Development of Strategic Behaviour of European Energy Incumbents in Response to European Gas Industry Change

A Theoretical and Empirical Investigation

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Vorwort

Im Laufe der Zeit, in der diese Arbeit entstanden ist, war eine Vielzahl von verschiedenen Menschen beteiligt, denen ich danken möchte.

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Overview

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bcm	Billion Cubic Metres
bn	billion
BP	Business Perspective
CCGT	Combined Cycle Gas Turbine
CCS	Carbon Capture Storage
CDM	Clean Development Mechanism
CEO	Chief Executive Officer
CNG	Compressed Natural Gas
CR	Corporate Responsibility
CSR	Corporate Social Responsibility
DJSI	Dow Jones Sustainability Index
DSO	Distribution System Operator
EdF	Electricité de France
e.g.	exempli gratia
E&P	Exploration and Production
EGD	EDF Gaz de France Distribution
EU	European Union
ENI	Ente Nazionale Idrocarburi
ERGEG	European Regulators Group of Electricity and Gas
GHG	Greenhouse Gas
GTL	Gas-To-Liquids
HSE	Health, Safety, Environment
IAA	Italian Antitrust Authority
IGCC	Integrated Gasification Combined Cycle
IPCC	Intergovernmental Panel on Climate Change
IPO	Initial Public Offering
JI	Joint Implementation

JV	Joint Venture
LNG	Liquefied Natural Gas
M&As	Mergers and Acquisitions
Mbar	millibar
mcm	million cubic metres
MEGAL	Mittel-Europäische Gasleitungsgesellschaft
mil.	million
MoU	Memorandum of Understanding
MW	Megawatt
NEGP	North European Gas Pipeline
NGV	Natural Gas Vehicle
nTPA	negotiated Third Party Access
R&D	Research and Development
REL	Renewable Energy Law
rTPA	regulated Third Party Access
PEG	Production Exploration Deutschland GmbH
PSA	Purchasing Sharing Agreement
PWC	PricewaterhouseCoopers
SCP	Structure-Conduct-Performance
SM	Strategic Management
SNAM	Società Nazionale Metanodotti
tcm	Trillion Cubic Metres
TCT	Transaction Cost Theory
TPA	Third Party Access
ToP	Take-or-Pay
TSO	Transportation System Operator
U.K.	United Kingdom
U.S.	United States
VEBA	Vereinigte Elektrizitäts- und Bergwerks-Aktiengesellschaft
VIAG	Vereinigte Industrie-Unternehmungen Aktiengesellschaft

CHAPTER I INTRODUCTION

1.1 Research Problem, Question and Aim

"I sell here, Sir, what all the world desires to have--POWER."[1]

What James Watt's business partner is supposed to have said when he promoted the steam engine still holds true today. Power, or energy as a more frequently used term, constitutes the fundamental basis of human life. For Europe, in particular the European Community, energy constitutes a fundamental building block. Even more, as "energy is a strategic and therefore political commodity (...)"[2] it has been assessed as determining "the nature and the destiny of the European Union"[3]. In the past decade, European energy markets have undergone dramatic change as elementary adjustments to European Energy Policy have fundamentally restructured the European energy industry, especially its gas and electricity markets. The focus in this work has been put on European gas markets and players active within. This has been chosen due to a lack of research determined in this area as is enlarged on later. Moreover, choosing a specific focus also satisfies a central criterion when conducting research in that the definition of a concrete unit of analysis provides the boundaries of a study and allows the comparison of findings with other studies.[4]

Central to this work is the fundamental change process that was initiated in the European gas industry with the introduction of liberalisation measures in 1998. The significance of this step becomes particularly apparent in the following depiction: *"The development of the European gas industry is in some senses very much a fairy tale. It has all the ingredients of a great story with nation states battling for territory, the gas companies behaving like 'barons' who mark out their fiefdoms and, some would say, control the lives of their 'serfs' in the form of*

1 Lienhard (1994), p. 3. Italicised by author. Also see Anonymous (1999a).
2 Rutledge/ Wright (2000), p. 26. Also cf. Horsnell (2001), p. 29.
3 Keppler (2009), p. 203.
4 Cf. Yin (2003a), pp. 22-26.

customers."[5] While complete market opening was carried out as a process of continuously implementing different regulatory measures over time, it brought elemental change to the traditional and long-term institutionalised industry that until then was characterised by governmental management and monopolistic closed market structures. European liberalisation measures broke up these structures by introducing the 'wind of competition'[6], requiring the unbundling of vertically integrated companies and thereby opening markets to competition and consumer choice. This again demanded of incumbents[7] to suddenly deal with forces and requirements not known before and "popping up in a number of unexpected places"[8], threatening their mere survival.[9]

The introduction of liberalisation did not remain the only regulatory 'attack' on established structures and on ways of doing business, however. In what can be characterised as a "fully hands-on"[10] approach to change the Commission also initiated significant regulatory adjustments to enhance security of supply and ecological conditions of the European Union. While those on supply security demanded organisational investments into strategic gas infrastructure and the diversification of gas supplies, for example, ecological ones were addressed at shifting the focus from the utilisation of fossil fuels to renewable sources of energy and to stipulating public awareness of such concerns. In fact, the enhancement of competition, security of supply and the ecological situation, the latter categorised under the term sustainability, came to constitute the three main goals of European Energy Policy. In addition to this, change was also characterised by the emergence of new types of stakeholders and the alteration of the role of prevailing ones, such as national governments and authorities, the European Commission and other European authorities. Moreover, not only did competitors emerge from within the same industry but also from across foreign borders as well as from related and unrelated sectors. At the same time consumers and environmental pressure groups posed new expectations regarding competitive prices, security of supply and

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5 Mabro/ Wybrew-Bond (1999), p. 1.
6 Cf. Percebois (1999), p. 14.
7 The term incumbent is used as an expression characterising established players in the market. In most cases these were large governmentally owned monopolies as will be enlarged on in chapter III.
8 Radetzki (1999), p. 25.
9 Cf. Radetzki (1999), p. 23.
10 Heren (1999), p. 5.

sustainable energy production. Following this, a classification can be made with respect to the type of influences exerted in that they differ by their nature and hence require different forms of action from the companies affected. While competitive and business-oriented forces demand efficient organisational structures, profit maximisation, and increasing profitability, for instance, regulatory, normative and societal ones entail appropriate stakeholder management for companies to retain their legitimacy.

Essentially, this new type of organisational environment is characterised by a degree of uncertainty so far unknown to the majority of European gas incumbents, fundamentally questioning established ways of doing business and thus exerting extreme pressure to adapt. This consideration becomes particularly paramount when taking into account that those players which do not behave according to rules and expectations may threaten their legitimacy, if not survival, as "rebels are rarely tolerated"[11] in the marketplace. At the same time it has to be taken into account that such drastic changes also open up opportunities to be taken advantage of. The criticality of these changes for European energy incumbents also becomes apparent when considering that European Energy Policy has not only been used as a tool to further converge national systems to complete the single internal market[12] but has even been viewed as the 'make-or-break challenge and litmus test'[13] for the institution of the European Union as such.

These considerations then raise the question of **how incumbents reacted to these changes** and how they played "the new game when the new rules are not completely known"[14].

The **aim** of this thesis therefore is to **determine organisational behaviour** adopted in response to such drastic environmental change, in particular, **how European energy incumbents strategically behaved in order to secure their survival and be successful in their new environment.**

11 Miller (1994), p. 328.
12 Cf. Genoud et al. (2004a), p. 122.
13 Cf. Röller et al. (2007), p. III; Keppler (2009), p. 222.
14 Peng (2003), p. 283.

Due to the complexity of the situation the research question has been formulated in such an open manner so as to allow an unbiased approach to analysis. This is explained next.

1.2 Structure

Basically, and serving as the discourse of inquiry, a thesis's structure provides the set-up for approaching the research questions.[15] Having laid out the research proposition, formulated the research question and explained the thesis' aim, another essential building block is to outline its structure. Following that "it is hard to describe and explain something satisfactorily unless you understand what something is"[16] and that energy policy must also always be seen as a reflection of historical events,[17] the subsequent chapter after the introduction, i.e. chapter II, presents the fundamental characteristics of the European Gas Industry before 1998 in order to provide the reader with a basis and emphasise the magnitude of the changes introduced as explained in chapter III.

Divided into two main sections and covering the analysis period from 1998 to 2008, the third chapter first explains the alterations made to European Energy Policy in the decade analysed, to then determine the structural changes having taken place in the industry over this period. Based on this, chapter III finishes with a brief conclusion and derives possible implications for organisational behaviour to formulate the research question in direct context.

Guided by this empirical reality, the theoretical approach of this thesis is established in the next chapter (chapter IV). Such an inductive procedure has been assessed as especially suitable in cases where 'real phenomena' are observed and explanations drawn.[18] While Mintzberg points out that "all theories are false"[19] as they too strongly simplify the world, others remark that it does not require a 'masterful theoretician' to determine the most

[15] Cf. Downey/ Ireland (1979), p. 630.
[16] Ghauri (2004), pp. 117-118.
[17] Cf. Czakainski (1993), pp. 18-19.
[18] Cf. Mintzberg (1979), p. 584; Beutel (1988), p. 32.
[19] Mintzberg (1979), p. 584.

appropriate approach. Instead, a thorough literature review which considers the full range of theories relevant should be carried out, so that the 'lessons learnt' enhance the understanding and knowledge on the topic.[20]

Having conducted such an analysis it has been found that no single theoretical approach exists which covers the complexity of the research setting and fulfils all requirements for being able to conduct a comprehensive analysis. Similar difficulties have also been encountered by early researchers who claim that "organizational phenomena are much too complex to be described adequately by any single theoretical approach"[21]. In order to counteract this fact a look has been taken at existing theories normally applied for analysing such phenomena in order to ground the most appropriate ones and establish a 'theoretical skeleton' which allows the accomplishment of the research aim. This procedure has again been guided by the fact that the forces constituting European gas industry change can be characterised as market (e.g. competitive) and non-market (e.g. regulatory) related. Based on this assessment a business- and an institutional-based approach are proposed as the most appropriate ones to capture empirical reality and enable a comprehensive analysis. Thus, after a brief introduction to the fundamentals of organisational behaviour in response to environmental change the two approaches are presented as the 'Business Perspective' in 4.2 and the 'Institutional Perspective' in 4.3. In section 4.4 then their applicability as a framework for analysis is tested and confirmed. While constituting the two main framing theoretical pillars, both perspectives predominantly focus on the organisation's external environment. The following section (4.5) therefore complements the two pillars by providing insights from an internal perspective. Chapter IV closes with the conclusion (section 4.6) that an integrated approach is required to comprehensively analyse incumbents' behaviour in response to the change of the European gas industry.

As no model exists to fulfil these requirements though, one will be developed by the researcher. This is done in sections one and two of chapter V by building on insights from

[20] Cf. Miles (1979), pp. 591-592; Bonoma (1985), p. 204; Gadamer (1999), pp. 553, 560; Yin (2003a), pp. 28-31, 47; Yin (2003b), pp. 3-5.

[21] Tolbert (1985), p. 12. Also cf. Kieser (1995), pp. 29-30.

relevant empirical and theoretical research and on the theoretical foundations worked out in the previous chapter. In the last section of this chapter (5.3) the procedure is summarised and the applicability of the model for empirical analysis concluded on.

Before being able to carry out the empirical analysis in chapter VII, the research methodology has to be determined. This is done in the preceding chapter VI. Based on findings from methodological research it has been determined that analysis here should be built on qualitative case studies as the most appropriate form for carrying out research (6.1). Following this, the method and process of conducting qualitative case study research are explained in the second and third section of this chapter (6.2 and 6.3), followed by a depiction of the research set up developed for this thesis in section 6.4. Essentially to be pointed out is that findings in this work have often been marked through direct and indirect quotes as required in order to emphasise institutional behaviour in particular.

Chapter VII is devoted to the empirical analysis of the four case studies chosen and thus consists of four major sections (7.1-7.4), one for each case study. Analysis of these four cases follows the same pattern: The first part provides a brief introduction to the company. In the second and third part the company's development is analysed from a Business and an Institutional Perspective, respectively. Finally, the organisation's development is determined from an Integrated Perspective and its strategic path derived in the fourth part.

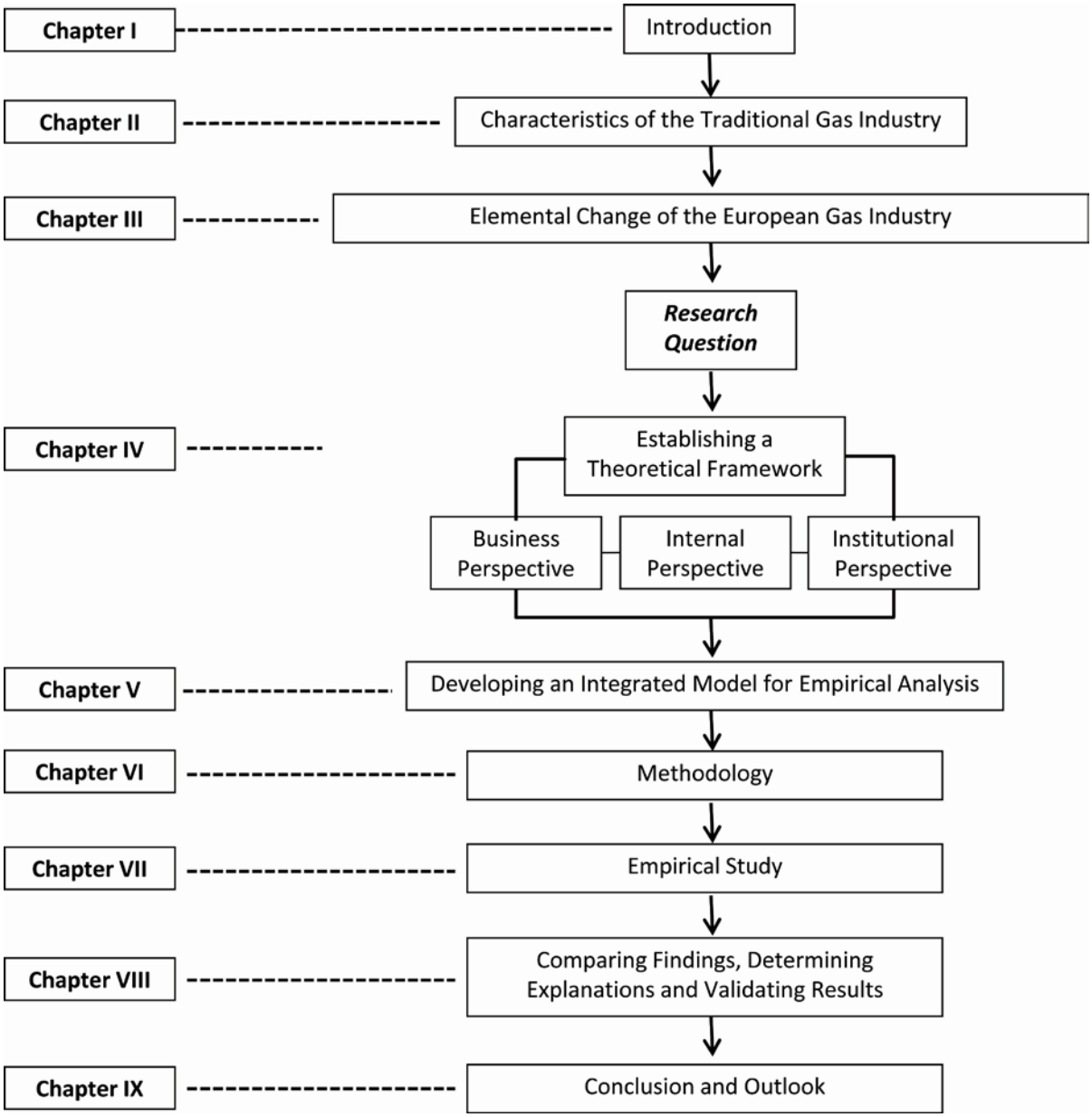
The results from this intra-case analysis are discussed in the subsequent chapter, chapter VIII. This is done by comparing findings with regards to commonalities and differences in section 8.1, determining explanations for these results in the second section (8.2), and by assessing performance outcomes of the four case companies analysed (8.3). In the fourth and last section of this chapter (8.4) these results are validated against industry developments in the research period as well as against findings from recent academic research and from other sources.

The thesis closes with Chapter IX where final conclusions are drawn. Categorised into three sections, the first (9.1) presents the findings and contributions of this thesis. The second (9.2)

again discusses its limitations based on which implications for future research are drawn before terminating this work with a section termed 'Final Word' (9.3).

The structure just explained above is illustrated in the following figure.

Figure 1:[22] Structure of thesis



[22] Own figure.

1.3 Contribution of Thesis

To conclude, with the topic and approach chosen this thesis enhances research in several ways and areas. From an empirical perspective the analysis satisfies an essential requirement of scientific work as being 'highly empirically informative'[23] in that it describes the fundamental structural change from one industry setting to a totally new one and the organisational behaviour within. A particularly beneficial aspect here is the depiction of change being composed from different types of forces and as coming from different directions in that all three pillars of European Energy Policy and their interrelatedness are looked at. Also recent work still remarked that more research was required on these subjects. The analysis of industries being subject to regulatory forces and where organisations are "neither competitors nor confederates"[24] has been described as the "stepchild"[25] of management research. Especially, the interrelatedness of European Energy Policy goals and its consequences have only been addressed relatively recently. While some, for example, pointed out that reforms should not be thought of in isolation as it was "the totality of energy policy which determines how the system performs, not the individual parts"[26] others see a convergence of all three goals in the long-run.[27] Similarly, this thesis also enhances the understanding of a new environmental setting in an industry in which, 'if it wasn't for competition', a company would hardly be "endogenously motivated to serve its environment"[28]. Value for theoretical research is created by taking a two-sided perspective of two apparently different approaches to analyse empirical findings through these two lenses. Moreover, by building a model and integrating the two approaches, analysis can also be carried out from an integrated perspective and thus significantly enhance explanatory power not only in form of allowing a more comprehensive examination, but by providing a different view on results. Additionally, the model enables to map organisational behaviour as a development path over time. This may reveal similar development paths which again permits the observer to draw conclusions on overall industry development.

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23 Cf. Beutel (1988), pp. 30-31.
24 Russo (1992), p. 25.
25 Russo (1992), p. 13.
26 Helm (2008), p. 34.
27 Cf. Röller et al. (2007), p. 10.
28 Midttun (2001), p. 19.

This as well as the multi-dimensional approach in general may also serve managers as an instrument to analyse the organisational environment in a comprehensive way and raise awareness regarding different types of forces and their respective effects. Furthermore, it reveals a range of forms of strategic behaviour that can be adopted. The industry perspective and comparison with competitors again provide an indication of overall development and thus a basis for reacting if necessary. Based on these arguments this thesis can be said to provide an essential guideline for future analysis of organisational behaviour in response to environmental change. The value of this work is also fundamentally enhanced through the methodological approach adopted. Apart from being descriptive, which used to be the usual but sole approach in organisational research for a long time,[29] it is also explanatory in that its multivariateness[30] reveals several possible connections and not only allows a capturing of the whole breadth of corporate behaviour but also an in-depth analysis of the findings made.

Apart from its academic contributions this thesis is also believed to be an interesting work to read following the continuous topicality of the research topic addressed. Or, as formulated by an observer shortly after market opening:

> *"Scarcely a day now passes without a story about heady manoeuvrings by boring old European utilities"*[31].

[29] Cf. Mintzberg (1979), p. 583.
[30] Cf. Hambrick (1980), pp. 567-570.
[31] Anonymous (2001a).

CHAPTER II CHARACTERISTICS of the TRADITIONAL GAS INDUSTRY

2.1 Fundamentals of Natural Gas

Features of Natural Gas

Generally, gas is a source of energy which again is the basic requirement for life on earth. The term 'energy' originates from the Greek word 'energeia'. The way it is applied today was introduced by Thomas Young in 1802 to describe the general working capacity of machines as a process 'in work'.[32] Fundamentally, energy appears in different forms such as fossil fuels like crude oil, coal, or natural gas which in their purest and simplest form are stored solar energy that has been captured in underground deposits,[33] thereby making them exhaustible and not renewable. Other forms of energy sources to be distinguished are those being manufactured from biological energy resources such as biogas which, for example, is produced from different energy plants, wood, straw, or animal excrements.[34] While these are also 'exhaustible' they are renewable at the same time. Other forms like solar energy or wind, hydro and tidal power again are renewable as well as non-exhaustible as 'automatically' produced by nature. Such energy sources are mainly referred to as 'renewables'.[35]

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[32] Cf. Slesser (1988), p. 88; Feddeck (2003), p. 6. In 1829, Jean V. Poncelet was the first to define energy as the 'capacity to perform work'. Following this definition energy can neither be generated nor destroyed. This elementary energy principle was already recognised by von Huygens in 1673 and then established as law by Hermann Helmholtz in 1847. It is also known as the first fundamental theorem of thermodynamics according to which it is inaccurate to speak of energy 'production' or 'consumption' as energy cannot be created (or destroyed) and therefore cannot be produced or consumed but can only be converted into another form. Cf. Grathwohl (1982), p. 9; Bockhorst (2002), pp. 8-11; Rebhan (2002), pp. 15-22; Feddeck (2003), p. 6; Kraus (2004), pp. 68-69. As the terms energy production and consumption are commonly known and used though, these expressions will also be applied throughout this work. Specifically, the term 'production' here is defined as "the extraction and subsequent transformation of fossil or fissile energy sources, and their delivery to the economic system" (Slesser (1988), pp. 91-92).

[33] Cf. Bischoff (1990), p. 22; Slesser (1988), p. 183.

[34] Cf. Schroeter (2007a), p. 4; Thrän et al. (2007), pp. 15-16; Pecka (2008a), p. 9.

[35] Cf. Auer (2004), p. 11.

Energy, in particular natural gas, has been an important source for the development of mankind.[36] The energy source 'gas' has to be distinguished from gases which are manufactured from different solid, liquid or gaseous fuels through chemical transformation and natural gases which have to be extracted from the earth's soil. While the word 'gas' itself was only introduced around 1609 by the Flemish scientist Jan Baptista van Helmont, who used this expression to describe those types of air which were different to that of atmospheric air, the term 'natural gas' was first used by the Italian scientist Lazzaro Spallanzani in 1795.[37] As a result of the specific geological circumstances under which it originated in the underground storage system, a mixture of miscellaneous chemical compounds can be distinguished which again determine its physical characteristics:[38] Natural gas consists of a highly combustible mixture of hydrocarbon-rich gases which, depending on the source of origin, can be distinguished into two different qualities of low- (L-) and high- (H) calorific natural gases.[39] Due to these differences and its volatile state, the extraction, transportation and storage of natural gas make it a technically and economically demanding product.[40] The fact that various forms can neither be interchanged nor mixed easily and even after processing still differ, presents a major technical and commercial hurdle.[41] As necessary adjustments are relatively costly and time-consuming even a "mere announcement of a particular natural gas quality by a transportation company is enough to stop its physical transportation (and hence its use in a particular area)"[42], making 'competition run into difficulties simply because of its

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36 The earliest observations were probably made by the Ancient Greek who in their narratives described supranational forces in form of 'seas of flames' on the Caspian Sean, most likely crude oil which had been ignited by lighting (cf. Körting (1963), p. 18). Similar observations were made much later by Volta who started first experiments and envisaged possibilities for economic application (cf. IEA (1982), p. 9).

37 Cf. Körting (1963), pp. 18-19; Peebles (1980), p. 7.

38 Despite extensive research on the topic of the origin of natural gas there are still many different opinions prevalent today. While some believe natural gas to be a by- or an end product of the formation process of petroleum others think it has a separate origin. The most widely represented hypothesis though is that natural gas origins from remainders of organic substances which inhabited the earth more than a quarter of a billion years ago as is also described in this work. For a more extensive explanation on the different possible forms of origin see, for example, Körting (1963), p. 23; Minchin (1968), pp. 42-43; Kehrer (1970), pp. 1-29.

39 The main element (70-90%) is methane. Other components are ethane, propane, butane, carbon dioxide, and in traces (0.2%) oxygen. Cf. Thielen (1999), p. 5; Kraus (2004), p. 75. L-gas is mainly found in Northern Germany and the Netherlands, H-gas in Russia, Norway or the North Sea. Cf. Kunde (1995), pp. 2-3; Kuck (1999), p. 41; Rott (2004), p. 4.

40 Cf. Hoffmann (1994b), pp. 499-500; Klinski (2006), pp. 70-72.

41 Cf. Kemmer et al. (1970), p. 776; Kunde (1995), p. 3, Rott (2004), pp. 4-6.

42 Rott (2004), p. 8. Translation by author.

different calorific values'[43]. In general though, transportability is a major advantage of gas as it is relatively easy to do once an infrastructure system exists, especially as it becomes more economical the higher its calorific value.[44] Another of its 'superiorities' is that it burns without leaving hardly any traces of root while developing less carbon dioxide than oil or coal during combustion and, almost lacking carbon monoxide, has no major toxic components. Reaching highest degrees of purity it is thus preferred as an efficient and environmentally sound source of energy,[45] allowing it to be sold at a premium price compared with other fuels.[46]

Before any form of energy can be used though it has to be transformed. This transformation process is depicted in the following section.

Gas Transformation Chain

An energy transformation chain describes the metamorphosis of energy sources from their raw condition to their final form for application by end consumers. The first step of this multi-stage transformation process is constituted by primary energy which in the case of gas exists either in form of natural gas or as manufactured gas produced from energy sources such as coal or biomass.[47] In the second step of the chain natural gas is transformed into secondary energy sources such as municipal heat, different product gases or refinery products. These again turn into final energy when being to the consumer's disposal, where possibilities for the application as 'employed' or 'derived' energy are manifold. An advantageous characteristic of

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43 Cf. Rott (2004), p. 6. Translation by author.

44 Cf. Schreiter (1965), pp. 24, 27, 88; Musil (1972), p. 103; IEA (1997), p. 115; Rojey (2002), p. 8.

45 Cf. BGW (2004), pp. 3-5, Rott (2004), p. 2. For more specific details on natural gas characteristics cf. Guo/ Ghalambor (2005). Despite its environmental friendliness though, also natural gas is not completely free of emissions as methane, its main constituent, also is a greenhouse gas. Its advantage particularly arises in comparison with other fossil fuels of which natural gas has the lowest emissions per unit of energy produced (cf. IEA (1997), p. 116) and as methane emissions from natural gas systems still represent significantly less than those from natural ecosystems (cf. Rossert (1996), p. 8).

46 Cf. Odell (1992a), p. 57.

47 As gathered from literature research there is no clear definition of the term 'primary energy'. Following the characterisation of natural gas, it here is defined as a form of energy "that has not undergone any sort of conversion" (World Energy Council (1992), p. 8).

natural gas derives from the fact that transformation losses, which normally arise when energy is being transformed from one source to another, can be kept relatively small with natural gas reaching a very favourable degree of effectiveness of nearly 90%.[48] A fundamental area of application is to use gas as a fuel or feedstock in industry where high-temperature heating is utilised for applications such as melting, drying processes or steam generation in metal, ceramics, or paper production, or in the chemical industry to produce paraffin or synthetic lubricants that go into final products such as pesticides, paint, pharmaceuticals, oils, ammonia and transportation fuels. This transformation has become possible through an important technological advancement called Gas-To-Liquids (GTL) which enables the production of synthetical products from natural gas otherwise produced from crude oil, often even showing higher quality characteristics and the monetisation of gas resourced through the expansion into other segments and markets.[49] Another large consumer of natural gas is the residential sector where it is used for heating purposes. Following its major application in the heating segment, where it presents a nearly perfect substitute for coal and oil, natural gas consumption is extremely dependent on weather conditions. Especially in mature markets an increase in sales is mainly the result of lower temperatures. A further possible form of application is as a fuel in the transportation sector or as a feedstock for electricity production.[50] Following these multi-purposes natural gas has thus also been termed a major 'cash cow' for suppliers.[51] Moreover, when considering the external costs of electricity generation, natural gas has an advantage over oil and coal but loses out over nuclear energy as well as renewables due to their subsidisation. At the same time gas and electricity characterise substitute fuels with regards to heating and cooking purposes.[52]

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48 Cf. World Energy Council (1992), p. 8; Kraus (2004), p. 167. For a very detailed and specifically technologically as well as chemically oriented overview over particular scientific aspects of the conversion possibilities of natural gas cf. Iglesia et al. (2001); Guo/ Ghalambor (2005); Kidnay/ Parrish (2006).

49 Cf. Schubert et al. (2001), p. 459; IEA (2004), p. 134; Hirsch et al. (2005), pp. 42-43. GTL has to be distinguished from Natural Gas Liquids (NGL), respectively Liquefied Petroleum Gas (LPG) produced from manufactured not natural gases (see above).

50 Cf. Fleisch et al. (2001), pp. 423-428; Schubert et al. (2001), pp. 460-463; IEA (2002), p. 111; Rojey (2002), p. 10; EIA (2005), pp. 46-48; IEA (2005), p. 171; Rostrup-Nielsen (2005), pp. 3-5, 12-16, 23; Trimm (2005), pp. 125-126, 134-135; Védrine (2005), pp. 403-405; EIA (2006), p. 55. Some have particularly pointed out the possibility of selling synthetic products produced from natural gas at higher prices. Cf. Babu (2001); Fleisch et al. (2001); Dybkjaer/ Christensen (2001); Schubert et al. (2001); Jensen (2003), p. 32; Seeliger (2004), pp. 22-25; Trimm (2005); Védrine (2005); Mohrdieck (2007), p. 9.

51 Cf. Schmitz (2006), p. 26.

52 Cf. Anonymous (2007a), p. 3. For a comparative study cf. Bartels/ Fiebig (1996).

While the gas industry was originally built up on manufactured gas, it is today mainly natural gas which is used. In the following section the natural gas industry's specific characteristics are explained in more detail.

2.2 Characteristics of the Natural Gas Industry

2.2.1 Activities constituting the Industry Value-Chain

Fundamentally determining the industry's structure are the individual activities for bringing natural gas from the 'wellhead to the consumer', i.e. from its place of deposit to that of application. Constituting the industry's value-chain, these activities, classified into upstream, midstream and downstream segments, are outlined in the following.

Upstream Activities

Exploration and Production (E&P)[53]

Natural gas in its purest form is found in nature where it is stored in and extracted from on- or offshore underground deposits in depths of up to 5,000 metres. Initially only discovered randomly during oil production and, its value not recognised, flared off,[54] the Chinese actually are said to have been the first to develop deep drilling along with separation techniques to use natural gas commercially. Today, different drilling technologies exist which enable efficiency to be improved and the amount of recoverable reserves to be extended while

[53] While this is a common term to be used, exploration as a step before extraction and production will not be considered as this would go too much into detail for the purpose of this work. For a more specific overview see, e.g., Köckritz (2005).

[54] Cf. Minchin (1968), p. 91. Sometimes the gas which still lies under the subsoil is also called 'raw gas' which then becomes natural gas when being extracted. Early on, natural gas was even regarded as the "stepbrother of oil" (Estrada et al. (1995), p. 2).

reducing environmental damage.[55] Still, although such advancements have made the development of formerly uneconomic fields, where gas lies below 3,000 metres, economically viable and although reliable production concepts are already available for production in the Arctic Ocean where conditions are particularly extreme, many remaining deposits nowadays lie offshore below the seabed in difficult climatic conditions. Such resources cannot be accessed yet with the existing technology. Further technological innovations therefore are a key success factor in the industry. Moreover, as the extracted gas has no value if it cannot be brought to users, and as most deposits lie in remote places of consumption, a functioning transportation system is the backbone of the industry, particularly as it also determines the structure of gas markets and its regulation. Another characteristic of natural gas is its storability which gives it an advantage over other energy carriers such as electricity. These activities constitute the midstream area of the gas value-chain and are depicted in more detail in the following.

Midstream Activities

Pipeline transportation

The largest volume of gas is transported by pipeline. One of the earliest forms of pipeline transportation known to be built was again by the Chinese using bamboo cane pipes.[56] The European pipeline system was set up using steel pipes which are still also used today. Long-distance high-pressure pipelines bring the gas from the wellhead to a distribution point where it is fed into a regional, mid- and then into the local low-pressure grid. Generally, several issues have to be considered with regards to transportation, such as the fact that the gas has to be processed, i.e. cleaned, to make it suitable for transportation. Other major obstacles to overcome are the transportation of different gas qualities (see above) and the drop in pressure which may result in substantial gas losses. Another technicality with regards to the

[55] Cf. Peebles (1980), p. 6; Kidnay/ Parrish (2006), p. 1. Another issue is safety concerns. Extraction activities may even trigger off earthquakes - as happened before. Cf. Anonymous (2006a), p. 3.

[56] Cf. Peebles (1980), p. 6; Kidnay/ Parrish (2006), p. 1.

disturbance-free flow of gas is the need to keep up the pressure by balancing in- and outflows as gas off-take at one point affects the whole network. A flexible instrument to alter pressure to a certain extent is known as 'line-pack', i.e. storing compressed gas within the network, and thus also functioning as a storage device.[57] This is a crucial network characteristic as localisation of storage in pipelines is much more flexible than in underground reservoirs or man-made systems and so additionally enhances the important role transporters play for overall industry structure as is explained in greater detail below.

Transportation by LNG

Particularly in case of sources which lie very remote from areas of consumption, transportation by pipeline may not be viable or possible at all. In this case an alternative form of transporting natural gas is in liquid form as liquefied natural gas (LNG). LNG is produced by cooling down natural gas to below minus 160 degrees where it then turns liquid at atmospheric pressure.[58] This liquefaction process reduces the overall volume by about 600 times to that of natural gas in its gaseous state and thus makes it suitable for transportation over long distances and for flexible storage.[59] Islands such as Japan, which are often not suitable for links with pipelines, are particularly reliant on LNG imports. Although there have been attempts of transportation by train and even plane, movement of LNG is mainly done via the seaway on special LNG tankers, the first of which were deployed at the beginning of the 1960s. In 1964, the United Kingdom (U.K.) was the first country in the world to import LNG from Algeria on a long-term commercial basis. At the same time this contractual delivery initiated the start of the world's first commercial international LNG project.[60] Shortly after, Gaz de France (GdF) started regular LNG imports with its tanker Jules Verne. Since then,

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57 Cf. Hoffmann (1994b), pp. 393-395; Kunde (1994), p. 3; Schmitt (1994), p. 1124; VSG (1996), pp. 1-2; IEA (1997), pp. 115-140; Rojey (2002), p. 9; Rott (2004), p. 4.

58 The very basics of this technique have been known since its discovery around 1870 by the German engineer Carl Linde who observed that certain gases liquefy under pressure while they begin to boil at temperatures below zero degrees when pressure slackens. From this observation Linde was able to build the first refrigerating machine whose concept is still applied today. Cf. Thielen (1999), p. 14.

59 One cubic metre of LNG equals 600 cubic metres of natural gas under normal condition. Also here different quality and technical aspects have to be considered though. Cf. Kessler et al. (2005), pp. 42-46.

60 Cf. Peebles (1980), pp. 2, 21, 28-29, 104, 109-111; IEA (1997), p. 126; Hensing et al. (1998), p. 80; Sietz (2006), p. T1.

these special vessels have continuously developed regarding size, materials - transportation of gas from Arctic reservoirs, for example, has to take place in special ice-capable tankers - and capacity. While the first tanker, which was used as an experimental shipment in 1959, had a capacity of 5,000 cubic metres, tankers 15 years later had a capacity volume of 125,000 cubic metres. With this development LNG transportation was increasingly realised as a viable way to ship gas otherwise flared from remote places. At its final destination the LNG is transferred into its original gaseous state again in special regasification plants in order to be transferred into the natural gas pipeline grid.[61]

Transportation as CNG

Another possible way of transportation is as compressed natural gas (CNG) where the gas is compressed under high pressures between 150 and 250 bar (compared with 80 bar for pipeline transportation). CNG transportation, which is possible by water or road, is still strongly dependent on further technological progress and so far has only been viable for low volumes. At the same time CNG poses a form of transportation particularly viable for regions which lack a pipeline infrastructure and are relatively small as LNG facilities require substantial space.[62]

Storage

An essential advantage of natural gas, especially LNG as mentioned above, over other energy sources is that it can be stored. Constituting another value-chain activity, the major function of storage is to balance daily and seasonal demand variations, cover peak demand and act as a buffer in the case of supply disruptions. This is particularly essential as the majority of gas supply volumes is contractually bound on a long-term basis and cannot suddenly be re-

[61] Cf. Minchin (1968), pp. 90-91; Rathmann/ Ruppert (1985), p. 3; Hoffmann (1994c), p. 833; IEA (1997), pp. 117-126.

[62] Cf. IEA (1997), pp. 118, 127, 130-131.

directed to other places of demand. Allowing large volumes to be taken, natural gas is mainly stored in underground reservoirs. These can be salt and rock caverns, pore storages like aquifers, or depleted hydrocarbon reservoirs. While relatively high volumes can be withdrawn from caverns at once, thus providing a relatively large degree of flexibility, they only offer small capacities compared with pore storages where gas may only be taken gradually, as the natural pressure system and way of flow must be kept in balance. Technically, underground storage is still a recent application. In Europe, the first pore storage was built in the 1950s. Today, about 640 storage facilities are active worldwide, about 160 of them in Europe, more than 400 in the USA.[63]

Downstream Activities

For the gas to reach consumers such as households or small- and medium-sized industry it needs to be distributed regionally and locally, characterising major downstream activities. Here, special attention has to be paid to the different peculiarities of natural gas such as its form and composition, which often requires additional treatment to become distributable after high-pressure transportation, particularly after crossing national borders. In fact, for transition into the national distribution system pressure has to be reduced drastically to only a few bar. Distribution activities become even more complex when H-gas has to be transformed into L-gas, or vice versa, to integrate regions with different gas qualities and supply structures. This procedure makes distribution not only more complex but also more costly and time consuming. Biological energy resources, too, require technical transformation and adjustments to natural gas quality - biogas is then called biomethan - when it is to be fed into the natural gas supply system.[64] Constituting the final downstream activity, gas is marketed and sold to end users.

These activities constitute the natural gas value-chain as illustrated in the following figure.

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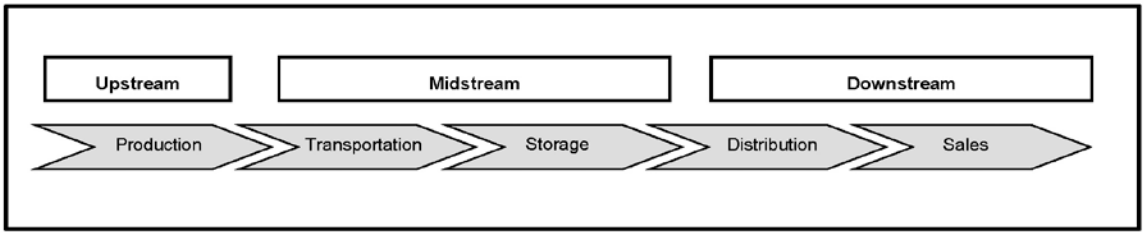
63 Cf. Wölfer/ Leunig (2004), p. 116; Pasternak et al. (2005), p. 39; Arnold (2006), p. 24; Focht (2007a), p. 6.

64 Cf. VSG (1993), p. 2; Rott (2004), pp. 5, 10. For an explanation on technical and cost aspects cf. Klinski (2006), p. 74; Wuppertal Institut et al. (2006), pp. 20-38, 50-57; Kanngießer (2007), p. 6; Leuschner (2007), pp. 30-32; Ott (2007), p. 10; Thrän et al. (2007), pp. 1-14, 31-38.

Figure 2:[65] Natural gas value-chain



In addition to the characteristics of these individual activities, the actors who are engaged along the chain constitute a specific part of the industry as is explained next.

2.2.2 Actors engaged along the Industry Value-Chain

Generally, no universal term exists for players active in the industry. While the European Union generally defines any actor engaged in at least one of the value-chain functions and responsible for commercial, technical and/ or maintenance related to those tasks as a 'natural gas undertaking',[66] a certain classification can be made according to the industry's value-chain activities: While exploration activities are often carried out by specialised players called E&P companies, the largest producers of natural gas are mainly the major oil companies.[67] In fact, the first major discoveries made in Europe near Groningen in the Netherlands with substantial impact on the energy scene in Western Europe were developed by oil majors Shell and Esso.[68] Similarly, in Italy the national oil company AGIP had been put in charge to develop domestic gas supplies, and in France it was the national oil major Elf. An exception is Russian Gazprom which mainly is a gas producer but also extracts oil.[69] The sale of gas

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65 Own figure based on the depiction of activites described above.

66 Cf. European Parliament and Council (2003a), Article 2, Recital 1. In all cases these 'actors' may either be a natural or legal person carrying out the respective function. This is therefore not mentioned again explicitly.

67 This is due to the fact that natural gas is often produced as a by-product of oil production which oil companies can take advantage of. Cf. Minchin (1968), pp. 41-42; Odell (1979), pp. 126-127; Radetzki (1999), p. 18. Apart from that, oil companies had already been engaged in the gas industry even before natural gas made its way to the market when delivering oil as a feedstock for manufactured gas and companies like Esso or Mobil Oil Corporation entered into contracts with gas works to supply refinery gas. Cf. Körting (1963), pp. 565-582.

68 Cf. Odell (1979), pp. 122-123; Peebles (1980), pp. 125-126; Peebles (1999), pp. 93-133.

69 Cf. Rapp (1992), p. 20; Estrada et al. (1995), pp. 98-104; Stern (1998), p. 23.

across national borders, again, in most cases is carried out by specially founded export companies. In the case of the Dutch resources, for instance, Shell and Esso together with the Dutch government, as part-owner of the resources, set up a joint state-controlled company, N.V. Nederlandse Aardolie Maatschappij (NAM), in order to market the gas across the Dutch border.[70] The actor who brings the gas into national territory again is called importer. This often is the national transportation company. In order to bring the gas from its field of production across national territories, producers and importers often jointly financed the necessary infrastructure, thus creating a mutual dependence still of relevance today.[71] In the midstream segment a distinction can be made between transmission companies, or more precisely transmission system operators (TSOs), and distribution companies, i.e. distribution system operators (DSOs), sometimes also grouped as transportation companies. While TSOs transport the gas in high-pressure pipelines over long distances and in most cases across national boundaries they also assume the function of wholesalers to DSOs on the next level. DSOs are responsible for the further supply in mid- and low-pressure pipelines within a region or local municipality. Both are generally responsible for operating, maintaining and, if necessary, developing the respective transportation system and its interconnections as well as for guaranteeing the long-term capacity of their system to meet the demand for the required transportation service.[72] Storage facilities again are operated by storage system operators (SSOs)[73] which in reality in most cases are TSOs. The last level is operated by 'supply undertakings' which supply and sell the gas to final customers.[74] In addition to these operating agents, governmental bodies, land owners, environmental groups and even customers are also engaged along the value-chain.[75] This is enlarged on further below. Before doing so though the traditional structure is laid out first to form a basis for understanding the change process and because several traits of this structure are still prevalent today.

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70 Cf. Odell (1979), p. 122; Peebles (1980), pp. 120-125; Peebles (1999), pp. 96-99.
71 Cf. European Commission (2007a), p. 27.
72 Cf. European Parliament and Council (2003a), Article 2, Recitals 4 and 6.
73 Cf. European Parliament and Council (2003a), Article 2, Recital 10.
74 Cf. European Parliament and Council (2003a), Article 2, Recital 8.
75 Cf. IEA (1997), p. 133. A prominent example for such a customer is German BASF with its own subsidiary Wintershall, which early engaged in the production and transportation of natural gas and was thus also considered a 'troublemaker' within the European gas industry (cf. Chevalier (1992), p. 177).

2.3 Traditional Structure of the European Gas Industry

2.3.1 Monopolistic and Demarcated Areas closed to Third Parties

The natural gas industry, 'painstakingly built up already in the era of manufactured gas'[76], is characterised by certain features which favoured closed market structures but hindered competition and the free flow of gas between Member States, and thus finally the creation of a common internal market as aimed for by the European Union.

Natural Monopoly

Fundamentally, the European gas industry is characterised by specific features which are common to all infrastructure industries. A major one of these characteristics is that of a natural monopoly which is determined by the fact that the gas grid constitutes an essential facility and a highly capital intensive asset. The building of a second pipeline parallel to an already existing one and the accompanying duplication of monopolistic structures is not only economically infeasible and inefficient, but has been argued to reduce overall welfare for society. Moreover, specifically built for a certain purpose and route, transportation facilities nearly completely lose their value once one side closes down its business, a circumstance also known as a hold-up situation. Such asset-specific investments therefore present irreversible commitments which are "literally sunk into the ground"[77]. However, while these aspects constitute an essential feature of natural monopolies, they do not automatically imply the existence of monopolistic market power as competition is generally possible, either by direct pipe-to-pipe competition or, in cases where a pipeline is operated by several parties, when customers are able to choose their counterparty.[78] Moreover, transportation by pipeline can also be substituted by other forms of transportation (see above). Thus, the specific cost structure also has to be considered. Characterised by large fix costs and constant marginal

[76] Cf. Peebles (1980), p. 1.
[77] Ellig/ Kalt (1996), p. xvii.
[78] Cf. Dörband (2005), pp. 32-36.

costs for the actual provision of the service, i.e. the transportation of gas, large sales volumes and a large, stable customer base are essential. This, together with a sub-additive and declining average cost curve, makes it more efficient and less costly if transportation is carried out by a single actor who can also more easily balance demand and supply.[79] Similarly, if transportation is bundled with upstream production and downstream supply vertical economies of scale can be exploited. Such infrastructures represent 'monopolistic bottlenecks' and provide pipeline owners or controlling operators with substantial quasi-rents and market power to take advantage of while posing significant barriers for new entrants. An exception often mentioned in literature is Germany where Wintershall in 1989 had built its own pipeline to supply its chemical plant and bypass Ruhrgas, the main importer until then. In 1996 this was even followed by a Joint Venture (JV) with Gazprom to establish Wingas (65% Wintershall-owned, 35% owned by Gazprom) and build a new pipeline parallel to that of Ruhrgas to transport and sell gas from Russia in Germany and beyond, and so introducing elements of competition in the gas market.[80] In addition to such predominantly natural monopolistic structures the European gas industry has also been characterised by considerable parts of public ownership and far-reaching state intervention,[81] having resulted in the establishment of statutory monopolies and integrated ownership structures as is explained in the following.

State Ownership and Governmental Engagement

After first discoveries had been made in Europe, natural gas developed to become an important element in the national energy mix as well as for overall economic and social welfare. In many cases this made the provision of gas a national task by either setting up national companies or by granting exclusive rights to produce and supply energy in

[79] For an in-depth theoretical explanation cf. Sharkey (1982). For an empirical example cf. von Hirschhausen (2007).

[80] Cf. Estrada et al. (1995), pp. 96-97; Golombek et al. (1995), p. 86; Rossert (1996), pp. 25-26; IEA (1998), p. 34. This example shows that also apparently natural monopolies are 'open to attack' when challengers are determined and willing to invest the necessary capital. Cf. Radetzki (1999), p. 20; Dörband (2005), p. 33.

[81] Cf. Radetzki (1999), p. 17. These characteristics have been commonly accepted as general industry features in literature. Also cf. Helm/ McGowan (1989), pp. 238-248; Kahane (1990); Hensing et al. (1998), pp. 77-89; von Hirschhausen et al. (2004).

demarcated areas in order to limit entry, and to protect the investor's assets, the latter thus constituting statutory monopolies. In most European countries producers, importers, transporters and also distributors were largely government controlled and value-chain activities were performed by a single vertically integrated company. Such constellations provided incumbents with substantial "opportunities for fine-tuning economies of scale and scope"[82] and thus organisational profit. Today, vertical integration and public shareholding in the utility sector are also high. About one third of gas transmission networks of the EU, for instance, are in the majority state-owned.[83] Although there were different grades of integration across European Member States, vertical integration was generally acknowledged as "the guiding principle of the previous market structure"[84] in Europe. Basically, vertical integration refers to the internalisation of network externalities due to the existence of reliability costs. One example would be producers who lack the incentive to maintain the necessary pressure in the infrastructure system which is needed to supply customers further downstream. Transmission companies are therefore interested in reliable relationships with their upstream supplier. In addition, backward integration has been chosen in cases where the 'bottleneck' activity is regulated, while the upstream part is not. This has allowed inflating costs upstream and at the same time the accumulation of additional rents.[85] Producers, facing the TSO as a bottleneck and barrier to market entry, are looking to integrate downwards. Similar considerations are significant for the relationship between transmission and distribution companies. While TSOs are interested in stable purchasing volumes to make investments viable, DSOs need a secure source of supply to satisfy their customers. Vertical integration thus allows a high and regular utilisation of capacities and an exploitation of economies of scale, while reducing uncertainty with regards to large sunk costs and a long life span of the investments. In this respect, a major distinction can be made regarding the mode of vertical integration, i.e. whether integration takes place via ownership rights (internalisation) or long-term contracts. Others speak of these two types as 'actual' and

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82 Tolmasquim et al. (2001), p. 337.

83 Cf. European Commission (2007a), pp. 40, 75.

84 European Commission (2007a), p. 28.

85 Lyon and Hackett in fact determined vertical integration as one of four essential bottleneck characteristics, the others being large quasi-rents, exchange relationships governed by regulatory policies and the growing scope and complexity of networks. Cf. Lyon/ Hackett (1993), pp. 382-386.

'effective' integration.[86] While both forms are characteristic for the industry, in reality different forms and combinations exist. These forms are briefly presented, based on the general distinction between internalised vertical integration and long-term contractual arrangements.

Vertical Integration

Vertical integration via internal coordination refers to the situation where value chain activities are all performed by the same company. Generally, competitive functions such as production and sales, and natural monopolistic activities like transportation are performed under one corporate roof. The European Commission has defined vertically integrated companies as 'natural gas undertakings or a group of undertakings whose mutual relationships concern the performance of at least one of the functions of transmission, distribution, LNG or storage, and at least one of production or supply of natural gas'.[87] While there are cases of full integration there are those where internal integration only takes place between the domestic producer and the national TSO or, in the case where there are no indigenous resources, between TSOs and DSOs.[88] In cases where ownership integration was not possible, e.g. foreign suppliers not being allowed to take ownership over essential national facilities, it was substituted by long-term contracts in order to establish some degree of stability and security and ensure the amortisation of investments by making producers carry the price and buyers the volume risk.[89] The duration of such contracts normally is as long as the infrastructure is used. Due to the long amortisation time of such projects, the majority of such contracts were established over a period of up to 25 years. A central feature of such gas contracts lies in the concept of the 'Daily Contract Quantity' (DCQ) which obliges the seller to guarantee for a minimum capacity of production, while the buyer again has to take off a minimum volume and pay what is called a 'Minimum Bill'. Contractually this was established as a 'Take-or-

86 Cf. Kahane (1990), p. 246.
87 Cf. European Parliament and Council (2003a), Article 2, Recital 20.
88 In this case also production becomes part of the bundled product. Cf. Lyon/ Hackett (1993), p. 380.
89 From a theoretical perspective, the importance of long-term contracts for uncertainty reduction has been particularly pointed out by Williamson (1985).

Pay' (ToP) clause, often accounting for 70 to 90% of the annually contracted volume. This guarantees the seller a minimum income flow to cover his debt duties from financing the development of the field.[90] The importer and subsequently the TSO again, in charge of the gas after it has crossed the border, needed the certainty of being able to sell the gas contracted to amortise their investments. This was often realised by defining demarcation areas which were either established by law, or existed because of being tolerated in that there existed a "clear tacit understanding among the gas executives that they respect each other's territory"[91]. The TSO thus 'passed the purchase obligation downward to the DSO'[92] which again was granted defined areas of supply to customers with different user profiles for being able to pool demand, and ensure a balanced utilisation of facilities, thus reducing their sales uncertainty. The establishment of long-term contracts and demarcation areas as a form of 'effective integration' therefore also allowed disintegrated companies to become connected.[93]

Essentially, those players with ownership and power over the transportation function linking buyers and sellers posed a major barrier to entry for third parties. Moreover, by acting not only as transporters but also as marketers both activities were inseparably bundled. In many cases, also the storage activity has been part of this bundled offer as not only grids but also storage facilities were owned by the transporters. Such actors have thus also been described as 'gatekeepers' or 'effective bottlenecks' in that suppliers could only directly sell to TSOs.[94] These again could not directly access final consumers but had to sell to DSOs following which also downstream markets remained closed to third parties.[95] Only in the case of industrial or commercial users with large purchasing quantities, such as power generation companies or industrial buyers, the gas was sold directly, bypassing distribution via DSOs (as indicated by the dotted line in the figure). At the same time also DSOs had substantial market powers, deriving from their historical origin of having been "almost by definition, monopolies

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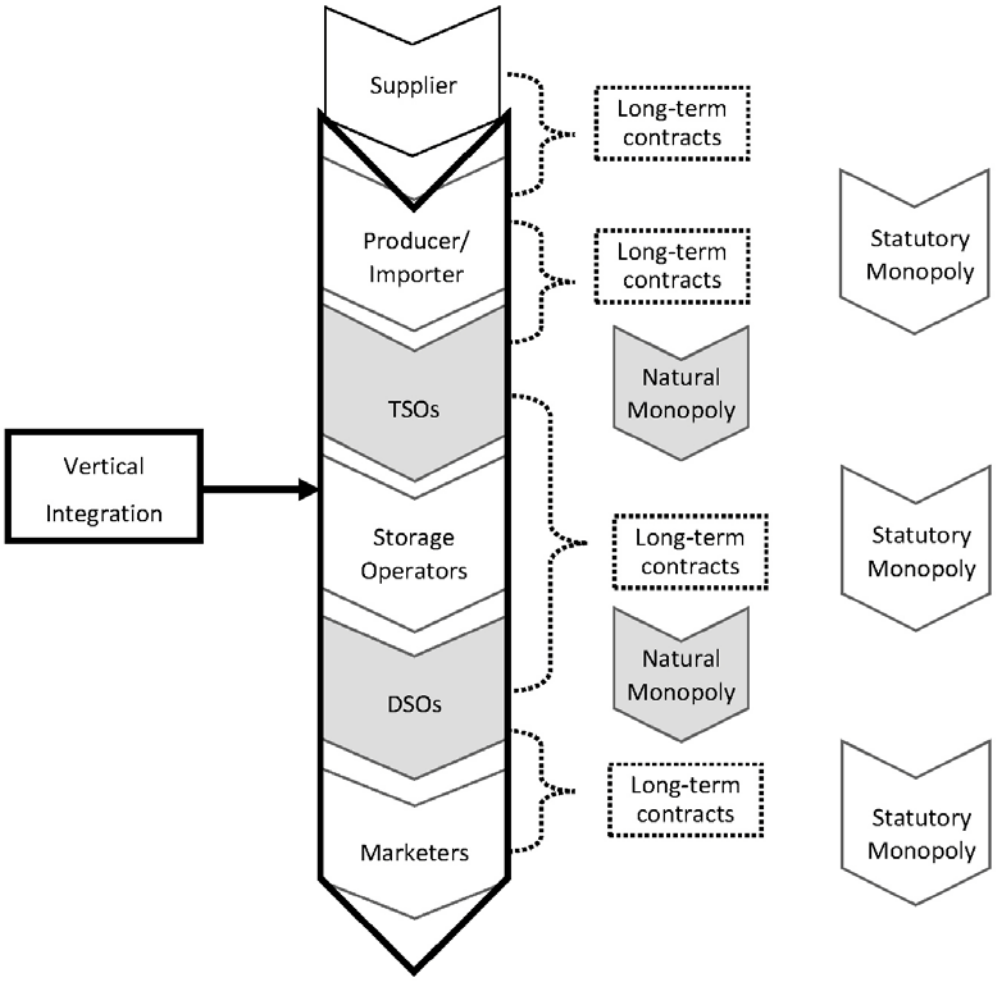
90 Cf. Estrada et al. (1988), pp. 264-268; Estrada et al. (1995), p. 20.
91 Estrada et al. (1988), p. 252.
92 Cf. Lyon and Hackett (1993), p. 386.
93 Cf. Kahane (1990), p. 246.
94 Cf. Stern (1998), pp. 10-11; Rutledge/ Wright (2000), p. 11; Bernardini (2004), p. 2.
95 These were therefore also called "citigate markets" (Lyon/ Hackett (1993), p. 386). Supply to wholesalers, regional or local distributors and major industry customers sometimes also called 'primary distribution', that to commercial and residential consumers 'secondary distribution'.

which grew up during the era of town gas"[96]. Also the Transit Directive installed in 1991 did not abolish these structures as it only obliged TSOs to *negotiate* over not grant access to their pipelines and thus did not enable suppliers to sell gas in foreign markets downstream.[97] A final outcome of these natural as well as statutory structural conditions has been a highly vertically integrated and thus close market set-up as illustrated in the following figure.

Figure 3:[98] Traditional industry structure characterised by monopolies and vertical integration



96 Stern (1998), p. 19.
97 Cf. European Council (1991). Italicised by author.
98 Own figure based on depictions from above.

In order to protect consumers from actors abusing their market power inherent in such structures, governments had intervened by both directly nationalising or at least regulating value-chain activities and price setting.[99] At the same time this involvement also allowed governments to secure a substantial part of industry profits while freeing companies from having to operate efficiently, although this created a net loss for society.[100] Another specific characteristic within this setting is the pricing of natural gas. Traditionally, natural gas prices have been linked to oil prices. The pricing of gas to its closest substitute fuel had "robbed"[101] the industry of much freedom of price setting but allowed producers to reduce the price risk they were initially carrying as natural gas industries were just beginning to develop.[102] While the whole pricing system is very complex and kept highly confidential with details never published,[103] it had become known that the production situation at Groningen was of a degree of excellence virtually unmatched elsewhere in the world, allowing such low-cost extraction that producers could generate maximum profits, leaving energy consumers as the 'losers'. Moreover, the linkage to oil implied that the costs for gas imports into Europe have been decoupled from the actual costs of extraction and that gas prices mirrored neither the 'real' demand nor supply situation.[104] The actual realities of the demand-supply-situation in the European Union are looked at in the following section.

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99 Another reason was that prices for manufactured gas production, which had initially been carried out parallel to natural gas production, would have had to be subsidised as they would have not been competitive anymore. Cf. Morgenthaler (1960), pp. 840-843.

100 Cf. Lyon/ Hackett (1993), pp. 381-382; Dörband (2005), p. 30. For an example of possible social welfare losses of natural gas pricing cf. Klein (1993).

101 DRI-WEFA (2001), p. 53.

102 Another reason was that oil companies also produced natural gas and thus tried to avoid eroding their oil sales when making gas more attractive than oil in areas possible for substitution (back then particularly in the heating segment). This linkage is also ironically described as "the gift that Exxon brought to the party" (Heren (1999), p. 5), following the erosion of oil sales when cheaper natural gas appeared in the market. In Europe it were Shell and Esso that introduced the concept of the 'oil-escalated price' to the market after the first major discoveries had been made in Groningen (see above). Cf. Odell. (1969), p. 235.

103 Information that does appear in public is based on estimations. Cf. Estrada et al. (1988), p. 263.

104 Cf. Odell (1969), pp. 235-241; Correljé/ Odell (2000), p. 21. This has also been described as a situation frustrating "the working of textbook micro-economics" (DRI-WEFA (2001), p. 5).

2.3.2 Increasing Dependence on Natural Gas Imports

Fundamentally and due to the favourable geological conditions that existed some million years ago, natural gas deposits also exist in the European region, particularly in the seabed beneath the North Sea. First large-scale discoveries in Europe[105] were made in Groningen in the Netherlands in 1959. This not only characterised the "fons and origo"[106] of the European natural gas business but marked the beginning of a new epoch for European gas markets and turned out to be the most important occurrence for the internationalisation of gas trade in Europe.[107] Production at Groningen only started in 1965 though as NAM (see above) and the Dutch government had "spent several months sitting on the discovery"[108]. In 1990, the largest producers within the EU were the Netherlands (34%), the U.K. (25%), Romania (14%), Italy (9%), and Germany (8%). The only two countries with an autonomous self-supply and volumes for exports though were the U.K. and the Netherlands. Between 1990 and 1997, overall production in the EU increased by 24% from 162 to 201 bcm. On a global basis in comparison, proven reserves in Europe only account for less than 2% of the world's reserves.[109] Moreover, several indigenous fields are approaching their depletion. Even if not becoming exhausted immediately, plateau production had already been reached in the Lacq field in France as early as the 1970s and only shortly after in the Frigg field in the North Sea.[110] Apart from this, supplies from the still resourceful Groningen field have declined over the years and the Dutch government issued a decree to protect national gas resources and restrict exports.[111]

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105 Commercialisation of natural gas had started in the U.S. With continuous positive news regarding its application as well as a growing need for energy after the Second World War when many coal fields were damaged or even destroyed and oil was relatively expensive, systematic search for natural gas also began in Western Europe. Cf. Hensing et al. (1998), p. 77. For a more detailed historical review cf. Odell (1979).

106 Heren (1999), p. 5. The Groningen field is also called the Slochteren field as the findings were made near the town of Slochteren in the province of Groningen. Cf. Peebles (1980), p. 122.

107 Cf. Estrada et al. (1995), pp. 9, 33.

108 Heren (1999), p. 5. The reason for this was that the Dutch government as well as Shell and Esso were looking to derive the largest economic benefits from these findings while not threatening other areas of energy supply. Cf. Estrada et al. (1995), p. 9; Heren (1999), p. 5.

109 Own calculations based on data from BP (2009) and Eurostat (2010).

110 Cf. Rempel (2002), pp. 227-228.

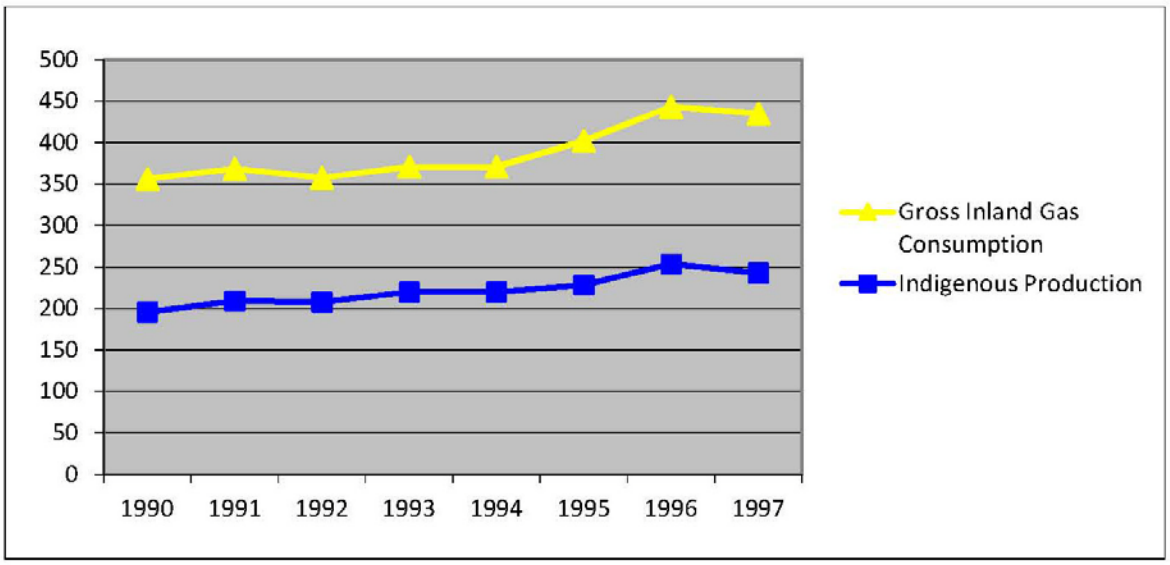
111 Cf. Rossert (1996), pp. 14-15; Mulder et al. (2007), p. 51.

On the consumption side however, demand for natural gas continuously increased, having tripled between 1970 and 1985, particularly since the 1990s after having long been ignored as a base-load energy. Over the course of time, and especially after the abolishment of the ban on gas use for electricity generation in 1989, natural gas, in fact, became a central source in the energy mix.[112] In absolute terms this signified an increase of more than 20% from 356 bcm in 1990 to 435 bcm in 1997. In 1996, natural gas even replaced solid fuels as the second most important energy carrier after oil which accounted for about 40%. In fact, the share of solid fuels declined from 27% in 1990 to 20% in 1997 while nuclear energy increased from 12% to 14% and renewables from 4% to 5%. In final consumption the largest share of natural gas was accounted for by the household (residential) and services (commercial) sector where gas is particularly used as a source of heating, already accounting for nearly 54% in 1990. Its growth had been particularly driven by its increasing application in electricity generation, having risen by more than 15% between 1996 and 1997.[113] When comparing this demand-supply situation, a major supply gap becomes apparent as well visible in the illustration below.

[112] Cf. Estrada et al. (1988), pp. 9-11, 17; Odell (1992a), pp. 42-49. Early calculations assumed that, starting from 50 bcm in 1968, natural gas had the potential to reach between 220 bcm in a pessimistic and 730 bcm in an optimistic scenario. Cf. Odell (1969), pp. 250-251. In Western Europe, the share of natural gas in overall energy use increased from 1.8% in 1961 to 15% in 1989. Cf. Odell (1992b), p. 289.

[113] Own calculations based on data from Engerer/ Horn (2009), p. 278 and Eurostat (2010) for EU-27.

Figure 4:[114] Development of European natural gas production and consumption from 1990 to 1997 (in bcm) – Revealing an increasing gap



In addition to this already unbalanced demand-supply situation it has to be considered that "more than half"[115] of the value chain lies beyond European market borders with the three major suppliers being non-EU members Russia, Algeria and Norway[116], in 1996 accounting for 54%, 24% and 22% of imports,[117] respectively. Furthermore, this supply structure is characterised by one of monopsy with only a few powerful supplying consortia which also are mainly state-owned, such as Russian Gazprom, Dutch Gasunie, Norwegian GFU[118] or

[114] Own figure based on data from Eurostat (2010).

[115] Dorigoni/ Pontoni (2008), p. 12. As a rule of thumb, the European industry value chain has been calculated to be made up by import and international transportation activities by 57%, by national transport and storage by 10%, and by distribution and sale by 18 and 15%, respectively. Cf. Dorigoni/ Pontoni (2008), p. 12. In fact, about 30% of global gas reserves are located in areas too far from places of consumption and difficult to access places, making future production uneconomic and uncertain for the future. Cf. World Energy Council (1992), pp. 254-255; Adelman/ Lynch (2002), p. 38; IEA (2002), p. 114; Sieber (2005), pp. 63-65. The IEA has thus pointed out an increasing investment need to develop future gas supplies, ranging from $2.7 trillion in 2004 (for the period 2003-2030) (cf. IEA (2004), p. 144) to $3.9 trillion in 2006 (for the period 2005-2030) (cf. IEA (2006), pp. 121-122).

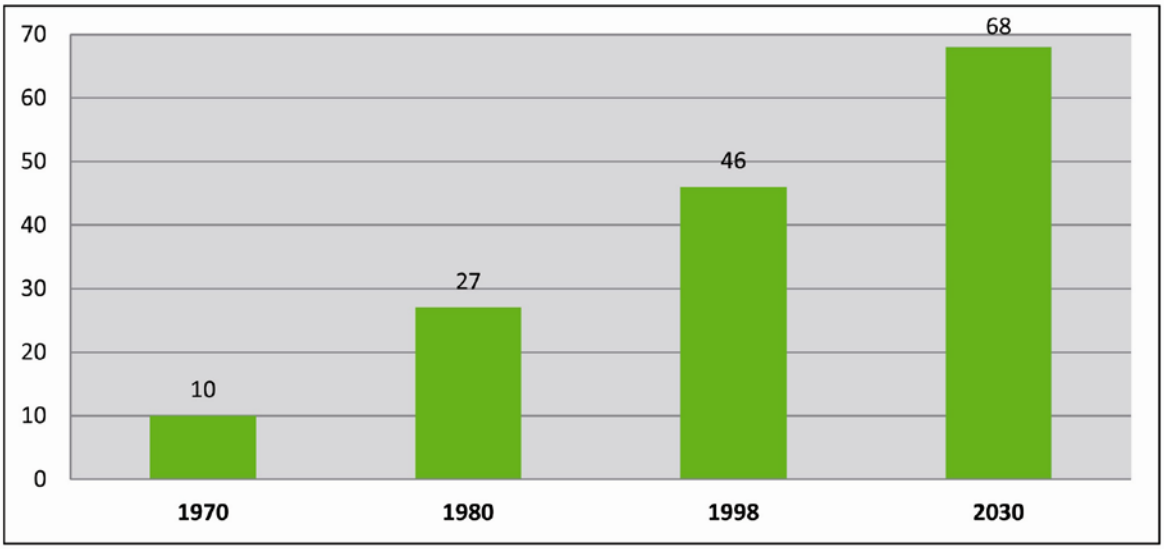
[116] Despite not being a member of the EU, Norway can still be said to take a somewhat different role, not only being part of the OECD but politically and socially close to the "Western community" (Estrada et al. (1988), p. 248). At the same time it has to be considered that the Norwegian state has direct and indirect stakes in Statoil and Norsk Hydro. Cf. Estrada et al. (1995), pp. 226-227; Stern (1998), p. 22.

[117] Own calculations based on data from Eurostat (2010).

[118] Consisting of Statoil, Norsk Hydro and Saga Petroleum, is the Norwegian Gas Negotiating Committee coordinating Norwegian gas sales and acting as a gatekeeper in form of a resource management and wealth management instrument for the Norwegian State. Cf. Sunnevag (2000), pp. 311-319.

Algerian Sonatrach. The rest of the market is divided into about twelve other suppliers with around 3-5% market share each, exemptions with 11-12% being the oil companies Shell and Exxon which again own stakes in Gasunie and GFU. Due to this geological reality the majority of supplies has to be transported over long distances and often under extremely difficult conditions to reach places of consumption.[119] The major pipelines bringing gas into the EU are hence those from the main supplying countries: the Interconnector bringing gas from the U.K. to Belgium, 'Progress' and 'Yamal' from Russia, 'Medgaz' and 'Transmed' connecting Algeria with Spain and Italy, respectively, and 'Frigg', 'Zeepipe' as well as 'Norpipe' and 'Europipe' bringing gas from Norway to the U.K., Belgium, and Germany.[120] While the European Union already is strongly dependent on natural gas imports, the increasing gap between consumption and supply has been continuously widening (see figure 4 above), thus increasing import dependency on natural gas as indicated in the figure below.

Figure 5:[121] Threat of increasing import dependency on natural gas (EU-27, in %)



Despite this critical situation, the European community had already determined early that a "greater reliance on natural gas is desirable as part of diversification of energy sources"[122] to

[119] Cf. European Commission (2001a), p. 16.
[120] For an illustration of the European pipeline grid cf. European Commission (2001a), p. 63.
[121] Own figure based on data from European Commission (2001a), p. 23; DIW (2009), p. 278.
[122] European Council (1991), p. 1.

reduce dependence on coal and oil imports. Similarly, gas utilisation has been further fuelled to encounter increasing ecological issues as "gas enjoys a relatively easy passage against the strengthening environmentalists' anti-energy use pressures"[123], especially in light of a growing public rejection of the increasing utilisation of nuclear power.[124] This is looked at in more detail in the next section.

2.3.3 Environmental-Ecological[125] Concerns

Fundamentally, large-scale concerns regarding issues of ecology and sustainability can be said to have been kicked off as soon as 1970 following the still well-known publication of 'The limits to growth' by a research group called the 'Club of Rome' which had carried out a comprehensive multivariate study on the utilisation and future supply of various natural resources. In the case of natural gas the group had projected that natural gas would only last for another 22 years.[126] Receiving global attention at that time this study essentially raised peoples' concerns about the conservation of natural resources. In fact, natural gas was soon after perceived as too valuable to be fired in power plants. The European Community in 1975 even implemented a 'Gas Burn Directive' which prohibited by law the application of natural gas for electricity production.[127] While this constituted a major threat to the future existence of the natural gas industry as such, it was soon after counteracted by events that, in fact, again established natural gas as a critical part of the energy mix. One was the nuclear catastrophe of Chernobyl in the Ukraine which resulted in a general questioning of the application of nuclear power in the fuel mix and in the promotion of natural gas as a substitute especially for electricity generation. At the same time also an increasing awareness for ecological issues could be observed which "came as heaven sent to the gas industry"[128], driven by early debates

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123 Odell (1992a), p. 47.
124 Cf. Odell (1979), pp. 126-128; Odell (1992b), p. 291.
125 This term has been chosen to distinguish from the organisation's general environment. Some use the term environment to refer to an organisation's 'ecological' environment. Cf. Bansal/ Roth (2000), p. 717.
126 Cf. Meadows et al. (1972), pp. 46-49.
127 Cf. Horsnell (2001), p. 29.
128 Estrada et al. (1995), p. 116.

around the Helsinki Protocol of 1985 to reduce sulphur emissions.[129] Also within the European Community these issues were addressed with augmented attention. In fact, the Single European Act (SEA) which was established in 1986 put as two of its central goals the 'improvement of environmental quality' and the ensuring of a 'prudent and rational utilisation of natural resources'.[130] The subjects of climate change and environmental protection actually stayed in focus and were even enforced further with the ratification of the Kyoto protocol in 1992, demanding a reduction of CO_2 by 8% between 2008 and 2012 compared to 1990 levels.[131] With regard to this, the European Community had been a major driving force, establishing the first trading system on carbon emission rights as is, amongst others, enlarged on in the following chapter.

2.4 Shortcomings of the Traditional European Gas Industry Structure – Contradicting the Goals of European Energy Policy

Essentially, the above depiction has revealed that the European Community faced several severe issues in different areas which required to be addressed. This has become particularly prevalent in order to achieve the Community's objectives of creating an internal energy market where consumers could freely choose their supplier while at the same time ensuring a sufficient and secure as well as affordable and environmentally friendly provision of energy. While these goals had actually already been mentioned before any official treaties on integration were established[132] and a first step for implementing an Internal Energy Market had already been taken in 1988,[133] it was particularly recent regulations which have

[129] After initial discussions the Protocol was finally signed in 1994 by 33 countries obliging themselves to reduce emissions by 80% until 2000 compared with 1980. Cf. Estrada et al. (1995), p. 78.
[130] Cf. European Communities (1986).
[131] Cf. United Nations (1992); United Nations (1997).
[132] In 1955 the participants of the Conference of Messina had already pointed out that "putting more abundant energy at a cheaper price at the disposal of the European economies constitutes a fundamental element of economic progress" (Eurotreaties (2010), p. 1).
[133] Cf. European Commission (1995), published in addition to 'Energy in Europe'. Cf. Klom (1996), p. 28.

"undeniably"[134] initiated a "philosophical change"[135] in the European gas market. In 1995, a White Paper formulating 'An Energy Policy for the European Union' was issued which established three objectives that were to become the three main pillars of the common energy policy:[136]

- To increase *competitiveness* by liberalising the "government-designed"[137] "anti-competitive ghetto"[138] of the European gas industry not compatible with the idea of a single open market where consumers should be able to choose their supplier of choice and where gas supplies should go to places of highest value in the most efficient way to be sold at prices determined by demand and supply in order to finally enhance overall economic welfare[139].[140] The European Commission sees the liberalisation of gas markets as "a very important tool which contributes to the development of the European economy towards its goals of efficiency and competitiveness in an ever-increasing global market place"[141].

- To *guarantee security of supply* for European consumer following the 'economic realities of the supply chain to consumers',[142] i.e. the fact that the European

134 Genoud et al. (2004a), p. 114. Also cf. Dronnikov et al. (2003), p. 27.
135 Estrada et al. (1995), p. 75.
136 Cf. European Commission (1995).
137 von Hirschhausen et al. (2004), p. 204.
138 Heren (1999), p. 4.
139 Empirical studies, for example, had indicated an increase in Western European economic welfare of 15-20% in the long-term. Cf. Golombek et al. (1995). Others again found vertical unbundling in addition with downstream competition to result in inefficient upstream investments and to reduce welfare. Cf. Baake et al. (2004); Casarin (2007).
140 Cf. European Commission (1988), p. 63; Krahl (2005), p. 23.
141 European Commission (2000a), p. 5. Also the general trend towards increasing globalisation (cf. Levitt (1983)) and more 'modern schools of thinking' (cf. Klom (1996), p. 33; Genoud et al. (2004b), p. 13) as well as positive examples from liberalisation in the U.S. (cf. Lyon/ Hackett (1993)) and the U.K. as the 'laboratory' and pacesetter for the rest of Europe where a significant drop in prices and the incumbents' market share could be observed, had a strong demonstration effect (cf. Estrada et al. (1995), p. 224; Rossert (1996), pp. 27-28; IEA (1998), pp. 129-174; Guizot (1998), p. 30; Correljé/ Odell (2000), p. 21; Finon (2004), p. 198). Recently though, a reverse trend can be observed in the U.K. as suppliers have been accused of abusing their market power and as the fact that investment into new energy sources is lacking to further guarantee price stability has created dissatisfaction up to that deregulation by now is being 'demonised' in Britain. Cf. Esterhazy et al. (2008), pp. 60-61; Thibaut (2010).
142 Cf. Clegg (2001), pp. 3-4. At the same time it does not necessarily mean that resources further away are more expensive to transport as e.g. for long-term contracted gas from Algeria in 2004 cost 9.80 €/ MWh while 12.80 €/ MWh had to be paid for Dutch gas. Cf. European Commission (2007a), pp. 124-125.

Community is highly dependent on natural gas imports from sources far beyond its borders, especially as there are "external market influences which cannot be balanced by the market itself"[143]. The EU defined security of supply as "the ability of the gas system to provide a continuous and reliable supply of gas to customers on an economic basis and to cope with interruptions"[144].

- To ensure the *sustainability* of energy provision due to the increasing ecological issues and growing concern for environmental matters such as climate change. In this respect, natural gas plays an important role because of its above mentioned role as an environmentally friendly source of energy.

In the following chapter these three goals of European Energy Policy and the change they brought to the European gas industry are analysed in more detail.

[143] IEA (2004), p. 64. While some remarked that the availability of natural gas resources was not to be a problem within the next decades (cf. Rossert (1996), p. 14; Lerche (2000); Odell (2004)) there is substantial uncertainty regarding future supplies. This also becomes apparent from the vast and scattered existence of different publications on this topic. In conducting a web research on 'hydrates' Lerche, for instance, found more than 600,000 articles dealing with this topic. Cf. Lerche (2007).

[144] de Miguel (1995), p. 25.

CHAPTER III ELEMENTAL CHANGE of the EUROPEAN GAS INDUSTRY

3.1 European Energy Policy Changes

3.1.1 The Liberalisation Process – Introducing Competition and Enhancing Security of Supply

The fundamental change process can said to have begun in 1998 when the first liberalisation package, Directive 98/30/EC,[145] was implemented. Despite having been criticised as reflecting not much more than a "broad degree of consensus and compromise"[146] found between Member States - as the initial plans for market opening had been watered down so much that the final result in 1998 was one of only 'fuzzy liberalisation'-[147] the regulatory amendments made in Directive 98/30/EC introduced and characterised significant change. A second major package, Directive 03/55/EC was put into practice five years later. While both as well as subsequent directives were directed at increasing transparency[148], facilitating third party access (TPA) to essential infrastructure[149], and allowing consumers to freely choose their supplier in order to enhance competition and security of supply, a distinction can be made according to the degree of coercion exerted through the different directives.

In fact, a characteristic of the whole change process is the escalating development of measurements, actually not planned as such. The first directive was presented as a framework

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145 Cf. European Parliament and Council (1998).
146 Klom (1996), p. 35.
147 Cf. Andersen/ Sitter (2007), pp. 8, 15.
148 Transparency refers to the provision of market participants with relevant data. Cf. European Commission (2007b), p. 1.
149 This includes upstream pipelines from production sites, processing facilities, LNG terminals, (high-pressure) transmission pipelines, storage facilities, balancing and other ancillary facilities as well as regional and local distribution pipelines. Cf. European Parliament and Council (1998).

of general principles leaving Member States a certain degree of freedom to take account for the principle of subsidiarity and enable them to choose the procedure that best fits their specific situation. For instance, other than making TPA to essential facilities mandatory as initially planned,[150] the first directive allowed Member States to choose between negotiated third party access (nTPA) based on voluntary commercial agreements in form of controlled self-regulation,[151] regulated third party access (rTPA) with common and generally public tariffs, or a combination of both systems. No matter which of these forms of access was chosen, network access always had to follow objective, transparent and non-discriminatory principles[152] while negotiations had to be held in 'good faith' with neither party abusing its position.[153] In addition to this, integrated natural gas undertakings were required to 'accounting unbundle' grid activities from commercial actions by creating 'Chinese Walls'[154] by keeping separate internal accounts for their transmission, distribution and storage activities in order to avoid discrimination, cross-subsidisation and competitive distortions.[155] While these measures were referred to as 'qualitative', those concerning the degree of market opening were termed 'quantitative'. In order to allow for a gradual adjustment, supplier choice at first was only effective for so-called 'eligible customers' such as gas-fired power generators or end consumers with more than 25 mcm of gas consumption per year.[156] As a minimum requirement, the degree of market opening had to be at least 20% of the total annual national gas consumption by August 2000, the deadline for implementation into national law. This further increased the degree of market opening to 28% after five years, and to 33% after 20 years when the Directive entered into force.[157] In order to avoid imbalances and unfair

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150 Cf. European Council (1990); European Council (1991).

151 Here, presupposing ex-ante approval by authorities, contract tariffs were to be individually negotiated with grid operators which again were required to lay open to third parties the central conditions for use of their infrastructure. Cf. European Parliament and Council (1998), Article 15(2).

152 Cf. European Parliament and Council (1998), Article 14. At the same time companies were allowed to deny grid access in case of capacity constraints, when preventing compliance with public service obligations, and/ or when facing serious economic and financial difficulties. Cf. European Parliament and Council (1998), Articles 14-17, 25.

153 Cf. European Parliament and Council (1998), Articles 21 and 22 which specifically refer to Article 86 of the Treaty of Rome.

154 These are barriers in IT systems to prevent commercially sensitive information flowing between companies operating both as grid operators and suppliers. Cf. European Commission (2000a), p. 11.

155 Cf. European Parliament and Council (1998), Article 13.

156 The term was only explicitly defined in the second directive as "customers who are free to purchase their gas from the supplier of their choice" (European Parliament and Council (2003), Article 2, Recital 28).

157 Cf. European Parliament and Council (1998), Articles 18 and 29.

competition a 'reciprocity clause' had been included, allowing Member States to refuse network access of eligible customers from another Member State if its degree of opening was below the minimum requirement.[158] In the year 2001 another Green Paper on security of supply, termed 'Towards a European strategy for the security of energy supply' was issued,[159] also reinforcing liberalisation measures. However, following an assessment made in 2001 on the progress of measures,[160] finding that much "remains to be done"[161], the Commission began to "make threatening noises"[162] to increase pressure.

In order to further 'speed up the liberalisation process'[163] an 'acceleration directive', Directive 03/55/EC, was therefore passed in 2003 and extended to include LNG as well as other types of gases such as those produced from biomass.[164] This second directive not only tightened quantitative and qualitative measures, enabling all non-household consumers and private households to freely choose their supplier from July 1, 2004 and 2007, respectively, but made regulated TPA as well as the legal and functional unbundling of transmission and distribution (see above) obligatory. This implied that the transportation and distribution business had to become legally and functionally separated entities.[165] Moreover, self-regulatory power was replaced by ex-ante control, and Member States were obliged to install a competent body functioning as a regulatory authority to watch over adherence to requirements. To facilitate the coordination and cooperation of the different national authorities, a basis was established for the creation of a supportive regulator, the European Regulators Group of Electricity and

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158 Cf. European Parliament and Council (1998), Article 19. Further derogations were granted in case of economic or financial difficulties, or when qualifying as an emergent, i.e. infant natural gas market where the first commercial supply contract was not installed more than 10 years before. Cf. European Parliament and Council (1998), Articles 2, 25, 26.

159 Cf. European Commission (2001a).

160 Cf. European Commission (2001b).

161 European Commission (2004a), p. 1. That this might actually be the outcome had already been indicated in the first Directive itself as it stated that "once it (the Directive, remark by author) had been put into effect, some obstacles to trade in natural gas between Member States will nevertheless remain in place" (European Parliament and Council (1998), §32).

162 Anonymous (2001b).

163 Cf. European Commission (2000a), p. 21.

164 Cf. European Parliament and Council (2003).

165 This also means that neither top nor operational management may have decision-making power over the respective other entity. Also the parent company only has limited supervision rights, being able to approve the overall financial plan but has no oversight over daily operational figures. An exemption to legal but not functional unbundling was granted to DSOs serving less than 100,000 customers. Cf. European Parliament and Council (2003), in particular Articles 9 and 13.

Gas (ERGEG), as an independent advisory group of representatives from national regulatory authorities. While being without any decision-making power, ERGEG proposes non-binding instruments to improve the functioning of common interaction.[166] Similar voluntary measures were prepared by the European Gas Regulatory Forum, also called the Madrid Forum, which had been installed in 1999 as a platform for stakeholders to discuss possible self-regulatory measures, the 15th Forum having taken place in 2008. In 2002, participants of this forum, for example, agreed on non-binding Guidelines for Good Third Party Access Practice for Storage System Operators (GGPSSO) that were followed by an amended second set one year later.[167] For technical issues the European Association for the Streamlining of Energy Exchanges (EASEE) was formed, offering common business practices for technical harmonisation such as for nomination times or gas quality standards in order to improve gas exchange between regions with different gas qualities.[168] Due to the industry's low commitment to these rules such voluntary agreements "did not turn out to be a success story"[169]. Thus, in order to further improve security of supply, several additional measures were taken. On a regulatory level this included an additional directive in 2004, legally demanding Member States to adopt transparent and non-discriminatory standards which are compatible with a competitive common market. This assigned clear roles and responsibilities to market actors.[170] Additionally, a specific regulation (REG/05/1775) on conditions for the 'access to the natural gas transmission networks' to complement DIR/03/55 was implemented through a setting of harmonised obligatory minimum criteria applicable from July 2006. This included the requirement of allocating capacity on a non-discriminatory basis, of congestion management based on use-it-or-lose-it (UIOLI) principles,[171] of balancing of gas flows on a real-time basis,[172] and of publishing technical and commercial capacity data. At the same time it granted investors an appropriate rate of return and temporary exemption from TPA for new

166 Cf. European Parliament and Council (2003), Article 25(1); Recital 14. ERGEG (2008), p. 80. Monitoring results are published on www.energy-regulators.eu.

167 For an overview over all events cf. European Commission (2008a).

168 Cf. European Commission (2007a), pp. 38, 257.

169 Haase (2008), p. 31.

170 This also includes regulations to protect household consumers from temporary supply disruptions, demanding companies to keep a minimum level of gas in stock. Cf. European Council (2004).

171 This implies that if capacities are not used by a transport customer the grid operator may allocate capacities to third parties.

172 This means that actual system needs are reflected as balancing, in functioning as a 'default market', is important for maintaining overall liquidity. Cf. European Commission (2007a), pp. 245-256.

infrastructure projects.[173] Other measures to enhance security of supply included the establishment of associations of TSOs such as Gas Transmission Europe (GTE) and European Transmission System Operators (ETSO). In addition to this ERGEG considered creating a single European TSO regulated by EU authorities to counteract the existence of several different national ones and thereby accelerate the creation of a single European market as well as enhance security of supply.[174]

Apart from regulatory enforcements and as market opening in itself generally is no guarantee for free choice and competition, market liberalisation and integration were seen as having to go hand in hand. Thus, incentives were provided, such as in the case of investments into strategic infrastructure. In order to 'energise' Europe's infrastructure and enhance security of supply across European borders, the Commission launched several different initiatives such as the 'EU-Russia Energy Dialogue'[175] or the so called TEN-E priority projects to support the development of essential pipeline and LNG projects.[176] The amalgamation of measures again was to be supported by initiatives such as the Gas Regional Initiative (ERI) which was launched by ERGEG in 2006 in order to accelerate the integration of the "juxtaposition of 25 national markets"[177]. Another important measure set up to increase transparency and improve market functioning was the plan of implementing a 'Charter of Electricity and Gas Customers' Rights'.[178] Similarly decisive were court rulings questioning institutionalised structures such as those set by the European Court of Justice on historical bilateral long-term contracts which granted priority over other requests for capacity reservation.[179]

The year 2007 constituted an important 'landmark'[180] for the European gas sector with all consumers theoretically being able to freely choose their supplier as demanded by the second directive, and despite the advancements made, several inquiries, among these "one of the

[173] Cf. European Commission (2007c).
[174] Cf. European Commission (2007a), p. 217.
[175] Cf. European Commission (2004b).
[176] Cf. European Commission (2003a); European Commission (2004c).
[177] European Commission (2005a), p. 4.
[178] Cf. European Commission (2005a), p. 14.
[179] Cf. European Commission (2005a), p. 6.
[180] Cf. ERGEG (2008), p. 23.

most thorough investigations in the Commission's history"[181], revealed that a "number of serious shortcomings"[182] continued to exist. Despite these deficiencies and "reluctant to give up the fight"[183] the Commission remained convinced that there was no alternative to liberalisation.[184] In order to be more effective though, an enhancement of regulatory measures was needed, especially as the autonomy granted to Member States in the transposition to national law had resulted in a 'regulatory vacuum'[185], demanding the combination of the Commission's powers under antitrust law, merger and state aid control as well as structural and pro-competitive measures. In September 2007, a third liberalisation package was thus presented, proposing the sharpening of regulatory measures by escalating vertical dis-integration to ownership unbundling (OU), the establishment of an independent European regulator, the granting of an institutional role to ETSO and GTE to increase cooperation between TSOs, the installation and enforcement of binding guidelines to increase transparency and improve the storage situation, and the implementation of an Energy Consumers' Charter to enhance consumer protection and prevent energy poverty.[186]

Apart from these regulatory directives and initiatives to boost competitiveness and security of supply, measures were also taken to achieve the third goal: making the EU's energy approach more environmentally friendly and sustainable. How this was done is laid out in the following section.

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[181] European Commission (2007a), p. 19. These investigations also included 'surprise inspections' of companies that were suspected of being engaged in collusive arrangements and market foreclosure. Cf. European Commission (2007a), pp. 31-32.

[182] European Commission (2007a), p. 328.

[183] Anonymous (2006b), p. 5.

[184] Cf. European Commission (2007d), p. 2.

[185] Cf. European Commission (2007a), p. 31. There was, for instance, evidence that regulators were being influenced by political decision-makers or that Member States had abused autonomy to reach different social goals. Cf. ERGEG (2008), p. 72.

[186] Cf. European Commission (2007b); European Commission (2007c); European Commission (2007e), p. 10.

3.1.2 The 'Greening Process' - Towards an Environmentally Friendly and Sustainable Energy System

The EU has been pursuing an ambitious plan to become the world leader in renewable energy as early as the beginning of the 1990s.[187] The first Community strategy to limit carbon dioxide (CO_2) and enhance energy efficiency had been issued in 1991. Two years later, a Council Decision was taken for Member States to achieve a 5% share of the total fuel consumption by motor vehicles in biofuels.[188] In 1997, a White Paper called 'Energy for the Future – Renewable Energy Sources of Energy – White Paper for a Community Strategy and Action Plan' was issued, promoting renewable energy sources as a major driver to achieve the above mentioned goals. Part of this 'strategic action plan' was to reach a 12% share of renewables in overall consumption by 2012.[189] These measures had become particularly important with regards to the Kyoto protocol which had been on its way since 1992 (see 2.3.3). In fact, the EU, which had ratified it in 2002,[190] was actually assessed to have been "the principal global champion of the Kyoto Protocol"[191]. In order to achieve the targets set, a Council Decision was adopted in 1999 to implement the 'Energy Framework Programme 1998-2000'[192] which again was followed by the launch of the European Climate Change Programme (ECCP) in 2000.[193] In addition to this, the notion of efficiency was addressed by installing 'An Action Plan to Improve Energy Efficiency'[194]. These specifically energy related measures were framed by major initiatives on a supra-European level. The major one to be mentioned in this respect is the Lisbon strategy also formulated in the year 2000 as a European response to globalisation and a measure to accelerate the creation of a common energy market. While Member States initially could not agree on concrete measures, the interrelationship of European energy policy with overall European policy also becomes apparent here in that the major aim of the Lisbon strategy was to achieve sustainable growth

187 Cf. European Commission (2001a), p. 11.
188 Cf. European Council (1993).
189 Cf. European Commission (1997).
190 Cf. European Council (2002).
191 Keppler (2009), p. 218.
192 Cf. European Council (1998).
193 Cf. European Commission (2000c).
194 Cf. European Commission (2000b).

and make the European Union the most competitive and dynamic economy in the world by 2010.[195] Moreover, while the issue of sustainability had been specifically pointed out for the first time in the Treaty of Amsterdam in 1997 with regards to the objective of achieving a 'balanced and sustainable development through establishing an internal market without barriers',[196] it soon after also found its way into energy policy. In 2001, for instance, the Commission presented a Green Paper called 'A sustainable Europe for a better world: A European Union strategy for sustainable development'. In order to change patterns of consumer behaviour and make the EU the most energy-efficient region in the world the paper emphasised the need for a new 'intelligent' approach to energy utilisation, thereby adding an environmental dimension to the Lisbon process. The action plan included measures for the improvement of energy efficiency and for promoting the production of electricity from renewables, requiring Member States to set national indicative targets consistent with the Community goal, formulated in a directive on the promotion of electricity production from renewable energy sources in 2001. Having to be implemented by Member States by 2003, this directive set the target of achieving a share of 22% of the EU-15's total electricity consumption by 2010.[197] After the Accession Treaty in 2003 this goal was adjusted to 21% for EU-25.[198] In the following three years (2002-2004) several directives with concrete individual measures were adopted such as on energy savings in buildings in 2002,[199] on the taxation of energy products in 2003,[200] and for the extension of the application of combined heat and power generation (CCGT) in 2004.[201] Also within this period a Biofuels Directive was adopted in 2003 to achieve a share of 2% biofuels in the transportation sector by 2005 and 5.75% by 2010,[202] following a Communication on 'alternative fuels for road transportation and a set of measures to promote the use of biofuels' which emphasised the potential of biofuels as short-term substitute fuels and that of natural gas for the long-term.[203] Apart from these directives another major step was taken during this time with the

195 Cf. European Commission (2007f).
196 Cf. European Communities (2002), Article 2.
197 Cf. European Parliament and Council (2001).
198 Cf. European Commission (2004b), p. 11.
199 Cf. European Parliament and Council (2002).
200 Cf. European Council (2003). This directive enables Member States to reduce tax rates on renewable energy sources.
201 Cf. European Parliament and Council (2004a).
202 Cf. European Parliament and Council (2003b).
203 Cf. European Commission (2001c).

development of a greenhouse gas (GHG) Emission Trading System (ETS). Based on a draft directive in 2002 that was agreed on in July 2003 to officially start in January 2005, it imposed objectives to reduce GHG emissions agreed on under the Kyoto Protocol. Under this scheme the exceeding of quotas of CO_2 emissions implies penalty payments if not traded for by certificates. While these allowances were to be allocated for free within the first national allocation plan (2005-2007), those for the second period (2008-2012) had to be obtained by participating in the emissions trading scheme, and later be bought on the market. This directive (Directive 2004/101/EC) was passed in 2004 to enable participants to combine CO_2 emissions trading with credits from Joint Implementation (JI) and Clean Development Mechanism (CDM) projects as defined in the Kyoto protocol.[204]

Over the course of time and further driven by ratifying measures of the World Summit on Sustainable Development, which demand an augmented market penetration of renewables and an improvement of efficiency, measures on sustainable development were further tightened by grouping individual means into specific programmes. In 2003, the EU thus adopted a multi-annual programme called 'Intelligent Energy for Europe 2003-2006'[205] which was paralleled by the creation of an 'Intelligent Energy Executive Agency'[206] responsible for managing the programme and informing the Commission. In order to raise public awareness and promote the utilisation of renewable energy, two major campaigns were launched for the periods from 1999-2003 and 2004-2007, the latter again emphasising the notion of sustainability.[207] This was further promoted through the initiation of the 'Sustainable Energy Europe Campaign 2005-2008' looking for the direct involvement of public actors.[208] At the same time, the years 2005 and 2006 can particularly be characterised as periods for the implementation of further regulatory measures. In 2005, a 'Green Paper on Energy Efficiency' was issued in order to drive further actions by economising 20% of energy

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204 Cf. European Parliament and Council (2004b). While the CDM is a market mechanism that offers incentives to invest in projects promoting clean energy technologies and efficiency in developing countries, the JI instrument allows participants to jointly implement emission reduction measures and use the reduced emission units to meet the targets of the Kyoto Protocol. Cf. United Nations (1997), Articles 6, 12, 17.

205 Cf. European Parliament and Council (2003c).

206 Cf. European Commission (2003b).

207 In this respect the first promotion was called 'Campaign for Take-Off for Renewable Energies', the second one 'Campaign for Sustainable Energy'. Cf. EREC et al. (2004), pp. 5, 39.

208 Cf. European Commission (2008).

utilisation.[209] Along with this, additional measures were taken to augment the utilisation of renewable energy sources such as the implementation of a 'Biomass Action Plan'[210], the adoption of a European 'Strategy for Biofuels'[211], an Eco-Design Directive,[212] or of a proposal for a 'European Directive to Promote Renewable Heating and Cooling'[213]. The year 2005 also marked the revival process of the Lisbon strategy which was finally signed in 2007 to enter into force in January 2009. The Lisbon strategy, which includes a special chapter on 'Energy and Climate', emphasises the importance of tackling climate change by applying a mix of regulatory measures and instruments, subsidies, tax incentives and market-based instruments such as completing gas and electricity liberalisation. This would further increase competition and emissions trading to generate a positive impact on overall macro-economic development.[214] Also the Spring European Council of 2006 on Growth and Job Strategies pointed out that the creation of an efficient and integrated energy policy was 'at the heart of the Commission's priorities'.[215] One year later this was followed by the 'Competitiveness and Innovation Framework Programme 2007-2013' which included further measures to enhance efficiency, such as a 'National Action Plan on Energy Efficiency', a community energy tax framework and, as a launch pad for international agreement, a 20% CO_2 reduction target by 2020.[216] Furthermore, a 'European strategy plan for energy technologies' was passed.[217]

At the same time and in view of the fact that "Europe has entered into a new energy era"[218], facing not only European but global "energy challenges of the 21st century"[219], demands were made for a more comprehensive approach towards a 'true European Energy Policy' and the creation of a 'European Energy Vision' as "the idea of maintaining 27 separate European mini

[209] Cf. European Commission (2005b).
[210] Cf. European Commission (2005c).
[211] Cf. European Commission (2006a).
[212] Cf. European Parliament and Council (2005).
[213] Cf. EREC (2005).
[214] Cf. European Commission (2007f).
[215] Cf. European Commission (2007g). The energy sector is a substantial economic driver within the EU, its 21,500 enterprises generating about €240 bn of gross value added, corresponding to 4.7% of the wealth created by the EU-27 non-financial business sectors. Cf. European Commission (2007h), pp. 229-245.
[216] Cf. European Parliament and Council (2006).
[217] Cf. European Commission (2007i). Also cf. European Commission (2007j).
[218] European Commission (2006b), p. 3.
[219] European Commission (2006c), p. 1.

markets in energy is absurd (…) and dangerous"[220]. While the legitimate right of Member States to follow their own external relations to securing energy supply and to choosing their domestic energy mix was not to be questioned, a common approach on energy issues was seen as a declaration of the energy sector's strategic importance. As an expression of this the 'Green Paper on Strategy' was adopted in 2006 which established the three main pillars of European energy policy goals as still valid today:[221] Competitiveness, security of supply and sustainability. In order to reach these objectives, several concrete measures were proposed: The completion of the internal gas and electricity market, the diversification of sources of supply (including an EU-Africa strategy and the support of Norway in developing new sources in the high north of Europe), the dealing with climate change, the implementation of a strategic energy technology plan as well as of a common external energy policy. After a first 'Strategic Energy Review' these were further substantiated one year later through an Action Plan on Energy Policy for Europe within which the EU committed itself to the 20-20-20 targets, i.e. decreasing GHG emissions by 20% while improving energy efficiency by 20% and increasing the share of renewables in the consumption mix by 20% to be implemented through an 'Energy and Climate Package'.[222] In 2008, a proposal was then made for the enhancement of the Renewables Directive in place since 2001 (see above) to further tighten existing regulations and integrate such as the above mentioned measures to boost the application of renewables.[223] Similar developments can be observed in the transportation sector where measures were extended for the 'greening' of transport.[224] A second review focussed on the aspect of supply security, recommending the adoption of an EU Energy Security and Solidarity Action Plan with measures to diversify supply sources and infrastructure, to improve external energy relations, to install strategic gas supplies and crisis response mechanisms, and to promote new technologies such as Carbon Capture and Storage (CCS) plants. The latter would allow the environmentally friendly recycling of carbon dioxide

[220] Barroso (2006), p. 3.
[221] Cf. European Commission (2006b).
[222] Cf. European Commission (2007k).
[223] Cf. European Commission (2008b).
[224] Cf. European Commission (2008c).

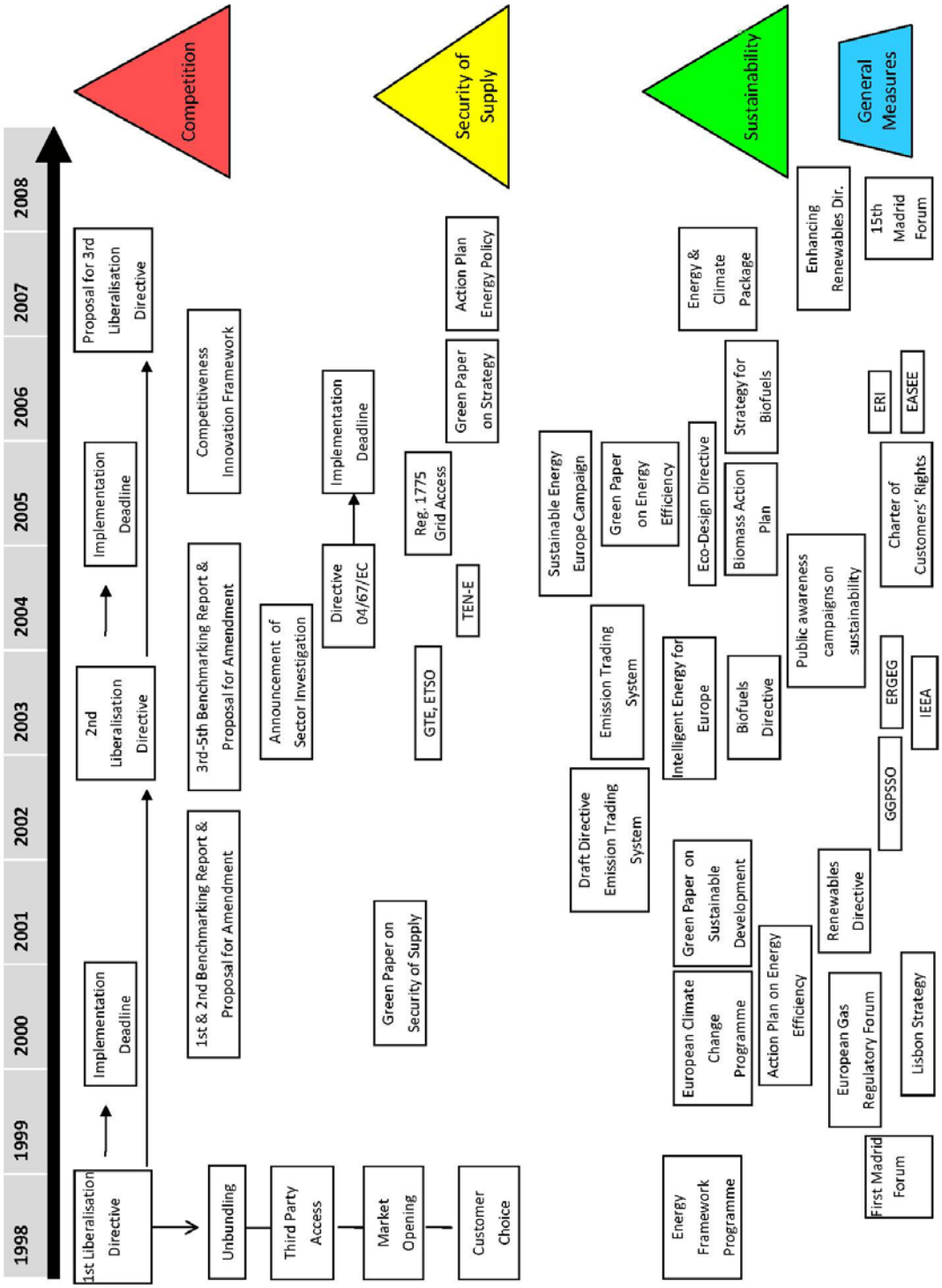
emissions from fossil power stations by separating the CO_2 during the combustion process and transporting it via special pipelines for capturing it in underground storages.[225]

3.1.3 Assessing European Energy Policy Change – A Complex and Interrelated Process

After having depicted the development of changes to European Energy Policy the complexity and magnitude becomes apparent. In order to provide an overview, the main changes have been laid out in the following illustration.

[225] Cf. European Commission (2008b).

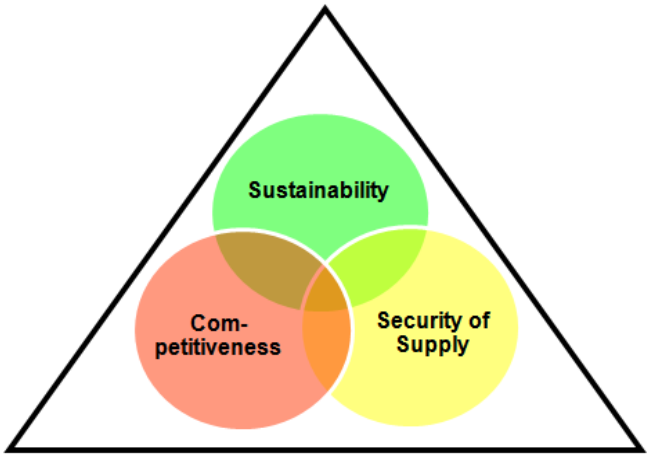
Figure 6:[226] Development of European Energy Policy



[226] Own figure based on depictions above.

Apart from providing an overview this illustration also shows the high degree of interrelatedness that is characterised by mutual reinforcement and depicts also trade-offs between the three goals. While the substitution of fossil fuels with more environmentally friendly natural gas, for instance, supports the strive for sustainability, it at the same time increases consumption of natural gas and hence import dependency. This again threatens security of supply. Achieving more competitive markets on the other hand augments security of supply as investments are directed to places of demand where prices are higher. Concrete measures such as improving efficiency on the other hand decrease demand for energies like natural gas and thus enhance security of supply while at the same time reducing emissions. This supports the aim of increasing sustainability and achieving an internal market as companies are required to become more competitive. The interdependency of these issues has, in fact, over the course of time come to be referred to as the 'Triangle of European Energy Policy' with the initial notion of 'Environmental Protection' according to the development illustrated above having been replaced by the more encompassing term 'sustainability'. This is illustrated in the figure below. Instead of placing each goal at one tip of the triangle, they have been depicted as intertwining and overlapping circles within the triangle to indicate the above mentioned interdependencies.

Figure 7:[227] Triangle of European Energy Policy



How the developments influenced market structures is analysed in the following section.

[227] Own figure.

3.2 Changes in the European Gas Market Structure

3.2.1 Changes along the Industry Value-Chain

3.2.1.1 Development of Consumption Patterns

As indicated (see figure 4), natural gas consumption has continued to increase over time, having developed from 435 bcm in 1997 to 520 bcm in 2007, to account for nearly one quarter in the EU's energy mix. The largest area with around 35% of natural gas consumption again is the residential and commercial sector, followed by the industrial sector with about 33% and the transportation segment with still less than 5%. In addition, when comparing final energy consumption, natural gas is the second most important energy source, accounting for 24% behind oil with 41%. Electricity accounts for 21%, renewables and solid fuels for 5% each, and derived heat and industrial waste for 4%.[228] The largest growth driver in the past decade however has been the increased application of natural gas as an environmentally friendly energy source in electricity generation such as in CCGT plants,[229] fuelled by the energy policy objective for environmental sustainability as laid out above. The application of natural gas for power generation increased immensely by more than 130% between 1996 and 2007, while that of coal and nuclear energy declined. Today, gas-fired power plants already produce 20% of the EU-27 electricity, compared with 7.5% in 1990.[230] At the same time this development significantly impacts on total EU natural gas consumption in the future. It is generally expected that demand will increase due to natural gas' environmentally friendly characteristics and new technologies such as GTL (also see chapter II). Nevertheless, differences exist regarding the extent of this growth.[231] Depending on the study looked at,

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[228] Own calculations based on data from Eurostat (2010).

[229] Cf. Seeliger (2004), p. 25; EIA (2005), pp. 41-42; Bräuninger/ Schröer (2007), pp. 1-2. Some studies project that around 40% of future EU gas demand is driven by demand from the electricity sector. Cf. Observatoire Mediterraneen de l'Energie (2001), p. 2; European Commission (2008e), p. 56.

[230] Own calculations based on data from Eurostat (2010).

[231] Despite the fact that demand forecasts are generally difficult to make and prone to vagueness due to the complexity of interrelatedness (cf. Eckerle et al. (1992), figure 1-1; Heß (2005), p. 2), the uncertainty of its drivers and the sheer amount of studies available, all including different factors and methods of evaluation (cf. Götz (2007), p. 2; Hirschl et al. (2007), p. 2; Beilharz (2008)), some estimations have nevertheless been presented here in order to give at least an indication of possible developments. For an extensive overview

experts forecast an increase of EU natural gas demand between 700 bcm by 2020 and 800 bcm by 2030,[232] and in case of high growth of even more than 900 bcm.[233] This implies a growth rate of more than 2% annually. Analyses commissioned by the European Commission expect the share of natural gas to have reached around 30% of gross inland consumption by 2030.[234]

3.2.1.2 Development of Production and Sourcing Patterns

In contrast to the increase in demand, indigenous production of natural gas has been declining since 2004. This can be explained by the fact that the U.K. turned from an exporter into a net importer of natural gas in that time.[235] Apart from reducing the EU's indigenous production volumes, this also means that the U.K. will absorb natural gas flows which would have otherwise gone to the Continent, especially those coming from nearby and reliable sources like Norway. In fact, gas fields in the North Sea already are mature and the potential for extraction in the future is restricted as the majority of remaining gas deposits either is too small or too remote to be viable for economic production, or is even restricted due to ecological concerns.[236] On top of this, the necessary infrastructure system is lacking which would be needed to bring such gas to shore.[237] Such impediments are expected to turn Denmark and the Netherlands into net importers between 2015 and 2020.[238] The amount of proved natural gas has been continuously declining over the past years and when again comparing the EU's gross inland consumption of natural gas with indigenous production, the

over expected developments in Europe cf. Mantzos et al. (2003) and for Europe in a global context cf. Uyterlinde et al. (2004). For an overview over relevant studies on global forecasts cf. Brand (2005), pp. 209-213. For examples of historical developments of relationship between these forces cf. Bourdaire (2003); Doucet (2004).

232 Cf. Bothe/ Seeliger (2005), pp. 3-4.

233 Cf. Hirschl et al. (2007), p. 3. In comparing different studies several authors have shown that foreceasts for 2030 may diverge up to 350 bcm. Cf. Götz (2007), pp. 2-4; Hirschl et al. (2007), p. 2.

234 Cf. Mantzos et al. (2003), p. 150; Eurogas (2007), p. 2. Figures are for the baseline scenario.

235 Cf. Eurostat data. Since then, the 'drying up' of British gas production and its consequences has also been an ever-emerging topic in literature and press. Cf. Guizot (1998), p. 32; Anonymous (2006c), p. 3; Faye (2006); Wright (2006); Anonymous (2007b), pp. 35-36; Minsaas/ Strowger (2008); Anonymous (2008a), p. 47; Anonymous (2009a), p. 25; Otzen (2009a), p. 5; Otzen (2010a), p. 4.

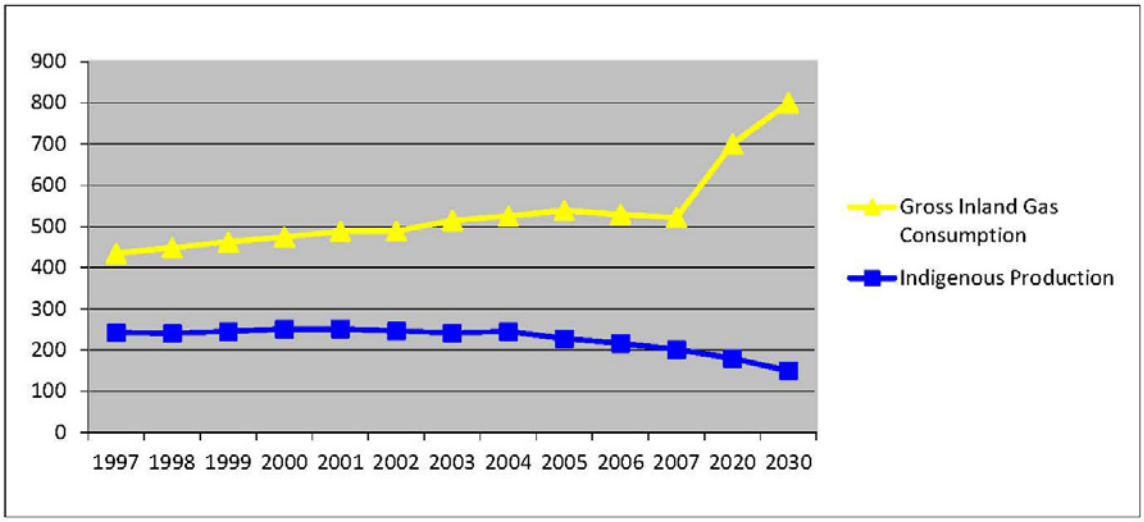
236 Cf. Kalkoffen (2005).

237 Cf. IEA (2004), p. 154; Seeliger (2004), pp. 10, 20; Anonymous (2007b), p. 36.

238 Cf. Dronnikov et al. (2003), p. 18.

supply gap has become larger over the years and can be expected to increase even further in the future when comparing forecasts on projected consumption and production (see figure 8 below).

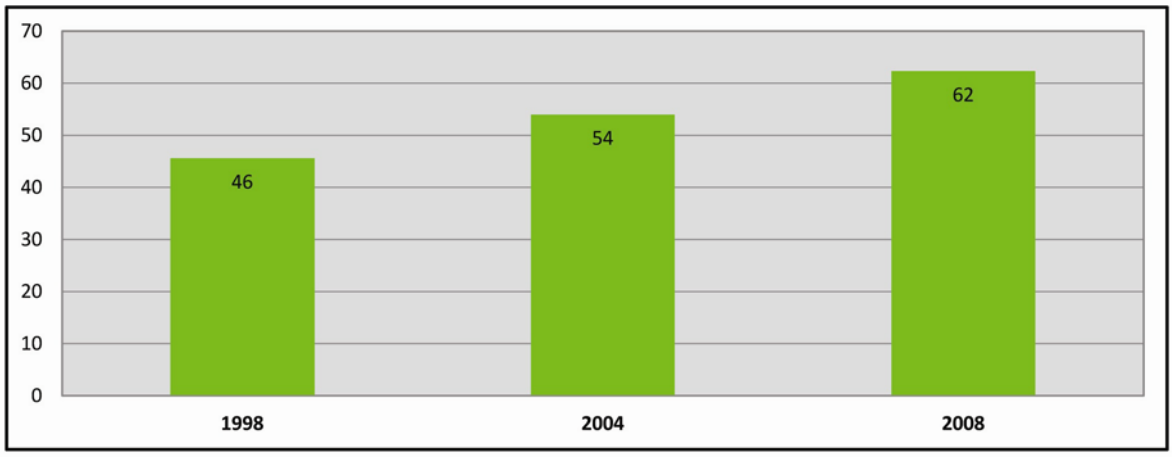
Figure 8:[239] Development of gross inland consumption and indigenous production of natural gas in EU-27 from 1997 to 2007 and future forecasts (in bcm)



This development again implies that natural gas import dependency has continuously grown, having increased from 45.6% in 1998 to 54% in 2004 and 62.3% in 2008 (see figure below). And as already shown in figure 5 above, this trend is expected to continue in the future.

[239] Own figure, for period 1997-2007 based on data from Eurostat, for forecasts from Observatoire Mediterraneen de l'Energie (2001, p. 2) projects 777 bcm for EU-30 until 2020; IEA (2004), pp. 154-155. Figures on forecasts have been aggregated and refer to EU-25, EU-27 or EU-30 but here have been taken as an indicator for a possible overall development.

Figure 9:[240] Development of natural gas import dependency of EU-27



With regards to the origin of supplies Russia, Norway and Algeria have also remained the three principal importers in 2007, accounting for a share of 43%, 29% and 18%, respectively. The remaining 10% is covered by new suppliers who have been developed to increase security of supply. The largest share (6%) is held by Nigeria which also accounts for the steepest increase in the past few years, followed by Qatar (3%) and Trinidad &Tobago (1%),[241] a development which can be explained by the fact that these sources supply LNG as is enlarged on below. Despite the slight diversification of supply sources the aspect of geographical location has remained a critical issue as relevant resources are all concentrated in a certain geographic area which has come to be known as the 'Strategic Energy Ellipse', characterising the region stretching from the Caspian Basin to the Persian Gulf States where 40% of the world's natural gas reserves are located. This fact has been assessed as "one of the most significant geo-strategic realities of our time"[242].

When looking at future projections on import sources to the EU, studies show that Russia, Norway and Algeria are expected to remain the major suppliers until at least 2030. In fact, the reserve base in Russia at the moment is acknowledged as the world's largest, the Russian Far

[240] Own figure based on data from Eurostat (2010).
[241] Own calculations based on data from Eurostat (2010). Data for EU-27 for the year 2007.
[242] Kemp/ Harkavy (1997), p. 111. For an illustration see p. 113.

East and Eastern Siberia fields alone are estimated to hold nearly 6 tcm,[243] and favourable scenarios exist for production levels of 700 bcm annually.[244] Norway again, having only used little gas itself, has generally increased domestic production,[245] and is projected to remain a relatively stable supplier in the future. At the same time it has to be considered that recently, due to increasing demand from industry, capacity constraints have arisen. This, in addition to the requirements of the Kyoto Protocol to reduce CO_2 emissions, may lead Norway to build new gas fired power plants which will increase domestic gas consumption while reducing amounts for future exports. Such issues again make supplies from other sources even more crucial for the EU. While new gas discoveries have mainly been made during oil production, new natural gas fields have recently been found off the coasts of Argentina, Brazil and Israel.[246] The world's largest region of supply in the future though will be the Middle East where exporters such as Iran and Libya but also Egypt, United Arab Emirates or Turkmenistan are gaining importance.[247] Currently, the world's quantitatively most extensive project to develop future supplies is that of the giant South Pars field in the Iranian Persian Gulf. The fact that Iranian reserves will eventually find their way to the world market despite political issues has thus been stated as "far from inevitable"[248]. It is estimated that Iran will have the highest production growth rate in the future, turning from a net importer in 2004 to the second-largest net exporter and becoming the second-largest pipeline exporter by 2030.[249]

[243] Cf. Khartukov/ Starostina (2002), p. 208.

[244] Cf. Mastepanov (2005), p. 10. An annual production rate of even 800 bcm has been claimed possible by Gazprom (cf. Wüst (2007), p. 148) and also Gazprom's Vice president Medwedew claimed that Gazprom would deliver as much gas as demanded by the market' (cf. Hirn/ Student (2006), p. 57). These figures probably have to be taken with care as presented by Russian officials interested in demonstrating Russia's future production capacity following growing concerns of its customers regarding Russia's, respectively Gazprom's, ability and political willingness to make the necessary investments to develop fields and produce sufficient volumes for export. Cf. Bourdaire (2003), p. 28; Otzen (2007a), p. 5; Voswinkel (2008), p. 21.

[245] Cf. Rosendahl (2008), pp. 5-8; Anonymous (2009b).

[246] Cf. IEA (2004), p. 135. More recently: Anonymous (2008b); Engdahl (2009); Heumann (2009).

[247] Cf. IEA (2004), p. 141; Bothe/ Seeliger (2005), pp. 3-5; IEA (2009), pp. 38-39.

[248] Kemp/ Harkavy (1997), p. 123.

[249] Cf. Seeliger (2006); Brüggmann (2009), p. 2.

3.2.1.3 Analysis of Midstream Activities

Apart from the diversification of sources of origin a change can also be identified with regards to the means of importing the gas. In this respect, transportation via LNG has gained increasing importance. In the beginning, when still in its infant state, it was merely used to supplement local gas supplies and was regarded as gas for niche markets.[250] By now, LNG has become "a major international source of gas supply in its own right"[251]. The growing importance for European supply can also be derived from the fact that LNG imports have nearly doubled from 28 to 52 bcm between 2000 and 2006, characterising an increase from 6.7% to nearly 10% of total gas demand. The two main recipients of LNG in Europe are Spain and France, accounting for more than 50% and 30% of import capacities, respectively.[252] These are followed a long way behind the third and fourth largest importers Belgium and Portugal, both receiving less than 6% of LNG supplies together. While LNG is not expected to replace pipeline gas, substantial growth is forecast in the future, showing supplies to have amounted to 100-142 bcm by 2010 and 190-240 bcm by 2030, depending on the study looked at. This would imply a share of nearly 32% of LNG of total gas demand.[253] Experts believe that the most important European LNG import market in the future will be Great Britain, taking into account that indigenous resources are declining (see above) and increasing demand cannot be covered by pipeline supplies alone.[254] Newcomers for LNG demand can also be expected to develop within Europe to diversify away from main pipeline gas exporters. A similar growth scenario in form of a 'LNG Revolution'[255] can also be observed on the world market as LNG is becoming a global commodity. It is expected to

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[250] Cf. Odell (1992a), p. 55; Rüster/ Neumann (2006), p. 11.

[251] Peebles (1980), p. 2. This development was especially driven by technical advancements and capacity increases of tanker size, making LNG deliveries more economical. While the standard size of LNG vessels currently in operations is 145,000 cubic metres, tankers of 200,000 or even 265,000 cubic metres volume are already being planned (compare with chapter II). For details on technical and economical developments of the LNG chain see Chabrelie (2003), p. 3; EIA (2003), p. 42; Jensen (2003), p. 3; Kessler et al. (2005); Seeliger (2005), p. 10; Sietz (2006), p. T1; Rüster/ Neumann (2006), pp. 7-10; Sanders (2006), p. 25; Krude et al. (2007), p. 24.

[252] This ranking had changed from 2001 to 2002 when Spain became Europe's largest LNG importer before France. Own calculations based on data on LNG movements from BP (2003) and BP (2004). Also cf. Seeliger (2005), p. 10; European Commission (2007a), pp. 261-270; Krude et al. (2007), p. 22.

[253] Own calculations based on data from Seeliger (2004), p. 17; Bothe/ Seeliger (2005), p. 6; European Commission (2007a), pp. 262-263, 269; BP (2009).

[254] Cf. Otzen (2005), p. 11.

[255] Cf. Jensen (2003).

account for more than one third of total transportation with a growing number of participating nations and so turn into an increasingly interconnected business.[256] For the European gas market this again increases global competition for LNG supplies. Efforts have thus been made to further diversify sources of LNG supply. While Algeria accounted for the largest share of European LNG imports in 2002, it was overtaken by Nigeria as the largest importer in 2008. Today, both account for nearly a third of import volumes. Qatar, Egypt as well as Trinidad & Tobago follow with a share between 12% and 16% each. Other exporters to the EU, although marginal, are Libya, Oman and Equatorial Guinea with less than a 5% share.[257] At the same time, production is controlled by major nationalised LNG companies, while imports are dominated by oil and gas majors.[258]

Pipeline infrastructure

Despite this diversification of sources and ways of transportation, the issue of geographical location remains critical in the future, making gas "politically and commercially different"[259]. Access to resources is becoming more and more dependent on geopolitics as the most hydrocarbon-rich countries have proven to be the most restrictive with regards to producing these supplies and accommodating private investment.[260] Moreover, as natural gas transports cross more and more national borders and "hydrocarbon molecules are increasingly asked for their passports"[261] the aim of ensuring a secure gas supply becomes more prone to uncertainty. Energy has always been a highly political subject with fossil fuels having been used as a political weapon of resource nationalists and terrorists in the past.[262] The politisation of energy markets has become increasingly stronger though with growing global demand

[256] Cf. Jensen (2003), p. 10; Parker (2006), p. 6; Rüster/ Neumann (2006), p. 3. Also cf. Seeliger (2006).
[257] Cf. European Commission (2007a), pp. 262, 265 and own calculations based on data from BP (2009), p. 30.
[258] Cf. Jensen (2003), pp. 4, 23; Anonymous (2005a); Kessler et al. (2005), pp. 12, 16; Otzen (2005), p. 11; European Commission (2007a), pp. 88, 268; Holz (2007), p. 19.
[259] Estrada et al. (1988), p. 103.
[260] Cf. Foss (2005), pp. 115-116; Haltermann/ Pfeil (2006), p. 10; Thumann (2008), p. 19.
[261] As expressed by Jacques de Jong, an advisor to the Dutch government. Cf. de Jong/ Liao (2006), p. 1.
[262] Cf. Kemp/ Harkavy (1997); Jensen (2003), pp. 29-30; Seeliger (2004), pp. 19-20; Dorian et al. (2005), pp. 41-44; Anonymous (2006d), pp. 12-13; Anonymous (2007c); Chevalier (2009), p. 38. For an overview of examples of oil supply disruptions as a consequence of different crises cf. van Bohemen (2008), p. 16.

prone to leading to fights, even war, for natural gas resources.[263] By now, the "annual gas squabble"[264] between Russia and Ukraine (see above) has become something of a "Christmas ritual"[265]. Even Norway, although not part of the EU, has implemented EU energy policy regulation and is perceived as a European supplier. It has also recently been criticised for looking to sell its gas to the higher-priced U.S. market, and although Norway's responsible ministers guaranteed that they would not to use gas as a political weapon and so remain a reliable partner,[266] an element of uncertainty remains for European importers. Moreover, while traditional suppliers have retained their bargaining power (see above), newcomers are characterised by a large degree of government involvement, monopoly power and the dominance of oil and gas majors.[267]

Against the background of these developments the concept of storage and the development of trading possibilities have become particularly critical as is laid out next.

Storage and trading activities

Security of supply storage has become an increasingly important business, turning from an instrument to balance seasonal demand and supply fluctuations (see chapter II) to a strategic asset to react to short-term changes, as for example created by increasing trade, and for hedging against price volatility.[268] Following the demand by ERGEG to facilitate the trade of storage capacities (see above), an internet based online trading platform was recently installed, enabling storage operators to offer their unused storage capacity and sell it on the market for additional profit. Buyers again can purchase missing volumes to become more flexible.[269] At the same time regulations on security of supply and liberalisation have also

263 Cf. Schürmann (2004), p. 11; Umbach (2005); Kneissl (2006); Brüggmann (2007), p. 8; Ginsburg (2007), pp. 32-33; Hecking/ Proissl (2008), p. 23; Herbermann/ Rinke (2008), p. 3.
264 Anonymous (2009a), p. 25.
265 Anonymous (2009c), p. 12.
266 Cf. Rinke (2006), p. 3; Ertel (2007), p. 88.
267 Cf. Jensen (2003), pp. 4, 23; Anonymous (2005a); Kessler et al. (2005), pp. 12, 16; Otzen (2005), p. 11; European Commission (2007a), p. 88; Holz (2007), p. 19; Röller et al. (2007), pp. 6-7.
268 Cf. Parker (2006), p. 6; Deschkan (2008), p. 23.
269 Cf. Dunker (2007), p. 9.

affected the way that gas is exchanged on the market. Initially executed mainly in form of bilateral long-term contracts (also see chapter II), spot trade was used as a bargaining tool or last resort to secure market share of gas in difficult segments.[270] Over the course of time independent spot markets began to develop in form of hubs or exchanges where physical natural gas as well as financial products could be traded, thus functioning as a distribution link between the upstream and the downstream business.[271] In the beginning however, volumes traded on hubs as well as exchanges remained relatively low. The Commission therefore announced investigations as to whether new entrants were disadvantaged while its efforts to free volumes through gas release programmes were beginning to draw interest by pure trading companies to become active in this segment.[272] Particularly recently, the development of trading activities increased at a pace not thought possible shortly before.[273] This also fuelled the competitive situation which is analysed in the following section.

3.2.2 Changes in the Competitive Situation

3.2.2.1 Development of the Degree of Market Opening and Switching Behaviour

Following the gradual introduction of regulatory requirements as laid out above, the average degree of market opening steadily increased over time, having reached 50% after the implementation of the first and nearly 75% after that of the second directive.[274] Despite this progress, assessments revealed that competition initially remained weak and that TPA had only increased by 3%. It showed, for example, that although several companies were identified as having become interested in becoming active in the European gas industry during the first phase of market opening, the majority of attempts to enter markets in reality

[270] Cf. Estrada et al. (1988), p. 245.
[271] Cf. European Commission (2007a), pp. 33-34; Ristola (2008), p. 6.
[272] Cf. DRI-WEFA (2001), pp. 67-68; European Commission (2005a), pp. 10-12, 20-25; European Commission (2007a).
[273] Cf. ERGEG (2008), pp. 18-22; Bruce (2009), p. 1; ERGEG (2009), pp. 5, 12-13.
[274] The degree of market opening is measured as the percentage of total natural gas consumption of customers who can choose their supplier. Figures are for EU-15. Cf. Goerten/ Clement (2005), pp. 1-2.

finally failed.[275] Also the option of changing suppliers was not extensively taken advantage of. Moreover, apart from initially being only possible for eligible customers, many players were also bound to long-term contracts. This, as well as the fact that the new tenders offered had the similar disadvantageous terms and thus provided no benefits, had a "chilling effect on customers' switching behaviour"[276]. In fact, between 2000 and 2001 only around 17% of consumers changed their supplier.[277] Over the course of time however, along with the intensifying regulatory measures on liberalisation, competition started to increase as incumbents attempted to enter each other's territories. Additionally, foreign producers such as Gazprom,[278] regional players, oil majors, specialised suppliers such as LNG and storage operators or renewables-based providers began to expand along the gas value-chain.[279] Apart from such entrants from energy-related areas, competitive threats were also increasing from actors of non-energy related businesses such as financial investors or agrarian companies who were becoming interested in buying assets such as grid infrastructure, biogas production facilities, or in engaging in trading.[280] Technology companies like Siemens, General Electric, or Bosch again began to engage in green energy production, steel companies in the midstream infrastructure business, and media companies or even churches in the downstream segment, selling gas.[281] At the same time competitive intensity was further increased through a change of consumers' switching behaviour which only remained rigid in the case of final consumers where less than 10% of EU-25 consumers changed their supplier as market opening had started later.[282] By 2008 overall switching rates had reached 19%.[283]

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275 Cf. DRI-WEFA (2001), pp. 28-31; Immenga et al. (2003), p. 37; European Commission (2005a).
276 European Commission (2007a), p. 239.
277 Cf. European Commission (2005a), pp. 29-31; European Commission (2005d), p. 4.
278 Cf. Heinrich (2003), pp. 46-66; Schaudwet/ Ginsburg (2006), pp. 59-66.
279 Cf. Kempkens (2009), p. 82. While by 1997 U.S. trading company Enron was already waiting to 'jump' into the Continental European market from its subsidiary in the U.K. also Shell and Gazprom had formed an alliance for joint activities not only in oil and gas but also related energy businesses. Cf. Radetzki (1999), pp. 22-23. By 2005 Shell again had become a market leader for LNG transportation while Statoil, Norwegian's largest oil producer, began to export LNG from its Snohvit plant, with annual production volumes already being sold for the next 30 years to the U.S., France, and Spain. Cf. Focht (2005), p. 14; Ristau (2006), p. 9. American oil producer Chevron again is planning to build LNG facilities in Australia (cf. Schmidt-Carré (2008)), thus presenting a competitor to European incumbents from a global dimension.
280 Cf. Anonymous (2006e), p. 18; Hegel/ Schulte-Beckhausen (2007), p. 30; Sandhövel (2007), pp. 34-35; Katzensteiner (2008), p. 183.
281 Cf. Seiwert (2008).
282 Cf. European Commission (2005d), p. 3; Goerten/ Clement (2006), p. 6.
283 Cf. ERGEG (2009), p. 26.

3.2.2.2 Development of Price Structure

This course of development again also affected price setting in the industry. While there had been a drop in prices directly after the release of the first liberalisation directive, levels had risen again by the year 2000, and since then, development has been characterised by a continuous upward trend. A brief drop can only be found for industrial consumers for the years 2002-2004 as a consequence of increased switching rates and augmented gas-to-gas competition.[284] The renewed upward trend since 2004 despite further liberalisation measures can be explained by the major upsurge of oil prices which fed through to gas markets. In fact, over the course of time, prices for industrial consumers grew by 127%, those of households by nearly 70% since 1997.[285] This, and the suspicion that in cases of declining oil prices such trends in many cases were not passed on to consumers but were retained as substantial windfall profits by gas companies, significantly contributed to an increasingly negative image and growing public attention to the behaviour of incumbents.[286] The increased dissatisfaction particularly encouraged energy-intensive and private consumers to produce their own energy in decentralised facilities, and switch to other energy sources such as wooden pellets for heating, or even to not pay their gas bill.[287] Similarly, distributors and industrial consumers were beginning to join forces in industrial buying consortia to put suppliers under pressure and so augment buying power.[288] Also the European Commission became increasingly concerned about price developments and announced that in cases of finding proof for corporate anti-competitive behaviour it would not "hesitate to take the appropriate remedies"[289]. Competition commissioner Kroes, for example, proposed a new directive that would allow consumer associations to file collective redresses in case consumers were forced to pay excessive prices due to illegal cartel agreements,[290] a plan that could be expected to have drastic consequences for energy companies.

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[284] See above as well as EC (2004), pp. 8-9.
[285] Cf. Eurostat (2010).
[286] Cf. European Commission (2007e), p. 38; Anonymous (2008c); Nikionok-Ehrlich/ Focht (2009), p. 1.
[287] Cf. Schuh (2006).
[288] Cf. DRI-WEFA (2001), pp. 66-67.
[289] European Commission (2005a), p. 11.
[290] Cf. Berschens (2009).

3.2.2.3 Development of Substitute Products

At the same time consumer behaviour not only began to change because of higher gas prices but also because of paying more attention to and putting more weight on ecological issues and sustainability, a trend to be observed on a European as well as on a global level.[291] Due to the perception that consequences of climate change are going to become one of the, if not the 'biggest challenge mankind has ever faced'[292], this development has become more and more visible in consumers' preference for environmentally friendly sources of energy production. While this also applies to natural gas (see chapter II), it has been nuclear power and renewable energy which have become a substitute threat to natural gas, particularly in electricity generation. Their share in the energy mix already accounts for 14% and 7%, respectively.[293] Especially nuclear energy has been projected to grow strongly worldwide.[294] But also coal, with relatively abundant and cheap resources, is increasingly becoming a serious competitive threat, particularly as progress is being made on technological developments such as carbon capture storage (CCS).[295] In the heating segment again, a major threat of substitution comes from manufactured gases. Although not expected to replace natural gas volumes in total and despite having to be adjusted to natural gas quality in a relatively costly and time-consuming process to be fed into the grid, the impact of such produced gases is believed to be substantial, especially due to the advantage of being able to be produced decentralised close to areas of

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[291] Cf. Losse et al. (2007), pp. 27-30; Bergius (2008a). On a global level there are publications such as the Intergovernmental Panel on Climate Change (IPCC) published regularly by the United Nations, the 'Stern Review on climate change' which claims that 1-2% spending of global Gross Domestic Product are required to avoid a seriously harming increase in temperatures (cf. Stern (2006); Stern (2009)), other climate reports (cf. Rahmstorf/ Schellnhuber (2006), or numerous press articles and related publications (cf. Dincer (1999); Beder (2002); al-Khatib (2004); Anonymous (2006f), pp. 1-24; Anonymous (2007d), pp. 1-32; Anonymous (2007e), p. 9; Bethge/ Wüst (2007), pp. 86-89; Losse et al. (2007), pp. 27-30; Bergius (2008a). Moreover, following the political conflicts and wars having arisen for fossil resources (see above), this trend has also been fuelled by publications promoting peace by using renewable energy (cf. Alt (2002); Scheer (2005)). For discussions on the Stern Report cf. Mendelsohn (2006/ 2007); Kümmel (2007).

[292] Cf. Vorholz (2007a), p. 23. Translation by author.

[293] Data from Eurostat (2010).

[294] Cf. Borger (2005), p. 12; Anonymous (2004a), p. 13; EIA (2005), pp. 72-73; Anonymous (2005b), pp. 48-50; IEA (2006), p. 4; Berschens (2007a), p. 2; Falksohn (2007), pp. 104-105; Götz (2007), pp. 4-5; Student (2007), pp. 84-90; Seiwert (2008), pp. 51-64; Flauger/ Hellmann (2009). Currently there are 439 nuclear plants in operation globally, further 68 are being planned. Cf. BMWi (2009). In 1997 in contrast, in view of the opening up of electricity markets and the increasing importance of natural gas, there were even thoughts whether nuclear power had a future within the EU. Cf. Waeterloos (1997), pp. 13-14.

[295] For substitution in electricity generation cf. Wright (2006).

consumption.[296] In this respect biogas, also referred to as 'green gas'[297], has gained market share. This has especially been fuelled by the formulation of a European Biogas Strategy as otherwise "nobody would dream of "thinning" high-quality gas with elaborately compressed air for no good reason"[298]. Between 1990 and 2005, biogas production volumes grew more than six fold, between 2004 and 2005 alone by about 15%.[299] As most European countries provide attractive reimbursements, biogas becomes economical for application in electricity generation, in gas-fired household appliances in form of Synthetic Natural Gas (SNG), or as a fuel in the transportation sector in form of Biomass-to-Liquid (BTL). Further growth is therefore expected in the future.[300] Experts claim that the total substitution of European gas by biogas is technically possible by 2020-2030 and can cover up to 20% of worldwide energy demand by then.[301] This advancement is further promoted by the fact that several biogas companies and respective associations are lobbying for increased political support and public attention.[302] Also other substitute manufactured gases such as waste, sewage and pit gas, and non-conventional gases like methane gases extracted from coal beds or shale formations and tight sands, i.e. low-permeability sandstone, started to gain foothold in the energy mix.[303] The producers of manufactured gases thus became competitors to the incumbents.[304] Despite public claims for more sustainable forms of energy production there has been a growing local resistance by consumers to new projects in form of a 'not-in-my-backyard' attitude which often hinders the implementation of such projects.[305]

Having laid out the change of European Energy Policy and market structures the implication of these developments is concluded on next.

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296 Cf. Anonymous (2006g), p. 15; Anonymous (2007f), p. 11; Köpke (2007a), p. 22; Schroeter (2007a), p. 4.
297 Cf. Dronnikov et al. (2003), p. 73.
298 Rott (2004), p. 10. High-quality gas in this respect refers to natural gas.
299 Cf. Eurostat (2007), pp. 15-16.
300 At the same time biogas production is dependent on prices of raw materials which have recently also been subject to increases. Cf. Pecka (2008b), p. 27.
301 Cf. Wuppertal Institut et al. (2006); Klein (2007), p. B12; Köpke (2007b), p. 15; Thrän et al. (2007); Vorholz (2007b), pp. 26-27.
302 Cf. Vorholz (2007b), p. 26; Feist (2008), p. 16; Focht (2009a), p. 9; Pecka (2009a), p. 17.
303 Cf. Adelman/ Lynch (2002); IEA (2002), p .115; IEA (2004), p. 139; Seeliger (2004), p. 11; IEA (2006), p. 116; Schacht (2007), p. W1; Anonymous (2008d), p. 4; Kempkens (2008), pp. 78-81; Peer (2009).
304 Cf. Köpke (2008), p. 20.
305 Cf. IEA (2006), pp. 121-122.

3.3 Implications of Change for the Behaviour of Incumbents active in the European Gas Industry

Fundamentally, the analysis above has revealed that the gas market environment has significantly changed in the past decade. These changes were not only of different type with various sources of origin but have also taken place in different areas. Liberalisation and deregulation, as 'backdrops of tremendous change'[306], have opened up former rigid market structures by breaking up the value-chain of vertically integrated incumbents, tearing down the shelter from competition by introducing respective forces and encouraging consumers to switch suppliers. The development of spot markets again undermined existing long-term contracts and put substantial pressure on prices. Established players thus faced the threat of profit squeezing and the redistribution of wealth along the value chain,[307] forcing them to become efficiency- and profit-oriented and to develop negotiating skills while also engaging in customer-relationship management, in particular as not only the number of customers was to be relevant anymore but also their value contribution.[308] At the same time, and contrary to the notion of deregulation, new authorities and regulatory requirements were implemented.[309] Consequently, while incumbents had been left alone in the past to do their business and their relationship with stakeholders had been negotiated out of the necessity of being stuck with each other and having to get along, the amendments of European energy policy have disrupted these arrangements and changed the setting from one of "cozy cooperation to one of jagged stridency"[310] where inappropriate behaviour is punished by the market.[311] This required the re-negotiation with traditional stakeholders and the establishment of relationships with new ones who have become attracted to enter the industry and influence industry

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306 Cf. Makhija (2003), p. 449.

307 As also pointed out by early research (cf. Bleeke (1990), p. 162). For a more recent example cf. Øygard/ Tryggestad (2001).

308 This has in fact been also pointed out by several publications over the course of time. Cf. Commichau (1997); Ghobadian et al. (1998), p. S71; Holst (1998), p. 167; DRI-WEFA (2001), p. 84; PWC (2003a); Höfermann-Kiefer/ Waltemath (2005), pp. 2-5; Neuhäuser et al. (2005), pp. 810-814; Schikarski/ Wältken (2005b), pp. 807-809; Seeliger (2005b), p. 10; Seel/ Timm (2008), p. 24. Also, new IT infrastructure is required. Cf. Heider (2007), pp. 44-49; Werthschulte et al. (2007), pp. 48-50; Komornyik (2008), pp. 89-92.

309 Some researchers thus prefer to merely use the term liberalisation in the sense of a qualitative transformation of regulatory modes (cf. Genoud et al. (2004b), p. 13).

310 Russo (1992), p. 13.

311 Cf. Mahon/ Murray (1980), p. 126; Estrada et al. (1988), p. 255; Ghobadian et al. (1998), p. S72.

profitability. Another source of pressure emerged from the measures to improve security of supply. While geo-political matters have always been an issue for European suppliers to deal with, the fact that the majority of future supplies lies in areas with difficult local conditions has even enforced this situation as indicated above. Regulatory requirements for providing a secure provision with natural gas have thus posed an even greater challenge to European suppliers in that they face strong supplying power from upstream government-controlled oligopolies.[312] This situation requires specific political and technical capabilities. At the same time incumbents experience a weakening of their buying power due to unbundling legislations, intensifying competition and powerful lobbying associations engaged in the European market. Security of supply has thus become a critical risk and cost factor to be managed and calculated into investment decisions.[313] The same holds true with regards to ecological concerns. While environmental goods have previously been public, the emphasis on sustainability has put a price tag on these goods and additional financial constraints on companies. In addition to this is the advancement of other environmentally friendly energy sources and new stakeholders from this area threatening natural gas suppliers' traditional sales territory. Moreover, especially recently these new stakeholders have increased their pressure on authorities to become more active, complaining that as 'politics had had itself lead up the garden path for too long'[314], the 'ecologisation of the gas market was lagging behind 20 years'[315] and that the crusted structure of the gas sector needed breaking up. Furthermore, some renewable energy providers have even aimed to completely substitute customers' natural gas supply with biogas.[316]

In conclusion it can be said that these changes came over organisations as exogenous waves which have profoundly impacted the organisational as well as the industry's value-chain and thus the traditional business model of incumbents along with their legitimacy. At the same

[312] At the same time, also many European downstream markets are still characterised by oligopolies. In this respect recent studies have concluded that in order to prevent double marginalisation, vertical integration should be allowed if not supported (cf. Boots et al. (2004)), a finding that stands in contradiction to EU Energy Policy efforts to unbundle energy companies' value-chains.

[313] Also these issues by now have been subject to several studies. Cf. PWC (2002); McKenna et al. (2006); Haltermann/ Pfeil (2006), p. 5.

[314] Cf. LichtBlick (2007). (Translation by author)

[315] Cf. Schwarzer (2007). (Translation by author)

[316] This topic has only been addressed relatively recently. Cf. Lempp et al. (2002); Klein (2007), p. 12; Oesterwind (2007), p. 32.

time these changes have also opened up opportunities to enter new business areas – either along the traditional gas value-chain or in other energy-related activities. Another opportunity lies in the development of a totally new business model in order to maintain or gain a competitive advantage, if not to survive in the marketplace. Based on developments laid out above this could include related diversification into the production and/ or supply of biogas or other manufactured gases, or investments into gas-based electricity generation in form of CCGT plants. This not only opens up opportunities for benefitting from arbitrage possibilities, selling gas on the market when prices are high, while using it for electricity generation when gas prices are low, but also for enhancing corporate image and thus legitimacy. No matter whether regarded as threats or opportunities, the growing influence and harmonisation of European Energy Policy has increasingly made interfaces between political and corporate fields of action more loaded with conflict potential. This has introduced a significant level of uncertainty and volatility into the institutionalised industry structure and thus the incumbents' environment, threatening to make the possession and utilisation of established resources and capabilities, and traditional assumptions of how the European market works, meaningless.[317] A specific challenge in this respect is the clash of different influences from various directions and sources creating "a tension between commercial and public service-orientation running right through the industry"[318]. Liberalisation, for instance, opened the industry to competitive forces on the one hand and enhanced customer choice while at the same time introducing new regulatory requirements and institutional agents. The same holds true with regards to the other two goals as both are not only characterised through the instalment of respective regulatory measures and agents, but also through the requirement of companies to fulfil market needs. This again requires players to satisfy various expectations of different stakeholders. Some of these are new; some have taken on a new role such as the European Commission as a "policy entrepreneur"[319] or other regulatory bodies who now act as 'surrogate customers'[320]. Their increasing degree of activity and the pressure exerted over the course of time has resulted in a

[317] While this has been pointed out as a potential threat in earlier publications (cf. Rider (1999), p. 19), these consequences have been referred to more frequently by recent ones (cf. Weber/ Schuler (2004); Fleissner (2005); Schikarski/ Wältken (2005a), pp. 497-499; Oesterwind (2007), p. 32; Schroeter (2007b), p. 22).

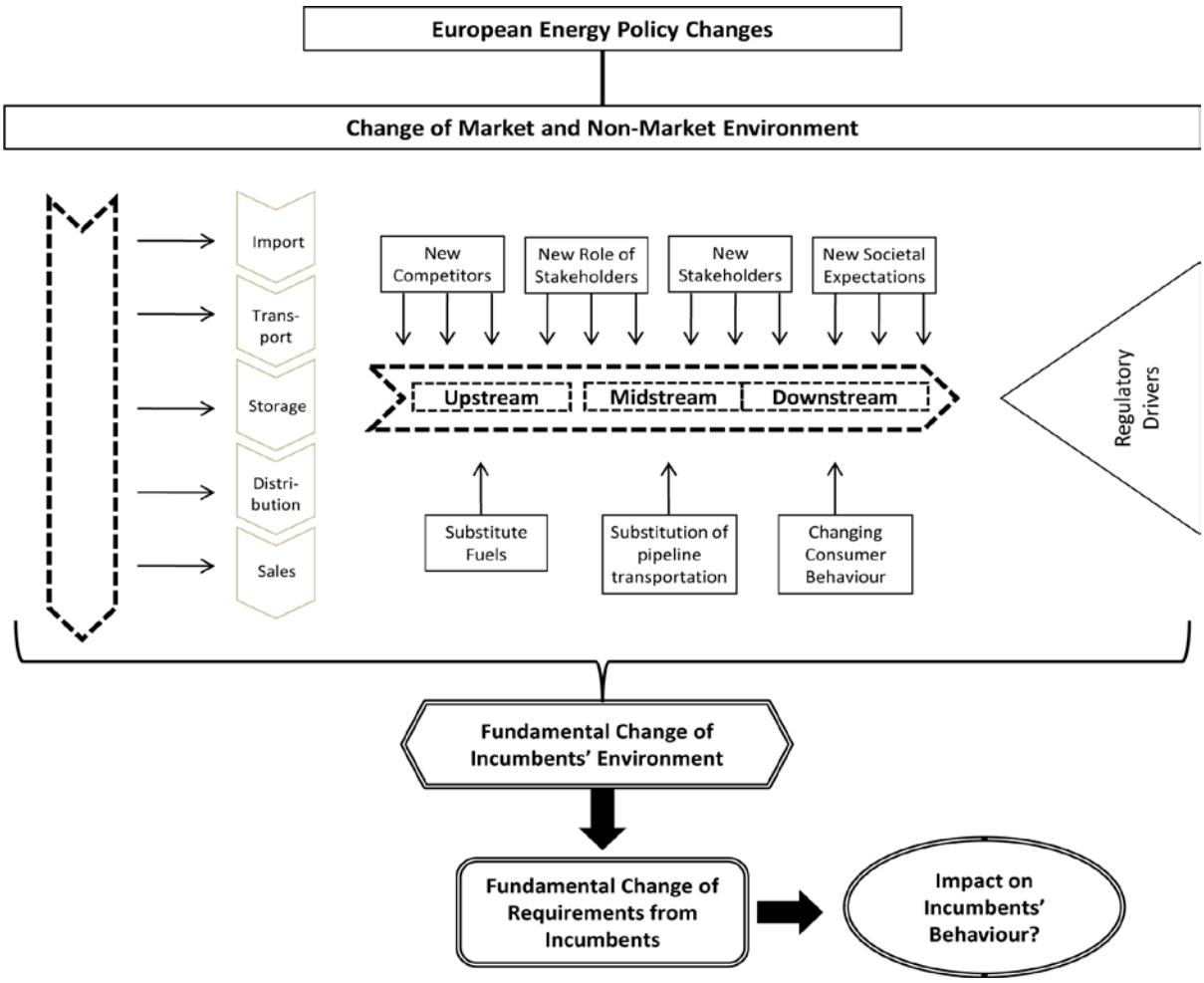
[318] Midttun (2001), p. 17.

[319] Genoud et al. (2004a), p. 122.

[320] Cf. Ghobadian et al. (1998), p. S78.

"battle between governments and markets"[321].[322] The distinct difference between these forces and agents, in fact, constitutes a major characteristic of the 'new' corporate environment. A fundamental distinction that can be made is between market mechanisms and institutions or market and non-market forces and actors. These interrelationships and considerations are illustrated in the following figure.

Figure 10:[323] Drivers of industry revolution and organisational behaviour – Breaking-up the traditional value-chain and industry structure



321 Chevalier (2009), p. 9.

322 For an overview of different stakeholders such as regulators, associations, companies and others cf. Genoud et al. (2004b), pp. 14-15, 21-22; Anonymous (2006b), p. 6; Esterhazy et al. (2008), p. 58.

323 Own figure. Due to the complexity of change as laid out in chapter III this illustration has been stylised, showing change on an accumulated level.

Having faced such a fundamental change of their previously stable, closed and rather predictable external environment the research question, which at the same time guides the research aim, can be formulated as follows:

How did incumbents strategically behave in order to achieve their goals and survive?

Due to the complexity of the situation, the research question has been formulated in such an open manner in order to allow an unbiased approach to analysis. This again has to begin with the determination of a sound theoretical basis. The challenge here is to find an approach which is able to capture the empirical situation as laid out above and fulfil the following requirements:

- ► Generally be applicable to reflect empirical reality;
- ► Allow the classification of different types of environmental forces and actors, more specifically the distinction between 'market' and 'non-market' ones;
- ► Explain organisational behaviour in response to environmental change;
- ► Take account of temporal dimension to account for development over time;
- ► Be able to fill explanatory gaps in order to enhance and bring forward academic research;
- ► Enable to provide advice for practitioners.

Which theoretical approach can satisfy these conditions is determined in the following chapter. The basis for this is set by first looking at the fundamentals of the relationship between organisations and their environment to then derive possible approaches for further discussion.

CHAPTER IV ESTABLISHING a THEORETICAL FRAMEWORK

4.1 Fundamentals of Organisational Behaviour in Response to Environmental Change

Essentially, the determination of the appropriate theoretical approach is guided by the analysis of change in the European gas industry and its impact on incumbents' strategic behaviour.

First of all it is therefore essential to understand the fundamental mechanisms between organisations and their environment. The very basis of analysing organisations in context of and in transaction with their environments can be said to have been laid by Systems Theory as "the most useful way to study organizations"[324] and "an excellent way of looking at the industrial firm"[325], an approach having opened up the 'black box' to understand an organisation's relationship with its environment. This had become particularly important as organisational environments had turned increasingly complex, if not turbulent, in any case uncertain and discontinuous.[326] Concrete definitions generally remained vague though, described, for instance, as the "set of conditions that are relevant but not under control"[327].[328] Drastic environmental changes in turn have been depicted as 'Schumpeterian shocks'[329] or

[324] Johnson et al. (1973), p. 41.
[325] Churchman (1968), p. 62.
[326] Cf. Johnson et al. (1963), pp. 3-6; Farmer/ Richman (1964), pp. 55-56; Katz/ Kahn (1966), pp. 26-27; Katz/ Kahn (1978), p. 63; Thompson (1967), p. 18; Perrow (1970), p. 93; Johnson et al. (1973), pp. 13, 508-509; Jurkovich (1974); Luthans/ Stewart (1977), pp. 183-184; Katz/ Kahn (1978), p. 32; Scott (1981), p. 119. Others used the terms heterogeneous or hostile. Cf. Burns/ Stalker (1961); Emery/ Trist (1965); Lawrence/ Lorsch (1967); Thompson (1967); Terreberry (1968); Duncan (1972); Khandwalla (1972); Boulton et al. (1982); Tushman/ Anderson (1986); Krickx (2000). For concrete empirical examples cf. Drucker (1971), p. 101; Kast/ Rosenzweig (1973), pp. 1-2; Bracker (1980), p. 219; Arrington/ Sawaya (1984), p. 160; Ansoff (1988), p. 12.
[327] Churchman (1968), pp. 34, 63.
[328] Cf. Thompson/ McEwen (1958), p. 23; Boddewyn (1966); Katz/ Kahn (1966), p. 171; Thompson (1967), p. 159; Ansoff/ Hayes (1976), p. 1; Lenz (1980a), p. 213; Scott (1981), p. 165; Strati (2000), p. 21.
[329] Cf. Barney (1986a), p. 798; Amit/ Schoemaker (1993), p. 38.

"earthshaking revolutions"[330]. In form of "disruptive outside factors"[331] a common trait is that they "critically impinge"[332] on organisational behaviour.

The determination of "*the appropriate form* of interaction"[333] with environments characterised by such fundamental change has thus been pointed out to be one of the major organisational considerations. In this respect particularly the 'temporal properties' underlying the interaction process have to be considered.[334] While some researchers depicted organisations' strategic responses as results of rational planning, emergent developments[335] as well as of trial-and-error experiments, serendipity, chance, coincidence, intuition or gut feelings,[336] a common acknowledgement across various theoretical approaches is that organisations have to find a fit with their environments by defining a respective strategy which determines its relationship with its surrounding in order to be successful in terms of achieving organisational goals[337], even to survive and not be 'selected out'[338].[339] Moreover, it has been found that organisations 'time shift' their responses along with environmental change in that they 'chase a moving context'[340]. Another finding is that strategic behaviour tends to develop along a continuum from being rather passive and risk-averse to becoming more chance-induced and pro-active over time as organisations take advantage of arising opportunities.[341] Passive behaviour has been related with re-active strategies, active behaviour

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330 Miller (1994), p. 334.
331 Fleming (1980), p. 35.
332 Arrington/ Sawaya (1984), p. 160.
333 Thompson/ McEwen (1958), p. 30. Italics in original.
334 Cf. Greiner (1972), pp. 40-41; Johnson/ Thomas (1987), p. 347; Fox-Wolfgramm (1988), p. 89; Burgelman (1991); Volberda et al. (2001), pp. 209-210.
335 Cf. Mintzberg (1978); Mintzberg/ Waters (1985).
336 Cf. Dutton/ Freedman (1985); Makridakis (1990).
337 For a discussion on organisational goals versus those of organisational members see Simon who finds the notion of goals as "indispensable to organization theory" (Simon (1964), p. 1).
338 This was particularly postulated by researchers of the Natural Selection Perspective. Cf. Hannan/ Freeman (1977); Aldrich (1979). Following the criticality of the product 'energy' provided by organisations of this thesis, it is assumed that gas companies will not be allowed to be selected out and 'die'. Instead, 'being selected out' in this study would mean that the company is not able to deal with the new environment and become either taken-over in a hostile acquisition or becoming subject to governmental control.
339 As a variety of these different disciplines cf. Cyert/ March (1963), p. 100; Johnson et al. (1973), p. 50; Lenz (1980b); Mahon/ Murray (1980), p. 134; Melcher/ Melcher (1980); Jemison (1981), p. 635; Mahon/ Murray (1981), p. 252; Venkatraman/ Prescott (1990); Aharoni (1993), p. 34; Hinterhuber et al. (1996). For an introductory overview cf. Poole (2004).
340 Cf. Hinings/ Greenwood (1988), p. 49.
341 Cf. Thompson/ McEwen (1958), p. 25; Parsons (1964), p. 340; Johnson et al. (1973), p. 50; Kast/ Rosenzweig (1974), p. 509; Dutton/ Freedman (1985), pp. 49-50; Hrebiniak/ Joyce (1985); Hinings/

at the other end of the continuum to pro-active strategic activities. Based on this characterisation re-active strategies can be identified as those forms of behaviour which are directed at maintaining the status-quo or changing as little as possible, keeping risk and resistance at a minimum as often showing in repetitive actions or imitation.[342] Pro-active strategies again are those with which organisations try to direct external forces to a favourable direction in order to satisfy relevant stakeholders and increase organisational value by exploring arising opportunities.[343] Passive behaviour can be explained by organisations' inherent natural inertia which constitutes their 'memory device' and in form of a blueprint for replication their natural tendency to follow their 'liability of newness clock'.[344] A natural and initial organisational reaction to environmental change therefore is often to simply "ignore it"[345] and stick to prior routes and known forms of behaviour by simply exploiting a given set of routines.[346]

This is particularly the case when pressure is externally imposed – as is the case with energy policy change in the European gas industry (see chapter III) – and organisations are 'infected' with the 'not-invented-here-syndrome'[347]. Vaughan et al., for instance, assume that in situations where companies were institutionalised in a 'close and warm relationship' with their government – again reference can be made to the situation on the European gas industry – they had become invulnerable to emerging environmental pressures and in consequence were not aware of the need to react accordingly. They also found that these players perceived the increasing importance paid by the public to ecological issues as superficial and thus saw no need to become active.[348] Thus, in following the path once taken and as the commitments made in the past often cannot be easily reversed, strategic change is constrained and

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Greenwood (1988); Kelly/ Amburgey (1991); Cummings/ Worley (1993), pp. 495-500; Burgelman (1994); Miller (1994), p. 332; Kraatz (1998), p. 622. More recently cf. Simerly/ Li (2000), p. 39; McGrath/ Tschan (2004), pp. 65-67.

342 Cf. Dutton/ Freedman (1985), p. 46; Cummings/ Worley (1993), pp. 52-53; Specht (1996), p. 152; Ingram/ Baum (1997); Romanelli (1999); Baum/ Rao (2004), p. 224.

343 Cf. Aldrich (1979); Hinterhuber et al. (1996), pp. 89, 99; Specht (1996), p. 152.

344 Cf. Stinchcombe (1965). Also cf. Amburgey/ Miner (1992), p. 335; Campbell (2004), p. 4. For empirical examples cf. Singh et al. (1986).

345 Dutton/ Freedman (1985), p. 54. Also cf. Hrebiniak/ Snow (1980).

346 Cf. Amburgey/ Miner (1992), p. 335.

347 Cf. Van de Ven/ Hargrave (2004), p. 271.

348 Cf. Vaughan et al. (1997).

organisational behaviour mirrors a codification of the past, also described as "the stories repeated within the corporate walls"[349].

As such behaviour carries the danger of leading organisations onto a "route to failure"[350] and into a "dangerous "do nothing" trap"[351], a situation which can be characterised as organisations being "victimized by dated and irrelevant strategies"[352] as opportunities arising from change are not explored, it has been shown that organisations over the course of time overcome forces of resistance and 'at least do something' to finally undergo some form of transformational change.[353] Research has also shown that the successful organisations are not only those which are able to take advantage of arising opportunities but those which co-evolve and reinvent themselves over time,[354] thus developing what above has been classified as pro-active strategies. In order to do so however, organisations in many cases first need to 'unlearn'[355], especially when considering that organisational transformation is never finished and strategies have to be constantly modified to fit and continue as long as firms need to adapt.[356] Particularly the criticality of entrepreneurial activities and pro-active behaviour in form of capturing first-mover advantages[357] and organisations 'designing'[358] themselves have been pointed out in academic research.[359] In this respect, many writers on organisational behaviour in response to environmental change have referred to Schumpeter's notion of

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349 Foster/ Kaplan (2001), p. 45.
350 Dutton/ Freedman (1985), p. 55.
351 Courtney (2001), p. 47.
352 Miller/ Chen (1994), p. 7.
353 Cf. Miller/ Friesen (1980), p. 288; Quinn (1980a); Quinn (1980b); Miller/ Friesen (1984), pp. 248-265; Tushman/ Romanelli (1985); Mahon/ McGowan (1996), p. 43; Wischnevsky (2004). Around this time a concept known as 'Issue Management' became popular. Cf. Ansoff (1975); Dutton/ Duncan (1987); Hainsworth/ Meng (1988); Greening/ Gray (1994); Liebl (1994). While its effectiveness has been recognised particularly as a short-term measure, it does not provide researchers with a profound theoretical basis as required here.
354 Cf. Ginsberg (1988), pp. 560, 562; Hinings/ Greenwood (1988), pp. 27, 41, 75; Cummings/ Worley (1993), pp. 14, 520-526, 536-537; Miller (1993); Hinterhuber et al. (1996), p. 89; Courtney (2001), p. 38; Bryan (2002), pp. 18, 20; Lewin et al. (2004), p. 109.
355 Cf. Ringbakk (1976), p. 10. Also cf. Nystrom/ Starbuck (1984).
356 Cf. Cyert/ March (1963); Hedberg (1981); Argyris et al. (1985); Levitt/ March (1988); Lundberg (1989); Cummings/ Worley (1993); Bellmann (1996); Specht (1996); Ingram/ Baum (1997); Pasmore/ Woodman (1997); Fuentelsaz et al. (2002), p. 259; Epstein (2003); Lynch (2003), pp. 604-605. Schroeder et al. (2002) have also pointed out that learning itself is a specific and difficult to imitate capability.
357 Cf. Lieberman/ Montgomery (1988).
358 Cf. Hedberg et al. (1976); Weick (1977).
359 Cf. Markides (1997).

'creative destruction'.[360] While this depiction reveals that organisational strategies tend to become more active along with environmental change, research with a particular focus on the temporal dimension has depicted the development of organisational behaviour as an evolutionary journey which in the end shows as a strategic path.[361]

After having explained the underlying dynamics of organisational behaviour in response to environmental change, the next step is to establish of a theoretical approach suited for this work. Guided by the empirical reality in form of different types of 'market' and 'non-market' forces, actors and requirements constituting change of the European gas industry and based on an extensive literature review, two major streams of research have been identified which are assumed to be not only applicable but prerequisite as theoretical approaches for addressing the research question formulated above. One of these streams represents business-based approaches, here classified as Business Theory (BT). The other is Institutional Theory (IT) which has been characterised as the "sole theoretical perspective"[362] and "standard theoretical toolbox"[363] to explain and depict non-competitive phenomena. Both characterise a distinct stream of research under the wide umbrella of Organisation Theory. Under the terms 'Business Perspective' and 'Institutional Perspective' their applicability for answering the research question will be tested in the following.

[360] Cf. Tripsas (1997), p. 119; Ellis et al. (2000), p. 299; Rugman/ Verbeke (2000), p. 378; Foster/ Kaplan (2001), pp. 41-42; Midttun (2001), p. 13; Delmas (2002); Rodrigues/ Child (2003), p. 2140.
[361] Cf. Mintzberg (1978); Huff (1982); Greenwood/ Hinings (1993).
[362] Carroll et al. (1988), p. 233.
[363] Lamberg et al. (2002), p. 3.

4.2 Business Perspective on Organisational Behaviour in Response to Environmental Change

4.2.1 Theoretical Background

The 'Business Perspective' (BP) view is characterised by combining insights from the area of Industrial Economics (IE) or Industrial Organisation (IO), and Strategic Management (SM). Although these fields have distinct origins, they are acknowledged as interrelated and mutually reinforcing, and are fundamentally established within the field of Business Theory[364] which allows its application as a research approach. One of the most prominent theories building on environmental forces to explain organisational behaviour and success is the Industrial Organisation approach,[365] also depicted as a field of economics looking at "markets that cannot easily be analyzed using the standard textbook competitive model"[366]. Whereas the underlying explanatory concept is the structure-conduct-performance (SCP), the central proposition is that market structure determines organisational conduct and sets the basis for earning above-average return.[367] While the original model assumed the flow of determination going in one direction,[368] it is acknowledged by now that the elements are interrelated in that the conduct of market participants also impacts prevailing industry structures.[369] Another benefit of the IO approach is that it introduced the notion of strategic conduct into the until then prevailing micro-economic-based theories, enabling the explanation of organisational behaviour on a corporate level.[370] At the same time the IO approach has been criticised for not being able to appropriately explain differences between organisational strategies and changes over time, especially in the case of increasing

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364 Cf. Porter (1981); Hoskisson et al. (1999); Martinez/ Dacin (1999); Flagestad/ Hope (2001). Another expression at times used in literature to summarise these approaches is 'Business Theory' or 'Business Perspective' but as there is also little 'conformity' (cf. Williamson (1994), p. 361), the term 'business' has been chosen here as it allows a better delineation as will come apparent over the course of this chapter.

365 As, for instance, early applied by Porter (1981).

366 Schmalensee (1987), p. 803.

367 Cf. Mason (1939). For empirical work cf. McGahan/ Porter (1997).

368 The figure most often applied to graphically depict the structure-conduct-performance paradigm is that by Scherer. Cf. Scherer (1970), p. 5; Scherer/ Ross (1990), p. 5. For another example cf. Porter (1981), p. 611.

369 These interrelationships are presented as reverse arrows in Scherer's illustration of the SCM model. Cf. Scherer (1970), p. 5.

370 Teece attributed this particularly to the SCP paradigm. Cf. Teece (1984), p. 93.

environmental uncertainty and complexity.[371] The fundament for integrating these elements was particularly established by Porter, a 'legend and leading edge thinker in Strategic Management'[372] who had set out to "turn IO on its head"[373]. Inspired by the SCP-model, Porter introduced its concept of industry rivalry and showed that companies may change rules to their favour by formulating respective strategic responses and thus influence environmental structures to their advantage.[374] Over the course of time the fundamental insights of these approaches became established as the Market-based View (MBV) in the wider business literature.[375]

Regardless of the continuous advancement of market-oriented approaches however, other research results showed that some firms were able to perform better than others, indicating that "the external environment is only one part of the economic rent story"[376]. In directing the focus towards the firm itself and as a "discipline that ventures into the black box"[377], Transaction Cost Theory developed as a stream within Institutional Economics. Fundamentally, TCT looks to explain why firms exist at all if all transactions could also be handled via the market and prevailing price mechanisms. Coase assigned the reason for establishing a firm to the benefit of avoiding the "cost of using the price mechanism"[378]. Oliver Williamson further distinguished between transactions that are organised via the market, via internal hierarchy, and via intermediate hybrid forms such as franchising on the one end or long-term contracts on the other end of the scale.[379] While Williamson in his later

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371 Cf. Börsig (1981), pp. 252-253; Schreyögg (1984); Dutton/ Freedman (1985), p. 59. For a more comprehensive analysis of critiques see, for example, Audretsch (1995).

372 Cf. Mintzberg (1988), p. 64; Mahon/ McGowan (1996), p. 46.

373 Ghemawat (2002), p. 54.

374 Cf. Porter (1985), p. 4.

375 Cf. Chakravarthy (1997); Hoskisson et al. (1999), p. 432; zu Knyphausen-Aufseß (2000), p. 55; Bea/ Haas (2001), pp. 24-25.

376 Amit/ Schoemaker (1993), p. 40.

377 Hoskisson et al. (1999), p. 432. Similarly cf. Gibbons (2003), p. 7. The utilisation of the term 'black box' again shows the above mentioned relatedness to Systems Theory as the preceding fundamental approach.

378 Coase (1937), p. 390.

379 Williamson, who became a prominent researcher of TCT, also contributed by determining the degree of undertainty, asset specifity, bounded rationality and opportunistic behaviour. Cf. Williamson (1975/ 1979/ 1985). Following these considerations, Williamson developed the Organizational Failure Framework, putting these forces in relation with each other and analysing their impact on transaction costs (these are costs which result ex-ante or ex-post of the conclusion of a contract from search, negotiation, control and adaptation processes). Cf. Picot (1982), p. 270). Cf. Williamson (1975), p. 40; Williamson (1991). For a more recent review cf. Williamson (2000).

work also accounted for the amendment of governance forms in response to environmental change,[380] TCT has been criticised for not being able to satisfactorily explain why many firms engage in more flexible forms of organising, in particular with regards to specialised assets in competitive markets which are characterised by rapid change.[381] Early studies, for example, found that external conditions may change in such ways that vertical dis-integration into independent specialised units becomes more viable.[382] A recent study indicates that uncertainty and vertical integration are not necessarily related.[383] In the case of cooperative arrangements it has been pointed out that despite higher transaction costs, JVs may turn out to be more efficient as they allow the improvement of an organisation's competitive positioning.[384] While TCT has become an integrated part to strategy formulation by now,[385] it has above all been research in the field of Strategic Management which promoted the consideration of improving an organisation's strategic positioning and its competitive advantage through the concept of corporate strategy.[386] Here it was particularly Chandler who determined environmental change as the driver for corporate strategy formulation and organisational structure.[387] Chandler also was the first[388] to define strategy by stating that it is the "determination of the basic long-term goals and objectives of an enterprise and the adoption of courses of action and the allocation of resources necessary for carrying out these goals"[389]. Based on these considerations it was especially researchers like Miles and Snow who enhanced insights on strategic content. Building on studies analysing the relationship between strategy and structure, they developed typologies of organisational forms for classifying strategic response to environmental change.[390] Also Hofer and Schendel put particular emphasis on the state of an organisation's environment, defining strategy as "the

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380 Cf. Williamson (1991), pp. 271-273; Williamson (1993), p. 48; Williamson (1996), p. 39.
381 Cf. Delmas/ Tokat (2005), p. 457. Also cf. Russo (1992), p. 17.
382 Cf. Harrigan (1985a); Hill/ Hoskisson (1987); Jacquemin (1987); Jones/ Hill (1988).
383 Cf. Krickx (2000).
384 Cf. Kogut (1988). For other critical remarks cf. Russo (1992), pp. 17, 25; Sydow (1992), pp. 145-166.
385 Cf. Williamson (1994), p. 361; Rumelt et al. (1994), p. 27; Hoskisson et al. (1999), pp. 419, 433-434; Foss (2000), pp. 2, 10, 12; Simerly/ Li (2000), pp. 45-46; Nickerson et al. (2001), pp. 251-252.
386 The concept of corporate strategy was especially enlarged on by Learned et al. (1965).
387 While Chandler formulated that "structure follows strategy" (Chandler (1962), pp. 13-14) March and Simon before had based their work on the notion that strategy follows structure (cf. March and Simon (1958)).
388 Apart from Peter Drucker, who first addressed the strategy issue in 1954 without explicitly mentioning the term 'strategy' though. Cf. Hofer/ Schendel (1978), p. 16.
389 Chandler (1962), p. 13.
390 Cf. Miles/ Snow (1978).

basic characteristics of the match an organisation achieves with its environment"[391], thereby offering a new paradigm on the concept of strategy. How the organisational environment is characterised from a Business Perspective is depicted next.

4.2.2 The Organisational Environment from a Business Perspective

From a business-oriented perspective the market environment can be depicted as consisting of those influences which affect an organisation's basis of performance and its positioning in the marketplace. A distinction is often made between the wider macro-economic and the narrow micro-economic environment which is also called 'task' or 'industry' environment.[392] As already indicated by the terminologies, the wider macro-economic environment consists of such forces which are not necessarily specific to a certain industry but affect any organisation, such as globalisation.[393] Of what has come to be known as the PESTEL or PEST framework in the English management literature, this outer layer of the organisation's environment includes political, economical, socio-cultural, technological, environmental, and legal forces.[394] The micro-economic environment again can be distinguished into more specific factors such as the industry's supply and sales market as well as its competitive structure as specifically depicted by researchers in the field of IO and MBV approaches. The importance of such forces had already been pointed out early by Mason who stated that apart from the general classification of input factors as addressed by system theorists (see above), there should be 'many more things' that determine market structure and respective influence on organisational conduct. As such he identified the number of sellers and buyers, possibilities of product differentiation, prevailing demand and cost structures as well as the economic age and stage of development of an industry, distribution channels, and market share.[395] Bain pointed out that with regards to market structure those industry characteristics which impact on competitive conduct should be emphasised, like established rivals or buyers which are close

[391] Hofer/ Schendel (1978), p. 4.
[392] Cf. Grant (2002), pp. 66-67.
[393] Cf. Lynch (1997), p. 91.
[394] Cf. Roeber (1973); Tregoe/ Zimmerman (1980), pp. 18, 89. The abbreviation PEST can be found when political and legal as well as economic and environmental forces are grouped together.
[395] Cf. Mason (1939), pp. 64, 70-72.

substitutes for each other.[396] The importance of potential market entrants and forces of substitution for determining behaviour of incumbents has become a central characteristic of these early approaches.

Within the Strategic Management literature it was again Porter who extended the Industrial Economists' environmental perspective, showing that the type and degree of competition and rivalry within an industry resulted from an interplay of the following 'Five Competitive Forces':[397] *Supplier Power* which, e.g., is strong in the case of monopolistic or oligopolistic supply structures, when no substitute input material are available, or when the threat of forward or backward integration is high – as used to be the case with gas incumbents before liberalisation. *Buyer Power* again is high when buyers are well informed, switching costs low, or products highly standardised. In such cases, industry profitability may be threatened when buyers demand lower prices, higher quality and/ or more service, like buyers of gas after liberalisation. *Substitutes* may pose a threat to industry attractiveness in terms of the general possibility of buyers choosing a different but similar product, e.g. biogas or renewable instead of natural gas. *New Entrants* increase capacities in the marketplace, leading to decreasing price levels and thus threatening profitability, as has been the case after opening up the European gas market. The threat of entry is generally determined by the reaction to be expected by incumbents as well as the height of barriers to entry (see above). In this respect Peteraf and Bergen remarked that especially in dynamic competitive settings substitute players and potential newcomers presented the most threatening but at the same time least recognisable competitive hazard.[398] *Intensity of Rivalry* results from the attempts of established players to increase their market share at the cost of rivals and, amongst others, is determined by the diversity of competitors or high exit barriers (see above).[399]

In extending Porter's concept, researchers added 'complementors' as additional stakeholders to take into consideration, characterising other companies from which buyers may purchase

[396] Cf. Bain (1951), p. 298; Bain (1956), p. 2.
[397] Cf. Porter (1985), pp. 4-11.
[398] Cf. Peteraf/ Bergen (2003), p. 1028.
[399] Cf. Schomburg et al. (1994).

complementary products or to which suppliers may sell complementary input.[400] While these forces have been introduced as common industry characteristics, Porter also pointed out the importance of the concept of a strategic group which he referred to as a group of firms which within an industry follow the same or a similar strategy.[401] Their function has been compared with one of "walled medieval cities"[402] which allow its members to "fend off invasion by hostile intruders"[403]. In an industry context these walls constitute mobility barriers which protect established players and enable them to generate higher profits, thus explaining intra-industry variations in firm performance. Strategic groups also provide certain stability and interrelatedness which enable its members to coordinate more effectively. At the same time members have to consider that such barriers may be subject to change, as in the case of evolutionary developments for instance, and thus may also affect prevailing power structures and profitability.[404]

4.2.3 Drivers and Organisational Goals from a Business Perspective

Based on the "commonplace observation that organisations exist to make money"[405] and on the insights gained from above, organisational behaviour within the business field can probably be best described as a "positioning-economizing perspective"[406]. According to this perspective the strategies employed are directed at most efficiently allocating scarce resources to gain a profit. In treating the firm as a profit maximising entity, the underlying rationale is not only the maximisation of organisational rents, but an efficiency-orientation which has also been described as the rational imperative that most contributes to long-run survivability of organisations.[407] Putting competition at the centre of analysis, early empirical studies claimed

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400 Cf. Brandenburger/ Nalebuff (1996); Grove (1996), p. 30.

401 Cf. Porter (1980), p. 129. The notion of strategic groups was first introduced in 1972 by Hunt who in an empirical study found that despite high concentration levels within the industry, profitability was low. He concluded that industry structure had to be extended to account for the concept of strategic groups. Cf. Cool/ Dierickx (1993), p. 48; Reger/ Huff (1993), p. 103.

402 Cool/ Dierickx (1993), p. 57.

403 Cool/ Dierickx (1993), p. 57.

404 Cf. Caves/ Porter (1977), p. 248; Porter (1980), pp. 129-145.

405 Katz/ Kahn (1966), p. 17.

406 Nickerson et al. (2001), p. 252.

407 Cf. Mason (1939), p. 63; Jones/ Hill (1988), p. 165.

factors like market share as the main drivers of organisational profit.[408] Soon after however, further research found that the orientation on profit or large market share should not be used as the only measure to determine survival and success in the market place.[409] While researchers from SM in most cases equate business success with financial performance, today, this particularly shows in the orientation on performance figures such as the return on investment (ROI) and the concentration on maximising shareholder value,[410] they also point out the importance of gaining a competitive advantage by establishing a favourable market positioning and organisational structure. While Chandler found that the competitive advantage of U.S. multinational companies was founded on their multi-divisional structure,[411] thus transferring the classical theory assumption of scale and scope to a corporate strategy level, Porter stated that a firm's long-term competitive advantage was determined by its positioning within the industry and the creation of fit among a company's activities.[412] Fundamentally, this includes the choice of products as well as the level of scope and diversity.[413] The underlying dynamics of organisational behaviour to achieve these goals while responding to environmental change are explained in the next section.

4.2.4 Business Perspective on Organisational Behaviour in Response to Environmental Change

4.2.4.1 Fundamental Strategic Behaviour

Basically, an organisation's strategic behaviour in response to environmental change is driven by the fact that such external upheaval threatens its "tried-and-true methods for making

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408 In literature these have become known as the PIMS (Profit Impact of Market Strategy) studies, carried out to provide management with data on the expected profit performance of various business units under different competitive conditions. Cf. Schoeffler et al. (1974). Also cf. Buzzell et al. (1975).
409 Cf. Tregoe/ Zimmerman (1980), p. 63.
410 Cf. Wigand et al. (1999), pp. 97-160. Also cf. Rappaport (1998).
411 Cf. Chandler (1977).
412 Cf. Porter (1985), p. 11; Porter (1996), p. 75.
413 Cf. Rumelt et al. (1994), p. 9.

strategy"[414]. Depending on the theoretical lens looked through, organisational responses can be characterised accordingly. IO theorists, for instance, based on the assumption that above average returns are inherent in market structure, point out the importance of finding ways to create barriers to entry against rivals in order to maintain an industry's profitability, such as by building on economies of scale or switching costs to "discriminate profitably"[415] and invest before potential entrants can, and by strategically behaving without being noticed by others as a "maverick stirring the competitive waters"[416].[417] Williamson above all claimed that in times of a large degree of uncertainty and high transaction costs exchanges should be concluded via hierarchical or long-term arrangements.[418] Others particularly emphasised cooperative long-term and exclusive agreements or vertical integration as a means to erect barriers to entry for defence.[419]

Within the Strategic Management literature again it is common to distinguish between different types of strategy levels. The main distinction made is between corporate strategies which deal with the scope of the firm's activities in terms of industries, markets, strategic business areas or domains in which it competes, and competitive strategies which determine how companies successfully compete in a market or industry and how they navigate in the domain selected.[420] As this distinction is mainly analytical in nature though and as determining where one type ends and the other begins in reality is "far from clear"[421], it will not be further enlarged on here. Being generally concerned with guiding organisations forward, the concept of strategy guides a firm's strategic consideration of what business the company already is or will be active in and the kind of company it is or will be.[422] In fact, the questions of which markets to be in, which products to produce and which activities to

414 Szulanski/ Amin (2001), p. 538.
415 Schmalensee (1988), p. 658.
416 Schomburg (1994) et al., p. 152.
417 Cf. Bain (1956); Scherer (1970); Porter (1980); Demsetz (1982); Schmalensee (1988); Grant (1991/ 1998).
418 Cf. Williamson (1975); Williamson (1981), p. 1546; Williamson (1985), pp. 61-63. Also cf. Schmalensee (1988), p. 656; Williamson (1999).
419 Cf. Bain (1956); Porter (1980); Demsetz (1982); Harrigan (1985b), pp. 28-35; Porter/ Fuller (1989), pp. 375-390; Sydow (1992), p. 293.
420 Cf. Bourgeois (1980). Also cf. Grant (2002), pp. 23-25; Johnson/ Scholes (2002), pp. 10-12.
421 Grant (2002), p. 388. Also cf. Bamberger/ Wrona (2004), p. 141.
422 Cf. Andrews (1971); Abell (1980); Ansoff (1981), p. 81; Ansoff (1988), pp. 76-85; Lynch (1997), p. 737; Grant (2002), pp. 23-24; Johnson/ Scholes (2002), p. 11.

perform have been identified as being among the most critical that organisations face in an environment characterised by strong competition and change.[423] Ansoff distinguished between four fundamental strategic dimensions:[424] Market penetration, where the organisation protects and strengthens its existing products and markets, market development, where new segments are developed with existing products in order to gain market share, product development, where the organisation develops new products for existing markets, and diversification as a strategy where new markets are entered with new products, thus signifying the largest change. Already early researchers had pointed out that diversification strategies are not only motivated by the possibility to improve efficiency through synergies across other businesses but also to create a competitive advantage by simultaneously making better use of resources and reducing the risk of dependence on one particular area.[425] This may even hold for forms of unrelated diversification which takes the firm from where it 'grew up', i.e. its 'center of gravity',[426] beyond its "cultural heart"[427] into product categories totally distinct from the original ones. Andersen et al., for instance, described diversification as "a condition the firm is always seeking to improve"[428]. Sometimes the term diversification is also applied to characterise the expansion along a vertical scope. In this respect then, vertical integration can be looked at not only from a transaction-cost but also from a strategic perspective with regards to the number and characteristic of value chain activities performed and whether firms integrate forward to move closer to the consumer, or backward to initial production.[429] The same holds true with regards to the degree of geographical scope where diversification characterises an organisation's internationalisation strategy in terms of the number of countries expanded into, the volume of investments, the share of foreign sales or added value, the number of employees, management's international orientation or the choice of market entry.[430] While research in this area could show that organisations which had diversified across national boundaries outperformed firms which had diversified only across domestic

[423] Cf. Cummings/ Worley (1993), p. 164.
[424] Cf. Ansoff (1965). For an illustration see p. 128.
[425] Cf. Andersen et al. (1959), p. 31; Buzzell et al. (1975); Hayes (1980).
[426] Cf. Galbraith (1983), p. 64.
[427] Mintzberg (1988), p. 59.
[428] Andersen et al. (1959), p. 27.
[429] Cf. Harrigan (1984); Wrona (1999), in particular pp. 270-271.
[430] Cf. Kutschker (1999), p. 104.

product portfolios,[431] empirical evidence on diversification in most cases has produced ambiguous results. Porter, for instance, found that most diversification moves had not created shareholder value and that most parts were divested again over the course of time before having provided a significant positive contribution.[432] At the same time Mintzberg remarked that each way of expansion also had a "downside equivalent"[433]. This refers to forms of specialisation on a narrowly defined product-market scope, a low degree of vertical integration, or a restricted geographical reach such as by withdrawing from existing markets, dis-integrating value-chain activities or divesting businesses.[434]

Porter also was the one who promoted research on a firm's competitive advantage on what he termed 'generic strategies'. From this perspective companies should either strive for cost leadership by being the producer with the lowest costs in the industry, for becoming unique within the industry through differentiation, or by focussing on a certain industry segment and optimising conduct there, either in form of a cost or differentiation focus. He argued that a cost advantage could be gained by controlling cost drivers or by reconfiguring the value chain while a differentiation advantage again was something that "grows out of the firm's value chain"[435] and provided something valuable to buyers in that any activity generally holds the potential for uniqueness. Others take an organisation's core business as the starting point and map out three fundamental strategic actions in response to environmental change: Those of adapting the core business, those of building new businesses and those of shaping the organisation's overall portfolio of businesses.[436]

In addition to these general forms of strategic orientation research in this area has particularly emphasised the tactics of mergers and acquisitions as means to diversify, internationalise, or vertically integrate and rapid ways to obtain resources while opening up opportunities to increase profitability.[437] Peng and Heath, for example, found that particularly 'newcomers to

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431 Cf. Bühner (1987).
432 Cf. Porter (1987); and also indicated by Katz et al. (1997), p. 34.
433 Mintzberg (1988), p. 32.
434 Cf. Mintzberg (1988), pp. 38-54; Sydow (1992), p. 148; Hinterhuber et al. (1996), pp. 72-75.
435 Porter (1985), p. 120. Also generally cf. Porter (1983).
436 Cf. Bryan (2002), pp. 25-26.
437 Cf. Andersen et al. (1959); Kutschker (1994).

the competitive game' chose such strategic alliances over other forms of organisation as the preferred growth strategy as these provide protection, access to resources and learning economies without incurring the costs of the other forms.[438] Pearce especially pointed out forms of co-opting with competitors, such as when building pipelines under joint ownership, through horizontal mergers.[439]

4.2.4.2 Development of Strategic Environmental Responses over Time

While the above has so far provided the explanatory fundament to explain organisational behaviour, it has not displayed the path of development in reaction to environmental change over time but only the 'final consequence of it'.[440] This will be looked at now.

Fundamentally and as indicated in the introductory part (4.1), business-perspective specific research, too, points out that organisations strive to re-establish fit after environmental change. Empirical studies in this area have revealed that this coincided with increased efficiency and higher economic performance.[441] Already Schumpeter had remarked that "business strategy acquires its true significance only against the background of that process and within the situation created by it"[442]. Within the approaches characterising Business Theory, an organisation's development path has often been depicted in reference to (industry) lifecycle developments.[443] Early researchers had found that organisations generally follow different development phases during this process, characterised, for instance, by a continuous process of building, holding, and harvesting strategies.[444] While researchers from Business Theory have depicted the possibility of passively reacting (adapting) or actively shaping the organisation's future development as the most fundamental strategic choice of organisational

[438] Cf. Peng/ Heath (1996).
[439] Cf. Pearce (1982), pp. 26-27.
[440] Cf. Mintzberg (1988), pp. 31-32.
[441] Cf. Simerly/ Li (2000), p. 31
[442] Schumpeter (1950), p. 83.
[443] Cf. Mintzberg/ Westley (1992); Van de Ven (1992).
[444] Cf. Buzzell et al. (1975); Hofer/ Schendel (1978). Empirical ex.: Cf. Rumelt (1982); Child/ Smith (1987).

behaviour in response to environmental upheaval,[445] these two options only constitute the two extreme ways of possible strategic behaviour to be determined. A more extensive categorisation has been provided by Miles and Snow (also see above) who distinguish between reactive, defensive, analysing and prospective types of organisational behaviour with reactive forms of behaviour constituting the most passive and prospective the most active ones. Whereas the authors determined these categories as a response to environmental change at a certain moment in time, they explicitly remarked that this classification also allowed accounting for the dynamic process of adjusting to environmental change and uncertainty in that organisational behaviour tended to become more active over time, showing as a continuous development from reactive, to defensive, to analysing to prospective strategies.[446] Only shortly after, Miles, by extending this work through adding a dynamic perspective, through case study research analysing organisational strategies of six major US tobacco companies after the introduction of an anti-smoking law[447] identified an underlying tendency of organisations to become more active over time. He also showed that even the most "recalcitrant"[448] organisations facing such pressures overcame their initial inertia in the end. In this respect Miles also pointed out the importance of considering an organisation's development history and its learning process.[449] Similar development paths have been found in other empirical studies such as in the case of Intel which, despite initially feeling like "Ford deciding to get out of cars"[450] when leaving its core business, over the course of time began to embark on an entrepreneurial track that finally resulted in successful strategic renewal.[451] Back then as well as still today researchers acknowledge that Miles and Snow have captured different stages of strategy development rather than a typology of alternative strategic behaviours.[452]

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445 Cf. Mintzberg (1978).
446 Cf. Miles/ Snow (1978), p. 3.
447 This characterises a form of regulatory enforcement as can be found in those of European Energy Policy.
448 Miles (1982), p. 242.
449 Cf. Miles (1982), pp. 247, 256.
450 Burgelman (1994), p. 41.
451 For similar empirical examples cf. Jacobides (2005).
452 Cf. Smith et al. (1986), p. 49. Others have criticised that Miles and Snow's approach neglected industry pecularities as well as organisational capabilities. Cf. Desarbo et al. (2005). This can be countered here as industry and organisational characteristics are extensively dealt with.

In conclusion it can be derived that the underlying dynamics of strategic behaviour in response to environmental change from a Business Perspective takes place as a development of passive towards active business strategies.

4.3 Institutional Perspective on Organisational Behaviour in Response to Environmental Change

4.3.1 Theoretical Background

Since its grounding by Selznick[453], institutional theory can be said to have gone through a "distinct evolution"[454], leading, amongst others, to the fact that no single self-contained theory exists. Consequently, "the beginning of wisdom in approaching institutional theory is to recognize that there is not one but several variants"[455]. In order to account for this fact in this work, and as others have done, reference is made to "the best available insights from the institutional literature, regardless of their disciplinary backgrounds"[456], here subordinated under the term 'Institutional Perspective'. The underlying ideas as presented in the original approaches are briefly explained first in order to provide a basis for further analysis.

Having been described as representing "the most complete conceptual transition away from models based on technical environments and strategic choice"[457], a major reason for the emergence of institutional approaches goes back to the critic on traditional economics and 'Old Institutionalists', or 'Institutionalists of the first generation'. Academics from the 'new' era found the neo-classical approaches unhelpful.[458] The approach that has recently gained increasing weight is what has been termed 'New Institutionalism', 'Neo-Institutionalism', or 'New Institutional Theory' to show its distinctiveness from Institutional Economy. In its

[453] Cf. Selznick (1957).
[454] Lewin et al. (2004), p. 134.
[455] Scott (1987a), p. 493.
[456] Peng (2003), p. 276.
[457] Drazin et al. (2004), p. 162.
[458] Cf. For a depiction of historical relatedness cf. Jacoby (1990).

strongest form this perspective rejects the premise that organisational phenomena are the outcome of technical considerations. It has thus even been called the 'antipole' to rational choice approaches.[459] As among the first, Meyer and Rowan had criticised that traditional economic assumptions had neglected the "dramatic enactments of the rationalized myths pervading modern societies"[460] and their impact on organisational behaviour. The argument by institutional theorists that such myths of rationalisation do not exist because "individuals believe in them, but because they 'know' everyone else does"[461] is crucial to be remarked in this context. As "classifications built into society"[462] these institutionalised patterns or standards have become part of a shared reality and are so taken for granted "in their own right"[463] that they are not questioned anymore, but at a certain point of time are accepted as "the rules of the game in a society"[464].[465]

Before enlarging on this, a first fundamental statement that needs to be made is that institutional forces manifest themselves differently. In literature, no uniform conceptualisation exists, so that a substantial degree of vagueness, which partly is a result of the blurred terminology used in original literature, often remains.[466] In reference to the field of biology the term 'institution' has been related to such systems that survive dramatic environmental change through evolutionary adaptation. This again may explain why certain rituals whose origin is not recognised anymore are still carried out. One of the "earliest and most influential versions"[467] in this field was provided by Selznick who described 'to institutionalise' as 'to infuse with value beyond the technical requirements of the task at hand'.[468] When looking at the conceptual understanding of the original representatives of New Institutional Theory,

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459 Cf. Müller-Jentsch (2003), p. 249.

460 Meyer/ Rowan (1977), p. 346. Or, as Walgenbach formulated: "Institutionalisten stehen der Vorstellung Webers, dass Organisationen gemäß ihren Blaupausen funktionieren, skeptisch gegenüber" (Walgenbach (1995), p. 269).

461 Meyer (1977), p. 75.

462 Berger/ Luckmann (1967), p. 54.

463 Meyer et al. (1983), p. 61.

464 North (1990), p. 3.

465 Cf. DiMaggio/ Powell (1991a), p. 9.

466 Cf. Müller-Jentsch (2003), p. 245; Senge (2006), p. 36; Walgenbach (2006), p. 389. For an overview over the development cf. Walgenbach (2002). For examples see Jepperson (1991), p. 143; Schülein (1987), p. 10; Esser (2000), p. 1.

467 Scott (1987a), p. 493.

468 Cf. Selznick (1957), p. 17.

differences but also overlapping contents can be detected. While Meyer and Rowan refer to institutions in form of social status, knowledge, particular behaviours, relations, or expectations as well as normative obligations and legal rules,[469] DiMaggio and Powell again emphasise the state and professions, including the legal environment, rituals and standard operating procedures, as the major 'rationalizers' that mainly drive the process of structural change.[470] Zucker instead refers to the cultural persistence of institutions and particularly emphasises the process of institutionalisation which continuously reproduces behaviours and leads to an underlying resistance to change.[471] North again distinguishes between formal (rules, laws, legislations) and informal (values and perceptions) institutions.[472] Based on this Scott developed the so-called 'three pillars of institutions' - a regulative, a normative and a cultural-cognitive one - to better conceptualise these various understandings.[473] and Thus, despite the fact that such forces have been differentiated from hard factors such as market structure, technical issues or dependency on financial resources,[474] it is accepted by now that also the institutional researcher "takes seriously the assumption that organizations are affected by their environments"[475]. How the organisational environment is depicted from an institutional perspective is depicted in the following section.

4.3.2 The Organisational Environment from an Institutional Perspective

Within institutional approaches the concept of the organisational field has become prevalent to characterise the relevant organisational environment. Introduced by DiMaggio and Powell it is defined as the totality of relevant actors which "in the aggregate, constitute a recognized area of institutional life"[476]. Other seminal researchers described these fields as a collection or

469 Cf. Meyer/ Rowan (1977), p. 343.
470 Cf. DiMaggio/ Powell (1983), p. 147.
471 Cf. Zucker (1977).
472 Cf. North (1990), p. 45.
473 Cf. Scott (1995), p. 33.
474 Cf. Hasse (2006), p. 150.
475 Scott/ Meyer (1991), p. 108.
476 DiMaggio/ Powell (1983), p. 148.

community of organisations which operate in a common meaning system with similar products or functions, and which interact more frequently and fatefully with each other rather than with actors outside the field while mutually influencing each other and thus being relevant from the respective other actor's perspective.[477] Recent literature refers to institutional stakeholders who act as 'gatekeepers of legitimacy' and, according to their perception and preferences, assess a firm's legitimacy.[478] These field agents in turn exert different pressures on organisations within and thus are of crucial importance to their survival. While DiMaggio and Powell speak of coercive, normative and mimetic mechanisms,[479] Scott, based on his three pillar concept, distinguishes between regulative, normative and cultural-cognitive actors, forces and mechanisms at work in an organisational field.[480] Despite some criticism,[481] the concept of organisational fields still forms an important element of institutional theory today as it provides a basis for depicting and explaining the implication of institutional forces on organisational behaviour. Being an established concept in literature by now, its classification is also used here to depict and explain the understanding of the institutional environment.

In this respect the *regulatory* pillar can be depicted as representing 'higher-order authorities'[482] such as the state or regulatory bodies who issue laws, set rules and standards by expedience, explicit imperatives of rule-setting, monitoring and sanctioning, or by the mere 'virtue of their power'[483] impose coercive pressure. While governmental bodies have been described as the "most significant"[484] and "most obvious stakeholders"[485], antitrust agencies such as cartel offices also possess a valuable form of power.[486] At the same time there may be

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477 Cf. Meyer/ Rowan (1977), p. 347; Fligstein (1991), p. 313; Scott/ Meyer (1991), pp. 117-118; Scott (1994), p. 70; Scott (1995), p. 56.
478 Cf. Lounsbury/ Glynn (2001), p. 553; Bansal/ Clelland (2004), p. 94.
479 Cf. DiMaggio/ Powell (1983), pp. 150-153.
480 Cf. Scott (1995), p. 35.
481 As already pointed out by DiMaggio and Powell making a clear distinction between the different forces in reality is not always easy. The classification is therefore mainly analytical in nature but still valuable for further conceptualisation. Cf. DiMaggio/ Powell (1991a).
482 Cf. Delmas/ Toffel (2004), p. 213.
483 Cf. Scott (1987a), p. 507.
484 Singh et al. (1991), p. 393.
485 Delmas/ Toffel (2004), p. 213.
486 Cf. Burns (1986), pp. 28-29.

situations where rather societal pressures become coercive,[487] or where organisations have become "subject to the whims of suppliers"[488]. *Normative* pressures are exerted through collectivities such as professional networks or associations which issue certifications, set occupational standards or give accreditation. Through 'professionalization' in form of 'occupational socialization' where e.g. information and experiences are shared and jobs rotated,[489] a "pool of almost interchangeable individuals"[490] is created. Here it has been shown that in many cases decision-makers within professional collectivities have similar educational histories and academic backgrounds that often lead to a convergence of mental models and result in shared beliefs about the environment and organisational conduct.[491] Within this setting certain expectations are diffused and normative pressures imposed. Especially organisations close to the public sphere and open to public scrutiny – as is the case with incumbents in the European gas industry - have been found to conform to normative pressures.[492] Studies have, e.g., revealed that firms were influenced by industry associations, consultancies and storytelling to adopt certain standards and strategies.[493] The *cultural-cognitive* pillar again consist of societal forces which create a set of common beliefs and shared logic, leading to the institutionalisation of a certain pecking order that is accepted within the field.[494] Scott thus described cognitive influences as "the internalized symbolic representations of the world"[495]. This was also particularly emphasised by Zucker who had claimed that persisting cognitive forces may become so anchored and taken-for-granted that they are continuously reproduced over time, e.g. through symbolic systems such as terminologies and signs, without being questioned or sanctioned. By guiding the understanding of reality organisations abide to them unconsciously instead of by conscious acceptance.[496] Moreover, as relationships with other field actors are subject to these cultural-cognitive influences, too, relational networks may also lead to the diffusion of certain myths which then again gain legitimacy merely "on the supposition that they are rationally

[487] Cf. Deephouse (1996), p. 1027.
[488] DiMaggio/ Powell (1983), p. 154.
[489] Cf. Arndt/ Bigelow (2000), p. 514.
[490] DiMaggio/ Powell (1983), p. 152.
[491] Cf. Huff (1982); Porac et al. (1989); Peng (2001).
[492] Cf. Edelman (1990).
[493] Cf. Newman (2000), p. 615; Delmas/ Toffel (2004), p. 214.
[494] Cf. Fligstein (1991), p. 313.
[495] Scott (1995), p. 40.
[496] Cf. Zucker (1977); Zucker (1983).

effective"[497]. From this perspective even efficiency concerns were seen as 'rationalised myths'.[498] In other cases certain measures are morally ruled out, such as efforts to apply economic criteria to public organisations of social welfare.[499] In many cases interest groups have been particularly mentioned as important actors. In their role as gatekeepers they have considerable power by initiating governmental action, assigning importance to issues, exposing gaps between business practices and societal expectations as well as by confirming or eroding organisational legitimacy and thus willingly or unwillingly function as institutional agents.[500]

These forces are seen as 'templates for organising'[501] within which organisations manage their survival – which again is dependent on their legitimacy. This will be explained in the following section.

4.3.3 Drivers and Organisational Goals from an Institutional Perspective

As a major driver of organisational behaviour the "imperative"[502] of legitimacy is one of the constituting characteristics and has even been assigned to be the "anchor-point"[503] for the complexities of the institutional world. While Boulding, by stating that "if an institution loses its legitimacy, it loses everything"[504], had already pointed out early the criticality of organisations being legitimate, Meyer and Rowan introduced this aspect into NIT by emphasising its importance as a prerequisite for organisations to have access to resources to

497 Meyer/ Rowan (1977), p. 347.
498 Cf. Ruef/ Scott (1998), p. 879. Also cf. Scott (1995); Scott (2001).
499 Cf. Hinings/ Greenwood (1988), p. 56.
500 Cf. Scott (1987b), p. 114; Aldrich/ Fiol (1994), p. 660; Greening/ Gray (1994), p. 489; Mahon/McGowan (1996), p. 65.
501 Cf. DiMaggio/ Powell (1991a), p. 27.
502 Selznick (1996), p. 273.
503 Suchman (1995), p. 571.
504 Boulding (1968), p. 3. An even earlier reference regarding the importance of organisational legitimacy had apparently already been made by Parsons in 1960. Cf. Scott (1991), p. 169.

secure their survival.[505] Also other seminal researchers argued along this line in that organisational survival was dependent on gaining legitimacy in form of political power and social fitness.[506]

The expression 'legitimacy', assumingly to be deriving from the Latin word 'legis', implies a behaviour which is in accordance with legal requirements.[507] By now its application has been extended to include other areas as well. Following Scott's pillar concept, a distinction can be made according to regulatory, normative and cultural-cognitive legitimacy. In view of that, regulatory legitimacy can said to be enforced through legal sanctions which make organisations comply.[508] Normative legitimacy is morally governed in that organisations comply with these forces out of ethical obligations or in conformance with norms established by professional institutions.[509] Cultural-cognitive legitimacy again is gained by behaving according to what is common understanding and taken-for-granted.[510] A similar categorisation has been made by Aldrich and Fiol who distinguish between cognitive and socio-political legitimacy. Cognitive legitimacy shows in the reproduction of taken-for-granted beliefs and in the conformity to institutionalised archetypes. Socio-political legitimacy again reflects the embeddedness in relational and normative situations and is granted when organisational behaviour is seen as obligatory and buttressed by institutional agents,[511] e.g. in form of 'legitimating pushs by governmental institutions'[512]. Based on the three-pillar concept the actors, forces and mechanisms which provide the basis of compliance and organisational legitimacy can be depicted as follows.

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505 Cf. Meyer/ Rowan (1977), p. 340. The importance of legitimacy to gain access to resources was also pointed out by researchers within the resource dependency field. Cf. Pfeffer/ Salancik (1978).
506 Cf. DiMaggio/ Powell (1983), p. 150.
507 Cf. Ruef/ Scott (1998), p. 879.
508 Legal mandates also provide legitimacy as already pointed out by Meyer and Rowan (1977), p. 347.
509 Cf. Hoffman (1999), p. 353.
510 Cf. Scott (1995). Also see table 1.
511 Cf. Aldrich/ Fiol (1994).
512 Cf. Hinings/ Greenwood (1988), p. 71.

Table 1: [513] Three pillar concept – Basis of Legitimacy

	Regulative	**Normative**	**Cultural-Cognitive**
Actors/ Sources	Authorities, e.g. state or regulatory bodies	Collectivities, e.g. professions & associations	Society
Forces	Rules, laws, sanctions	Certifications, accreditation e.g. occupational standards	Common beliefs, shared logic of action
Mechanism	Coercive	Normative	Mimetic
Basis of compliance	Expedience in form of explicit imperatives, e.g. rule-setting, monitoring, sanctioning	Social obligations, Professionalisation	Taken-for-grantedness, shared understanding
Basis of legitimacy	Legally sanctioned	Morally governed	Culturally supported and recognisable

An important characteristic of these depictions is that legitimacy is granted in form of an "external blessing"[514] when organisations behave according to requirements, norms and expectations. From this perspective organisations do not 'possess' legitimacy but obtain it in form of a conferred status, endorsement, recognition, support or acceptance from those stakeholders upon which they depend and which determine what is appropriate and legitimate. This may, for instance, happen in form of 'regulatory endorsement' from the government or regulators, from professions or associations, or in form of public endorsement such as from consumers or voters.[515] This has also been described as the 'standard reference'[516] of legitimacy, defined by Suchman as a "generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed systems of norms, values, beliefs, and definitions"[517]. Suchman further

[513] Adopted from Scott (2001) who remarked that while this illustrative distinction was mainly analytical in nature it could still serve as a tool to analyse an organisation's institutional setting (cf. Scott (2001), pp. 51-58) and thus is suitable for this work.
[514] Meyer/ Rowan (1991), p. 56.
[515] Cf. Meyer/ Scott (1983), p. 201; Singh et al. (1991), p. 398; Elsbach/ Sutton (1992), p. 700; Aldrich/ Fiol (1994), p. 648; Scott (1995), p. 45; Suchman (1995), p. 594; Deephouse (1996), p. 1025; Deephouse/ Carter (2005), p. 332.
[516] Cf. Hellmann (2006), pp. 80-83.
[517] Suchman (1995), p. 574.

differentiated *pragmatic* legitimacy to which he assigned the attributes of 'exchanging' or 'influencing'. While the first refers to just 'making sense', the notion of influence implies that organisations can 'do more' by becoming active and presenting itself as particularly important and valuable.[518] Following these considerations Scott later argued that organisations are not only capable of merely maintaining legitimacy, but of transforming and even creating it, critical aspects which also play an essential role with regards to organisational behaviour when confronted with environmental change and crisis. Thus, as pointed out recently by researchers, legitimacy not only secures survival and protects organisations from crises,[519] but also allows them to deviate from institutionalised myths. Especially Scott pointed out the criticality of legitimacy and remarked that in order to ensure their survival during institutional environmental change organisations had to transport to stakeholders the message that they are 'legitimate'.[520] Which forms of institutional strategies organisations can apply to do so is determined next.

4.3.4 Institutional Perspective on Organisational Behaviour in Response to Environmental Change

4.3.4.1 Fundamental Strategic Behaviour

Characteristic for institutional approaches is that especially in the beginning the perspective on organisational behaviour has been driven by the appraisal that organisations are "almost absorbed"[521] by the institutional forces prevailing within an organisational field and forced to adopt those templates that have become legitimised there - even if this conformance implied the incurrence of costs and took place "in the absence of evidence that it increases internal efficiency"[522].[523] The observation that organisational change may not be driven by

[518] Cf. Suchman (1995), p. 578.
[519] Cf. Bansal/ Clelland (2004), p. 95.
[520] Cf. Scott (1994), p. 64; Scott (1995), p. 47.
[521] Meyer/ Rowan (1977), p. 352.
[522] Powell/ DiMaggio (1991b), p. 73.
[523] Cf. Meyer/ Rowan (1977); Meyer/ Zucker (1989).

competition or the need to become more efficient was what had actually lead DiMaggio and Powell to analyse what made organisations so similar and explain the "startling homogeneity"[524] of organisational behaviour. They determined the above mentioned coercive, mimetic and normative mechanisms as drivers of such form of behaviour according to which organisations model themselves on other organisations they perceive as successful.[525] Within such spirals of homogenisation where organisations closely observe each other,[526] and "respond to an environment that consists of other organizations responding to their environment which consists of organizations responding to an environment of organizations' responses"[527], they become locked in like in an 'iron cage of and behind institutionalised bars'.[528] Those organisations which tried to escape this 'prison' by deviating from established structures were believed to threaten their legitimacy and hence survival.[529] Newcomers to a field on the other hand were shown to have overcome their liability of newness by imitating institutionally legitimated archetypes and being 'rewarded'[530] by being granted the legitimacy needed for accessing essential resources. On a field level such an "inexorable push toward homogenization"[531] was argued as finally resulting in the total institutionalisation of the field, leaving no space for individual action and strategic behaviour.[532]

It were especially these assumptions which increasingly raised attention by other researchers who criticised NIT for not being able to explain why organisations which share the same institutional field and face common institutional pressures pursue different, i.e. heterogeneous

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524 DiMaggio/ Powell (1983), p. 148; DiMaggio/ Powell (1991b), p. 64.

525 Cf. DiMaggio/ Powell (1983), pp. 151-156. Especially mimetic isomorphism has received greatest attention in literature, likely due to the high visibility of these field developments. Cf. Mizruchi/ Fein (1999), pp. 660, 667.

526 Cf. Fligstein (1991), p. 316; Abrahamson/ Fombrun (1994), p. 750.

527 Powell/ DiMaggio (1991b), p. 65 citing Schelling ((1978), p. 14).

528 Cf. Meyer/ Rowan (1977), p. 352; DiMaggio/ Powell (1983).

529 Cf. Meyer/ Rowan (1977), p. 353. This effect has been empirically shown by natural selection researchers, with regards to newly founded organisations which had a high the mortality rate due to a lack of legitimacy. Cf. Hannan/ Freeman (1989); Hannan/ Carroll (1992); Delacroix/ Rao (1994).

530 Cf. Scott (1987b), p. 126.

531 DiMaggio/ Powell (1983), p. 148.

532 Cf. DiMaggio/ Powell (1991a), p. 14. For early empirical studies cf. Tolbert (1985); Meyer (1982); Ritti/ Silver (1986). For other examples cf. Edelman (1990); Fligstein (1990); Edelman (1992); Jennings/ Zandbergen (1995); Deephouse (1996); Dobbin/ Sutton (1998); Flier et al. (2003).

strategies and to explain change.[533] But even seminal scholars themselves had increasingly began to "challenge their own view"[534]. DiMaggio, for example, remarked that the process of institutionalisation "bears, if not the seeds of its own destruction, at least openings for substantial change"[535]. In fact, already Meyer and Rowan had indicated that institutions may change and organisations actively seek legitimacy, such forms were reduced to ceremony and the de-coupling of critical elements from institutionalised expectations and to make visible only those that conform to requirements,[536] In this respect it has by now been acknowledged by critics that NIT also did not totally rule out but rather play down strategic interests.[537]

Particularly successive researchers took the de-institutionalisation of a field as a main driver to argue the possibility for strategic institutional behaviour. For institutional change to 'bust loose' and de-institutionalisation to take place, a certain threshold or tipping point which disturbs the balance in a field is required.[538] These have been referred to as environmental or precipitating upheaval or jolts.[539] Amongst others brought about through major alterations to legal frameworks, political settings, socio-cultural models[540] or the dynamics underlying the collaboration between field players,[541] they create ambiguous, if not conflicting, and time-lagged signals which result in a large degree of uncertainty. Others even described such

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533 Cf. Greenwood/ Hinings (1996); Dacin (1997); Fox-Wolfgramm et al. (1998); Kondra/ Hinings (1998); Lawrence (1999); Phillips et al. (2000); Lounsbury (2001); Lawrence et al. (2002); Baum/ Rao (2004); Delmas/ Toffel (2004); Van de Ven/ Hargrave (2004); Delmas/ Toffel (2005); Schneiberg/ Clemens (2006).

534 Van de Ven/ Hargrave (2004), p. 266. As another example cf. DiMaggio (1988), p. 11.

535 DiMaggio (1991), p. 287.

536 Cf. Meyer/ Rowan (1977), pp. 344, 355-357; Rowan (1982), pp. 261-263. De-coupling here is different to that proposed by early organisational theorists (cf. Thompson (1967); Lawrence/ Lorsch (1967)) who refer to a structural de-coupling of the technical core while institutional scholars speak of ceremonial de-coupling.

537 Cf. Goodstein (1994), p. 350; Suchman (1995), p. 576.

538 Cf. DiMaggio/ Powell (1983), pp. 154-156; Jepperson (1991); Oliver (1992); Greenwood/ Hinings (1996), p. 1024; Tolbert/ Zucker (1996); Beckert (1999); Lawrence et al. (2001); Greenwood et al. (2002); Scott (2002); Baum/ Rao (2004); Hinings et al. (2004); Poole/ Van de Ven (2004); Van de Ven/ Hargrave (2004); Ebner (2008). For empirical studies cf. Singh et al. (1991); Hoffman (1997).

539 Cf. Meyer (1982); Newman (2000), p. 603; Greenwood et al. (2002), p. 60.

540 Some explicitly call this 'Zeitgeist' or ideology. Cf. Brint/ Karabel (1991), p. 343; Czarniawska/ Joerges (1996), pp. 30-32; Greenwood/ Hinings (1996), p. 1043; Jones (2001), p. 914; Ingram/ Silverman (2002), pp. 2-7; Rodrigues/ Child (2003), p. 2140.

541 Cf. Edelman (1990), p. 1417; Fligstein (1991), p. 317; Jepperson (1991), pp. 152-153; Oliver (1992); Baron et al. (1986); Haveman/ Rao (1997); Phillips et al. (2000); Kraatz/ Moore (2002); Lee/ Pennings (2002); Thornton (2002); Townley (2002); Baum/ Rao (2004), p. 241; Van de Ven/ Hargrave (2004). Others described the institutional environment as a faceted 'multi-level system' in that not only forces from within a field but also those from outside should be mentioned (cf. Seo/ Creed (2002), pp. 240-241; Poole/ Van de Ven (2004), p. 384), a depiction which can be compared with the macro-economical forces as depicted in business-oriented approaches (see above).

situations as organisations being 'bombarded'[542] with forces of change which may lead to "institutional war"[543]. At the same time such 'turbulent or ill formed'[544] organisational fields also open up opportunities for organisations to manoeuvre and "strategically put forth practices or models that strike external actors as appropriate or effective"[545] as well as "niches for "outlaw" entrepreneurs"[546] to embark on new tracks. The implementation of new laws, for example, not only constitutes a threat to a prevailing institutional setting but also opens up opportunities such as by leaving scope for interpretation and thus "for bootlegging incidental changes into organizations"[547], thereby legitimising unorthodox but revitalising experiments.[548] From this perspective the institutional environment can be seen as a pool of resources which serves as a backdrop for strategic behaviour that diverges from established actions.[549]

An even greater impact for the advancement of NIT, however, was the acknowledgement of agency power in form of a self-interested 'institutional entrepreneur'[550]. This introduced a totally new element and provided researchers with the possibility of integrating strategic choice without creating inconsistencies with the fundamental arguments underlying institutional theory. It also allowed bringing analysis from an aggregate field to an organisational level to explain individual organisational strategies and thus heterogeneous behaviour, 'freeing' NIT from the notion that institutional forces only result in isomorphism.[551] Due to this influential power, institutional entrepreneurs have also been called "the shock troops of innovation"[552] or, more moderately expressed, "fashion setters"[553]. Kondra and Hinings classify such fringe players as 'renegade' types which, knowingly or

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542 Cf. Scott (2004), p. 24.
543 Hoffman (1999), p. 352.
544 Cf. Fligstein (1991), p. 316; Van de Ven/ Hargrave (2004), p. 264.
545 Zimmerman/ Zeitz (2002), p. 422.
546 Suchman (1995), p. 594.
547 Meyer (1982), p. 533.
548 Cf. Edelman (1992); Campbell (2004).
549 Cf. Singh et al. (1991); Whittington (1992), p. 704; Meyer et al. (1993); Suchman (1995); Goodrick/ Salancik (1996), pp. 4-5; Oliver (1996); Beckert (1999), pp. 780-785; D'Aunno et al. (2000); Phillips et al. (2000); Seo/ Creed (2002), p. 241; Zimmerman/ Zeitz (2002), p. 418; Kumar (2003); Peng (2003), p. 278.
550 Cf. DiMaggio (1988), p. 14.
551 Cf. Schulze (1997); Beckert (1999), p. 789; Hoffman (1999), p. 367; Scott (2001), p. 75. For a review on the development cf. Jepperson (2002).
552 Etzioni (1987), p. 179.
553 Zimmerman/ Zeitz (2002), p. 426.

unknowingly, operate outside the institutional norm.[554] At the same time research has shown that this is also dependent on organisational characteristics in that large organisations, which generally are more visible and exposed to their environment and thus more likely to be singled out, often become targets of institutional actors while less visible ones are able to escape scrutiny.[555] Similarly, several researchers indicated that those organisations which have been successful in the past are more likely to 'get away with' deviating behaviour. Particularly these forms of organisational behaviour then serve as a blueprint that is copied by other field members and thus leads to change.[556] The temporal dimension underlying the institutional strategies will be looked at next.

4.3.4.2 Development of Strategic Environmental Responses over Time

Following the fact that change has not only become an integral part of NIT but is generally described as taking place as a process that is characterised by phases of de-institutionalisation and re-institutionalisation, organisational behaviour has been depicted as developing along by generally moving from one template to another.[557] Essentially, the development of institutional responses to environmental changes over time can be characterised as mirroring a "reflection of strategic choice to accommodate the institutional pressures"[558]. And while it was initially still found paradox that legitimacy could be created by organisations themselves,[559] it is acknowledged by now that organisations can mobilise and successfully promote new structures and repertoires of acting. In fact, they are not only capable of 'strategically legitimising'[560] but, when possessing the legitimacy, of 'creative destruction'[561].[562]

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554 Cf. Kondra/ Hinings (1998), in particular pp. 753-758. Also cf. Kellog (2006).
555 Cf. Scott (1992), p. 241; Greening/ Gray (1994), p. 490.
556 Cf. Greenwood/ Hinings (1993), p. 1074; Fligstein (1997); Lawrence (1999); Arndt/ Bigelow (2000); Newman (2000); Greenwood et al. (2002); Sherer/ Lee (2002), p. 107; Lewin/ Kim (2004); Van de Ven/ Hargrave (2004); Clemens/ Douglas (2005), p. 1207; Lu (2005); Bourdieu (2008), p. 364.
557 Cf. Greenwood/ Hinings (1996), p. 1026; Hinings et al. (2004), p. 304.
558 Hinings/ Greenwood (1988), p. 161.
559 Cf. Hinings/ Greenwood (1988), pp. 124-125.
560 Cf. Brint/ Karabel (1991); Fligstein (1991), pp. 316, 334; Selznick (1996), p. 273; Greenwood/ Hinings (1996); Fligstein (2001), p. 110; Zimmerman/ Zeitz (2002), p. 421; Hinings et al. (2004), pp. 307, 309;

The underlying notion of corporate behaviour in institutional approaches can therefore be depicted as ranging between an organisation's passive conformance, or acceptance, and its active drive. Even more, these responses again can be distinguished according to their degree of activity. While reference to the lifecycle concept (see above) has been made here, too,[563] the most frequently mentioned concept to categorise the development of institutional responses in institutional literature is the one established by Oliver. Distinguishing along a continuum from passive to active behaviour, Oliver developed a typology of strategic actions which organisations may enact as a "repertoire of behaviours"[564] in response to pressures from the institutional environment. According to Oliver, the most passive institutional strategy is that of acquiescing, followed by compromising, avoiding, defying, and manipulating as the most active strategy type. Also Suchman, despite only distinguishing between three main types of institutional strategies, i.e. conforming, selecting, and manipulating, not only sees these as fundamental forms of organisational behaviour but as characterising an increasing degree of organisational influence towards forms of pre-emptive measures.[565] Hinings et al. even find that by "wittingly responding to opportunities in order to capture advantage"[566] organisations may actually drive change and create a more favourable environment themselves – such as by interpreting and translating changes against the background of their own position, capabilities, commitments, and history as pointed out by others.[567]

Lewin/ Kim (2004); Scott (2004), pp. 11-13. For case study examples on the 'translation of organisational change' cf. Czarniawska/ Sevón (1996). One of the first empirical studies was conducted by Meyer (1982). For subsequent examples cf. Leblebici et al. (1991); Goodrick/ Salancik (1996); Kraatz/ Zajac (1996); Delmas/ Toffel (2004).

561 Cf. Beckert (1999), p. 786; Newman (2000), p. 615; Baum/ Rao (2004), p. 241. As this shows, reference to Schumpeter has been made here, too (also see above).

562 Cf. Aldrich/ Fiol (1994); Tolbert/ Zucker (1996); Galaskiewicz (1997); Clemens/ Cook (1999); Dyck/ Starke (1999); Kraatz/ Moore (2002); Hinings et al. (2004), pp. 314-317.

563 Cf. Steger/ Winter (1997).

564 Oliver (1991), p. 159.

565 Cf. Suchman (1995), p. 593.

566 Hinings et al. (2004), p. 311. From this perspective institutional change has also been defined as a "process that starts when one or several players perceive that they could do better with an altered agreement or contract" (Lamberg et al. (2002), p. 4).

567 Cf. Greenwood/ Hinings (1996), p. 1048. Also cf. Campbell (2004). At the same time Greenwood and Hinings pointed out that organisational characteristics may also hinder organisations from developing the necessary "action capability" (Greenwood/ Hinings (1996), p. 1041) to become more active, e.g. when being too deeply embedded in historical ties.

4.4 Applicability of the Business and the Institutional Perspective as a Framework for Analysis

After having analysed both approaches, a row of common as well as different characteristics can be determined. First of all, each is distinct with regards to the characterisation of the forces which constitute the respective business or institutional environment, the main actors and organisational goals necessary for survival in this environment, and hence strategic behaviour. To summarise, the focus of business-based approaches lies on a market-oriented perspective where organisations' strategic behaviour is directed at economic and competitive market forces, constituting what has here been termed the 'business environment'. From this perspective the organisational goal is to achieve an economically favourable product-market position to finally gain a competitive advantage. Transferring this to empirical reality as laid out in chapter III, the forces of competition and sustainability, for example, need to operate profitable and sustainable to not only retain customers but to satisfy their demands with regards to price and service, something not in focus in monopolistic markets. The institutional perspective again focuses on drivers from and strategic behaviour directed at the 'institutional environment', such as regulative, normative, and cultural-cognitive ones. Here, the organisational objective is to achieve legitimacy as the main criterion for survival and success. For incumbents in the European gas industry this means that the forces of competition and sustainability also require organisations to satisfy institutional actors such as authorities from the European Union as initiators and drivers of change, and society's expectations with regards to their behaviour. To achieve these goals, both perspectives propose different forms of strategic behaviour. The following table contrasts these differences.

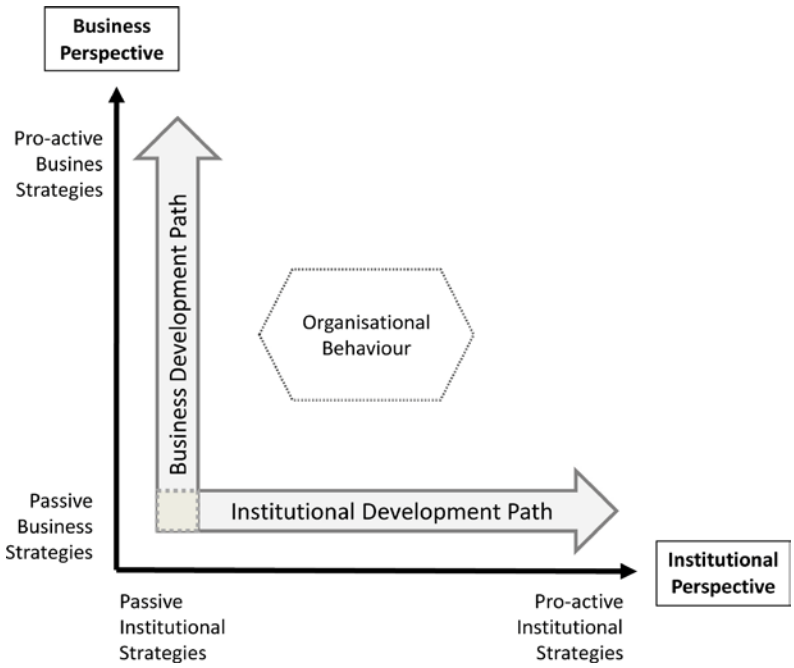
Table 2: [568] Comparing main characteristics of the Business and the Institutional Perspective

	Business Perspective	**Institutional Perspective**
Characterisation of the organisational environment	Business Forces (e.g. competition, substitution)	Institutional Forces (e.g. regulatory, normative, cognitive)
Main external actors	Business Agents (e.g. existing competitors, new rivals, suppliers, customers)	Institutional Agents (e.g. authorities, associations, society)
Organisational goals	Competitive advantage	Legitimacy
Strategic behaviour	Range of passive and active business strategies and tactics	Range of passive and active institutional strategies and tactics

At the same time both approaches not only allow taking account of a temporal dimension but depict organisational behaviour in response to environmental change as taking pace along a continuum which again is constituted by passive to pro-active strategies. This is illustrated in the figure below, where each perspective is depicted as an axis which again presents the development from passive to pro-active strategies. Based on the underlying notion inherent in both approaches that organisations' responses to environmental change tend to become more active over time, organisational behaviour has been portrayed as what has here been termed the 'Business Development Path' and the 'Institutional Development Path' (see figure below).

[568] Own figure based on insights gained above.

Figure 11:[569] Commonalities in portraying organisational behaviour in response to environmental change over time



A final conclusion that can be drawn at this point therefore is that the assumption of the applicability and necessity of these two approaches as the fundamental framework for empirical analysis, as formulated above, can be confirmed.

Having determined this, another assessment to be made is that both perspectives mainly emphasise the impact of external drivers on corporate behaviour and so neglect organisation-specific characteristics. At the same time statements in both approaches have referred to internal factors to enhance their explanation. In order to guarantee a comprehensive analysis, such an internal view is introduced in the following part to form a complementary perspective.

[569] Own figure.

4.5 Complementary Perspective – An Internal View to explain Organisational Behaviour in Response to Environmental Change

4.5.1 Introduction

"We are impressed by the impact of an organization's history and its ideology (...), by the role that personality and intuition play in decision making. To miss this in research is to miss the very lifeblood of the organization."[570] While already formulated by Mintzberg in 1979, the fact that organisational factors such as an organisation's size[571], its resources and capabilities as well as managerial perception and leadership play a critical role for explaining organisational behaviour has also been determined by several studies.[572] Fox-Wolfgramm et al., for example, found that despite the fact that regulatory forces to comply had become stronger across the whole industry and exerted homogeneising pressure, each company's strategic orientation also played an important role with regards to managing these forces over the course of time.[573] Similarly, Albert had pointed out a decade early that in order to understand organisational phenomena one had to take into consideration the underlying motives, aims or expectations.[574] Research on the oil industry again revealed that commitment from top management, strategic intent, vision and clear objectives as well as a change of beliefs and attitudes regarding overall benefits were pointed out as key success factors for explaining differences in behaviour. Particularly the person of the CEO, his capabilities, cognition and perception, able to turn a company from a 'lame duck' into a leading one by setting targets or even industry standards for others, has been shown to be critical.[575] Moreover, in addition to this empirical evidence it is also theoretically established by now

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570 Mintzberg (1979), pp. 587-588.

571 As variables for measurement the number of employees or sales may, for instance, be taken in empirical research. Cf. Finon et al. (2004), pp. 297-298.

572 Cf. Pfeffer/ Leblebici (1973), p. 273; Boeker (1989); Grant/ Cibin (1996), p. 185; Dyck/ Starke (1999); Siggelkow (2001); Taylor-Bianco/ Schermerhorn (2006).

573 Cf. Fox-Wolfgramm et al. (1998).

574 Cf. Albert (1988).

575 Cf. Grant/ Cibin (1996), p. 185; Green/ Keogh (2000), pp. 252-255; Jenkins (2000), p. 627; Stonham (2000), pp. 415-417; Kolk/ Levy (2001), p. 506.

that an internal view is essential to complement externally-oriented approaches in order to assure a comprehensive analysis. The most prominent approach to representing such an internal perspective is the RBV.

4.5.2 The Resource-Based View (RBV)

4.5.2.1 Origination

The first to point out the interaction of the external environment with management structures were contingency theorists.[576] Shortly after, also organisational theorists Cyert and March remarked that "the decisions of the firm are not always uniquely determined by its external environment"[577]. Emery and Trist (also see above) determined that in order to reach their strategic objectives organisations required 'distinctive competences'.[578] Research in the business strategy field again found that market conditions "are clearly not all that matters"[579]. Instead, as pointed out by the researchers, unique endowments, positioning and strategic choice likewise determined organisational success.[580] Among the first within the Industrial Economic discipline were Hatten and Schendel who, based on empirical studies, raised the notion of the impact of organisational characteristics and heterogeneity within an industry.[581] Similarly, Rumelt, building on insights from empirical analysis, found that firms within the same industry compete with considerably different bundles of resources and apply distinct approaches. He remarked that such results "either contradict or stand completely outside the neoclassical theory of the firm and the standard models used in industrial organization"[582] and referred to Schumpeter and his depiction of innovating entrepreneurs as possessing 'special

[576] Cf. Burns/ Stalker (1961) (e.g. p. 121); Woodward (1965); Lawrence/ Lorsch (1967).
[577] Cyert/ March (1963), p. 20.
[578] Cf. Emery/ Trist (1965), p. 25.
[579] Rumelt (1991), p. 168.
[580] Cf. Tosi/ Carroll (1976), p. 155. Later especially Rumelt (1991). The notion of strategic choice had already been emphasised by Child who pointed out that organisations had a room to manoeuvre despite being subject of strong environmental influences. Cf. Child (1970); Child (1972); Child (1997), in particular p. 70.
[581] Cf. Hatten/ Schendel (1977); Hatten et al. (1978). Also cf. Cool/ Schendel (1987).
[582] Rumelt (1984), p. 558.

information' which allowed them to be unique and create monopoly rents.[583] Dierickx and Cool again formulated that the heart of a firm's competitive position was its 'bundle of assets'[584] and Chakravarthy pointed out that the value of future strategic options and the differentiation from competitors was fundamentally determined by the accumulation of slack resources.[585] Essentially, an organisation's resource endowment reveals to which degree it is able to enter markets with above-average return. The creation of a unique competitive position again is achieved through the pattern of resource deployment.[586] While the RBV has been criticised for its one-sided perspective on quasi-rents and for ignoring external drivers as emphasised by market-based approaches,[587] its interdependency with market-based perspectives is acknowledged by now.[588] Its contributions as a theoretical framework are laid out next.[589]

4.5.2.2 Fundamentals

4.5.2.2.1 Terminological Delineation

Basically, representatives of the RBV[590] see organisational success as dependent on and inherent in corporate resources, turning the externally oriented explanatory approaches towards the inside of organisations which, in resemblance to the structure-conduct-performance scheme (see above), has also been described as a 'resource-conduct-performance chain'[591]. Especially in times of growing environmental turbulence this perspective became

583 Cf. Rumelt (1984), pp. 560-561.
584 Cf. Dierickx/ Cool (1989), p. 1504.
585 Cf. Chakravarthy (1986).
586 Cf. Hofer/ Schendel (1978), p. 25.
587 Cf. Peteraf (1990), p. 10; Barney (1991), p. 100.
588 Cf. Dierickx/ Cool (1989); Amit/ Schoemaker (1993); Peteraf (1993); Teece et al. (1997).
589 For a discussion on whether the RBV constitutes a 'theory' see Priem and Butler (2001) and Barney's response to their article (cf. Barney (2001)).
590 Among the most prominent and most cited ones are Wernerfelt (1984); Dierickx/ Cool (1989); Peteraf (1990/ 1993); Prahalad/ Hamel (1990); Barney (1991/ 1992); Teece et al. (1991).
591 Cf. Rasche (1994), p. 4.

increasingly important.[592] Tushman and Anderson, for instance, had pointed out relatively early that organisational resources may constitute a limiting factor in that a lack may constrain market and/ or product expansion.[593] Despite the wide application of the RBV there still is neither a commonly acknowledged definition of the term 'resource' nor a clear delineation of the RBV.[594] Based on literature research one could say that the expression 'RBV' encompasses all concepts that aim to explain organisational success on the basis of the existence of unique organisational characteristics.[595] While Wernerfelt, as one of the early writers, broadly depicted resources as "anything which could be thought of as a strength or weakness"[596] of a company, it was particularly Barney who progressed the RBV. He defined resources as including assets, capabilities as well as processes, corporate attributes, information, and knowledge which are controlled by the firm and enable it to develop and implement strategies to improve efficiency and effectiveness.[597] Later, Barney also included luck as a resource for success.[598] Collis and Montgomery further classified resources into tangible and intangible ones and into organisational capabilities. While tangible resources are those which are of physical nature and appear on a company's balance sheet, intangible ones are not seizable and cannot be easily capitalised upon, such as competencies or an organisation's culture and image. Capabilities again refer to human capital which includes the employees' know-how, skills as well as their experience and motivation. According to the two authors organisational capabilities are especially critical as they determine the strategic value of a company's resources.[599] Makadok again recently defined resources as 'an observable asset' which can be valued and traded and thus also integrated brands or patents, previously categorised as intangible, as strategic assets.[600]

An extension of the notion of resources and capabilities is that of 'core competences'. As in the case of categorising resources, different terminologies also exist for this concept as

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592 In this respect Hart relatively early pointed out the importance of the 'biophysical' environment and respective strategies for sustainable development. Cf. Hart (1995).
593 Cf. Tushman/ Anderson (1986). Also cf. Anderson/ Tushman (1990).
594 Cf. Rasche (1994), p. 38.
595 For an overview see Bürki (1996), pp. 27-31; Priem/ Butler (2001), p. 24.
596 Wernerfelt (1984), p. 172.
597 Cf. Barney (1991). For Barney's definition of resources see page 101.
598 Cf. Barney (2001), p. 50.
599 Cf. Collis/ Montgomery (1997).
600 Cf. Makadok (2001).

becomes apparent in the various terminologies applied - such as core competences, core competencies, core or strategic capabilities. A common trait, however, is that they generally enable organisations to transform inputs, which are also accessible to competitors, into outputs more efficiently and/ or with greater quality than rivals.[601] Others again pointed out that they enable organisations to gain strategic control during change.[602] Here, the term 'core competencies' is used as proposed by seminal researchers Hamel and Prahalad who define them as "the collective learning in the organization"[603] and, as a fundamental characteristic, point out their ability to produce several different outcomes.[604] This is further enlarged on in the following.

4.5.2.2.2 The Meaning of Resources and Capabilities for Organisational Behaviour

The basis of organisational behaviour within the RBV is formed by the consideration that above-average returns are inherent in internal resources which make organisations specific/ heterogeneous and form the basis for strategic behaviour and competitive advantage over rivals.[605] The heterogeneous resource endowment, as also already pointed out by Penrose[606] who defined the business firm as "a collection of productive resources"[607], again is seen as an organisation's strategic success potential. This explains the differences in organisational performance of companies within an industry or strategic group.[608] Within the RBV researchers therefore also speak of rents rather than profits in that they stem from resources that are designated to a certain use and lose their value if applied differently.[609] In this respect Grant, for example, pointed out that monopoly rents from market power are actually based on

601 Cf. Lenz (1980b).
602 Cf. Band/ Scanlan (1995).
603 Hamel/ Prahalad (1990), p. 82.
604 Cf. Hamel/ Prahalad (1990), p. 81.
605 In this respect Denrell et al. formulated that "firms are distinguished by the resources they command" (Denrell et al. (2003), p. 977).
606 Cf. Penrose (1959), pp. 75-76.
607 Penrose (1956), p. 31.
608 Cf. Barney (1986b), p. 1231; Barney (1991), pp. 99-102; Collis (1991), p. 2; Peteraf (1990), p. 1; Amit/ Schoemaker (1992), p. 7; Peteraf (1993), p. 186.
609 Cf. Rumelt (1987), p. 142; Peteraf (1993), p. 180.

organisational resources.[610] Later, this consideration was extended in that the ownership and the effective deployment of such 'assets' allowed companies to obtain a competitive advantage while functioning as individual isolating mechanisms which protect the erosion of profits and competitive advantage.[611] Others draw attention to the value of superior managerial skills as an isolating mechanism and rent-generating corporate resource.[612] Diversification from a resource-based perspective can then be explained in that it allows firms to capitalise on their existing resources and capabilities when expanding into other businesses.[613] Empirical studies found related diversification where firms 'stick close to their knitting'[614] to yield better results than unrelated diversification.[615]

In order to provide such benefits, however, and especially as rivals are generally able to obtain similar or substitute resources of successful organisations in the market, the sustainability of their contribution is dependent on the notion that they are rare, not-substitutable, "difficult if not impossible to imitate"[616] and imperfectly mobile.[617] Barney again added that their potential must be fully exploitable.[618] Endowments fulfilling these criteria are inherent in an organisation's historical development and learning path as these are unique, not replicable and thus not imitable while at the same time being highly valuable.[619] From the notion that "history matters"[620] Dosi et al. derive that where an organisation can go is "a function of where it has been"[621]. Based on such historical decisions made in the past, organisations are tied to a certain track which influences its future development, such as

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610 Cf. Grant (1991), pp. 117-118.
611 Cf. Rumelt (1984), p. 568; Wernerfelt (1984), p. 173; Teece (1990a); Collis/ Montgomery (1995). Teece applied this consideration to compare the structure and organisation of the natural gas industry in the U.S. and Germany. Cf. Teece (1990b).
612 Cf. Castanias/ Helfat (1991).
613 Cf. Penrose (1959); Yip (1982); Haveman (1992).
614 Cf. Peters/ Waterman (1982).
615 Cf. Rumelt (1974).
616 Teece et al. (1991), p. 19.
617 Cf. Dierickx/ Cool (1988), p. 7; Peteraf (1993).
618 Cf. Based on these four characteristics Barney established the so called 'VRIO-Framework' as an abbreviation for Value-Rarity-Imitability-Organisation Framework. Cf. Barney (1997), p. 173.
619 Cf. Penrose (1959), p. 48; Cohen/ Levinthal (1990), p. 135; North (1990), p. 76; Reed/ DeFillippi (1990), p. 91; Barney (1991), p. 107; Collis (1991), p. 20; Teece et al. (1991), p. 27; Dosi et al. (1992), p. 20.
620 Alt/ North (1990), p. vii. Also cf. Collis (1991), p. 51
621 Dosi et al. (1992), p. 20.

investment commitments which constitute sunk and switching costs.[622] Moreover, the fact that resources and capabilities are embedded within an organisational specific context and thus are strongly interdependent, makes them valuable only within such organisational routines or patterns of behaviour which again constitute an organisation's "most important form of storage"[623] of operational knowledge.[624] Teece similarly remarks that a "firm's performance is a function of deeply engrained repertoires"[625]. Critically, and together with competitors' bounded rationality and absorptive capacity such constitutions create a situation of 'causal ambiguity' which leaves competitors uncertain about the real basis of success potentials and thus functions as a barrier to imitation.[626] Additionally, being able to draw on historical experience, as another firm specific characteristic, prepares organisations to better assess and opportunise on environmental change and hence create a competitive advantage.[627] At the same time it has been pointed out that such commitments and dependencies may constitute lock-ins which make organisations prisoners of their past and thus hinder response to environmental change and the creation of future success potential.[628] Or they may lead organisations into a 'competency trap', so that they rather invest in existing businesses than develop new ones more appropriate for a changed external environment.[629]

Thus, the complementary value of the internal perspective particularly lies in promoting internal sources as enabling organisations to encounter environmental threats while exploiting opportunities to generate sustainable success and secure survival. In this respect researchers pointed out the existence of 'strategic windows of opportunity' that have to be considered in order to take advantage of 'commitment opportunities' and that organisations constantly need to augment critical competitive capabilities to be able to act.[630] From a core competence perspective those organisations which are able to do so fastest are likely to be the most

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622 Cf. Collis (1991d), p. 1; Collis/ Montgomery (1996), pp. 49-50.
623 Nelson/ Winter (1982), p. 99.
624 Cf. Doz/ Hamel (1991), p. 6; Amit/ Schoemaker (1992), pp. 12-13.
625 Teece (1984), p. 106.
626 Cf. Cohen/ Levinthal (1990), p. 128; Dierickx/ Cool (1990), p. 13; Barney (1991), p. 108; Collis/ Montgomery (1996), p. 50.
627 Cf. Denrell et al. (2003).
628 Cf. Levitt/ March (1990), pp. 16-22; North (1990), p. 17; Ghemawat (1991), p. 17. Also cf. Ghemawat (1993).
629 Cf. Levitt/ March (1988), p. 322; Teece et al. (1991), p. 32.
630 Cf. Abell (1978), p. 21; Barney (1991), p. 100; Collis (1991), pp. 3-4; Teece et al. (1991), pp. 19, 30-32.

successful ones.[631] These considerations also show the interdependency of an organisation's internal situation with its environmental surroundings, and thus with externally oriented approaches.[632] What this means with regards to complementing business- and institutionally-based approaches concluded on in the following.

4.6 Conclusion – Requiring an Integrated Explanatory Framework

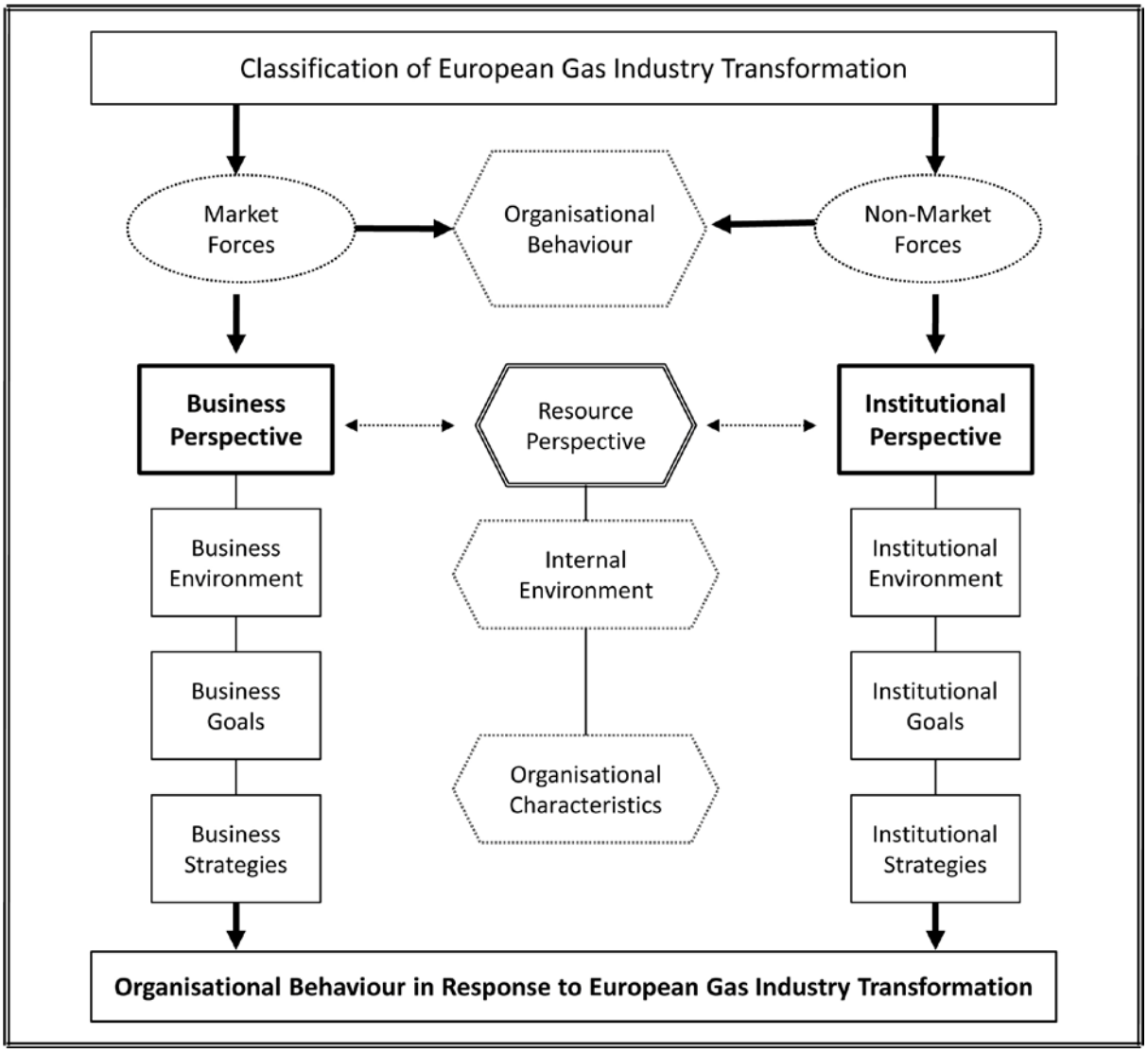
Essentially, the review of the above theoretical approaches has revealed that they are not only relevant but essential for being able to conduct a comprehensive empirical analysis of the behaviour of European gas incumbents in response to environmental changes as enforced through changes in European energy policy over the past decade. That is, the Business Perspective is important as it captures such environmental forces, goals and organisational behaviour identified as market-related, while the Institutional Perspective covers those here addressed as institutional ones. The Resource Perspective on the other hand, apart from balancing the predominantly external views, serves as a complementary approach for linking the business and the institutional perspective.

These interrelations which simultaneously constitute the explanatory basis for analysis are shown in the following illustration.

631 Cf. Prahalad/ Hamel (1990), p. 81. For an extensive discussion on the creation of competitive advantage through core competences see Rasche (1994).

632 In the Strategic Management literature this is addressed within the SWOT framework which serves as the basis for fitting organisational Strengths (S) and Weaknesses (W) with environmental Threats (T) and Opportunities (O) for developing an appropriate corporate strategy. Cf. Priem/ Butler (2001), p. 25.

Figure 12:[633] Fundamental theoretical framework - setting the basis for empirical analysis



Having established this as the underlying explanatory framework, a model must now be determined which embraces these considerations allows conducting empirical analysis accordingly. This will be done in the proceeding chapter, beginning with a review of existing empirical studies dealing with the change of the European gas industry.[634]

[633] Own figure.
[634] This includes literature existing until the year 2005 when beginning this thesis.

CHAPTER V DEVELOPING AN INTEGRATED MODEL FOR EMPIRICAL ANALYSIS

5.1 Reviewing Relevant Literature

5.1.1 Status of Empirical Industry Studies

5.1.1.1 Insights from Research on European Gas Markets

One of the first and at the same time few publications which focussed on European gas markets and organisational behaviour within was issued by Chevalier, who considered possible strategic reactions in response to pending liberalisation, in 1992. Being practically oriented without specific reference to theoretical approaches, Chevalier assumed that companies needed an increased 'strategic alertness' and defensive as well as offensive strategies to fend off threats from new entrants. As a first defensive 'reflex' he found gas companies to have established a powerful lobby in Brussels to prevent TPA from being implemented. He himself proposed that companies should achieve cost advantages by exploiting economies of scale and scope and by reducing prices as much as possible in order to defend themselves. For British Gas, within the U.K. as the first European market to be liberalised (also see above), such measures lead to a "Mont Blanc of cash flow"[635], and may thus have served as a role model for other European gas companies. As offensive strategies Chevalier proposed the backward integration via acquiring production sites or exploration licences from oil companies while also not ruling out mergers with these. At the same time he pointed out the difficulty and costliness of such upstream integration, until then only successfully pursued by British Gas which in return turned into the only truly 'Global Gas Company' at that time, again serving as an example for the 'rest' of the European gas industry. Offensive activities in the downstream area according to Chevalier should embrace

[635] Chevalier (1992), p. 182.

segmentation and customer focus measures, differentiation and diversification as well as forward integration into services. On the industry level, he detected a tendency towards stronger ties between up- and downstream activities and projected an increasing concentration in the industry.[636] In a paper published in 1999, Percebois looked at the European gas deregulation process in general and the role of oil companies in this restructuring process, indicating the development towards the emergence of "oil-electro-gas"[637] oligopolies. Radetzki, in the same year and too with a focus on organisational responses to upcoming competitive forces through liberalisation, believed that companies would increasingly merge and that strategic alliances would become the most significant aspect of the 21st century European gas industry.[638] But also he did not apply a theoretical basis for his study. Others were Ellis et al. One year later they published an article on structural change in European gas markets after liberalisation. Believing the SCP model not to be an appropriate approach as the empirical situation required an understanding of dynamics involved, they instead referred to insights from Institutional Economics and Strategic Management. Being interested in the structural change of Europe's gas markets after liberalisation and their development until 2020 in dependence of companies' behaviour, thereby putting the firm at the centre of their study, they aimed to analyse how players moulded their market environment. Taking such a market-oriented perspective, the authors distinguish between defensive strategies in form of market foreclosuring tactics to preserve power and market share, and pro-active strategies to increase organisational value by acquiring market share and/ or profitability. As possible actions they see the building of market barriers, the carrying out of M&As as well as of demergers, and vertical, horizontal, or lateral integration along and across the gas value-chain. Based on these possible strategic activities they derive three scenarios which could result as a consequence: One where oligopolistic structures are maintained but also new opportunities sought, a second that is characterised by vertical integration along the gas value-chain where companies try to exploit their monopoly power, and a third one called 'pull-the-plug scenario' which is characterised by competitive structures that are strongly dependent on actions by major gas suppliers like Gazprom. By concluding that 'how the future structure will look like

636 Cf. Chevalier (1992).
637 Percebois (1999), p. 14.
638 Cf. Radetzki (1999), p. 23.

mainly depends on who wins the struggle for change'[639], they adhere substantial power to organisational behaviour.

While the studies looked at above reveal forms of organisational behaviour found in the business-oriented approaches determined in chapter IV, the researchers have neither considered the likely impact of the other goals of European Energy Policy on organisational behaviour nor their impact in form of what above has been classified as institutional forces. To do so one has to look at research focussing not only on the gas but also other energy industries and geographical markets. This will be done in the following section.

5.1.1.2 Insights from Research on the Energy Industry

Particularly studies from the oil industry provide such examples. It was, for instance, found that as regulatory and public pressures were increasing, companies began to support ecological measures. In this respect British Petroleum was mentioned as having taken a pro-active first-mover approach by turning its slogan into 'Beyond Petroleum' in order to create a 'greener image'. It was also pointed out that, over the course of time, this had attracted more attention from institutional stakeholders and made the company a subject of public scrutiny and criticism. In addition to this general observation, the same study also revealed the existence of different types of behaviour although companies were engaged in the same industry, a finding that was traced back to differences in national socio-cultural and regulatory factors. Thus, while in the U.S. lobbying was commonly accepted as a way to prevent regulatory measures from being implemented or the legitimacy of institutions such as the IPCC being challenged, companies in Europe on the contrary felt a much stronger pressure from their stakeholders "for a constructive approach to secure credibility, legitimacy, obtain reliability and a seat at the table"[640]. Hence, as the lack of social legitimacy was perceived as a fundamental threat, approaches were shown to have been much more cooperative and

[639] Cf. Ellis et al. (2000), p. 308.
[640] Kolk/ Levy (2001), p. 503.

characterised by voluntary, pre-emptive measures for which governments, as a 'quid-pro-quo deal', refrained from imposing certain regulations.

An early example of mentioning Institutional Theory and using the example of a gas company – but with explicit reference to the U.S. market and without specifically referring to energy policy changes – were Ritti and Silver in an article published in 1986. They revealed that as a response to accusations by the census bureau the gas company questioned the bureau's legitimacy, a form of behaviour above classified as defiance. As a general outcome of their study the authors proposed that as an organisation's legitimacy and respective resource acquisition was essential for survival, they should apply myth-building strategies to secure their legitimacy.[641] Another, relatively early, example is provided by Russo. By applying TCT to analyse companies' reason for backward integration and diversification in the electrical utility industry, he not only included regulators as part of a utility's task environment but also emphasised that companies needed a strategy to react to regulators. He found that as companies no longer were able to "include the troublesome exchange partner"[642], i.e. internalise the regulator, without "costly haggling"[643], they brought in relevant actors to substitute the lack of integration. While this can be assessed as an institutional strategy as laid out above, Russo did not point this out as such or refer to Institutional Theory specifically.

Only very few examples can also only be found with regards to studies having been built on a combination of insights from business-, institutional- and resource-oriented approaches. Amongst the few that did consider this was Midttun. He criticised the shortcomings of business-based approaches – such as the overemphasised focus on shareholders' investments. Yet again he did so for the energy markets in general, not with a focus on the gas industry. Still, he claimed that "the modern corporation has a responsibility to serve the interests of multiple stakeholders"[644] and pointed out the need to also consider a perspective that supplements "the extremely rationalistic Williamsonian position with a range of 'softer' motivational elements that have also proven to be critical factors in organisational

641 Cf. Ritti/ Silver (1986).
642 Russo (1992), p. 16.
643 Russo (1992), p. 15.
644 Midttun (2001), p. 18.

development"[645]. For the analyses of corporate strategies in the changing European electricity industry, and particularly with regards to DiMaggio and Powell's mechanisms of institutional isomorphism, Midttun himself proposes the application of the 'new institutional school in organisation theory'.[646] For other examples though one again has to include studies on the American electricity market. Kumar, for instance, in 2003 published an article analysing the management of alliances in the independent U.S. power generation industry by referring to TCT, SM and at least the notion of institutional legitimacy.[647] In an example issued one year later, Schneiberg then draws on insights from economic and institutional theory to explain the existence of different organisational forms in the American electrical utility industry before having been reformed. The strongly institutionally embedded structures were assumed not to have provided room for heterogeneity when looking only through an institutional lens.[648] Others again built their analysis on one theoretical pillar while incidentally also referring to insights from the other two. Studying the corporate behaviour of the British electricity company PowerGen over the period between 1991 and 1996 Jennings, for instance, built his analysis on Miller and Friesen's (1977) strategic archetypes (see above) while at least pointing out the importance of managing governmental and regulatory relations and of organisational capabilities as being key to continuous profitability. He did not further advance analysis in this respect though.[649]

From the examples provided by Russo, Midttun and others it can be derived that utilities have responded differently to ecological environmental regulation. There are those companies which engaged in cross-border transactions, those which 'diversified out of reach' into new business domains, those which dis-integrated functions as a way to escape institutional pressures, or those which adopted voluntary measures such as green certificate trading.[650] Szulanski and Amin again mention the example of a utilities company which, as an attempt to break with the past, embarked on the exploration of 'radically different approaches to leverage its capabilities', such as developing an electric car, setting up a consultancy, or

[645] Midttun (2001), p. 17.
[646] Cf. Midttun (2001), p. 2.
[647] Cf. Kumar (2003).
[648] Cf. Schneiberg (2004).
[649] Cf. Jennings (2001), pp. 391-401.
[650] Cf. Russo (1992), p. 24; Midttun et al. (2001), pp. 412-413; Albrecht (2004).

building an energy theme park. Although initially judged as "wild and impractical ideas"[651], they in the end allowed the company to enhance its legitimacy. Although with no specific reference to theory the example indicates the importance of corporate resources for organisational legitimacy.

In addition to the fact of having to look at studies from other sectors to find indications of researchers having included insights from several approaches in their analysis, this also holds with regards to the temporal dimension. A comprehensive study in this respect was carried out by Midttun and others, analysing strategic configurations of European energy companies in different phases in response to increasingly complex and dynamic European energy markets since liberalisation in 1998. In each phase they found dominant patterns of strategic configuration such as a strong tendency towards diversification, but also detected a change in behaviour between the two phases, such as towards a larger degree of functional specialisation while reducing vertical integration.[652] A similar observation was also made by others, showing, for example, that while initial strategic behaviour after liberalisation was characterised by reactive tactics, such as improving operational efficiency and defending themselves against new entrants, a development towards more active behaviour which was guided by long-term strategy planning towards 'corporate reshuffling' in form of divestments could be observed after a while.[653] This was also detected by researchers having studied organisational behaviour after U.K. electricity market liberalisation. Thomas, for instance, showed that when facing the possible threat as well as the real fact of increasing competition, a first response by incumbents was to defend their traditional core business by integrating vertically up- and down the value-chain, often buying their own customers, i.e. distribution companies, in order to compensate for the loss of market share elsewhere. Even as they came under severe scrutiny from financial institutions to increase their profits - while regulation was eroding their core business - and although large sums of money were spent on public relations in order to establish an image of a responsible ethical company, the focus was primary directed at defending existing businesses by generating short-term commercial

[651] Szulanski/ Amin (2001), p. 544.
[652] Cf. Midttun (2001); Midttun/ Omland (2004), pp. 273-281.
[653] Cf. Tolmasquim et al. (2001), pp. 355-373.

success and increasing shareholder value instead of building new ones.[654] Jennings (see above) again found that driven by a substantial loss of market share due to increased competition and in anticipation of a stricter regulation to come, PowerGen, following a vision of creating a globally integrated utility, had aimed for developing long-term growth opportunities and new sources of income by building on its existing capabilities and using efficiency gains from and expertise in core business to finance and strategically advance the new path. The process of developing from a single to a global multi-utility business was characterised by a major phase of divisional reorganisation to be followed by the creation of a whole new cluster of business units to take advantage of new business opportunities in new product and geographical markets.[655]

Also research on other European utility markets and companies brought about similar results. In response to increasing uncertainty and pressure through competition, it could be shown that incumbents became concerned with efficiency and securing profits, a fact which showed as tactics of cost cutting and vertical integration.[656] Midttun found vertical integration to be applied as an active tactic to offensively access new businesses and/ or resources to increase market power or to enable differentiation by being closer to the market and so to finally gain a competitive advantage from changing constraints.[657] A study on electricity companies from Germany, Sweden and the U.K. revealed that in the first phase during early market opening, when regulators still relied on new entrants to create competition instead of regulatory intervention and incumbents still enjoyed a comfortable profit margin, some were "frantically buying"[658] assets along the whole value chain in order to expand fast. In 2004, nearly one third of European respondents to PricewaterhouseCoopers' (PWC) sector study, e.g., defined their gas strategy as having been driven by the aim to gain full capability along the value chain.[659] Thomas mentions examples of gas companies having taken the opportunity of relatively low gas prices to newly enter or augment their electricity generation business, particularly by investing in new and modern CCGT plants. Electricity companies again were

654 Cf. Thomas (2001).
655 Cf. Jennings (2001), pp. 391-401.
656 Cf. Kaserman/ Mayo (1991); Ghobadian et al. (1998), p. 80; Jensen (2003), pp. 34-35; Knell (2004), p. 17.
657 Cf. Midttun (2001), pp. 9-14.
658 Allas (2001), p. 21.
659 Cf. PWC (2004a), p. 14. Also cf. PWC (2005), p. 9.

shown to have diversified into a variety of unrelated, non-core activities to become multi-utilities after liberalisation.[660]

Research on the oil industry showed that in response to fundamental environmental change the major oil companies, in what was called a 'resistance phase', initially continued their business as usual before striving for growth. This was particularly the case when initial efficiency measures turned out not to be sufficient anymore.[661] Oil companies then began to expand geographically, to engage in related (gas, coal) as well as more unrelated (chemicals, solar energy, and nuclear power as a "prudent hedge"[662]) and even totally unrelated (forestry, facilities) businesses. Other research from this industry revealed that oil companies which had extended their value chain by integrating into the natural gas pipeline business had achieved positive effects on their stock ratings.[663] Weston and Siu even see the definition of an energy company having changed from one based on coal (50 years ago) to one based on oil (20 years ago) and further to one centering on oil-and-gas. For the future they predicted that energy companies would turn into gas-and-electricity firms.[664] While this only includes energy businesses in general, others found a consolidation towards 'super utilities' as players diversified into businesses not directly related to energy, such as water and telecommunications,[665] to become multi-infrastructure utilities, and even into facility management and financial services. Such developments further drove cross-industry integration. At the same time the analysis along a temporal dimension also enabled to reveal that for some players these expansions had led onto a path of 'disastrous diversification' so that in a 'phase of accommodation' such businesses were divested again.[666] Others thus believe that the integrated business model will become obsolete and that the industry will

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660 Cf. Thomas (2001).
661 Cf. Stonham (2000), pp. 417-418.
662 Auty (1983), p. 9.
663 Cf. Edwards et al. (2000).
664 Cf. Weston et al. (1999), p. 174.
665 While the telecommunication business as a grid based industry shares some general feature with the energy industry, a very specific case for the integration between electricity and telecommunication companies has been the consideration to use the transmission grid also for the transportation of telecommunication. Cf. Midttun (2001), p. 6.
666 Cf. Ghobadian et al. (1998), p. 81; Guizot (1998), pp. 31-32; Jenkins (2000), p. 623; Petrovic (2000), p. iii; Babu (2001), p. 111; Midttun et al. (2001), pp. 410-411; Thomas (2001); Tolmasquim et al. (2001); Dronnikov et al. (2003), pp. 50-51, 86-88; PWC (2003b), pp. 12-18; Knell (2004), p. 17.

move to a structure where 'value-chains belong to a bygone age' with specialist companies focussing on a certain value-chain activity.[667] Similarly, the observation of a change of behaviour over the course of time was also made with regards to organisations' phases of internationalisation.[668] Others researchers in empirical studies on deregulation of U.S. and European electricity markets and on change in the oil industry, included a temporal aspect in order to show the general importance of moving from rigid to strategic corporate planning and of aligning resources and capabilities in order to account for increasing environmental dynamism.[669]

Notably, while this review has provided evidence for the benefit of considering a temporal dimension to capture a change of organisational behaviour over time, it has so far only disclosed examples classified as business strategies and tactics. In fact, from an institutional lens only few can be found for the gas or even energy industry. Within Ritti and Silver's study (see above) an indication can at least be found of the gas company analysed having moved from a position of resistance where it tested the authority's legitimacy to one where it provided its acknowledgement of the respective authority as evidence it was fulfilling expectations.[670] From a theoretical classification this could be depicted as a tactic of window dressing and thus as an organisational move from compromising to avoiding behaviour. Apart from this though no further empirical studies on change over time of gas or energy companies can be found. At the same time does the adoption of an institutional perspective enable the researcher to look at results found in studies on other energy industries as above from a different angle. This, for instance, holds with regards to the common development mentioned by several researchers in terms of an increasing convergence of oil, gas and electricity markets as, for instance, oil majors entered the gas business to compensate for declining growth possibilities in oil production while others were depicted as discovering their 'passion for electricity'[671] or 'marrying their electricity and gas activities'[672]. In addition to this, also

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667 Cf. Stonham (2000), p. 414; Keers (2002), p. 12.
668 Cf. Ghobadian et al. (1998), p. 81; Maier/ Lukas (1999), pp. 362-366; Midttun et al. (2001), pp. 399-408; Seiferth/ Hannes (2002); Finon et al. (2004), pp. 320-321. Also cf. Finon/ Midttun (2004).
669 Cf. Dyner/ Larsen (2001); Grant (2003).
670 Cf. Ritti/ Silver (1986).
671 Cf. Hartmann (2000). Translation by author.
672 Cf. Midttun (2001), p. 20; Thomas (2001), pp. 121-124; Dronnikov et al. (2003), p. 86; PWC (2003a), p. 11.

other players were 'folding their arms' around the gas, oil and electricity industry and thereby increasingly blurring the lines between these three.[673] The diversification into multi-utility businesses to achieve growth and the internationalisation to achieve synergies after liberalisation has in fact been assessed as a global phenomenon.[674] This also is the case with the industry-wide waves of M&As which were observed by others.[675] From an institutional perspective the observation of common forms of behaviour could indicate a homogeneous development across the industry, evoked by a common perception[676] or even "conscious parallelism"[677] within the same organisational field, such as by lawyers that "have ascended the utility ranks"[678] as remarked by Russo.

Having reviewed the status of empirical research and having revealed that several gaps exist, the following part will lay out the status of research from a theoretical perspective while also considering insights from other industry studies.

5.1.2 Status of Theoretical Research

5.1.2.1 Shortcomings in Prevailing Approaches

Although constituting a jump ahead of conclusions, this section shall be introduced by stating that also the review of theoretical work - or other sector studies - has not revealed the existence of an appropriate model for analysis. What has been found though is a development of theoretical discussion towards the adoption of an integrated perspective. While this will be enlarged on in the second part, the development towards an integrated approach has been fuelled by critical discussions on the shortcomings of each approach. This will be reviewed next.

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673 Cf. Midttun (2001), p. 6; Pinnock (2002), pp. 5-6; Scheer (2002), p. 57; Baranes et al. (2003), p. 9; PWC (2003a), p. 9; Knell (2004), p. 16; PWC (2004b).
674 Cf. Midttun (2001), p. 6; Thomas (2001), pp. 126, 129.
675 Cf. Stonham (2000), pp. 417-418.
676 Cf. Thomas (2001).
677 Grant/ Cibin (1996), p. 169.
678 Russo (1992), p. 14.

Fundamentally, shortcomings have been identified for each of the theoretical approaches depicted above. Business-based approaches essentially have been criticised for their 'culture of short-sightedness'[679] on market criteria and for defining success solely based on economic criteria such as profitability and market share maximisation, while neglecting what above has been classified as 'non-market' drivers.[680] Porter, for instance, seeing the industry environment and competitive drivers as "the key aspect of the firm's environment"[681] has been criticised for excluding political and social forces, and for 'lulling' analysts into a feeling of security while blinding researchers as well as practitioners regarding the impact of these forces on business strategies and their outcomes. Particularly in cases where influences from the state are relatively high and companies are not allowed to go out of business, the assumption that economic criteria are the essential ones has been pointed out as "absurd"[682]. Or, as paraphrased by a government official in an example deployed by Jacobides: "What you economists don't see, is that (…) there are other interests that can be more important"[683]. Moreover, although some researchers from the business field, amongst others driven by the stakeholder approach,[684] did consider socio-cultural trends and public policy issues,[685] and although insights from the Strategic Management literature further extended this early approach to include political-legal and social drivers, this remained restricted to a focus on the above mentioned business-oriented goals, while neglecting the institutional environment and thus the issue of legitimacy.[686]

Adopting solely a business-oriented approach can thus be said to leave an explanatory vacuum to elucidate certain phenomenon, such as why organisations do not necessarily strive for efficiency.[687] Also Williamson (see chapter IV), despite having considered government structures as embedded in an institutional environment, addressed this with regards to

679 Cf. Selznick (1996), p. 272.
680 Cf. Pettigrew et al. (1992); Aharoni (1993), p. 35; Freeman (1999), pp. 164-165.
681 Porter (1980), p. 3.
682 Carroll et al. (1988), p. 237.
683 Jacobides (2005), p. 488.
684 Cf. Freeman (1984); Rühli/ Sachs (2005).
685 For an overview cf. Fahey/ Narayanan (1986).
686 Cf. Haunschild (1993); Aldrich/ Fiol (1994); Bonardi et al. (2005), pp. 409-410.
687 Cf. Roberts/ Greenwood (1997), p. 350.

production, exchange and distribution activities,[688] not legitimacy. Others again pointed out that possible business benefits needed to be balanced against and may even be offset by the costs of legitimacy.[689] Even more, the notion that legitimacy and institutional strategies are important enough to be considered has systematically been discarded or omitted as being of no special importance in Business literature.[690] While this shortcoming has increasingly been criticised, it has been pointed out as particularly decisive in industries where the firm itself often is the 'legitimacy problem'[691]. This, for instance, holds for the energy sector or industries generally characterised by monopoly power where firms could "ill afford"[692] to allow institutional stakeholders to exert uncontrolled pressures.

At the same time similar claims have been raised with regards to institutional approaches. In fact, Institutional Theory has been criticised as a "one-sided perspective"[693] in terms of looking at the external environment from an 'overarching social view' and at organisational behaviour determined by the organisation's strive for legitimacy, while ignoring pressures for efficiency and competitive advantage arising from the market environment.[694] In particular it has been commented that from an institutional perspective, economic issues are merely seen as a part of society like any other and are not further considered, especially with regards to strategic interests.[695] Moreover, while some researchers do find that Institutional Theory had gained prominence within the field of Strategic Management,[696] others have only very recently remarked that the majority of research in this field had mainly only dealt with institutional environmental forces as a source of constraints on organisational behaviour. Moreover, in many cases only the business environment has been seen as the driver of organisational development.[697] Rodrigues and Child, for example, criticise that only little

[688] Cf. Williamson (1993), p. 111. Also cf. Davis/ North (1971), p. 6.
[689] Cf. Rugman/ Verbeke (2000), p. 383.
[690] Cf. Etzioni (1987), p. 185; Goodrick/ Salancik (1996), p. 3; Mahon/ McGowan (1996), p. 5.
[691] Cf. Mahon/ McGowan (1996), pp. 63-66.
[692] Mahon/ Murray (1981), p. 257.
[693] Beckert (1999), p. 795.
[694] Cf. Roberts/ Greenwood (1997), p. 347; Dacin (1997), pp. 46-47; Martinez/ Dacin (1999), pp. 76, 85.
[695] Cf. Hasse/ Krücken (1999), p. 50.
[696] For an introduction on this topic cf. Ingram/ Silverman (2002).
[697] Cf. Behrman/ Grosse (1990), p. 1; Goodrick/ Salancik (1996), p. 3.

attention has been paid to strategic choices of companies operating in highly institutionalised environments.[698]

From this it can be derived that both approaches lack that part of explanatory power which is provided by the respective other approach. In this respect the comparative illustration of the main characteristics of each perspective as presented in table 2 above can also be seen as not only showing differences of each approach but as also revealing the possibility for complementation with insights from the respective other. Guided by such considerations the author extended literature review to determine possibilities for such complementation. This will be carried out in the following.

5.1.2.2 Proposals for Extension

Researchers looking at shortcomings within institutional approaches claim the integration of a business-oriented perspective to be crucial. In this respect already Oliver had pointed out the interrelatedness of economic accountability and rationalisation objectives with institutional pressures, especially in cases where changing institutional forces exert pressures on firms to become more 'business-like' or 'economically accountable'.[699] Deephouse proposes that companies "should be as different as legitimately possible"[700]. Others again demand that Institutional Theory needed to find its place within the 'old', economic-oriented approaches.[701] A large part of research in this field has, in fact, focussed on showing that business-oriented behaviour was determined more by institutional rather than by business-market forces in that the prevailing institutional setting in form of coercive, cognitive or normative drivers had forced organisations to adopt a certain business-market strategy and thus into a particular direction of development.[702] Studies have revealed that by guiding

[698] Cf. Rodrigues/ Child (2003).
[699] Cf. Oliver (1991), p. 161.
[700] Deephouse (1999), p. 147.
[701] Cf. Selznick (1996), p. 276.
[702] Cf. Fox-Wolfgramm et al. (1998); Inzerilli (1990); Haveman (1993a); Sampat/ Nelson (2002), p. 159; Ingram/ Silverman (2002), p. 7; Lamberg et al. (2002); Peng (2003); Scott (2004); Thornton et al. (2005); Wright et al. (2005).

resource allocation or even destroying organisational property, legally enforced requirements not only restricted the range of feasible strategic options available to firms but also worked to favour certain strategies over others while weakening established stakeholder relationships. This in turn severely influenced economic decision-making and profit generation.[703] Moreover, it has been pointed out that governmental actors may even force companies to adopt certain strategies, such as to 'play the networking game' in order to be allowed market entry.[704] Similarly, also normatively and cultural-cognitively defined forces have been found to constrain organisations' market conduct, i.e. when behaviour is institutionalised as taken-for-granted or socially expected. By arguing that "industries are cultures too"[705], Mintzberg had already indicated that such forces may present substantial barriers to market development, such as by making re-location shifts "awfully demanding"[706]. Others again recently found the change from diversification to that of focussing on a certain business segment to have been a result of "negative comments from analysts"[707]. Similarly, as transaction costs may be socially constructed ('tacit') or embedded in society so that the need to lower transaction costs becomes an institution itself, certain forms of organising may be pursued despite being inefficient, a situation which often results in hierarchical failure.[708] In such cases decisions have been described as having to be made within cognitive straightjackets which restrict the pursuing of alternatives. This, for example, has been shown to have been an issue with ecological regulation.[709] The changing of institutionalised arrangements may therefore considerably increase transaction costs.[710] In this respect, organisations have also been illustrated as 'efficiency-seeking under institutional constraints'[711]. At the same time there may prevail institutionalised beliefs that business-oriented goals such as seeking efficiency are not a legitimate motivation or cases where society values other, i.e. institutional, factors over efficiency.[712] Consequently, certain decisions may never come to be analysed from a

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703 Cf. Carroll et al. (1988); Rugman/ Verbeke (2000), pp. 378, 381; Lawrence et al. (2001), pp. 635, 638; Sampat/ Nelson (2002), p. 157; Burt et al. (2002), p. 201.
704 Cf. Peng/ Heath (1996); Guilléen (2005), pp. 25-32.
705 Mintzberg (1988), p. 60.
706 Mintzberg (1988), p. 60.
707 Harper/ Viguerie (2002), p. 33.
708 Cf. Perrow (1981); Cook/ Emerson, (1984), p. 3; Ghoshal/ Moran (1996); Sampat/ Nelson (2002).
709 Cf. Tenbrunsel et al. (2000).
710 Cf. Zucker (1987).
711 Cf. Roberts/ Greenwood (1997), p. 347.
712 This has, for example, been shown in the case of the airline industry. Cf. Kelly/ Amburgey (1991), p. 592.

transaction cost perspective, explaining why certain structures may persist despite being inefficient.[713] Porac et al., for instance, relate the dominance of vertical integration to the existence of a 'cognitive oligopoly' which had become an institutionalised frame of reference within which players defined their actions rather than considering transaction-cost or market-based issues.[714] By integrating insights from economic and institutional theory, Schneiberg recently found cooperative forms of behaviour not to have resulted only from the choice between market and hierarchy, but to also have emerged through the influence of institutional forces.[715] Similarly, institutionalised settings such as the "myth of the innovative society"[716] may demand organisations to be innovative in order to receive legitimacy, even if economic profits remain uncertain.[717]

Thus, by acknowledging that organisational activities may be the result of 'social constructions of the managerial mind' and conditioned by institutional forces, the cognitive view on competition serves as an important complement to traditional models and as a basis for understanding strategic market conduct.[718] This becomes even more crucial when considering that empirical results built on efficiency-based explanations have only provided vague results or have been interpreted ambiguously and are thus argued not be appropriate as the sole guide for analysing and understanding organisational actions.[719] In fact, this has also been supported by other studies which revealed that the market strategies observed were not driven by business but institutional drivers in that organisations were forced to adopt certain behaviours as indicated above. Tactics of diversification, M&As and international expansion, for instance, were shown to have been a response to increasing regulatory constraints and to have been pursued as compensation for the withdrawal of institutional protection instead of having been driven by a quest for growth or market development.[720] By now, several other

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713 Cf. Fligstein (1990), p. 21; Fligstein (1991), pp. 315-316; Roberts/ Greenwood (1997); Martinez/ Dacin (1999), pp. 83-84.
714 Cf. Porac et al. (1989).
715 Cf. Schneiberg (2004), p. 4.
716 Apitzsch (2006), p. 13.
717 Cf. Garcia-Pont/ Nohria (2002), p. 309.
718 Cf. Barley (1988); Baum/ Oliver (1992); Fligstein (1996); Porac et al. (1989), p. 412; Porac et al. (1995), p. 204; Burt et al. (2002), p. 171; de Figueirdo/ de Figueirdo (2002); Van de Ven/ Hargrave (2004), p. 295.
719 Cf. Perrow (1986); Jones/ Hill (1988); Haunschild (1993); Moran/ Ghoshal (1996). With respect to internationalisation processes cf. Henisz/ Delios (2002).
720 Cf. Tregoe/ Zimmerman (1980); Fligstein (1991); Peng/ Heath (1996); Henisz/ Delios (2002).

studies found that waves of SAs,[721] M&As,[722] diversification[723] as well as divestments,[724] or the implementation of certain practices[725] were a result of having become shared reality and a legitimised way of behaviour within a field and thus increasingly mimicked as a consequence of cultural-cognitive or normative forces.[726] In such cases organisations were shown to have followed others, even when performance declined as a consequence.[727] In this context researchers also pointed out the role model and first-mover function of large and particularly successful organisations.[728] It could in fact be shown that M&As or vertical integration were pursued in order to 'borrow' legitimacy from prestigious organisations in order to compensate for the lack of institutional protection when diverging from institutional norms, enabling these organisations to mitigate institutional pressures and justify their behaviour by creating the belief that it was legitimate.[729] One example is the cooperation of a financial and a telecommunications company with a major energy company. This cooperation was set up in order to benefit from the latter's experience in dealing with governmental and regulatory agencies.[730]

The few researchers that have begun to combine insights from economic and institutional theory find that organisations may strategically use the institutional environment and the notion of legitimacy to their advantage in that institutional forces may serve as a resource to establish new organisational forms.[731] Others, who integrated insights from institutional and

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721 Cf. Apitzsch (2006).
722 Cf. Haunschild (1993); Baum et al. (2000).
723 Cf. Fligstein (1985); Fligstein/ Dauber (1989); Fligstein (1991); Luo/ Chung (2007).
724 Cf. Nicolai/ Thomas (2006).
725 Cf. Barley (1988); Mezias (1990).
726 Cf. Astley/ Fombrun (1983); Oster/ Pickrell (1986); Jones/ Hill (1988); Haunschild (1993); Venkatraman et al. (1994); Fligstein (1996); Gimeno/ Hoskisson (1997) in Martinez/ Dacin (1999), p. 87; Hoskisson et al. (2000); Phillips et al. (2000); DiMaggio (2001); Powell (2001); Sampat/ Nelson (2002); Dowell et al. (2002); Garcia-Pont/ Nohria (2002); Ingram/ Silverman (2002); Teng (2005).
727 Cf. Abrahamson/ Rosenkopf (1993). The phenomenon of 'competitive bandwagon pressures' has particularly been observed in industries characterised by oligopolistic structures. Cf. Guilléen (2005), p. 19.
728 Cf. Haveman (1993b).
729 Cf. Delacroix et al. (1989); Amburgey/ Miner (1992); Aldrich/ Fiol (1994); Ginsberg/ Baum (1994); Gulati (1995); Oliver (1997), p. 711; Osborn/ Hagedorn (1997); Phillips et al. (2000); Rugman/ Verbeke (2000); Lounsbury/ Glynn (2001); Peng (2001); Dowell et al. (2002); Kumar (2003); Bansal/ Clelland (2004).
730 Cf. Butler/ Carney (1986), pp. 170-175.
731 Cf. Schneiberg (2004), p. 11.

resource-based approaches,[732] concluded that organisations which do not possess relevant resources and capabilities "by default continue to carry out much of the same activities in similar ways as before"[733] and try to "muddle through"[734] instead of actively taking advantage of change. Others think that legitimacy should be regarded as critical institutional capital and a valuable strategic resource in form of an intangible asset which in extreme cases enables organisations "just to survive"[735], while in other cases provides the power to not only develop active institutional strategies but to 'nullify' or at least dampen the vulnerability to market forces and even change the rules of the game.[736] This has begun to be seen as setting the basis for creating economic value and establishing a competitive advantage.[737] The implementation of legitimation strategies has been shown to enable companies to defend themselves against rivals, enhance product-market development and acquire necessary resources.[738] Moreover, in reference to the arguments of Transaction Cost Theory, which has also begun to be discussed in convergence with sociological institutional approaches,[739] it should also be considered that institutional strategies may allow or at least support the reduction of transaction costs. The application of bargaining tactics, for example, may hold the costs arising through regulation at a minimum level through.[740] Martinez and Dacin again point out that in the presence of transaction costs, imitation may be the most efficient way to establish the suitable path of action.[741]

Others again found that political strategies, such as dealing with regulatory bodies, also served as a channel for organising business decisions and achieving market-oriented goals such as sales growth and profitability while being able to defend themselves against new entrants.[742] Baron depicted similar examples of companies having enhanced their product-

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[732] Cf. Moldaschl/ Diefenbach (2003). Also researchers from other fields had already pointed out that solely adopting a resource-dependence perspective is "woefully inadequate" (Carroll et al. (1988), p. 237).
[733] Peng (2000), p. 45.
[734] Peng (2003), p. 285.
[735] Devlin (1991), p. 77.
[736] Cf. Greenwood/ Hinings (1996), p. 1039.
[737] Cf. Dobbin (1999), p. 196; Shaffer/ Hillman (2000), p. 176; Thornton (2002), p. 96.
[738] Cf. Aldrich/ Fiol (1994), pp. 656-658; Goodstein (1994), p. 361; Zimmerman/ Zeitz (2002), p. 425.
[739] Cf. Ipsen (2003).
[740] Cf. Clemens/ Douglas (2005), p. 1206.
[741] Cf. Martinez/ Dacin (1999), p. 90.
[742] Cf. Mahon/ Murray (1980), pp. 134-135; Post/ Mahon (1980); Rugman/ Verbeke (1990).

market development strategy through accelerating the regulatory approval process, using tactics such as lobbying, establishing relationships with regulatory institutions, providing information voluntarily, cultivating the media, or educating the public. He also mentioned examples of players having defended their territory against foreign entrants by filing for anti-dumping petitions to their government. In another case, a company finding opposition from local producers when trying to enter their market, sought the help of its home government to pressure at state level together with the foreign government for the revision of entry barriers.[743] Other examples are of companies which established alliances with governmental agencies to obtain a first-mover advantage.[744] Researchers from other theory fields have termed such strategies "nonmarket strategies"[745]. These have been shown not only to enable companies to defend themselves against competitive threats but create market opportunities such as by influencing pressure groups and creating the rules of the market to realise a competitive advantage.[746] By bringing together insights from public affairs management and corporate strategy, Keim and others propose to develop political and social strategies as a 'sophisticated' way to manage relationships with regulatory authorities and enable organisations to deal with public pressures groups.[747] Others have shown how political strategies can complement a company's economic approach[748] - former monopolies, for instance, are often seen as "perfect examples of companies using defensive political strategies to their advantage"[749] - or how a legitimate image may translate into economic benefits.[750] Elsbach and Sutton again propose that organisations should engage in impression management techniques as these may 'create unprecedented possibilities to obtain resources'.[751] In fact, such 'non-market' strategies could be seen as strategic responses to non-

[743] Cf. Baron (1995a), pp. 50-54. For similar examples cf. Miles (1982), pp. 226, 234; Miles/ Cameron (1982); Bonardi (2004), pp. 103, 107; Bonardi et al. (2005), p. 410. For a particular focus on international business and government relations cf. Chakravarthy (1985); Behrman/ Grosse (1990); Guilléen (2005), pp. 15-34.
[744] Cf. Rugman/ Verbeke (2000), pp. 382-383.
[745] Baron (1995a), p. 48.
[746] Cf. Mahon/ Murray (1981), pp. 257-261; Mahon/ McGowan (1996), pp. 39-40, 63-66; Baron (1995a), p. 48; Baron (1995b), p. 84.
[747] Cf. Mahon/ Murray (1981), Keim/ Zeithaml (1986); Bonardi/ Keim (2005).
[748] Cf. Bonardi (2004); Bonardi et al. (2005).
[749] Bonardi (2004), p. 102.
[750] Cf. Rugman/ Verbeke (2000), p. 383.
[751] Cf. Elsbach/ Sutton (1992).

market forces as defined in chapter III and thus as corresponding to what has been called institutional strategies in institutional approaches.

Similar findings were made with regards to ecological issues. Here, researchers argue that companies do not necessarily face a trade-off between ecological goals and industrial competitiveness. Instead, through compliance strategies characterised by using tactics such as participating, cooperating, voluntarily going beyond requirements and communicating success stories, organisations could offset costs of ecological regulation and even gain competitive advantage.[752] In this respect and as in the cases depicted above, it has been demanded that organisations recognised the environment as a business opportunity instead of "an annoying cost or a postponable threat"[753]. A similar assessment has been made by other scholars who pointed out that by not only learning how to deal with ecological requirements but also by developing new 'green capabilities' and 'actively innovating ecologically', companies could not only obtain market access but also outperform rivals.[754] For a long time, the impact of such influences has been seen as a barrier to business growth, at best reduced to protecting organisations from regulatory constraints and appeasing ecologically conscious pressure groups. The business vision, in contrast, was acknowledged as bringing growth and profitability. At the same time, it has been identified as carrying the risk of making companies 'run into a green wall'. As likely reasons researchers identified the lack of integrating the impact of market and institutional drivers as well as an inadequate resource endowment, and the organisational belief that "any of this 'green stuff' really makes business sense"[755]. They hence proposed that by making EHS "a true business partner"[756] and aligning EHS goals with the corporate vision, a significant contribution to overall success could be achieved. Also other academics have very recently begun to point out how non-market strategies could enhance business development. Along a similar line Bansal and Clelland remark that even governmentally enforced publications of certain data could be turned into a strategic tool to

752 Cf. Bonifat et al. (1995); Porter/ van der Linde (1995).
753 Porter/ van der Linde (1995), p. 114. The authors also point out comparative advantages on the national or state level. Also cf. Liedtke/ Roeder (2006); Roeder/ Bleischwitz (2006).
754 Cf. Rugman/ Verbeke (1998); Bansal/ Roth (2000).
755 Shelton/ Shopley (1997), p. 120.
756 Shelton/ Shopley (1997), p. 119.

positively influence stakeholder perception.[757] This proposal becomes particularly critical when considering their finding on the impact of ecologic environmental legitimacy, e.g. in form of an organisational resource, on stock market performance.

As a general advice, Aldrich and Fiol propose that organisations should be "in harmony"[758] with their institutional *and* with their market environment for deriving advantages and securing their successful survival. Organisations that are have also been described as entrepreneurs who take advantage of opportunities which arise in 'both environments' and still are undiscovered and thus unexploited by others.[759] Essentially, research has shown that those organisations able to simultaneously 'play the two games', i.e. addressing economic aspects as well as managing institutional issues, have been more successful than those that have not.[760] Other examples include companies which were anticipatory in their behaviour, driving market development while at the same time optimising institutional conduct.[761] Another example is that of a supplier operating under the same institutional constraints as its customer, but by having applied respective institutional tactics, was able to gain a competitive advantage that even allowed it to move up the value-chain and become a competitor.[762] Also studies from other fields of research have indicated the importance of bringing together insights from various approaches, pointing out the dependence of organisational success on strategies for creating a competitive advantage while at the same time meeting sustainability criteria.[763] By combining insights from NIT, IO and the RBV, Rodrigues and Child (see above) studied organisational co-evolution from a highly institutionalised and closed to an open and competitive market environment and particularly emphasise the importance of considering the complex interrelationship between the different types of environmental forces as well as the underlying temporal dynamics for comprehensively analysing and explaining organisational behaviour.[764]

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[757] Cf. Bansal/ Clelland (2004).
[758] Aldrich/ Fiol (1994), p. 663.
[759] Cf. Lounsbury/ Glynn (2001), p. 553; Delmas (2002).
[760] Cf. Post/ Mahon (1980).
[761] Cf. Rugman/ Verbeke (2000), pp. 383-384.
[762] Cf. Bonifat et al. (1995), pp. 41-43. A similar example was mentioned by Steger and Winter (1997), p. 66.
[763] Cf. Flagestad/ Hope (2001).
[764] Cf. Rodrigues/ Child (2003).

Despite the advancements made in this respect, research proposing the integration of insights from both perspectives has only been very recent and thus is not extensive yet. Only relatively lately however, the importance of developing market as well as non-market, or business and institutional, strategies to address the different types of environmental influences has specifically been made. With reference to deregulating industries Bonardi, for instance, claims that economic strategies of former monopolies could not be understood if related political strategies are not taken into consideration.[765] Thus, in a subsequent publication he and fellow researchers, in differentiating between influences from economic and political markets, argue that strategic management researchers could enhance explanatory value on organisational behaviour when considering political markets and strategies.[766]

5.1.3 Conclusion – Building on Findings from Literature Review to develop an Integrated Model

Essentially, the review of theory and empirical reality above allows drawing several conclusions which enable the researcher to carry on from here.

The analysis of existing empirical research has revealed that so far only few studies on organisational responses to changing European energy policy in European gas markets have been carried out. Those that do exist only consider one of the goals of European energy policy, in most cases liberalisation. Moreover, analysis has been restricted to being looked at through a single theoretical lens. In most cases this has been the business approach. The aspect of sustainability, for instance, has in fact only recently begun to be addressed in academic studies, but not yet systematically. In particular, no example has been found which integrated insights from business-, institutional- and resource-based approaches. In addition to this has the majority of scientific work for a long time been mainly based on or aimed at the U.S. and U.K. market.[767] And although some research does provide a temporal dimension

[765] Cf. Bonardi (2004), p. 116.
[766] Cf. Bonardi et al. (2005), pp. 409-410.
[767] Also cf. Kneissl (2006), p. 15.

what is also missing are studies which have been carried out over a longer period of time and which allow the analysis of a change in organisational responses over time. On the other hand do the insights on forms of organisational behaviour gained from studies on other energy sectors such as with regards to strategies and tactics used sustain the assumptions made and conclusions drawn from the theoretical analysis in chapter IV, thus confirming their general suitability and applicability. This particularly holds for the electricity sector which faced very similar influences as European gas markets. Support can, too, be found for the assumption of having to build analysis on an integrated approach.

In addition to this, similar conclusions can be drawn from the review of existing theoretical work and insights from other industry studies. Here, especially the disclosure of shortcomings to each perspective and the development of academic discussion towards the importance and benefits of taking an integrated approach to analysis has been crucial. This particularly holds when furthermore considering that "organizational phenomena are much too complex to be described adequately by any single theoretical approach"[768] and that "strategy cannot be understood until its complexity is acknowledged"[769]. In fact, a main value of adopting an integrated perspective is that it allows researchers to reveal that certain phenomena of organisational behaviour observed are actually driven or motivated by others than those normally expected when looking through only one theoretical lens. Moreover, it reveals that change should not only be perceived as a threat and risk to traditional ways of organisational conduct, but also as a source of opportunities to enhance development. Organisations may, for instance, strategically use the 'institutional environment' and the notion of legitimacy to their advantage to realise business-oriented goals. Or, to use Butler's and Carney's words applied in a different context earlier on: actors should address "the best of both worlds"[770] in order to secure their survival and establish a competitive advantage. Similar claims have recently been made by others such as Henisz and Delios who recently pointed out that both approaches actually had "much to gain"[771] from each other. This becomes even more relevant when considering that competitive and institutional processes interact with each other and over time

[768] Tolbert (1985), p. 12.
[769] Aharoni (1993), p. 34.
[770] Butler/ Carney (1986), p. 172.
[771] Henisz/ Delios (2002), p. 340.

disseminate new forms[772] - an aspect which again emphasises the importance of considering a temporal dimension as argued above.

Such insights are especially important for practitioners; even more so for those being part of industries where organisations provide particularly 'important or problematic products'[773] which are under particular scrutiny from changing influences in their environment. This can generally be said to be the case of the energy industry. Realising and understanding such forces and the power and legitimacy of the various actors towards the organisation is crucial in order to anticipate, shape, and respond appropriately. With particular regard to 'institutional' forces some researchers (also see above) have pointed out that the failure to do so may increase attention from institutional actors and thereby further reinforce the measures already imposed.[774] As a closing conclusion it can therefore be derived that not only can empirical studies be enhanced by building analysis on an integrated approach but also explanatory value and advice for practitioners.

Still, despite different theoretical and empirical work having indicated these benefits, to date no model exists which serves as a framework for analysis. Hence, by developing a respective model the author of this thesis not only contributes to an enhancing theory, but also creates a basis that allows the carrying out of a comprehensive empirical analysis. This model is developed next to serve as the fundament for case study research in the following chapter.

5.2 Developing an Integrated Model

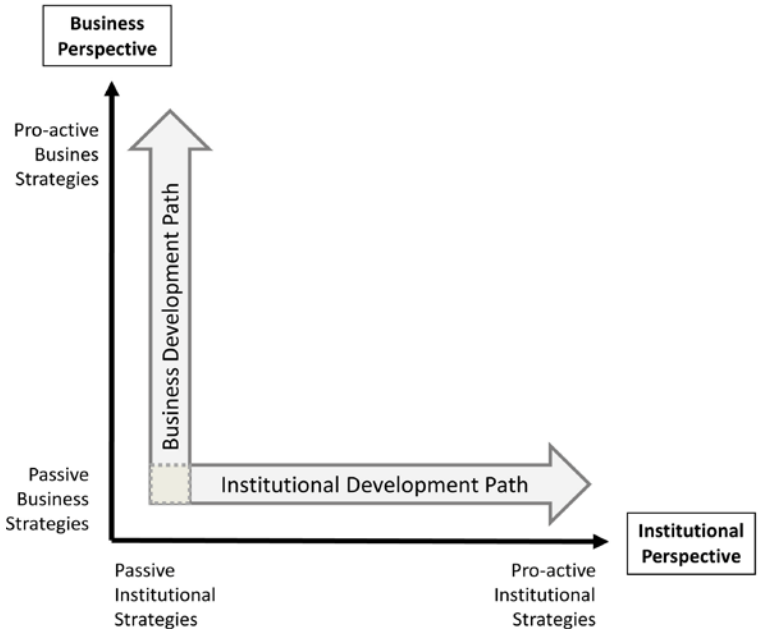
5.2.1 Model Framework

Fundamentally, the model building process is guided by the establishment of the business and the institutional approach as the two main constituting approaches and by the requirement of

[772] Cf. Lee/ Pennings (2002).
[773] Cf. Suchman (1995), p. 590.
[774] Cf. Mahon/ McGowan (1996), pp. 26, 46; Mitchell et al. (1997); Midttun (2001), p. 17.

the model having to enable analysis from each lens individually as well as from an integrated perspective. This can be satisfied by making each approach form an axis of a two-dimensional model where the x-axis represents the institutional and the y-axis the business perspective,[775] taking as a basis the illustration developed in figure 11 above:

Figure 13:[776] Model Framework



Constituting the external frames and the main fundament of the model this illustration enables analysis from a single lens as well as an integrated angle.

The next step in the model building process then is to find a way to depict organisational behaviour in response to environmental change over time. Based on the insights from theoretical analysis above it can be assumed that over the course of time this process takes place as a development from passive to active forms of behaviour, leading to what is illustrated as an Institutional and a Business Development Path in the figure above. In order to exemplify such paths a classification of behavioural forms of responses is necessary. This

[775] This choice has been randomly made and could have also been the other way round.
[776] Own figure.

requisite can again be satisfied by taking the development continuums identified in chapter IV as an instrument of categorisation. Hence, the business perspective would be represented by the classification developed by Miles and Snow, the institutional one by Oliver's categorisation. Significantly, the general suitability of their work for such classifications has been supported across literature. Miles' and Snow's work is not only frequently referred to in research but has been identified as 'the most enduring strategy classification research tool available'[777]. Furthermore, it is also acknowledged to be of analytical value even if research is only "loosely based"[778] on their categorisation. Especially the empirical reality of the current energy industry requires models to depict phases where incumbents' behaviour is more adventurous than that of defenders but not as risk-oriented as that of prospectors.[779] The categorisation described above can thus be adopted as the fundament for classifying strategic behaviour in response to environmental change over time. Moreover, in addition to the examples already mentioned above, other researchers also based their studies on Miles and Snow's typology. Ghobadian et al., for example, applied it to the analysis of public utility companies and added a 'cautious prospector' as a hybrid of characteristics from analysers and prospectors, depicting strategic behaviour that is risk-averse while at the same time showing 'forward momentum' of expansion and growth activities such as entering into joint ventures with companies active and experienced within the field the company wants to enter.[780]

In fact, the depiction of organisational behaviour in response to environmental change taking place as a development from passive to active strategies is also supported by empirical findings in the business field. Research on organisational behaviour after deregulation, for example, has shown that incumbents initially aim to retain their monopoly position and show reactive forms of behaviour.[781] Studies have also revealed that deregulation is followed by a phase where organisations 'squeeze profits' and thus lower industry profitability.[782] This

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777 Cf. Hambrick (1980), p. 571; Ginsberg (1984), p. 551; Ghobadian et al. (1998), p. S72; Gimenez (1999), p. 4; Reger et al. (1992), p. 192; Desarbo et al. (2005), pp. 47-49. Gimenez e.g. has researched that between 1987 and 1994 more than 50 papers had applied the Miles and Snow typology and found no evidence of major conceptual criticism. Cf. Gimenez (1999), p. 3.

778 Miller/ Friesen (1982), p. 9.

779 Cf. Ghobadian et al. (1998), p. S80.

780 Cf. Ghobadian et al. (1998), pp. S81-S82.

781 Cf. Makhija (2003).

782 Cf. Bleeke (1990), p. 162.

again directly affects incumbents' formerly stable incomes and thus requires a higher degree of organisational activity.[783] Such statements are supported by findings which show that only when profits are affected or performance gaps occur, change is initiated.[784] Desarbo et al. again found that while strategies of defence initially tend to focus on efficiency improvements, incumbents over the course of time often try to strategically deter entry or disadvantage competitors by setting up market barriers via vertical integration.[785] Similarly, Andersen et al. had earlier pointed out the development component in that organisational behaviour is characterised by periods of tentative search before a strategic position is established and that a phase of experimentation is followed by one of creation.[786] The development from analysing to creating behaviour again is supported by studies which show that particularly in uncertain and fast-changing environments strategic activities are likely to be exploratory first and only later become exploitative ones.[787]

The same assessment of suitability holds true for the institutional perspective. Apart from its appropriateness as a theoretical approach for analysing the realities determined above, it also satisfies the requirement of accounting for a temporal dimension in that strategic institutional responses change along with institutional environmental change and can thus be depicted along a continuum from passive to pro-active forms of behaviour as just laid out in the previous section. While Oliver was the first to develop such a categorisation similar distinctions have also been made by subsequent researchers. Suchman, for instance, distinguishes between whether legitimacy is being passively granted, such as when the external 'audience' perceives the organisation as meaningful, predictable, and trustworthy and the organisation simply adopts a certain behaviour because it "wants a particular audience to leave it alone"[788], or whether it actively seeks for protracted intervention from the audience. While this implies a varying degree of institutional organisational activity, others even think that there are different 'institutionally specific design archetypes' in form of ideal types which

783 Cf. Hollas et al. (2002); Delmas/ Tokat (2005).
784 Cf. Greiner (1972), p. 40; Miles (1982), p. 237.
785 Cf. Desarbo et al. (2005), pp. 50-51.
786 Cf. Andersen et al. (1959), p. 25.
787 Cf. Regnér (2003).
788 Suchman (1995), p. 575.

are characterised by different forms of behaviour.[789] Essentially, recent empirical research has also shown that "firms can and do choose more than one strategy or tactic in responding to institutional pressures"[790]. Based on this, Oliver's original typology is taken as the basis for depicting institutional behaviour as developing along a continuum from passive to pro-active behaviour.

These two categorisations constituting the business and institutional strategic continuum will be enlarged on in more detail in the following.[791]

5.2.2 Classification of Organisational Behaviour in Response to Environmental Change over Time

5.2.2.1 Strategic Continuum of Organisational Behaviour from a Business Perspective

As already mentioned and illustrated above, Miles' and Snow's categorisation embraces four main forms of behavioural responses which will now be explained in more detail - beginning with the most passive form.

789 Cf. Kikulis et al. (1992).

790 Clemens/ Douglas (2005), p. 1207. Also cf. Schneiberg/ Clemens (2006), pp. 206-207. For an earlier empirical example cf. Delacroix/ Swaminathan (1991).

791 With regards to methodological consistency: Kondra and Hinings compare their institutional typologies with those of Miles and Snow (1978) and Miles et al. (1978). Cf. Kondra/ Hinings (1998), pp. 753-759.

Reactive Behaviour

Characteristically, Miles and Snow described 'reactive' organisations as those which are unprepared for environmental change, their initial objective thus being survival. Accordingly, reactive strategies are characterised by a short-term orientation while potentials for market development are ignored and existing capabilities not taken advantage of. Instead, as a tactic to deal with environmental upheaval, reactive behaviour shows in the tendency to remain loyal to the prevailing position and follow familiar routines and standards even if they are no longer appropriate for the new environmental reality.[792] These lock-ins, in fact, hinder organisations to "respond to messages of the marketplace"[793] and develop at the pace and scale of the market.[794] This can be explained by the fact that incumbents often feel protected by their historically grown structures which at least temporarily provide a "cushion from new competition"[795] and allow them to retain market power while ignoring change despite the existence of obvious market threats and ineffectiveness.[796] Another explanation is that new entrants first have to consolidate in order to become large enough to affect seller concentration.[797] In fact, research on deregulating industries has shown that initially "nearly all new entrants fail"[798]. Other studies on deregulation again found waves of similar types of strategies in form of imitative moves.[799] Such type of behaviour is also known as the 'following-the-leader'[800] phenomenon and has, in fact, been determined as another characteristic of reactive behaviour, as particularly in the presence of transaction costs the imitation of other players allows them to 'keep an eye' on efficiency while first-movers absorb the costs and risks of experimentation or discovery.[801] Additionally, incumbents may also be encouraged to imitate when newcomers have proven to be successful with their approach.[802] As competitive forces, or even the threat of such, tend to increase over time as

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792 Cf. Miles and Snow (1978), pp. 81-93; Boisot/ Child (1999), p. 247.
793 Foster/ Kaplan (2001), p. 43.
794 Cf. Foss (2000), pp. 16-17; Foster/ Kaplan (2001), pp. 41-45.
795 Makhija (2003), p. 437.
796 Cf. Johnson/ Thomas (1987), p. 344. For an empirical example cf. Mintzberg (1978), pp. 938, 944.
797 Cf. Caves/ Porter (1980).
798 Bleeke (1990), p. 159.
799 Cf. Bleeke (1990), pp. 160-162.
800 Cf. Knickerbocker (1973); Bolton (1993).
801 Cf. Dutton/ Freedman (1985); Lieberman/ Montgomery (1988); Martinez/ Dacin (1999), p. 90.
802 Cf. Lyles/ Salk (1996); Shenkar/ Li (1999).

changing markets also provide opportunities that make it attractive for new entrants to overcome market barriers and attack incumbents in their core business, reactive tactics are not appropriate to secure survival in the long run. In such cases incumbents have been shown to begin to "defend their turfs"[803], a form of behaviour that is depicted next.

Defensive Behaviour

Miles and Snow classify defensive strategic behaviour as such, where organisations aim to protect their domain as if it was their property while at the same time trying to improve the efficiency of existing businesses,[804] especially as one of the 'first contributions' by successful new entrants often is to reduce the incumbent's market share.[805] Studies have also shown that an erosion of profits and decrease of performance motivates defensive organisational action in that players begin to guard their business.[806] In general, several tactics of defence can be employed, such as establishing barriers to competition through taking advantage of prevailing market imperfections and exploiting assets owned or an existing customer base when facing deregulation,[807] or by introducing process improvements or engaging in low-cost strategies.[808] Another possibility may be to build on benefits deriving from cross-subsidisation as this allows disciplining, even destroying, competitors through using resulting profits to lower prices while financing losses out of profits from other businesses and forcing these losses on rivals until they leave the market.[809] Another option would be the establishment of cooperations such as in form of defensive market-extension mergers or JVs,[810] or the collaboration with other incumbents which are actually competitors, a tactic therefore also termed co-optition.[811] Studies found that new entrants, as well as the mere threat of these, have lead incumbents into defensive mergers to prevent entry and preserve market share,

[803] Bleeke (1990), p. 163. For empirical examples cf. Johnson/ Thomas (1987), p. 344; Schomburg (1994), p. 151; Walker et al. (2003); Barnett/ McKendrick (2004), p. 542.
[804] Cf. Miles/ Snow (1978), pp. 31-48.
[805] Cf. Caves/ Porter (1980), p. 7.
[806] Cf. Johnson/ Thomas (1987), p. 344; Schomburg (1994), p. 151; Walker et al. (2003).
[807] Cf. Makhija (2003).
[808] Cf. Bleeke (1990), pp. 159-160.
[809] Cf. Caves (1977), pp. 41-42.
[810] Cf. Johnson/ Thomas (1987), pp. 344-345; Chatterjee (1991); Kelly/ Amburgey (1991).
[811] Cf. Aldrich/ Fiol (1994).

while newcomers engaged in M&As to rapidly take advantage of economies of scale and quickly penetrate the market.[812] Additionally, another possibility would be to vertically integrate in form of 'forward defending' along the value-chain.[813] Empirical studies in fact showed that during environmental change vertical integration is one of the first strategic changes an organisation makes, and that it has been used as a protective measure to retain control over raw material inputs and distribution channels to customers.[814] A different type of defensive tactic is signalling which allows building a 'reputation of toughness' by, for instance, investing into specific assets which signal commitment to competitors and thereby keep them from even trying to enter.[815] In the energy sector incumbents also often boosted construction plans of power plants to be built in order to frighten-off rivals.[816] This too includes attempts to delay competitive responses by purposefully creating uncertainty, e.g. through public announcements by organisational leaders that the current market situation is business threatening.[817] Another possibility would be to formulate certain industry standards in order to create a situation where competitors, "paralyzed by confusion, complexity, and uncertainty, sit on the sidelines"[818]. More drastic tactics for trying to reduce or eliminate competition include attempts to engage in cartels or even try to establish monopolies.[819] Another characteristic of the defensive behaviour is an underlying scepticism towards innovation while the focus is kept on routines. In such cases organisations have also been described as behaving like "manifestations of rational calculation"[820] instead of considering new options. One reason behind this is that especially industry leaders are often driven by their past success and tend to 'tenaciously cling to traditional markets'.[821] Over time however, and as defensive measures often change industry structures, ongoing change leads to increasing complexity and transaction costs. This requires organisations, as a "prelude to

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812 Cf. Johnson/ Thomas (1987), pp. 344-345.
813 Cf. Kirsch/ Trux (1981), pp. 301-302.
814 Cf. Galbraith (1983), p. 67; Nickerson et al. (2001), pp. 259-260; Leiblein/ Miller (2003).
815 Cf. Williamson (1994) and very recently Buehler/ Schmutzler (2008).
816 Cf. Rossert (1996), p. 6.
817 Cf. Foss (2000), p. 17.
818 Bryan (2002), p. 24. Also cf. Butler/ Carney (1986), p. 169.
819 Cf. Katz/ Kahn (1966), pp. 127-131. In this respect, the authors pointed out that "the paradox of the private enterprise type of economic system is that its dynamic reduces the number of competitors and ultimately may lead to public regulation as the enterprise becomes a quasi-public institution" (Katz/ Kahn (1966), p. 130).
820 Dutton/ Freedman (1985), p. 44.
821 Cf. Miles (1982), p. 237.

creativity"[822], to become 'divergent thinking' in that they look to take advantage of threats and opportunities,[823] identified by Miles and Snow as 'analysing' behaviour as is explained below.

Analysing Behaviour

Analysing behaviour, as a 'step beyond' defensive behaviour, is classified as such conduct where organisations look to exploit new market opportunities while at the same time defending existing businesses in terms of 'having one foot in the traditional and the other in a new business'.[824] This has thus also been assessed as an 'intermediate type'[825] of organisational behaviour. Kirsch and Trux, for example, compared this with the behaviour of an 'architect' building something new on existing fundaments.[826] Initially though, when facing change, organisations tend to orientate towards known solutions as they are "motivated to transform ill-defined problems into a form that can be handled with existing routines"[827]. Others, in fact, found that disruptive changes are often "delayed until the costs of not restructuring become high enough to justify the widespread structural modifications that may be required"[828]. Snow and Hrebiniak pointed out that such behaviour is "usually not viable in the long run"[829], others again remarked that solely "sticking to tried-and-true paths"[830] neither creates a competitive advantage nor secures survival. Consequently, in many cases the only available strategy to earn above-average return and confront threats is to not to put 'all eggs in one basket' and increase risk while at the same time accepting potential losses.[831] For organisations this indicates the need to become more active and search for new ways, especially as the previously most attractive domains may become the least attractive ones due to environmental changes and vice versa. It has, for instance, been shown that at a later stage

822 Foster/ Kaplan (2001), p. 49.
823 Cf. Foster/ Kaplan (2001), p. 46.
824 Cf. Miles/ Snow (1978), pp. 68-80. Also cf. Miles (1982), p. 238.
825 Cf. Hambrick (1980), p. 572.
826 Cf. Kirsch/ Trux (1981), p. 302.
827 Miles/ Snow (1978), p. 156.
828 Miller/ Friesen (1984), p. 208.
829 Snow/ Hrebiniak (1980), p. 325.
830 Szulanski/ Amin (2001), p. 545.
831 Cf. Kirsch/ Trux (1981), pp. 303-304; Dutton/ Freedman (1985), pp. 42-43; Foss (2000), p. 18.

after market opening the identification of new opportunities for market development is much more crucial than conserving capital.[832] Also companies which have once operated in a restrained regulatory context are likely to, at one point, begin "to look beyond their borders"[833]. This has been shown in cases after deregulation where firms, as competition was increasing, began to consider a 'repertoire of responses' such as remaining vertically integrated or, on the contrary, divesting value-chain activities in order to adjust strategies to meet new market demands.[834] For 'strategic analysing' to be successful however, organisations must not only be able to evaluate and select from a variety of alternatives, but must learn to think 'out-of-the box' to create new rules instead of merely breaking existing ones, such as by changing a 'hierarchy of experience' with one of "imagineering"[835].[836] Taking such an approach opens up a number of possibilities which may function as launching pads that allow adaptation and even the change of direction in uncertain environments.[837] This again forms another characteristic of analysing behaviour in that targets are set for others in the market, thus taking a leadership function which may allow influencing overall industry development. At the same time, and although analysers other than defenders are not emotionally tied to a certain domain,[838] it has been pointed out that the "dancing around"[839] too many alternatives also carries the danger of resulting in disadvantageous delays. Hence, companies are required to learn how to manage market risks and invest in new development strategies as even successful players cannot only rely on tactics of 'managing for survival' which do not guarantee long-term performance.[840] This again indicates the importance of organisational leaders and their capabilities and could be described as moving from a status of making "seat-of-the-pants decisions"[841] and 'muddling-through' to becoming pro-active and innovative with regards to countering threats and taking advantage of arising opportunities. Several researchers have, in fact, pointed out that strategic development should not focus on

832 Cf. Bleeke (1990), p. 162.
833 Reger et al. (1992), p. 189.
834 Cf. Miller/ Chen (1994), p. 17; Delmas/ Tokat (2005), pp. 442, 445.
835 Szulanski/ Amin (2001), p. 549.
836 Cf. Hamel/ Prahalad (1991); Coyne/ Subramaniam (1996); Hamel (1996); Harper/ Viguerie (2002); Epstein (2003).
837 Cf. Williamson (1999).
838 Cf. Kirsch/ Trux (1981), p. 303.
839 Burgelman (1994), p. 45.
840 Cf. Dyner/ Larsen (2001).
841 Miller/ Friesen (1982), p. 5.

limitations from competitive forces but on "entrepreneurial discovery"[842] for creating sustainable competitive advantage.[843] This type of behaviour has been characterised as 'prospective' by Miles and Snow as is presented next.

While so far the first three categories established by Miles and Snow have been enlarged on, the fourth, 'prospective', has been replaced with the term 'create' in order to emphasise the types of strategies and tactics behind such forms of behaviour as laid out in the following.

Creative Behaviour

Fundamentally, prospective behaviour is characterised by the continuous search for innovations to extend the existing business.[844] Achieving growth has not only been shown to be particularly important in industries where firms are of similar size and competition is intense,[845] but also when facing environmental change. Such constellations can, for example, occur when former monopolies are deregulated. In such situations, organisations are then confronted with the question of which direction to grow and which strategy to adopt.[846] Empirical studies have shown that a common way to do so is by exploiting arising opportunities through product and/ or domain extensions, such as by diversifying into new but related industries in terms of matching new ventures to the present shape of business and by developing new businesses to increase global reach.[847] In this respect Bryan pointed out that incumbents particularly had several high-potential opportunities in that they could take advantage of their experience to adjust their core businesses or build related ones which allowed the capturing of economisation advantages.[848] Miles showed that diversification into new areas had especially been chosen by incumbents as it freed them from their symbiotic relations of the domains traditionally shared and thus was seen as a major opportunity for

842 Jacobson (1992), p. 785.
843 Cf. Child/ Kieser (1981); Wildemann (1996), p. 39; Harper/ Viguerie (2002), p. 35.
844 Cf. Miles/ Snow (1978), pp. 49-67.
845 Cf. Cool/ Dierickx (1993), p. 49.
846 Cf. Ansoff (1988), p. 81.
847 Cf. Hambrick (1983); Ghobadian et al. (1998), p. S74; Bryan (2002), p. 19; Harper/ Viguerie (2002).
848 Cf. Bryan (2002), p. 23.

establishing a competitive advantage.[849] Another characteristic of such a more risk-oriented strategic behaviour is that by "pushing back the boundaries"[850] of traditional industry areas and being first to market, such players are able to take advantage of uncertainty and open up windows of opportunity to 'embrace change'[851] and make "order out of chaos"[852]. Critically, they are thereby able to determine market and product development, even drive change themselves.[853] In this respect researchers remarked that an organisation's corporate strategy should not be handled as a portfolio of businesses, but as one of initiatives. This particularly holds for areas where the organisation enjoys significant advantages of familiarity which allow it to thrive despite environmental uncertainty.[854] Hence, value creation and survival are "intimately associated with the ability to continually create innovative business strategies"[855]. Through learning by doing cooperative arrangements and vertical integration have in many cases therefore been the preferred mode of operation to innovate more rapidly. For being able to do so, several researchers emphasise the importance of improving capabilities and getting better knowledge of up- and downstream activities while at the same time being able to balance power asymmetries and securing reliability of supply.[856] Others have also pointed out that learning could take place via vertical co-specialisation in that actors learn from each other by becoming active outside their own boundaries, thereby fundamentally changing an organisation's core business and its core capabilities.[857] Following similar considerations Mintzberg proposed three fundamental types of 're-conception strategies' which organisations may pursue to re-organise their core business:[858] Re-combination, re-location, and re-definition. Fundamentally, the strategy of re-combination is directed at generating synergies and possibilities of cross-subsidisation by diversifying into activities of related or unrelated industries and by building on commonly applicable capabilities. Despite being the strategy that least changes the organisational core it still characterises pro-active behaviour and has

[849] Cf. Miles (1982).
[850] Ghobadian et al. (1998), p. S81.
[851] Cf. Ghobadian et al. (1998), p. S74.
[852] Courtney (2001), p. 42.
[853] Cf. Mintzberg (1978).
[854] Cf. Bryan (2002), pp. 19-20.
[855] Szulanski/ Amin (2001), p. 538.
[856] Cf. Pearce (1982), pp. 25-26, 29-31; Porter (1983), pp. 375-403; Harrigan (1985b), pp. 28-35; Jacquemin (1987), p. 123; Porter/ Fuller (1989), pp. 375-390; Scherer/ Ross (1990), pp. 94-96; Sydow (1992), p. 293.
[857] Cf. Jacobides (2005), p. 484. Also cf. Floyd/ Lane (2000); Floyd/ Wooldridge (2000).
[858] Cf. Mintzberg (1988), pp. 54-65.

been assessed as "very effective"[859]. In shifting the centre of gravity, re-location strategies are closer to affecting the organisational core business in that they change strategic positioning. Such shifts can take place vertically along the value-chain, between functions such as when changing from a production to a marketing focus, or as a shift into a new business of the same or a different stage of the value-chain. A possible fourth form is the re-location around a core theme which directs the organisation from a narrow to a de-focussed, i.e. broad, orientation. Even more active and "fundamentally creative"[860] are re-definition strategies which, in affecting the whole value-chain, essentially change how business is defined and conducted. While businesses may simply be re-defined "by a stroke of the pen"[861], e.g. in that organisations from the railroad or airline industry start to define themselves as being in the 'transportation business', Mintzberg pointed out that it is rather the application of "some dramatic innovation"[862] which enables the company to shift the basis of competition.[863], such as by using tactics of expanding, shifting, splitting, usurping, (re-) creating or re-combining activities. To emphasise the importance of such behaviour Kirsch and Trux added the 'risk-diversifying' organisation and the 'innovator' to Miles and Snow's category.[864]

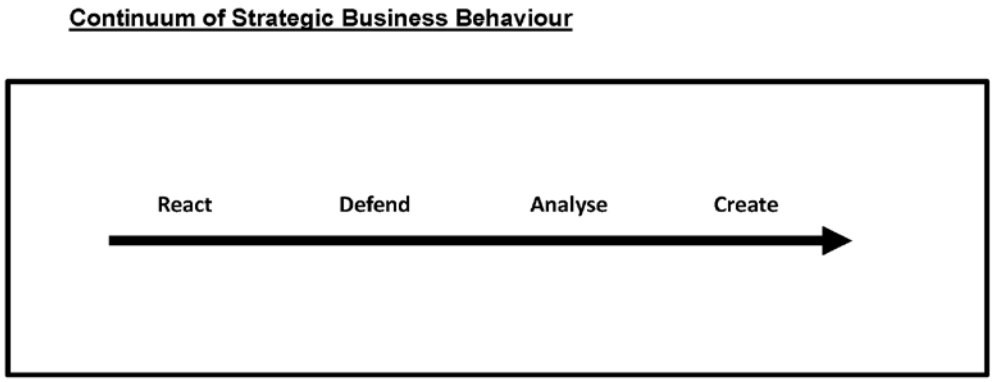
At the same time it must be considered that such forms of behaviour require substantial resource endowments, and that in many cases trade-offs must be made, particularly when facing threats and opportunities during environmental change.[865] Pro-active behaviour therefore not only includes 'creating' but also, in reference to Schumpeter's notion of 'creative destruction' (see above), 'destructive' strategies. Still, these are also critical in that they detain a company from "drifting rudderless into oblivion"[866] when facing too many opportunities. It has, in fact, been pointed out that particularly during transition phases to a deregulated environment, companies endanger themselves by overextending and should thus rather focus their resources on a very few strategically important environmental opportunities

[859] Mintzberg (1988), p. 58.
[860] Mintzberg (1988), p. 56.
[861] Mintzberg (1988), p. 58.
[862] Mintzberg (1988), p. 56.
[863] Cf. Mintzberg (1988), pp. 56-59.
[864] Cf. Kirsch/ Trux (1981), pp. 299-306.
[865] Cf. Hofer/ Schendel (1978), p. 4.
[866] Szulanski/ Amin (2001), p. 551.

in order to secure 'strategic freedom' as a basis for competitive advantage.[867] Similarly, it was shown that even the most broadly diversified companies over the course of time, often after a "brief flirtation"[868] with diversification, prefer to follow a strategy of focussed diversification by divesting or 'dumping' many of the formerly integrated businesses to return to their core business[869] The destroying of parts of the previous business model and the strategic exit of certain businesses has actually been shown to be a "natural part of competing in high-velocity environments"[870], especially as "increased size alone does not guarantee performance"[871] Another tactic in this respect is the outsourcing of activities. Also this often takes place as a development process from contracting out ancillary activities first to then include those which are closer to the core business.[872] The organisational aim to create its environment and take advantage of opportunities has therefore also been described as a process where organisations are looking to "make themselves more like the market"[873] while at the same time letting old businesses "die a timely death"[874]. Fundamentally, while the development of opportunities must not result in a decision of 'either-or',[875] organisations pro-actively creating their possibilities must accept that this is accompanied by a change of their identity.[876]

867 Cf. Mahon/ Murray (1980), pp. 131, 135; Harper/ Viguerie (2002), pp. 35-37.
868 Miles (1982), p. 239.
869 Cf. Miles (1982), pp. 239-248; Pearce (1982), p. 28; Bleeke (1990), p. 160; Burgelman (1994), p. 50.
870 Burgelman (1994), p. 51.
871 Weston et al. (1999), p. 173.
872 Cf. Hinterhuber et al. (1996), p. 99; Morgan (2003), pp. 37-38.
873 Foster/ Kaplan (2001), p. 42.
874 Foster/ Kaplan (2001), p. 42.
875 Cf. Delmas/ Tokat (2005), p. 457.
876 Cf. Kirsch/ Trux (1981), pp. 304-305.

Figure 14:[877] Continuum of organisational behaviour in response to increasing environmental change from a Business Perspective



5.2.2.2 Strategic Continuum of Organisational Behaviour from an Institutional Perspective

Similarly as in the case of the Business Perspective a categorisation representing the institutional one is required. As indicated above, this is provided by the one developed by Oliver and will be presented in the following.

Acquiescive Behaviour

According to Oliver, the most passive form of strategic behaviour is that of acquiescence which implies that organisations accede to institutional pressures by either adopting tactics of following their habit, imitating, or complying. The notion of organisations 'following their habit' implies that they 'remain aloof' to institutional forces and follow known routes by reproducing institutionalised actions despite pressures to change, for instance when having

[877] Own figure based on findings from above.

become so "enamored with their own legitimating myths"[878] that they do not respond strategically.[879] Others pointed out that this may also be the case when governments issue confusing and conflicting information so that there is "no particular reason to take any announcement seriously"[880] anymore. Imitating refers to the copying of institutionalised practices or successful or known and trusted behaviour. By complying, organisations consciously obey and accept imposed rules by choosing to "follow the letter and the rule"[881] and incorporating institutionalised values, norms and requirements. Particularly in cases where legal coercion is high and non-conformity to laws or governmental mandates is strictly penalised acquiesce behaviour may be the organisation's best choice or 'smallest evil', especially when having to gain access to relevant resources.[882] The latter also explains the difference to complying as a more active form of organisational behaviour in that it characterises a conscious and strategic decision in expectation of certain benefits, such as access to resources and legitimacy, or the reduction of vulnerability to institutional pressures.[883] Compliant behaviour again is likely to be reduced when organisations are not continuously rewarded or threatened, such as when not being legally forced to collect and publish possibly sensitive data.[884] While Oliver finds that imitation in form of mimetic isomorphism may happen consciously as well as unconsciously,[885] others add that it often only presents a 'structural incarnation' of existing 'recipes' which emerge in tandem with new ones. Moreover, although imitation presents one of the least disruptive changes, it is no guarantee for long-term legitimacy and survival as organisations often make 'copying mistakes' or fail due to complexity.[886]

878 Suchman (1995), p. 595.
879 Cf. Oliver (1991), p. 152; Ingram/ Simons (1995); Greenwood/ Hinings (1996); Lawrence et al. (2001).
880 Peng/ Heath (1996), p. 514.
881 Clemens/ Douglas (2005), p. 1206.
882 Cf. Oliver (1991), pp. 164-168; Bansal/ Roth (2000). Empirically this was shown by Goodstein (1994) as one of the first. Also cf. Pfeffer/ Salancik (1978) or Hannan/ Freeman (1989).
883 Cf. Oliver (1991), p. 153.
884 Cf. Lawrence et al. (2001), pp. 633-635.
885 Cf. Oliver (1991), p. 152.
886 Cf. Kondra/ Hinings (1998), p. 756; Lawrence (1999), pp. 165-166; Rivkin (2000); Baum/ Rao (2004); Lawrence/ Suddaby (2006).

Compromising Behaviour

Moving beyond compliant behaviour has been shown to emerge when organisations realise that following 'the letter of the law' is not sufficient in the prevailing environmental setting as pressures become too influential and strong.[887] Even those organisations that were "born subordinate"[888] after a while have been found to start realising their opportunities and trying to take advantage of them strategically.[889] This, together with the loss of organisational freedom and autonomy when passively acquiescing as well as the fact that organisations find "unqualified conformity unpalatable or unworkable"[890], makes slightly more active behaviour such as compromising on compliance more likely. While this, on the one hand, still characterises the organisational will of conforming to institutional requirements it likewise presents "the thin edge of the wedge"[891] in organisations' resistance to institutional pressures as they seek to follow their own interests. In this respect, compromising can also be described as "partial conformity"[892]. This includes tactics of balancing where companies aim to serve different requirements most effectively such as by 'playing off' parties against one another or 'achieving panty' amongst organisational interests. Especially when these conflict, balancing tactics are applied to achieve an acceptable compromise. An even more active tactic would be to pacify institutional expectations, such as by fulfilling at least minimum requirements or appeasing and placating institutional sources.[893] This could also be achieved by apologising as an instrument of impression management (see above) in that the organisation 'blames' the necessity to change on institutional forces which present 'unparalleled challenges' or 'conflicting and confusing pressures'. Doing so the organisation can not only deny its responsibility but present change as an unavoidable environmental response or adaptation to institutional pressures.[894] As a third tactic within compromising behaviour Oliver proposes that organisations may also start bargaining or allying with institutional agents on the

887 Cf. Hinings/ Greenwood (1988), p. 106; Brint/ Karabel (1991), pp. 346-347; Van de Ven/ Hargrave (2004), p. 271.
888 Brint/ Karabel (1991), p. 347.
889 Cf. Brint/ Karabel (1991), p. 347.
890 Oliver (1991), p. 153.
891 Oliver (1991), p. 153.
892 Oliver (1991), p. 164.
893 Cf. Oliver (1991), pp. 153-154.
894 Cf. Arndt/ Bigelow (2000), pp. 504-505.

conditions of compliance to get at least some form of concession such as by transferring own personnel to regulatory agencies as advisors in order to achieve an acceptable compromise.[895] Others add that by communicating openly with relevant institutional agents, companies could find out those requirements most important to these stakeholders and achieve a mutually agreeable solution and consensus as the least disruptive procedure.[896] Research on strategic behaviour in deregulating industries, for example, has shown that in response to arising change and uncertainty, incumbents after a while began to negotiate with regulatory agencies such as for the continuation of existing regulations in order to delay deregulation and gain time for adaptation.[897] In fact, several researchers advise that especially in situations of state dependence the importance of 'regulatory bargaining' should be carefully managed.[898] Bargaining tactics may also be helpful when "managers wish to avoid having their organizations remade in the image of the environment"[899] and thereby maintain legitimacy.

Avoiding Behaviour

Instead of simply passively acquiescing to or compromising on imposed institutional influence and as a third type of strategic behaviour, organisations may then look to avoid pressures. Oliver defines this as the "attempt to preclude the necessity of conformity"[900] by pursuing tactics of concealment, buffering, or escaping. Concealment depicts behaviour where the organisation 'disguises nonconformity behind a façade of acquiescence' such as by ceremonially pretending that it was implementing expected institutional norms, rules or requirements, making symbolic gestures of compliance, by 'paying lip service, or by engaging in 'window dressing' tactics. Here, activities are displayed that are institutionally expected but are not part of normal routines.[901] Other researchers have thus termed such

[895] Cf. Oliver (1991), pp. 154, 164-168.
[896] Cf. Clemens/ Douglas (2005), p. 1212.
[897] Cf. Mahon/ Murray (1980), pp. 133-134; Snow/ Hrebiniak (1980), pp. 325-326.
[898] Cf. Butler/ Carney (1986), p. 167; Carroll et al. (1988), pp. 236-237.
[899] Suchman (1995), p. 589.
[900] Oliver (1991), p. 154.
[901] Cf. Edelman (1977); Oliver (1991), pp. 154-156, 164.

forms of behaviour one of 'cheap response'[902]. Suchman pointed out that in order to reduce inspection, companies should try to 'simply make sense' and that by embedding new actions in networks of already legitimised institutions or 'cynically revising their core mission statement', they could manipulate their own appearance in order to signal allegiance and give off a false appearance of conformity. At the same time he found that there may actually be circumstances where the institutional audience specifically desires only a symbolic, superficial response, characterising a special situation requiring organisations to be aware of. To buttress achieved legitimacy, Suchman therefore proposes to provide periodic evidence of ongoing performance to avoid unexpected incidents which may reawaken scrutiny, either by downplaying concerns, making behaviour seem natural and inevitable by providing "matter-of-fact-explanations"[903], or manipulating language. Other tactics include the stockpiling of goodwill and support, such as trust and esteem as well as distinguishing between 'elite' and 'popular' support so that regulatory backing does not obscure looming public doubts.[904] Also others point out that by 'acting the innocent' organisations may build façades which lead to the creation of 'organisations of hypocrisy'.[905] Buffering, as the second tactic, again refers to the organisation's endeavour to minimise examination, i.e. the degree to which it is inspected, scrutinised, or evaluated by suspicious institutional actors. This can be achieved by de-coupling from institutional attachments as already pointed out by Meyer and Rowan and subsequently by Oliver and others.[906] Suchman again recommends that in cases where organisations aim to repair legitimacy, they can offer a normalising account which disconnects the 'harming' element from the rest of the organisation such as by denying, excusing, justifying, or explaining the disrupting issue. At the same time he emphasises that organisations in any case should avoid panic as those which too 'franatically try to reestablish legitimacy may dull the very tools that, if used with patience and restraint might have saved them'.[907] Also other researchers found that organisations used 'justification' as a measure to claim that change was essential in order to guarantee survival and for being able to provide the same if not better output quality also in the future, thereby acknowledging responsibility

[902] Cf. Ingram/ Simons (1995), p. 1479.
[903] Suchman (1995), p. 596.
[904] Cf. Suchman (1995).
[905] Cf. Brunsson (1989) who actually called the title of his work 'The Organization of Hypocrisy'.
[906] Cf. Meyer/ Rowan (1991), pp. 41, 59; Oliver (1991), pp. 155, 168; Bansal/ Clelland (2004), p. 95.
[907] Cf. Suchman (1995), p. 599.

for change but not for possible negative outcomes. As possible other options the researchers propose that organisations could play down change in that they give the impression of being well prepared, or, as a stronger alternative, hide or keep secret strategic change.[908] Clemens and Douglas even found organisations to have manipulated tools of measurement in order to avoid the discovery of non-compliance.[909] Oliver again draws attention to the fact that especially in cases where dependence on public approval and scrutiny is high, de-coupling may actually raise suspicion and reduce the organisation's access to resources, legitimacy and support.[910] Motivated by the wish to evade institutional pressures towards conformity an even "more dramatic avoidance response"[911] is to escape, either by exiting the sphere of forces or notably change goals, activities and strategies. The basis of such behaviour can be found in organisations' ability to, at least to a certain degree, select the environment it operates in by looking for a more "amicable venue"[912] of activity.

Defying Behaviour

The fourth form of strategic behaviour, defiance, again constitutes an unequivocal rejection of institutionalised norms and expectations and refers to situations where organisations either dismiss, challenge, or attack institutional influences, especially when these are not well understood or are in conflict with organisational interests and when the expected punishment is low or organisations have little to lose.[913] By ignoring pressures or deciding that costs of responding are not 'worth the effort' or that authorities do not have the necessary resources and/ or will to enforce regulations, organisations may explicitly dismiss requirements and try to avoid any discussion with institutional actors,[914] e.g. by 'sitting out the issue on the sidelines' and 'wait and see' what happens.[915] The unwillingness to work with regulators has been pointed out to be more pronounced, when regulatory pressures are directed at means

[908] Cf. Arndt/ Bigelow (2000), pp. 506-507.
[909] Cf. Clemens/ Douglas (2005), p. 1212.
[910] Cf. Oliver (1991), p. 155.
[911] Oliver (1991), p. 155.
[912] Suchman (1995), p. 589.
[913] Cf. Oliver (1991), pp. 156-157.
[914] Cf. Clemens/ Douglas (2005), pp. 1206, 1212.
[915] Cf. Mahon/ McGowan (1996), p. 39.

rather than at ends.[916] Also lengthy issuing processes promote organisational abstaining from conforming to institutional expectations, particularly when high conformance costs are involved.[917] Generally, firms have been found more willing to work with authorities when they are involved in effective cooperative ventures with them.[918] When challenging institutional pressures, organisations try to "make a virtue of their insurrection"[919], meaning that behaviour is not only directed at consciously departing from what is institutionally expected but turning this into an advantage. Organisations are particularly likely to challenge institutional forces when they are able to demonstrate that they are already 'doing more than necessary' and that their deviating actions are already above the norm of what is actually expected.[920] Possible measures to try and dominate institutional agents include legal manoeuvring, overwhelming agencies with useless papers or delays, and strategically using administrative processes or revolving door hiring practices as observed by researchers from other fields.[921] In situations, where institutional requirements are particularly negative and discrediting, or anticipated to become severe constraints, where organisations see their rights, autonomy, or privileges seriously questioned, they have been shown to attack institutional sources as a more aggressive tactic. This includes rather rude forms of behaviour like assaulting, belittling and vehemently denouncing institutionalised values and those that formulate them. In cases of increasing public criticism, for example, one reaction may be to attack the media source spreading this criticism.[922] Challenging and attacking activities may also include confronting institutional agents in court with the attempt of prosecution for overly burdensome requirements, or by attacking them publicly by initiating media campaigns together with other actors affected.[923] Lawrence at the same time pointed out that such tactics require respective organisational resources, abilities and especially legitimacy to do so.[924]

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916 Cf. Tenbrunsel et al. (2000), p. 854.
917 Cf. Lu (2005), p. 4.
918 Cf. Clemens/ Douglas (2005), p. 1211.
919 Oliver (1991), p. 156.
920 Cf. Oliver (1991), pp. 156-157.
921 Such as Bernstein (1955); Stigler (1971); Owen/ Braeutigam (1978); Russo (1992), pp. 14, 16.
922 Cf. Oliver (1991), pp. 156-157.
923 Cf. Clemens/ Douglas (2005), p. 1206; Schneiberg/ Clemens (2006), p. 206.
924 Cf. Lawrence (1999), pp. 171-172.

Manipulative Behaviour

The most active strategic response on Oliver's scale is characterised by manipulation, defined as "the purposeful and opportunistic attempt to co-opt, influence, or control institutional pressures and evaluations"[925] to alter and re-create institutional pressures to the organisation's own advantage. While Oliver was the first to point out such possibilities of active and strategic forms of 'manipulation', shortly after other researchers also found that organisations should not only perceive institutional forces as constraints to be obeyed, but actively 'seek response' and direct the environment onto a more favourable course such as by spreading rumours, publicly questioning the compatibility with existing norms, provoking legal and regulatory barriers as well as suppressing or disseminating inaccurate information to undermine the newcomer's cognitive legitimacy and socio-political approval.[926] Oliver, as the first of the three tactics, mentions the notion of co-opting in form of coalition building with institutional agents such as by bringing in powerful constituents into the organisation or at least forming potent alliances with them in order to neutralise institutional opposition and display the organisation's worthiness.[927] This also includes initiatives of teaming with well-established and successful organisations in order to gain legitimacy and through this the power to manipulate.[928] By installing organisational members in the sources exerting the institutional pressures, e.g. establishing monitors or 'watchdogs', hiring ombudsmen, even by replacing institutional agents, or by starting 'grievance procedures' and selectively confessing that certain elements were not in order, organisations can restructure in a way visible to institutional agents in order to take influence and gain or re-gain legitimacy.[929] Likewise, through shaping values and criteria, organisations can impact institutional sources and even create new institutional requirements, e.g. via the lobbying of government officials and/ or regulatory agencies, or the organisation of other field actors with similar interests, to make sure that "the rules of the game are enforced in a favourable way"[930]. Lobbying, for instance,

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925 Oliver (1991), p. 157. Italicised by author.
926 Cf. Cummings/ Worley (1993), p. 495; Aldrich/ Fiol (1994), pp. 656-658; Mahon/ McGowan (1996), p. 42; Van de Ven/ Hargrave (2004), p. 267.
927 Cf. Oliver (1991), pp. 157-158. Also cf. Clemens/ Douglas (2005), p. 1206.
928 Cf. Phillips et al. (2000), p. 31; Zimmerman/ Zeitz (2002), p. 425.
929 Cf. Suchman (1995), pp. 597-599.
930 Butler/ Carney (1986), p. 169. Also cf. Fahey/ Narayanan (1986), pp. 172-173.

could be applied to stop regulations from being passed or at least softened. Another possibility would be to try and implement a new institutional agent or drive a wedge between existing ones to mitigate institutional hazards and make deviating behaviour become legitimised.[931] Thus, instead of opposing, organisations should rather 'trap' institutional agents to serve their own interests.[932]

In addition to this, researchers also found that organisations were seeking to improve their relation with institutional agents by voluntarily participating in programs sponsored by institutional stakeholders, or by collaborating with institutional agents and signalling a proactive attitude.[933] In this respect more recent research points out the criticality of possessing respective skills and organisational structures such as departments authorised to manage these relations.[934] While tactics of co-opting and taking influence already present a highly active form of behaviour, they at the same time constitute an important framing process to prepare change and gain legitimising support for more active and deviating behaviour. Among this is taking control which characterises the most active form on the strategic continuum. This especially refers to 'preventive' tactics of manipulation such as voluntarily going beyond requirements in order to take the lead before institutional actors do and even stricter constraints are imposed.[935] Moreover, by purposefully seeking attention from the source of authorisation and showing compliance beyond requirements, organisations may at the same time bypass other requirements normally demanded and thereby gain legitimisation,[936] e.g. by adopting voluntary environmental strategies that seek to reduce impacts beyond regulatory requirements.[937] Others again depict manipulative tactics as part of creative behaviour which consigns to pre-emptive tactics in form of 'anticipatory

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931 Cf. Miles/ Cameron (1982); Mezias (1990); Oliver (1991), pp. 157-159; Mahon/McGowan (1996), pp. 64-65; Lawrence et al. (2001), pp. 624-625; Henisz/ Delios (2002), p. 349; Holburn/ Vanden Bergh (2002), pp. 58-60; Zimmerman/ Zeitz (2002), p. 425; Bonardi et al. (2005), pp. 398-399; Clemens/ Douglas (2005), p. 1212; Jacobides (2005), pp. 487-488.

932 Cf. Austvik (1997), pp. 1004-1005.

933 Cf. Delmas/ Toffel (2004), p. 216; Bonardi et al. (2005), p. 410.

934 Cf. Sharma/ Vredenburg (1998); Delmas/ Toffel (2005), p. 8; Rühli/ Sachs (2005), pp. 225-226.

935 Cf. Mahon/ Murray (1981), pp. 257-261; Oliver (1991), pp. 166-167; Rugman/ Verbeke (2000), p. 381; Sharma (2000); Bonardi et al. (2005), p. 407.

936 Cf. Scott (1987a), pp. 502-507.

937 Cf. Sharma (2000).

subordination' trying to 'curry favour' with key state officials by showing behaviour that is believed to gain approval such as taking sponsorship or fuelling scientific research.[938]

Essentially, this most active form of strategic behaviour implies that organisations take advantage of new opportunities and shape the environment according to their interests. This has been indicated by the notion of the institutional entrepreneur (see above) which again allows them to 'carve out'[939] and invade niches already occupied, re-combine available institutional practices, or even create new ones through 'radical combination'.[940] In this respect organisations function as role models which set the agenda for others.[941]. In order not to get caught in a 'legitimacy trap' however, the creation of such new practices requires organisations to generate new beliefs until the divergent behaviour becomes institutionally legitimised again.[942] Thus, as institutional change is "organized around debates about the appropriateness of particular organizational forms"[943] and faces a liability of newness especially in the beginning,[944] organisations must first 'debug' the innovative behaviour and gain legitimacy as the most critical resource – particularly as access to other resources may otherwise be refused.[945] Here, impression management may also be applied to downplay the newness of the innovation and the organisation's entrepreneurial activities and portray familiarity to 'satisfy the myths of legitimacy'.[946] Suchman pointed out that innovative behaviour often requires the pre-emptive intervention in the institutional environment to develop the necessary support tailored to the organisation's distinct needs. Among this is the pro-active promulgation of new explanations of social reality through cultural manipulation, including the moulding of constituents' tastes, image advertising, and the displaying of success through "attention-grabbing"[947] demonstrative events using strategic communication and lobbying tactics. Moreover, by acting together and jointly proselytising such as in form of

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938 Cf. Brint/ Karabel (1991), p. 346; Suchman (1995), pp. 592-593; Zimmerman/ Zeitz (2002) (who also refer to business-related activities as will be enlarged on below); Lawrence/ Suddaby (2006).
939 Cf. Baum/ Rao (2004), p. 243.
940 Cf. Rao/ Singh (1999); Baum/ Rao (2004); Campbell (2004).
941 Cf. Goodstein (1994), p. 359; Fligstein (1997); Zimmerman/ Zeitz (2002), p. 425.
942 Cf. Van de Ven/ Hargrave (2004), p. 286.
943 Hinings et al. (2004), p. 312.
944 Cf. Baum/ Rao (2004), p. 239.
945 Cf. Van de Ven/ Hargrave (2004), p. 271.
946 Cf. Aldrich/ Fiol (1994); Arndt/ Bigelow (2000); Lounsbury/ Glynn (2001); Scott (2001).
947 Suchman (1995), p. 592.

'lobbying associations'[948], this form of "collective evangelism helps to build a winning coalition of believers"[949] and enables organisations to create legitimacy for change and establish new forms of behaviour. Similarly, by building on Aldrich and Fiol (see above), Baum and Rao propose that institutional entrepreneurs should follow a certain procedure in order to win stakeholder support for new practices such as by establishing frames which match the institutionalised setting while at the same time allowing new behaviour. As the basis of this procedure they see the development of a common understanding and trust of which an important instrument is the utilisation of rhetoric which they determine as a "powerful weapon against the vicious cycle of social barriers to innovation"[950]. Among this is the utilisation of qualitative narratives to create a "dramatic imagery"[951] such as entrepreneurial story telling,[952] or a continuous 'making and re-making of stories'[953] which can be applied to familiarise stakeholders with change, build credibility and gain acceptance.[954] In this respect, newspapers, magazines, leaders' biographies, consultants, training courses or other forms of communication networks have been found to serve as valuable sources for distributing such narrative recipes. Often, special reports are also created to emphasise the importance of a certain topic. Thus, apart from its entertainment value the utilisation of language in form of story telling or gossiping works as a creative device to establish a favourable environment and a new identity to jolt movements or a 'new logic'[955] which again supports organisational change.[956]

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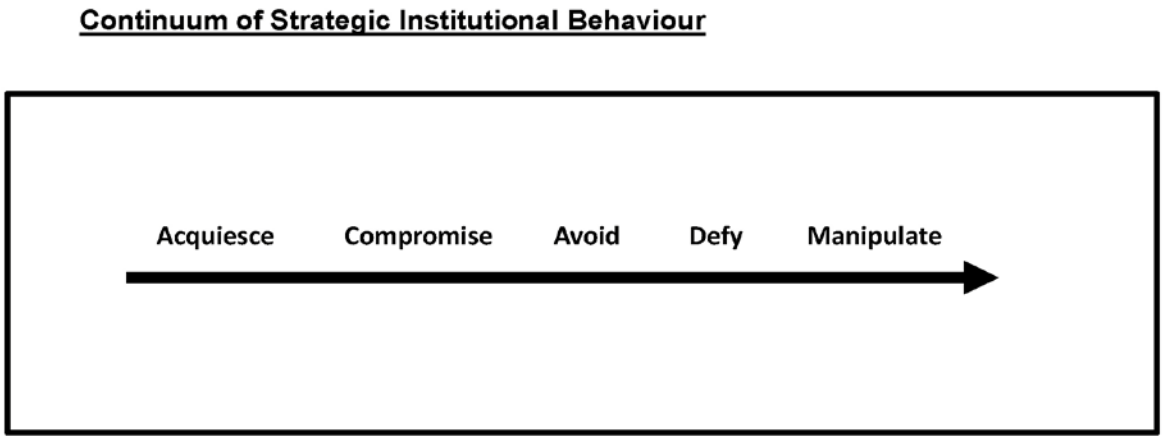
948 Cf. Baum/ Rao (2004), p. 246.
949 Suchman (1995), p. 592.
950 Aldrich/ Fiol (1994), p. 663.
951 Hinings et al. (2004), p. 314. Also cf. Covaleski/ Dirsmith (1988), p. 583.
952 In this sense entrepreneurial story telling differs from that mentioned above in that is is directed at creating new forms instead of defending existing ones. Cf. Elsbach/ Kramer (1996).
953 Cf. Lounsbury/ Glynn (2001), p. 560.
954 Cf. Elsbach (1994).
955 Cf. Scott et al. (1999).
956 Cf. Edelman (1977); Aldrich/ Fiol (1994); Suchman (1995); Abrahamson (1996); Elsbach/ Kramer (1996); Sevón (1996), pp. 60-65; Ruef (2000); Lounsbury/ Glynn (2001); Van de Ven/ Hargrave (2004), pp. 277-282.

Figure 15:[957] Continuum of organisational behaviour in response to increasing environmental change from an Institutional Perspective

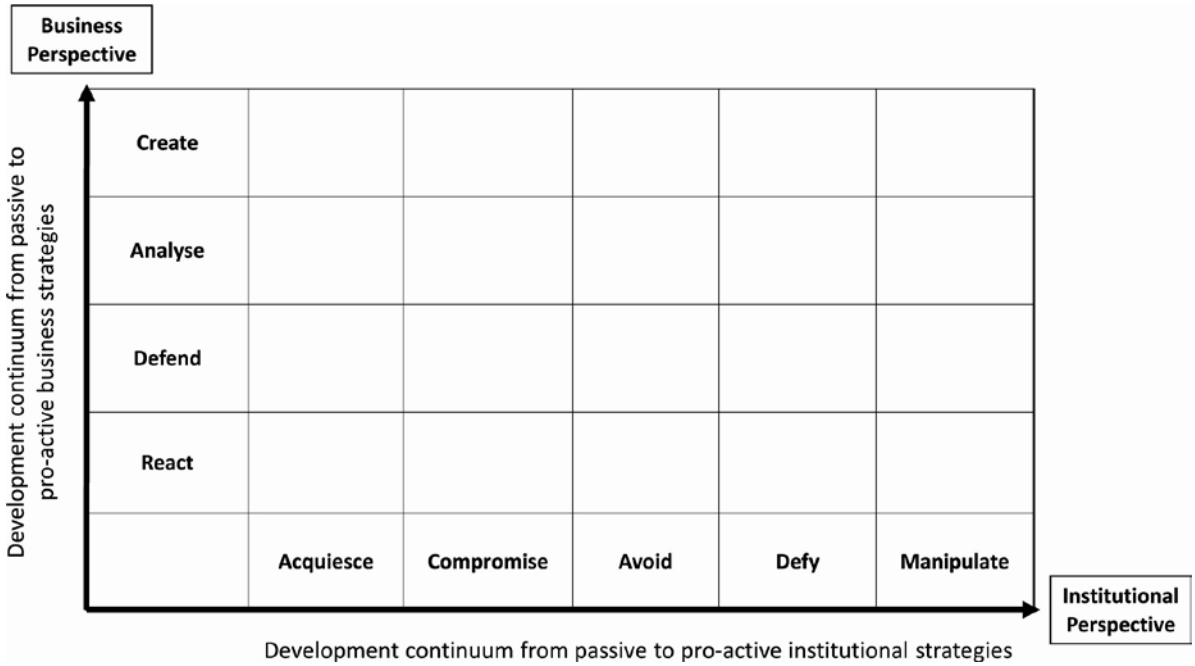


[957] Own figure based on findings from above.

5.2.3 Deriving Stylised Development Paths illustrating Organisational Behaviour in Response to Environmental Change over Time from an Integrated Perspective

Having determined classifications for analysis from both perspectives and bringing together all the considerations from above, a two-dimensional matrix model can be built. This is illustrated in the following figure.

Figure 16:[958] Integrated Model Framework



This allows depicting organisational behaviour from each perspective over time. Following the insights gained from above, it can be assumed that organisational development after environmental upheaval generally takes place as one where strategic behaviour develops from passive to becoming more active over time. Transferring this onto the matrix, organisational behaviour would show as a development path. In the case that the strategic behaviour found is predominantly determined by institutional strategies and tactics, this would show as a

[958] Own figure.

development path along the x-axis and could be termed 'institutional path'. Such developments may either be the result of organisations having been forced there by institutional constraints, or because their focus and resources were directed at the institutional environment. Dacin, for example, indicated that this may happen when organisations perceive institutional forces as a larger threat or opportunity than drivers from the business environment.[959] Such a case is illustrated through the grey path in the figure below (arrow number 1). In contrast, the other extreme would be a 'business path', showing as a development along the y-axis, here depicted by the yellow arrow (number 2). In this case, behaviour is mainly determined by business strategies. In the case that organisations paid attention to influences from 'both' environments and mutually used strategies to achieve the respective 'other' goals, i.e. business strategies to maintain or gain legitimacy and institutional strategies to accomplish business goals, the development path would show as a diagonal arrow through the matrix, here shown in orange (and labelled number 3). This could also be termed an 'integrated path'.

While these paths present rather straight developments, other courses are also possible, such as when development starts along one axis but then turns towards the other as organisations move from one strategic pattern to another.[960] This is shown by the divergence of development which at one moment in time changes direction onto another path, here depicted as changing to the respective other colour and arrows becoming dotted. For example, a development which started as a business path and then diverted to an institutional track -as institutional forces grow stronger, the issue of maintaining or gaining legitimacy becomes more prevalent and organisational behaviour thus dominated by institutional strategies-[961] would show as a yellow arrow first and then become a grey dotted one. A contrasting development path would result when behaviour is first determined by institutional strategies before becoming business oriented. This, e.g., may be observed in phases of "market-oriented

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959 Cf. Dacin (1997).

960 The change between strategic patterns has been pointed out particularly by Huff. Cf. Huff (1982), p. 122. Also Grant claimed that when facing radical environmental change, organisations may be forced to drastically change their scope. Cf. Grant (2002), p. 444.

961 This possibility has recently been indicated by other researchers. Cf. Lamberg et al. (2002); Clemens (2005), p. 1207.

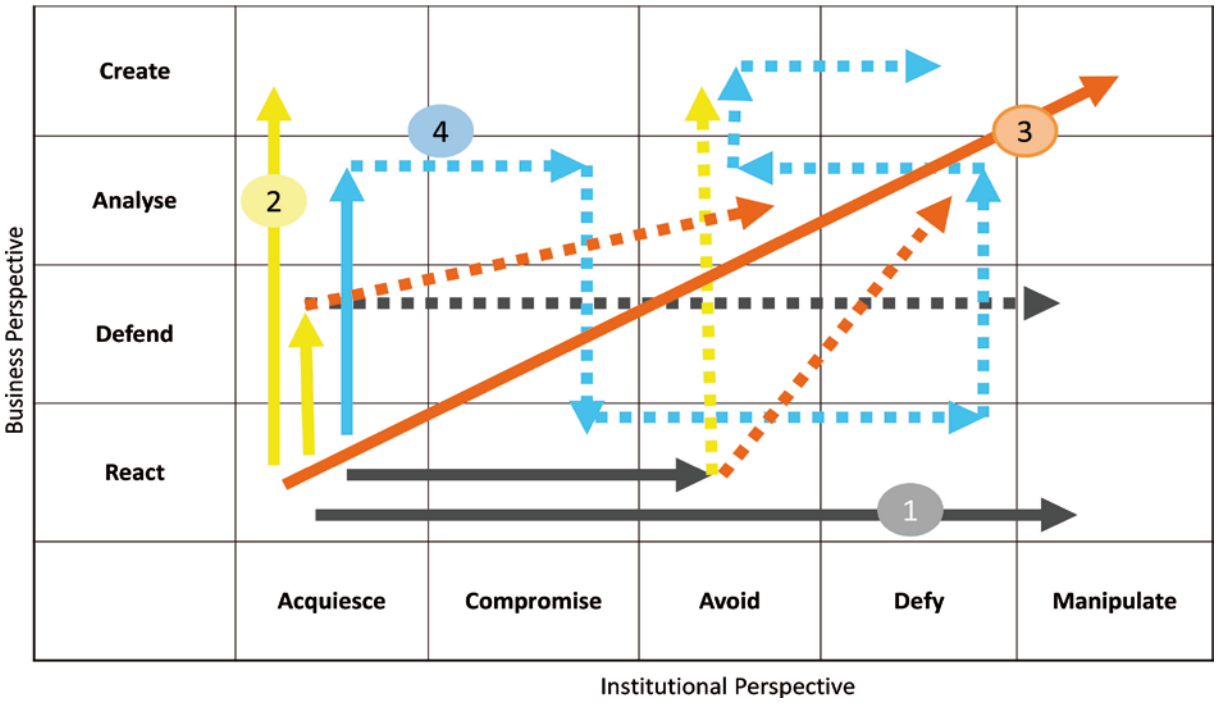
institutional transitions"[962]. In this case the path would be grey first and then become dotted yellow. Research has shown that while organisations focus more on the institutional environment in the early phase of institutional transition, which is often characterised by a relatively high degree of uncertainty, in later phases, where the institutional setting has become more stable but the market environment more competitive, 'business-supporting' behaviour becomes more important. Peng, for example, found that as new, market-supporting institutions pressure firms to engage in market competition, they develop respective strategies which enable them to "navigate the turbulent waters of institutional transitions"[963]. Also others found that organisations over time respond by moving to establish competitive positions and set out to realise market-based opportunities.[964] Another reason for companies to change onto a market path may be given when institutional strategies do not bring expected results or when the costs of responding to institutional pressures are not worth the effort as pointed out by Clemens and Douglas.[965] At the same time companies may also be found to consciously violate institutional norms or use the institutional setting to respond to market forces and enhance business development as determined above. This may show in tactics where, at first, ties with critical institutional players such as government officials or regulators are established, while later business strategies, such as the setting up of WOS or acquiring other players, become more critical.[966] In fact, and supporting the idea of this model, "such market-oriented institutional transitions can be conceptualised as moving from one primary mode of exchange to another mode"[967]. Similarly, it may also be the case that development changes onto an integrated path (illustrated as dotted orange arrows). While such deviations generally imply that the initial path taken is not further followed, it still continues to exist and may thus serve as a basis onto which companies may turn back onto later on. Institutionalised practices, for example, which have not disappeared completely, therefore still exert influence although institutional developments have already taken on "lives of their own"[968], an aspect to be accounted for in empirical research. In case such changes of direction took place several

[962] Peng (2003), p. 278.
[963] Peng (2003), p. 277.
[964] Cf. Hinings/ Greenwood (1988), pp. 155-156; Hoffman (1997), p. 290; Lu (2005), p. 5; Schneiberg/ Clemens (2006), p. 207.
[965] Cf. Clemens/ Douglas (2005), p. 1206.
[966] Cf. Peng (2003), p. 289; Clemens (2005), p. 1211; Guilléen (2005), pp. 15-34.
[967] Peng (2003), p. 278.
[968] Suchman (1995), p. 593. Also cf. Hinings et al. (2004), p. 317.

times, development would show as a 'zic-zac' path through the model, illustrated here as a turquoise arrow that after the first change of direction turns into a number of dotted ones, leading to what has here been labelled path number 4. At the same time it must be considered that such 'zic-zac' paths may also be the result of companies having been "thrown off course amid the obstacles and challenges"[969] and having become 'strategically confused'. Especially after having been subject to a "jungle of conflicting requirements"[970], such as when the regulatory changes introduced are unclear and the organisational environment is characterised by uncertainty, organisations face the danger of becoming 'lost in chaos' over the course of development. Another risk is that of becoming trapped in an endless circle of exploration[971] and paralysed when "scrambling to diversify"[972] due to engaging in too many and especially unrelated activities. Research on organisational behaviour after deregulation has even shown that there is a danger of players 'unintentionally' harvesting their core business.[973] The following figure illustrates the possible organisational development paths just described above.

969 PWC (2003b), p. 14.
970 Scott (1983), p. 105.
971 Cf. March (1994).
972 Tregoe/ Zimmerman (1980), p. 18.
973 Cf. Courtney et al. (1997); Szulanski/ Amin (2001), pp. 542-545; Bryan (2002), p. 22.

Figure 17:[974] Stylised organisational development paths



5.3 Summary and Conclusion – Applicability of the Model for Analysing Incumbents' Behaviour in Response to European Gas Industry Change

Summarising the above, one of the most fundamental outcomes to be drawn from the preceeding reviews is that so far no empirical study exists which analyses organisational behaviour of European gas companies in response to European Energy Policy changes over time from in a comprehensive way. As determined above, such an inclusive analysis would have required an integrated approach. The same holds true with regards to the review of theoretical work and studies from other industries. In fact, although academic and empirical researchers, based on the shortcomings of each approach, have begun to discuss and provide

[974] Own figure derived from considerations from above.

some evidence for the benefits of taking an integrated perspective, no model so far exists which would enable analysis and explanations of organisational behaviour in such environmental settings as in the European gas.

As a consequence of this and based on the different insights gained, a model was created in order to satisfy the requirement of accounting for organisational behaviour in response to what above has been termed 'market', or 'business', and 'non-market', or 'institutional', environmental influences. Essentially, the specific set-up of the model well allows mapping organisational strategic responses to environmental changes and the resulting development path. At the same time it enhances explanatory value by providing the researcher with a framework to look at and explain organisational behaviour through each lens individually as well as from an integrated perspective. Still, while these paths characterise examples of developments possible to be observed, it has to be pointed out that theoretically there may be numerous different adaptive scenarios that unfold over time. While "a complete enumeration of strategic actions is impossible"[975] though, it is also acknowledged that there not necessarily is one 'best path'[976]. Moreover, being aware that "as with all stage models, there are problems of presenting them as cut and dried"[977] and as organisational development in 'real life' is often "not nearly as orderly as the model implies"[978], this conceptualisation only presents a characteristically ideal model. Nevertheless, it serves as a fundament to integrate both perspectives and visualise organisational behaviour and thus forms a sound basis for the analysis of organisational behaviour in the changing European gas industry.

In this respect the focus of interest lies on finding out whether there is one specific path taken by European gas incumbents as organisations which have been subject to similar environmental influences often tend to "travel the same paths"[979], or whether several different paths can be observed. Another contribution is to explain these findings. Flier et al., for

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975 Simerly/ Li (2000), p. 38.

976 Cf. Dutton/ Freedman (1985), p. 50. This has also been concluded on by Volberda et al. ((2001), p. 223). Sahlin-Andersson, for example, found that there may be cases where imitation is an organisation's best choice. Cf. Sahlin-Andersson (1996).

977 Hinings et al. (2004), p. 317. Also cf. Kikulis et al. (1992), p. 363.

978 Cummings/ Worley (1993), p. 63.

979 Mahon/ McGowan (1996), p. 40.

example, having analysed the strategic renewal behaviour of British, Dutch and French financial incumbents since the implementation of EU banking regulations by applying three single-lens theories along with a co-evolutionary perspective, found that, despite having adopted similar activities due to a shared industry mind-set, companies' development paths turned out to be different in that some were more pro-active in their strategic behaviour than others. The authors assigned this to differences in the national institutional context in terms of the implementation of regulation, but also found managerial capacity and leadership to determine such strategic renewal processes.[980] Apart from this finding their example supports the approach of having included an internal perspective for enhancing explanatory value.

Fundamentally though, one of the most critical conclusions to be derived is that the model satisfies all the requirements formulated after the analysis of empirical reality in chapter III. In essence this is:

- ✓ Allowing the classification of different types of environmental forces and actors in form of business and institutional ones.
- ✓ Bringing together a "juxtaposition of two seemingly irreconcilable theoretical worlds"[981].
- ✓ Explaining organisational behaviour in response to environmental change.
- ✓ Taking account of the temporal dimension to account for development over time, a topic identified as requiring more research in both streams[982] and for organisational research in general.[983]
- ✓ Being applicable to reflect empirical reality.
- ✓ Closing explanatory gaps, thereby enhancing and bringing forward academic research.
- ✓ Providing advice for practitioners.

Before applying this to empirical reality, however, an appropriate methodological approach must be established. This is done in the following chapter.

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980 Cf. Flier et al. (2003).
981 Midttun (2001), p. 13.
982 Cf. Burgelman (1994), p. 24; Peng et al. (2005).
983 Cf. Pettigrew (1992), p. 11; Grant/ Cibin (1996), pp. 167, 186; Mahon/ McGowan (1996), p. 41.

CHAPTER VI METHODOLOGICAL APPROACH

6.1 Deriving the Research Instrument

Fundamentally, while research can be distinguished from other means of gathering knowledge, such as learning, there is no agreement on what encompasses a sound scientific method.[984] Depicted as a mode for dealing with empirical material and a tool or technique to collect and analyse data,[985] the most important postulate that determines the method chosen is that each has it advantages and disadvantages and that there is neither an adequate nor an inadequate one in itself. Instead, it must always be approached within the setting of the research situation.[986] Similarly, Jensen defines 'methodology' as "a theoretically informed plan of action in relation to an empirical field"[987]. According to Yin, the final type of research strategy chosen is determined by three distinctive characteristics:[988]

1. The form of research questions developed
2. The extent of control the researcher has over events
3. The degree of focus on contemporary as opposed to historical events

The first characteristic refers to the way in which research questions are asked. A basic categorisation can be made by assigning types of 'who', 'what', 'where', 'how', and 'why' questions. While the first three forms (who, what and where) favour survey strategies and archival analysis, 'how' and 'why' questions present themselves to favour experiments or case studies as well as histories. The reason for this subdivision is based on the fact that 'how' and 'why' questions are more explanatory in nature and specifically concerned with operational aspects which need to be observed over time.[989] As the research question

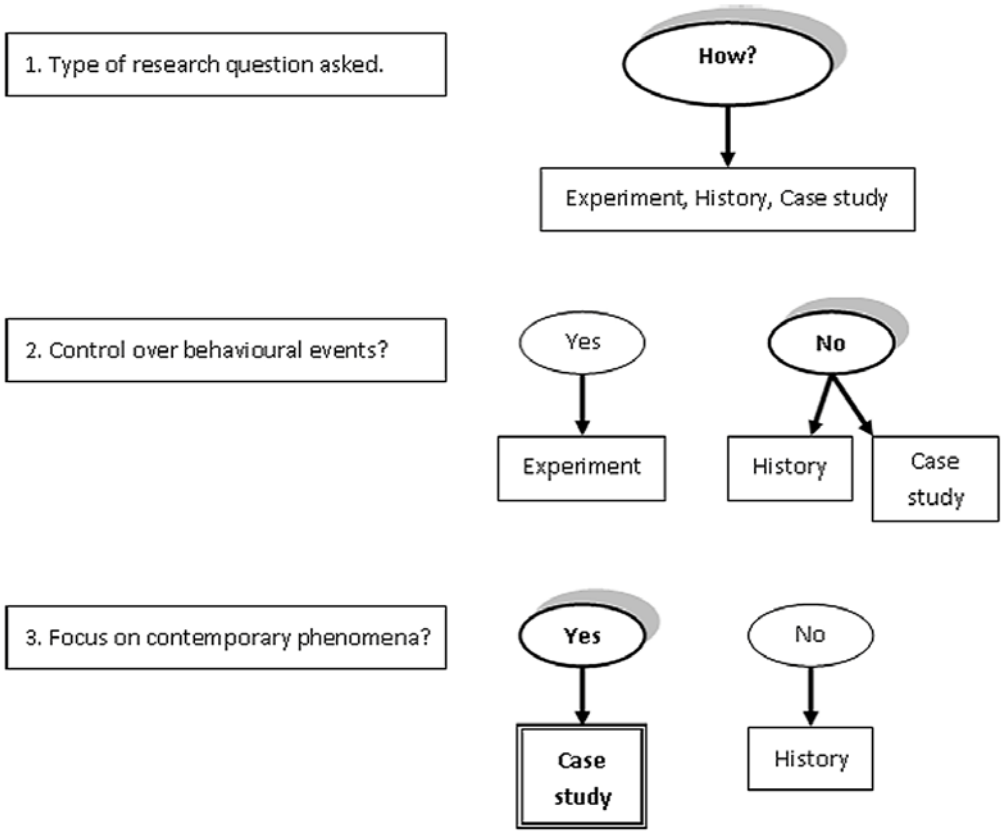
984 Cf. Bonoma (1985), p. 200.
985 Cf. Alvesson/ Deetz (2000), p. 4. Also cf. Schwandt (2001).
986 Cf. Downey/ Ireland (1979), p. 630; Ghauri (2004), p. 116.
987 Jensen (2002), p. 258.
988 Cf. Yin (1994), p. 7; Yin (2003), p. 5.
989 Cf. Yin (2003b), pp. 5-6.

developed in this thesis is a 'how' question, the research strategies of survey and archival analysis do not have to be elaborated on any further. The remaining possibilities in question as research strategies for this study according to the distinction above thus are experiments, historical analysis and case study research. This distinction can be further deepened by referring to the extent of control the researcher himself has over behavioural events and the degree of focus put on contemporary events in contrast to historical events (see enumeration above). The characterisation of 'control over behavioural events' means that when carrying out experiments the researcher is able to directly, precisely, and systematically manipulate behaviour. This statement is valid for laboratory as well as for field experiments which take a phenomenon from its context, and where the focus of attention can be directed towards only few variables of interest while other parameters can be controlled for. Out of the three remaining research strategies, only experiments allow for control over behavioural events, historical analysis and case studies do not. Surveys again are limited in their ability to reveal the relationship between a phenomenon and its context. Applying these considerations to the situational context of this work it becomes evident that the researcher - due to the complexity and dynamic forces which have influenced the European gas market, its organisations and consequently the setting of analysis and research - is not able to take control over behavioural events. Consequently, experiments are not a suitable research strategy applicable in this work. Hence, the third characteristic laid out above must be looked at. Asking whether the degree of focus is on contemporary rather than on historical events, the remaining suitable research strategies are either historical analysis or case studies. A historical approach should be chosen if its distinctive contribution is made by dealing with a past of which no relevant persons are alive to report. Case study research on the other hand explicitly focuses on contemporary events where behaviours cannot be influenced. Nevertheless, historical methods and case study research remain closely connected as they make use of the same techniques such as analysing primary and secondary documents. Allowing for the inclusion of contemporary events, the case study's distinctive advantages are the immediate observation of events as well as the consideration of a wide variety of empirical evidence, including documents, artefacts and interviews.[990] As becomes apparent from the process of exclusion just described and as illustrated in figure 18 below, the research strategy to be applied in this thesis should be based

[990] Cf Yin (2003b), pp. 6-8.

on case study analysis. Under these considerations the method of conducting interviews with organisational members has been ruled out in order to ensure highest levels of objectivity in this study, especially as one drawback of this technique is that interview partners may try to 're-write history' by presenting themselves in a better light.[991] Moreover, when conducting interviews, the researcher takes the role of a participant instead of remaining an observant who is not able to take influence,[992] as is the case when relying on external documents.

Figure 18:[993] Deriving the appropriate research instrument



[991] Cf. Miles (1979), p. 597. Scapens also pointed out that the transcription of interviews is time and resource consuming. He thus even advised PhD students to be selective when doing so (cf. Scapens (2004), p. 270).
[992] Cf. Scapens (2004), pp. 263-264.
[993] Own illustration based on explanations from above.

6.2 Qualitative Case Study Research

6.2.1 Definition and Value of Case Studies

Yin, as the most cited writers on case study research,[994] defines a case study as "an empirical inquiry that investigates a contemporary phenomenon within its real-life context, in particular when the boundaries between phenomenon and context are not clearly defined"[995]. Especially when considering the characteristics of the prevailing research setting, case studies constitute the most suitable tool as they allow the analysis and deepening of the understanding of a complex and difficult to quantify research phenomenon. At the same time they enable the researcher to maintain holistic and meaningful peculiarities of organisational 'real-life events' which are difficult or even impossible to analyse outside their natural setting. Moreover, case study analysis goes beyond the mere provision of a static snapshot. It enables a holistic view by cutting across the temporal and contextual dimensions of events to guide the researcher from largely uncontrollable observations to generalisable inductive conclusions by not only allowing the evaluation of processes but also the analysis of outcomes. This can be done by tracking the chronological sequence of events in order to show and explain strategic organisational transformation in complex and rapidly changing environments.[996] Apart from already having been applied extensively within the area of business policy, strategic management and organisational theory in general, indepth qualitative case studies have also proven to be a valuable tool within Institutional Theory to analyse and explain heterogeneous strategic behaviour.[997] And, last but not least, case study research has been proposed as a particularly suitable method of analysis for Ph.D. students.[998]

Having determined case studies as the most appropriate research method another distinction can be made between a quantitative and a qualitative research design, both of which have

994 Cf. Berry/ Otley (2004), p. 236.
995 Yin (2003a), p. 13.
996 Cf. Ginsberg (1984), p. 550; Bonoma (1985), pp. 199, 202-204; Yin (2003a), pp. 1-2; Yin (2003b), pp. xi, xvii. Ghauri (2004), pp. 111-112. Very recently also pointed out by Viellechner/ Wulf (2010), pp. 11-12.
997 Cf. Schneiberg/ Clemens (2006), pp. 215, 217.
998 Cf. Berry/ Otley (2004), p. 249.

their place in organisational research.[999] Although case studies have by now been acknowledged as a research method in their own right and a popular tool in economics and management literature,[1000] they are often wrongly equated with qualitative research. The latter suffers from being perceived as 'soft', non-numerical, non-statistical and too subjective, while quantitative work is automatically equated with objectivity. But even apparently objective data in a way is interpreted subjectively by the researcher as well as the reader.[1001] Moreover, and particularly true for this work, are organisational strategies much too multi-dimensional and contingency-dependent to be analysed solely quantitatively. In addition to this there are "many aspects of organizations which do not easily lend themselves to quantitative interpretation"[1002]. Also the empirical setting is much too wide to be captured and measured statistically. Furthermore, case study research as a form of the textual operationalisation of strategy has been assessed as especially useful for theory building.[1003] Although not the primary aim of the thesis, this constitutes an additional benefit as the theoretical analysis carried out above has revealed a research gap and thus a possible starting point for subsequent research on theory building. Another benefit of case studies is that they allow a variety of methods to be applied and may be a mix of quantitative as well as qualitative methods,[1004] thus supporting their value as a research technique. Similarly, quantitative and qualitative research should not be seen as competing but as complementary,[1005] a perspective also taken in this thesis. Still, the major part of analysis is based on qualitative analysis as this has been identified as the most suitable and valuable approach in this work as is explained in the following.

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999 Cf. Downey/ Ireland (1979), p. 630; Yin (2003b), p. Xii; Ghauri (2004), p. 109.

1000 The case study approach has already been a popular method in psychology, sociology as well as political and educational science. Cf. Yin (2003a), p. 1; Yin (2003b), p. xi. It has also been pointed out that a difference in research cultures may be the reason researchers using quantitative or qualitative methods. The European academic research setting for example is believed to be generally more receptive towards qualitative research. Cf. Marschan-Piekkari/ Welch (2004), p. 7.

1001 Cf. Downey/ Ireland (1979), p. 632; Marschan-Piekkari/ Welch (2004), pp. 5-8; Scapens (2004), pp. 257-258; Welch/ Welch (2004).

1002 von Bertalanffy (1973), p. 46.

1003 Cf. Hambrick (1980), pp. 569-570.

1004 Cf. Yin (1981), p. 58; Yin (2003a), pp. 14-15, 97; Ghauri (2004), pp. 109, 112. For examples cf. Hofstede et al. (1990).

1005 Cf. Miles (1979), p. 595; Usunier (1998), p. 134.

6.2.2 Value of Qualitative Case Study Research

Simply expressed, qualitative research, despite its characteristics or distinction to quantitative research not being entirely clearly defined,[1006] provides an answer to 'messy problems and complex issues'[1007]. Qualitative research methods not only enable the studying of a phenomenon in its natural setting, but make qualitative data very context specific and therefore more 'real' and 'holistic'.[1008] Particularly when analysing organisational behaviour qualitative analysis is to be the preferred research method as it offers "a far more precise way to assess causality in organizational affairs than arcane efforts like cross-lagged correlations"[1009], especially as quantitative approaches to modelling strategy have neither always turned out useful nor worked as smoothly as assumed due to their inability to delineate the underlying logic of the phenomenon to be analysed.[1010] While 'hard', i.e. quantitative, data does reveal relationships, it is particularly, if not only, 'soft', i.e. qualitative, data that allows an explanation of these relationships. In fact, those researchers focussing only on very few variables while keeping all other constant have been accused of obscuring issues more than clarifying them and thus increasing confusion.[1011]

Qualitative data in contrast allows the researcher to preserve a chronological flow where critical and only minimally suffers from retrospective distortion as formulated by Miles.[1012] In this work this is extremely valuable due to the complexity characterising the research setting which makes it difficult to isolate variables (as became particularly clear in chapter III), a fact which can be counteracted by qualitative case study inquiry. While the use of qualitative data to analyse an organisation's environment had already become important to organisational research early, also case-based research is commonly used by now.[1013] Some already even

[1006] Cf. Schwandt (2001), p. 214.
[1007] Cf. Wrigth (1996), p. 70. Also cf. Hopf (1993), p. 19.
[1008] Cf. Miles (1979), p. 590; McClintock et al. (1979), p. 612; Van Maanen (1983), p. 9; Denzin/ Lincoln (1994), p. 4; Marschan-Piekkari/ Welch (2004), p. 17.
[1009] Miles (1979), p. 590.
[1010] Cf. Mintzberg (1979), pp. 583-584; Ginsberg (1984), p. 551.
[1011] Cf. Mintzberg (1979), pp. 587-588.
[1012] Cf. Miles (1979), p. 590.
[1013] Cf. Downey/ Ireland (1979), p. 630; Berry/ Otley (2004), p. 250.

speak of the globalisation of qualitative research.[1014] At the same time there are still frequent calls for more research "of this kind"[1015] which has also generated "some of the most provocative work"[1016]. Within Institutional Theory, for instance, case studies have been used to analyse organisational change and show the influence of taken-for-granted assumptions on organisational activity.[1017] To enhance research in CSR practices again, qualitative data analysis has been applied.[1018] Finally, the application of qualitative methods not only is determined by the nature of the phenomenon researched, but also by the researchers's ideology and the philosophical foundation of the adopted research approach.[1019] By using qualitative case studies, this thesis also contributes to enhancing the general status of academic research. Before doing so though, the type of case study to be applied as well the process of conducting them need to be explained as is done in the following.

Generally, case studies provide a flexible approach suited to different types of research questions.[1020] Three fundamental types of case studies can be distinguished:[1021] descriptive, exploratory and explanatory ones. The first type, as the name already indicates, is used for describing phenomena in their context. While descriptive research has in 1979 already been considered to have been the norm in organisation theory for a long time,[1022] and although providing helpful information,[1023] it is not sufficient for the purpose of this work as conclusions are also to be drawn here. In such cases the application of exploratory or explanatory studies is advised. The exploratory type is appropriate when looking to formulate questions and hypotheses for a subsequent study, for ascertaining the feasibility of desired research procedures, or for developing a new theory and allowing its subsequent quantitative testing. Collecting data and field work are thus done beforehand, often intuitionally, in order

[1014] Cf. Alasuutari (2004), p. 17.
[1015] Marschan-Piekkari/ Welch (2004), p. 7.
[1016] Vernon (1994), pp. 144-145.
[1017] Cf. Burns et al. (2003).
[1018] Cf. O'Dwyer (2004), p. 391.
[1019] Cf. Berry/ Otley (2004), p. 233.
[1020] Cf. Ghauri (2004), p. 109.
[1021] Cf. Yin (2003b), p. xvii. Other types of case studies to be distinguished are those which support quantitative studies or those which prepare carrying out quantitative research. As this study is based on qualitative analysis though, these other types are not enlarged on further.
[1022] Cf. Mintzberg (1979), p. 583.
[1023] Cf. Scapens (2004), p. 259.

to determine theory via direct observation. Hence, when considering the aim and requirements of this work, this case study type does not seem appropriate. Keeping this in mind, analysis here is mainly built on explanatory cases as these not only enable the researcher to explain how things have happened, but to develop an explanatory causal path which shows critical cause-and-effect relationships. While the distinction between exploratory and explanatory cases is not always clear-cut, especially the latter reveal the "real potential of case study research"[1024], supporting the argument for their application. Mintzberg even finds that all interesting research is explorative in the end.[1025]

Having set the type of case study to be applied, the number of cases has to be determined next, based on the research problem and objective formulated. Here, a distinction can be made between single and multiple designs. Single studies should be conducted in extreme or unique cases where all conditions necessary to test, confirm, challenge or extend a well-formulated theory are met, or to represent revelatory cases in terms of pilot studies where observation previously was not possible. As this is not the case here, a multiple design, consisting of two or more cases, must be used, especially as no 'critical incidence case'[1026] existed as determined from literature review (see above). While each is analysed separately, cases should be selected so that they replicate each other in that they pose the same question and study the same phenomenon. This enables the researcher to compare results which are either very similar or totally different.[1027] Using more than one single case not only allows examining different dimensions and levels of the research variables, but also makes results more robust as the evidence from multiple studies is more compelling. Through this particularly powerful conclusions can be drawn, especially for extending theory.[1028] Within the field of institutional research, for example, the incorporation of "comparisons over time, across groups, and across settings within case studies of institutional change"[1029] has been

[1024] Scapens (2004), p. 260. Scapens pointed out here that this may even be the main objective of research. Cf. Scapens (2004), p. 262.
[1025] Cf. Mintzberg (1979), p. 584.
[1026] Cf. Viellechner/ Wulf (2010), p. 11
[1027] Cf. Yin (2003a), pp. 39-53; Yin (2003b), pp. 3-6; Ghauri (2004), p. 114; Scapens (2004), p. 263.
[1028] Cf. Bonoma (1985), p. 204; Yin (2003a), pp. 39-53; Ghauri (2004), p. 114; Scapens (2004), p. 263.
[1029] Schneiberg/ Clemens (2006), p. 220.

pointed out as being particularly valuable to enhance understanding within institutional theory. The process of carrying out case study research is explained next.

6.3 Process of Conducting Qualitative Case Study Research

6.3.1 Requirements

Fundamentally, as cases should not just be chosen for convenience or the accessibility of data but must fit the theoretical framework chosen and variables identified, the researcher has to justify the selection of each case and the purpose it serves.[1030] At the same time he also needs to be 'pragmatic' as, for instance, "the most appropriate company may be too far away or refuse access"[1031]. Still, to make case study analysis, or any kind of research valuable, the researcher is responsible for ensuring its quality. Yin proposes to determine this by making certain that the case study design

- ► is based on the appropriate operational measures ('Construct Validity'),
- ► considers the cause-and-effect relationships ('Internal Validity'),
- ► generalises the findings beyond the actual study and theory ('External Validity'), and
- ► ensures its repetitiveness in that other researchers analysing the same topic achieve the same results ('Reliability')[1032].[1033]

[1030] Cf. Yin (2003b), p. 10; Ghauri (2004), pp. 112-114.
[1031] Ghauri (2004), p. 113.
[1032] Some argue that this is impossible as no two researchers have the same insight, attentiveness or take the same notes. Cf. Berry/ Otley (2004), p. 245.
[1033] Cf. Yin (2003a), pp. 34-37. Scapens argues that as reliability demands the researcher to be independent and validity to reflect objective reality, these criteria are unsuitable for case analysis. He proposes to instead speak of 'procedural reliability' to indicate that cases are based on sound and appropriate methods and procedures. He also suggests to exchange external validity with'transferability' to imply that findings can be transferred to other cases, and internal validity with 'contextual validity' to 'prove' credibility of the study and the conclusions drawn. Cf. Scapens (2004), pp. 268-270. Here, the terms depicted above are used as they are commonly used and as their meaning is known. For an illustration showing the connection between reliability and validity cf. Jensen (2002), p. 267.

While these four criteria can be said to be commonly acknowledged as fundamental for valuable research, there is less agreement with regards to case study analysis which has been criticised due to its limited ability to generalise.[1034] Another reason is the above mentioned difference between quantitative and qualitative research. While validity has especially been granted to quantitative studies, it has been pointed out that it is not the method itself, but the researcher's procedure which determines validity.[1035] Others claim that validity and reliability naturally are in conflict and that the latter needed to be violated intentionally for the researcher to obtain in-depth understanding,[1036] and that when conducting studies, researchers had to accept methodological trade-offs such as between accuracy and contextual richness.[1037] One way to counteract such issues is to draw upon 'triangulation', an approach which can be traced back to 1959. It refers to the application of various methods and the collection as well as the analysis of different data from multiple angles on the same phenomenon. This not only ensures validation but also reduces the likelihood of misinterpretation to produce a more holistic and contextual picture of the research objective,[1038] as pointed out as critical above. The concept of triangulation thus also forms the basis of this thesis, ensured through a multi-method approach to data collection. The practical procedure of conducting research and the design of the case studies are looked at in the following.

6.3.2 Choice of Cases and Data Base

Conducting qualitative research and particularly case studies is "not the easy option"[1039] but "difficult and demanding, frustrating and elusive"[1040]. There neither is a uniform set of procedures for data collection and analysis nor a common design for conducting case studies.[1041] Nevertheless, certain general principles which have to be accounted for can be found. A main prerequisite is that a common unit of analysis is established in that cases share

[1034] Cf. Hambrick (1980), p. 570.
[1035] Cf. Lund (2005), p. 121.
[1036] Cf. Miles (1979), p. 596.
[1037] Cf. Weick (1979), p. 35; Bonoma (1985), p. 199.
[1038] Cf. Ghauri (2004), p. 115.
[1039] Scapens (2004), p. 276.
[1040] Berry/ Otley (2004), p. 251.
[1041] Cf. Yin (2003a), pp. 19-28.

some features which make them comparable and predict similar processes that account for positive outcomes beforehand (replication logic). This can be done by first determining the relevant target population and then its accessibility for finally selecting the cases to be studied. Other than in the case of statistical sampling, qualitative case studies are chosen systematically for their specific purpose (see above) in that they either predict similar results (literal replication), e.g. organisations from different industries following the same or similar strategies, or contrasting results, but for predictable reasons (theoretical replication). Even cases which do not fulfill needed criteria and are therefore not chosen can still provide valuable information which can be used (e.g. competitive data). In a next step data is collected and compiled. Based on this, cases are written up before being analysed and conclusions drawn in the final step.[1042] It has been criticised though that qualitative researchers often do not reveal their method of data collection.[1043] In order to counteract this criticism, the composition of the data base is addressed in the following.

While Yin has emphasised that the case study method does not imply any specific form of data collection,[1044] the main sources for primary data collection can generally be distinguished between the researcher's active searching and his passive but direct observation. This can include verbal reports such as from personal interviews, especially when information is not available otherwise,[1045] archival reports, physical artifacts and data gathered at trade meetings. Also the personal review of organisational processes or interaction with management, external stakeholders and industry experts serves as a basis for data collection. For reasons of triangulation (see above), this qualitative collection can be supported through quantitative data such as financial, market performance and competitive information.[1046] Here, analysis is based on externally available corporate documents such as annual, financial or other accessible reports, press releases, letters to shareholders, public presentations, corporate speeches (as "actors rarely, if ever, remain silent as they make policy"[1047]), conference material, and other information available on corporate websites. These kinds of

[1042] Cf. Bonoma (1985), p. 205; Yin (2003a), pp. 47-48, 153; Ghauri (2004), pp. 112-113.
[1043] Cf. Zalan/ Lewis, p. 15.
[1044] Cf. Yin (2003b), p. 4.
[1045] Cf. Schmalensee (1988), p. 649.
[1046] Cf. Thomas (1974), p. 37; Downey/ Ireland (1979), pp. 633-635; Bonoma (1985), p. 203; Yin (2003a), p. 86.
[1047] Schneiberg/ Clemens (2006), p. 210.

data sources not only provide clear-cut facts but also organisational stories from which insights can be drawn. Despite, at times, being criticised as biased due to having been created by organisations as the research subject themselves, it can be countered that these official documents have to follow certain standards for being able to be made public, even more in the case of publicly listed companies. In fact, these data sources have been considered as 'very useful'[1048] for obtaining qualitative and quantitative data. Others deemed the reliance on such artefacts sometimes even necessary.[1049] Especially Annual and Financial Reports, despite being issued by companies themselves, have been assessed as objective because of being publicly reviewed by several sources. Moreover, the higher the strategic credibility of such documents is, the more attractive the organisation becomes. In this respect they have been depicted as "narrative disclosures"[1050] in terms of being used as an effective communication tool to display and send certain messages and pictures to different stakeholders. Some researchers thus also consider the 'shape' of Annual Reports in that they include graphics, photos and the language used in their analysis. Others count the number of report pages or the frequency of key words or topics mentioned in order to assess the importance and actuality of a topic.[1051] As these documents mainly report on performance though, 'Letters to Shareholders' are drawn upon as an additional source. These are not only subject to public review, but are used by organisational leaders to communicate directly with stakeholders and thus reveal how they perceive certain issues. This again allows the researcher to draw conclusions.[1052] Still, in order to enhance data quality, information from newspapers, journals and magazines is also drawn upon. While prone to subjectivity by the journalist, this at the same time provides a way to reflect on the researcher's own interpretation of corporate data, such as on performance measures as well as statements made by organisational members in public. This has been pointed out as valuable particularly when analysing organisational change.[1053] Moreover, taking into account historical documents is particularly helpful when tracing strategic patterns over a longer period of time,[1054] as is required in this work. Apart

[1048] Cf. Ghauri (2004), p. 116.
[1049] Cf. Ginsberg (1984), p. 555; Point/ Tyson (1999), p. 558; Scapens (2004), p. 267.
[1050] Point/ Tyson (1999), p. 556.
[1051] Cf. Point/ Tyson (1999), pp. 556-562. For examples cf. Newell (1988).
[1052] Cf. Ginsberg (1984), p. 552; Point/ Tyson (1999), p. 556; Schneiberg/ Clemens (2006), p. 210.
[1053] Cf. Katz/ Kahn (1966), p. 261; Foss (2000), p. 17.
[1054] Cf. Mintzberg (1979), p. 582.

from these benefits, the advantage of using externally available data lies in the possibility of replication, identified as being of central importance for case study quality. At the same time it is also more time and cost effective, a very valuable aspect when considering that this has been determined as one of the most critical constraints to case study research. In fact, several researchers have based their analysis solely on such data sources within qualitative case studies. Examples include analyses of how environmental change, created through regulatory adjustments like deregulation, influenced corporate strategic behaviour and organisational change.[1055] Finon et al. again also drew conclusions from companies' mission statements.[1056] Mintzberg even included anecdotal data.[1057]

Internal, i.e. not publicly available, information in contrast, has not been utilised as it is difficult to gain access to. But even if this had been granted, there are restrictions in many cases to make results public due to reasons of commercial confidentiality, internal politics, or care for privacy of individual persons such as organisational leaders. Thus, the exclusion of certain information is a necessary cost of conducting research.[1058]

6.3.3 Conducting Analysis

As data does not speak for itself,[1059] it requires thorough analysis and "detective work"[1060] to track down patterns. In addition to this, it is not only fundamentally dependent on the researcher's ability to judge and draw conclusions,[1061] but also on his "total immersion and commitment"[1062]. Thus, the interpretation and analysis of qualitative data has not only been described as "perhaps the most difficult task while doing research"[1063], but has also even been

[1055] Cf. Smith/ Grimm (1987); Zajac/ Shortell (1989); Meyer et al. (1990); Kelly/ Amburgey (1991); Barr et al. (1992); Thomas et al. (1993); Rajagopalan/ Spreitzer (1996); Fox-Wolfgramm et al. (1998); Midttun/ Omland (2004), p. 273.
[1056] Cf. Finon et al. (2004), p. 311.
[1057] Cf. Mintzberg (1979), p. 587.
[1058] Cf. Gummesson (1991); Berry/ Otley (2004), p. 247.
[1059] Cf. Blau (1963), p. 6.
[1060] Mintzberg (1979), p. 584.
[1061] Cf. Beutel (1988), p. 59.
[1062] O'Dwyer (2004), p. 404.
[1063] Ghauri (2004), p. 117.

claimed to be "a mysterious, half-formulated art"[1064] in form of a "creative and literary act"[1065]. Miles and his team, who were early researchers to use case studies, felt that they "could not escape the suspicion that others did not know much more than we about the arcane process of making valid sense of large amounts of qualitative information"[1066]. Especially the design of multiple case studies has been pointed out to be resource and time consuming with no short cuts possible. While the researcher needs sufficient data in order to conduct meaningful analysis, he at the same time faces the danger of being overloaded with a sheer range of phenomena which makes the process seem endless. Hence, as case study design and analysis do not follow a simple straight process and researchers are advised to not take it 'lightly', a way must be found to be able to synthesise large amounts of different data. This is particularly critical as computer software cannot only not 'replace thinking' or the formulation of conclusions, but by many researchers has not been found helpful for case study analysis.[1067] Moreover, while sounding logical, several writers have emphasised the importance of ensuring that data collection and analysis are interwoven right from the start so that the conclusions drawn clearly stem from the case study ('Logical Positivism'[1068]).[1069]

After having collected data the process of analysis can be further split into the three steps of data reduction, data display and data interpretation. The first step refers to the identification of key topics and patterns which in a second step should then be clearly presented before conclusions can be drawn in a last step.[1070] Generally, several different techniques exist which allow "Transforming a 'Messy' but 'Attractive' 'Nuisance'"[1071], such as the complex research setting faced in this case, into meaningful results. Among these practices is "logical compound synthesis"[1072] which synthesises findings into 'a plausible logical story'. An essential part of this process is the development of chronologies, the coding of data according to concepts established and its clustering, so that cases are categorised according to common

[1064] Miles (1979), p. 593.
[1065] Scapens (2004), p. 274. Also cf. O'Dwyer (2004), pp. 391, 393, 405.
[1066] Miles (1979), p. 595.
[1067] Cf. Yin (1984), p. 26; Miles (1979), p. 590; Yin (2003a), p. 39; Berry/ Otley (2004), p. 237; Ghauri (2004), p. 117; O'Dwyer (2004), p. 395; Scapens (2004), pp. 263, 270, 272.
[1068] Cf. Yin (2003b), Box 21 on p. 163.
[1069] Cf. Ghauri (2004), pp. 117-120.
[1070] Cf. O'Dwyer (2004), pp. 393-403.
[1071] O'Dwyer (2004), p. 391.
[1072] Itami/ Numagami (1992), p. 133.

characteristics or dimensions. Other possibilities include the setting up of matrices in order to explain interrelationships between identified factors, decision-tree-modelling by grounding a description of real-world decisions, or pattern matching as a comparison between predicted and empirically based patterns.[1073] As each has its advantages and disadvantages, it has been proposed to use a mix of them to allow an extensive analysis,[1074] an approach that is also applied here. While cases based on common features are constructed, story telling allows the development of the chronology needed. Matrices or pattern diagrams again provide an overview over relationships found. At the beginning of the process however, following the nature of the phenomenon studied, codes need to be assigned through descriptive coding. This not only reduces large volumes of data and brings the researcher deeper into analysis, but supports the development of a cognitive map which helps to elaborate analysis. Moreover, it lays the fundament for inter-case analysis when doing multiple case studies. Codes need to be made meaningful by developing patterns which allow conclusions to be drawn.[1075] This is carried out further below. Pattern matching again reveals whether the assumed paths can be empirically proven and has the advantage of not requiring statistical tests.[1076]

In order to further increase internal validity, research case studies must be absolutely rigorous and fair with the presentation of data, a requirement that can be satisfied by including confirming as well as competing 'rival' explanations.[1077] In addition to this, it has been pointed out that a successful interpretation not only suffices with the observation of phenomena, but needs to be established in context of their meaning. This again in large parts depends on the researcher's style of investigation and his integrity with regards to the consideration of the extent and quality of evidence.[1078] Also more profound issues such as the usage of tabular displays, a researcher's language skills, his intuition, but also luck as well as the notion of "knowing your data intimately"[1079] are critical to successful analysis.[1080] Here, these requirements are not only satisfied by the research techniques just mentioned, but also

[1073] Cf. Ghauri (2004), p. 118.
[1074] Cf. Ghauri (2004), p. 121.
[1075] Cf. Miles/ Huberman (1994).
[1076] Cf. Ghauri (2004), p. 121; Scapens (2004), pp. 270-273.
[1077] Cf. Yin (2003b), p. 122; Viellechner/ Wulf (2010), pp. 11-14.
[1078] Cf. Yin (2003b), p. 110; Berry/ Otley (2004), p. 246.
[1079] O'Dwyer (2004), p. 404.
[1080] Cf. Mintzberg (1979), p. 587; Jennings (2001), p. 400; Scapens (2004), p. 272.

by the chosen methodological approach in that several theoretical approaches have been applied which allow critical analysis and the look through different lenses. Viellechner and Wulf, for example, in their approach - which is similar to that applied here - propose to create evolutionary case write-ups of 20-30 pages and carry out within (intra-case) as well as cross-case (inter-case) analysis in order to avoid jumping to conclusions.[1081] Similarly, in order to respond to the challenge of analysing change, Schneiberg employed comparative case studies.[1082] Longitudinal case studies again have been determined as essential for profoundly complex studies and have especially been applied to find out which patterns enable the description of the strategy process.[1083] Meyer et al., for instance, analysed the evolution of the American clinic industry over a period of 30 years in order to determine change on the organisational and field level.[1084] Allas looked at the development of European electricity companies over a phase between 1995 and 2000.[1085] While there is no commonly accepted approach to carrying out qualitative research, case study research has been described as essentially being based on 'telling an interesting story' which is authentic, plausible and critical.[1086] Before doing so, the research set-up created for this thesis is laid out in the following.

6.3.4 Research Set Up

Fundamentally, as can be derived from the above findings, some basic structures are conditioned by empirical reality. On the one hand this refers to the temporal frame. With the year 1998 constituting the start of liberalisation and thus the trigger for elementary structural change, it also marks the beginning of period of analysis. The year 2007 again flags a 'landmark' with regards to full market opening. Moreover, the 3rd liberalisation package was presented at the end of that year. The year 2008 has thus been chosen as the finishing point of analysis. Covering a research decade from 1998-2008 not only includes a period where the

[1081] Cf. Viellechner/ Wulf (2010), pp. 13-14.
[1082] Cf. Schneiberg/ Clemens (2006), p. 219.
[1083] Cf. Mintzberg (1987); Schneiberg/ Clemens (2006), p. 219.
[1084] Cf. Meyer et al. (1990).
[1085] Cf. Allas (2001).
[1086] Cf. Berry/ Otley (2004), p. 247; O'Dwyer (2004), p. 403; Scapens (2004), pp. 272, 274.

most essential alterations have been made with regards to European Energy Policy, but provides the researcher with a sensible period for analysing the consequences of this change over the course of time. On the other hand, and despite the size of the European market and the large number of market players active within, the choice of cases for analysis is in addition partly set by the focus of the research topic in that companies must be incumbent European companies active in the European gas market. Under these pre-conditions large global players such as Gazprom, the world's largest gas producer, could not be included in case analysis. Some freedom of choice is hence only granted in form of choosing among incumbents from Member States of the European Union. At the same time the researcher is always subject to resource and time constraints (see above) and hence can only analyse and discuss a few selected companies.[1087] Here, four cases have been chosen as the basis for analysis. In order to ensure methodological quality (see above), these have not been determined randomly out of the basic population possible, but from Germany, France and Italy as the largest, most advanced and influential European countries.[1088] Moreover, similar courses of industry developments have been expected there.[1089] In addition to this, each of the three countries has a relevant incumbent with monopoly power: In the case of France this is Gaz de France (GdF) which later became GDF SUEZ, and in Italy SNAM (Società Nazionale Metanodotti) which became part of Ente Nazionale Idrocarburi (E.N.I.). In Germany again the main gas incumbent used to be Ruhrgas. As this was incorporated by E.ON, which again is the result of the merger between two traditional Germany utilities as is enlarged on in the case study, E.ON has been selected as a case example for Germany. Following the fact that there is no focal gas incumbent anymore, RWE has been chosen as a second German case example in order to avoid, or at least reduce, possible bias.

[1087] As also particularly mentioned by Midttun et al. (2001), pp. 391-392.
[1088] The U.K. has not been considered due to already having liberalised its energy markets well before the rest of Europe (see chapter III).
[1089] Cf. Rossert (1996), pp. 5-8.

The following four companies thus constitute the case examples for this research:[1090]

- ✓ Ente Nazionale Idrocarburi (ENI)
- ✓ E.ON
- ✓ Gaz de France (GdF)
- ✓ RWE

Having explained the selection of case studies, the next step is to lay out the procedure of examining these. First of all, each is analysed according to the following structure which again is based on what was determined in the theoretical analysis: After a brief introduction to company history and its initial set-up, the development of corporate strategic behaviour over the course of time is looked at first from a Business Perspective, then through an Institutional lens to be followed by an analysis from an Integrated Perspective. As definitions of such behavioural classification schemes must be based on key characteristics for identification and comparison, especially when analysing strategic change,[1091] the identification of strategic behaviour is also pre-conditioned by the criteria theoretically established and empirically proven as laid out above. Here, key words as applied in literature are referred to and later used for the identification of empirical analysis. These are summarised in the tables below.

[1090] In alphabetical order.
[1091] Cf. Keim/ Zeithaml (1986), p. 837.

Table 3: [1092] Criteria for the measurement of organisations' business behaviour

Strategic Behaviour	**Characteristics**
React	- Short-term orientation - Ignore change and with this arising opportunities - Remain loyal to existing products, markets, activities, and positioning - Risk-averseness - 'Follow the leader'-orientation
Defend	- Scepticism towards innovation - Protect domain while improving efficiency such as via process improvements - Establish market barriers by exploiting assets owned, low-cost strategies, cross-subsidisation, or signalling investments - Defensively vertically integrating and/ or engaging in mergers, acquisitions and JVs - Co-opt with rivals - Engage in cartels - Establish monopolies
Analyse	- Exploit while at the same time still defending existing businesses - Identify opportunities - Become more open to taking risks
Create	- Continuous search for innovation - Strive for growth via product-market extensions such as through related as well as unrelated diversification, e.g. via SAs. - Developing innovative business strategies - Pushing back traditional industry boundaries - Shift the 'centre of gravity', i.e. build a new core business and change the basis of doing business - Being a first-mover and driving industry development

[1092] Own table based on findings from chapters IV and V.

The following table shows the measures for determining an organisation's institutional behaviour.

Table 4: [1093] Criteria for the measurement of organisations' institutional behaviour

Strategic Behaviour	**Characteristics**
Acquiesce	Follow habit - Blind adherence to taken-for-granted rules due to being unaware of institutional influences and pressures to change - Not responding strategically but reproducing institutionalised actions
	Imitate - Copy institutionalised practices or successful, known or trusted behaviours
	Comply - Consciously obey and follow 'the letter and the rule' - Incorporate institutionalised values, norms or requirements
Compromise	Balance - Play off actors against one another - Achieve panty with institutional actors - Negotiate openly
	Pacify - Fulfil minimum requirements/ appease or placate - Apologise - Deny responsibility/ blame environmental pressures - Justify by claiming that change is essential for survival - Play down change - Hide/ keep secret change
	Bargain - Ally with institutional agents, e.g. transfer personnel
Avoid	Conceal - Disguise non-conformity through ceremonial adoption, pretending, symbolic gestures of compliance, window dressing, paying lipservice, acting the innocent
	Buffer - Decouple to reduce extent of external inspection, scrutinisation and evaluation - Deny, excuse, justify change
	Escape - Alter or even exit the domain of pressures - Alter goals and activities

[1093] Own table based on findings from chapters IV and V. This table is more extensive as the characterisation of institutional behaviour is particularly based on verbal expressions and language.

Defy	Dismiss - Ignore institutional pressures - Avoid arguments with institutional agents - Adopt wait-and-see attitude and sit-out requirements
	Challenge - Make a virtue of insurrection - Argue of already 'doing more than necessary' in that deviating actions are above what is actually required - Legal manoeuvring by overwhelming agencies with useless paperwork, delaying procedures, using administrative processes for own advantage
	Attack - Threaten, assault, belittle and denounce institutional pressures and those who insert them - Confront institutional agents in court - Attack publicly by initiating media campaigns
Manipulate	Co-opt - Coalition building with institutional agents - Bringing in powerful constituents into the organisation
	Influence - Impact perception of institutional agents and stakeholders - Lobby and 'curry favour' - Re-interpret requirements to own advantage - Spread rumours - Suppress or disseminate inaccurate information with regards to own, respectively competitors' behaviour - Publicly question institutional requirements
	Control - Drive wedge between different if not implement new institutional agents (install organisational members in organisations exerting institutional pressures) - Provoke legal/ regulatory barriers - Voluntarily participate in or even go beyond institutional measures - Image advertising and issuing qualitative narratives such as via corporate documents to distribute stories - Anticipatory engagement such as through sponsorships or selectively fuelling research - Collaborate with institutional agents - Being an 'institutional entrepreneur' by creating new institutional expectations not actually intended by institutional agents

Based on these criteria strategic organisational behaviour is identified for each year of the ten-year research period, i.e. 1998-2008, and marked as a dot in the matrix. When connecting these dots, the organisation's development path becomes apparent. The fact that organisational development can be depicted in this way, i.e. as a path which consists of individual strategic action patterns that may change from re-active to pro-active, has also been

pointed out and empirically applied by other researchers.[1094] Within the field of business research the determination of change and heterogeneity, for example, has been measured by the number of countries internationalised or the number of business areas diversified into. Researchers within institutional theory again have, amongst others, counted the number of companies having adopted certain tactics, of cases brought to court, or the frequency of certain terms used. Also the emergence of new publications relating to the prevailing topic of change as well as their relative importance has been used as measures. Legitimacy, or its breach, becomes reckonable through the 'noise' it creates, e.g. in form of public criticism as actors complain and debate, authorities issue warnings and start investigations, or by the traces it leaves in popular press, legal records, trade journals and other documents.[1095] Thus, in order to better reveal the 'dramaturgy with which an organisation conducts its affairs'[1096], especially direct and indirect verbatim quotes, derived from corporate as well as secondary sources, are used in order to enhance reliability. The prevailing direction or focus of paths, i.e. whether business, institutional or integrated – or 'zic-zac' – is determined as described in chapter V.[1097]

After having determined individual strategic development paths through intra-case analysis, these results then are compared and further analysed by inter-case analysis to enhance explanatory power. Also this is pre-determined by findings from previous chapters in terms of the external and internal drivers looked at. From these two types of analyses first conclusions are drawn. In order to further augment explanatory value these are complemented with findings from industry analysis which is conducted subsequently to case research. Finally, by also bringing in the results from this industry analysis and current research, chapter VIII closes with an overall discussion of findings. Additionally here, more recent developments and findings are integrated. As "it is always possible to derive new inferences from the data, to carry the interpretation a step further, to make additional comparisons, to use information

[1094] Cf. Ginsberg (1984), pp. 551, 554; Grant/ Cibin (1996), p. 185; Scallon/ Sten (1997), pp. 145-163.
[1095] Cf. Schneiberg/ Clemens (2006), pp. 201-202, 212, 215.
[1096] Cf. Ritti/ Silver (1986), p. 28. For an example cf. O'Dwyer (2004), p. 403.
[1097] This includes a company's actual focus and direction of resource employment but also its environmental perception or attitude. Scallon and Sten, for example, used the notion of attitude to categorise companies into different behavioural groups. Cf. Scallon/ Sten (1997), pp. 145-163.

to refine the analysis, and to view the research from a broader perspective"[1098], and as hence "the analysis of research findings never reaches a final state of completion"[1099], the researcher at some point has to draw a final stroke as otherwise there is the danger of the work becoming a 'never-ending story'. What should be done though is to be 'creative' with regards to analysing beyond one's data and break away from the expected to describe something new.[1100] This, in fact, is transposed in the following chapter containing the empirical analysis. For reasons of consistency, case study analysis follows the same pattern:

- Introduction
- Analysis of development from a Business Perspective
- Analysis of development from an Institutional Perspective
- Analysis of development from an Integrated Perspective and mapping development path on the matrix established above

Accordingly, and following the approach depicted above, for each case analysed a business, institutional, or integrated path should be determined. This is carried out in the following chapter - with cases presented in alphabetical order.

[1098] Blau (1963), p. vii.
[1099] Blau (1963), p. vii.
[1100] Cf. Mintzberg (1979), p. 584.

CHAPTER VII EMPIRICAL STUDY – INTRA-CASE ANALYSIS

7.1 ENI

7.1.1 Introduction

While ENI, Ente Nazionale Idrocarburi,[1101] celebrated its 50th anniversary on February 15, 2003, its roots go back much further to 1926 when the Italian government created Azienda Generali Ialiana Petroli (Agip) as a state-owned oil company. Having discovered a major natural gas field in Northern Italy in 1948 Agip was merged with Società Nazionale Metanodotti S.p.A. (SNAM), Italy's distribution company, and other state-owned energy businesses in 1953 to create ENI with the aim of developing hydrocarbons and natural gases. Apart from its engagement in the energy field via its 36 subsidiaries, ENI was also active in the engineering services, the chemical, the real estate and the soap business, a diversification which in most cases had been politically driven. Several years later, after a phase of financial difficulty, these businesses were divested in order to form ENI into an energy company focussed on the oil and gas sector. Another major change was initiated when ENI became a joint stock company in 1992 and went public via Initial Public Offering (IPO) in November 1995.[1102]

When starting this study, ENI was an integrated company active in different energy businesses. Upstream activities, of which 80% is carried out globally, were and still are carried out by Agip S.p.A. By 2001, ENI had established operations in 70 countries, its main geographic regions of activity including Europe, Africa, the Americas as well as Asia and Oceania.[1103] Transportation activities are still conducted via SNAM and subsidiaries. These

[1101] In the following the term ENI will be used. Here, information has been taken from three main corporate documents provided by ENI: Annual Reports (labelled 'a'), Fact Books ('b') and Financial Forms 20-F ('c').
[1102] Cf. Grant/ Ritter (2007), pp. 1-5.
[1103] Cf. ENI (2001a), see second page (no page number provided); ENI (2001c), pp. 10-11.

had been created in 1941 by Ente Nazionale Metanom, Agip, the Salsomaggiore S.p.A. Company, and Società Anonima Utilizzazione e Ricerca Gas Idrocarburati (Surgi) with the aim of constructing and operating natural gas pipelines in order to distribute and sell gas. At that time they owned 95% of the Italian pipeline grid[1104] and several storage sites in Italy.[1105] In addition to these domestic midstream facilities, ENI also has ownership stakes in international long-distance pipelines such as TTPC, together with Gazprom in Blue Stream to bring gas from Russia to Turkey, or with the National Oil Company of Libya in Greenstream, a pipeline bringing gas from Libya to Italy. Retail distribution to commercial and residential consumers again is carried out through Italgas, Italy's largest, publicly traded local distribution company in which ENI held a majority share at the beginning of the study. Via stakes in local distributors such as Tigaz in Hungary, Adriaplin in Slovenia, and Distribuidora de Gas Cuyana in Argentina, ENI was also already present in retail distribution across national borders. Moreover and apart from its engagement in the gas business, ENI was also active in the production and sales of electricity through its subsidiary EniPower SpA, the refining and marketing of petroleum products via EniChem SpA, a leading producer of petrochemicals, as well as in the segment of oilfield services and engineering via Saipem SpA, a world leader in offshore and subsea oil and gas pipeline laying, drilling and platform installation services.[1106]

7.1.2 Analysis of Development from a Business Perspective

Fundamentally, business behaviour has to be characterised as *reactive*. Despite having mentioned the threat from increasing competition through market opening already since the beginning,[1107] and that as a response ENI was looking to 'pro-actively manage the consequences of the Italian gas market liberalisation' and grow internationally to compensate

[1104] Cf. ENI (2004a), p. 36.
[1105] Cf. ENI (2002a), p. 14.
[1106] Cf. ENI (2001a); ENI (2001b); ENI (2001c).
[1107] Cf. ENI (2002c), p. 4; ENI (2003c), pp. 4-5; ENI (2004c), pp. 4-5; ENI (2005c), pp. 4-5; ENI (2006c), pp. 4-5; ENI (2007c), pp. 4-5; ENI (2008c), pp. 5-6; ENI (2009c), pp. 5-6.

for losses resulting from regulatory change,[1108] opportunities for market development were not taken advantage of. Instead, ENI remained loyal to its existing businesses. This becomes particularly apparent from the fact that the focus of activities was laid on the global upstream business, while potentials for benefiting from change in European markets were mainly ignored. Similarly, despite having initiated an even 'more aggressive upstream growth strategy'[1109] in 2000, including, amongst others, the acquisition of a 28% stake in UK based Lasmo Plc which not only provided access to production facilities in the U.K., but also to the Netherlands, North Africa (Morocco), Venezuela, Pakistan, Indonesia, where it obtained access to the world's largest liquefaction plant (Bontang) for LNG being shipped to Japan, and Turkmenistan for the first time, ENI in 2004 still pointed out that its "long-term development strategy is mainly upstream driven"[1110].[1111] The focus on E&P activities can also be derived from the fact that ENI continuously enforced initiatives to discover natural gas, such as in Australia where it acquired exploration permits and discovered natural gas in 2001, participated in a consortium that was constructing a pipeline to the coast in 2002, and entered into contracts with local industrial consumers for the supply of gas in 2005. Similarly, via the acquisition of a stake in the North Caspian Sea PSA from British Petroleum and Statoil, access was gained to a production site in Kazakhstan which was confirmed to be one of the largest oil discoveries in the past 30 years. The fact that plans were made to reinject gas in order to increase oil production[1112] also shows the focus of ENI's operations on the upstream segment at that time. The assessment of ENI's reactive behaviour is further supported by the fact that these engagements were not directed at taking advantage of changes in the European market, as a large part of upstream discoveries made were determined for electricity generation in local plants at places of production. This also holds with regards to activities further down the gas value-chain such as with the development of LNG capacities with shipments going to Japan instead of Europe.[1113] Likewise, the renewed engagement, through

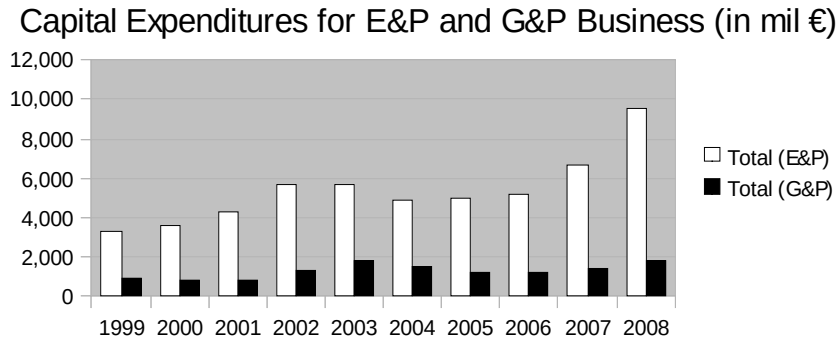
[1108] Cf. ENI (2002a), p. 8; ENI (2003a), pp. 10-13, 27; ENI (2004a), pp. 12-13; ENI (2005a), p. 12. These were also stated as goals in the following years (cf. ENI (2006a), p. 11; ENI (2007a), pp. 9-10; ENI (2008a), p. 10; ENI (2009a), pp. 10-11) thus presenting no change and supporting the finding of passive behaviour.
[1109] Cf. ENI (2002a), p. 8.
[1110] ENI (2005a), p. 14.
[1111] Cf. ENI (2002a), pp. 17-18; ENI (2002b), pp. 12, 23-24, 26.
[1112] Cf. ENI (2003a), pp. 11-13, 16-22.
[1113] Cf. ENI (2002b), pp. 23-24; ENI (2003a), p. 22; ENI (2005a), p. 24; ENI (2005b), p. 24; ENI (2006a), p. 24; ENI (2006b), p. 27; ENI (2007a), p. 25.

the acquisition of a 50% stake in a consortium with the licence to explore possibilities for developing natural gas, in Saudi Arabia in 2004, where ENI has been operating since the early 1970s, was restricted in that the gas discovered had to be sold on the Saudi Arabian market for local use instead of being utilisable for export to European markets.[1114] A similar situation can be found with regards to the Indian market where ENI in 2005 obtained stakes for the right to explore and develop natural gas from two production blocks in the Indian Ocean, the production also having to be sold locally. Its global upstream orientation was further reinforced through the signing of a MoU with the Indian Oil & Natural Gas Corporation in order to jointly develop E&P opportunities as well as to share information on global projects with the possibility of exchanging equity interests in up- and midstream engagements. This was done in 2007 when ENI swapped interests for a stake in an Indian offshore field while itself provided a stake in an offshore permit in the Congo.[1115] In 2006, ENI further extended its international production by becoming active in Mali and East Timor for the first time, having been awarded full operatorship of five exploration licenses in East Timor while having acquired a 50% stake in five onshore exploration licenses in Mali.[1116] In the same year a similar 'strategic landmark agreement' was struck with Gazprom, extending supply contracts to 2035 and increasing the residual life of ENI's supply portfolio to 23 years. Also this deal, despite Gazprom being a major supplier to Europe (see chapter III), was struck with the aim of augmenting ENI's global sales.[1117] One year later then and 'in line with focussing on its core areas' as pointed out by ENI itself,[1118] further upstream acquisitions were made in the Gulf of Mexico as well as in the Congo and Alaska. In addition to these, an agreement was signed for the purchase of a 30% stake in one of the richest gas E&P areas in Australia.[1119] This also holds when considering the take-over attempt of Gas de Portugal made in 2003. This had initially been refused by the European Commission and later only allowed under the condition that the natural gas transport network, storage sites and an LNG regasification plant had to be spun off, leaving ENI only with upstream gas and oil refining activities.[1120]

[1114] Cf. ENI (2004c), p. 24; ENI (2005a), p. 24.
[1115] Cf. ENI (2005c), pp. 26-27; ENI (2006a), p. 24; ENI (2006c), p. 31; ENI (2007a), p. 23.
[1116] Cf. ENI (2007a), pp. 21, 25; ENI (2006c), p. 26, 31.
[1117] Cf. ENI (2007a), pp. 8-9, 31-33.
[1118] Cf. ENI (2008a), p. 5.
[1119] Cf. ENI (2008a), pp. 22-30.
[1120] Cf. ENI (2004a), p. 31; ENI (2005a), p. 31-32, 35; ENI (2006a), p. 34; ENI (2007a), pp. 35-36.

Finally, the assessment that ENI's "aggressive growth strategy"[1121] initiated in 1999[1122] did focus on the upstream business also shows when looking at the increase of daily production volumes as well as when comparing capital expenditures for the upstream E&P segment with those for the G&P business. Not only have those in G&P declined for three consecutive years, i.e. between 2004 and 2006, while those for E&P only did so from 2003 to 2004 and otherwise continuously increased, but has the ratio between the two extremely grown. In 1999, expenditures for E&P were already 3.6 times higher than those for G&P, but ENI spent 5.3 times more on E&P than on G&P in 2008 (see figure below). These examples support the evaluation of ENI's mainly reactive behaviour.

Figure 19:[1123] Development of capital expenditures for the E&P and G&P Business



Apart from these operational figures ENI's organisational structure also supports the above finding in that, by merging Snam SpA, Somicem SpA and AgipPetrol, it restructured into an 'energy company with a focus on the oil and gas business' between 2001 and 2002,[1124] thus shortly after gas market liberalisation. Additionally, the integration of EniTechnologie in 2006 was carried out with the predominant aim of establishing partnerships with companies of producing countries to access resources and increase its reserve replacement ratio.[1125] Other evidence is provided by the fact that capital investments into the G&P segment as well as the increase of shares in Italgas to become the sole owner of the company were initially

[1121] ENI (2001c), pp. 11, 14.
[1122] Cf. ENI (2004a), p. 8.
[1123] Own figure based data on from Annual Reports.
[1124] Cf. ENI (2002a), pp. 7, 22; ENI (2003a), p. 12.
[1125] Cf. ENI (2005a), pp. 74-76; ENI (2006a), pp. 97-99; ENI (2007a), p. 116; ENI (2008a), p. 11.

mainly directed at the domestic market,[1126] thus qualifying only as reactive behaviour. This can even be found in concrete statements such as with regards to the re-organisation of marketing activities in the Italian market in order to be able to "*react* promptly and efficiently to market requirements"[1127]. A similar assessment can be made with regards to ENIpower which had been established early as a separate entity to own and operate ENI's power stations. Promoted as being '*more market oriented* with greater development potential'[1128], electricity sales, in fact, increased from 4.8 TWh in 2000 to 29.93 TWh in 2008.[1129] While these characteristics normally indicate a form of growth strategy in form of horizontal value-chain extension, this does not hold here as later statements reveal that the growth in electricity generation had been used as a way to 'get rid of' gas volumes as demanded by the release programme (see above).[1130]

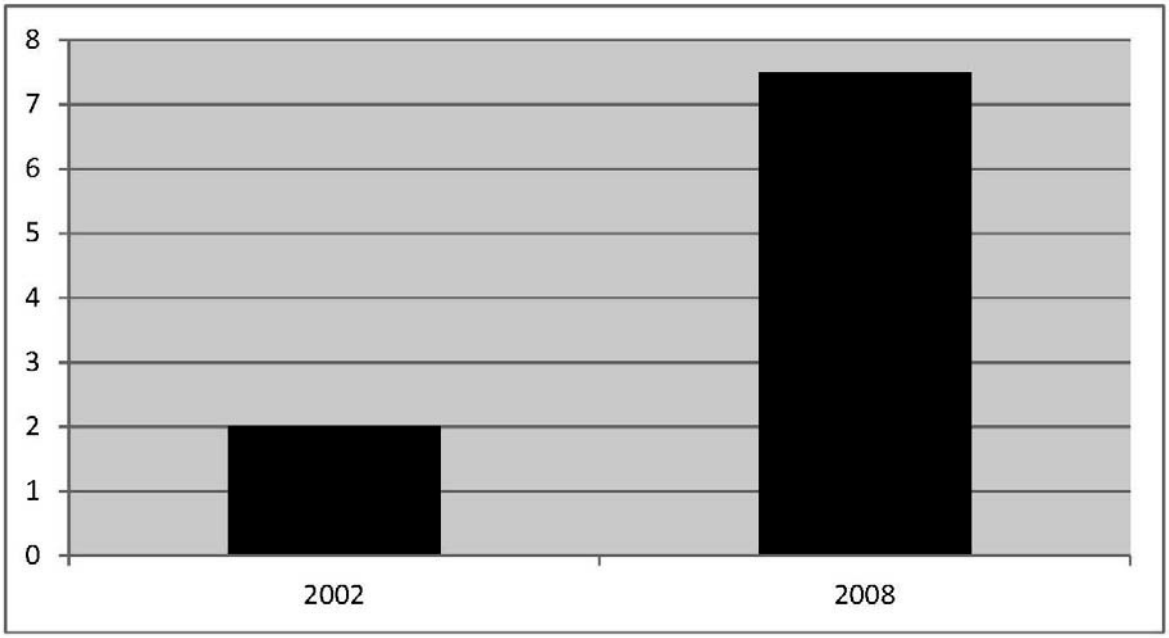
A change in behaviour could only be observed recently, apparently triggered by increasing competitive threats from different types of rivals such as other large international oil and gas majors as well as ENI's own clients like electricity producers for example. Particularly mentioned in this respect was Russian producer Gazprom who, in exchange for access granted to Russian production and transportation facilities, was expected to be entering the Italian market and start selling gas to Italian consumers.[1131] Driven by the experienced and further projected decline of margins and the fact that ENI needed to amortise its significant upstream investments (see above),[1132] defensive measures were adopted, showing, for instance, in the fact that production growth objectives were decreased from 6% in 2001 to 3% in 2008 while at the same time aiming to increase direct sales of natural gas volumes produced.[1133] To do so ENI has recently begun to become more active in other European markets such as Spain, Portugal, France and Germany, hoping to leverage the opportunities from ongoing liberalisation. Other than before, this also included possibilities for take-overs which in 2005

[1126] Cf. ENI (2003b), p. 41; ENI (2004a), p. 32; ENI (2005a), p. 38; ENI (2005c), pp. F-78 – F-79; ENI (2006a), pp. 35-36; ENI (2007a), pp. 37-38.
[1127] ENI (2003b), p. 46. Italicised by author. Also cf. ENI (2004b), p. 47.
[1128] Cf. ENI (2002b), p. 11. Italicised by author.
[1129] Cf. figures in respective Annual Reports.
[1130] Cf. ENI (2006a), p. 11.
[1131] Cf. ENI (2007a), pp. 8, 31, 37, 120; ENI (2008a), pp. 23-24, 28-29, 33-39; ENI (2008b), pp. 39-40.
[1132] Cf. ENI (2008b), p. 11; ENI (2009a), p. 9; ENI (2009b), p. 11.
[1133] Cf. ENI (2002a), p. 8; ENI (2003a), p. 13; ENI (2004a), p. 12; ENI (2005a), p. 12; ENI (2006a), p. 11; ENI (2007a), p. 9; ENI (2008a), p. 9; ENI (2009a), pp. 10-11; ENI (2009b), p. 62; ENI (2009c), p. 10.

still had been thought of only as "an option not a necessity"[1134]. In France, this resulted in the acquisition of a 27.8% stake in Altergaz, the main independent operator in the French gas market, with whom it also bought a stake in a regional French gas company with access to 250,000 customers. In the German market again ENI used measures such as direct marketing and increasing sales via its subsidiary Gasversorgung Süddeutschland GmbH (GVS), one of Germany's largest regional energy companies acquired together with German Energie Baden-Württemberg (EnBW) as an equal JV in 2002[1135]. In 2008, ENI also acquired Belgian Distrigaz to benefit from its central location for sales to neighbouring markets and became active in the Turkish market.[1136] Following this geographical sales expansion, gas sales into European target markets gradually increased, having almost doubled from 18 to nearly 32 bcm between 2005 and 2008.[1137] Nevertheless, while the above indicates a development towards more active behaviour in that possibilities for expansion were sought, this happened only relatively recently and more out of a necessity of defence than out of pro-actively developing opportunities. This also becomes apparent from the fact that additional sales markets to monetise equity gas had to be found, most of which however were outside of Europe. The need to monetise equity reserves, then, also explains the acquisition of stakes in British North Sea production sites and in pipeline infrastructure such as Interconnector U.K. Ltd. through which ENI gained access to infrastructure facilities such as the Bacton terminal, the Interconnector pipeline and the trading hub at Zeebrugge, thereby opening up additional sales channels.[1138] Showing the increase of gas sales by ENI's European affiliates from 2002 to 2008, the following figure illustrates this development.

[1134] ENI (2006a), p. 10.
[1135] Cf. ENI (2003a), p. 28.
[1136] Cf. ENI (2008b), p. 55; ENI (2009a), pp. 38-39; ENI (2009b), p. 59.
[1137] Cf. figures in Annual Reports from 2005 to 2008.
[1138] Cf. ENI (2006a), p. 34; ENI (2009a), p. 40; ENI (2009b), p. 51.

Figure 20:[1139] Development of gas sales of ENI's European subsidiaries (in bcm)



An indication towards more active behaviour in terms of analysing or creating opportunities can only be attributed to recent activities such as plans to use depleted gas fields as storage facilities in form of an additional business opportunity. This also shows in statements such as having started to consider "the development of gas storage facilities as a core element of the gas business"[1140] and as 'another strategic stage in the process of strengthening its leadership in the European storage business'[1141]. At the same time several facts supports the assessment that ENI's business behaviour has over the course of time only developed from reactive to defensive: Not only did the sales share of the G&P business decline from around 20% in 2005 to 16% in 2008 but it was still only seen as a pillar to provide stability to returns and cash generation. The same can be said with regards to the electricity business which, despite capacity having increased fivefold between 2000 and 2008, is merely used as an additional output for gas resources rather than 'creatively' as a strategic activity.[1142] Its mainly defensive

[1139] Own figure based on data from ENI (2005a), p. 31 and ENI (2009a), p. 37. The gap is likely to be even slightly higher as only from AR 2005 onwards are sales to domestic affiliates reported separately, accounting for only 0.07 bcm in 2005 and 0.05 bcm in 2007 and 2008. Cf. ENI (2007a), p. 34; ENI (2009a), p. 37.
[1140] ENI (2009a), p. 65.
[1141] Cf. ENI (2007b), p. 52; ENI (2008b), p. 56; ENI (2009a), p. 65; ENI (2009c), pp. 27-30.
[1142] Figures are based on own calculations. Cf. ENI (2002a), pp. 8, 27; ENI (2009b), pp. 51, 60-61.

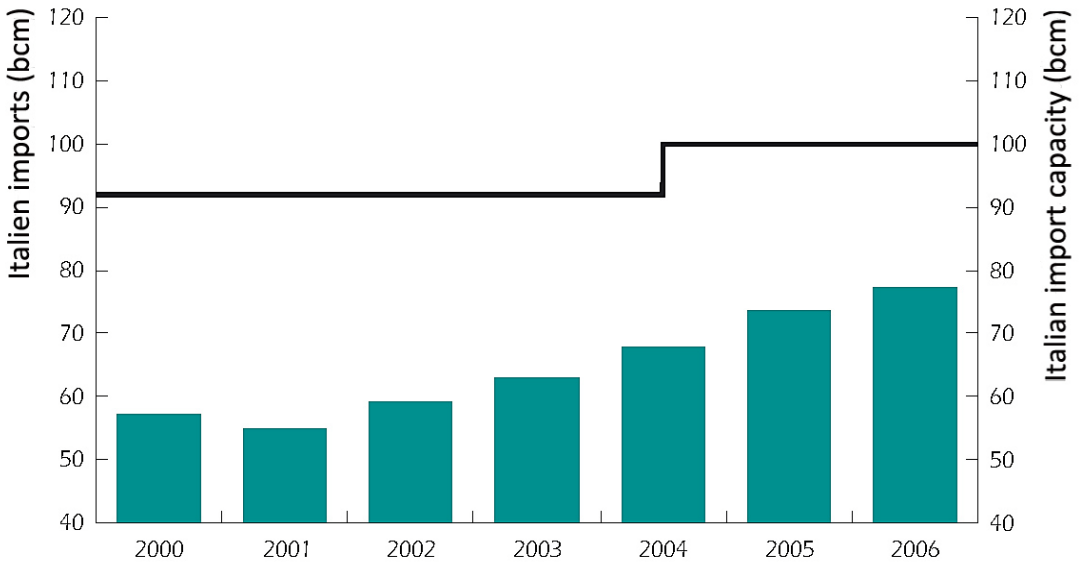
behaviour also becomes apparent from strategy statements of continuously delivering efficiency and financial discipline, in 2004 even 'focussing' on enhancing efficiency while in 2007 still 'tightening' financial discipline.[1143]

7.1.3 Analysis of Development from an Institutional Perspective

In contrast to its passive market development, ENI's institutional behaviour was much more active. Strikingly, the 'least active' one was avoidance behaviour, characterised especially through tactics of concealment. This becomes particularly apparent with regards to security of supply measures. While ENI continuously pointed out plans to substantially upgrade transport capacity of important cross-border transit pipelines,[1144] the analysis of relevant figures actually reveals that only a slight increase was made between 2002 and 2003,[1145] a finding which is also supported by the results from an investigation made by the European Commission and as later mentioned by ENI itself.[1146] In fact, capacity of critical import routes has only recently been substantially increased.[1147] The figure below, depicting the under-utilisation of Italian import capacity in comparison with theoretically available capacity, illustrates this discrepancy well. Thus, when considering these facts, the announcements by ENI turn out to be 'symbolic gestures of compliance' and attempts to 'disguise its non-conformity' to institutional requirements.

[1143] Cf. ENI (2005c), p. 4; ENI (2008a), p. 2.
[1144] Cf. ENI (2004c), pp. 32-33; ENI (2005c), p. 36; ENI (2006a), p. 35; ENI (2007a), pp. 35-37.
[1145] Cf. ENI (2003b), pp. 42-46; ENI (2004b), pp. 43-46.
[1146] Cf. ENI (2007a), p. 187.
[1147] One example is that of the TTPC pipeline (see above) as well as other assets. Cf. ENI (2009b), pp. 50, 62-63.

Figure 21:[1148] Comparison of available import capacity with real imports



This finding is also supported by the fact that ENI was fined €4.5 million for complying belatedly with authorities' requirements of enhancing competition following an investigation on the functioning of the gas market which had confirmed an unsatisfactory level of competition due to ENI's vertically integrated structure. Similarly, inquiries were also made with regards to ENI and its subsidiaries abusing their dominance over access to the regasification terminal at Panigaglia and for not making progress on the required capacity upgrade, also here results confirming an alleged abuse. In what can also be assessed as symbolic gestures of compliance, ENI responded by submitting proposals and reports ensuring that they would incite more competition by upgrading capacity of respective infrastructure facilities. Authorities decided however that this was not sufficient and started a procedure for the default of compliance with law. Apart from these examples ENI's window dressing attempt becomes even more pronounced when considering a requirement set by the European Commission. This not only demanded ENI to make available the gas volumes set free due to the cancellation of the territory clause with Gazprom (Gazexport), but to also upgrade the TAG pipeline along with the deadlines of third parties' decision to build LNG terminals in Italy for transportating gas from these facilities. In fact, only the proposal

[1148] Taken from Natural Gas Market Review of IEA (2007), p. 232.

submitted in 2004 to sell 9.2 bcm to third parties in form of a gas release programme until 2008 was judged as adequate to close procedure, still fining ENI the above mentioned amount. ENI again filed claim against these decisions,[1149] indicating another form of active institutional behaviour that is enlarged on in the following section. The tactic of window dressing can also be found in the case of sustainability issues as ENI defined initiatives to expand its presence in the renewables and alternative energy sector such as photovoltaic and biomass power as part of its 'environmental' strategy,[1150] while figures reveal that total capacity aimed for remained restricted to 45 MW.[1151] In addition to the examples mentioned so far and also constituting a form of avoidance behaviour, but qualifying as a more active tactic on the theoretical scale, was that of buffering as already displayed in 2001. This shows as attempts to excuse behaviour in that ENI not only termed the regulatory cap set by authorities as an 'allowed' revenue, thus saying that it was not its 'choice', but that it explicitly justified it as a regulatory evaluation which "should not be read as an indication of the market value"[1152].

Even more characteristic is ENI's defying behaviour. In response to increasing pressures such as antitrust thresholds on imports from outside the EU and sales to final customers, and the enforcement to sell excess volumes to third party importers, ENI attacked these institutional requirements as inefficient and argued it could have sold these volumes 'much more efficiently'.[1153] Likewise, but particularly striking, is its defying behaviour in form of confronting institutional sources in court, showing in the finding that ENI filed legal claims right from the beginning. In response to the assessment by the Italian Antitrust Authority (IAA) that its subsidiary SNAM had abused its dominant market position, for instance, an appeal was made against the imposed fine of €2 million, not only claiming that it had not

[1149] Cf. ENI (2004a), pp. 35, 149; ENI (2004b), p. 49; ENI (2005a), pp. 33-34; ENI (2006a), pp. 33-38; ENI (2007a), pp. 36-37, 187; ENI (2008a), p. 203. Also cf. IEA (2007), pp. 233-234.
[1150] Cf. ENI (2006a), pp. 12, 95.
[1151] Cf. ENI (2009b), pp. 60-61.
[1152] ENI (2001c), p. 55. Also ENI (2002c), p. 53.
[1153] The antitrust threshold allowed no single operator to have a market share larger than 75% of imported or produced natural gas fed into the national grid from 2002 on. This percentage was set to further decline by annually 2%-age points until reaching 61% in 2009. Moreover, operators could not sell more than 50% of their supply to final consumers effective from January 2003. Cf. ENI (2002c), pp. 5-6, 54; ENI (2003a), pp. 29-30.

violated any rules but also pointing out that the Authority's fine went against DIR/98/30.[1154] Similarly, already in December 2000 SNAM and several of ENI's other DSOs appealed against a decree which had foreseen an additional tax on the use of natural gas in electricity generation, threatening to challenge the decision in court in case the request was implemented.[1155] In 2001 again, an inquiry was started by the IAA based on the grounds of a competitor's complaint accusing ENI of having only provided partial access to its transmission system while giving priority to Italian purchasers with which it entered supply contracts outside the country to import volumes (see figure 21 above). The authority judged this as an infringement to rules but, admitting on the lack of clarity of regulations and ENI's announced willingness to augment transmission capacity outside Italy, only imposed a symbolic fine of €1,000 in 2002 in return for a report to be submitted by ENI on the measures taken to eliminate its infringing behaviour.[1156] A less favourable early experience was made with regards to storage tariff proposals submitted by ENI's subsidiary Stoccagi Gas Italia for the first regulatory period. While the Authority had left operators free to define their tariffs it rejected those proposed by Stoccagi Gas Italia and instead set rates 50% lower than those applied at that time. ENI immediately made an appeal against the Authority's decision but nevertheless had to reimburse customers a total sum of €16 million before the legal settlement would be clarified.[1157] Also subsequent storage tariff proposals were repealed by authorities. ENI continued to official appeal against these decisions, too, but was finally rejected for good on this matter in 2006.[1158] Similarly, also decisions and rulings by the Authority for Electricity and Gas were appealed or attacked in court by ENI or its subsidiaries, such as against grid access regulation, storage services, or reference prices for non-eligible customers. Different to the above cases however, there seems to have been a learning process as ENI, after having been confronted with the finding of non-compliance of not having provided the full information and data requested, decided to better 'spontaneously transmit' the requested information. It was nevertheless fined €10 million (out of a possible range between €25,000

[1154] Cf. ENI (2002a), p. 116; ENI (2002c), p. F-36. The outcome of this legal case was still pending in 2008. Cf. ENI (2009a), p. 222.
[1155] Cf. ENI (2002a), p. 115. The same was done regarding a price cut imposed by Lombardian authorities against which ENI filed a claim. Cf. ENI (2001c), p. 56.
[1156] Cf. ENI (2002c), pp. 7, 52, F-44; ENI (2003a), p. 30.
[1157] Cf. ENI (2002c), pp. 17, 57.
[1158] Cf. ENI (2004a), pp. 35-37, 149-150; ENI (2005a), p. 150.

and €150 million) in 2006 for late fulfilment. Still, while also filing a claim against this decision ENI, other than before (see above), at the same time accrued financial provisions for a possible negative outcome on its behalf.[1159]

Apart from this already aggressive form of 'attacking' behaviour, even more active tactics can be found from early on. As part of its "strategy of cooperation with municipalities and utilities"[1160], for instance, ENI worked together with influential constituents such as industry associations or other authorities right from the beginning. Moreover, in 2001 it set up separate regional companies to manage respective institutional stakeholder relationships and published a Community Relations Report.[1161] Other forms of manipulative instruments applied to take influence can be found with regards to ENI's strategic approach to addressing the issue of sustainability. Amongst this are tactics such as setting up its own CSR unit in 2002, having adjusted management systems to its HSE governance model by 2003, or early pointing out the UN Global Compact Initiative which itself had only been established in 2000. Others are the mentioning of its active engagement in institutional associations such as CSR Europe whose aim it was to agree on common actions and policies to implement a sustainable development process. Moreover, ENI also emphasised its active participation in the design and implementation of new rules in the HSE area as well as in the development of responses to the question of climate change within the European system of emission trading. In this respect, it, at an early stage, had also begun to engage in CDM initiatives in Africa as well as setting up a protocol for transparent reporting on the EU emission trading scheme.[1162]

While these activities already reveal a substantial degree of active behaviour, ENI's manipulative tactics became even more pronounced over the course of time. With regards to environmental and sustainable issues this particularly shows in the increasing degree of structural organisation in that projects such as the management of greenhouse gases and clean fuels were to be handled by a specific subsidiary (EniTechnologie SpA). Those related to CDM and JI measures were to be organised as an own portfolio. Furthermore, in addition to

[1159] Cf. ENI (2005a), p. 35; ENI (2006a), pp. 36-38, 172; ENI (2007a), p. 39.
[1160] ENI (2001c), p. 30.
[1161] Cf. ENI (2001c), p. 56.
[1162] Cf. ENI (2005a), pp. 48-50.

the publications already mentioned above, ENI in 2005 announced the publication of a 'sustainability paper'[1163] which was followed by a Sustainability Report in 2006 "to communicate more effectively with stakeholders"[1164]. In 2007 it called attention to its joining the FTSE4 Good and DJSI, and in 2008 specified that it had been selected the world's most sustainable company of the oil and gas sector within the DJSI listing.[1165]

In response to the fading of its former monopoly position, ENI attempted to take influence by 'currying favour' and claiming that it had once 'rendered Italy an important service'[1166]. Even more, it aimed to take control by voluntarily doing more than necessary by going beyond requirements. It not only separated sales and distribution activities (having Italgas SpA establish Italgas Più SpA as the new company responsible for sales and customer management)[1167] as required by unbundling requirements (see chapter III), but by transferred transmission, dispatching and regasification activities to Snam Rete Gas SpA about six months earlier than actually demanded by requirements of the First Liberalisation Package.[1168] Additionally, ENI set up a legally separate transmission company, SNAM Rete Gas, which owns the pipelines used by ENI, and offered it to the market.[1169] Moreover, it established an independent but 100% owned storage affiliate, Stoccagi Gas Italia, in November 2000 and transferred the ownership and management of storage assets to it.[1170] Even more crucially, ENI 'sold' these structural reorganisations to the public as a pro-active decision to reposition its domestic market presence in the new open European energy environment and thereby 'manipulated' it in order to gain legitimacy. Also with regards to the requirements of the second liberalisation package and its translation into national law,[1171] ENI pro-actively moved forward by reducing its stake in Snam Rete Gas and demerging Italgas. The latter's shares in Italian downstream suppliers were transferred to Italgas Più and to parts

[1163] Cf. ENI (2006a), p. 13.
[1164] ENI (2007a), p. 13.
[1165] Cf. ENI (2008a), p. 11; ENI (2009a), p. 9.
[1166] Cf. ENI (2003a), p. 11.
[1167] Cf. ENI (2003b), p. 27.
[1168] This was translated into Italian law by Decree No. 164 in May 2000. Cf. ENI (2002a), p. 25.
[1169] ENI kept a majority stake (59.75%) in this company though. Cf. ENI (2002a), pp. 6, 21, 25; ENI (2002c), p. F-68.
[1170] Cf. ENI (2001c), p. 17; ENI (2002a), p. 17; ENI (2002c), p. F-68; ENI (2003b), p. 55.
[1171] Cf. ENI (2004a), p. 36; ENI (2004c), pp. 65-66; ENI (2005a), p. 28.

of foreign DSOs, such as Tigaz, which were thereby incorporated into ENI.[1172] In doing so, Italgas was 'freed' to manage the distribution business while the integration of Più granted ENI access to about five million customers in Italy. The demerger of Italgas again was initiated with the aim of "integrating commercial and development policies within ENI natural gas business"[1173]. As a form of image advertising and thus manipulative behaviour the above mentioned strategic agreement with Gazprom again was promoted as "a fundamental step towards the security of energy supplies to Italy"[1174].

7.1.4 Analysis of Development from an Integrated Perspective

Fundamentally, the above reveals that ENI's development path has initially been dominated by its active institutional behaviour. In fact, ENI used institutional change as a basis for business behaviour in that it took unbundling and the required cuts on capacity revenues as an opportunity to improve Snam Rete Gas' operating result and change its pricing system to provide more attractive offers to customers.[1175] This can be assessed as a defensive measure in form of a low-cost strategy to keep rivals out of the market. Another example is that of "economically exploiting"[1176] assets owned such as through flared gas projects. Also its tactic of attacking authorities in court as laid out above and the willingness of engaging in 'complex and lengthy legal claims and administrative procedures'[1177] served as an instrument to defend its territory. Moreover, in the beginning ENI already used the notion of sustainability and its engagements in this area as a tool to gain shareholders' trust, such as by considering sustainability criteria in the evaluation of investment projects while integrating these into its corporate strategies in order to give value to those intangible assets that distinguish it from its competitors.[1178] In fact, ENI's focus on institutional issues also remained the prevailing one in the following years, showing in the continuous application of institutional strategies for

[1172] Cf. ENI (2006a), p. 39; ENI (2009c), p. 112.
[1173] ENI (2005a), p. 32.
[1174] ENI (2007a), pp. 31, 37.
[1175] Cf. ENI (2001c), pp. 55-56.
[1176] ENI (2007a), p. 11. For concrete projects cf. ENI (2009c), pp. 24-27.
[1177] For an example cf. ENI (2005a), p. 36; ENI (2006a), pp. 36-37; ENI (2007a), p. 38; ENI (2008a), p. 132.
[1178] Cf. ENI (2004a), p. 14.

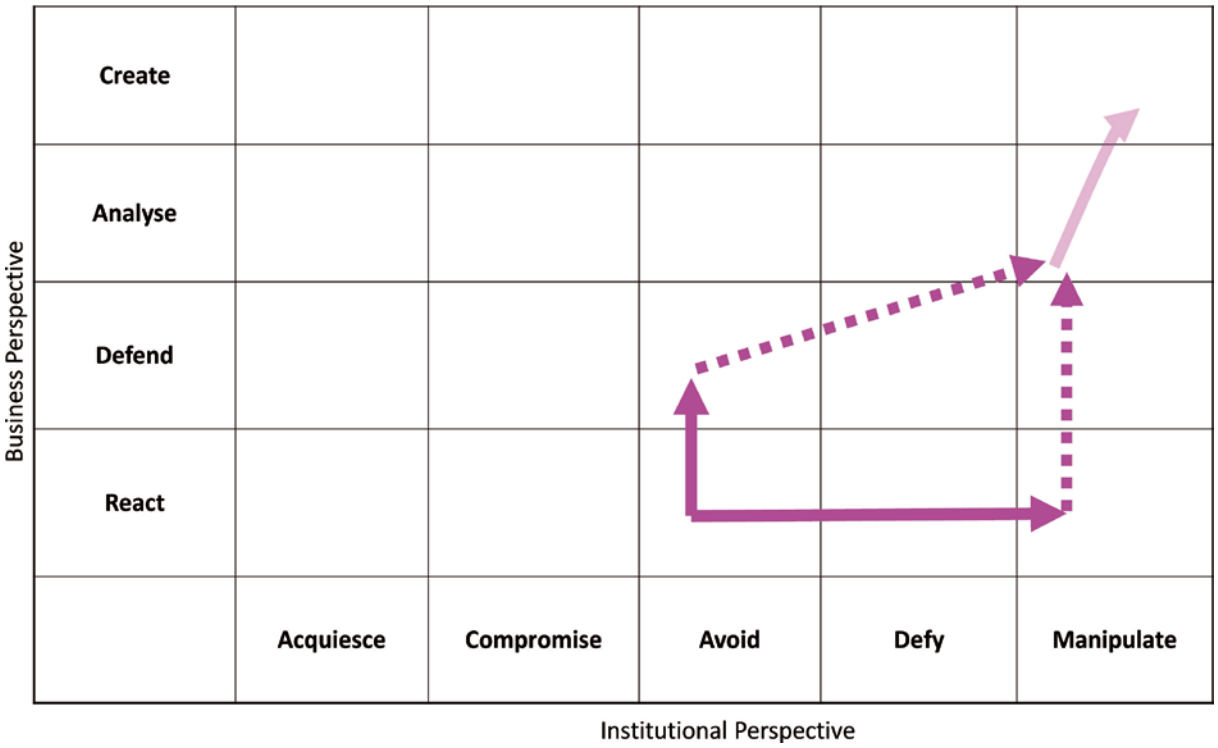
business considerations. Also its upstream focus and low degree of internationalisation in downstream markets along with its strong dependence on the domestic market - which show as passive business development - have been indicated by others, depicting ENI as tired as 'an athlete at the end of a long and strenuous race'.[1179]

So far there has been only little evidence of a development towards an integrated perspective in form of simultaneously using business strategies to enhance institutional development. Exceptions are the announcement that it was looking to deploy natural gas as 'a strategic response to problems posed by interrelations of energy development and the environment'[1180] and having identified "environmental and climate emergencies"[1181] as great strategic challenges to be addressed with sustainable development not only seen as lying 'at the heart of priorities' but as a key element to successfully manage the complexities of large, integrated energy companies.[1182]

Accordingly, ENI's development paths show as a passive business and dominating active institutional one. The indications of a development towards an integrated perspective again are illustrated as two dotted arrows diverging from the business and the institutional path towards an integrated one which is here indicated in transparent purple – as shown in the following figure.

[1179] Cf. Grant/ Ritter (2007), pp. 1, 6-7, 17.
[1180] Cf. ENI (2006a), p. 95.
[1181] ENI (2007a), p. 120.
[1182] Cf. ENI (2006a), pp. 12-13; ENI (2008a), p. 11.

Figure 22:[1183] ENI's development paths between 1998 and 2008



[1183] Own figure based on results from case study analysis.

7.2 E.ON

7.2.1 Introduction

E.ON was founded in 2000 as E.ON Energie AG following the merger of VEBA and VIAG, two German conglomerates which, amongst others, were engaged in the energy business.[1184] Following the "logical continuation"[1185] of previous conduct, the energy and speciality-chemistry business (Degussa AG) were identified as the new company's core operation. Engagement in the energy business was mainly constituted by activities in the electricity segment though while the gas – as well as the water business – was only briefly referred to as a complementary segment to "flank"[1186] electricity activities. E.ON's upstream activities were performed by the subsidiary VEBA Oil & Gas GmbH which was primarily active in the oil business. At that time gas production was carried out in the Netherlands, the U.K., Argentina and Syria. Driven by the natural depletion of deposits in addition to the generally increasing competition for resources, VEBA acquired a subsidiary of Wintershall in 1999 with the aim of generating synergies and becoming active beyond distribution in gas-to-power conversion activities.[1187] Downstream, E.ON's engagement was mainly characterised by majority shareholdings in Contigas (98.7%) and Thüga (57.3%) and in smaller stakes in regional and local distributors (DSOs). Via PreussenElektra VEBA also held controlling stakes in German regional suppliers such as Avacon which included the operative business of one of the largest German gas companies Ferngas Salzgitter. Outside Germany, VEBA had acquired a minority share in the Latvian gas utility Latvijas Gaze in alliance with Ruhrgas in 1997.[1188]

[1184] VIAG stands for 'Vereinigte Industrie-Unternehmungen Aktiengesellschaft', VEBA for 'Vereinigte Elektrizitäts- und Bergwerks-Aktiengesellschaft'. While VIAG's business consisted of providing services within the energy, telecommunication, aluminium, chemicals and packaging industry, VEBA had been founded as an electricity and mining company and at the time of merger was engaged in the areas of electricity, chemicals, distribution and property management.
[1185] E.ON (2001), p. 28.
[1186] E.ON (2002), p. 70.
[1187] Cf. VEBA (1998), pp. 37-39; VEBA (1999), pp. 40-43; VEBA (2000), pp. 42-45; VEBA (2001), pp. 42-45; E.ON (2001), p. 91.
[1188] Cf. VEBA (1999).

7.2.2 Analysis of Development from a Business Perspective

Fundamentally, E.ON's market development is characterised by very active behaviour right from the beginning. This already shows in the fact that the new company was guided by a pacesetting initiative called 'fast forward', emphasising the aim to *not only defend* its domestic position, but also to *actively shape* the global competitive arena to enhance shareholder value as the primary goal and create new opportunities provided by liberalisation.[1189] To achieve this, E.ON simultaneously followed an efficiency- and growth-oriented corporate strategy right from the beginning.[1190] Facing liberalisation and decreasing electricity prices, for instance, initial activities in the year of the merger were directed at creating synergies[1191] by consolidating existing businesses in order to benefit from cross-selling opportunities and economies of scale on a vertical line from generation to sales, on a horizontal axis between the electricity and gas business as well as on a diagonal scale across geographical markets. Particularly the gas business was aimed at expansion, e.g. by optimising gas procurement through producing a larger share of the gas sold within the company and by developing the necessary infrastructure.[1192] Also with regards to its geographical extension E.ON right from the beginning focussed on those regions which provided synergies due to their geographical proximity, establishing wholly owned subsidiaries in the Czech Republic (E.ON Bohemia), Hungary (E.ON Hungary), and the Netherlands through E.ON Benelux.[1193] The years between 2000 and 2002 are specifically characterised by expansion into Northern and Eastern Europe. In this period E.ON not only took a controlling stake in Swedish Sydkraft through which operations in Scandinavian countries and Poland were to be extended, but at the same time increased its stakes in Hungarian and Slovenian power producers. Furthermore, it became active in Ireland for the first time. Another important milestone was the acquisition of the integrated U.K.-based

[1189] Cf. VEBA (1999), p. 26; VEBA (2001), pp. 8-13, 26, 30; E.ON (2001), pp. 43-45. Italicised by author.
[1190] An example of early internal restructuring is the merging of separate sales and trading divisions into E.ON Sales & Trading as a new corporate unit to focus on the wholesales business. Cf. E.ON (2002), pp. 26-29.
[1191] This had also been a major aspect of the VEBA-VIAG merger with cost synergy potential of the energy division calculated to amount to €700 mil.
[1192] Cf. E.ON (2001), pp. 43-45; E.ON (2002), p. 71; E.ON (2003), p. 166; E.ON (2004), pp. 20-25, 33.
[1193] E.ON Polska is also mentioned in the enumeration (cf. E.ON (2001), p. 31) but not mentioned again separately as the other WOS. Neither is it listed in the listing of the following Annual Report (cf. E.ON (2003), p. 164).

utility Powergen which made E.ON the second-largest energy provider in the world. This not only provided E.ON with access to conventional- and renewables-based power plants and to final customers, but also to long-term gas supply contracts following Powergen's acquisition of TXU Europe's UK retail business operations and of a wholly owned power and gas supplier (LG&E) in the U.S., the world's largest energy market.[1194] While these expansions were mainly directed at the electricity generation and supply business in the beginning, the gas business, already early recognised as a growth industry,[1195] was soon gaining increasing attention. This shows in the expansion of downstream engagements.[1196] In its home territory, for example, E.ON took full control of Thüga which again acquired HEIN GAS, a DSO with its own pipeline and storage facilities and owner of several regional and local utilities. At the same time E.ON also incorporated regional suppliers like Contigas, thereby significantly extending access to 130 utilities and its end customers. Critically, both companies had been engaged in the energy market since the middle of the 19th century and thus possessed relevant organisational experience. Moreover, through Thüga E.ON gained influence over supply in Italy.[1197]

The "strategic breakthrough for E.ON"[1198] in the gas business was however achieved through the acquisition of Ruhrgas AG. While this €10.2 billion take-over had already been initiated in 2001, it could not be finalised before the year 2003 due to an initial rejection by the German Federal Cartel Office and the following requirement to dispose of stakes in subsidiaries. Additionally, substantial gas volumes had to be offered on the open market (Gas Release Program) in order to enhance competition.[1199] In January 2003 then, E.ON had reached out-of-court agreements with the nine competitors who had filed complaints against the ministerial approval and was able to finalise the acquisition of Ruhrgas AG which then was rebranded into E.ON Ruhrgas in July 2004.[1200] When acquired by E.ON, Ruhrgas was one of Europe's leading gas companies with its core business in the up- and midstream

[1194] Cf. E.ON's Annual Reports of years 2000-2004.
[1195] Cf. E.ON (2001), p. 5.
[1196] The growing importance of the gas business also shows in the fact that only from the year 2001 on gas (and water) sales are mentioned separately in the Annual Report. Cf. E.ON (2001) and following.
[1197] Cf. E.ON (2004), pp. 25, 83; E.ON (2005), pp. 37, 67.
[1198] E.ON (2003), p. 5.
[1199] Cf. E.ON (2003), p. 37.
[1200] In the following, the term Ruhrgas will be used.

segment, and one of the world's largest gas importers with established long-term supply contracts, excellent industry contacts and equity interests in transportation and storage facilities across Europe. This backward integration was an important strategic move for E.ON as it not only served as an entry barrier to defend the domestic market but also as a strategic compliment to the existing business.

Having become the world's largest electric and gas utility after the acquisition of Ruhrgas and Powergen,[1201] E.ON established a new organisational structure in 2004. Five market units, one for Central Europe, one for Pan-European Gas, one for the U.K., one for Nordic regions, and one for the US-Midwest, were organised around the Corporate Center E.ON AG. While each unit was responsible for its geographical market, Ruhrgas operated under the Pan-European market segment where the upstream segment was headed by E.ON Ruhrgas E&P, the midstream business of gas purchasing, sales, and storage by E.ON Ruhrgas AG which also owned and maintained the transmission system. Transportation services again were marketed by Ruhrgas Transport. Downstream shareholdings across Europe were mainly managed by E.ON Ruhrgas International, while Thüga's focus was directed at German utilities and the Italian market.[1202] Essentially, this reorganisation shows the drive towards more efficient structures. Moreover, by taking advantage of the European enlargement process and the opening of these markets, the year 2004 is characterised by a rapid penetration of further Eastern European markets with E.ON acquiring regional distributors in Bulgaria. At the same time Ruhrgas took a majority stake in a Romanian and Hungarian TSO (Distrigaz North and MOL Gas). This not only facilitated the transportation of gas supplies from Siberia to European markets of consumption, but provided Ruhrgas with access to the Romanian network which again allowed it to bypass the Russian route, thus contributing to efforts of diversifying supplies. In addition to these expansion activities E.ON and Russian Gazprom in 2004 signed a Memorandum of Understanding (MoU) to further deepen their partnership. Recently, the engagement in Russia and the cooperation with Gazprom were further strengthened by signing long-term contracts for the supply of 400 bcm until 2036[1203]

[1201] Cf. E.ON (2003), p. 43.
[1202] Cf. E.ON (2005a), p. 66.
[1203] Cf. E.ON Ruhrgas (2008), p. 55.

and for jointly building power stations in Russia. Even more, after long lasting negotiations an agreement was finally reached in October 2008 regarding the participation in production from the gas field Yushno Russkoje, with more than 600 bcm one of the world's largest deposits. While this allowed Ruhrgas to obtain a stake of 25% minus one share, Gazprom acquired Ruhrgas' share in ZAO Gerosgaz[1204].[1205] In addition to supplies from Russia, Ruhrgas also drove to develop other sources by obtaining stakes in gas fields or production companies, such as in the U.K. and Norway. These commitments were to substantially contribute to the company's goal of sourcing 15-20%, around 10 bcm, from its own deposits in the long-term.[1206] Moreover, upstream engagements were also complemented by several major investments in the midstream gas business via the expansion of pipeline and storage capacity across Europe. Among these was the establishment of a project company together with BASF in 2005 in order to build the 'North European Gas Pipeline (NEGP)', a 1,200 km long offshore pipeline sourcing the gas from the Siberian gas field Yushno Russkoje and bringing it from Vyborg through the Baltic Sea to Greifswald. Due to its importance for European gas supply, the NEGP is supported by the EU as a key project through the TEN-E list (see above). This serves as another example for E.ON's behaviour of strategically taking advantage of opportunities arising from change. Midstream engagement was further extended by participating in the expansion of the Interconnector pipeline between Belgium and the U.K. in order to stabilise European supply security.[1207]

While the development depicted above reveals a geographic expansion in Northern and Eastern Europe, E.ON soon also directed its attention towards Western and Southern Europe, engaging in the generation and final distribution segment in the Netherlands and attempting to take-over Endesa, Spain's largest utility company, in 2006. This move would not only have opened up the Spanish market, but also would have provided access to Latin America as well as France, Italy Poland and Turkey via stakes owned by Endesa's subsidiaries. While the EU Commission had given unconditional approval for the acquisition, the Spanish government,

[1204] This at the same time means that E.ON's share in Gazprom declined from the 6.4 to 3.5%. Cf. E.ON (2010), p. 68.
[1205] Cf. E.ON (2008), pp. 25, 68.
[1206] Cf. E.ON (2002), p. 70; E.ON (2007), pp. 92, 95; E.ON (2008), pp. 75, 94-95.
[1207] Cf. E.ON Ruhrgas (2008), p. 56; E.ON Ruhrgas (2009), p. 47.

rejecting a foreign take-over, imposed several restrictions against which E.ON filed an appeal. The Commission once more confirmed that the conditions imposed by Spain did not conform to EU law, enabling E.ON to submit a €41 billion take-over bid. In the meantime, the Spanish construction company Acciona had acquired a 20% stake in Endesa and concurred with Enel on joint control. Finally, in April 2007, E.ON agreed with Enel and Acciona to withdraw its offer and instead acquire Endesa's subsidiaries in Italy and France as well as Enel's in Spain, thereby gaining access to the above mentioned stakes in Poland and Turkey.[1208] Further steps to expand internationalisation were taken by attempting to take-over the Belgian distributor Distrigaz which Suez was forced to sell following its merger with GdF (see GdF/Suez case study). This would have allowed E.ON to become more independent from Russian supplies due to Distrigaz' sourcing in the Netherlands, Norway and Algeria. In addition to that, Distrigaz was also relatively strong in the LNG business[1209] and would have not only provided E.ON with access to this activity, but at the same time would have enforced its midstream business. While Distrigaz in the end was sold to ENI, E.ON received drawing rights for 770 MW from three nuclear facilities in Belgium of which 270 MW were to be supplied in the Netherlands (see GDF case study),[1210] thus strengthening E.ON's international electricity business.

Apart from this geographical market extension, E.ON's pro-active business development behaviour also shows in the seeking of further growth opportunities along the gas value-chain as well as in the horizontal diversification into new business areas. This included the construction of nuclear power plants in Sweden and in the U.K. via a JV with RWE as well as investments into the midstream gas business and renewables sector, both of which had been identified as gaining increasing importance. Along the gas value chain the focus of activities was directed towards extending the storage and trading segment, complementing the transportation activities mentioned above. The trading function, for instance, was significantly enhanced by purchasing a 75% stake in Dalmine Energie, one of Italy's largest independent energy traders and by combining European energy trading operations into a strategically

[1208] Cf. E.ON (2007), pp. 15, 70; E.ON (2008), p. 77.
[1209] Cf. Alich/ Flauger (2008).
[1210] Cf. Suez (2008a); Suez (2008b).

focussed company, E.ON Energy Trading (EET) which was to operate as an independent market unit in order to seize new growth opportunities and generate additional earnings.[1211] Ruhrgas again, having already been experienced in trading before the merger,[1212] established 'Choice Market', a virtual trading platform where gas could be offered or sold via the Internet.[1213] In 2008, E.ON Gas Storage was established as a wholly-owned subsidiary of Ruhrgas in order to bundle the company's European storage activities.[1214] Another crucial strategic move was the entrance into the LNG business. Although Ruhrgas, through a 78% share in the German LNG Terminal Company, had already been in the possession of an operating license for a terminal to be built in Wilhelmshaven since the 1970s, LNG not only constituted a new field of engagement but a central pillar of gas sourcing. Similarly, a MoU had already been signed with Algerian producer Sonatrach for analysing opportunities to bring Algerian LNG into Europe. In 2007, first regasification capacities were booked at an LNG terminal in the U.K. under long-term contracts running until 2029, providing Ruhrgas with the possibility to supply its subsidiaries as well as third parties. Further stakes were taken in existing or planned terminals such as in Africa (Equatorial Guinea), where E.ON and the Nigerian oil company NNPC recently agreed to cooperate on extracting and transporting natural gas to Europe as well as capturing gas so far still being flared. Moreover, by participating in the construction of other European terminals (e.g. Rotterdam, Le Havre, or on the Croation Isle of Krk), or even West Africa, Ruhrgas strategically developed entry into the LNG business. Furthermore, by engaging along the whole LNG chain in shipping, trading, and regasification enabled E.ON to take advantage of arbitrage opportunities (also see chapter III) and supported its aim of increasing the share of LNG in its supply portfolio from 10 to 17% by 2020.[1215]

[1211] Cf. E.ON Ruhrgas (2009), pp. 26-27.
[1212] Ruhrgas was one of the founding shareholders of the North West European Hub Service Company GmbH established in 2002. Cf. Ruhrgas (2004), p. 16.
[1213] Cf. E.ON (2008), pp. 79, 101; E.ON Ruhrgas (2009), p. 23; VIK (2007), pp. 29-30.
[1214] Cf. E.ON (2009a), p. 50.
[1215] Cf. E.ON (2007), pp. 66, 70, 94; E.ON (2008), pp. 92-95; E.ON (2009a), pp. 49, 80; E.ON (2010), pp. 58-63.

A similar expansion has taken place with regards to renewable energy sources which were assessed to "have an enormous, as-yet-untapped potential in numerous applications"[1216] such as wind power, biomass or marine energy.[1217] In fact, what had begun as R&D projects soon developed into global businesses. In line with the strategic importance given to the gas business and in the light of increasing competition for natural resources, one of the earliest initiatives in this area was the engagement in the production of biogas. This resulted in the establishment of E.ON Bioerdgas in 2007 as a subsidiary especially set up for the generation of biomethane in natural gas quality,[1218] also to be used by E.ON Gas Mobil in the transportation sector where CNG was gaining increasing importance (also see chapter III).[1219] Moreover, in order to develop the full economic and environmental potential of biogas, E.ON is currently building Europe's largest biomethane production facility and is investing in further facilities across Europe.[1220] Another large part of its renewables generation portfolio is formed by wind energy. While, initially, the tactic was to acquire wind parks, E.ON recently also started growing organically in this area by building its own assets in cooperation with experienced partners. The latest project, for example, was the creation of the world's largest offshore wind farm (London Array) on the British Coast, and is carried out together with Danish Dong Energy and Masdar, an investor from Abu Dhabi specialised in investments in the renewables energy sector.[1221] Further major investments were made by engaging in the solar energy project Desertec. Generally, the importance attributed to the renewables division can be seen in the extent of investment volumes of €6 billion between 2008 and 2010[1222] as well as in the organisational structuring into independent geographical renewable business units in addition to a special environmental corporate unit called Market Unit Climate & Renewables, enlarging the company's market units to ten.[1223]

[1216] E.ON (2008), p. 82.
[1217] Cf. E.ON (2007), pp. 56-57, 86; E.ON (2008), pp. 60, 80-83, 105; E.ON (2009a), pp. 14-17; 52-54, 79. As also pointed out by external sources. Cf. Traufetter (2007), p. 146; Czycholl (2009); Mühlstein (2009), p. 20.
[1218] In 2008, E.ON Bioerdgas GmbH was sold to E.ON Climate&Renewables GmbH. Cf. E.ON Ruhrgas (2009), pp. 14-15, 47.
[1219] Cf. Ruhrgas (2004), pp. 42-43 (page reference to binding); E.ON Ruhrgas (2007), p. 71. The industry had actually been obliged to supplement natural gas used as a motor fuel with 10% of biogas until 2010 and 20% by 2020. Cf. E.ON Ruhrgas (2008), p. 22.
[1220] Cf. E.ON (2008), pp. 68-70, 93, 97.
[1221] Cf. E.ON (2009a), pp. 19, 71. Also cf. Backfisch (2008).
[1222] Cf. E.ON (2009a), pp. 70-73; E.ON (2010), pp. 148-163.
[1223] For an overview cf. E.ON (2009a), pp. 42-43.

7.2.3 Analysis of Development from an Institutional Perspective

Strikingly, E.ON's institutional behaviour also reveals a pro-active approach in dealing with European energy policy changes. This already becomes apparent when just looking at formal aspects such as relevant documents and the attention paid to respective topics. In this respect it can be seen that while European energy policy issues played an important role in annual reports right from the beginning, they have gained even more weight over the course of time as, for instance, can be derived from the number of pages dedicated to respective topics or the way of it being presented. As early as 2004 and until then not often found in other documents, thus indicating E.ON's pro-active drive, a figure shows the triangle of European Energy Policy goals as presented in chapter III. This is headed with the remark that E.ON not only supported these, but would play an active role in shaping European Energy Policy by taking "rapid-response measures"[1224].[1225] Moreover, concrete statements formulated in 2001, such as looking to take influence and seeking "involvement in the political opinion-forming process"[1226], also reveal its early pro-active behaviour. This is further supported by the fact that the main form of behaviour is that of 'window dressing', found early on and with regards to all three energy policy goals. That is, instead of 'just' acquiescing or compromising, E.ON straight from the beginning claimed that it wanted to engage 'in a systematic, constructive, objective and informed dialogue with leaders from politics and the legal business'[1227], and develop relationships of trust with institutional as well as financial investors such as by regularly feeding the media with relevant information.[1228] It even used its foreign subsidiaries such as E.ON Hungary as positive examples, drawing attention to the fact that this subsidiary not only had "made substantial contributions to paving the road to deregulation"[1229], but was "a champion of fair competition"[1230] who attempted to 'exert influence through participating in the forming of government directives'[1231]. In fact, already VEBA had claimed that it had

[1224] E.ON (2007), p. 68.
[1225] Cf. E.ON (2005a), p. 54. Also cf. E.ON (2007), p. 4; E.ON (2008), p. 7.
[1226] E.ON (2002), p. 15.
[1227] Cf. E.ON (2003), p. 38; E.ON (2004), p. 46; E.ON (2005), p. 34. A similar statement can also be found in Ruhrgas' Annual Reports. Cf. Ruhrgas (2004), p. 30.
[1228] Cf. E.ON (2003), pp. 48, 53.
[1229] E.ON (2002), p. 47. Also cf. E.ON (2002), pp. 38-39, 45-47.
[1230] E.ON (2002), p. 47.
[1231] Cf. E.ON (2002), p. 47.

been 'supportive of liberalisation from the beginning'[1232]. While this indicates E.ON's support of changes made, looking at its actual behaviour reveals a different picture, translating into avoidance behaviour as becomes apparent from applying tactics of window dressing. With regards to liberalisation measures, this, for example, shows in the fact that authorities had to impose several legal proceedings before E.ON became cooperative. E.ON then took advantage by selling this 'cooperation' as well as the opening-up of its gas price calculation and the reduction of the number of its tariff zones as pro-active and voluntary measures that were enhancing competition and transparency[1233] while in reality having been forced to do so by Authorities. Also the creation of the energy retailer 'E as in Easy', which was heavily promoted, can be characterised as window dressing as it enabled E.ON to present itself as a price-oriented supplier and not as one that 'rips-off' customers.[1234] Characteristically, window dressing tactics can also be found in the cases of the goals supply security and sustainability. With regards to the first, E.ON had explicitly drawn attention to the fact that it was sharing the importance attributed to the issue of supply security, and that it contributed to achieving this goal by making necessary investments and implementing measures to facilitate gas exchange.[1235] At the same time, however, evidence was found of E.ON having created barriers for third parties to access its grid, and of not being supportive of projects of European interest as determined by the Commission's sector inquiry.[1236] Similarly, while having emphasised the willingness to 'constructively work with political leaders beyond complying with law', e.g. having already implemented a Climate Protection Action Program in 2000, and having pointed out that it was Germany's biggest operator of renewable generation assets, the share of renewables in its production portfolio only accounted for less than 10% at that time.[1237] This can thus be assessed as window dressing behaviour. Another tactic applied was that of concealment in form of paying lip service, such as by claiming it was "well aware of the special responsibility it shoulders"[1238], or that energy utilities had "an

[1232] Cf. VEBA (2000), pp. 9-10.
[1233] Cf. Anonymous (2005c), p. 7; E.ON (2006), p. 73; Balzer/ Student (2006a), pp. 66-73; Bundesnetzagentur (2006), pp. 23-24, 100-102; E.ON Gastransport (2006); Flauger (2006a), p. 14; Prinz et al. (2007), p. 6.
[1234] Cf. E.ON (2008), p. 113. This has also been recently assessed by secondary sources. Cf. Focht (2008a), p. 8.
[1235] Cf. E.ON (2005a), pp. 54, 70.
[1236] Cf. European Commission (2007l), pp. 15-16.
[1237] Cf. E.ON (2001), pp. 11, 51, 55.
[1238] E.ON (2005b), p. 58.

obligation towards society as a whole"[1239]. Other tactics revealing avoidance behaviour were that of escaping. By proposing to build an integrated European energy market, E.ON, for instance, agreed to open up its grid to competition and transfer grid ownership to a separate subsidiary (E.ON Gastransport) in order to get away from further inquiries and thereby buffer itself from non-compliance.[1240]

Another striking feature to be found with regards to E.ON's institutional behaviour is the rapid movement towards more active behaviour in form of defiance and even manipulation, again holding for all three goals of European energy policy. Also here, several tactics were applied. A major one of these was the attacking of authorities, commenting not only that law makers had "*once again*"[1241] initiated and enacted regulatory constraints, but blaming authorities of having constrained action through a "months-long political tug-of-war"[1242] while itself had "repeatedly pointed out"[1243] the need for a stable regulatory environment. It thus argued that it could "hardly be blamed for passing along government-mandated changes"[1244] such as taxes on or subsidies for renewable energy, and even claimed that renewables should be more market-based to decrease the financial burden on consumers. Other examples of attempts to take influence can be found in E.ON's accusation of authorities in statements such as 'making it clear to political leaders' that measures to enhance competition, security of supply, or sustainability would be disadvantageous to economic development.[1245] The notion that the "legislative tampering with the country's recently liberalized power market would be economically harmful"[1246], for instance, had already been made in 2000. Similarly, and assumingly along with increasing institutional pressures, 'attacks' on authorities further increased. E.ON, for example, publicly criticised that governmental coercion by the European Commission was an inacceptable intervention in market economy and entrepreneurial freedom. The threat of ownership unbundling, for

[1239] E.ON (2005b), p. 7.
[1240] Cf. E.ON (2007), p. 88. Also cf. Kögler (2007), p. 32; Bundesnetzagentur (2006), p. 30; Bundeskartellamt (2008a); Bundeskartellamt (2008b).
[1241] E.ON (2005a), p. 54. Italicised by author.
[1242] E.ON (2005b), p. 8.
[1243] E.ON (2005b), p. 8.
[1244] E.ON (2005b), p. 9.
[1245] Cf. E.ON (2001), p. 55; E.ON (2002), p. 62; E.ON (2003), p. 60; E.ON (2005a), p. 55; E.ON (2005b), p. 8.
[1246] E.ON (2001), p. 55.

instance, was seen as an illegal expropriation and as being in clear contradiction to competitive politics and liberalisation,[1247] while the reduction of network charges was criticised as being based only on a "one-sided interpretation"[1248] by authorities.[1249] While threatening to take legal action in this respect E.ON had already filed an appeal against the allocation of CO_2 certificates within the Trading System in 2004[1250] as well as against a prohibition decree issued by the Federal Cartel Office (FCO) in 2006.[1251] With regards to increasing enforcements to augment security of supply, E.ON referred to the principle of subsidiarity (see chapter III) and claimed that responsibility here, first of all, lay with gas companies and only 'if necessary' with member states and "only as a last resort, by the EU itself"[1252] thereby telling authorities to 'keep out of its business'. Further forms of 'attacking' behaviour can also be found with regards to sustainability issues in that E.ON criticised the aim of replacing natural gas by preferring renewables such as wind power or solar energy while the deployment of biogas was hindered by market barriers.[1253] This behaviour can be attributed to the fact that E.ON itself was only weakly positioned in the field of solar energy while having stronger stakes the biogas business (see above).

Even more pro-active were E.ON's attempts to manipulate institutional agents and sources by co-opting tactics and by trying to not only take influence but control. The first of these tactics is especially characterised by bringing in powerful constituents. One of these was the former German Chancellor Schroeder who was made chairman of the NEGP (see above).[1254] While this can be assessed as particularly relevant in relation to security of supply issues, other examples of this tactic can be found with regards to the matter of sustainability. Here, E.ON set up several joint initiatives with global corporate players as well as industry experts and prestigious institutes to gain legitimacy for projects such as CCS. Essentially, this tactic became particularly critical in order to maintain the acceptability for increasingly expensive

[1247] Cf. E.ON (2007), p. 63; E.ON Ruhrgas (2009), pp. 40-41.
[1248] E.ON (2007), p. 23.
[1249] Cf. E.ON (2007), p. 24; E.ON (2008), p. 65; E.ON Ruhrgas (2009), pp. 40-43; E.ON (2009a), pp. 7, 38.
[1250] Cf. E.ON (2005b), p. 53.
[1251] Cf. Bundesnetzagentur (2006), pp. 29-30; E.ON (2007), p. 97; E.ON Ruhrgas (2008), p. 59.
[1252] E.ON (2005a), p. 54.
[1253] The amended REL demanded that 20% of total electricity production had to come from renewable energy sources by 2020, requiring grid operators to feed in biogas, an aspect challenged by E.ON as it would increase consumer prices. Cf. E.ON (2005b), p. 52.
[1254] Public press therefore created the name 'Gerdprom'. Cf. Thumann (2006).

natural gas in face of the growing popularity of renewable energies. In cooperation with different partners of well-known reputation E.ON therefore started several initiatives across different sectors which were later grouped under the 'climate protection initiative Erdgas.ON'.[1255] In 2008, this was accompanied by the new communication campaign 'We do natural gas'[1256]. Similarly, launched as "rapid-response measures"[1257] and as 'an important signal for fair competition'[1258], E.ON also explicitly communicated the auctioning of storage capacity, the publication of relevant key information and the facilitation of cross-border flows by cooperating with relevant institutions.[1259] Such measures of image advertising have continuously been accompanied by lobbying work[1260] and further supported by 'using' the publication of special reports. In this respect, apart from the inclusion of its subsidiaries in the DJSSI having already been pointed out in 2000,[1261] the term 'sustainability' as well as its operational implementation was explicitly mentioned for the first time in the AR of 2003 as an example referring to its success of having increased the efficiency of supply. Moreover, E.ON emphasised that it not only shared stakeholders' interests in sustainable development but particularly that it *voluntarily* committed itself to corporate responsibility, such as by making public respective reports like one on Corporate Social Responsibility in 2004.[1262] In the following years, E.ON not only continued pointing out its support for climate protection measures, but added supplementary instruments such as funding research initiatives, establishing a CSR council in 2005, as well as having enlarged its CR department by 2007. Also explicitly mentioned was the fact that its CR report had received the highest rating possible (A+) from the Global Reporting Initiative and for the first time was included in the DJSW and STOXX indices. In addition to that, the roll-out of an improved CR strategy and of one even better embedded in corporate strategy was announced for 2008, not only clearly

[1255] Cf. E.ON Ruhrgas (2008), pp. 10-31; Ruhrgas (2009), pp. 16-17.
[1256] In German this campaign is called "Wir können Erdgas".
[1257] E.ON (2007), p. 24.
[1258] Cf. E.ON Ruhrgas (2009), p. 23.
[1259] Cf. E.ON (2007), pp. 24, 68; E.ON Ruhrgas (2008), pp. 45, 53; E.ON (2008), pp. 31, 90; E.ON Ruhrgas (2009), pp. 22-23; E.ON (2009a), p. 38. Also cf. Ontras (2009a); Ontras (2009b); NetConnect Germany (2009); Reutersberg (2008), pp. 4, 8-9, 12. Also cf. European Commission (2007a), p. 260; Focht (2008b), p. 9.
[1260] Lobbying work had also played a major role in 'convincing' authorities of the benefits of the merger with Ruhrgas. Cf. Student (2002), pp. 41-44.
[1261] Cf. E.ON (2001), pp. 11, 51, 55; E.ON (2003), p. 60.
[1262] Cf. E.ON (2004), pp. 72-73; E.ON (2005a), p. 32. Italicised by author.

defining goals and measures but implementing a specific programme called 'E.ON Environmental Champions'. In 2006, E.ON was also included in the Carbon Disclosure Leadership Index for the first time.[1263]

Tactics of exerting control again have been applied particularly recently by voluntarily going beyond enforced requirements, especially with regards to liberalisation measures. While in 2003 having criticised that legal unbundling disproportionately interfered with organisational procedures,[1264] E.ON three years later specifically pointed out that they had implemented all unbundling requirements half a year before legally demanded.[1265] In 2007, it explicitly emphasised supporting enforced competitive measures as implemented in the 3rd Liberalisation Package and even argued this as being to the advantage of everyone. Along a similar line, the emissions trading system was praised as a 'good idea'.[1266] This form of behaviour can be explained by the fact that E.ON had increasingly become subject to inquiries by authorities (also see above) and was trying to guard against this by becoming pro-active before even stricter rules were implemented or sanctions imposed. In response to the antitrust proceedings initiated against E.ON and GdF, for example, E.ON in 2007 suggested to the Commission to divest its transmission system and release some of its generating capacity.[1267] Bernotat himself admitted that in the face of massive political demands from all areas and all parties, this step was done in order to reduce opportunities for criticism and attack. For the same reason, i.e. to soothe regulators, E.ON decided to sell Thüga, the group where it had bundled its stakes in more than 100 local utilities and which had developed into the largest network in Germany. Doing so it hoped for a 'quid pro quo' offer by the FCO for being able to expand in other areas.[1268] Similarly, E.ON recently took the initiative and transferred grid ownership rights to E.ON Gastransport, as well as making voluntary investments into grid infrastructure.[1269]

[1263] Cf. E.ON (2007), pp. 25, 58; E.ON (2008), pp. 61, 73; E.ON (2009a), p. 12.
[1264] Cf. Immenga et al. (2003), pp. 46-48.
[1265] Cf. E.ON (2007), p. 24.
[1266] Cf. E.ON (2007), p. 58; E.ON (2008), pp. 65-66.
[1267] Cf. E.ON (2008), p. 65.
[1268] Thüga was bought by a consortium of 50 local utilities and became the 5th largest energy company in Germany substantially increasing competition and showing the growing re-communalisation (see above). Cf. Bundeskartellamt (2008c); Flauger (2009a); Flauger (2009b); Gassmann (2009a); Weil (2009).
[1269] Cf. E.ON (2009a), p. 50.

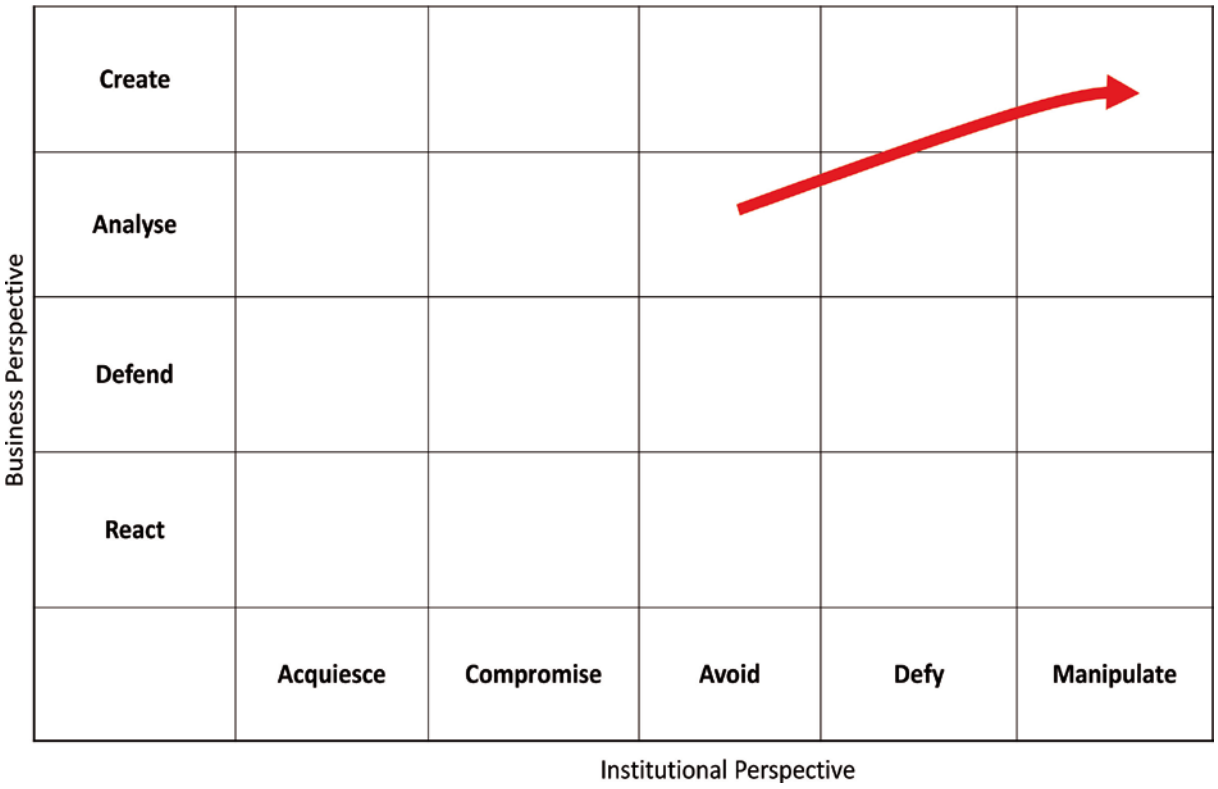
7.2.4 Analysis of Development from an Integrated Perspective

Essentially, E.ON's business and institutional behaviour can be characterised as highly active. From a business perspective it not only started to defend its established competitive position straight away, but also prioritised this through the active development of existing businesses while at the same time analysing and quickly taking advantage of opportunities arising from change. Even more, over only a short course of time E.ON pro-actively drove change itself, its course of development thus showing as a path that reaches from the 'analysing' to the 'creating' box. An analogous development path can be determined in the case of its institutional behaviour. Having already applied active strategies early, behaviour even became pro-active within a short period of time with E.ON using institutional change to its advantage.

Even more, the analysis above revealed that E.ON actually followed an integrated path right from the beginning, showing in the fact that it used business strategies to support institutional development and vice versa, such as when implementing the trading platform Choice Market (see above) not only as a market opportunity but also as an instrument for stimulating gas trade.[1270] Also the awareness of continuously having to be active to maintain legitimacy while also gaining acceptance for its business model among key stakeholders to lay "the groundwork for sustaining our business success into the future"[1271] reveals this integrated path. This is depicted in the following figure.

[1270] Cf. E.ON Ruhrgas (2008), p. 54; Focht (2006), p. 6.
[1271] E.ON (2007), p. 58.

Figure 23:[1272] E.ON's development path between 1998 and 2008



[1272] Own figure based on results from case study analysis.

7.3 GdF

7.3.1 Introduction

Gaz de France (GdF) was established on April 8, 1946 as a public industrial and commercial entity (EPIC)[1273] in the course of the nationalisation of the French gas (and electricity) sector following which it obtained 84% ownership of gas facilities as well as exclusive monopoly rights on import and transportation activities.[1274] Since the 1970s GdF has also been the owner of two LNG terminals: Fos-Cavaou (1972), in partnership with Total, and Montoir-de-Bretagne (1980).[1275] In the 1990s GdF had become engaged in the E&P business by taking control of German EEG in 1994 and acquiring licenses to participate in the development of fields in the British North Sea in 1998. These steps again had required GdF to set up the necessary infrastructure, making it the owner and operator of the French transmission grid, of an interconnected long-distance pipeline as well as of storage sites and LNG receiving terminals. An exception was the transmission network in south-western France which it operated jointly with Total.[1276] Midstream distribution and customer service activities again were carried out jointly with EdF, the national electricity company, until 2004. Outside France GdF was operating as a shareholder in infrastructure systems such as the MEGAL and B.O.G. pipelines in Germany and Austria, respectively, and storage sites such as in Germany (together with Ruhrgas), Switzerland and Belgium. Via its marine engineering affiliate Gaz Transport, its engineering and consulting subsidiary Sofregaz (Société Francais d'Études et de Réalisation d'Équipements Gaziers) and other ventures it was furthermore engaged in Turkey, Bolivia, India, China, the U.S. or Canada.[1277] At the time of the beginning of the study GdF was thus engaged along the whole gas value-chain.

[1273] This abbreviation stands for the French denotation 'Établissement public à caractère industriel et commerical'. Cf. GdF (2006), p. 6.
[1274] Estrada et al. (1988), p. 122. Only few LDCs existing before 1946, such as in Bordeaux, Grenoble and Strasbourg were excluded and remained in ownership of municipalities. Estrada et al. (1995), p. 98.
[1275] Cf. CEER (2005), p. 39.
[1276] Cf. Reference Documents from 2005 to 2008 under the section 'History' (no page number given).
[1277] Cf. Annual Reports 1986-1989.

7.3.2 Analysis of Development from a Business Perspective

Basically, following the analysis of GdF's development from a Business Perspective, behaviour must be characterised as passive, as opportunities having arisen from changes to European energy policies were not taken advantage of. GdF neither extended existing businesses and activities nor developed new ones. Instead, it upgraded engagement in the global upstream business, taking over a British and two Dutch upstream companies in 2000, the latter of which provided it with its first offshore E&P capacity as well as making it an operator of Noord Gas Transmission, the main Dutch underwater pipeline. In the same year GdF added a part of Statoil's oil and gas reserves in the Norwegian Sea and the Barents Sea to its portfolio by taking a 20% stake in the Njord field and a 12% stake in the popular Snohvit field. In 2001, it agreed with Sonatrach and Malaysian Petronas to acquire a permit for extracting gas from the Algerian Ahnet basin, with production beginning earliest in 2007. Similarly, an agreement was found with Dana Petroleum and Wintershall four years later for GdF to become active in Mauritania with operations starting a year later in 2005. Also extending its German upstream production, Production Exploration Deutschland GmbH (PEG) was taken over in 2003, starting first deliveries in 2004. Despite incessant efforts to increase extraction from PEG's fields, even going into tight-gas exploration, production continuously declined. Sales only increased due to a common rise of gas prices. In Egypt, engagement was reinforced through the purchase of a 45% participation in a licence for activities in an Egyptian field operated by Vegas Oil & Gas in 2007. Soon after, LNG shippings from there as well as from India, via GdF's strategic partner Indian Petronet LNG, were started. Around that time GdF also renewed its contract for LNG deliveries from Algeria until 2019. In order to be able to take these volumes, GdF had begun to build a new LNG receiving terminal (Fos Cavaou) in 2004 to become operational in 2007, characterising at least the extension of activities in the European but still domestic market. Apart from this however, activities continued to focus on the upstream business, renewing existing and entering into new supply contracts with Gazprom for the purchase of additional volumes of Russian gas while also looking to globalise sourcing options from Africa (Nigeria) and the Middle East (Qatar, Iran), the Caspian Sea as well as from more remote regions such as the Caribbean and South America via tactics such as acquiring stakes in liquefaction plants.

Activities in the mid- and downstream segments again were also only carried out outside European territory, such as by obtaining further distribution permits in Mexico in 2000 and acquiring a majority stake in two major TSOs, Energia Mayakan (67%) and Transcanada des Bajio (100%). In the downstream segment again activities remained restricted to the national territory and to offering only more personalised products to its customers.[1278] The finding that GdF initially remained loyal to existing businesses, markets, and products and ignored opportunities for change thus constitutes reactive behaviour.

An indication of a development towards more active behaviour as defined according to theory can only be observed to have begun around 2005 as GdF realised the need to defend its position as can be derived from the tactics applied. In order to limit its loss of market share, which had fallen from 73% in 1999 to 64.5% in 2005 and further to 55% at the end of 2007,[1279] for instance, GdF began to strengthen its engagements in the downstream segment by offering specialised products also to household consumers as well as amplifying these efforts by its services division (Cofathec) with its European subsidiaries (e.g. Cofathec Projis in France, Cofathec Servizi in Italy, Cofathec Heatsave in the U.K. or Cofathec Benelux in Belgium). Moreover, by providing global multi-energy services, including the construction of power plants, and by offering new products such as financial engineering, energy management and facility services, this segment was seen as a strategic complement of vertical integration. In addition to this, the Services segment was also identified as important due to its experience in energy generation from wood, geothermal and combustible sources as well as in the area of natural gas vehicles (NGVs).[1280] Another indication of an increasing degree of activity can be derived from the appearing of a rumour of a "multibillion-pound merger"[1281] with British Centrica in 2005, a deal which would have provided GdF with commercial experience as being a private gas retailer, while Centrica would have strengthened powers to defend itself against new entrants. Both companies would also have benefited from larger financial resources to jointly develop upstream projects. Other examples include the move of becoming the major shareholder in Distrigaz Sud, the central gas distributor in Romania

[1278] Aggregated information from across Annual Reports (termed Reference Documents here) 2004-2007.
[1279] This is according to GdF's own data. Cf. GdF (2006), p. 87; GdF (2008a), p. 100.
[1280] Aggregated information from across Reference Documents 2004-2007.
[1281] Anonymous (2005d), p. 12.

possessing a more than 13,000 km long grid and around 900,000 customers in 2005,[1282] the divestment of DSOs in South America (Argentina, Uruguay, Brazil), or the merging of the Hungarian distributors Egaz and Degaz in 2006, and of EEG and PEG at the end of 2007 with the goal to benefit from synergies and expand within Europe.[1283]

A crucial step taken in this respect was the merger with Suez into GDF SUEZ, here also referred to as 'the Group', in 2005. Fully completed in summer 2008, the French government retained a share of 35% in the new company.[1284] While Suez had actually been looking to grow its LNG business and benefit from the development of converging its gas and electricity businesses and thus increase competitive pressure on GdF,[1285] the merger allowed both companies to strategically complement each other's portfolios. This becomes fundamentally apparent in the electricity segment where Suez, especially following the acquisition of Electrabel,[1286] was particularly strong in that it possessed nuclear and renewable energy capacities.[1287] These enabled GdF to add 'an electricity component' to its offerings for eligible customers by gaining a licence to supply electricity.[1288] Moreover, as an activity "essentielle pour le développement du Groupe"[1289], it had also started to build up its own production portfolio, such as by acquiring power plants in the U.K., Spain and Belgium.[1290] Amongst this also was France's first CCGT plant and Belgium's second largest electricity producer (which was renamed Segebel). Additionally, GdF signed a three-year electricity purchase contract with EdF for the commercialisation of its electricity engagements, and entered into pure, i.e. not gas-related, electricity sales contracts and partnerships with large consumers such as industrial customers. From a joint perspective again, the merger enabled

[1282] Cf. GdF (2005), p. 33.
[1283] Cf. GdF (2007), pp. 77-78; GdF (2008a), pp. 41-42.
[1284] Cf. GDF SUEZ (2009a), pp. 36-37, 120-121. In order for the merger to be approved by the European Commission Suez had to divest Distrigaz and GdF to transfer its stake in Segeo, a pipeline operator, to Suez' former transmission and storage company Fluxys. For more detailed explanations cf. GdF (2006), pp. 129-131 and GdF (2007), pp. 123-124.
[1285] Cf. Suez (2002), p. 4; Suez (2004), p. 33; Suez (2005), p. 38.
[1286] Suez had only shortly before the merger, after strong pressure from one of its major shareholders (an American investment company), acquired a 49.9% stake in Electrabel. Cf. Anonymous (2005e).
[1287] Cf. Suez (2002), p. 39.
[1288] GdF had been taking 'advantage of the favourable legislation that guaranteed a certain electricity price sold by cogeneration' since 2000 but then only did so as a service provider for designing, financing and structuring such projects. Cf. GdF (2006), p. 56.
[1289] GdF (2005), p. 14.
[1290] Cf. GDF SUEZ (2008a).

the Group to actively seek synergies.[1291] Another indication for GdF's increasing active behaviour was the attempt to acquire a 49.9% stake in the German local utility Stadtwerke Leipzig (SWL) in order to increase its engagement in electricity generation as well as to invest in a biomass R&D centre in Leipzig in 2007.[1292] As a Group, plans were also made to extend engagements to coal and biomass activities in Germany and the Benelux region as well as to the construction and operation of nuclear power plants. These were implemented mainly via partnerships with other European energy companies such as with Spanish Iberdrola, Scottish & Southern Energy, or Total and French AREVA in the United Arab Emirates. At the same time new growth opportunities for natural gas were sought in the Middle East, for hydroelectric power production in Brazil. In 2008, GDF SUEZ acquired First Light, an American electricity company possessing over 15 power plants and a gas field in the U.S.[1293] Similarly, also GdF's renewable activities were further enhanced by Suez' engagement in this segment. From 2006 onwards, it pointed out that it had initiated its renewable strategy by setting up a separate subsidiary termed 'GDF Future Energies' in order to group the new wind power activities, GdF had built France's first wind farm, and expand its renewable electricity business in the domestic territory as well as across Europe.[1294] Furthermore, backed by the merger while officially still operating on its own, GdF also began to expand its storage business, developing salt caves in England, taking majority stakes in the two Romanian storage operators Depomures (59%) and Amgas (65%), and through a partnership with Acea entered the Italian storage market for the first time.[1295] Together with Societé Generale, a major French financial institute, a separate trading company, Gaselys, was set up in order to optimise sourcing by balancing long-term contracts with short-term purchases and as an instrument for 'intervening in European gas and electricity markets' to complement activities along the whole value chain in order to enhance competitiveness.[1296] At the end of 2008, a new subsidiary, Storengy, was especially created to manage the storage business. Moreover, in the further development of its Eastern European engagement, GdF has recently considered

[1291] Cf. GdF (2005), pp. 14-16, 21; GdF (2006), pp. 56, 357; GdF (2007), pp. 39-40, 59, 303; GdF (2008a), pp. 29-30, 60, 308.
[1292] Cf. GdF (2008a), p. 338.
[1293] Cf. GDF SUEZ (2009a), p. 342; GDF SUEZ (2009b), GDF SUEZ (2009c).
[1294] Cf. GdF (2007), p. 40; GdF (2008a), pp. 3, 28, 53.
[1295] Cf. GdF (2008b).
[1296] Cf. Gdf (2006), pp. 48-49; Gdf (2007), p. 51; Gdf (2008a), pp. 51-52.

building a pipeline that would connect Romania with Bulgaria and Hungary also. Still, despite having been active in the LNG business for decades (see above), a separate subsidiary, Elengy, was set up as late as the end of 2008 to manage terminal activities.[1297]

7.3.3 Analysis of Development from an Institutional Perspective

Fundamentally, GdF's institutional development is characterised by passive behaviour with regards to all European energy goals and respective changes as is presented in the following. Acquiescing behaviour can, for instance, be found in complying with the requirements of the liberalisation directives, showing in the unbundling of gas distribution activities into a separate department termed Gaz de France Réseau Distribution (GRD), and into the establishment of EDF Gaz de France Distribution (EGD), an administrative branch together with EdF to continuously carry on work on technical matters such as grid construction, maintenance, project management. EGD also was to become responsible for managing the downstream business after the full market opening in 2007 while regular meetings were set up with customers to provide them with "une information claire et pédagogique"[1298] regarding the functioning and services of the new subsidiary. In 2002, GdF purchased the transmission network from the French State which it now owns and operates and with which it has the respective authorisation to carry out gas transmission activities. Both departments were then transferred to a wholly owned subsidiary and renamed from Gaz de France Réseau Transport into GRT gaz to be operating independently of GdF's other gas business effective of January 2005.[1299] In 2007, also distribution activities were legally unbundled and transferred into a wholly owned separate entity called Gaz de France Réseau Transport (GrDF). Along with the SUEZ merger, GrDF became a subsidiary of the new Group in January 2008, receiving its own management structure, IT systems and GdF's distribution assets as well as related rights and obligations, such as concession contracts tying municipal customers to the company. In

[1297] Cf. GdF (2008a), pp. 29, 53; Anonymous (2008e), p. 16; GDF SUEZ (2009a), pp. 28-29, 48; GDF SUEZ (2009d), p. 61.
[1298] GdF (2005), p. 31. Also specific websites were created to comply with transparency requirements. Cf. Carrière/ Balard (2004), p. 520.
[1299] Cf. GdF (2006), p. 76.

addition to this latest reorganisation, British and German storage activities as well as those of transmission in Germany (via GDF-DT and Mégal subsidiaries), Belgium (via SEGEO subsidiary) and Austria (via BOG subsidiary) were also transferred to the Infrastructures Division.[1300] In the course of this restructuring, GdF also unwound its partnership with Total to become the sole operator of the transmission grid (and thus sole shareholder in CFM (see above)), while Total remained responsible for transmission in Southwestern France (becoming shareholder of Gaz du Sud-Ouest (see above)). In the same period, and also in conformance with regulatory requirements, GdF initiated a gas release programme in the southwest of France where competition was more restricted (see above).[1301] While there are no indications of it having been enforced to do so, the assessment of passive behaviour is also supported by the fact that the company generally continued to follow its habit, and only after the implementation of directives, participated in consultations and dialogues ("a alors participé"[1302]) and had not engaged in any legal proceedings at that time as explicitly mentioned in its 2005 Reference Document.[1303]

A change towards more active behaviour, characterised by tactics of defiance and manipulation, can only be observed from 2005 onwards. This is likely to be attributable to the increasing pressures which were "significantly affecting the revenues and profits of Gaz de France as well as the way in which it conducts business"[1304].[1305] While GdF, based on the contract with the French state (see above), had been able to cover all its costs in the past, the continuous decrease of rates as set by European regulation made it begin to complain about losses of €750 million made (between November 2004 and April 2006). In particular, a development can be seen with regards to the tactics applied in this respect. After initially merely having mentioned that "all modifications to rates must fall within the principles set by the law and respect the economic equilibrium of the company"[1306], that TPA might make GdF unable to fulfil all its delivery requirements and that it was *intending* to keep a "constructive

[1300] Cf. GdF (2008a), p. 31; GdF (2008d).
[1301] Cf. GdF (2005), pp. 1, 7, 15, 24-26, 28-29; GdF (2008a), pp. 14, 29-32.
[1302] Carrière/ Balard (2004), p. 519.
[1303] Cf. GdF (2006).
[1304] GdF (2007), p. 17.
[1305] Cf. GdF (2006), pp. 17-18, 80-81; GdF (2007), pp. 13-14, 32, 84-85; GdF (2008a), pp. 13-14, 32, 88-89; GDF SUEZ (2009a), pp. 21-23.
[1306] GdF (2006), p. 132.

dialogue"[1307], GdF's behaviour over the course of time became more active. This, for instance, shows in GdF threatening to confront institutional sources in court, e.g. by making regulations "subject to discussion with the public authorities"[1308].[1309] According to the theoretical classification depicted in chapter V, this can be characterised as a tactic of 'attack'. The development towards more active behaviour also shows in the fact that GdF began to mention particular changes as influences which "could substantially change the Group's integrated organization"[1310], such as the 'Troisième Paquet législatif' (Third Liberalisation Package), the pending threats of ownership unbundling, or the creation of an ISO. Ignoring these would have characterised less active tactics within behaviour of defiance. Apart from the generally increasing institutional pressures, GdF had also become subject to gas market investigations by the Commission due to an alleged infringement of EC rules. It was accused of having abused its dominant position and having applied restrictive business practices such as the long-term reservation of transport capacity, the underinvestment in respective infrastructure capacity as well as anti-competitive agreements with E.ON. The latter accusation resulted in a hearing where GDF SUEZ (which it had become in the meantime) agreed "to provide the European Commission with its full cooperation in the course of the proceedings"[1311]. While this indicates the tactic of 'collaborating with institutional agents', GdF at the same time announced that it would 'assert its rights in full', characterising more defiant behaviour. Also later on no real pro-active behaviour can be observed. Instead, in an *attempt* to take influence, GdF emphasised the aim to "facilitate the involvement of all stakeholders (…) and reinforce its legitimacy as an operator of public Services with respect to the regulator, the French State, local communities, customers and all of the gas community"[1312] to provide all the stakeholders with a "satisfactory perspective"[1313]. Simultaneously it remarked that it would comply with legal requirements and seek productivity gains in order to establish GrDF's identity and legitimacy, and to position itself

[1307] GdF (2006), p. 36. Also GdF (2007), p. 38.
[1308] GdF (2008a), p. 13.
[1309] Cf. GdF (2006), pp. 16-18, 53-55, 61-64, 69-70; GdF (2007), pp. 12-13, 38, 64-65, 67-68, 73-74; GdF (2008a), pp. 12-13, 58, 66-67, 69-70, 77-78.
[1310] GdF (2007), p. 14.
[1311] GDF SUEZ (2009a), pp. 400, 466. Also cf. GdF (2008e); GDF SUEZ (2009a), p. 488.
[1312] GdF (2006), p. 64.
[1313] GdF (2008a), p. 72.

as a 'recognised benchmark distributor',[1314] a tactic qualifying as a form of image advertising. This also holds true with regards to statements such as promising to "*scrupulously* implementing measures guaranteeing the proper application of the texts in force"[1315], making a 'positive noise' by pointing out that it had already implemented regulated TPA to its transmission grid and LNG terminals in August 2000 "since it was a direct application disposition of the directive"[1316], and that it had hired an ombudsman as an "amicable last resort"[1317] to show willingness to settle disputes with authorities.

A similar development of behaviour can be observed with regards to the issue of security of supply. While initially having only been mentioned with regards to own supplies, a change can be observed in relation to the merger by pointing out its importance in terms of "strengthening geostrategic challenges related to the security of European energy supplies"[1318] of 'France and Europe'. Similarly, GdF particularly later pointed out its engagement in building essential infrastructure, such as LNG terminals or the Medgaz pipeline connecting Algeria and Spain (see above) as contributions to securing European supplies.[1319]

What is striking with regards to sustainability issues again is that GdF had already early installed and pointed out respective measures, such as in 1987 and 1988 in form of sponsoring environmental contests, participating in respective exhibitions and creating a special media prize for industry and environment. It had also nominated its CEO Vice President of the French Committee for Environment, formed an Environment Committee in 1992 (the year of the climate conference in Rio), formalised 'pro-environmental' activities into company-wide Corporate Environment Plans since 1993, and published its first Environmental Annual Report in 1999. In the year 2000, it began to engage in the Carbon Prototype Fund. Moreover, while initially the term 'environment' was utilised, this changed within Annual Report 2000/ 2001 to include 'sustainability', such as when the first Sustainable Development Action Plan

[1314] Cf. GdF (2006), pp. 64-65; GdF (2007), p. 69; GdF (2008a), pp. 71-72.
[1315] GdF (2007), p. 14. Also cf. GdF (2008a), p. 14. Italicised by author.
[1316] GdF (2008a), p. 31. Also cf. GdF (2008a), pp. 64, 69.
[1317] GdF (2006), p. 52.
[1318] GdF (2008a), p. 135.
[1319] Cf. GdF (2006), p. 36; GdF (2007), p. 38; GdF (2008a), p. 38; GDF SUEZ (2008b); GDF SUEZ (2009e).

(SDAP)[1320] was mentioned. Furthermore, and despite having only been approved in 2004 and implemented for the following period until 2006, after an update programme had already been initiated in 2000, it was particularly specified that the indicators used in the SDAP had been externally verified. By 2003 even, GdF had not only created a Sustainability Development Department and a respective committee, but also a concrete Sustainable Development Plan to implement and supervise the Group's sustainable development policy. Additionally, in the same year it had also become a member of the World Business Council for Sustainable Development (WBCSD), entered into a partnership with the WWF, and engaged in the French Environment and Energy Agency (AERES)[1321] in 2004. Still, while this could be assessed as manipulative behaviour from a theoretical perspective in that GdF was seeking to take influence through these measures, it at the same time has to be taken into account that these initiatives were only recently explicitly mentioned, the earliest being in Reference Document 2006.[1322] This, therefore, indicates that the strategic and thus manipulative impact of these tactics had not been realised then, and was supported by the fact that concrete measures were only briefly indicated then.[1323] The same holds with regards to the seemingly more concrete actions already taken in 2005. This, for example, includes the creation of an Environmental Balance Sheet or the mentioning of its partnership with 'Comité 21', a group to promote sustainable development in France, as instruments to communicate with stakeholders in order to discuss its Sustainable Development Policy with representatives from relevant institutions. GdF also explicitly pointed out that this policy had not only been drawn up in conformity with the 2002 Sustainability Reporting Guidelines of the Global Reporting Initiative (GRI), but was also a 'tangible proof of commitment' to the United Nations Global Compact. In 2006/ 2007, it further remarked that it had not only been listed on relevant sustainability indices such as the DJ Stoxx and the Climate Disclosure Leadership Index, but also emphasised that it had won prizes for the best sustainable development report.[1324] However, while these measures would normally qualify as manipulative tactics, they in this

[1320] In 2006, this has also been abbreviated with PADD (cf. GdF (2007), p. 88), according to the French 'Plan d'actions en faveur du development durable'. Cf. GdF (2005), p. 40. Here the term SDAP will be continued to be used as also applied in the following documentation. Cf. GdF (2008a), p. 90.
[1321] This stands for the French denotation 'Agence de l'Environnement et de la Maîtrise de l'Energie'.
[1322] Cf. GdF (2007), pp. 88-89.
[1323] Cf. GdF (2005), pp. 38-41; GdF (2006), pp. 82-83; GdF (2007), pp. 86-88; GdF (2008a), p. 90.
[1324] Cf. GdF (2006), pp. 63, 85; GdF (2007), p. 88; GdF (2008a), pp. 90-94.

case have to be classified as tactics of 'window dressing'. In fact, GdF itself in 2007 still described its behaviour as 'reactive'[1325] as policies were constraining firms to become "answerable"[1326] and admitted that it was only '*partially* basing its reputation on its social responsible corporate image'[1327].

This has begun to change only very recently in that GdF was aiming to go "beyond the response to regulatory requirements"[1328]. Indications for more pro-active forms of behaviour show in that GDF SUEZ explicitly mentioned the definition of sustainability set by the so-called Brundtland Commission in 1987, one of the first global documents on sustainable development,[1329] and in the signing of voluntary agreements with relevant stakeholders on CSR measures in 2008.[1330]

7.3.4 Analysis of Development from an Integrated Perspective

In assessing both development paths determined above, it can be concluded that each remained mainly passive and only recently showed signs of more active behaviour. From a Business Perspective, this is revealed in the predominant focus on the global upstream business instead of taking advantage of changes in its business environment. The Institutional Path again is characterised by forms of acquiescing behaviour in that GdF did not strategically respond to institutional forces. Indications of change can only be found after 2005, the year of the announcement of the merger with Suez. From a Business Perspective, this, amongst others, showed in the extension of activities along the natural gas value-chain or in the engagement in the electricity segment. Despite these signals, behaviour can still not be classified as pro-active from either perspective. Business behaviour is still predominantly characterised by defensive forms of behaviour. This, e.g., shows in the prevailing scepticism towards innovation and measures of domain protection as well as the focus on improving

[1325] Cf. GdF (2008a), p. 92.
[1326] GdF (2008a), p. 34.
[1327] Cf. GdF (2007), p. 14; GdF (2008a), p. 14. Emphasis added.
[1328] GdF (2008a), p. 96. Also cf. GdF (2007), p. 90.
[1329] Cf. WCED (1987).
[1330] Cf. GDF SUEZ (2009a), pp. 123-125.

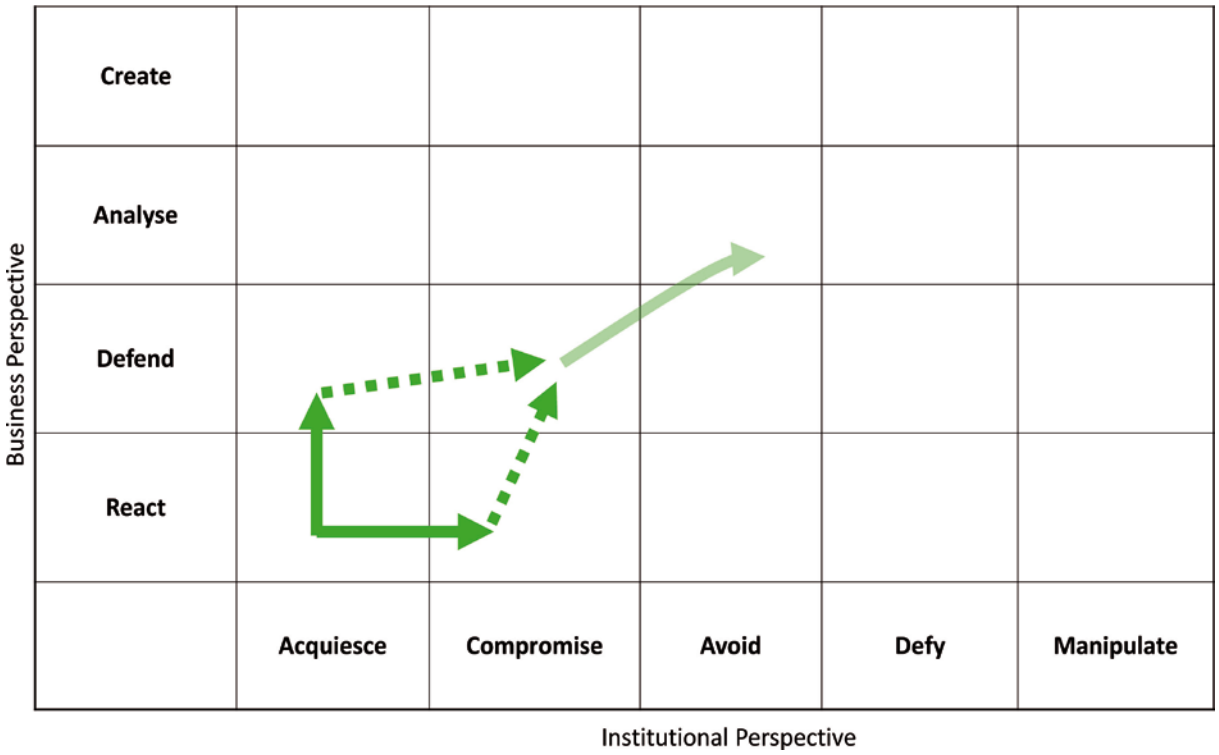
efficiency instead of building new businesses. At best, GDF SUEZ' behaviour can be assumed to become 'analysing', in that new options are *considered* while the focus remains on known businesses and markets, such as France and Benelux as core markets. New growth areas are rather seen to by lying outside of Europe, such as in Brazil, Thailand, the U.S. and the Middle East.[1331] A similar assessment can be made for the company's institutional behaviour which shows signs towards avoidance behaviour. At the same time no predominant orientation or development along either perspective can be determined.

Similarly, also indications of a more integrated perspective only showed very recently. In 2008, for instance, GDF SUEZ declared that it not only had *voluntarily incorporated* initiatives to improve security of supply, maintain competitive prices and achieve sustainability, but that it simultaneously considered that stakeholder needs and expectations are *compatible with economic performance*.[1332]

Accordingly, the development of organisational behaviour has to be depicted as consisting of a passive business and a passive institutional path while the indication towards an integrated perspective is shown as diverging dotted arrows that lead into an integrated path indicated in transparent green. This is depicted in the following exhibit.

[1331] Cf. GDF SUEZ (2008c); GDF SUEZ (2008d); GDF SUEZ (2009a), p. 49; GDF SUEZ (2009f).
[1332] Cf. GDF SUEZ (2009a), pp. 123-125. Italicised by author.

Figure 24:[1333] GdF (SUEZ)'s development paths between 1998 and 2008



[1333] Own figure based on results from case study analysis.

7.4 RWE

7.4.1 Introduction

RWE was founded in 1898 as a local utility in Essen, North Rhine-Westphalia (NRW), under the name 'Rheinisch-Westfälisches Elektrizitätswerk AG'. In 1990 it was renamed 'RWE Aktiengesellschaft' and today is mainly referred to as RWE.[1334] One hundred years after its founding and thus at the beginning of European energy market liberalisation, RWE was a 30% municipally-owned diversified energy company which was organised into five main divisions: Energy, Petroleum & Chemicals, Environmental Services, Industrial Systems and Construction & Civil Engineering. Accounting for around 30% of total revenue and 50% of profit, RWE Energie was responsible for electricity production and gas supply of which the latter only had a share of less than 10% while electricity sales made up more than half of its income. In fact, gas accounted for only 3%, coal and nuclear power for 40% and 17% of the sales, respectively. Gas production was headed by RWE DEA while engagement in gas import, transportation, distribution, and supply was carried out through its 75% stake in German TSO Thyssengas.[1335]

7.4.2 Analysis of Development from a Business Perspective

Strikingly, RWE's business development was characterised by diverse expansion in the first years of liberalisation, with RWE having acquired 25% in the Hungarian gas supplier Tigaz as soon as January 1998, and, two months later set up cooperation agreements with Polish energy suppliers Zaklad Energetyczny Krakow (ZEK) and Stoleczny Zaklad Energetyczny (STOEN). In October of that year it also took a 75% stake in the American coal producer Consol. This expansion was accompanied by a structural reorganisation of RWE Energie, reducing the number of regional suppliers from twelve to eight by bundling them into four grid- and four supply regions. Even more crucial was the initiation of the merger with VEW,

[1334] Cf. Schweer/ Thieme (1998), p. 261.
[1335] Cf. RWE (2001), pp. 60-95; RWE (2002), pp. 68-85.

at that time Germany's sixth largest energy company, which was finalised in 2000 to create a subsidiary called 'RWE Neu' ('RWE New'). Similarly, in the year before, i.e. 1999, development was mainly characterised by different acquisitions and structural reorganisation, as manifested in the take-over of American Turner Corporation in the building sector, in the securing of a share in the Berlin water works together with French Vivendi and the German financial company Allianz, as well as the full acquisition of Lahmeyer AG along with which all energy related technical services were integrated into the newly founded subsidiary Tessa. Also in 1999, RWE Trading, with trading offices in London and Essen and sales offices in the Netherlands, Poland and later in the U.S., was established as "the market's eye"[1336], presenting the interface between production, wholesale markets and sales. In fact, and "guided by the needs of the market"[1337], RWE Trading was the only trading company in the German market then, offering derivates from all energy sectors. Nevertheless, its function remained restricted to trading for price hedging purposes,[1338] thus not constituting a form of creative behaviour yet. Around the same time and building on a multi-utility concept of energy, water and environmental activities RWE then re-structured its industry segment, too. Business segments and resources again were bundled into the core and non-core business units. The core area comprised of an area termed 'Energy and Energy Related Services' including RWE Dea, RWE Plus, RWE Trading, RWE Net, or Tessag, of a section called 'Environment' with RWE Umwelt, and of the 'Water' business. As non-core business units RWE addressed those areas not related to energy, environment or water activities, such as telecommunications, with e.g. E-Plus, chemicals, medical engineering, or construction and facility management. Many of these were divested in 1999, redeeming around €3.75 billion. In fact, the divestment of non-core businesses was also continued in 2000, when RWE decided to sell Hochtief and Heidelberger Druck, two well-known and well-established traditional German companies, as well as the non-related energy activities of Harpen and RWE Dea's petrol stations, refineries and chemical activities to become a pure oil and gas E&P company. In 2001, facility

[1336] RWE (2002), p. 79.
[1337] RWE (2001), p. 71.
[1338] Initially, only relatively small amounts of gas were traded in comparison to electricity, with gas trading having only started in 2000. Cf. RWE (2001), pp. 65-66; RWE (2002), pp. 41, 79; RWE (2003), p. 76.

management as well as energy- and medical engineering activities of RWE solutions were also sold.[1339]

A major expansion step was taken with the acquisition of U.K.-based Thames Water which provided RWE with operating licenses in Chile, and of American Water Works as a fourth strategic pillar to supplement the existing core businesses. Managed under Thames Water, RWE became the world's third-largest water company, planning to generate further synergies within its multi-utility concept to contribute to overall Group results. Following the merger of RWE Umwelt with the recycling activities of VEW, RWE also became number one in Germany and number three in Europe in the recycling business. Activities in the renewable segment again were to be organised by Harpen, thus becoming a separate organisational unit termed 'Harpen Renewables'.[1340] Along with this, the Group's organisational set-up was significantly restructured, integrating Lahmeyer into RWE AG with the remaining energy-related businesses of the Industrial Systems area put under the lead of the newly founded 'Tessag Technische Anlagen und Services AG' while energy and environmental activities were organised into then twelve independent corporate units (RWE Power, RWE Dea, RWE Gas, RWE Plus, RWE Rheinbraun, RWE Net, RWE Trading, RWE Thames Water, RWE Umwelt, RWE Systems, Harpen Renewables and Tessag, later becoming part of RWE Solutions) under the umbrella of RWE AG as a holding.[1341]

While the above mainly characterises activities in the years 1998-2000, the years 2001 and 2002 were especially characterised by a major phase of acquisitions along and across the entire value-chain. In the upstream gas market, this included the acquisition of U.K.-based gas producer Highland Energy which became part of RWE Dea UK as well as the purchase of several E&P licenses for activities in the Norwegian Sea, off the Egyptian coast and the Canary Islands, and for the extension of the development of gas reserves in the North of Germany.[1342] The midstream gas business was strengthened by taking over 40% of the

[1339] Cf. RWE (2001), p. 37; RWE (2002), p. 42; RWE (2003), p. 5.
[1340] Cf. RWE (2001), in particular pp. 1, 4-5, 15, 21; RWE (2002), in particular pp. 15-17, 26, 37, 84, 86-89.
[1341] For illustrative overviews cf. RWE (2001), pp. 12-15; RWE (2002), p. 37; RWE (2003), 'A brief portrait' (no page number given).
[1342] Cf. RWE (2002), pp. 99, 101-102; RWE (2003), pp. 38, 48, 83-87.

Slovakian natural gas storage company Nafta in expectation of a significant gas trading point (hub) to develop in Eastern Europe,[1343] as well as 97% of the Czech transportation company Transgas, a move that was presented as having taken over 'nearly the whole Czech gas industry', advancing RWE from a mainly German utility to becoming part of the 'European gas league'. Organisationally integrated under the roof of RWE Gas, the joint coordination with Transgas' pipeline, sourcing, trading, storage, and transportation activities was anticipated to generate savings of €100 million each year from 2007 onwards.[1344] In addition to this, acquisitions were made in the downstream business, having taken over Dutch Obragas as well as smaller stakes in eight regional utilities in Eastern Europe (Czech Republic, Poland, or Slovenia).[1345] Attempts had also been made to obtain a majority stake in a further Dutch gas utility, Intergas N.V., but this was rejected by the Dutch government.[1346] Nevertheless, the expansions made until then resulted in a substantial augmentation of natural gas purchasing volumes from 15 bcm in 2001 to 40 bcm in 2002. While accounting for the Group's single-largest cost position, it at the same time improved its bargaining position and allowed the renegotiation of contracts with producers and suppliers to obtain better conditions.[1347] On domestic grounds, the focus was put on the downstream segment by merging regional suppliers to gain critical size and by increasing shares in German municipal utilities such as Thyssengas in order to increase the degree of vertical integration along the gas value chain and benefit from synergies.[1348] In the electricity segment, RWE acquired 49% of an Austrian electricity company as well as stakes in a power plant in Portugal and set up RWE Plus Belgium to expand sales in the Benelux region. Through RWE Plus' subsidiary RWE Powerline, attempts were also made to market electricity via the Internet. Furthermore, in following its multi-utility approach, large-scale moves were taken in the coal business, having

[1343] Cf. RWE (2002), pp. 40, 84.
[1344] Cf. RWE (2003), pp. 6, 20-21, 86. This was supported by setting up a portfolio management system centrally managed by RWE Transgas from Prague in order optimise purchasing activities and the negotiation position with international suppliers. Cf. RWE (2006), p. 67.
[1345] Cf. RWE (2002), pp. 11-12, 40, 84; RWE (2003), p. 6; RWE (2004), p. 86.
[1346] Cf. RWE (2002), pp. 40, 84. Afterwards not mentioned anymore.
[1347] Cf. RWE (2003), p. 47. This also assigned a new role to RWE Systems as a Group-wide supporter of procurement processes, instead of just administrating data (see above). Additionally, a JV company, Eutilia, was created together with ten other large European energy suppliers with the goal of installing an Internet-based purchasing portal in order to benefit from group procurement volumes. For further supporting the development of e-business activities, RWE set up RWE Com GmbH & Co. oHG as an individual unit. Cf. RWE (2001), p. 85.
[1348] Cf. RWE (2003), pp. 47, 84, 86; RWE (2004), p. 49.

bought another 50% of Dutch SSM Coal (later transferred to RWE Trading following which it became Europe's largest coal trader) as well as facilities to produce coal-seam based methane gas to be used in a power plant set up through RWE Rheinbraun's American subsidiary Consol.[1349] Behind these moves was the aim to expand its energy business as well as the possibility of diversifying risks to support overall Group performance.[1350] In the renewables segment again, Harpen started operations of its first wind power park in 2001 and controlled 24 hydro-electric plants in France, Italy, and Portugal while R&D investments into fuel cell technology were also increased.[1351] In the following year, RWE made another large scale acquisition by taking over British Innogy, the second-largest electricity and third-largest gas supplier in the U.K. Together with Thames Water this enabled RWE to implement the multi-utility concept also in the U.K. and benefit from synergies.[1352] By increasing its stake in additional water companies, this engagement was also extended to the domestic market as well as to China and Spain. In Slovakia and Poland shares were taken in regional electricity companies. The electricity business again was further extended by acquiring 49% of a Slovakian (VSE) and 85% of a Polish electricity supplier (STOEN). Also the national electricity business was to be strengthened by increasing or acquiring stakes in local and regional utilities in Germany while RWE Rheinbraun started operating the world's most efficient lignite power plant. Along with this 'electricity strategy' Harpen was assigned to the electricity business and not only acquired the Spanish wind power specialist AERSA but also built Italy's first wind park.[1353]

Strikingly, while the above depicts the development path until 2002 and is characterised by tactics of creative behaviour, the phase until 2005/ 2006 is characterised by little if any expansion activity. In 2003, for example, only the acquisition of the remaining 25% of Thyssengas from Shell is worth mentioning. Instead, several of the previously acquired businesses were sold again in the years after such as Heidelberger Druck and Hochtief

[1349] The Consol Energy group operates 56 subsidiaries in the U.S., Canada and Belgium. Cf. RWE (2001), p. 142.
[1350] Cf. RWE (2001), pp. 67-69. As also stated in RWE (2003), p. 38.
[1351] Cf. RWE (2002), pp. 64, 84.
[1352] Cf. RWE (2003), pp. 21-22, 78. In addition to that, RWE Gas and the British National Grid Transco set up a logistics JV Viavera to provide services round transportation contracts to traders and sellers. Cf. RWE (2003), p. 86.
[1353] Cf. RWE (2003), pp. 9-10, 33-34, 45-48, 64, 77-79, 92.

(following the decision made in 2000), RWE Umwelt, and further stakes in telecommunication companies. Among these divestments even were activities of the energy business, like American Consol Energy, the U.S. trading business despite its positive contribution to overall Group performance[1354] as well as activities in Portugal, Switzerland, Italy and Turkey. Furthermore, the water businesses outside Continental Europe were spun off while those in Europe and America, in expectation of positive growth contribution, were first retained and invested into in 2003 and 2004. In 2005 again, RWE announced plans to sell its U.K. and U.S. water business, too. Along with this, the number of leading organisational entities was reduced from thirteen to six.[1355]

Following this phase, behaviour became slightly more active again, especially with regards to activities in the gas market and renewables sector, showing in form of 'analysing' behaviour. While in 2006 an attempt was made to take over the German regional gas company Saar Ferngas, which, however, did not turn out successful,[1356] RWE was more successful in entering the LNG business, acquiring stakes in an LNG terminal to be built in Rotterdam (NL) and Croatia as well as in entering into an agreement with American Excelerate Energy to market the LNG supplied by Excelerate to Teeside in the U.K. After these moves, further expansion was required in order to quickly gain the critical mass for being able to compete on an international level. Plans were therefore announced in July 2007 to build jointly with Excelerate an import terminal for LNG tankers on the German North Sea coast for the re-gasified LNG to be fed-in into the German grid starting in 2010. In order to manage the Group's midstream business a new company, RWE Gas Midstream GmbH, was established in January 2007, handling gas supply for RWE Energy and RWE Power, commercial sales for RWE Dea as well as transportation, storage, LNG, and wholesaling. Moreover, plans were also made to integrate RWE Trading activities 'as soon as the development of the Continental European gas trading market provided a sensible basis'. This seemed to have been the case in April 2008, when RWE Gas Midstream and RWE Trading were combined to create RWE Supply&Trading GmbH as a separate division, pooling gas purchasing activities for the

[1354] Cf. RWE (2004), pp. 49, 98-99.
[1355] Cf. RWE (2004), pp. 100-105; RWE (2005), pp. 28, 65; RWE (2006), pp. 4, 9, 11, 21, 34-37. For a depiction of the organisational structure see the figure on the second page of AR 2005 (no page number given).
[1356] Cf. RWE (2007), pp. 5, 36, 97; RWE (2008), p. 57.

Group with the energy trading business for electricity, gas, oil and CO_2. RWE Supply & Trading then directly acquired a 50% interest in Excelerate Energy, an important move as Excelerate operated special LNG tankers which allowed the regasification of LNG on board, thus not requiring facilities to be built onshore while enabling flexible transportation, at that time constituting a substantial technological advancement.[1357] Another major step for extending its international transportation activities was taken at the beginning of 2008, when RWE, through RWE Gas Midstream, became the sixth partner in the Nabucco Gas Pipeline International Ltd. project, the consortium planning and building one of the most important infrastructure projects to secure gas supplies to Europe.[1358] The development of the midstream business was becoming particularly critical to RWE in order to market the increasing gas volumes produced by RWE Dea from newly acquired sites in the Caspian Sea (Kazakhstan), North Africa (Egypt) as well as the Middle and Far East, even more as in-house production was to be tripled by 2013 in order to reduce dependence on gas procurement while increasing utilisation of gas in electricity generation. At the same time supply contracts with Gazprom were extended until 2035. In order to bring these volumes to market, a plan was announced at the beginning of 2007 to build a gas pipeline from the Czech Republic to Belgium to be connected to the German network. Simultaneously, RWE was looking to grow further in the Netherlands but decided to sell the Dutch gas grid companies acquired before (see above) as regulation prohibited further expansion. Instead, a major strategic move was made by acquiring Essent, the leading energy utility in the Netherlands with engagements in Germany and Belgium, allowing RWE to create scale economies and expand into the Benelux region. Around the same time a German as well as a Dutch Internet-based supplier were acquired with the aim to provide loyalty or 'green' offers to consumers through special CRM programmes. Initially mainly directed at selling electricity, the marketing of gas was planned as well, especially in reaction to the loss of customers following the increasingly fierce competition in core gas markets.[1359] Also the advancement of storage facilities was mentioned in ARs 2007 and 2008 but not further enlarged on.[1360] More explicit in contrast was the recent geographical expansion when RWE entered Turkey in 2008 through its own local company

[1357] Cf. RWE (2008), pp. 28-29, 42, 56, 60, 106-107, 111; RWE (2009a), pp. 56, 59-60, 75, 113.
[1358] Cf. RWE (2009a), pp. 59, 113.
[1359] Cf. RWE (2007), pp. 19-22, 35-39, 86; RWE (2008), p. 57; RWE (2009a), pp. 65-67, 81.
[1360] Cf. RWE (2008), pp. 28, 110; RWE (2009a), pp. 80, 112-113, 116-117, 141.

and signed a MoU to acquire a stake in a Turkish-based electricity producer. Furthermore, the gas and renewables business in Turkey was analysed for potential engagement as well as an entry into the Russian region considered.[1361]

In addition to this RWE also began to invest into the renewables segment in 2007 and 2008 by establishing RWE Innogy. Until then, RWE Innogy had been responsible for the U.K. business (see above) and was regarded as a specialist company representing the whole group in this field. Becoming operational in 2008, RWE Innogy followed a growth strategy right from the beginning. The aim was to more than triple its generation base to 4.5 GW by 2012 and to become one the three largest offshore wind farm operators in Europe by 2013. To achieve this, several activities were initiated, including the construction of two wind farms on the Welsh coast together with a Scottish partner and the acquisition of a 50% stake in the Greater Gabbard wind park off the South Eastern English coast as well as of the Spanish wind power operator Urvasco Energía (renamed into Iberian Removables Corporación). Furthermore, RWE Innogy acquired stakes in the North Sea Windpower 3 offshore farm, renamed Innogy Nordsee 1, with plans to make it Germany's largest offshore wind park. In addition to this, wind activities were extended to Italy where a 50%-50% JV was set up with Fri-El Green Power. At the same time plans were made to enter the wind business in Poland, Hungary and the Czech Republic. This growth strategy was in fact built on a €25 billion investment programme, the largest in the company's history. At the end of 2008, Innogy bought a minority stake in British Quiet Revolution, a company specialised in the development and construction of small wind power installations such as for household use. Due to these massive expenditures however, RWE Innogy initially was not able to earn its capital costs, thus making negative value contribution to overall Group results. Nevertheless, further smaller acquisitions, especially in entrepreneurial companies with promising technologies, were envisaged.[1362] While the focus within the renewables portfolio was put on wind power in the beginning, further plans were made to progress electricity generation from biomass, resulting in biomass projects with Fri-El Green Power in Italy and the acquisition of UK-based Helius Energy Alpha Ltd. with rights to build and operate a biomass power station

[1361] Cf. RWE (2008), pp. 28, 38, 41, 58; RWE (2009a), pp. 37, 112.
[1362] Cf. RWE (2008), pp. 12-13, 39-40, 55, 106; RWE (2009a), pp. 55-56, 60, 75, 81, 98-99.

fired with wood residuals. RWE Rheinbraun again had begun to use wooden pellets as a cost-efficient alternative to oil and gas while RWE Dea started exploring possibilities for making use of methane hydrates. In 2008 again, RWE was chosen as a strategic investor to build and operate nuclear power plants in Bulgaria and Romania, and set up a JV with its competitor E.ON to analyse possible engagements for building plants in the U.K.[1363] A striking strategic step taken was the divestment of Thames Water. Characterising the leaving of the water business in Europe, one of RWE's former core pillars (see above), at the same time plans were made to go public with the water business in North America.

7.4.3 Analysis of Development from an Institutional Perspective

Noticeably, when analysing RWE's institutional behaviour over the course of time, it is prominent that at the beginning of analysis, it is characterised by the most active tactics according to the continuum determined in the theoretical analysis. While this shows with regards to all three goals of European energy policy, the most active one in form of seeking to take control can be found in response to liberalisation measures. Here, RWE 'did more than necessary', i.e. as required by regulation, by not only functionally but also legally and organisationally separating its gas grid from its production and sales activities. Furthermore, in what can be assessed as a tactic of image advertising, it explicitly pointed out that it was "the only integrated power company in Europe which by founding RWE Net has accomplished this step (…)"[1364] and "the first German utility company to comply with the demand for complete unbundling of the energy business in organisational terms as well"[1365] before this became enforced by law. In addition to this, and likely to have been applied as a support of such controlling tactics, RWE also sought to coopt with powerful constituents such as regulatory authorities early on.[1366]

[1363] Cf. RWE (2008), p. 106; RWE (2009a), pp. 54, 112, 120-121.
[1364] RWE (2002), p. 82.
[1365] RWE (2002), p. 36.
[1366] Cf. RWE (2002), p. 8.

With regards to sustainability matters, for instance, this is not only revealed in RWE having already pointed out in 2000/ 2001 to "have taken the increasingly stringent requirements for environmental conservation and climate protection *proactively* on board"[1367], but also in its teaming up with well-known allies like German glass manufacturer Schott Glas with whom RWE established a JV (RWE Schott Solar) to advance growth in solar technology. The success of such tactics shows in the fact that RWE Schott Solar became market leader in this segment in Europe and operated the world's most modern solar technology factory at that time.[1368] To support this manipulative imaging tactic a new label was launched ('Avanza') in order to increase overall brand awareness while at the same time serving as an ecological brand for electricity produced from renewables.[1369] In fact, RWE has been offering a 'green' tariff to develop renewable energies since 1996.[1370] Further attempts to take influence also show in the early and continuous mentioning of having already been listed on the DJSI since 1999, of having joined e7, an initiative of leading global utilities promoting sustainable energy projects in 2002, and the UN initiative Global Compact in 2003 as well as of having published an Environmental Report that was soon after replaced by a specific Corporate Responsibility Report.[1371] Additionally, initiatives were accompanied by continuous "lobbying work"[1372] and imaging in that RWE not only claimed it was *contributing* its expertise to the discussion but was even *helping* to shape planned policies such as in case of the emissions trading scheme.[1373]

While this pro-active behaviour constitutes the first phase of RWE's development, the following years, constituting the phase between 2003 and 2006, are characterised by a development towards more passive behaviour again. The year 2003, for instance, having already shown signs of influencing tactics as just depicted above, is also typified by avoidance behaviour. RWE, in light of a generally increasing public 'displeasure' of energy companies, tried to buffer from such influences by making the excuse that the responsibility

[1367] RWE (2001), p. 64. Italicised by author.
[1368] Cf. RWE (2003), p. 64.
[1369] Cf. RWE (2001), p. 70.
[1370] Cf. Mez (2001), p. 219.
[1371] Cf. RWE (2003), p. 65; RWE (2004), pp. 19, 73; RWE (2005), pp. 75, 197.
[1372] RWE (2004), p. 62.
[1373] RWE (2004), p. 62. Italicised by author.

to make the right decisions "lies in the hands of policymakers"[1374]. Similarly, in an attempt to justify RWE's behaviour, CEO Roels in 2004 claimed to have 'time and again repeated in talks with policymakers and public authorities' that a secure supply with energy was not for free.[1375] The years 2004 and 2005 then show an even larger degree of more passive behaviour in that RWE, although "not always easy"[1376], aimed to balance interests by trying to "do justice to the well-founded interests of all stakeholder groups relating to RWE as best as we can"[1377]. CEO Roels again, by uttering his 'personal understanding', attempted to pacify stakeholders.[1378] Even more passive behaviour during this time shows in form of acquiescence as RWE imitated other companies in filing an appeal after having obtained fewer CO_2 emissions than applied for, or in implementing the regulatory requirements such as the entry-exit model.[1379] It also claimed of wanting to continue as before "regardless of political requirements"[1380], thus ignoring institutional change.

From 2006 onwards, development again is characterised by a tendency towards more active behaviour. Related to the issue of security of supply, for instance, statements such as that Europe could not "afford to be insular"[1381], that it was "high time that right decisions are taken for tomorrow's infrastructure"[1382] and that "we must stop pointing fingers and initiate an all-encompassing dialogue"[1383] can be assessed as forms of window dressing or justification. This becomes even more apparent when considering that RWE did not invest into respective projects but instead claimed that it was "up to policymakers and society to create reliable conditions to safeguard"[1384] investments. The same holds true in relation to the notion of sustainability. While claiming to "accept political decisions"[1385] RWE challenged discussions on climate protection as 'unfortunately being rarely unbiased and constructive

[1374] RWE (2004), p. 6.
[1375] Cf. RWE (2005), p. 6.
[1376] RWE (2006), p. 91.
[1377] RWE (2006), p. 91.
[1378] Cf. RWE (2006), p. 7.
[1379] Cf. RWE (2005), p. 57; RWE (2006), pp. 32-36.
[1380] RWE (2006), p. 79.
[1381] RWE (2007), p. 6.
[1382] RWE (2007), p. 6.
[1383] RWE (2007), p. 127.
[1384] RWE (2007), p. 128. Also cf. RWE (2008), p. 51.
[1385] RWE (2008), p. 16.

while not paying attention to economic facts'[1386] and authorities' decisions of achieving supply security without using coal and nuclear power (two energy sources heavily deployed by RWE)[1387] while simultaneously aiming for competitive energy prices as non viable, thus even demanding an end of 'over-subsidisation of renewables'[1388]. Over the course of time, more manipulative tactics can be found again. In order to improve legitimacy RWE, for instance, tried to positively coopt public perception by referring to the support of powerful constituents such as in the case of the laying of the cornerstone of its new and the world's most efficient lignite-power plant (see above). Here, RWE not only emphasised that such investments were "extremely important to Angela Merkel"[1389], but also that "the German government was certain to send a representative to the groundbreaking ceremony for this environmental milestone"[1390] for the planned commissioning in 2020. Similarly, with regards to research on CCS RWE declared it was cooperating with powerful constituents.[1391] Another manipulative tactic applied was that of referring to and bringing in powerful constituents. In 2007, for example, RWE published an interview with Prof. Dr. Klaus Töpfer, a former German environmental minister,[1392] in its Annual Report and marketed him as 'a well-known environmental expert and former Executive Director of the United Nations Environment Programme (UNEP) on climate protection'. Likewise, by choosing Prof. Vahrenholt as Chairman of the Board of Directors for the newly established RWE Innogy and presenting him as being highly prestigious "through his past entrepreneurial activity and work in the field of energy policy"[1393], a powerful constituent was directly established within the organisation. One year later, i.e. 2008, also a former member of Greenpeace was brought in to represent the renewable business to relevant stakeholders.[1394] Other examples include those of RWE looking to take influence and control developments by applying instruments of image advertising and story telling. Starting with the Annual Report of 2006, RWE began to explicitly point out several individual areas relevant for the sustainability issue, including

[1386] Cf. RWE (2007), p. 6.
[1387] Remark by author. Cf. Annual Reports.
[1388] Cf. RWE (2007), p. 75.
[1389] RWE (2007), p. 122.
[1390] RWE (2007), p. 124.
[1391] Cf. RWE (2007), pp. 132-133, 140.
[1392] Remark by author.
[1393] RWE (2008), p. 55.
[1394] Cf. Wildhagen (2009a), pp. 102-104.

Climate Protection, Social Responsibility, Stakeholder Dialogue, Systematic Sustainability Management, or Resource Efficiency. In addition to this, an extra section called 'RWE Special' on 'Energy of the future' was included, reporting measures on promoting efficiency in households, renewable energy and climate protection such as CDM or CCS projects. It furthermore included an extra section on renewables that was presented under sustainability considerations with RWE promoting itself as "The Energy Efficiency Company"[1395] claiming to 'set a good example' by offering bonuses to energy saving household consumers via campaigns called "Climate protection begins at home"[1396] or "Save Energy Now"[1397].[1398] From 2007 onwards, even more concrete action fields were added, such as one concerning security of supply.[1399] Another indication for the above assessment is provided by the fact that despite already having been highly ranked on respective sustainability indices or despite having become the first power company in Germany that joined the World Bank's Prototype Carbon Fund (PCF), such achievements were only remarked on by RWE in 2008. Then it was particularly emphasised that RWE had been 'the only German company included in the DJSI without interruption since 1999'[1400] and had not only been listed on the Carbon Disclosure Project's Climate Leadership Index[1401] but had immediately ranked best in class in the utilities category in 2006, again only later promoted as an initiative within its sustainability strategy in 2007.[1402] In addition to this qualitative proof, evidence for the increased attention to and activity in this area can also be found in the amount of pages dedicated to the issue of sustainability in Annual Reports: While in 2005 it was only two pages, it was four or more afterwards.[1403]

A similar tendency towards more active forms of behaviour can also be observed with regards to regulatory measures to increase competition which initially particularly referred to tactics of defiance. This, for instance, shows in publicly challenging authorities that the debate on

[1395] RWE (2007), p. 122.
[1396] RWE (2007), p. 123.
[1397] RWE (2007), p. 125.
[1398] Cf. RWE (2007), pp. 110, 119-140.
[1399] Cf. RWE (2008), pp. 131-135; RWE (2009a), pp. 139-145.
[1400] Cf. RWE (2009a), p. 145.
[1401] This project was initiated by a group of large institutional investors aiming to make companies' CO_2 emissions and climate protection strategies transparent to the financial market. Cf. www.cdproject.net.
[1402] Cf. RWE (2008), p. 136; RWE (2009a), p. 145.
[1403] See respective Annual Reports from the years 2005 to 2008 and as mentioned before.

prices and monopolistic profits "can't be all that alarming"[1404] as energy prices had remained "roughly the same"[1405] as before liberalisation, and that despite enforcements to facilitate TPA, "competition will not be able to change fundamental factors such as rising commodity prices, grid fees, taxed and levies for climate protection"[1406]. RWE also publicly criticised that ownership unbundling would not 'be of help'[1407] as it "has not been proven empirically and is questionable from a scientific point of view"[1408]. Similarly, it complained that regulatory approval procedures were taking too much time and, for example, that measures were not effective.[1409] Even more, it strongly 'opposed' installed regulations as these went "against the EU's requirement to allow prices in the European energy sector to be determined according to the principles of free markets"[1410], again publicly threatening that this would isolate Germany and put at risk required investments. Moreover, with regards to the FCO's accusations of RWE having applied inappropriate methods to factor CO_2 costs into electricity prices for industrial consumers, RWE not only 'firmly rejected' this claim but even accused the FCO of having neglected the 'fundamental principles of competitive price determination' and announced that it would challenge possible sanctions in court, being confident that arguments would hold in legal proceedings.[1411] Only one year after, however, much more passive compromising behaviour can be observed again in this matter as RWE, in what can be assessed as a pacifying tactic, instead 'opted for an agreement over protracted litigation' and showed willingness to auction power products from its depreciated coal-fired plants to industrial customers in return for the FCO dropping its case.[1412] In a similar attempt to pacify after having become subject to an abuse procedure initiated by the EU Commission in 2007 - for having hindered access to the natural gas transmission grid in order to achieve an allegedly dominating market position in the gas supply business - RWE agreed to re-organise its gas grids by downsizing the long-distance pipeline infrastructure in order to avoid protracted litigation. It even considered selling its German gas grid to a third party if the

[1404] RWE (2007), p. 127.
[1405] RWE (2007), p. 127.
[1406] RWE (2007), p. 129.
[1407] Cf. RWE (2007), pp. 33-34.
[1408] RWE (2008), p. 52.
[1409] Cf. RWE (2007), pp. 30, 39, 75; RWE (2008), p. 53.
[1410] RWE (2007), p. 31. Also cf. RWE (2008), pp. 52-53.
[1411] Cf. RWE (2007), pp. 31-32, 83.
[1412] Cf. RWE (2008), p. 53.

Commission on the countermove would drop its investigations.[1413] RWE even admitted that the European Commission was right to "urge us to accelerate integration"[1414], a tactic which can be assessed as an attempt to pacify. In 2008 then, active defiant behaviour can be found yet again with RWE threatening to be willing to take legal actions to accelerate regulatory approval processes. Similarly, it further publicly attacked institutional sources in that EU regulations were hindering investments and distorting competition.[1415] At the same time examples of manipulative behaviour in form of co-opting and influencing tactics can be found. Finding, for instance, that due to a 'lack of trust prevailing in the industry', time had come "to turn the damaged relationship between the energy industry, policymakers and consumers back into constructive cooperation"[1416] RWE committed itself to 'acting more constructively and jointly' by establishing close contact with stakeholders. This also shows in the change of attitude towards regulatory enforcements such as welcoming the Third Liberalisation Package and believing the ITO to constitute a "workable solution"[1417]. Likewise, as a 'clear commitment to competition', it specifically installed customer friendly offers and measures to increase transparency.[1418] Attempts to take influence again are revealed in the establishment of powerful constituents such as lobbyists to 'fight in Berlin'[1419] for the company's interests, or the financing of projects of European interest at prestigious institutions.[1420]

7.4.4 Analysis of Development from an Integrated Perspective

Essentially and as revealed in the analysis above, RWE's development path can said to be constituted by different phases of behaviour. Valid for the business as well as for the institutional one, each began with an active phase mainly characterised by creative and

[1413] Cf. RWE (2008), p. 103; RWE (2009a), p. 56. As also pointed out in public press. Cf. Anonymous (2007g), p. 6.
[1414] RWE (2007), p. 129.
[1415] Cf. RWE (2009a), pp. 25, 49-50, 54-55.
[1416] RWE (2008), p. 26.
[1417] RWE (2009a), p. 51.
[1418] Cf. RWE (2009a), p. 141. As a specific example cf. www.rwetransparent.com.
[1419] Cf. RWE (2009a), p. 24.
[1420] Cf. RWE (2009a), pp. 54-58, 96-100.

manipulative tactics holding until 2002/ 2003. This has been illustrated by respective arrows along the business and institutional axis. At the same time no dominant focus on either type of environmental forces can be determined. Instead, RWE during that time and thus relatively early had adopted an integrated perspective, not only being aware that "commercial success is not the only benchmark of performance"[1421] but that a 'clean image' was critical for positive stakeholder attention which put communication skills 'to the test'.[1422] Another example is that RWE, in fact until 2003 and thus also supporting the period assessed above, had also declared that sustainable development formed 'an integral part of corporate strategy'[1423] while investors praised its sustainability reporting.[1424] Conspicuously, when looking at the years afterwards, the analysis above has revealed a second phase of development which constitutes the period between 2003 and 2005/ 2006 and which is characterised by passive forms of behaviour. This actually holds true for both dimensions and in the figure below illustrating RWE's development path has been illustrated as a 'reverse' development with each arrow pointing in the other direction. Even the phase which seems to mark the beginning of a third period towards more active behaviour, again having started after 2006 as laid out above, has to be looked at under the consideration that behaviour was passively driven by external factors rather than by RWE having taken advantage and orchestrating change itself. This, for example, shows in moves of naming its 2008 Sustainability Report 'Our Responsibility' in order to '*do justice'* to requirements, thus just satisfying them, or in looking to operate within *familiar* framework conditions.[1425] Such behaviour, revealing more passive behaviour than pro-active advancement, becomes even more pronounced through statements by RWE of '*waiting* for EU resolutions on the 2008 climate package to be translated into national law'[1426]. Similarly, it tried to justify itself by pointing out a study analysing the impact of political influences on corporate decisions which had found that energy companies were increasingly prone to politically motivated demands constraining their future room of manoeuvre and that "political decisions in the field of energy policy have a significant impact

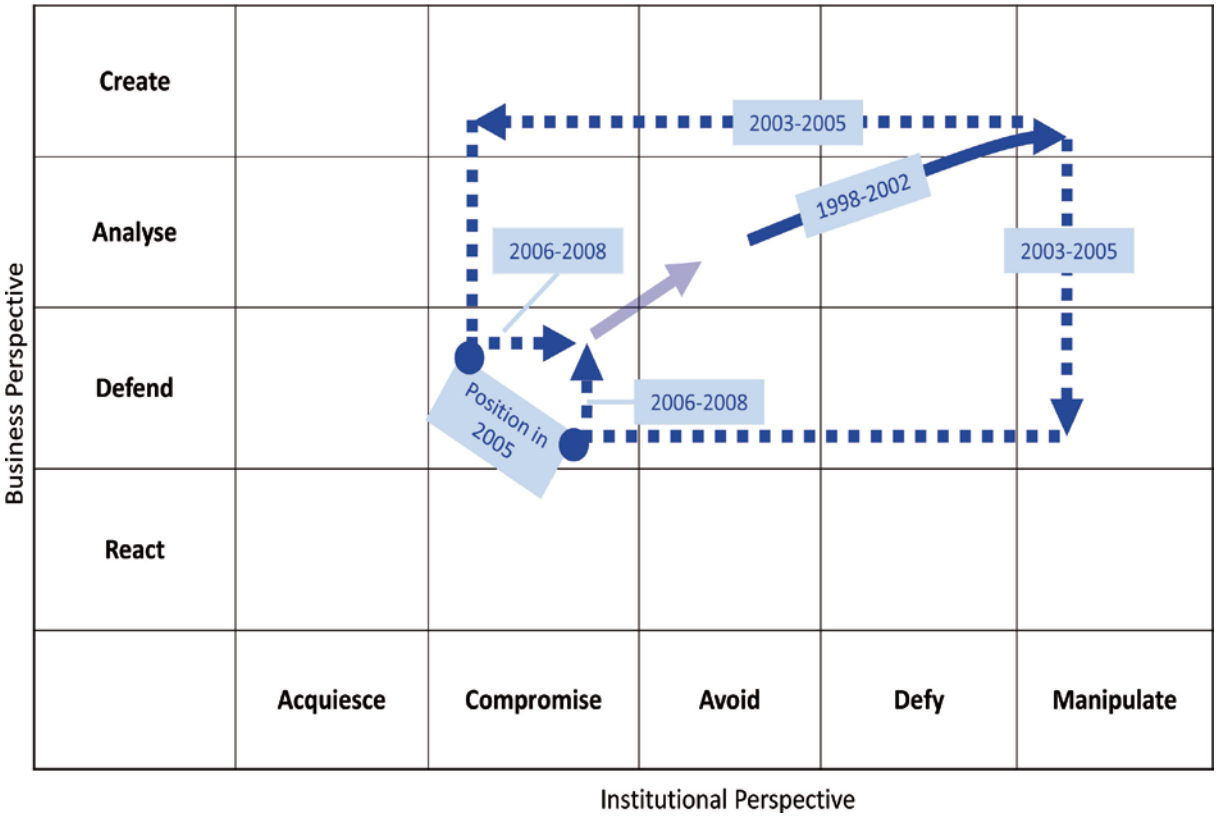
[1421] RWE (2003), p. 61.
[1422] Cf. RWE (2003), p. 26.
[1423] Cf. RWE (2002), pp. 64-65; RWE (2003), pp. 48-49; RWE (2004), pp. 63-65; RWE (2005), pp. 22-23, 90-91.
[1424] Cf. RWE (2003), p. 27; RWE (2004), p. 19.
[1425] Cf. RWE (2009a), pp. 22, 35, 139. Italicised by author.
[1426] Cf. RWE (2009a), p. 37. Italicised by author.

on the options available to the RWE Group"[1427]. The notion of externally enforced active behaviour also becomes apparent with regards to other activities, like its participation in CDM and JI projects, the construction of CCGT plants, or the use of new methods like Integrated Gasification Combined Cycle (IGCC) technology[1428]. This also holds for its subsidiaries such as RWE Dea's research on underground CO_2 storage facilities which were actually initiated because emission certificates were not allocated for free anymore and were turning into an increasing cost factor.[1429] Under these considerations, its newly implemented 'Strategy Agenda 2012', which again was guided by the principle of 'More Growth, Less CO_2',[1430] or the new campaign termed 'The energy to lead' to illustrate the realignment of RWE as a forward-thinking and -acting company that is 'responsible and innovative at the same time',[1431] have to be assessed as window dressing tactics. This is also valid for the claim that the enhancing of efficiency did not pose "the only item on the agenda"[1432] as well as the emphasis that RWE had not only been "rising to the challenges of sustainable management for years"[1433], but that sustainability management had become 'firmly cemented' and dialogues with stakeholder a part of daily routine.[1434] While such activities have also been judged as 'elegant ways of softening ecological constraints' in secondary literature,[1435] those with regards to investments into infrastructure projects, such as the Nabucco pipeline, have been assessed as an institutional tactic of RWE selling it as its support to increase European security of supply and market liquidity.[1436] At the same time tactics such as lobbying and the bringing-in of powerful constituents progressed RWE's development in the renewable business, thus supporting its integrated perspective. When mapping these findings onto the matrix, RWE's course of development reveals as what above has been termed 'zic-zac' path. In order to facilitate identification, each deviation has been marked with the respective phase

[1427] RWE (2008), p. 40.
[1428] This technology allows converting coal into a gaseous state to create synthesis gas from which CO_2 is separated and electricity generated in steam and gas turbines. Connected to this site also is an algae harvesting plant that is planned to be 'fed' with the CO_2 produced in the IGCC plant in order to convert it to biomass which again could be further applied in future biogas plants. Cf. Michelatsch (2009), p. 9.
[1429] Cf. RWE (2008), p. 40; RWE (2009a), p. 40.
[1430] Cf. RWE (2008), p. 28.
[1431] Cf. RWE (2009a), p. 40.
[1432] RWE (2009a), p. 25.
[1433] RWE (2008), p. 131.
[1434] Cf. RWE (2008), p. 131.
[1435] Cf. Flauger (2009c).
[1436] Cf. Czakainski/ Lamprecht (2008), pp. 48-49.

as depicted above. The indication towards a renewed integrated path is depicted as a transparent blue arrow.

Figure 25:[1437] RWE's development paths between 1998 and 2008



[1437] Own figure based on results from case study analysis.

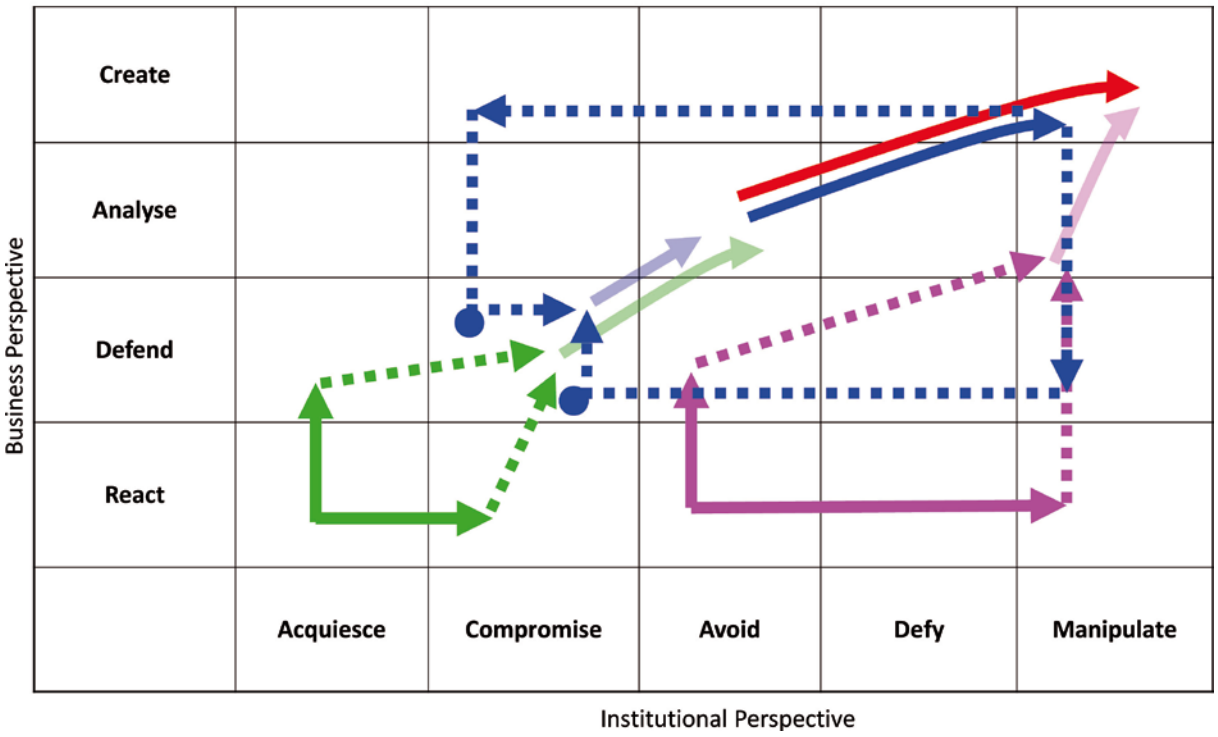
CHAPTER VIII COMPARING FINDINGS, DETERMINING EXPLANATIONS and VALIDATING RESULTS

8.1 Inter-Case Analysis – Commonalities and Differences

8.1.1 Incumbents' Development Paths

Before comparing the four cases in detail, several general findings can be determined. Primarily, research has shown that incumbents' behaviour over the past decade has been significantly influenced by changes of European Energy Policy and gas industry transformation. What can be observed is that incumbents not only in some form adapt to these changes, but that this process is characterised by the fact that organisational behaviour has become more active over the course of time. Even more, strategic behaviour by now can be identified as being or becoming pro-active as incumbents take advantage of arising opportunities to drive change themselves – instead of being driven by it. This holds for incumbents' business as well as their institutional path. These findings can be seen in the illustration below where the four individual development paths determined from case study analysis have been merged into one matrix.

Figure 26:[1438] Comparison of individual development paths



Apart from these commonalities the figure above also reveals the differences in development paths. Prominent here is that despite the general trend just depicted above, each incumbent's individual development path is distinct from the others. While that of GdF (SUEZ) has been mostly passive and is thus situated in the left bottom corner of the matrix, that of E.ON has been mainly pro-active as shown by the position in the right top corner of the matrix. ENI's development path again is characterised by predominant active institutional strategies while business behaviour has been more passive. Another different path is that of RWE, where both paths started off actively before 're-developing' as behaviour became more passive again, to recently once more showing a tendency of pro-active strategies. At the end of the analysis period of RWE's path hence shows as a zic-zac course.

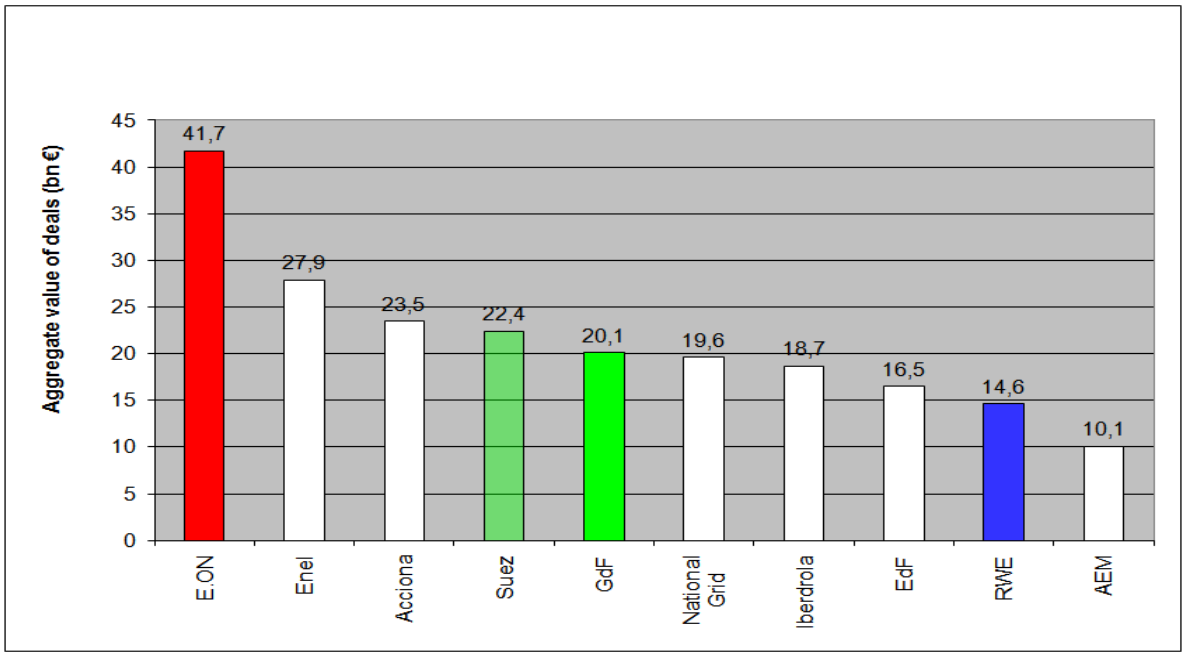
After having compared incumbents' overall development paths the same will be done in the following two sections with regards to their business as well as institutional behaviour.

[1438] Own figure based on above case results.

8.1.2 Incumbents' Business Behaviour

Fundamentally, the comparison from a business perspective emphasises the findings made above. Looking at M&A deals of European incumbents over the study period, for instance, reveals E.ON as the top bidder before Suez, GdF, and RWE and thus sustains the finding of its pro-active lead.

Figure 27:[1439] M&A deals by European incumbents (1998-2007)



The finding of E.ON as the most pro-active incumbent is also supported by assessments in secondary literature where it has been depicted as being 'very active' and 'giving direction',[1440] or as having been the only foreign energy company that was able to enter the 'walled off' French market.[1441] This also holds with regards to its strategy of vertically integrating along the gas value-chain to re-inforce its upstream as well as midstream business

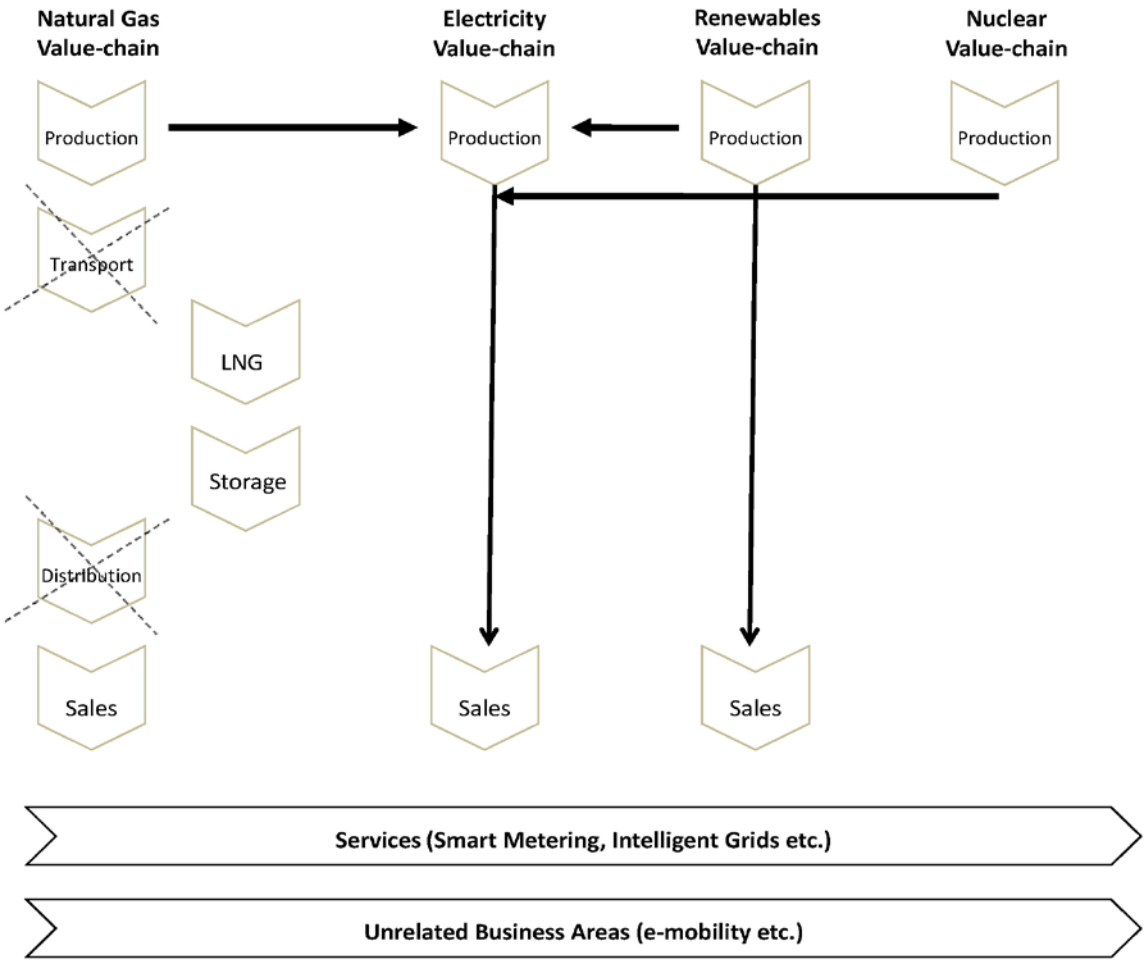
[1439] Own figure based on data from Lévêque/ Monturus (2008), p. 297. Suez has been coloured in transparent green to indicate the later merger with GdF.
[1440] Cf. Maier et al. (2006), p. 4; Flauger (2010a), p. 29.
[1441] Cf. Alich/ Flauger (2009a); Alich/ Flauger (2009b).

such as treating storage and trading as strategic activities.[1442] The positioning of GdF in front of RWE despite GdF's more passive business development can be explained by the fact that indeed RWE was restrictive in this respect as revealed from case study findings and that GdF especially recently made more large-scale acquisitions in terms of value as indexed in the figure above. While ENI has not been part of the study and thus is not mentioned, this on the other hand can also be seen as an indicator for its passive business behaviour as determined in the case study. The assessment of GdF as the most passive player even finds support in its own statements in that it set out to *follow* instead of *shaping* fundamental trends in the European energy industry.[1443] A similar statement can be found by RWE. While stating of 'being *capable* of taking a leadership role' it admits not having such a position yet.[1444]

Apart from the support for E.ON's leadership position, the figure above at the same time indicates that M&As have been a business tactic that has been commonly applied. This becomes even more pronounced with regards to the extension along and across the value-chain. While all four companies are engaged along the whole gas value-chain and vertically integrated, they have also all diversified horizontally into other energy businesses. This is particularly predominant in the case of electricity which again is not restricted to power generation from natural gas but also includes nuclear power and renewable energies. Moreover, diversification into the electricity business has not only focussed on production activities. All four incumbents in fact further integrated down the electricity value-chain to also sell and market the power produced. This has been depicted in the following figure:

[1442] Cf. Grant/ Ritter (2007), pp. 7-8; Gassmann/ Yacoub (2010).
[1443] Cf. GdF (2006), p. 56. Also cf. GdF (2007), p. 59; GdF (2008a), p. 82.
[1444] Cf. RWE (2008), pp. 22-23. Italicised by author.

Figure 28:[1445] Towards a common industry business model



8.1.3 Incumbents' Institutional Behaviour

Strikingly, the finding of an increasing resemblance of strategic behaviour also holds when comparing cases from an institutional perspective. This becomes particularly evident when looking at the tactic applied when communicating on sustainability issues, a topic that has become increasingly critical for incumbents' legitimacy. As the following table well shows do incumbents apply the same instruments to display their engagement in this area. All four, for

[1445] Own figure.

example, in some form publish an environment and sustainability report, engage in carbon disclosure projects, and are members of the UN Global Compact Initiative.

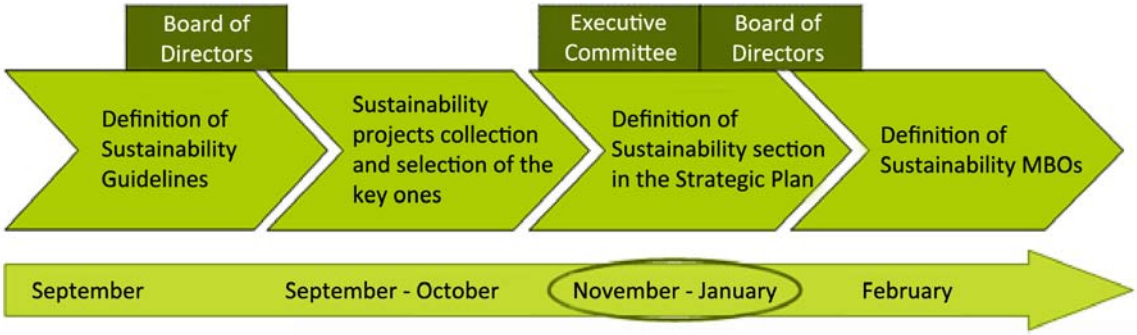
Table 5:[1446] Application of common institutional instruments to report on sustainability

	Eni	E.ON	GdF SUEZ	RWE
Climate/ Environment Report	x	x	x	x
Sustainability Report	x		x	x
DJSI	x	x		x
World Bank Prototype Carbon Fund (PCF)			x	x
Carbon Disclosure (CDP; CPLI)	x	x	x	x
UN Global Compact Initiative	x	x	x	x
Climate Disclosure Leadership Index (CDLI)	x	x	x	
Others - company specific	Sustainability Yearbook	Sustainability Yearbook	Environment Committee, Committee 21	E7 Initiative

As already revealed by case study research it has been particularly ENI which has been active in this respect. In fact, while E.ON's institutional behaviour was identified as the most pro-active above, ENI has recently been ranked leader with regards to its communication on sustainability via its corporate website.[1447] Here it has not only installed an extra tab on 'sustainability' but under this has implemented further riders termed 'environment', 'our commitment', 'stakeholder', 'people', and 'communities'. Additionally, two extra tabs display 'case studies' and 'news'. Extensive information and further subjects on these topics can be found under each tab. Under 'our commitment', for example, ENI particularly reports on sustainability which again has been separated into six distinct areas: results and objectives, areas for improvement, its sustainability model, valuation by sustainability indices, international guidelines, and interviews. Also here additional sub-categories can be found, amongst which is a conceptual sustainability model, ENI's sustainability process as well as the planning process to advance its sustainability strategy are presented (see following figure).

[1446] Own figure based on case study findings.
[1447] Cf. Halda (2009), p. 69; Lundquist (2010).

Figure 29:[1448] ENI's sustainability planning tactic – An outstanding process



ENI's procedure thereby can be assessed as an outstanding tactic. This is also supported when comparing the other incumbents' behaviour in this respect. None has in fact installed a distinct category on sustainability. GDF SUEZ has implemented a tab termed 'commitment' but there only lists general topics, such as its 'vision', 'environment and climate', 'stakeholder expectations', 'corporate responsibility', 'sustainable urban development', and 'diversity'. Moreover, the section 'environment and climate' only includes one subcategory on biodiversity where GDF SUEZ illustrates results from a study comparing CO_2 emissions by European utilities. This though shows the company as the third lowest emitter before E.ON – and RWE as the largest emitter of CO_2.[1449] RWE again only has a general tab on 'responsibility'. Under this it reports on sustainability and climate issues but by far not as differentiated as that of ENI. In its 2009 Responsibility Report, for instance, RWE does list 'climate protection', 'energy efficiency', 'security of supply', and 'environmental protection' as key areas for action of its corporate responsibility strategy,[1450] but today still refers to the implementation of a sustainable business as a 'challenge',[1451] not an opportunity.

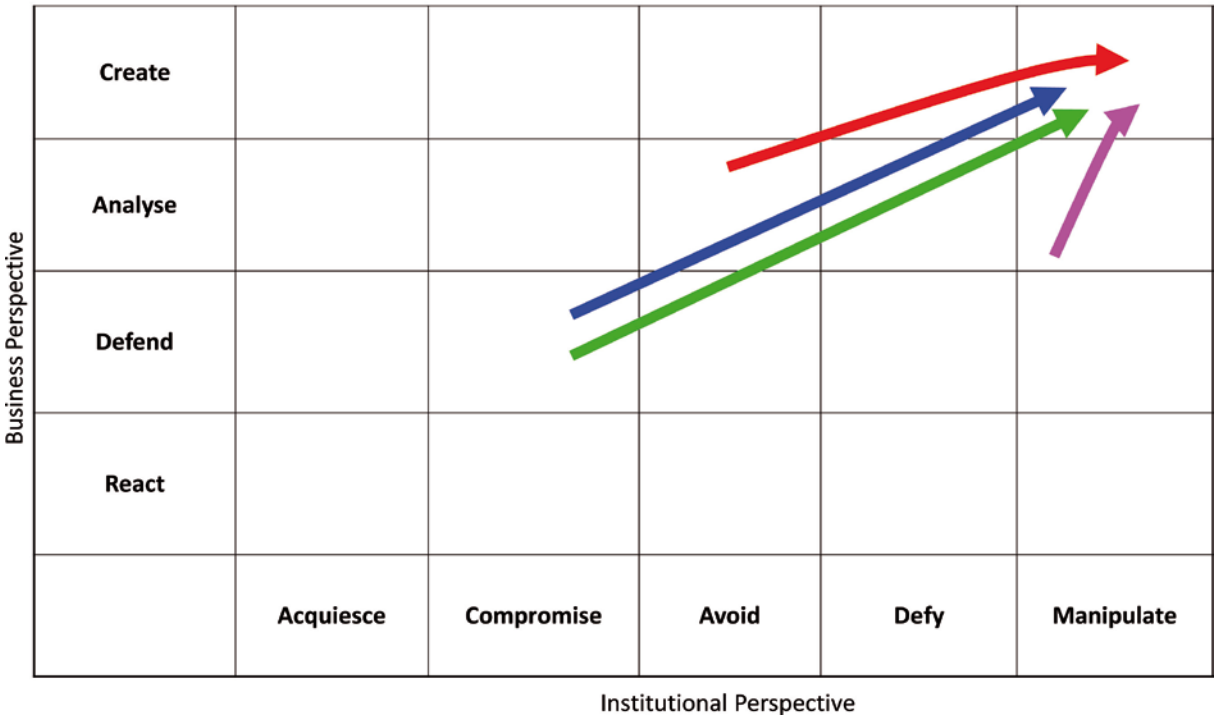
These findings hence support the assessments derived from intra-case analysis above. If this also holds when comparing cases from an integrated perspective is determined next.

[1448] ENI (2011).
[1449] Cf. GDF SUEZ (2011).
[1450] Cf. RWE (2010), pp. 19-20.
[1451] Cf. RWE (2011).

8.1.4 Incumbents' Integrated Behaviour

Taking the comparatative matrix from above (figure 26) as the starting point, another critical observation that can be derived but so far has not been mentioned is the fact that independent from their individual course of action all paths develop towards the right hand top corner of the matrix. This supports the finding that business as well as institutional behaviour has become pro-active over the course of time. Even more conspicuous when adopting an integrated perspective though is the fact that development paths may consist of independent business and institutional paths as in the cases of ENI and GdF, or in form of integrated ones like those of E.ON and, at least initially, RWE. Having stated this at the same time draws attention to the fact that also ENI's and GdF's, and recently RWE's again, have turned towards becoming 'integrated paths' (as shown by the dotted arrows). In sum, this again indicates that behaviour is becoming increasingly similar – an outcome which is supported by the common application of business and institutional strategies and tactics as just laid out above and as illustrated in the figure below.

Figure 30:[1452] Development over time – Convergence of behaviour



At the same time the adoption of an integrated perspective enhances analysis in that it reveals that the behaviours observed have to be explained by considering the respective other perspective, such as when business development is not a result of business but institutional forces. One example is ENI's establishment of EniPower SpA for the development of CCGT plants. While this actually constitutes a form of business extension ENI used this as an institutional tactic to escape the regulatory ceilings imposed by using these plants as an outlet for its natural gas resources (see case study). A contrasting example could be GDF SUEZ' tactic of displaying its CO_2 emissions as the lowest before its rivals (see above). This institutional tactic could also be used to enhance business development by demonstrating its competitive advantage in this respect.

Moreover, as has been already indicated by case study research and analysis above, the developments observed may be an outcome of whether environmental drivers functioned as constraints on or as drivers of behaviour. Two extreme examples in this respect are GdF's and

[1452] Own figure based on above case study results.

E.ON's development: While GdF's business as well as institutional development has been constrained by environmental change, that of E.ON has in both cases been pro-actively enhanced. In ENI's case again institutional behaviour was more active than its business development, and RWE's path is characterised by a zic-zac course. What the drivers behind these different development paths are will be determined in the next section. This is done by building on the explanatory factors derived from the analysis in chapters IV and V.

8.2 Explanatory Discussion of Case Findings – Determining Drivers of Development

8.2.1 Business Environmental Drivers

8.2.1.1 Supply and Demand Situation

Looking at external factors and in particular national market and industry structure the analysis reveals that the underlying development of the natural gas demand and supply situation followed the same trend in the three countries in that primary production declined while consumption increased. Differences can be found with regards to the extent of these changes though. Looking at the period between 1997 and 2008, it can be seen that France, where some of the first European natural gas discoveries had been made in 1957,[1453] started from a relatively low production level of 2 million tons of oil equivalent (toe) while that in Germany accounted for 16 million toe and in Italy for nearly 18 million. While production in these three countries in this period declined by more than 60%, 30% and 52%, respectively, consumption increased by 10% in Germany, 11.8% in France, and 6.4% in Italy. In absolute terms Germany is the largest consumer with nearly 57 million toe, Italy the second-largest with almost 37 million toe, and France the third-largest with close to 32 million toe (2008 figures). Their dependency on imports amounts to around 81%, 87% and 96%, respectively. In order to derive some possible explanations with regards to incumbents' behaviour, these

[1453] Cf. Sauvage (2008), p. 27.

figures have to be put in relation to overall consumption of primary energy as this gives an indication of the maturity of the market. This data again shows that while natural gas already had a relatively large share in the Italian and German primary energy consumption mix in 1998, there was hardly any utilisation in France.[1454] Having faced a relatively saturated national market and the need to find new sales markets thus also explains why E.ON and RWE took advantage of liberalisation by internationalising while GdF, when becoming more active, first started to develop the domestic market. The same holds true in ENI's case as revealed in the case study. At the same time GdF had also always faced strong competition from nuclear power as an even more environmentally friendly form of energy[1455] with 47% of European nuclear power being produced in France, where it had a share of nearly 80% in electricity generation, compared with about 20% in Germany and none in Italy.[1456] In 2008, GDF SUEZ recently pointed out the impact of the possible revival of nuclear energy in Germany and Sweden as going against the development of the natural gas industry.[1457] By 2008, natural gas still only accounted for 15% in the French energy mix, compared with 38% in Italy and 22% in Germany.[1458]

8.2.1.2 Incumbents' Market Power

Apart from the threat through substitute forms of energy as just mentioned above, another possible explanatory factor requiring to be looked at more closely is the competitive situation in the respective domestic industry. From a theoretical modelling point of view, Italy can be classified as the most competitively oriented, followed by Germany and France, the latter of which was categorised as one based on a 'national public interest' orientation and thus as the least competitive.[1459] While this provides a first indication on the situation, several other

[1454] Own calculations based on data from Eurostat (2010) databasis.
[1455] This had also already been pointed out by Chevalier in 1992. Cf. Chevalier (1992), p. 182.
[1456] Data from Eurostat (2010).
[1457] Cf. GDF SUEZ (2009a), pp. 28-29. For discussions on Germany cf. Delhaes/ Thelen (2006), pp. 30-31; Franke (2007), p. 18.
[1458] Own calculations from Eurostat (2010) databasis. Updated in 2010 as only then substantial data for 2008 available.
[1459] Cf. Arentsen (2004), pp. 96-98.

factors also have to be considered to determine the competitive condition as explained in chapter III. Thus, when looking at the split of buying and supplying power of European gas incumbents in 2001, it can be seen that while ENI's SNAM and GdF accounted for 15% and around 11% of European gas imports, respectively, neither E.ON nor RWE are directly mentioned due to their small share.[1460] This at the same time indicates a disadvantage with regards to buying power. A similar picture arises from the supply situation in 2001 with GdF making up 95%, ENI Gas & Power 84% while E.ON and RWE are not mentioned. The fact that Ruhrgas alone accounted for 14% of imports and 54% of downstream supply, however, supports the importance of its acquisition by E.ON, which at the time of its founding had a market share of 33%.[1461] In fact, E.ON accounted for more than half of domestic bulk and retail purchases by 2004, i.e. after the merger, and was well on its way to become a major player in the gas market,[1462] as also determined in the case analysis. Despite this similarity in incumbents' market power, a distinction can be made with regards to the number of competitors in the field. In this respect particularly Germany stands out as a market where historically a number of several players have been engaged along the value-chain, compared with monopoly-dominated Italy and France. This is especially evident in the downstream segment where there were about 700 different LDCs segmenting the German market while GdF with its import state monopoly and ENI's Italgas alone accounted for 95% and 50% of local supplies at that time.[1463] And while there were still around 400 LDCs in Germany in 2002,[1464] GdF in 2007 was still serving 95% of private consumers in France.[1465] Moreover, more than 96% of public competitive bidding for new natural gas concessions had still been won by GdF in 2005,[1466] indicating the continuously strong position in its domestic market. Taking into account these figures, it can then be assumed that German players were much more accustomed to dealing with competitors, explaining why E.ON and RWE had become active right after liberalisation, while GdF, despite also having experienced threats from oil

[1460] Cf. DRI-WEFA (2001), pp. 81-82.
[1461] Cf. E.ON (2001), p. 16.
[1462] Cf. Finon (2004), p. 215.
[1463] Cf. Chevalier (1992), p. 176; Estrada et al. (1995), pp. 98-102.
[1464] Cf. Finon (2004), p. 215.
[1465] Cf. GdF (2008a), p. 30.
[1466] Cf. GdF (2006), p. 66.

companies,[1467] was protected by its monopoly power – as was ENI, thus facing no direct competition and need to become active.

8.2.1.3 Degree of Rivalry

Still, in addition to the number of competitors in a market, their position relative to each other should be considered, too, in order to enhance explanatory power. In this respect especially E.ON and RWE serve as good examples as both were direct competitors to each other and have been analysed as case studies. In fact, their rivalling behaviour has also been described as 'power play rivalry' that "has pushed RWE and E.ON to the vanguard of European energy"[1468]. One prominent example is their internationalisation and diversification strategy. While RWE, notably due to the acquisition of Thames Water, was initially seen as the pioneer with its multi-utility approach, E.ON's main focus on the energy market and in particular the take-over of Powergen in contrast were believed to be disadvantageous with E.ON having even been assessed as being in danger of turning into 'acquisition prey' itself.[1469] As was shown by case study analysis though these assessments did not turn out true. This finding, in addition to its contextual relevance, also supports the importance of adopting a long-term perspective for analysis and thus the methodological approach adopted here.

In terms of corporate behaviour it was, in fact, the temporal perspective which revealed that it was E.ON that took the lead, leaving RWE behind as a 'follower that envied its rival', as similarly assessed by others.[1470] At the same time, E.ON's pioneering behaviour made its rivals life 'more difficult'. The move of E.ON 'voluntarily' selling its electricity grid, for example, was judged as having put RWE at a loss to argue the necessity of 'clinging to' its

[1467] Elf and Total had not only been interested in importing and transporting the gas from their global upstream production (cf. Estrada et al. (1988), pp. 122-123) but had even offered the French finance ministry to take control of GdF (cf. Chevalier (1992), p. 181).
[1468] Anonymous (2003).
[1469] Cf. Anonymous (2001a); Student (2002), pp. 108-115; Flauger (2010a), p. 29. Also see the front cover of Finance magazine issue of September 2004. Cf. Finance (2004).
[1470] Cf. Flauger (2009d); Bozem (2007), p. 123.

grid against regulatory authorities, making it look like the 'stubborn odd man out'.[1471] In fact, RWE later copied E.ON's move when it sold its gas grid to escape infringement by the EU commission (see above). Another example is E.ON's tactic of bringing in powerful constituents, such as in the case of German Chancellor Schroeder. While this in media was judged as "a move that raised eyebrows across Europe"[1472], it lead RWE to install Joschka Fischer, Germany's former foreign minister, to promote the Nabucco pipeline project.[1473] This is another example of RWE's imitating behaviour. Apart from explaining the companies' individual behaviour, this type of 'power play' is likely to have contributed to the fact of both companies' strategies and tactics becoming more similar over the course of time. This, amongst others, shows with regards to the renewables business where both, E.ON and RWE, were described as 'investing noisily'[1474], e.g. having set up specific subsidiaries (E.ON Climate & Renewables and RWE Innogy) with similar portfolios and investment volumes (see case study). Other examples include their publicly uttered scepticism regarding the feasibility and practicability of certain projects,[1475] their escape to the U.K. to jointly build nuclear power plants,[1476] or their tactic of 'fighting back in Brussels and hiring the odd politician for support'[1477].

8.2.1.4 New Entrants

Another industry-related aspect that might have been beneficial for German companies is the early influence of international players such as from leading British companies which had entered German territory in 1825 even before natural gas found its way into the market.[1478] While this on the one hand presented a competitive threat to German companies such as RWE

[1471] Cf. Wildhagen (2009b), pp. 58-59; Flauger (2010a), p. 29.
[1472] Anonymous (2006h), p. 14.
[1473] Cf. RWE (2009b); Fechtner (2009); Student (2009), pp. 8-9.
[1474] Cf. Anonymous (2007h).
[1475] Cf. Seiwert et al. (2009), pp. 40-47.
[1476] Cf. Otzen (2007b), p. 14; Flauger/ Heilmann (2009a); Flauger/ Heilmann (2009b); Goffart (2009); Otzen (2009b), p. 4; Schürmann (2009a); Schürmann (2009b).
[1477] Cf. Anonymous (2007h).
[1478] Cf. Wehrmann (1958), pp. 30-38; Schulze-Berndt (1989), in particular pp. 83-100; Spreckelsen (2008), pp. 72-73.

or VEW as E.ON's predecessor, it on the other hand allowed them to gain valuable learning experience for dealing with foreign rivals today. Considering these arguments, ENI generally could have been expected to be more active, too. Although not as early and as dynamic as in Germany, there also were some important moves by foreign competitors in the Italian market. Examples include Spanish Gas Natural which, by acquiring two major Italian distributors, tried to reach its target of accessing 300,000 Italian customers, or Exxon-Mobil and Qatar Petroleum which started to jointly build an important LNG terminal in Italy,[1479] thus threatening ENI's domestic territory. In addition to this, switching rates were highest in Italy (around 30% compared with less than 10% in France or even 5% in Germany).[1480] This contributes to the explanation of ENI using its global upstream business to balance possible losses in the midstream business. The fact that other gas suppliers active in Italy were forced to buy their gas from ENI (see case study) again supports the finding of passive business activity in that ENI might not have felt the need to increase downstream sales due to its comfortable position.

At the same time this helps to explain ENI's active institutional behaviour of trying to fight regulatory measures in court (see case study) in form of a tactic to defend its business and thus market position. Here, the value of adopting an integrated perspective becomes apparent again. This is also supported by other legal procedures ENI pursued. When in 2002, for instance, authorities of the Sicilian Region introduced an environmental tax on pipeline owners in this region, Snam Rete Gas, in order to protect its interests, filed a claim with national authorities. These, although acknowledging the tax burden as an operating cost for TSOs, subjected the inclusion of the tax in tariffs. Until November 2002 the accrued payments for ENI, respectively Snam, had accumulated to a total of €97 million. ENI then filed a claim with the European Commission in this matter with the aim of opening a proceeding against Italian authorities. In December 2003, the European Commission ruled that the tax was contrary to European energy rules as well as to common custom tariffs as it modified the equality of customs expenses on commodities imported from third countries and

[1479] Cf. Capgemini (2004), pp. 11-12.
[1480] Cf. Goerten/ Clement (2006), p. 6.

thus led to a distortion in access and a violation of competition rules.[1481] In July 2004, the Commission formally requested to cancel the tax and comply within two months. As Italian authorities did not, the Commission passed the case to the Court of Justice which declared the tax illegitimate and arranged for the repayment. While the Sicilian Region presented recourse against this decision in April 2005, it was finally ruled that instalments had to be repaid to ENI two years later.[1482] Apart from serving as an example for ENI's active institutional behaviour, it also shows how ENI used institutional forces to its advantage. While this initially was not the case with regards to its business behaviour, this began to change as was shown in the case study. This development can also be clarified by the fact that ENI was facing a growing level of competition in domestic territories. By 2006, already 182 independent companies were operating in the Italian market,[1483] a development which explains ENI's need to become more pro-active.

An increasing level of trading activities and competition can also be observed in the French market where new suppliers such as German E.ON and Verbundnetz Gas, Italian ENI, or the three Spanish companies Gas Natural, Iberdrola and Endesa Energia had entered.[1484] GdF itself, for example, pointed out of facing more and more competitive threats from external players like Gazprom which in 2005 had already declared that it was aiming to take advantage of liberalisation to gain a market share of 10% in the French market, a statement it repeated again in 2008. In fact, by directly supplying large industrial customers in France and by looking for acquisition opportunities, Gazprom, despite claiming to see GdF as a key partner for its plans, turned from being a supplier to GdF to becoming a direct competitor. From this perspective, the move of becoming the major shareholder in Distrigaz Sud (see case study) can be characterised as a defensive tactic as this engagement allowed GdF to control a critical import route for Russian gas to Europe. In addition to this, competitive threats from Gazprom also emerged in the midstream segment because part of its expansion plans included the goal of becoming a leader in the global LNG business and consequently a rival to GdF here, too. As one tactic of defence GdF started to cooperate with Gazprom, such as by swapping a LNG

[1481] Cf. ENI (2001c), pp. 57-58; ENI (2002a), pp. 31-32, 124-125; ENI (2003a), pp. 31-32.
[1482] Cf. ENI (2005a), pp. 147-148.
[1483] Cf. IGU (2008), p. 24.
[1484] Cf. CRE (2009a), pp. 64-105; CRE (2009b), pp. 35-36.

cargo owned by a joint company of GdF and Sonatrach with gas delivered by Gazprom for sales on the French market.[1485] Other indicators are GdF's interest in participating in Gazprom's NEGP project (also see E.ON case study),[1486] or its enabling of Gazprom to become an equity partner in a new LNG terminal in North America.[1487]

Apart from the growing rivalry from traditional gas players GdF also increasingly became confronted with competitive threats from electricity companies. An example is domestic rival EdF whose CEO Gadonneix, delicately also the former head of GdF (see above) and thus knowing the company well, recently announced to significantly grow EdF in the gas business. By even aiming to make it the second main pillar of EdF's business,[1488] also EdF therefore developed towards becoming a dual-offer supplier and hence a direct competitor to the Group. In order to "limit EDF's exploitation of the competitive head start it enjoys from brand confusion with Gaz de France"[1489] and to clearly differentiate between both companies, GdF had installed a new logo that illustrates its gas activities as its core business.[1490]

In conclusion, similar to the cases mentioned above, the finding of converging behaviours and business models can be found here, too. Whether this also holds from an Institutional Perspective is analysed in the following section.

[1485] Cf. GdF (2008c), p. 14.
[1486] Cf. European Commission (2007l), p. 15.
[1487] Cf. Anonymous (2005g); De Monicault (2007); Anonymous (2008e).
[1488] Cf. Flauger (2007a).
[1489] GdF (2008a), p. 56.
[1490] Cf. GdF (2007), pp. 53-57; GdF (2008a), pp. 12, 53-57.

8.2.2 Institutional Environmental Drivers

8.2.2.1 Regulatory Setting

Having busted loose change (see chapter III), the impact of regulatory influences is looked at first. In this respect it should be considered that although energy policy changes were introduced on a supra-European level, the consideration of the subsidiarity principle had left room for "Institutional Diversity"[1491] in that Member States in the beginning had some freedom in the interpretation and implementation of regulations. In the case of a "subsidiarity-oriented European deregulation"[1492], for example, governments initially had the freedom to choose between regulated and negotiated TPA (also see chapter III). As a consequence of such room for choice, the early European market resulted in "a series of juxtaposed and entrenched national markets"[1493], each of which was characterised by a "strong national bias"[1494]. Similarly, based on the "national style argument"[1495], Midttun developed a conceptual model of European market development and identified several approaches[1496] in order to explain differences in firm behaviour with regards to national politics. As the case studies looked at in this thesis all fall into the 'Continental European Contestable Semi-Integrated Market' approach, a closer look must be taken at possible national differences in order to explain the results obtained above. How this has influenced the companies' development is determined in the following paragraphs.

[1491] Midttun et al. (2001), p. 375.
[1492] Midttun et al. (2001), p. 375.
[1493] Finon (2004), p. 187.
[1494] Arentsen (2004), p. 75.
[1495] Midttun/ Omland (2004), p. 290. The assessment of economic nationalism being strongest in France has also been pointed out elsewhere. Cf. Anonymous (2000a), p. 3.
[1496] These have been classified according to the degree of market opening along the horizontal axis and the geographical expansion along the vertical axis. Cf. Midttun (2001), p. 4.

Governmental Attitude towards Liberalisation

A first prominent example is the difference in the degree of market opening. While Germany and Italy had fully opened their markets right from the beginning, France had only done so by 20%, having ignored the required minimum level of 33% as long as possible, even accepting a fine by the EU Commission for non-compliance.[1497] From this perspective, the statements of compliance with regulations depicted above as well as the claim by two organisational leaders of 'GdF remaining pro-active' (also see case study assessment) and continuing its "stratégie d'anticipation de l'évolution des marches européens"[1498] can be seen as an attempt of window dressing, thus confirming the assessment of an underlying tendency of more active institutional behaviour. As a consequence of the belated market opening, GdF, under the argument of reciprocity, was not allowed entry into the territory of Member States who had opened their markets to a much larger extent. At the same time RWE and E.ON had already been "impatiently queuing up to enter the French market"[1499] in 2001. In fact, while national market protectionist regulations as intended by the French government on the one hand protected GdF from increasing competition in its domestic territory, it on the other hand constrained the company from becoming active and taking advantage of entering other European markets.[1500] GdF itself described the access to other European markets being "difficult due to the strong presence of historic market participants"[1501]. Fundamentally, the French energy sector has always been characterised by a high degree of state intervention,[1502] for some even serving as the 'modèle d'excellence'[1503] in terms of a "leading exponent of "economic nationalism""[1504] and a "typical example of government intervention in a market

[1497] France only opened its market in July 2004.
[1498] Carrière/ Balard (2004), p. 519. To be translated as 'strategy of anticipating the development of European markets'. Translation by author.
[1499] Anonymous (2001b).
[1500] Cf. Pederson (2001), pp. 194-195.
[1501] GdF (2006), p. 51.
[1502] When taking the size of state-owned companies in relation to GDP as a ratio, for instance, it is highest in France, and higher in Italy than in Germany. Cf. Anonymous (2007i), pp. 11-12; Anonymous (2007j).
[1503] Cf. Chevalier (2009), p. 48.
[1504] Anonymous (2006i).

economy"[1505]. This, amongst others, also shows in the fact that by law the French state had to retain a stake of at least 70% in GdF (see case study).

Additionally, due to the 'principe de spécialité' GdF was only allowed activity in the French *gas* sector, restricting it from engagement in the French electricity sector. This restriction was only changed in 2004.[1506] While energy planning had been a priority State interest as early as the 1920s,[1507] France's current president Sarkozy still openly declared that 'liberalisation existed to create national champions, not to destroy jobs'[1508]. Others addressed such arguments by French politicians as "an easy scapegoat for unpopular liberalisation"[1509]. Moreover, although the merger with GdF had already been discussed between the two CEO's and the French ministry at the beginning of 2000, the government decided not to authorise it following substantial pressure by powerful trade unions[1510] and massive public resistance against the necessary privatisation of GdF.[1511] It was not until a hostile takeover bid by Italian Enel,[1512] that the deal was finally permitted, even governmentally pushed through against ongoing public protests and internal boardroom discussions.[1513] In comparison to such disputes and despite a 200-page strong document of objections created by the EU, the need to win the approval from EU authorities was regarded as a 'walk in the park'. Support from other stakeholders could, in fact, only be gained after heavy lobbying work,[1514] and by marketing the deal as a merger of equals which was crucial to secure European supplies and to jointly fend off Gazprom with its "l'appétit d'un monster"[1515]. From an organisational

[1505] Estrada et al. (1988), p. 117. Also cf. Brühl/ Oei (2006), p. 335. The French protectionist attitude against foreign take-overs was described by some as making even 'yoghurt a strategic industry' (cf. Anonymous (2005h)).
[1506] This has also been specifically pointed out by Finon et al. (2004), pp. 301-302.
[1507] Cf. Estrada et al. (1988), p. 117.
[1508] Cf. Anonymous (2004b).
[1509] Anonymous (1999b). Also cf. Anonymous (2005i); Anonymous (2006j); Mönninger (2006), p. 24.
[1510] Cf. Anonymous (2007k); Alich (2008a).
[1511] Cf. Beckmann (2007), pp. 4-5.
[1512] Apparently, this offer was triggered due to a 'veteran French corporate advisor' having persuaded Enel's CEO to become engaged in the takeover of Suez instead of just bidding for Suez's subsidiary Electrabel, arguing that it enabled Enel to increase in scale and by obtaining access to several nuclear power plants support Italy in reducing its CO_2 emissions. Cf. Anonymous (2007k).
[1513] Cf. Alich (2006); Anonymous (2007l); Huet et al. (2007); Jeudy (2007); Ollier (2007); Thibault (2007).
[1514] Cf. Alich (2008b); Anonymous (2006k); Anonymous (2006l).
[1515] De Monicault (2007).

resource perspective, the merger enabled the realisation of synergies worth €1.1 billion.[1516] Thus, while governmental involvement had initially constrained market expansion, this move finally made it possible, characterising a governmentally orchestrated merger and "une belle victoire patriotique"[1517], enabled by aggressive French energy politics and "a new president keen to remodel the French economy"[1518]. Moreover, having been created in Sarkozy's 'palace d'Elysée', it presented a "typically French solution"[1519] with the French government keeping more than one third of ownership in the new GDF Suez, thereby making Mestrallet a 'tool' of Sarkozy who in turn is seen as the 'real' CEO in the Elysée palace.[1520] As indicated in the case study, this holds as an explanation for the change of GdF's behaviour from 2005 on onwards.

A similar explanation can be found in ENI's case. While the Italian government did not get involved initially, this changed with E.ON's takeover bid for Endesa. It not only made Italian Enel openly support Gas-Natural in its counter-bid after having claimed a few months before of not getting engaged in the 'takeover battle',[1521] but the Italian government to create its own national energy giant by merging ENI with Enel. Romano Prodi, the candidate for presidency at that time, argued that this engagement was a crucial counterweight to other European national monopolies.[1522] Since then, involvement by the Italian government has generally become stronger, president Berlusconi even aiming to become a central figure in the international energy business and support ENI in its market expansion as was mentioned with regards to ENI's and Gazprom's cooperations.[1523] As in the case of GdF this therefore supports the observation of ENI's recently increased business development activity.

[1516] Cf. Anonymous (2006k); Mestrallet (2007); Ollier (2007).
[1517] Anonymous (2007m).
[1518] Carson (2007).
[1519] Anonymous (2007n).
[1520] Cf. Anonymous (2006l); Alich (2007), p. 19; Anonymous (2007j); Anonymous (2007n); Beckmann (2007), p. 5; Meier/ Ruch (2008), p. 3; Nikionok-Ehrlich (2008), p. 4. This had required a change of the law dictating a minimum of 70% of state ownership (see above). Cf. Brühl/ Oei (2006), p. 335. At the same time the Socialist candidate for upcoming elections at that time, Ségolène Royal, declared to renationalise GdF when being elected. Cf. Anonymous (2006m).
[1521] Cf. Flauger et al. (2006), p. 14.
[1522] Cf. Wörmann (2006), p. 15.
[1523] Cf. Anonymous (2007o); Jung/ Kaffsack (2009).

In Germany, in contrast, state engagement has generally been seen rather critically,[1524] thus leaving more room for pro-active corporate development. At the same time, the German market also has historically been characterised by a high degree of municipal engagement which in fact turned out "to be one of the most stubborn obstacles to European liberalisation"[1525] and particularly hindered RWE's expansion. Moreover, the German government had become involved in 'questions of national interest', too, such as in the case of E.ON's takeover of Ruhrgas which only became possible due to the overruling by the German Ministry of Economics and Technology where E.ON had filed for ministerial approval, as the FCO and other authorities had rejected the deal.[1526]

Governmental Attitude towards Sustainability

In addition to the factors just depicted, national differences must also be taken into account with regards to sustainability issues. While emission reduction requirements as well as the current and future share of renewables in electricity generation were roughly the same in all three countries,[1527] Germany was special in that it had established regulatory measures such as a renewables energy law or special grid access orders which guaranteed preferential treatment to renewables, such as in the case of transportation requests feeding in gas from biomass.[1528] Again, it was especially E.ON which took advantage to extend its activities in this field, while RWE behaved more passively and only recently increased engagement as

[1524] As, for instance, stated by the director of the energy department of the federal ministry for trade and technology: "Liberalisation in Germany currently means that we are nationalising the private energy industry again, only this time it is not the German state that acts as the owner" (Immenga et al. (2003), p. 44). Translation by author.

[1525] Heren (1999), p. 6.

[1526] The Ministry had granted permission on the account that the merger would support the company in competing internationally and securing access to supplies, thus being in the interest of the general public (cf. Monopolkommission (2002)), as had been used as an argument by E.ON (see above). This approval was criticised as 'one of the most controversial mergers in German economic history' (cf. ZEW (2003), pp. I-II) as it would turn the German market into a duopoly where E.ON and RWE would have market-closing dominance (cf. Anonymous (2002a); Anonymous (2002b); Mez (2002); Schwintowski (2002)).

[1527] Emission reduction (characterising the necessary reduction until 2020 compared with 2005 level): 4% in Germany and France, 13% in Italy; current share of renewables in electricity generation: 15% in Germany, 13% in France and 14% in Italy; future share: 17, 18 and 23% in Italy, Germany and France, respectively. Cf. Eurostat database (2010).

[1528] Cf. Bundesnetzagentur (2006), p. 125.

shown in the case studies. Italy and France, in contrast, initially had not implemented such strict laws. Hence, ENI and GDF SUEZ were not required to become active, a finding which supports the passive behaviour determined in the case study. In France, this has begun to change though as a new environmental law supporting the development of renewables and efficiency measures was passed following the increasing pressures from EU regulations.[1529] Taking this into account helps to explain GDF SUEZ' increasing degree of institutional behaviour as revealed in case study research.

Essentially, the above has disclosed the existence of several national differences in the beginning of European Energy Policy changes. When furthermore accounting for a temporal dimension, it becomes apparent that these dissolved over the course time as energy policy regulations have become mandatory at EU level, leaving no space for national divergences anymore. This also holds true with regards to other structures, such as the development of electricity generation from renewable energy sources which by now is financially supported in all three countries.[1530] As a consequence, companies are facing the same regulatory framework in this respect. This, too, supports the finding of a development towards converging behaviours.

8.2.2.2 Normative and Cultural-Cognitive Situation

Another factor to be considered from the institutional environment are normative forces, such as those exerted from authorities or 'society at large' (see chapter III). These have been particularly prevalent in France, showing in form of a general public attitude of believing in and supporting economic patriotism (also see above). This, for instance, becomes apparent in the fact that "French people see the market as a jungle to be feared if it cannot first be tamed by the state"[1531], and is reflected in a general preference for protected markets, for vertically integrated companies, and in an underlying attitude described as "who cares what the

[1529] Cf. Nikionok-Ehrlich (2010), p. 5.
[1530] Cf. PWC (2009a), pp. 48-51, 62-63.
[1531] Anonymous (2001c).

European Commission thinks"[1532]. That such normative forces did impact GdF's behaviour can also be derived from the fact that in 2006 heavy suburbial riots had prevented it from increasing prices during cold weather in fear of new unrest.[1533] At the same time, GdF had taken advantage of such an attitude itself by having initiated massive protests against cost reduction measures.[1534] Recently, similar developments could be observed in Germany and Italy, too. In Germany, the growing public resistance against many sources of energy production has been described as a situation where 'everything that produces electricity is not welcome anymore'[1535]. Even more, the majority of the Germans would in fact currently opt for a partial nationalisation of energy companies. German politicians, again, have used the bad public image of energy companies to improve their political standing.[1536] This then helps to explain E.ON's and RWE's attempts to gain legitimacy, pro-actively as in the case of E.ON, or because of having been forced to by these developments as in the case of RWE. In Italy, too, an increasing local resistance to large-scale projects such as building pipelines or LNG facilities can be observed, already having forced Italian Enel to set up a deal with GdF in order to be able to supply the Italian market.[1537]

Furthermore, apart from clarifying individual case study findings, the impact of these influences also helps to explain the detected development towards converging behaviours. Still, while all of the above factors do provide some explanatory insights, they have not been able to explain all of the developments observed in the case studies. As pointed out as relevant in both streams of theory, organisational characteristics must also be considered as is done in the following section.

[1532] Anonymous (2001c). As another indication of this attitude may hold the fact that two years after the first directive had been passed it was not officially translated into French law. Cf. DRI-WEFA (2001), p. 6.
[1533] Cf. Anonymous (2006b), p. 4.
[1534] Cf. Berschens (2007b).
[1535] Cf. Anonymous (2005f), p. 16; Augter (2008), pp. 23-26; Grosse-Halbuer/ Wildhagen (2008), p. 27; Ruch (2008); Flauger/ Stratmann (2009a).
[1536] Cf. Flauger (2009b).
[1537] Cf. Jensen (2003), pp. 31, 35-36.

8.2.3 Internal Environment – Organisational Drivers

8.2.3.1 Corporate History

Founded in 1898 as the first energy monopoly in the German Reich following the advancements made with regards to the invention of electricity, RWE not only is the oldest of the four companies but also the one with the largest historical heritage, having pioneered important developments in the energy industry which amongst others also granted it a monopoly position in Germany for some time. Being able to look back on a more than 100-year old company history and having already faced many different changes in its organisational environment, it could gain experience that is likely to have been beneficial in more recent times, too, such as dealing with strict energy policy laws, building networks and relationships with stakeholders or cross-border cooperations with other energy providers.[1538] At the same time and as pointed out in the theoretical analysis, it must be considered that experiences from the past may also constrain development. RWE's reluctance to build gas-fired power plants, for instance, was related to the fact that its memory of a doubling Dutch gas price in 1980 was "still haunting"[1539] it.

Also E.ON, despite having only been founded in 2000, can be classified similarly, following its origin from the merger of VEBA, which also was the single largest shareholder of RAG which later became Ruhrgas, and VIAG as two traditional German conglomerates founded in the 1920s. Moreover, VIAG and VEBA, through their subsidiaries not only represented two of the largest vertically integrated energy companies in Germany, but had made similar learning experiences as RWE over the course of time. At the same time the development of RWE, VIAG and VEBA has been related in that they not only were competitors but also held shares in each other's businesses. These, in fact, still exist today and have recently become subject to political pressures.[1540] In addition to this did E.ON after the acquisition of Ruhrgas

[1538] For a detailed depiction of the 100-year old history of RWE cf. Schweer/ Thieme (1998).
[1539] DRI-WEFA (2001), p. 64.
[1540] Cf. Mechnig (2008), p. 167. For a detailed overview over VIAG's historical development and its relationship with RWE cf. Pohl (1998). For examples of existing interconnections cf. Chevalier (1992), p. 180; Zimmer et al. (2007), pp. 46-47.

benefit from its experience in the gas market and its connections within, such as the long-established sourcing relationship with Russian Gazprom with whom deliveries from deposits as far away as Siberia have been upheld since the start of supply in 1973.[1541] Even more, in 1998 the majority of those contracts was extended until 2020 and Ruhrgas was the first Western company allowed to obtain a stake in OAO Gazprom. Other examples of Ruhrgas having benefited E.ON include the signing of a MoU with Gazprom for taking a share in a Norwegian production field and the engagement in the construction of the NEGP.[1542] To be evaluated as similarly crucial is Ruhrgas' early engagement in business areas like methanhydrat production or the founding of an initiative to promote the fuel cell as possible business extensions (also see chapters II and III).[1543] Apart from this E.ON (including Ruhrgas)[1544] and RWE, are publicly listed companies, a fact which has generally granted them more operational freedom than would have been the case under governmental ownership.

In these two cases such historical ties and ownership structures are likely to have benefited both companies in terms of a well-founded and broad starting position compared with that of GdF and ENI which, founded in 1946 and 1953, are relatively young enterprises in comparison. Another characteristic of ENI and GdF is that both were created and owned by the government. While Midttun and Omland in their analysis on the energy sector found that neither public nor private ownership were related to organisational structure or performance,[1545] corporate behaviour generally can still be expected to be influenced by such characteristics. It has, for instance, been shown that capital markets have reacted cautiously regarding too much political influence on entrepreneurial freedom.[1546] The impact of corporate ownership becomes particularly obvious in GdF's case which only had an obligation to earn an adequate, not maximum, return on investment.[1547] Although ENI was

[1541] This contract had already been signed in 1970 with Sojuzgaexport (which was later integrated into Gazprom) and was special in so far that Sojuzgaexport supplied Ruhrgas with natural gas as part of payment for pipelines 'bought' from Mannesmann. Cf. Ruhrgas (2005), pp. 36-37.
[1542] Cf. E.ON (2004); E.ON Ruhrgas (2009).
[1543] Cf. Ruhrgas (2003).
[1544] Cf. Radetzki (1999), p. 18; Oostvoorn/ Boots (1999), p. 7.
[1545] Cf. Midttun/ Omland (2004), pp. 293, 295.
[1546] Cf. Anonymous (2006n).
[1547] Cf. Radetzki (1999), p. 19.

also established as a state-owned company (see case study), the Italian government remained a relatively passive owner in that issues were "resolved within the ENI 'family' anyhow"[1548]. GdF again, established as the central organ of the market,[1549] had already been made a political tool early (also see above) in that it was forced to account for sensitive counter-trade arrangements and was used as a 'scapegoat' in the political scenery.[1550] That this did constrain its development, showing as the passive development determined in the case study, can be derived from examples which indicate that it possessed the potential for much more active behaviour early on. One example is its early institutional orientation, e.g. showing in statements from 1986 when it had already claimed of wanting to 'better get to know its institutional agents' ("Le Gaz de France s'efforce de mieux faire connaître et de renforcer son image auprès de ses agents, des ses clients, des décideurs, des organismes socio-économiques, des établissements d'enseignement et des médias."[1551]). Only shortly after, this was supplemented by ecologically-related activities, such as sponsoring a 'Company and Environment' contest, creating a Media prize called 'Industry and Environment' in 1987/88, and nominating its CEO as the Vice-President of the French Committee for Environment in 1992. In addition to these institutional measures, the notion of making "the public and industrial customers aware of the possibility, *notably for natural gas*, to reconcile the requirements of modern life and environmental protection"[1552] also reveals an early orientation towards the market as GdF was looking to promote the utilisation of natural gas in a country that had mainly relied on nuclear power (see above). Moreover, GdF back then had already pointed out of following an "outward-looking policy"[1553] with regards to its international business development. More recently though GdF still uttered concern in its Annual Reports, saying that the remaining governmental stake after privatisation might limit its internationalisation goals.[1554]

[1548] Estrada et al. (1988), p. 257.
[1549] Cf. Körting (1963), pp. 564-565.
[1550] Cf. Estrada et al. (1988), p. 252.
[1551] GdF (1987), p. 15.
[1552] GdF (1989), p. 17. Italicised by author.
[1553] GdF (1989), p. 28.
[1554] Cf. GdF (2006), p. 17; GdF (2007), pp. 13-14; GdF (2008a), p. 13.

On the other hand, state ownership also benefited GdF in that it enabled it to early gain experience. An example is the LNG business where the first contract with Sonatrach had been orchestrated by the French and Algerian government (also see chapter II). This was soon followed by contracts with Dutch Gasunie as well as with Russian, Norwegian and Nigerian companies.[1555] In fact, this could have been used by GdF as an institutional tactic to promote the support of European security of supply. Moreover, while governmental ownership had already enabled its rival EdF to go on an "acquisition spree around Europe"[1556], it also benefited GdF with regards to the SUEZ merger mentioned above to become one of Europe's largest gas companies in terms of assets, pipeline length and employees.[1557] With regards to future development, however, government ownership may become a constraint again. While even the French public has begun to criticise the French government for only being interested in its own political advantage and not for creating value,[1558] it in particular has not been well received by investors who, for instance, criticised SUEZ of having 'landed in bed with the government' after the merger with GdF.[1559]

8.2.3.2 Tangible Resources

Financial Assets

In addition to the issues just mentioned, company ownership also turned out to be an important constraining factor with regards to financial assets, a critical success factor specifically in the capital intensive gas industry, as the following comparison between the cases reveals. Here, it especially shows that GdF's advancement was constrained because the French state did not possess sufficient financial resources to fund its development.[1560] This only began to change when the French government decided to make GdF a limited liability company (société anonyme (SA)) at the end of 2004 with the first listing of shares (IPO)

[1555] Cf. Sauvage (2008), p. 27.
[1556] Bonardi (2004), p. 102.
[1557] Cf. Estrada et al. (1995), pp. 98-99.
[1558] Cf. Anonymous (2007p); Anonymous (2007q); Berschens (2007b); Pfaff (2008).
[1559] Cf. Anonymous (2007p).
[1560] Cf. Anonymous (2000b), p. 4; Pederson (2001), p. 191; Finon et al. (2004), p. 338.

taking place in July 2005.[1561] To do so, a new law on the governance of the energy sector was established in December 2006. This enabled the privatisation of GdF if the French state kept a minimum ownership of one third of the company's capital. The Conseil Constitutionnel decided that a transfer to the private sector would effectively be possible as of July 2007.[1562] Remaining obliged to having to provide public services, GdF contracted with the French state for a period between 2005 and 2007 to make available stable and secure supplies, adhere to tariff developments, protect the environment and engage in R&D activities. Despite these obligations this step enabled the company to open up around 30% of its capital to private and international investors[1563] which in fact provided the basis for expansion as revealed in case study research, when GdF's business behaviour showed a larger degree towards more active development. This became even more pronounced after the merger with SUEZ which significantly increased GdF's financial 'firepower'[1564]. The fact that it was able to calculate with net capital expenditures of €30 billion for the three-year period 2008-2010 to finance its expansion,[1565] supports the finding of the criticality of the merger with SUEZ. The importance of organisational ownership and of possessing sufficient financial resources for development also becomes apparent with regards to the acquisition of SWL (see case study) which was evaluated as an "excellent offer"[1566] by SWL's CEO and by analysts as a 'strategic price'[1567], something GdF would not have been able to pay under the previous ownership structure and resource situation.

E.ON and RWE, in contrast, apart from their largely private ownership having provided more room for entrepreneurial activity as indicated above, also benefited from the access provided thereby to financial resources. In this respect, it has been pointed out that E.ON's success was fuelled by its large 'war chest', i.e. financial resources, which have not only been valued as the industry's benchmark but even as the 'measure of all things'[1568]. This not only enabled its early international expansion, including the planned €29 billion cash take-over of Endesa, but

[1561] Cf. GdF (2008a), pp. 23-24. For information on the IPO cf. GdF (2007), p. 298.
[1562] Cf. GdF (2007), p. 32.
[1563] Cf. GdF (2005), p. 6.
[1564] Cf. Wildhagen et al. (2007), p. 74.
[1565] Cf. GDF SUEZ (2009d), p. 29.
[1566] Schroeter (2007c), p. 5. Translation by author.
[1567] Cf. Flauger (2007b), p. 15. Translation by author.
[1568] Cf. Wildhagen et al. (2007), p. 74. Translation by author.

also to bear a €2.4 billion write-off of Powergen's value. Moreover, despite the recent financial crisis E.ON has been able to extend its credit line, having €12.5 billion at its disposal.[1569] ENI again, as shown not to have been constrained by the government's ownership stake benefited from relatively high margins and income in the upstream segment,[1570] thus explaining the development observed.

Apart from financial resources and according to theoretical insights, there are likely to have also been other corporate resources which have influenced development. Essential ones are a company's tangible assets such as gas resources, pipelines, storage sites, LNG terminals, and power plants. While a detailed comparison of every asset goes beyond the scope of this thesis, only the major ones are determined in order to further enhance analysis.

Value-Chain Assets

In this respect GdF and ENI can be said to have started off from an advantageous position due to their vertical ownership of activities along the gas value-chain. Here, particularly upstream and midstream resources played an important role. ENI's SNAM, for example, not only possessed the domestic grid but also participated in the building and financing of import pipelines to secure Italian gas supply. In addition to this it had gained experience with national and foreign rivals such as Edison, a private Italian electricity producer, gained ownership over some domestic gas fields in 1992, and three years later even established a JV with Gazprom to build a pipeline to transport Russian gas to its power plants in order to bypass SNAM, even considering the latter to become a possible customer of this gas as well. Gazprom in fact was so keen to expand its market share that it was willing to abstain from its exclusive supply relationship with SNAM.[1571] Through its take-over of Distrigaz ENI had also become the owner of the Belgium gas infrastructure system and had gained access to essential electricity infrastructure strategically well positioned in central Europe.[1572]

[1569] See financial figures in respective Annual Reports.
[1570] See Annual Reports.
[1571] This pipeline was never established though. Cf. Radetzki (1999), pp. 21-22.
[1572] Cf. Estrada et al. (1995), pp. 104-105.

Furthermore, its global upstream engagement allowed ENI to participate in environmental protection initiatives such as zero gas flaring directly on-site (see case study).

The same advantageous position can be found in the case of GdF as the owner of the majority of gas infrastructure in France, if not directly as in the South and West of France, then via majority ownership in regional distribution companies.[1573] By now it is the proprietor of the longest transmission and distribution grid in Europe as well as of the second largest storage capacities. And, as already mentioned above, GdF also had a well established LNG business, being owner of major terminals and having become the second-largest importing nation in Europe after Spain. Of particular relevance for this development again was the merger with SUEZ which, despite having had to dispose of its 57.25% stake in the Belgium distributor Distrigaz in order for the merger to be authorised, contributed essential resources. Amongst these were several gas and electricity assets located around the world, such as a compound of E&P assets in the U.K., the Gulf of Mexico, Egypt, and Indonesia. In Italy, it had obtained regional distribution grids, two 20-year long supply contracts for the provision of natural gas within Italy and of LNG in the Gulf of Mexico. In addition to this, it had exchanged significant power generation capacity with E.ON (also see E.ON case study) in Belgium and the Netherlands for engaging in the German market. Furthermore, GdF also benefited from SUEZ' strong position in the environmental business, despite the EU Commission's sanction of having to spin off 65% of SUEZ Environment for allowing the merger.[1574] In fact, the 'incorporation' of SUEZ can be said to have fundamentally balanced and strengthened GdF's presence in core European markets without having had to make major cash expenses. This allowed GdF to transform "a double constraint into a dual opportunity for expansion consistent with our strategic vision and efforts to maintain a strong balance sheet"[1575], as recently formulated by the Group itself.

In comparison to this RWE and E.ON can be assessed as having started from a disadvantageous position as they did not possess assets such as storage sites, LNG facilities or

[1573] Cf. Estrada et al. (1988), p. 122; Estrada et al. (1995), p. 99.
[1574] Cf. Suez (2008c), pp. 33, 218; GDF SUEZ (2009a), pp. 60, 368; GDF SUEZ (2009d), pp. 4-7, 22-23; Suez (2008a); Suez (2008b).
[1575] GDF SUEZ (2009d), p. 7.

major pipelines. This was particularly prevalent in the case of E.ON – and its successors VEBA and VIAG. At the same time though VEBA and VIAG had already early taken advantage of market opening by acquiring customers outside their traditional demarcation area by acquiring long-established domestic local and regional suppliers with substantial experience in the gas market as well as engaging in generation or supply activities in foreign neighbouring markets in order to compensate for declining electricity sales after liberalisation.[1576] Even more critical for E.ON's pro-active development in this respect was the acquisition of Ruhrgas.[1577] Ruhrgas was not only a major TSO but through its ownership of the largest and strategically best positioned transmission grid had actually become Germany's main importer and wholesale supplier of natural gas over the course of time, controlling and dominating all major flows within the country. In addition to this, Ruhrgas had in the past not only managed gas purchases from foreign suppliers for other German companies, but also had lead the Continental consortium – including GdF, Distrigaz and Gasunie – in buying gas from Norway, thereby taking a leadership position early on.[1578] Ruhrgas was also pointed out as having been the first company in Europe to realise the great importance of underground storage,[1579] a fact which was later explicitly emphasised by E.ON after the take-over.[1580] Likewise, Ruhrgas also successfully acquired ownership stakes in 40 companies across 12 countries.[1581] In this respect especially its 49%-acquisition of the Slovakian gas monopolist SPP has been assessed as a 'good catch' due to SPP's bottleneck position for gas flows from Russia to Western Europe and the exertion of pressure this take-over put on RWE.[1582]

[1576] Cf. VEBA (1998); VEBA (1999); VEBA (2000); VIAG (2000).

[1577] Founded as a public company for Coal Recovery in 1926, 'Ruhrgas AG' had originally been established as a long-distance supply company in 1928 to transport the gas produced in coal mines and gas works to places of consumption through which it had also become the owner of major German gas supply infrastructure. With the entrance of natural gas in the European market, Ruhrgas developed to become an importer and long-distance transporter of natural gas and the major owner over critical import pipelines which, due to the central location of Germany within Europe, also were crucial to overall Continental European gas trade. Examples include the Trans Europe Natural Gas Pipeline (TENP), Deutsche Erdgas-Transport-Gesellschaft (DETG) or Mittel-Europäische Gasleitungsgesellschaft (MEGAL). Cf. Körting (1963), pp. 565-582; Schreiter (1965), pp. 96-108.

[1578] Cf. Estrada et al. (1988), pp. 107-108, 252; Stern (1998), p. 12.

[1579] Cf. Körting (1963), pp. 495, 565-582, 591; Schreiter (1965), pp. 96-98.

[1580] Cf. E.ON (2004), pp. 92-97, 209.

[1581] Cf. Mez (2002).

[1582] Cf. Weidemann (2002).

Apart from the analysis of tangible resources also intangible ones have to be looked at in order to provide comprehensive explanations. This will be done in the following.

8.2.3.3 Intangible Resources

The analysis of intangible resources is further divided into the following factors:

- ► Human Resources
- ► Organisational Leadership, as represented by the organisations' CEOs
- ► Environmental Perception and Goal Formulation
- ► Strategic Focus and Corporate Vision

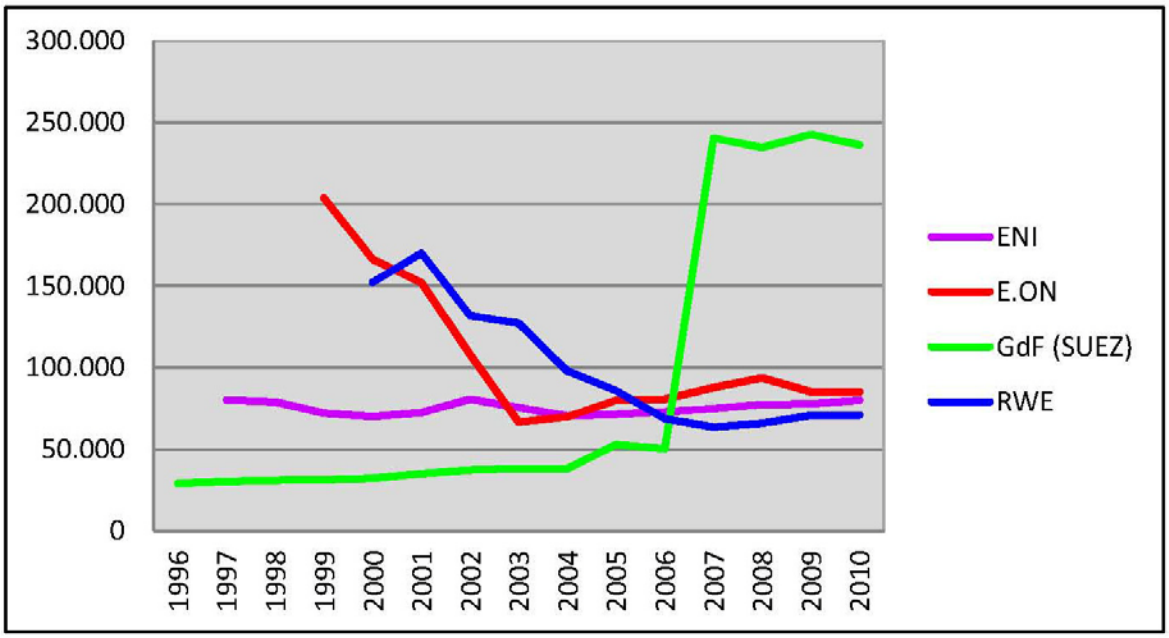
While the first factor provides an introductory and more quantitative analysis, the following provide qualitative explanations, as determined as essential in the analysis above.

Human Resources

Here, the development of a company's workforce is drawn upon to allow for a quantitative analysis. This has been done for all four cases. As can be seen in the figure below, the development of ENI's and GdF's number of employees has remained relatively stable over the course of time with only a slight increase towards the end, supporting the finding of passive business development as no new fields were opened up or businesses acquired. An exception again is the development after the merger of GdF and SUEZ which shows as a steep rise in the figure. A different course can again be seen in the case of E.ON and RWE where in both cases figures have steeply declined, more so in the case of E.ON than of RWE's. This can be explained by the fact that E.ON more rapidly and drastically divested certain businesses while developing with fewer employees. In addition to its efficiency strategy (see case study), E.ON became leaner and thus able to faster pursue pro-active strategies to finally take a leading position as revealed above. What can also be seen from the

figure below is the slight increase in its employee numbers since 2003, following the takeover of Ruhrgas. In 2005, E.ON even overtook RWE, resulting in a difference of 27,600 people in 2008. Recently though, this spread has been reduced by about half again, resulting in a close-up of E.ON and RWE, but also ENI, supporting the finding of converging organisational structures. A similar development can be expected to take place in the case of GDF SUEZ which currently has nearly more than three times more employees than its competitors. Along with increasing competition it is likely that also GDF SUEZ will be forced to reduce its number of employees in order to remain competitive.

Figure 31:[1583] Comparison of the development of the number of employees



Organisational Leadership - CEO

Looking at E.ON first it shows that its active development is likely to have been driven by the strategic initiative of the two CEOs of VEBA and VIAG who, already before the merger, had pointed out the opportunities arising from the changing environment and the importance of

[1583] Own figure based on data from companies' Annual Reports.

becoming active in the gas business.[1584] The CEO of VEBA, for example, who later became E.ON's first leader, not only stated his determination of opposing constraining influences, but of granting stakeholders priority over political consensus and, if necessary, by legal dispute.[1585] A similar determination can be found in the case of Bernotat, E.ON's second CEO, who was guided by the personal conviction "that commercial initiatives are always preferable to anti-market intervention"[1586] and that the growing regulatory influence was a serious infringement to corporate rights which "we can't allow"[1587]. Beneficial for E.ON's pro-active business development is also likely to have been Bernotat's aim to double the stock quotation.[1588] Moreover, he was also praised for paying appropriate prices for acquisition objects as well as for its foresight of not getting further involved in a legal battle after the defeat in the Endesa take-over, a measure which is believed to have otherwise distracted E.ON's development.[1589] In fact, Bernotat was judged as having "turned what had developed into a very messy situation into a semi-victory"[1590] for E.ON. Even more, through statements made in relevant public press[1591] he challenged and attacked authorities, stating, for instance, that 'issues did not lie with Russia' but that instead "the real threat was coming from the European Commission"[1592]. With regards to the threat of ownership unbundling again, he claimed that he was "pretty sure unbundling is not coming"[1593] as "such processes in Brussels take time especially if important member states such as France and Germany are against it"[1594]. Thereby he at the same time belittled authorities and provocatively dismissed the threat of ownership unbundling which in any case "would not kill Eon"[1595].

Over the course of time, and under increasing pressure from the European Commission, Bernotat decided to take the lead before institutional actors did and sell E.ON's electricity

[1584] Cf. VIAG (2000), p. 11. Interview published in VIAG's Annual Report.
[1585] Cf. VEBA (1999), pp. 9-10; VEBA (2000), pp. 11, 39.
[1586] E.ON (2007), p. 5.
[1587] E.ON (2007), p. 5.
[1588] Cf. Reischauer (2005), p. 48.
[1589] Cf. Flauger (2006), p. 16.
[1590] Anonymous (2007r).
[1591] This is specifically mentioned as a valid source also pointed out in the methodology chapter.
[1592] Milne et al. (2007).
[1593] Milne et al. (2007).
[1594] Milne et al. (2007).
[1595] Milne et al. (2007).

grid, a move that by observers was assessed as a 'surprising u-turn', especially as Bernotat continued 'fighting with Brussels'.[1596] Recently, Bernotat also openly attacked the prevailing situation in France and the market dominance of GdF whose CEO thereupon admitted that 'in no other Western country a gas company was controlling more than 65% of the market', a statement which in consequence initiated an investigation by the EU Commission.[1597] The tactic of rhetorical attacks was also applied by Ruhrgas' CEO Reutersberg who attacked increasing regulatory measures as "poison pills"[1598] and threatened that these would severely endanger the willingness to invest and innovate, and as a final consequence security of supply. He backed his accusations by referring to assessments of well-known industry experts.[1599] National governments again were openly accused of 'siphoning off the dividend of deregulation' and of not considering that E.ON had to abide by the rules of international capital markets instead of German public law.[1600] At the same time statements can be found where Bernotat pointed out the need of not only having to consider the demands of capital markets but of all stakeholders,[1601] thus including institutional actors. Similar attempts of manipulation can be derived from claims by other E.ON leaders, such as "despite all rumours to the contrary at the announcement by the relevant authorities, competition on the German market is in full swing"[1602], or, with regards to the issues of supply security and sustainability, that E.ON was already doing more than "any other European energy company"[1603] to enhance security of supply. Likewise, Bernotat tried to curry favour by arguing that climate policy was 'important to him personally'[1604], while at the same time stating in media that it depended on the public will whether E.ON would build new power plants. Moreover, he also generally attacked European energy policy by declaring that it had degenerated to a "wallflower of energy and climate politics"[1605].

[1596] Cf. Anonymous (2008f).
[1597] Cf. Alich/ Flauger (2009a).
[1598] Reutersberg (2008), p. 9.
[1599] Cf. E.ON Ruhrgas (2009), p. 12; Reutersberg (2008), p. 10.
[1600] Cf. Wildhagen (2007), pp. 82-83. Translation by author.
[1601] Cf. Bernotat (2007), p. 2.
[1602] Deters (2009), p. 1.
[1603] E.ON (2007), p. 5.
[1604] Cf. E.ON (2008), p. 7.
[1605] Schürmann (2008), p. B03. Translation by author.

Apart from these rather aggressive tactics E.ON's development was also influenced by the CEOs' utilisation of more 'appropriate' tactics when required, such as admitting that "initially, we probably didn't react with enough sensitivity"[1606] when facing increasing public opposition. Also the depiction by media of Bernotat as the 'foreign minister for politics and publicity'[1607] supports this assessment. Particularly recently the application of such cooperative institutional tactics could be observed. Being "a bit worried that we see signs of re-regulation and renationalisation of the market"[1608] and that the energy industry was facing an 'image crisis' Bernotat called attention to the importance of implementing a broad and inclusive as well as objective and honest energy-policy dialogue. He proposed to bring together policymakers and the public with the energy industry, believing that trust of policymakers and the public was key to continuously operating successfully and creating value.[1609] This change towards cooperative behaviour also shows in the fact that the EU Commission was 'suddenly' seen as "our ally".[1610] Ruhrgas' leader Reutersberg again, characterised as a fast and aggressive leader with high professional experience,[1611] instead of attacking, openly appealed to Brussels and Berlin for supporting projects 'not only for reasons of rationality but also with passion'[1612]. Support for this assessment can also be found in secondary literature where it has been stated that, when favourable for the company, Bernotat was aiming to create 'equality of arms' and of not seeing governmental tailwind as the 'work of the devil' anymore, but as a useful tool to increase overall success of the company. In the media, the realisation that cooperation with the state can yield benefits has been evaluated as Bernotat's 'instinct'.[1613] Another important ability in driving E.ON's active development is likely to have been the utilisation of institutional issues to gain legitimacy for enhancing overall business expansion. Examples include using the argument of supply security to justify the acquisition of Ruhrgas, claiming that "only large, financially robust energy companies that operate along the entire value chain have the ability to ensure that we maintain today's high

[1606] E.ON (2005), p. 7.
[1607] Cf. Flauger (2009e); Flauger (2010b), pp. 62-63.
[1608] Milne et al. (2007). Also cf. E.ON (2008), p. 6.
[1609] Cf. E.ON (2008), pp. 6-7, 66.
[1610] Wildhagen (2007), p. 83.
[1611] Cf. Wildhagen (2008a).
[1612] Cf. Reutersberg (2008), p. 11.
[1613] Cf. Wildhagen (2007), pp. 83-84.

energy supply standards over the long term"[1614], or, with regards to price increases, pointing out that "we can't ignore the fact that (…) security of supply will have an increasingly higher price tag"[1615]. Also the argument of 'a deep commitment to sustainability' was used early to promote business activities.[1616] Generally, Bernotat has been judged as a strong leader and, in relation to the positive development of the E.ON share, as the 'darling' of shareholders.[1617] Whether such explanatory forces also hold for the other cases is determined in the following.

Looking at the RWE case example it can be assessed that also RWE was initially[1618] guided by a visionary CEO, Dietmar Kuhnt. He, after the merger, not only had established the objective termed 'Challenge 2000'[1619] and of forming a future-oriented and 'responsible' multi-utility group, but had made this his personal concern. Moreover, Kuhnt perceived changes such as liberalisation and especially the opening of gas markets as an additional chance, driving internationalisation and profit orientation while at the same time aiming for sustainability and an 'unrefined' dialogue with stakeholders,[1620] an aspect which shows his integrated view. Despite this and the fact that Kuhnt "was not shy of a fight"[1621] E.ON was also in the lead in this respect as Hartmann "played tit-for-tat with RWE"[1622]. In fact, RWE was criticised for its multi-utility approach adopted under the leadership of Kuhnt, and for a lack of 'creative leaders' as management was too strongly resembling that of a public authority where managerial positions were also granted to former district administrators or mayors with no management experience.[1623] The following leader Harry Roels, who became CEO at the beginning of 2003, stopped the development towards the implementation of a multi-utility business model. In following a strict shareholder orientation he instead started to focus RWE's development on the energy business with engagement in a few core markets

[1614] E.ON (2005b), p. 33.
[1615] E.ON (2005), p. 7. A similar statement made is that "energy comes at a price" (E.ON (2005b), p. 9).
[1616] Cf. E.ON (2005a), p. 7.
[1617] Cf. Kowalewsky (2005), p. 53; Reischauer (2005), p. 48; Flauger (2010c). His professional drive can also be seen by the fact of recently having applied for becoming the first German Chairman of the Board of a global company (BP). Cf. Flauger/ Heilmann (2009c).
[1618] This refers to the beginning of this study.
[1619] Cf. Mez (2001), p. 218.
[1620] Cf. Schweer/ Thieme (1998), pp. 42-50.
[1621] Anonymous (2003).
[1622] Anonymous (2003).
[1623] Cf. Anonymous (1997), pp. 77-78.

only. While by few observers having been praised for this[1624] - RWE in 2006, for instance, was awarded the winner of the Best of European Business award in the utilities category and explicitly praised for "its courage to re-examine its portfolio"[1625] - Roels was heavily criticised by most for not having developed a long-term strategy, even for not having 'accomplished anything' ("nichts zuwege gebracht"[1626]) and came to be called a 'lame duck' losing power.[1627] According to critics, RWE under Roels' lead had become rigid, shaken by power struggles on the supervisory board, dis-organised, and a candidate under continuous threat of being taken over by some of its major rivals like Suez, Enel, EdF and later GDF SUEZ.[1628] This supports the finding of a change from a pro-active to a passive development, in fact the beginning of its zic-zac course.

This is also supported when examining statements made with regards to impacts of ecological change, emissions trading, and grid regulation. Roels' assessment of such changes as 'not coming into play soon'[1629] again not only supports the above mentioned accusation of not having adopted a long-term orientation but also indicates a misguided environmental perception. Financial investors even accused Roels of having made a strategic mistake regarding his decision to sell Thames Water to Macquarie-Bank instead of going into re-negotiations and accept the offer by Qatar and Swiss bank UBS which would also have included a strategically crucial option on LNG deliveries, thereby missing out an important opportunity.[1630] A similar argument was brought forward by public press, criticising RWE of not having realised the need to dispel stakeholder concerns with arguments or dialogue under Roel's leadership.[1631] Only recently Roels admitted that it was necessary to "start thinking beyond the Kyoto Protocol today"[1632] and that it would be "inconceivable for the public debate on the future of energy supply not to address climate protection"[1633]. As criticism on his person had become so intense over the course of time, Roels voluntarily offered to resign

[1624] Cf. Anonymous (2007s), p. 29.
[1625] Roland Berger Strategy Consultants (2006).
[1626] Wildhagen et al. (2007), p. 76.
[1627] Cf. Luber (2004), pp. 48-53; Wildhagen (2005); Reitz/ Schneider (2006), pp. 40-41.
[1628] Cf. Wildhagen et al. (2007), p. 76.
[1629] Cf. RWE (2004), p. 6.
[1630] Cf. Wetzel (2006).
[1631] Cf. Koch/ Reiche (2007).
[1632] RWE (2007), p. 139.
[1633] RWE (2008), p. 28.

earlier than the official end of his contract. Appointed as his successor, effective of 1 October 2007, was Jürgen Großmann who had been a member of RWE's Economic Advisory Board since 2000.[1634] In comparison to Roels, who had also been accused of having been too friendly in times of crisis, Großmann's leadership style was described as not wavering and as driving strategy rather than being driven by external forces as Roels was criticised for.[1635] His close relationship with relevant stakeholders, e.g. being "more clout with politicians"[1636] than Roels had been, was seen as another personal benefit of Großmann.

A major difference to his predecessor which can be assumed to have played a role in RWE's renewed development towards more active behaviour as detected in the case study already becomes apparent in his vision and personal 'mission'. This was to make RWE play a major role in shaping the future development as one of Europe's largest energy companies. Großmann aimed to achieve this by making RWE more customer-oriented and by enhancing its efficiency. Moreover, he wanted to take advantage of growth opportunities more aggressively. In addition to this, he was described as someone not giving up despite failures.[1637] To progress RWE, Großmann declared that he was taking a "determined and modern approach-with more energetic entrepreneurial spirit"[1638] and turning "even more creative"[1639], a statement which supports the finding of the turn towards more pro-active behaviour. In what can be assessed as an attempt to co-opt with institutional agents through forming potent alliances with them, for example, Großmann called on policymakers and the public to enter into an 'Energy Pact for Germany' in order to tackle the ongoing confrontations between industry, energy companies, and policymakers. This in turn lead to talks with respective institutional agents such as the German Economics Ministry, consumer associations, and representatives of energy-intensive industries.[1640] In what can be attributed as a first success was the 'surprising' ministry approval for participating in a venture with

[1634] This can be taken from the composition of RWE's advisory board over time. Cf. Annual Reports.
[1635] Cf. Flauger (2009d).
[1636] Anonymous (2007h).
[1637] Cf. Flauger (2008c); Flauger (2010d), p. 62.
[1638] RWE (2008), p. 26.
[1639] RWE (2008), p. 26.
[1640] Cf. RWE (2008), pp. 54, 133. This was also pointed out in public press. Cf. Köpke (2007c), p. 29.

regional suppliers.[1641] Moreover, in a personal reply to an article accusing RWE of market misuse, Großmann also used the tactic of referring to prestigious agents to refute these claims.[1642] By making a personal statement he again encountered critics for having brought in ex-foreign minister Fischer (see above).[1643] His impact on driving RWE's development has also been commented on by others, such as with regards to leading the company's expansion into Russia and Turkey, or into the renewables and nuclear sector. Also the successful acquisition of Essent or the bringing-in of powerful constituents in terms of important 'coups' have been attributed to his leadership.[1644] At the same time, examples of less pro-active, qualifying as defiant behaviour, can also be found. This, for instance, shows in statements such as: "Unfortunately, our demonstration of strength through billions of Euros invested in supply security and crisis-proof jobs during this period of economic weakness is often counteracted by political decisions. The debate on energy policy conducted in recent years and decades is deadlocked. This is a great worry to me."[1645] This not only supports the above finding of RWE's zic-zac path, but also the importance of stringent leadership for organisational development.

The impact of leadership can also be seen in the case of GdF. Especially its increasingly pro-active development since the long-planned merger with SUEZ has been fundamentally determined by the leadership qualities of its new CEO, Mestrallet, who was described as having made order out of "political industrial mess"[1646]. Having a very good educational background and successful career,[1647] and described as a 'discrete but belligerent fighter for his strategic vision while not being afraid of Sarkozy'[1648] he, despite all obstacles, had always remained determined and convinced of the success of joining the two companies. Already in

[1641] Cf. Flauger (2007c), p. 17.
[1642] Cf. Großmann (2009), p. 9.
[1643] Cf. Großmann (2011), p. 118.
[1644] Cf. Flauger (2009f); Flauger/ Stratmann (2009b).
[1645] RWE (2009a), p. 25.
[1646] Anonymous (2007n). This assessment is also supported by the already above mentioned evaluation of governmental interests being solved via energy policy or statements that Sarkozy had been "foolish enough" (Anonymous (2007k)) to make prime minister de Villepin announce the deal as a way to gain public support for having fended off French jobs being lost due to a takeover by an Italian company, making the merger appear like a "quick political fix to stymie the Italians, instead of a long-planned merger that made lots of industrial and financial sense" (Anonymous (2007k)).
[1647] With regards to Mestrallet cf. Meier/ Ruch (2008), p. 3.
[1648] Cf. Alich (2008b); Kuchenbecker (2008); Meier (2008), p. 3.

his function as CEO of SUEZ, he had aimed for preparing the company to compete against increasing competitive forces from rivals such as the newly privatised GdF. In fact, he had already successfully mastered SUEZ' turnaround to a profitable company, something which he achieved through strict cost cutting measures and asset sales that cut debt by half.[1649] As a state-owned company such measures had been paid little attention to at GdF until then. Moreover, Mestrallet had also explicitly pointed out the importance of the merger for the "indépendance énergétique de l'Europe tout entière"[1650], even the "shape of European energy for the next 50 years"[1651]. He thereby not only made "far more positive noises about meeting EU demands than about winning the support of its shareholders for the deal"[1652] but also used institutional topics as a means to drive business development. The former government-appointed CEO of GdF had early stated, too, that his mission was to "make GdF the first European utility"[1653] active 'from the wellhead to the burner tip'.[1654] Under his lead and in preparation of European market liberalisation, first internationalisation steps had been taken in 1997 with the acquisition of Italian Agip Servizi and through participation in the GASAG JV in Germany. Especially this latter move shows his drive as GASAG had been a "notorious loss-maker"[1655], turning GdF's participation into a forward-looking 'strategic manoeuvre'. Mestrallet's scope of activity had remained restrained, however, by the above mentioned barriers such as the general governmental involvement or the issue of reciprocity.[1656]

As valid for the three cases looked at so far, the impact of organisational leadership also holds as an explanatory factor supporting the development determined in ENI's case study research. When becoming CEO at the end of 1998, Mincato had already spent 42 years with ENI, bringing a strong reputation and detailed knowledge of the company.[1657] Based on his personal conviction of opposing M&As, he followed a selective expansion strategy and instead built on organic growth. Believing that ENI was not in the position to be able to

[1649] Cf. Anonymous (2005e).
[1650] De Monicault (2007).
[1651] Anonymous (2007k).
[1652] Anonymous (2006k).
[1653] Anonymous (1999d), p. 3.
[1654] Cf. Pederson (2001), pp. 191-194.
[1655] Anonymous (1998).
[1656] This may also explain why in 1998 GdF entered Latin America, setting up a subsidiary, MaxiGas Natural which began supplying different regions in Mexico.
[1657] Cf. Grant/ Ritter (2007), pp. 5, 16.

'divest' possible acquisitions,[1658] he gained a reputation for being a 'defender of domestic borders' with no interest in international expansion. These statements support the finding of ENI's restrained business development. Another indication is the accusation by the Italian government of Mincato as being too cautious. The government even tried to achieve Mincato's resignation, but failed due to the rejection by the board of directors. Apart from serving as a support for the assessment of ENI's restrained business development, it also distracted management attention from possible evolving opportunities, as did the power struggle which had developed after Mincato's appointment with the chairman at that time who then left the company one year later. At the same time Mincato's preference and conviction of not mixing politics and business[1659] explains ENI's active institutional behaviour of going to court (see case study). This is also supported by others who praise Mincato's modest approach and his ability to keep the state from interfering. Moreover, it brought him respect from other industry players. One recent example is a production project in Kazakhstan in which he made ENI take the lead before other majors could. Mincato is also said to be unimpressed by public opinion which again could explain ENI's modest institutional behaviour with regards to sustainability issues. Moreover, he managed to reorganise ENI into a single entity with three main divisions (see case study) and set up an internal change programme to provide it with a clear sense of identity and common culture.[1660] Apparently, ENI by now is assessed as being even so powerful as to 'guide' Italian foreign policy.[1661]

After having laid out the impact of leadership, other organisational characteristics such as an organisation's environmental perception, its goal formulation, and strategic focus are analysed.

[1658] Cf. Grant/ Ritter (2007), p. 7; Anonymous (2011a).
[1659] Cf. Anonymous (2011a).
[1660] Cf. case study by Grant (2007).
[1661] Cf. Kort (2008).

Environmental Perception and Goal Formulation

Again, E.ON and RWE serve as good starting examples due to their contrary development. Strikingly, it shows that E.ON not only was perceptive of different forms of environmental influences and driven to develop along, but also had the foresight to recognise the importance of having to pro-actively defend its existing competitive position.[1662] Moreover, it was always positive about change and looking to pro-actively shape the process in order to benefit from arising opportunities. Examples include the observation of markets not liberalised at that time or the possible investment into 'forward-looking' segments like the energy efficiency business.[1663] A similar positive perception of environmental change, likely to have benefited E.ON's development, can be found in the case of Ruhrgas. This, for example, shows in Ruhrgas' belief that risks resulting from liberalisation are "balanced out by business opportunities"[1664]. Apart from this general attitude more concrete examples support the path determined in the E.ON case study. The early realisation that "European rivals have become very active in the German market"[1665] and having learnt from "tough crowding-out competition"[1666] in the electricity market, for instance, explains E.ON's drive of defending its national territory by the tactics depicted in the case study. The rapid transition towards pro-active and creative strategies again can be said to have been driven by initiatives such as the 'fast-forward programme' (see case study). Another example is E.ON's willingness to accept costly out-of-court agreements with competitors (see case study) as a settlement in court would have meant further delay. In fact, the fast development of the energy business was pointed out a priority, especially in the gas business. E.ON's related early internationalisation strategy, for example, was driven by it having been "very resolute in capitalizing on entrepreneurial opportunities abroad"[1667] with "its sights *firmly set* on Belgium and Luxembourg"[1668]. The 'key belief' that in liberalised markets scale and integration are an essential competitive advantage again explains E.ON's further expansion along and across the

[1662] Cf. E.ON (2002), pp. 32, 47.
[1663] Cf. E.ON (2001), p. 11; E.ON (2002), pp. 16, 39; E.ON (2003), p. 7.
[1664] Ruhrgas (2004), p. 30.
[1665] E.ON (2003), p. 28.
[1666] E.ON (2002), p. 63.
[1667] E.ON (2002), p. 31.
[1668] E.ON (2002), p. 46. Italicised by author.

value-chain. The same holds true with regards to influences from the institutional environment and the behaviour observed. E.ON had early recognised that 'even in liberalised markets public policy plays a very important role in the energy business'[1669], that substitute fuels such as sewage or wood may be used and promoted to the public as a significant tool to advance environmental protection,[1670] and that biogas could be produced economically and at world market prices, even be able to replace natural gas.[1671] E.ON's aggressive institutional tactics can, amongst others, be explained by it having seen "the danger of Brussels reregulating Germany's energy market"[1672] as well as the increased restriction of business expansions through regulatory constraints which would have to be "fought for in courtrooms"[1673]. Crucially, while E.ON acknowledged that change was not foreseeable, it believed that significant influences could at least be anticipated, pointing out the need of not only having to be aware of influences from EU energy policy, but of also having to take into account other sources such as the Stern report[1674] (see chapter III). This was later further supported by Ruhrgas and holds with respect to all three energy policy goals. Driven by a general belief that their enforcement was not only counterproductive but presented an intervention into the conduct and corporate freedom of private enterprises, Ruhrgas had argued that "the fathers of the Treaties of Rome did not delegate responsibilities for energy supply security to European institutions but to the member states themselves"[1675], and that the Commission needed to account for the principle of subsidiarity. It also declared that "ultimately it is the companies who remain responsible for ensuring supply security" and that only "as a final resort, the European Union should become involved"[1676].[1677] Before liberalisation, and especially in relation with unbundling requirements, Ruhrgas had visualised its consequences in terms of losing control over its most strategic asset and ending up as a "collection of pipelines"[1678]. Facing such threats in fact made Ruhrgas announce that

[1669] Cf. E.ON (2001), p. 11.
[1670] Cf. E.ON (2001), p. 51, E.ON (2002), pp. 61, 65-66.
[1671] Cf. Klein (2007), p. B12; von der Weiden (2007), p. B6.
[1672] E.ON (2005b), p. 56.
[1673] Wildhagen/ Müller (2006), p. 46. Translation by author.
[1674] Cf. E.ON (2007), pp. 22-25, 63.
[1675] Ruhrgas (2004), p. 17.
[1676] Ruhrgas (2004), p. 19.
[1677] Cf. Ruhrgas (2003), pp. 6-7, 10-13; Ruhrgas (2004), pp. 9, 55; Ruhrgas (2005), pp. 9, 55-57.
[1678] Estrada et al. (1988), p. 253.

it was willing to "*fight* to its death"[1679], a statement also revealing its underlying attitude which in the end translated into pro-active institutional behaviour as laid out in the case study. Moreover, this attitude was shown in its rejection of the consensus found with the other 15 TSOs with regards to the anti-competitiveness of long-term gas contracts between TSOs and DSOs, Ruhrgas in the end being the only company to file suit.[1680] Similarly, it attacked authorities by *cynically commenting* that "contrary to what is said in benchmarking reports"[1681], which it thought to represent "a predominantly negative picture"[1682], it believed "that the EU Commission has confirmed the wisdom of its purchasing policy"[1683]. Moreover, by publicly questioning institutional requirements, arguing, for instance, that an increase in regulation had not proven its superiority, it not only aimed to take influence but to even exert control over institutional agents' plans and further measures by taking over the lead in initiatives aiming to implement "less radical instruments"[1684]. At the same time, in order not to threaten its legitimacy, it also showed cooperative forms of behaviour, such as by promoting the expansion of its sourcing activities or its engagement for NGVs by pointing out their benefit for the EU's security of supply and sustainability goals.[1685] Also the fact that E.ON had early pointed out that Ruhrgas' "efforts in the area of environmental stewardship often go well *beyond compliance* with environmental regulations"[1686], qualifying as a manipulative form of institutional behaviour, shows its awareness of the criticality of these issues on legitimacy and its value in this respect. Thus, when taking over Ruhrgas, E.ON not only had acquired ownership over or access to strategic assets, but to institutional capital that allowed it to drive its institutional as well as market development as shown in the case study analysis.

Closely related to E.ON's environmental perception are its goal statements. These also support explanations for the development path determined. In fact, E.ON's goal formulation

[1679] Estrada et al. (1988), p. 253. Italicised by author.
[1680] Cf. Bundesnetzagentur (2006), pp. 29-30; E.ON (2007), p. 97; E.ON Ruhrgas (2008), p. 59.
[1681] Ruhrgas (2004), p. 16.
[1682] Ruhrgas (2004), p. 15 (page references to binding). Also cf. Ruhrgas (2002), pp. 9-10; Ruhrgas (2003), pp. 11-12; Ruhrgas (2004), pp. 13-19 (page references to binding), pp. 8-11, 55.
[1683] Ruhrgas (2004), p. 9.
[1684] Ruhrgas (2003), p. 13.
[1685] Cf. Ruhrgas (2004), pp. 18, 37; E.ON (2003), pp. 73, 97.
[1686] E.ON (2004), p. 73. Italicised by author.

has been very ambitious right from the start. This already shows with regards to the 'founding' merger from VEBA and VIAG (see case study). The aim of the newly created company was to develop '*the* leading European Powerhouse'[1687] by continuously improving profitability and creating a competitive market positioning. Also here, Ruhrgas' positive influence becomes apparent as it not only had adopted a profit-orientation and willingness to take risks early on but was continuously striving for efficiency and growth while defending its position as a market leader against major national as well as foreign rivals.[1688] This drive can in fact still be found in E.ON's recent and more concrete business related goals, such as embarking on the "road to becoming the world's leading energy services provider"[1689]. Only shortly after these statements had been made, E.ON already saw itself as a market leader which was "committed to adapting to changing markets *faster and better than our rivals*"[1690] and of doing so by "recognizing and actively shaping market trends"[1691]. Similarly, environmental and climate protection issues received a relatively large degree of attention right from the beginning. Another success factor is likely to have been the view of evaluating asset investments not only according to economic criteria but also to the parameters 'environment, customer relationships and the public'.[1692] Furthermore, E.ON not only viewed itself as "shaping change in global energy markets"[1693], but as "superbly positioned to meet the new challenges of its changing European market environment"[1694]. It even considered itself as a 'pacemaker' of European market integration and of enhancing CSR measures, well on the way to becoming the world's leading power and gas company as formulated above.[1695]

In RWE's case, too, the statements found support the results from above. In line with the pro-active behaviour detected in the beginning, its environmental perception and goal statements

[1687] Cf. E.ON (2001), p. 11. Italicised by author
[1688] Cf. Körting (1963), pp. 495, 565-582, 591; Schreiter (1965), pp. 96-108; Ruhrgas (2003), pp. 16-23; Ruhrgas (2004), pp. 13, 21, 41 and others; Anonymous (2003a); Focht (2008c), p. 16. Wintershall, having been part of the consortium to build the second major pipeline into Germany (see above) has been assessed as a "challenger to Ruhrgas" (Rossert (1996), p. 26), making the latter gain experience in price and legal wars though. Cf. Estrada et al. (1995), p. 97.
[1689] E.ON (2003), p. 28.
[1690] E.ON (2004), p. 53.
[1691] E.ON (2004), p. 53.
[1692] Cf. E.ON (2009a), p. 55.
[1693] E.ON (2007), p. 58.
[1694] E.ON (2008), p. 74.
[1695] Cf. E.ON (2007), p. 58; E.ON (2008), p. 58; E.ON (2009a), pp. 5, 7, 38.

reveal that it not only was aware of the fact that utilities were 'highly integrated in a political, legal and social structure subject to continuous change'[1696], but that "within one year the realm in which energy utilities operate has radically changed"[1697]. While it found the full impact difficult to foresee, changes such as deregulation were still seen to leave "an indelible mark"[1698] that again left 'little time' for reaction.[1699] Starting with the merger with VEW's businesses, which "against the backdrop of deregulated markets"[1700] were seen as supplementing and reinforcing RWE's core activities, RWE had decided to make a fundamentally new start by creating a 'new' company with a "fresh appearance"[1701]. This was believed to be setting an "inimitable landmark in the competitive environment"[1702] for the first time in its history. Moreover, by providing "additional momentum"[1703], and particularly so in the gas business,[1704] the merger with VEW was intended to provide the launching pad for further expansion. Intensions for rapid development also show in corporate principles such as "Don't waste time in the beginning, don't let up later on"[1705], an approach that was believed to be "the most far-reaching change process"[1706] in the company's history. This new orientation was to be put into practice by 'revamping', i.e. breaking down, the value chain into unbundled, fast-responding and effective operating units, each with a certain focus on a key competence.[1707] This is also reflected in the perception of itself as a forward-looking, learning-focussed pacemaker with entrepreneurial creativity and the potential to occupy one of the foremost positions in tomorrow's dynamic utility market,[1708] even more so in that "the new RWE has set the pace in the transformation process shaping Europe's energy and

[1696] Cf. RWE (2001), pp. 7, 45.
[1697] RWE (2001), p. 58.
[1698] RWE (2001), p. 28.
[1699] Cf. RWE (2001), p. 54; RWE (2002), p. 6; RWE (2003), p. 51; RWE (2004), pp. 56-57, 60-64.
[1700] RWE (2001), p. 63.
[1701] RWE (2001), p. 16. This also included the establishment of a new logo which shows a symbolic hand against a blue background, illustrating the multi-utility concept, i.e. all services from one hand, and the company's brand values of competence, customer proximity and approachability. Cf. RWE (2001), p. 16. The logo is still used today.
[1702] RWE (2001), p. 16.
[1703] RWE (2001), p. 62.
[1704] Cf. RWE (2001), p. 71.
[1705] RWE (2003), p. 23.
[1706] RWE (2001), pp. 4, 28.
[1707] Cf. RWE (2001), pp. 4-7, 13, 28, 49.
[1708] Cf. RWE (2001), pp. 4-7, 17; RWE (2002), pp. 4-5, 9, 68.

environment markets"[1709]. Another example is the perception of its subsidiaries as playing the role of reference companies.[1710]

While this evidence characterises RWE's orientation at the very beginning, the analysis of the following years reveals a critical difference in that the paramount goal of corporate strategy became the increase of shareholder value and become a cost leader in the European market. The formulation of becoming 'a', not 'the' cost leader is especially striking here as it reveals no strive for leadership as found in E.ON's case. To achieve this, a major cost-cutting and efficiency programme was launched and continuously expanded over the years.[1711] The paramount focus on costs and efficiency is particularly reflected in the return-driven pricing policy which was rooted in the principles of 'margin before market share' and 'margin over volume'. As this strategy at the same time required "an increasing readiness to decline low-margin orders"[1712], cost management and financial discipline were believed to provide the basis for differentiating from competitors in a commodity business such as energy. While this coincides with the development towards more passive behaviour as determined in case study analysis, this assessment is further supported by statements that the internationalisation process was seen as being "largely completed"[1713] as soon as the end of 2002. The fact that RWE was looking to follow a strategy of regional focus in clearly defined markets "instead of banking on a widely diversified geographic presence"[1714] again characterises another major difference to E.ON's strategic orientation. Similarly, instead of expanding, the year 2003 was taken as the "year of consolidation"[1715], guided by the new CEO Roels. As a consequence, instead of following the expansion plans set out in the beginning, growth was not a priority anymore. Especially 'growth at any price' was not believed to be the right strategy, particularly in view of the high prices of possible acquisition objects which forced RWE to drop out of auctions even in its core regions. Instead, by stating that "patience is of the

[1709] RWE (2002), p. 4.
[1710] Cf. RWE (2003), p. 51.
[1711] Cf. RWE (2001), pp. 6, 38-39, 49-50, 68; RWE (2002), pp. 4-7, 54; RWE (2003), p. 7; RWE (2004), p. 40; RWE (2005), pp. 44-45.
[1712] RWE (2002), p. 71.
[1713] RWE (2003), p. 6.
[1714] RWE (2003), p. 6.
[1715] RWE (2004), p. 4.

order"[1716] and that "we are not in a rush"[1717], Roels himself indicated that 'growing organically in a disciplined and moderate way' was to remain the preferred mode.

A slight change in behaviour, in the case study characterised as an indication towards more active, i.e. analysing, behaviour, can be found with regards to the extension into the renewables business and geographical presence as RWE began to include the 'whole' European market in its expansion plans, instead of only speaking of a regional focus. When looking at the environmental perception during this period, a coinciding change can be detected which supports the assumptions made. Precisely, other than in the years before where competition and regulatory forces were only *expected* to become stronger, the years 2007 and 2008 were characterised as years where competition, customer demands, the willingness to switch suppliers, and regulatory requirements were pointed out as *in fact* having become fiercer.[1718] Moreover, instead of merely seeing environmental changes as threatening challenges, its "outstanding opportunities"[1719] were mentioned once more.

The same also holds true with regards to institutional behaviour observed and RWE's perception of changes in this respect. The augmented attention paid to institutional issues not only shows in the fact that the volume of documents and the frequency with which they were published increased, but also by the intenseness of reporting. Other than in the years before, for instance, the Chairman of the Supervisory Board Report pointed out that "a considerable amount of time was dedicated by the Supervisory Board to discuss changes in conditions underlying energy policy and their impact (…)"[1720]. In 2005, while still *assuming* that regulatory and political conditions were "unlikely to become any easier"[1721], this perception was beginning to change. Perceiving that there was hardly a day passing "without us being confronted by new issues of energy policy"[1722] such as the issue of supply security having

[1716] RWE (2006), p. 23.
[1717] RWE (2006), p. 6.
[1718] Cf. RWE (2006), p. 21; RWE (2007), pp. 19, 31; RWE (2008), p. 38; RWE (2009a), pp. 32-35. Italicised by author.
[1719] RWE (2009a), p. 33.
[1720] RWE (2007), p. 97. This also still holds true for the following years. Cf. RWE (2009a), p. 121.
[1721] RWE (2006), p. 21. Italicised by author.
[1722] RWE (2007), p. 4.

"moved up the political agenda"[1723] and that politicians were "increasingly inclined to regulate functioning market processes more intensely"[1724], RWE remarked on the possibility that the stricter monitoring of anti-competitive practices could increase the number of inquiries and thus of further legal disputes.[1725] The implementation of the EU Energy and Climate Package 2013-2020, the legal framework created for CCS, or the Third Liberalisation Package which required 'paying intense attention to' were also recently mentioned.[1726] Apart from these augmenting regulatory pressures also those from other institutional sources such as the public were pointed out. Facing the situation that "the public believes that competition has not really got off the ground"[1727] and that people were demanding that energy supply was affordable, reliable and environmentally friendly, RWE realised that behaviour needed to become more pro-active and attention paid to its legitimacy, especially as "the debate on rising energy prices has a substantial impact on our reputation in the public eye and influences the regulatory context"[1728]. At the same time, financial markets were "placing mounting demands on not only corporate transparency, but also sustainability"[1729], too, leading RWE to realise that "our company's performance is not expressed in terms of commercial success alone"[1730]. This new attitude is also reflected in the motto 'Do it' of its 2008 Annual Report, mirroring RWE's ambition of 'not stopping to promote the necessary changes with constructive suggestions and initiatives on all political levels',[1731] or in the launch of a new campaign 'The energy to lead' particularly directed at "the public at large"[1732].

The explanatory power of such factors on organisational behaviour also shows when looking at ENI's and GdF's development which could be characterised as 'mono-sectorally' focussed

[1723] RWE (2007), p. 6.
[1724] RWE (2009a), p. 22.
[1725] Cf. RWE (2008), p. 102.
[1726] Cf. RWE (2009a), pp. 25, 32-33, 49-52, 96. In addition to these measures at EU level, several national regulations have become stricter, such as the Renewable Energy Act in Germany or regulations implemented by the U.K. government which force energy companies to promote energy saving measures to household customers and thereby also provide assistance to low-income consumers, a requirement which for RWE npower resulted in an additional spending of €90 million. Cf. RWE (2009), pp. 50, 73.
[1727] RWE (2008), p. 26.
[1728] RWE (2009a), p. 141.
[1729] RWE (2009a), p. 145.
[1730] RWE (2009a), p. 141.
[1731] Cf. RWE (2009a), p. 25.
[1732] RWE (2009a), p. 40.

(see chapter IV). The notion of environmental perception is particularly valuable in ENI's case as it supports the finding of its initially passive business in comparison to its active institutional development. That is, having analysed ENI's underlying environmental perception it is striking that despite the realisation of, for example, increasing competition (also see case study), statements initially remained undifferentiated. This reveals in statements such as that "the world energy scenario"[1733] was generally presenting itself as "quite different"[1734]. Also stakeholders were only addressed in the widest sense. Moreover, those forces which were particularly emphasised were related to the upstream business, such as the development of the oil price and thus the exchange rate of the Euro over the dollar.[1735] This also puts goal statements into relation, such as 'creating shareholder value and increasing size through continuous growth as lying at the heart of strategic priorities'[1736] which otherwise do not coincide with the passive business behaviour determined. Market changes mentioned with regards to European energy policy were only indicated broadly. This reveals in statements such as that "many of the cultural and industrial certainties that had accompanied ENI's history were starting to fade out"[1737]. Examples include ENI's 'institutionalised role as the country's oil and gas supplier with a virtually monopolistic position on supply, transmission, and sales of natural gas'[1738]. Likewise, change was not further identified and its consequences depicted vaguely as creating "risks *in terms* of margins levels"[1739].

[1733] ENI (2004a), p. 12.
[1734] ENI (2005a), p. 11.
[1735] Cf. ENI (2002a), pp. 5,8; ENI (2003a), pp. 9, 12; ENI (2004a), p. 11; ENI (2005a), pp. 11-12; ENI (2006a), p. 10; ENI (2007a), p. 8; ENI (2008a), pp. 9-10; ENI (2009a), p. 9. In this respect, particularly the oil price increase of 2004 was mentioned, on the one hand enabling to generate "huge cash flows" (ENI (2006a), p. 10) and thus investments while on the other hand increasing the value of the companies' reserves, making acquisitions expensive. Uncertainty also shows in the expected development of oil prices. While in 2002 and 2003 oil prices were projected to remain around $16 per Barrel until 2007 (cf. ENI (2003c), p. 4; ENI (2004c), p. 4), it already peaked over $35 in 2003 (cf. ENI (2004a), p. 9) and increased to over $50 in 2004 (cf. ENI (2005a), p. 10).
[1736] Cf. ENI (2002a-2009a). Mission statements in Annual Reports from 2001 to 2005, no page numbers. For ARs 2006-2008 cf. ENI (2007a), p. 8; ENI (2008a), p. 9; ENI (2009a), p. 9. The continuity of these statements was specifically pointed out through remarks such as looking to for 'continuous growth' (cf. ENI (2003a), p. 13; ENI (2009a), p. 9) or that growth '*still* is' the main objective (cf. ENI (2005a), p. 12, emphasis added).
[1737] ENI (2003a), p. 11.
[1738] Cf. ENI (2003a), p. 11.
[1739] ENI (2003a), p. 12. Italicised by author.

An even stronger indication is provided by statements from management which for a long time had only 'believed' that liberalisation would influence the company's conduct such as by 'possibly' decreasing margins.[1740] This also coincides with the belief that the "original entrepreneurial spirit of being a company able to create value"[1741] needed to be recovered first in order to achieve more ambitious targets than before, e.g. qualifying as a permanent member among the oil majors as mentioned above, or that the new energy world only required an *adequate* response.[1742] While this restricted focus resulted in ENI having lost a lot of time due to "playing catch up with leading oil majors"[1743], the perception of its relevant environment, which is also reflected in the attitude of feeling of only having to "*cope* with the process of opening up the Italian market"[1744] instead of actively driving its development, supports the finding of it perceiving change as a threat rather than an opportunity to be capitalised on. This attitude also becomes apparent from the fact that, despite pending infringement processes, ENI did not consider it necessary to accrue a contingency reserve for penalty payments (see example above).[1745] Despite still having pointed out oil companies and large customers as being its main competitors in 2008,[1746] a change in perception towards taking an integrated approach can be observed to have begun around 2006. While new entrants were still perceived as constituting a threat for the fulfilment of ToP contracts,[1747] the ongoing market opening was depicted as a development towards a "broadly favourable trading environment"[1748]. This perception indicates that ENI was beginning to see possibilities for taking advantage of changes in European energy policy. In the case study this is reflected as a change towards more active business behaviour. Moreover, being a 'master of balancing' its governmental relationships SNAM acted as a door-opener for engagements in important international pipeline and LNG projects.[1749]

[1740] Cf. ENI (2002b), p. 6; ENI (2003b), p. 6; ENI (2004b), p. 6; ENI (2005a), p. 10; ENI (2005b), p. 7; ENI (2006b), p. 7; ENI (2007b), p. 8.
[1741] ENI (2002a), p. 5.
[1742] Cf. ENI (2002a), pp. 5, 7. Italicised by author.
[1743] Grant (2007), p. 16.
[1744] ENI (2002a), p. 8. Italicised by author.
[1745] Cf. ENI (2003a), p. 31.
[1746] Cf. ENI (2009b), p. 54.
[1747] Cf. ENI (2007a), pp. 32-33.
[1748] ENI (2007a), p. 8.
[1749] Cf. Estrada et al. (1988), pp. 251-254; Estrada et al. (1995), pp. 101-103. This was also pointed out later by Finon et al. (2004), pp. 332-333.

In comparison, with regards to the influence of institutional forces it shows that a relatively high awareness existed right from the beginning. This, for instance, reveals in statements such as that "the scenario of health, safety and environmental issues is characterised by increasing rejection of industrial settlements by local communities, stricter regulations, ever increasing requests for information and evaluation of results and, therefore, higher availability of stakeholders to favour proactive companies capable of coping with the new challenges of sustainability"[1750]. Such a different perception in the case of its institutional environment may also be explained by the above mentioned resistance of communities against energy projects in Italy, having forced Enel into a partnership with GdF. In 2005, this was even further enlarged on. ENI stated, for example, that particularly industries "involved with energy, operate in a context that has become increasingly aware of the importance of the protection of health, safety and most of all the environment"[1751]. It also found that many stakeholders not only exerted strong pressure on companies and influenced activities, but also paid special attention "to the ability of a company to operate in the medium and long term in a framework of sustainability, conciliating economic with environmental and social objectives"[1752]. Having realised that there was a "growing request for attention to the environment both in the definition of strategies and in the management of operations"[1753], ENI responded with active institutional behaviour as depicted above. Also the belief that the creation of shareholder value should be achieved in compliance with appropriate behaviour towards *all* stakeholders[1754] supports the finding that institutional issues seem to have received principal attention.

Similar explanations can be found in the case of GdF. Noticeably, despite seeing itself as "proactif"[1755], environmental change was not specified initially and only mentioned relatively late. This aspect explains the passive development found in the beginning of analysis. Moreover, even when considered, change was merely perceived as a constraint in form of

[1750] ENI (2004a), p. 14.
[1751] ENI (2005a), p. 13.
[1752] ENI (2005a), p. 13.
[1753] ENI (2005a), p. 13.
[1754] Cf. ENI (2002a), p. 7. Italicised by author.
[1755] Carrière/ Balard (2004), p. 519.

holding "numerous risks for the Company"[1756]. Especially those deriving from regulatory changes, such as from deregulation and liberalisation, were perceived as posing "contraintes stratégiques"[1757]. This can be explained by the fact that GdF at that time was subject to several legal investigations,[1758] making the impact of such forces more paramount. Simultaneously, despite also having pointed out increasing threats from other European suppliers,[1759] GdF not only still perceived Total, an oil major, as its main competitor, but this as also being "rather far behind"[1760]. Only as late as 2006 perception changed towards generally seeing the environment as "an essential component"[1761] and market opening increasingly as an opportunity to gain access to new clients, develop activities across Europe, and to establish itself as a benchmark company in the area of natural gas distribution.[1762] Thus, while the initially restricted perception of competition also supports the finding of GdF's passive behaviour in this respect, the recent change of perception serves as an explanation for the more active development revealed. The same holds true with regards to mentioning the need to guarantee security of supply, or the notion of sustainability in that respective measures were beginning to be looked at as 'extra assets' to increase customer loyalty, even acquire new ones, while controlling risks and performance. Even more, statements show the realisation that previous activities were not sufficient to offset negative consequences and that an inadequate view of risks could over time lead to a discrepancy between policy and stakeholder expectations. This again was feared as possibly being sanctioned through a downgrading of its sustainability ranking and the alteration of the Group's image while investment and compliance costs would increase to finally result in a decrease of investor and customer confidence and in the loss of market share.[1763]

This is also reflected in GdF's goal formulation and finally in its behaviour. That is, supporting the passive development found, goal statements remained restricted to the *intention* of strengthening its existing businesses while at the same time focussing on local

[1756] GdF (2006), p. 15. Also GdF (2007) and GdF (2008a), p. 11.
[1757] Carrière/ Balard (2004), p. 516. Also cf. GdF (2006), p. 17; GdF (2007), pp. 13-14; GdF (2008a), p. 13.
[1758] Cf. GdF (2006), p. 17; European Commission (2007a), p. 260; GDF SUEZ (2009a).
[1759] Cf. GdF (2006), pp. 15, 86-88.
[1760] GdF (2006), p. 88.
[1761] GdF (2006), p. 90; GdF (2007), p. 96.
[1762] Cf. GdF (2007), pp. 32, 69; GdF (2008a), pp. 32, 71.
[1763] Cf. GdF (2006), pp. 20, 83-85; GdF (2007), pp. 17, 39, 87-90; GdF (2008a), pp. 14-16, 30, 39, 56-57, 90-97.

needs.[1764] And although more active goals were formulated in the following years, this did not translate into more pro-active strategies as can also be seen from statements of wanting to *participate* in growth opportunities[1765] instead of driving them. In accordance with the alteration of development made out above, this began to change after the merger and can be found in formulations referring to business as well as institutional goals. This is characterised through business-oriented objectives of aiming to 'boost market performance by reducing costs' and to 'become the leading multi-energy provider of natural gas' as well as through institutionally-oriented goals such aspiring to turn the company into a 'sustainable development actor' who shows commitment to the environment by promoting renewables and is committed to transparency.[1766]

This drive becomes even more prevalent in the joint GDF SUEZ documents where the new company's goal was formulated as becoming 'a leading global player in the energy and public utilities industry'[1767]. Its mission again was formulated as tackling "the major energy and environmental challenges"[1768] with sustainable development being 'an imperative that forms the identity of the new Group' and a 'decisive criterion in strategic choices'.[1769] Also this has begun to translate into driving corporate development as depicted in the case study. The company's development towards realising the importance of combining managerial performance with social responsibility has recently been pointed out by others as well.[1770] Apart from this, the positive influence from SUEZ also becomes apparent with regards to the perception and valuation of its substantial midstream assets (see above) which by now are realised as not only 'significantly contributing to the Group's financial value'[1771] but also as a strategic business. While GdF in 2007 still only regarded storage as a tool to balance summer and winter demand,[1772] it was pointed out to be an important strategic asset after the

[1764] Cf. Anonymous (1999d), pp. 2-3; Pederson (2001), p. 192. Italicised by author.
[1765] Cf. GdF (2005), pp. 3, 16; GdF (2006), pp. 36-37; GdF (2007), pp. 38-40; GdF (2008a), pp. 38-40. Italicised by author.
[1766] Cf. GdF (2008a), pp. 56-57.
[1767] Cf. Suez (2008c), p. 129.
[1768] GDF SUEZ (2009a), p. 182.
[1769] Cf. GDF SUEZ (2009d), p. 29.
[1770] Cf. Dufour (2009), pp. 145-155.
[1771] Cf. GdF (2008a), p. 31.
[1772] Cf. GdF (2008a), pp. 51, 68, 70, 100.

merger.[1773] In total, these measures enabled it to limit losses through market opening in this segment and as a result GdF's European sales had "more than made up in volume for its lost sales resulting from the opening of the French market"[1774] by 2007.

Strategic Focus and Corporate Vision

Closely related to environmental perception and goal formulation is an organisation's self-perception and strategic focus. Again, E.ON serves as a leading example. Aiming to create a 'one-stop energy shop'[1775], E.ON's development was driven by the focus on core businesses and the 'clear understanding' that non-core businesses had to be divested over the course of time to increase shareholder value and free up resources in order to finally make it one of the biggest investor-owned energy service providers and the world's largest specialty chemicals group. This is also symbolised by the connotation of the new name 'E.ON', meaning 'new energy', which had also been chosen to promote the brand's personality in top international publications and campaigns to investors and opinion leaders. This at the same time reveals E.ON's early realisation of the importance of such institutional agents. Another success factor likely to have driven E.ON's development is its focus of having strategically analysed and systematically seized opportunities while not having taken its eyes of day-to-day operations. Neither did E.ON radically change its course despite substantial organisational restructuring after the merger of VIAG and VEBA.[1776]

When looking at the other three cases in contrast, several differences can be determined. In ENI's case, strategic focus was initially mainly directed towards upstream operations, while opportunities for business development which arose through the changes in European Energy Policy were neglected (see case study). GdF's strategic focus again is likely to have been distracted by the fact that it had to separate its grid activities from those of EdF, a process

[1773] Cf. GDF SUEZ (2009d), p. 61.
[1774] GdF (2008a), p. 30.
[1775] This expression refers to providing electricity, gas, heat, and possibly water services under one corporate roof. Cf. E.ON (2001), p. 11.
[1776] Cf. E.ON (2001), pp. 10, 16; E.ON (2004), p. 23.

which had required "significant reorganization"[1777] so that organisational resources could not be applied to significantly develop other areas. This only began to change after the merger and hence again shows Suez' contribution as already indicated above. Also here, this holds for the business as well as institutional development. Essentially, SUEZ not only had a long organisational history and thus experience, but had become a multi-utility company with a "declared vocation"[1778] of selling electricity, water, and waste and engagements in more than 130 countries.[1779] Moreover, it also brought in its experience with shareholder demands and its endeavour for profit-orientation. This impact shows, for instance, in the fact that GdF mentioned the importance of compiling a cost reduction plan for the first time only in 2007.[1780] Even more, the merger with SUEZ derived GdF of the image of being a government-driven company, making expansion, especially across Europe, easier. That this was becoming increasingly important can be seen from the fact that the take-over attempt of SWL (see case study and above) had actually failed because of a local referendum against SWL's privatisation and its take-over by GdF as a governmentally driven company.[1781] The same holds true with regards to the targeted purchase of a stake in EWE, Germany's fifth largest regional supplier. Also here GdF lost out as EWE was acquired by German EnBW.[1782]

Similarly, despite having been engaged in environmental measures relatively early, these issues were only addressed and pointed out much later (see case study) after the merger with SUEZ. This shows in "a clear desire to place sustainable development at the very center of the Group's strategy in order to participate in the most strategic stakes, such as the building up of its image"[1783]. Another indicator is GDF SUEZ marketing itself as "the *only* utility group to develop operations and expertise over the entire gas and electricity value chain, upstream and

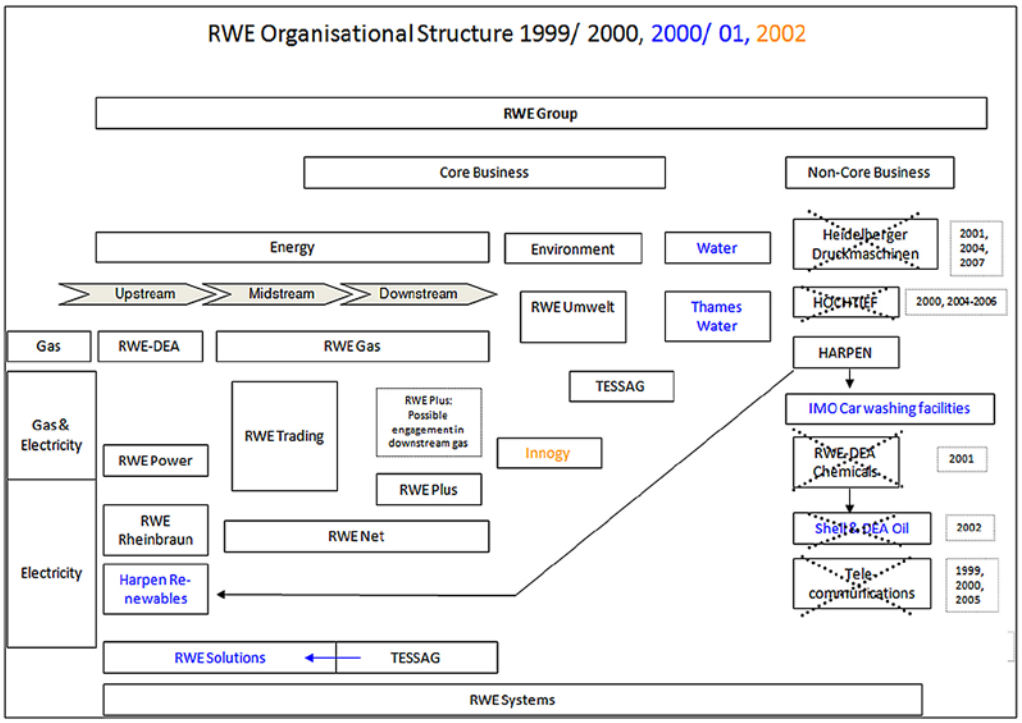
[1777] GdF (2006), p. 18; GdF (2007), p. 15.
[1778] Anonymous (1999c).
[1779] Suez was founded in 1859 as 'Compagnie Universelle du Canal Maritime de Suez' to build the Suez canal. Over the course of centuries it developed into a holding company with equity investments in the financial services and energy sectors in Belgium and France. In 1997, Compagnie de SUEZ merged with Lyonnaise des Eaux to become SUEZ. Cf. Suez (2003), p. 5; GDF SUEZ (2009a), p. 37. This was also pointed out by Finon et al. (2004), pp. 324-325.
[1780] Cf. GdF (2008a), p. 39.
[1781] Cf. Schroeter (2007c), p. 5; Lenz (2008).
[1782] Cf. Flauger (2008a); Flauger (2008b).
[1783] GdF (2007), p. 86.

downstream, in Europe and around the world"[1784] with a unique profile based on global presence and capabilities in the energy and environmental sector as core businesses across the value chain.[1785] The basis of this orientation was seen to be lying in the Group's large asset base, especially its global and diversified upstream supply portfolio which constituted a major strategic trademark that "sets us apart from other utilities in Europe"[1786]. Also its strong position in the midstream segment, here in particular its LNG assets, was believed to provide it with a competitive advantage in that it allowed the Group to make use of the gas-electricity convergence "more than any other player"[1787]. In the downstream business, GDF SUEZ saw its 'diversified, efficient, flexible and sustainable' electricity production portfolio, based on its renewable, nuclear and natural gas sources, as a critical source for developing a multi-energy offer.[1788]

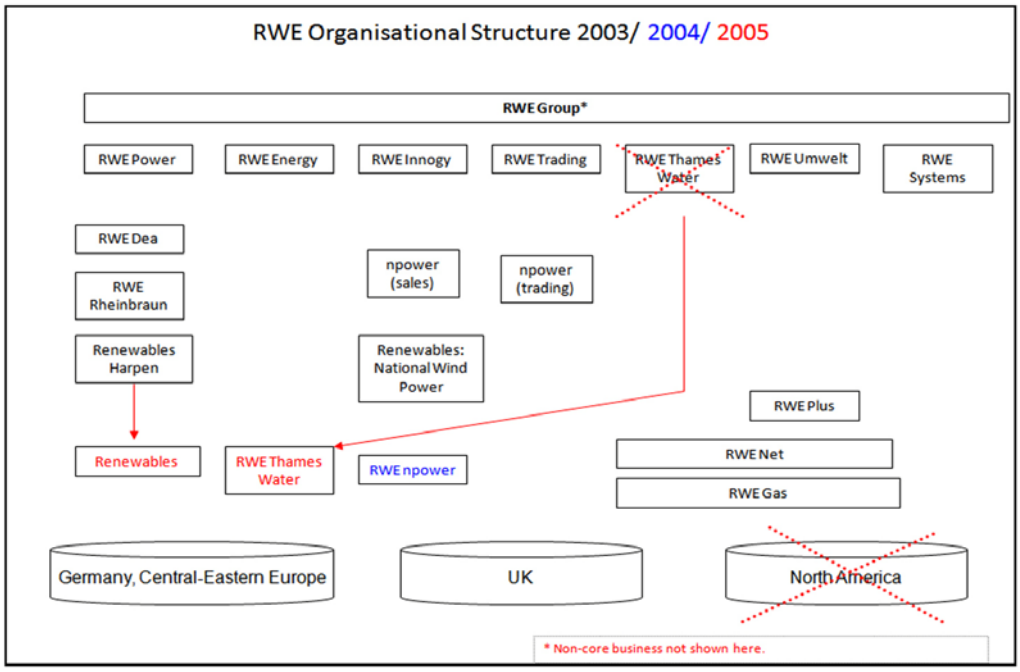
The criticality of strategic focus and, respectively, resource allocation is even more prevalent in the case of RWE. As laid out in the case study, but also explicitly stated as its strategic focus, RWE defined itself as a multi-utility, all-inclusive provider of electricity, gas, water, waste disposal, and energy-related services. As pointed out by the company itself, this constituted an approach which required significant resources and attention.[1789] The realisation of this in relation to the operational difficulty of implementing such a multi-utility business model is likely to have contributed to the attempt of re-organising corporate structures. As laid out in the case study, this did not take place as a stringent process, but was characterised by a continuous change between acquisition and divestment activities and accompanying re-organisation. This lack of strategic focus becomes particularly apparent when depicting RWE's process of organisational restructuring illustratively as shown in the figure below. As this process is particularly characteristic for RWE and supports the finding of its diverged path, such an illustration has only been made in for its case.

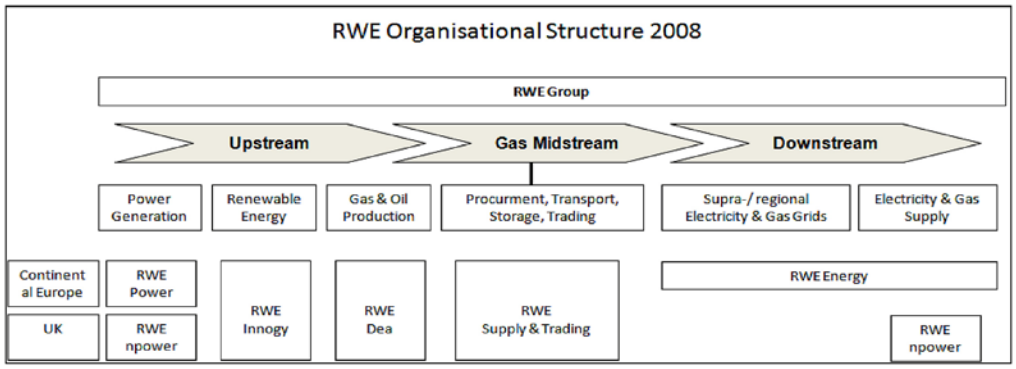
[1784] GDF SUEZ (2009d), p. 28. Italicised by author.
[1785] Cf. GDF SUEZ (2009a), p. 50; GDF SUEZ (2009d), p. 28.
[1786] GDF SUEZ (2009d), p. 7.
[1787] GDF SUEZ (2009d), p. 4.
[1788] If not indicated otherwise the following was taken from GDF SUEZ (2009a), p. 50.
[1789] Cf. RWE (2001), pp. 18-19; RWE (2002), p. 24.

Figure 32:[1790] RWE's process of organisational restructuring (1998 to 2008) – Revealing a lack of strategic focus



[1790] Own figure based on findings from above.


RWE Organisational Structure 2003/ 2004/ 2005
RWE Group*
RWE Power
RWE Energy
RWE Innogy
RWE Trading
RWE Thames Water
RWE Umwelt
RWE Systems
RWE Dea
RWE Rheinbraun
Renewables Harpen
npower (sales)
npower (trading)
Renewables: National Wind Power
RWE Plus
Renewables
RWE Thames Water
RWE npower
RWE Net
RWE Gas
Germany, Central-Eastern Europe
UK
North America
* Non-core business not shown here.


RWE Organisational Structure 2008
RWE Group
Upstream
Gas Midstream
Downstream
Power Generation
Renewable Energy
Gas & Oil Production
Procurment, Transport, Storage, Trading
Supra-/regional Electricity & Gas Grids
Electricity & Gas Supply
Continent al Europe
RWE Power
UK
RWE npower
RWE Innogy
RWE Dea
RWE Supply & Trading
RWE Energy
RWE npower

8.3 Performance Appraisal – Determining Success of Incumbents' Development Paths

Having revealed different organisational paths and their drivers, so far nothing has been said about the outcome of these developments. While it has been argued that in the long-run passive behaviour is not successful and active, if not pro-active, behaviour sets the basis for creating a (sustainable) competitive advantage, it has also been pointed out that there is not necessarily one 'best path' of development. In the following, a look will therefore be taken at incumbents' performance.[1791] In coherence with the approach taken adopted this is done by determining business-related performance such as market capitalisation, turnover, and net income,[1792] as well as stakeholder perception as an institutional performance indicator for legitimacy.

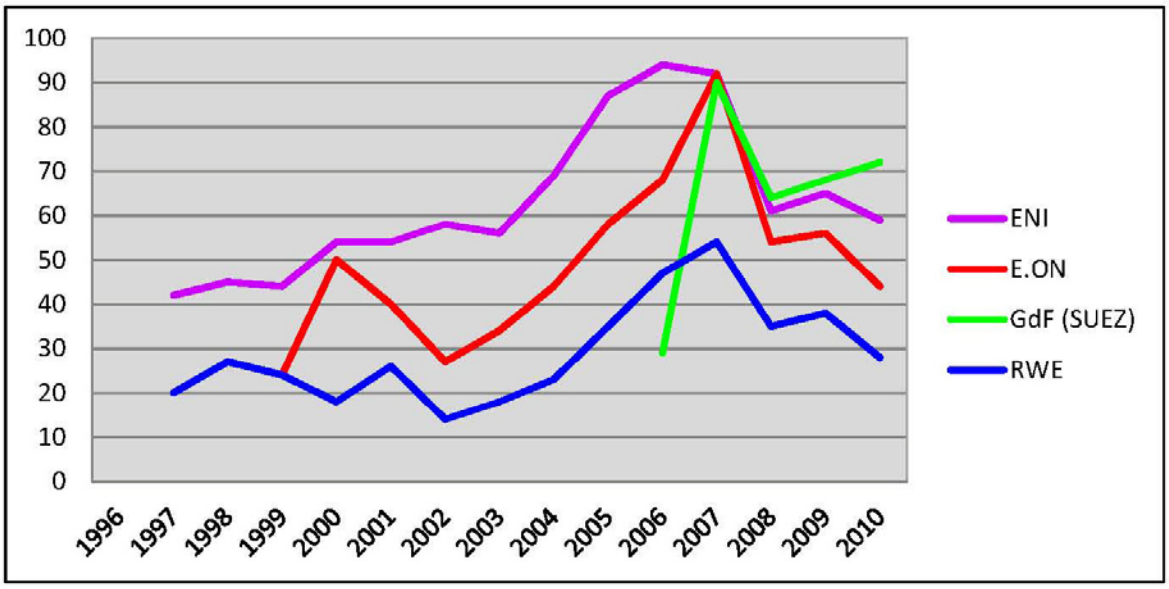
8.3.1 Market Capitalisation

Beginning with market capitalisation, which is often used as a major indicator for organisational performance from a financial perspective, the following figure shows the comparison of the development of market capitalisation of the four case companies.

[1791] Some even believe that "research questions are inherently uninteresting or trivial unless they include an explicated linkage to performance" (Meyer (1991), p. 825).

[1792] If not indicated otherwise, the figures mentioned have been taken from respective Annual Reports. In order to better illustrate the development of the respective period (1998-2008) also data for previous as well as following years (if already available) have been included, i.e. 1996-1997 and 2009-2010.

Figure 33: Comparison of the development of market capitalisation (in billion €)



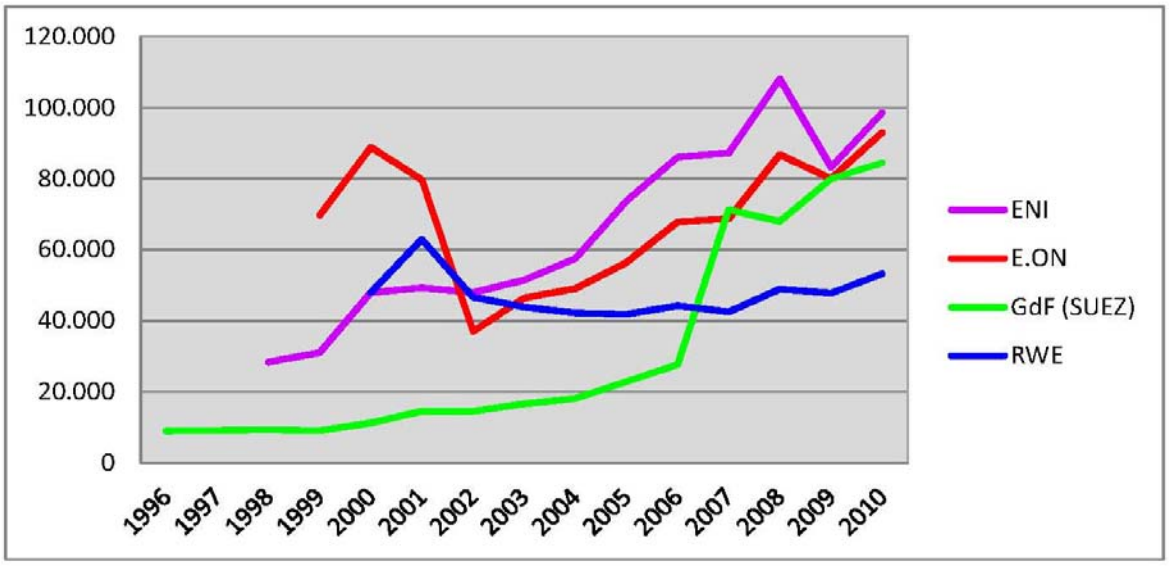
According to these figures ENI is the most valuable one. This can be attributed to the fact that it is assessed as an oil major and thus as part of a group which has traditionally been highly valued by capital markets, especially due to relatively high margins generated in the upstream business where ENI is still generating most of its operating income (see case study). At the same time the illustration shows that from 2002 on, ENI, E.ON and RWE followed the same upward trend until 2007. While GdF was not publicly listed then, its development followed suit after 2006. The steepest initial increase can be found in the case of E.ON, showing the appreciation of the merger of VEW and VIAG by the market. Noticeably, by 2007, market capitalisation of ENI, E.ON, and GDF SUEZ reached a similar value of around €90 billion, while that of RWE only rose to €54 billion. A distinction that becomes apparent, however, is that the rise of development was steeper in the case of E.ON, GDF SUEZ, and RWE than in that of ENI. In fact, ENI's value even declined by 2% between 2006 and 2007, while that of E.ON rose by 35% and that of RWE by nearly 15%. The strongest increase of 210% was that of GdF, which once more can be attributed to the merger with SUEZ. Another common development is the drastic decline in value from 2007 onwards as a likely consequence of the global financial crisis, followed by a brief upward trend in 2008. After that, development took different turns again. While market capitalisation of ENI, E.ON, and RWE decreased to €59

billion, €44 billion, and €28 billion, respectively, that of GDF SUEZ continued its upward trend to amount to €72 billion.

8.3.2 Turnover

When looking at the development of turnover of the four companies, the picture is more diverse than that of market capitalisation. This can be explained by the fact that turnover is much more company specific, while market capitalisation is also determined by common stock market trends. The analysis of turnover thus enables the researcher to gain more insight into financial performance. In this respect it is to be noticed that until 2001, turnover of E.ON and RWE was higher than that of ENI, despite its larger market value (see above). This changed though after 2001, when E.ON's and RWE's development experienced a significant downward trend. While this was steeper in the case of E.ON, with turnover having declined by 53% following the divestments made after the merger, than in the case of RWE which experienced a decrease of 25%, E.ON's development afterwards steadily increased again. That of RWE, in contrast, continued its decline until 2007, if only modestly so. E.ON's development instead paralleled that of ENI and by 2009 E.ON's turnover had nearly caught up. Then, it accounted for nearly €80 billion, while ENI's was at €83 billion. RWE's turnover again had remained at not even €48 billion. GdF's development sticks out in that it started from a relatively low level at around €9.4 billion, compared with E.ON's nearly €70 billion, and only slowly increased over the course of time, amounting to €14.5 billion in 2001. A dominantly steep increase, however, took place after 2006, when turnover rose by nearly 158% to €71 billion in 2007. Even more, by 2009 it had reached nearly €80 billion and thus almost the level of ENI and E.ON. This development can be attributed to the merger with SUEZ and the increase of business expansion as determined in the case study. The depiction just made is illustrated in the following figure.

Figure 34: Comparison of the development of turnover (in million €)



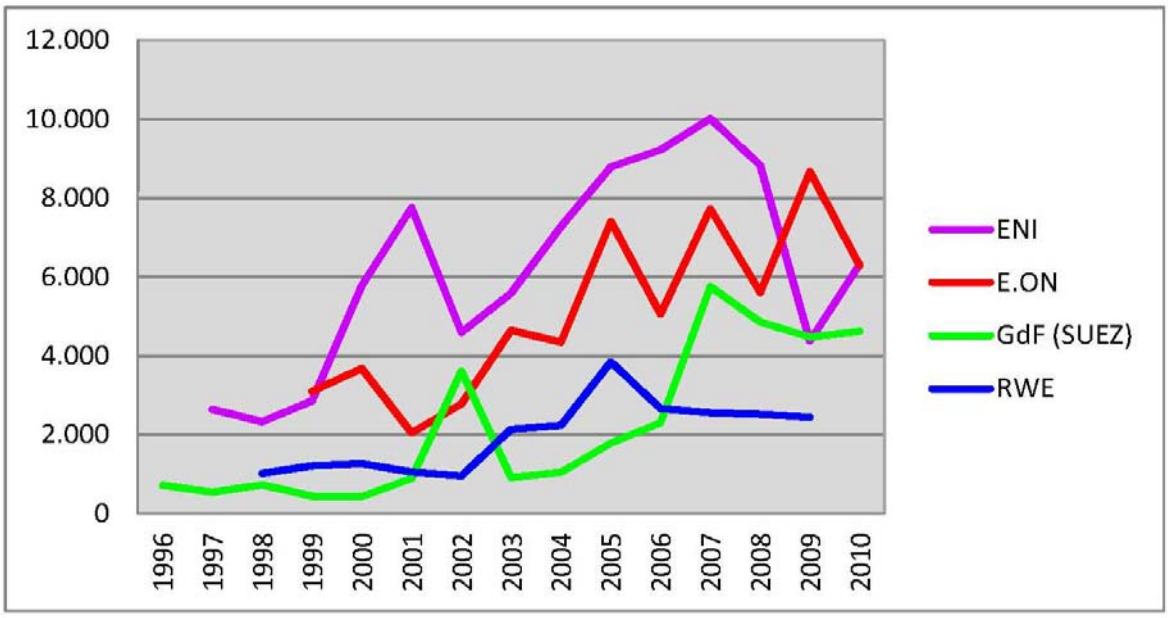
While the development of turnover is a good indicator for the increase of activity, it does not provide information on the effectiveness of operations. This again can be enhanced on when looking at net income.

8.3.3 Net Income

In fact, as the figure below reveals, the development of the four companies varies much more than in case of the other variables laid out above. While this holds particularly for E.ON, reflecting its high degree of activity, the development of ENI, GdF, and RWE, with less business activity than E.ON as determined in case study analysis, only show very few peaks. Another observation to be made is that fluctuations may be so strong that one company may suddenly come to outperform the others. This can be observed in the case of GdF in the period between 2001 and 2002, when figures climbed above those of RWE and even E.ON, to then decline again below that of all three rivals. From 2006 onwards, i.e. again after the merger, GdF's (SUEZ') net income rose above that of RWE but still remained below that of E.ON and ENI. Similarly, E.ON in 2009 outperformed ENI which until then had shown

highest net incomes, achieving €8,669 billion compared with ENI's €4,367 billion. At that time, ENI's net income was even lower than that of GDF SUEZ with €4,477 billion. Again, these depictions can be seen in the following figure.

Figure 35: Comparison of the development of net income (in million €)



Another striking development that can be seen well in the illustration is that since 2008 the development of net income in ENI's and E.ON's case continued to be volatile with down- and upturns, while having remained relatively stable in the case of RWE and GDF SUEZ. In the case of ENI this can be attributed to a negative development of the oil sector following the economic crisis and to the large investments required in the upstream business which constitute a large cost block that affects profits. In E.ON's case again there have been indications of fundamental financial difficulties. These have been attributed to its former 'jewel' Ruhrgas which has been tied to expensive long-term oil-linked ToP contracts (also see chapter II) while gas prices on trading markets were substantially lower, making it difficult

for Ruhrgas to sell its gas.[1793] Compared with the situation of other energy companies, E.ON's difficulties have been described as a 'luxury problem'[1794] because E.ON still has the highest net income. Apart from such evidence, its success also shows in non-quantitative figures as is enlarged on in the following.

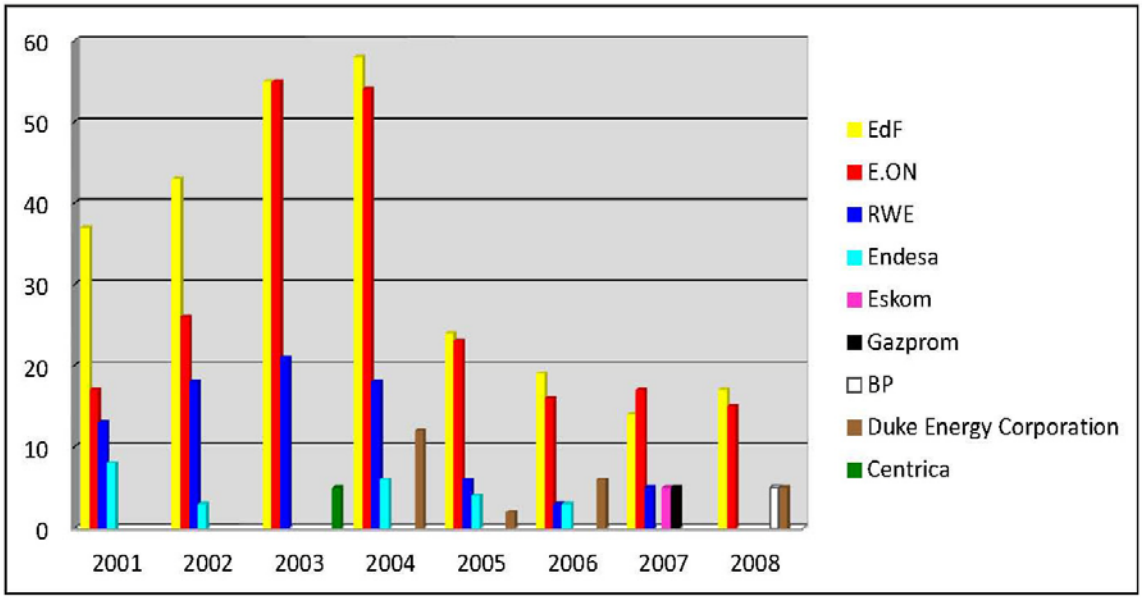
8.3.4 External Perception

In fact, different studies, which analysed the perception of leading energy players, have revealed E.ON as the main leader, thus supporting the findings made above. Looking, for example, at the assessment of European utility managers regarding their perception of the global leading energy companies over a phase from 2001 to 2008, it can be seen that E.ON, together with French EdF, was heading the ranking over the whole period as illustrated in the following figure.

[1793] Even if also customers were tied to such contracts these in most cases contained a price revision clause which allowed customers negotiations at certain moments in time. After liberalisation though, these price revisions were oriented at price developments in trading markets, thus reducing prices of existing contracts substantially. As a consequence, Ruhrgas itself then, after hard negotiations, reached an agreement with Gazprom to at least link a part of contracted gas imports to spot market prices. Having achieved this means that Ruhrgas pioneered a fundamental break with traditional industry structures (cf. Anonymous (2010a), p. 15; Gassmann (2010a), p. 6) - which again is evidence for its leadership role.

[1794] Cf. Flauger (2008d).

Figure 36:[1795] Development of the perception of leading energy players (in %)

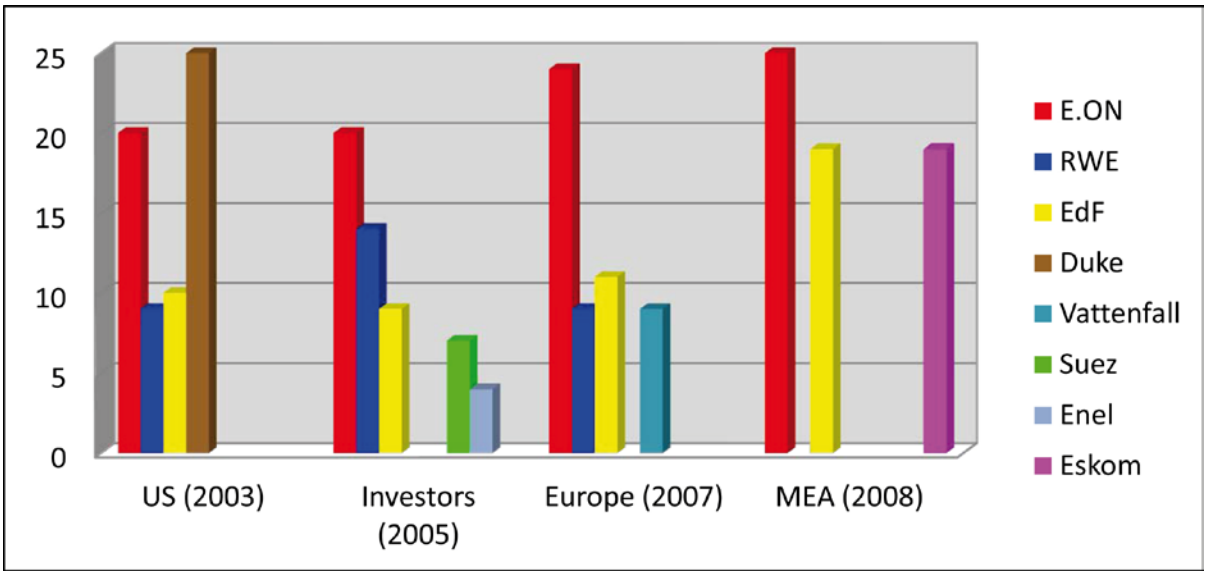


Moreover, both players have been portrayed as having 'grabbed significant mind share'[1796], a fact that coincides with a high degree of legitimacy which in E.ON's case again can be attributed to its pro-active institutional behaviour as revealed in the case study. Another finding that can be supported is that of RWE being a follower of E.ON. As the figure shows has the distance between the two even increased over the course of time, with RWE's share having sunk to below 5% by 2006 and in 2008 not even being mentioned anymore. EdF's leadership position again can be explained by its large nuclear assets which enable low-cost and nearly CO_2-free electricity production. While EdF, except for in 2007 where E.ON was slightly in front, was able to maintain its leading role, the figure also reveals E.ON's fast and strong close-up since 2003. This fact can be explained by its active and rapid development, making it appear more powerful for other utility leaders. Another interesting finding to be derived from these results is that neither ENI, GdF nor SUEZ are mentioned. While in ENI's case this could be attributed to it being perceived more as an oil company and thus not appearing on utility leaders' radar, this argument does not hold as British Petroleum is also

[1795] Own figure based on data derived and accumulated from PWC (2003a), pp. 4-5; PWC (2004), p. 16; PWC (2005a), p. 19; PWC (2006a), p. 17; PWC (2008a), pp. 18-19.
[1796] Cf. PWC (2008a), p. 3.

mentioned. Apart from this, ENI is a large European producer and importer of natural gas. Instead, the fact that ENI has not been perceived as a leading player is more likely to be a result of its weak business development in the European market, determined as passive business behaviour in the case study and thus supporting this finding. In the case of GdF again, a plausible explanation is its initial status as a government owned company and its therefore constrained possibilities for active behaviour as laid out above. Noticeably, the perception of E.ON as the leading player is also shared by utility leaders in other parts of the world, such as the U.S. as well as the MEA and European region. This even is the case when looking at the ranking in different years, as shown in the figure below. As this illustration reveals, E.ON's distance is always substantial to the following ranked companies. Moreover, investors see E.ON as the leading player, too. In this ranking also SUEZ is mentioned this time, a fact which again confirms its importance for GdF's development as pointed out above.

Figure 37:[1797] Development of the perception of leading energy players from different perspectives (in %)



[1797] Own figure based on data from PWC (2003a), pp. 4-5; PWC (2004a), p. 16; PWC (2005a), pp. 12-13; PWC (2006a), p. 17; PWC (2008a), pp. 18-19.

While the above reveals a general view, further support for case study findings is provided by results of recent studies. These unveil ENI and E.ON, both of which have shown pro-active institutional behaviour with regards to addressing sustainability issues, among the highest ranked members in the Carbon Performance Leadership Index (CPLI) which serves as a guide for investors.[1798]

Nevertheless, the above findings can be further enhanced by looking at overall industry analysis as explained in the chapter on methodology. This is done in the following section.

8.4 Industry Review – Validating Findings

8.4.1 Evaluation against Industry Developments between 1998-2008

8.4.1.1 Results from a Business Perspective – Confirming Findings

Fundamentally, the review of organisations' business behaviour in the industry over the research period reveals several developments which support cases study findings. These are looked at in more detail in the following.

Diversification as a Common Industry Strategy

In fact, the development trend towards multi-utilities and the merging into "broader energy companies"[1799] as mentioned above was also pointed out by subsequent researchers[1800] as well as by companies themselves (see case study of GdF). More recent again is the diversification behaviour for strategic reasons as also found in case study analysis, such as the

[1798] Cf. PWC (2010a), p. 18.
[1799] Midttun et al. (2001), p. 390.
[1800] Cf. Chabrelie/ Lecarpentier (2005); Girault (2005), pp. 5-7, 10-11; Anonymous (2006b), p. 4; Anonymous (2006o), pp. 4-5; Bozem/ Rath (2008), p. 50; Verde (2008).

operation of storage facilities as strategic assets. At the same time, a trend of divesting non-energy businesses relatively recently after they have been acquired has also been found.[1801] While these developments can be said to characterise particularly the first phase after market opening and the introduction of change, another phase seems to have started recently with the diversification into nuclear power and various renewable energy activities such as solar, wind, or hydro power and biomass. In fact, this trend has not only been observed with regards to utility companies (also see case studies), but has also been determined as a common development amongst oil majors which, for example, have engaged in the solar business or started building CCGT plants for participating in large-scale electricity production.[1802] Even more, and as a further extension to existing products and markets, energy companies have again begun to diversify into unrelated businesses such as the automotive sector. This has been assessed as a renewed development (for early examples see case studies of E.ON and RWE) towards multi-utility business models and the blurring of industry boundaries.[1803]

When analysing the drivers behind this trend, a change can be determined from companies having used such business extensions as defensive measures to fend off competitive threats to increasingly using such new business markets as opportunities to differentiate themselves from rivals and create additional value.[1804] The same holds true with regards to gas trading which initially not only was used by very few players,[1805] but also simply as a tool for balancing demand and supply. Over the course of time though, the trading function has become an important strategic instrument to hedge risks along the whole value-chain and provide additional value to contribute to overall performance.[1806] Incumbent oil and gas companies, for instance, have used their trading business as a service to be offered to third parties and as a "critical vehicle"[1807] to grow organically. Other studies show that players

[1801] Cf. Girault (2005), pp. 10-12; Funk et al. (2006); Anonymous (2007k); Bozem (2008), p. 56.
[1802] Cf. Emerging Energy Research (2006); Fockenbrock (2006), p. 16.
[1803] Cf. Bozem (2008), pp. 56-58.
[1804] Cf. Pecka (2007), p. 13.
[1805] Even incumbents traded less than 2% of their overall volume. Cf. European Commission (2005e), p. 11.
[1806] Cf. PWC (2003a), pp. 16-19; PWC (2004a), pp. 17-18; PWC (2005a), p. 16.
[1807] Anonymous (2006p), p. 44.

invested in renewables and efficiency services as a response to the growing importance of sustainability and environmental awareness to maintain or gain legitimacy.[1808]

This once more thus emphasises the importance of 'looking through an institutional lens' in order to enhance explanatory value, as is done further below. In addition to this, it also supports case study analysis which has revealed these diversification trends as well. Whether this also holds with regards to M&As and vertical integration is determined in the following two sections.

Vertical Integration as a Common Industry Strategy

Similarly, and as found in case study analysis, another industry-trend to be detected is that of vertical integration along the gas value-chain, particularly into the long-distance pipeline transportation, the LNG, the storage, and the trading business.[1809] The common expansion into LNG, for example, has been described as a corporate "rush to build LNG"[1810]. The trend in the storage business again was driven by the growing realisation that storage was a strategic asset and to support overall business. Likewise, while this downstream integration was particularly prevalent in the first years, there are indications for a second development that is characterised by companies exiting certain activities to become more focussed.[1811] Bozem, for instance, recently identified two types of organisations: those that are active only in the regulated infrastructure business and those that engage in competitive segments. He furthermore distinguished between players with an international, metropolitan, or regional-local focus.[1812] The most common strategic instrument found to carry out vertical integration was that of M&As, in particular strategic acquisitions or joint ventures. In fact, their share

[1808] Cf. Capgemini (2005), p. 48; Laudicina/ Pau (2007), pp. 11-14.
[1809] Cf. Chabrelie/ Lecarpentier (2005); Bozem (2008), p. 56; Bozem/ Rath (2008), pp. 50-54.
[1810] Harsh et al. (2006), p. 2.
[1811] Cf. Harsh et al. (2006); Schürmann (2007), p. B3.
[1812] Cf. Bozem (2008), pp. 57-58.

rose from 33% in 2007 to 51% in 2008,[1813] thus coinciding with the M&A trend identified above.

A major driver identified behind the development towards a growing degree of vertical integration was the reaction to increasing downstream competition following liberalisation and the aim of players to close up markets by downstream integration to gain control over customers, often by acquiring them. This was criticised as having resulted in a "vertical blockage of distribution channels"[1814]. Upstream integration again was found to have been driven by the aim to compensate for losses made further down the value-chain, e.g. in the case of declining sales because of increased competition.[1815] Delmas and Tokat, based on an empirical study on U.S. electricity companies, found that companies which had vertically integrated to 'insulate' themselves from uncertain market transactions as well as those which had chosen the market as a way to deal with complex transactions in order to avoid organisational slack, were more efficient than those which adopted hybrid forms of arrangements. At the same time the researchers indicated that the latter may be the most efficient organisational form during the process of deregulation.[1816] Another reason was the companies' need to fulfil security of supply requirements imposed by EU regulations.[1817] In fact, these two examples well reveal that behaviour was driven by business as well as institutional drivers.

Strategic Alliances - Mergers & Acquisitions as a Common Industry Strategy

In fact, particularly M&As have been identified as a major development trend, especially in form of a 'first wave' after market opening.[1818] When analysing this phenomenon in more

[1813] Cf. PWC (2008a), p. 5.
[1814] Immenga et al. (2003), p. 49. Translation by author.
[1815] Cf. Fritz-Vannahme/ Gammelin (2006), p. 23.
[1816] Cf. Delmas/ Tokat (2005). The authors particularly point out that despite technical, economic and institutional differences their findings are also relevant for other network industries such as natural gas. Cf. Delmas/ Tokat (2005), p. 457.
[1817] Cf. PWC (2007a), p. 13; PWC (2008a), p. 5.
[1818] Cf. Bozem (2008), p. 56.

detail over the course of time, different phases can be distinguished:[1819] While the first period after liberalisation was characterised as a "frentic"[1820] one where large waves of M&As had taken place on a "mega level"[1821], deal activity had decreased again by 2003, especially in the gas market.[1822] This, however, turned out to have been only a short decline as the year 2004 was characterised by another major wave of M&As. Even more, in gas as well as in electricity markets new growth records were set, not only in terms of the total number of deals made and the total deal value, but also regarding the number of mega deals and the value behind single deals. A big part of this comprised deals in Europe where the value of transactions increased by much more than 100% compared with 2004. This situation has been described as one where a deal was struck "every day of the working week with just a pause for breath on Fridays"[1823]. Similarly, the year 2005 was termed another "record-breaking year"[1824] which not only introduced a "new merger cycle"[1825], but even "a new era of blockbuster deals"[1826]. In fact, these remained strong in the following years.[1827] Also from a geographical perspective certain trends can be identified. While early studies had identified M&A activity as having remained regionally focussed,[1828] a more comprehensive study recently published on M&A deals of European energy companies between 1998 and 2007, determined a certain pattern of activity which was only initially focussed on domestic territory before having been overtaken by cross-border types of M&As in number and by value.[1829] Others supported this finding, specifying further that in case activity was expanded beyond European territories, European companies generally preferred North America, except for the Spanish and Portuguese players for which the South American region was more critical due to being culturally closer.[1830]

[1819] In order to better illustrate the development over time, this assessment is built on the accumulation of studies available and includes findings made before 2005, thus also extending those mentioned in chapter III.
[1820] Petrovic (2000), p. iii.
[1821] ABS Energy Research (2004), p. 32.
[1822] Cf. PWC (2005b); Roland Berger (2003).
[1823] PWC (2006b), p. 13.
[1824] Anonymous (2005j), p. 14.
[1825] Anonymous (2005h), p. 1.
[1826] Anonymous (2005j), p. 14.
[1827] Cf. Anonymous (2006q); Brühl/ Oei (2006), pp. 334-339; Capgemini (2006); Fautz/ Leuschner (2006), pp. 180-184; Lewiner (2007); Tykvová (2006), p. 3; PWC (2006b); PWC (2007b); Weinert/ Meyer (2007), pp. 14-20; Anonymous (2008g), p. 68; PWC (2008b); Verde (2008).
[1828] Cf. PWC (2004); Wiegand/ Krüger (2004); PWC (2005b).
[1829] Cf. Lévêque/ Monturus (2008), pp. 295-322.
[1830] Cf. Hymner (2005), pp. 67-106; Anonymous (2008g), p. 68.

Wolf et al. again drew three different possible scenarios for future development: one of a 'European energy-gas-oligopoly' where market power is concentrated in the hands of few integrated players, a second one of 'augmented market segmentation' where there are more specialised providers, and a third scenario where re-structuring becomes enforced by regulatory authorities.[1831] Research on the oil industry revealed the emergence of three types of players after similar influential environmental change: 'Megamajors' as industry shapers, 'Mezzos' as small-and-medium sized companies, and 'Specialists' with a focus on a certain value chain activity.[1832]

When analysing the drivers behind these developments, not only various reasons but also different phases can be determined. Initially, following the liberalisation of energy markets with the introduction of competition and the threat of losing market power, in addition to prevailing liquid capital markets and increasing globalisation, M&A activity has been driven by the strive for growth. This again was required in order to gain access to capital markets and become global player to survive as well as to operate more efficiently and increase shareholder value.[1833] While such aspects remained important in the following years, M&As in later phases were mainly driven by the need to access new customers and gain critical scale in order to establish a competitive advantage. Other reasons were the aim to create a hedge in terms of portfolio risk management and to expand geographically.[1834] This again was followed by a phase where M&As became a valuable tool to access resources and capabilities. At the same time, the wish to broaden an existing product portfolio, the divestment of assets to focus on the core business,[1835] and regulatory pressures were mentioned as reasons.[1836] While this indicates active behaviour driven by 'business goals', the notion that many of those M&As have been interpreted as having been 'governmentally orchestrated or engineered

[1831] Cf. Wolf et al. (2007), p. 31.
[1832] Cf. Stonham (2000), p. 414.
[1833] Cf. Anonymous (2000a); PWC (2002); Anonymous (2005f), p. 16; Müller/ Wetzel (2005); Piller (2006), p. 13; Snijder (2006), p. 2; Bozem (2008), p. 56; Bozem/ Rath (2008), pp. 50-54; Verde (2008).
[1834] Cf. PWC (2005a), p. 10.
[1835] Cf. Heidenreich (2006), pp. 35-36; Fautz/ Leuschner (2006), p. 182; Voss (2006), pp. 1-7.
[1836] Cf. PWC (2006b), p. 16; Wellmer/ Dalheimer (2000), pp. 1-6; PWC (2007a), p. 15.

marriages' with the aim of creating national champions'[1837], or as driven by politicians who, afraid of losing control, "protectively have been throwing themselves over national energy companies"[1838], reveals passive responsiveness. The portrayal of the above mentioned waves or phases of M&As as a 'herding phenomenon'[1839] could also be interpreted as homogeneous field behaviour for reasons of legitimacy as derived as another assumption from case study research.

Typological Behaviours and Common Business Models

In addition to the specific strategies and tactics just laid out above, insight from industry research also supports the approach of categorising energy companies into different types of players according to their degree of activity.[1840] Having, for example, differentiated between a low and high degree of knowledge and implementation rate of success factors to create a four-field matrix, a study analysing trends and success factors in the energy industry determined four different forms of behaviour which range between a passive 'Wait-and-See' type and a pro-active 'actionists' one.[1841] Others again, having analysed and classified the behaviour of energy companies in response to deregulation along a continuum, at the one end typified aggressive market players taking advantage of market opportunities. At the other end they placed those which were identified as too passive. These are characterised as not being aware of minimum standards and appropriate management models required for success in an increasingly uncertain environment.[1842] A similar distinction was made with regards to the tactic of diversifying into the renewable energy business where research identified those players who had invested early and those who had adopted a 'wait-and-see' attitude.[1843]

[1837] Cf. Anonymous (2002c); Anonymous (2004b), pp. 65-66; Anonymous (2004c), p. 60; Anonymous (2005h); Anonymous (2005k); Müller/ Wetzel (2005); Anonymous (2006b); Anonymous (2006i); Anonymous (2006q); Anonymous (2006r); Lenz (2008).
[1838] Wildhagen (2007), p. 83. Translation by author.
[1839] Cf. Balzer/ Student (2006b), p. 69; PWC (2008a), p. 1.
[1840] This has also been shown for other industries. Cf. Koubek et al. (1996).
[1841] Cf. Management Engineers (2004).
[1842] Cf. Spiegel et al. (2005), p. 34.
[1843] Cf. Salzmann (2006), p. 213.

Finally, by bringing together the developments from above, the finding of converging organisational behaviour and common business models can be supported. Having analysed industry developments from a Business Perspective, the same is now done from an Institutional Perspective in order to maintain methodological consistency.

8.4.1.2 Results from an Institutional Perspective – Confirming Findings

Common Responses to Measures of Liberalisation and Security of Supply

Fundamentally, commonalities can be found with regards to the institutional strategies and tactics applied. Looking at liberalisation measures and especially unbundling, for example, a common tactic determined was that of window dressing. Incumbents claimed to be supporting liberalisation but, driven by a 'general reluctance' and 'limited interest', were actually found to be 'allegedly abusing their position', such as by privileging their own sales company, hindering customer switching, or reinforcing their long-term contracts.[1844] They were also found to have been delaying or even denying access of third parties based on congestion arguments.[1845] Another finding is that incumbents created confusing information, making newcomers complain that finding "your way in the tariff jungle is a real nightmare"[1846]. With regards to ownership unbundling again, players were found to be using the tactic of questioning the methods of studies recommending such drastic measures,[1847] while others, by referring to prestigious constituents, argued that existing regulations were sufficient.[1848] Similarly, as already revealed by the case examples, recent publications found that E.ON, RWE, and GdF were using the tactic of trying to take influence such as by publicly questioning requirements or lobbying their governments as a response to regulatory plans to

[1844] Cf. Brito/ Hartley (2007).
[1845] Cf. European Commission (2005e), pp. 12-18; European Commission (2007a), pp. 13, 48, 71, 80, 245-260; European Commission (2007c), p. 5.
[1846] European Commission (2005e), p. 26.
[1847] Cf. Lütkehus (2008), p. 4.
[1848] Cf. A.T. Kearney (2008). This study was internally initiated and not in behalf of a customer.

introduce ownership unbundling.[1849] They argued, for example, that large integrated companies were needed to face the bargaining power of foreign suppliers.[1850] Another reaction indicated by others, again supporting case study findings, is the tactic of escaping. One example provided is that of E.ON having sold its electricity grid to escape infringement measures. E.ON's move has even been evaluated as serving as a role model,[1851] thus sustaining the finding of E.ON as an industry leader. Support for the discovery of a development towards more active behaviour can be derived from the finding that institutional tactics are increasingly characterised by more manipulative forms of behaviour, e.g. showing in organisations' perception of authorities as allies necessary to achieve organisational goals and guard against possible inquiries,[1852] as has also been pointed out in the case examples.

Common Responses to Measures of Sustainability

The finding of institutional behaviour having become more active over the course of time can also be found with regards to sustainability.[1853] First evidence in this respect is that initially the term 'environmental protection' was used, showing the focus on only one aspect of the 'sustainability agenda' (see above). Early studies also found that initially only few players had implemented a robust environmental strategy and if they had, that this had primarily been done to comply with legislation.[1854] More active institutional behaviour can be found to have developed over the course of time in response to increasing pressure, revealing particularly in form of window dressing. Among the first-movers were oil majors that started investing in renewables as a tactic to address stakeholders and pretend they had turned 'green' to improve their image and hence legitimacy. A prominent example is the U.K. oil company British Petroleum which not only had already established a business unit for renewable energy in 1997, but by now is engaged in producing solar cells and analysing possibilities to enter the CCS segment, aiming to invest around $8 billion into renewable energies until 2015. Other

[1849] Cf. Esterhazy et al. (2008), p. 58.
[1850] Cf. Anonymous (2006b), p. 3; Anonymous (2007t).
[1851] Cf. PWC (2008a), p. 7.
[1852] Cf. Focht (2007b), p. 1; Flauger (2008e).
[1853] Also here findings from studies before 2005 are included in order to better depict the development over time.
[1854] Cf. PWC (2002); PWC (2003a); PWC (2004).

institutional tactics applied by the company include the sponsoring of environmental associations with large sums as well as bringing in its CEO into the board of respective organisations. It even changed its slogan from British Petroleum into 'beyond petroleum' and its logo into a symbol representing the sun.[1855]

The development towards the increasing importance put on issues of sustainability can also be seen in the figure below. This reveals the results of questionnaires on the perception of the most important market developments in different years, showing the ranks in descending order with the most relevant issue at the top. As shown, in 2004 the need to increase transmission capacity, security of supply, and increasing competition from oil majors and financial institutions were the prevailing topics. The encouragement of renewable energies only ranked last during this time and players appeared slow at integrating the consequences of climate change into their business strategy. This had already changed substantially one year later as the encouragement of renewable energy had moved to the top of the agenda, also described as "one of the clearest environmental pressure points by regulators on utility companies"[1856]. The notion of supply security again remained second and price volatility, having become the third most important driver, was replaced by the threat of increasing regulations and resulting obligations in 2006, a year where the challenge of change was also perceived as "little short of revolutionary"[1857]. The fact that security of supply ranked top of the agenda in 2006 is likely to have been a consequence of the Ukrainian-Russian gas crisis at the beginning of that year, when Russia stopped its deliveries to the Ukraine as a measure to force the latter to pay its gas bills. With the Ukraine being a transit country for supplies from Russia, Western Europe was heavily affected. This incident thus increased public awareness on Europe's vulnerability of secure gas supplies.[1858] In the following years, measures regarding the encouragement of renewable energies remained to be perceived as the most influential development, while security of supply issues moved down the agenda as the need to increase efficiency and the regulation of emissions became more paramount.

[1855] Cf. Fockenbrock (2006), p. 16; Salzmann (2006), pp. 158, 213; Friese (2008).
[1856] PWC (2003a), p. 22.
[1857] PWC (2006a), p. 6.
[1858] Cf. Kramer (2006).

Table 6:[1859] Common change of perception of energy policy topics over time

Rank	2004	2005	2006	2007	2008
1	Increasing transmission capacity	Encouragement of renewable energy	Security of supply	Encouragement of renewable energy	Encouragement of renewable energy
2	Security of supply	Security of supply	Encouragement of renewable energy	Increasing efficiency	Regulation of emissions
3	Increased JV activity from oil majors/ financial institutions	Wholesale price volatility	Increased regulation & obligation	Security of supply	Increasing efficiency
4	Wholesale price volatility	Increased regulation & obligation	Increasing efficiency	Increased regulation & obligation	Security of supply
5	Increased regulation & obligation	Increasing transmission capacity	Wholesale price volatility	Regulation of emissions	Increased regulation & obligation
6	Encouragement of renewable energy	Increased JV activity from oil majors/ financial institutions	Regulation of emissions	Wholesale price volatility	Wholesale price volatility

[1859] Own figure based on data from PWC (2003a), p. 10; PWC (2004a), p. 5; PWC (2005a), p. 5; PWC (2006a), pp. 10-11; PWC (2008a), p. 8.

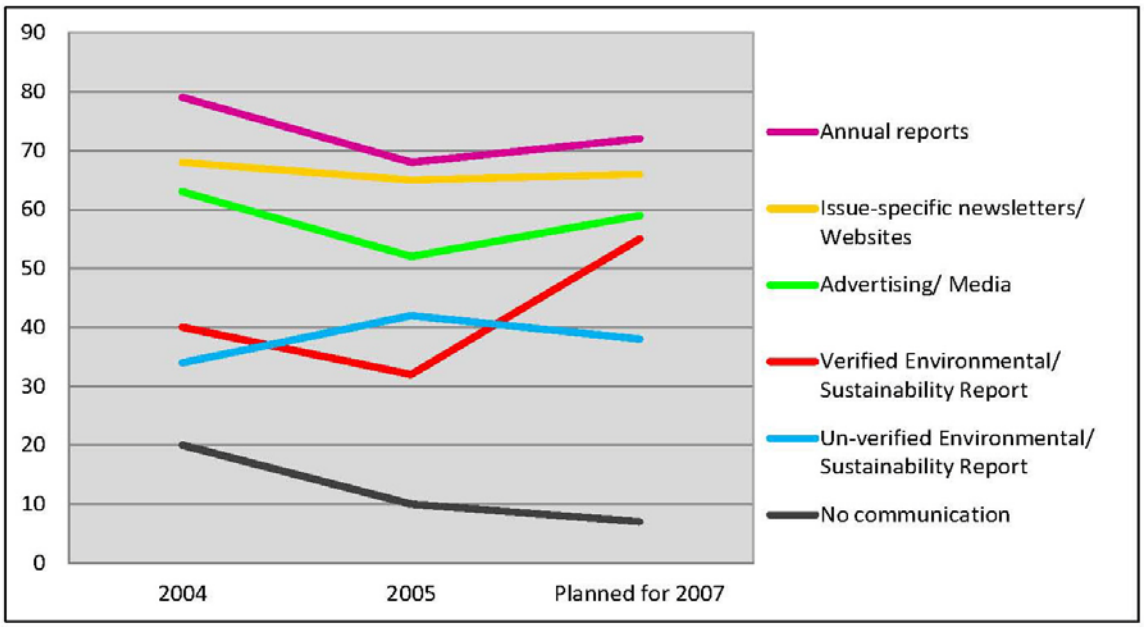
Interestingly, all three constitute measures characterising the policy goal of sustainability as laid out in chapter III.[1860] Furthermore, several studies which analysed corporate environmental and sustainability management efforts revealed a large degree of backlog demand and optimisation possibilities for energy companies.[1861]

The fact that liberalisation measures were not seen as pressuring anymore can be explained by the notion that companies had accustomed themselves to these forces as unavoidable, while 'green drivers' were still relatively recent and required more attention, especially as consumers, too, have become more aware of and concerned about sustainability issues.[1862] By 2007, companies judged the EU's climate policy as "very challenging to meet"[1863]. Others see climate change as having emerged as the main driver of EU policies to accelerate transition to a sustainable energy system. This, for instance, shows in the change of terminologies used in that the expression 'environmental objectives' was replaced by that of 'sustainability'.[1864] As a consequence, many energy companies have been waking up to climate change and become 'much more ready to gear up to seize the sustainability agenda' in that they pro-actively participate and drive developments instead of remaining reactive, especially as such developments were "starting to bite with a clear impact on long-term investment decisions"[1865]. In fact, this has translated into more active forms of institutional behaviour, revealing in strategies of manipulation with the aim to take influence, if not control. Prominent tactics applied in this respect have been those of strategic communication, image advertising and qualitative narratives. Here, a development can be seen in that the performance of environmental and sustainability activities in the beginning was mainly communicated through the common Annual Report and sporadic announcements on websites or media. And while in 2005 still only one third of respondents used a verified sustainability/ environmental report, more than half were planning to do so by 2007 (see figure below), indicating the growing awareness for and the importance of such measures. Before that though, most of these measures were applied merely 'for the sake of it' and without true

[1860] These three measures have thus all been illustrated in green colours.
[1861] Cf. Salzmann (2006); Seiwert (2007), p. 44; PWC (2008c), pp. 40-47.
[1862] Cf. Knauß (2007), p. 10; Whan (2007).
[1863] Lewiner (2007), p. 6.
[1864] Also cf. Röller et al. (2007), p. 1.
[1865] PWC (2008a), p. 46.

commitment.[1866] Very recently, measures have even become *pro*-active, showing in tactics such as openly and bluntly displaying the emission trading scheme as additional costs for consumers,[1867] or, with regards to the uncertain legal framework for CCS, by 'writing its own laws' to put governments under pressure.[1868] Moreover, indications for a more trust-based communication with stakeholders can be found.[1869] Further evidence for the change of behaviour can also be derived from statements such as having "moved from a time when climate change barely registered a mention in a company's annual report to one where it is on the lips of every chief executive officer who runs a power utility business"[1870]. The following figure illustrates this development towards more specific instruments of communication.

Figure 38:[1871] Common instruments to communicate sustainability (in %)



Whether findings can also be confirmed from an integrated perspective will be determined next.

[1866] Cf. Viedt (2005), p. 626; Salzmann (2006), p. 158.
[1867] Cf. Stratmann (2008a).
[1868] Cf. Stratmann (2008b).
[1869] Cf. Matthes/ Ziesing (2008), p. 33; Mühlstein/ Köpke (2008), p. 14.
[1870] PWC (2008a), p. 1.
[1871] Own figure based on data from PWC (2004), p. 10; PWC (2005a), p. 25.

8.4.1.3 Results from an Integrated Perspective – Confirming Research Approach

Essentially, the benefit of considering an integrated approach is also confirmed here. This, in fact, holds for several aspects. Referring to the above findings under the business perspective, for instance, the common strategies and tactics of diversification, vertical integration and M&As from an institutional perspective could also be interpreted as imitative and homogeneous behaviour. Similarly, when adopting a business perspective to look at institutional strategies and tactics these may turn out to have been applied to enhance business development, such as via the instruments to communicate on sustainability. This can actually be supported with findings from industry research. While initially CDM and JI measures were implemented merely for compliance reasons companies today are increasingly using them for trading purposes to generate additional income.[1872] The notion that companies have gone over to taking advantage of what had before been perceived as a threat is also supported by the European Commission's finding that "the declaration of European interest has given a renewed stimulation for some projects with a long history"[1873] as companies have used the goal of supply security to obtain funding for 'essential' infrastructure projects. This has recently become even more pronounced with regards to the possibility of strategically taking advantage of the growing importance of ecological and sustainability issues which have opened up opportunities such as enhancing brand value and reputation to exploit a competitive advantage.[1874]

Still, while research had already pointed out in 2003 that the achievement of sustainable synergies between business and environmental performance was dependent on how well companies managed to integrate environmentalism into their strategy right from the beginning instead of dealing with it as an add-on or regulatory requirement, the same study found that the tension between environmental and business strategy was only eroding slowly.[1875] Instead,

[1872] Cf. PWC (2007a), p. 41; PWC (2008a), p. 46.
[1873] European Commission (2007l), p. 4.
[1874] Cf. Lewiner/ Easton (2004), p. 6; PWC (2004), p. 10; PWC (2005a), pp. 18-19; PWC (2006a), pp. 19-20.
[1875] Cf. PWC (2003a), p. 23.

only few companies were aware of the fact that environmentalism and economic goals could reinforce each other. This had changed by 2008, when nearly 60% of European utilities believed their environmental strategy and performance had an impact on investors' decisions.[1876] Moreover, not only are measures such as climate protection activities becoming part of organisations' core business and integrated into business strategy, but central to business strategy and a critical driver of business growth.[1877] This supports the finding of a development towards an integrated perspective as already determined in case study research.

In the following, the findings from case study research and those from industry analysis are discussed. In order to further enhance analysis, this is done by also including recent research results and publications.

8.4.2 Evaluation against Findings from Secondary Literature and Current Research

8.4.2.1 Results from a Business Perspective – Confirming Findings

Apart from researchers still working on the determination and integration of 'business policy' and 'strategic management',[1878] research on the general strategy process over the past few years has confirmed findings. This holds with regards to depicting organisational change as a development process from passive to more active behaviour in fast-changing environments and the importance of entrepreneurial orientation,[1879] and also is supported by results from international business research.[1880] In a second study on the strategic renewal behaviour of financial incumbents since the implementation of EU banking regulations (for first study see

[1876] Cf. PWC (2008a), p. 14.
[1877] Cf. Bergius (2008b).
[1878] Cf. Nag et al. (2007), pp. 935-936.
[1879] Cf. Corbett (2005); Dess/ Lumpkin (2005); Jacobides (2005); Regnér (2005); Volberda (2005); Hinings/ Malhotra (2008), pp. 120-123; Lamberg et al. (2009).
[1880] Cf. Hutzschenreuter et al. (2007).

above) Flier et al. confirm their previous finding that organisational development can be depicted as a path which consists of strategic action patterns and of such is characterised by risk-taking and pro-active behaviour keeping the organisation aligned with its environment.[1881] More concrete is the support for the finding of the advantage of pro-active behaviour. In fact, several publications by now emphasise that adopting a wait-and-see behaviour or acting half-heartedly, and thereby risk losing out on opportunities to create value, in the long-run was a 'recipe for disaster'[1882]. From research on organisational behaviour after deregulation of the electricity industry Delmas et al. describe the notion of organisations 'following their habit' as 'remaining aloof' to institutional forces. Organisations continue to follow known routes by reproducing institutionalised actions despite pressures to change, for instance when having been 'pushed on a particular strategic path'. The researchers found that the enhancement of efficiency as a defensive characteristic particularly follows as a reaction to the fact that "there can be profound marketplace penalties for inefficiency"[1883] without monopoly status. They showed that that those companies which strove to differentiate themselves from competitors were more efficient and even outperformed their rivals.[1884]

Hence, especially when facing radical change, leaders are advised to act instantaneously, particularly as there is no evidence for negative effects on performance when reacting overhastily. In what can be determined as such pro-active business tactics is the tendency to vertically integrate along the gas value-chain. The above finding that companies integrated into own production activities to secure resources and benefit from higher margins, and into midstream activities to use pipelines, storage or trading as strategic assets and as separate profit generating business units (see above), has recently also been pointed out by others.[1885] The same holds true for the diversification movement into related and un-related businesses, such as energy production from renewables, or the engagement in the automotive industry such as by developing gas- or electricity-based driving systems.[1886] RWE has recently even

[1881] Cf. Flier et al. (2005).
[1882] Cf. Viellechner/ Wulf (2010).
[1883] Delmas et al. (2007), p. 195.
[1884] A brief overview over literature is provided by Delmas et al. (2007), pp. 190-191.
[1885] Cf. Buck (2009); Köpke (2009), p. 42; von Bechtolsheim et al. (2009); Otzen (2010a), p. 4.
[1886] Cf. Flauger (2009h); Focht (2009b), p. 42; Sanktjohanser et al. (2009), p. 8.

become active in a new business area of laying glass fibre lines for high-speed internet.[1887] This implies that RWE is entering the telecommunications business once more, a segment in which it used to be active in at the beginning (see case study), and indicates a possible re-development to become a multi-utility company again. This reinforces the finding of RWE's zic-zac course. Similarly, also the engagement of oil majors in the renewables business has continued.[1888] Likewise, M&As are still a major characteristic of development.[1889] Closely related to these developments is the increasing tendency of competitors cooperating with each other along and across the value-chain.[1890] At the same time others also recently remarked that active strategies do not necessarily imply the best behaviour as a successful change achieved too quickly may turn out to be the opposite of a victory.[1891]

8.4.2.2 Results from an Institutional Perspective – Confirming Findings

Apart from being able to find evidence for individual tactics applied, such as when denying third parties access to the gas grid based on congestion arguments or in form of window dressing with regards to engagement in the renewables business (see above),[1892] several general trends can be identified. The development of business models becoming 'greener' and development paths 'environmentally friendly' currently is particularly evident. This especially shows in corporate investments into renewable energies and into the field of efficiency enhancement.[1893] In addition to this, has the topic of sustainability been gaining increasing importance on companies' strategic agenda. Even more concrete, Chevalier sees the year 2006 as having been a turning point with regards to public awareness on sustainability. Apparently, especially the reinforcing recognition from investors in companies' attitude towards ecological issues has heightened the criticality of effective environmental and

[1887] Cf. Berke (2010), p. 9.
[1888] Cf. Flauger/ Heilmann (2009b); Pecka (2009b), p. 20.
[1889] Cf. Flauger (2009g); PWC (2009b); PWC (2010b).
[1890] Cf. Lohmann (2007), pp. 23-25; Flauger (2010e); Otzen (2010b), p. 4.
[1891] Cf. Fronda/ Moriceau (2008), p. 589.
[1892] Cf. Bonse/ Flauger (2009); Esterhazy et al. (2010), p. 51.
[1893] Cf. Focht (2009c), p. 3; Focht (2009d), p. 8; Schürmann (2009c); Schürmann (2009d), p. 8.

sustainability reporting (also see above).[1894] In fact, this not only is a prevailing topic in the gas or energy industry, but has become a global topic which cuts across industries with companies aiming to integrate sustainability as part of their core business and define shareholder value in a new way.[1895] Players from other industries have, for example, begun to engage in the renewable energy and efficiency servicing business, for some even leading to the transformation of their previous core businesses.[1896] Other tactics applied in this respect resemble those found above, such as the implementation of respective corporate websites on sustainability,[1897] emphasising the inclusion in sustainability indices, or the bringing-in of powerful constituents – either into the own organisation or by installing own managers in essential institutions.[1898] E.ON, for example, installed the Vice President of its nuclear power subsidiary as the president of the nuclear forum.[1899] Similarly, as revealed by figure 38 above, several recent publications also pointed out the criticality of continuous open, transparent and verified communication as well as trust building measures with all stakeholders, particularly with regards to sustainability issues.[1900]

At the same time, it was also remarked that several players still do not have respective measures in place to keep stakeholders updated in an engaged and continuous way, and instead are still "locked into a once-a-year reporting mentality"[1901]. Increasingly though has the companies' attempt of 'publicly portraying themselves as climate activists' been criticised as 'greenwashing'. Tactics such as publishing a sustainability report or calling attention to the winning of respective awards, for instance, have been assessed as merely cosmetic or as paying lip service "under the guise of sustainability"[1902] without being truly committed.[1903]

[1894] Cf. Chevalier (2009), pp. 6-7, 56. Some even defined sustainability as 'a metaphor for some of the most perplexing and consequential issues facing humanity which may even include the very survival of our species'. Cf. Heal (1998) in Bretschger (2009), p. 3.

[1895] Cf. Pfeil (2009), p. 35; Rees et al. (2010), pp. 75-82; TACD (2009); Gey (2010), p. 13; Steinkirchner (2010), pp. 54-57.

[1896] Cf. Rees et al. (2009), pp. 75-82; Grüttner (2010).

[1897] For an overview see CSR Globe as a global online directory that collects information on the CSR practices of the world's top companies. Cf. CSR Globe (2011).

[1898] Cf. EnBW (2010); PWC (2010a), p. 24; PWC (2010c), p. 26.

[1899] Cf. Anonymous (2010b).

[1900] Cf. Henzgen/ Klär (2010), pp. 56-59; PWC (2010a), p. 26; PWC (2010c), pp. 16, 18-19, 30.

[1901] Lundquist (2010), p. 2.

[1902] Mahler et al. (2009), p. 1.

This becomes especially delicate when considering the finding that only those who are truly committed to sustainability outperform their rivals from a financial perspective and are guarded from value erosion.[1904]

This also holds true regarding the increasing importance of communicating openly with stakeholders and providing transparency.[1905] Research on gas companies' behaviour has, for instance, shown that due to 'clumsy communication', the underestimation of the impact of institutional drivers, and of the criticality of an adequate strategic response even in good times had extremely damaged their image. Consequently, this resulted in the realisation that in the 'new' environmental situation business does not work without integrating eco-components into the portfolio and engaging in constructive stakeholder dialogues in order to retain customers.[1906] A recent study on global sustainability tactics of publicly listed companies, for example, revealed that already 82% of the 300 largest European players provide information about their climate strategies.[1907] This indicates the development of companies adopting an integrated approach and serves as additional support for the findings above.

Further evidence is provided by statements that climate change no longer simply is a compliance issue but one of the 'greatest single challenges to global sustainability'[1908]. Companies are thus advised to move beyond rhetorics and not to take sustainability just as "a philanthropic endeavour"[1909] but as key to corporate strategy.[1910] This also includes the integration of sustainability into daily operations and risk management practices as well as regular auditing and the generation of a history of green innovations in terms of meaningful investments in order to benefit from business results as well as an improved public

[1903] Cf. Bible/ Ginsburg (2009), pp. 63-64; Brendel/ Müller (2009), p. 85; Kröher (2009), pp. 92-95; Flauger (2010f).
[1904] 'Sustainable' companies are here defined as being included in either the DJSI or the Goldman Sachs SUSTAIN focus list. Cf. Mahler et al. (2009), pp. 1-2.
[1905] Cf. Halda (2009), p. 69; Kröher (2009), pp. 92-95; Hajek (2010), pp. 82-86.
[1906] Cf. Oesterwind (2007), p. 33; Focht (2009e), p. 21.
[1907] Cf. Bergius (2008c); Bergius (2009). Also here national differences can be distinguished. German companies, for example, were found to have been keeping back respective information. Cf. Bergius (2009); Koenen (2009); Bergius (2010), p. 27; Wildhagen (2010a), pp. 50-51.
[1908] Cf. Laudicina/ Pau (2007), p. 13.
[1909] Mahler et al. (2009), p. 2.
[1910] Cf. Bergius (2009); PWC (2010c), pp. 8- 9. In fact, one of the very few having pointed this out earlier was Hoffman (cf. Hoffman (2001), p. 221) - but again not specifically for the energy industry.

perception,[1911] i.e. legitimacy. In this respect others particularly pointed out that time was running out for a pro-active environmental strategy.[1912] From this perspective, the recent tactics applied by companies can be seen as advanced forms of responses to such developments, such as the engagement in initiatives like the Voluntary Carbon Market as one step beyond CDM and JI projects. While these are not certified initiatives yet, companies hope to create additional benefits through its voluntary character and make public their achievements via Google Earth and other websites.[1913] Another example is a form of 'ethical investing' as promoted by the BG Group to become 'the leading natural gas company'.[1914] E.ON again set up a teaching chair specifically for Corporate Responsibility at the European School of Management and Technology whose Head of Department teaches that innovative business strategies based on stakeholder communication can improve a company's social as well as economic value.[1915] The fact such tactics have become paramount for organisational performance, if not for long-term survival, can also be drawn from the evidence that by now investors are commissioning studies to determine companies' performance on responses to addressing the 'sustainability agenda'.[1916]

Apart from these industry findings support for the approach adopted can also be found in academic research. In particular, Walgenbach and Meyer have recently confirmed the importance of Institutional Theory as an antipole to rational economic approaches as well as of the concept of organisational fields and legitimacy as critical elements.[1917] And as pointed out in this work, also others found that business-oriented approaches had neglected the institutional environment and the notion of legitimacy for achieving competitive advantage. To emphasise the power of legitimacy Bourdieu, for instance, states that its lacking could bring down "some of the best established monopolies"[1918]. Lately, Breitsohl worked out the criticality of legitimacy in times of organisational crisis.[1919] Delmas and Toffel even find that

[1911] Cf. Mahler et al (2009).
[1912] Cf. Bergius (2008c); Bergius (2010), p. 27.
[1913] Cf. Eckert (2011), p. 23.
[1914] Cf. BG Group (2009).
[1915] Cf. E.ON (2009b).
[1916] Cf. PWC (2010a); PWC (2010c).
[1917] Cf. Walgenbach/ Meyer (2008), p. 120.
[1918] Bourdieu (2008), p. 365.
[1919] Cf. Breitsohl (2009).

so far still too few had "employed institutional theory to understand questions of strategy"[1920], such as on organisational behaviour that goes beyond compliance. Along this line Sauder draws attention to the value of seeing the institutional environment as a pool of resources which serves as a backdrop for strategic behaviour that diverges from established actions.[1921] Others remarked that organisational actors themselves, "whether they like it or not"[1922], over the course of time contributed to the institutionalisation and de-institutionalisation of their environment. Schneiberg in turn built on institutional theory to explain why certain paths continue to exist.[1923]

8.4.2.3 Results from an Integrated Perspective – Confirming Findings

Fundamentally, both types of analysis, i.e. case study and industry research, have revealed the significant impact the change of European Energy Policy had on corporate behaviour and provided evidence for the different types of behaviour as determined according to the degree of strategic activity. Another common finding is that along with the increasing degree of ecological influences the underlying development trend of organisational paths progressed from passive to pro-active forms of behaviour as companies turned from being risk-averse towards taking advantage of environmental change. This has recently been supported by other studies.[1924] Apart from this general trend, findings reveal a development of organisations taking an integrated perspective. This is characterised by companies considering influences from 'both types of environments' and using 'both types of strategies' to enhance overall success – which again includes the achievement of legitimacy as well as economic goals. Thus, instead of, for example, seeing themselves constrained by institutional influences, companies have begun to seize change to take advantage of arising opportunities to enhance their business development. Delmas et al. earlier described this as a situation where "market-

[1920] Delmas/ Toffel (2008), p. 1048.
[1921] Cf. Sauder (2008), p. 211.
[1922] de Queiroz et al. (2007), p. 56.
[1923] Cf. Schneiberg (2007), p. 50.
[1924] Cf. Bozem (2008), p. 55; PWC (2008c), p. 1; PWC (2010c), p. 8.

like behaviour supplanted the more paternalistic approach under regulation"[1925]. On an aggregated industry level this supports the indication of a homogeneous development. In fact, such 'herding' behaviour has been particularly mentioned by more recent publications.[1926]

Moreover, also here findings are supported by recent academic research. This holds with regards to several aspects. One refers to the fact that business behaviour findings could be enhanced when also adopting an institutional lens, such as when strategic alliances or even divestments turn out to be results of the quest for legitimacy.[1927] Another example is the tactic of internationalisation following institutional constraints in the domestic territory.[1928] Dacin et al. again point out that membership in strategic alliances allows the improvement of business- as well as institutionally-oriented goals such as enhancing market development while increasing legitimacy.[1929] The notion of companies seeking governmental help to control competition and create economic rents versus merely following market-oriented strategies has also very recently been discussed by Fligstein. He, in fact, found that governments played a pivotal role in driving entrepreneurial activities.[1930] Others in turn show how non-market strategies can enhance business development. They, for instance, propose 'environmental communication' in form of publishing environmental or sustainable development reports, or membership in self-regulating industry associations, as instruments to be adopted in order to achieve 'environmental legitimacy' and hence business success.[1931] Brunner particularly mentions the value of story telling.[1932] Meyer et al. generally advise that insights from business- and resource-based approaches should be considered in order to "enrich the institution-based view of strategy"[1933].

[1925] Delmas et al. (2007), p. 204.
[1926] Cf. Anonymous (2009d), pp. 62-63; Mahler et al (2009), p. 4; Anonymous (2010f), p. 6.
[1927] Cf. Luo/ Chung (2007).
[1928] Cf. Witt/ Lewin (2007).
[1929] Cf. Dacin et al. (2007), for an illustrative overview see page 173.
[1930] Cf. Fligstein (2008).
[1931] Cf. Berrone et al. (2007); Hunter/ Bansal (2007).
[1932] Cf. Brunner (2009), pp. 92-96.
[1933] Meyer et al. (2009), p. 562.

8.4.2.4 Results from an Internal Perspective – Confirming Findings

Another finding which has to be emphasised is the explanatory value of organisational characteristics. While behaviour and developments were shown to have been initiated and driven by the change of European Energy Policy, case study analysis particularly revealed the impact of internal factors on organisational development. In fact, evidence shows that the influence of environmental change on most companies worked as a constraint in the beginning, while pro-active behaviour was positively influenced by organisational characteristics and resources, such as its assets, its experience, or capabilities such as leadership. Research on the airline industry, for example, found that interdependencies with certain alliance partners may turn out to be a possible constraining force in that the space of response measures is reduced,[1934] an aspect that can also be expected to be of relevance in the energy industry due to similar origins and historically grown interdependent structures as shown in the case of study research (see above). At the same time, such interdependencies may also provide the basis for competitive advantage. This is a possible explanation for the increasing engagement in strategic cooperations also between competitors. Further findings are laid out in the following.

Environmental Perception

As shown and pointed out in recent literature, an organisation's capabilities are particularly critical for a successful development, independent of the path taken. The notion of the criticality of environmental perception, for example, especially in case of an industry "full of emotions"[1935] and shared beliefs such as the energy industry, is supported by the fact that those players who only compare themselves with established rivals facing the same problems (as ENI did, see above) and imitate those that were successful in the past, tend to be inert to change, rather clinging to known forms of behaviour and defending them rather than taking advantage of change. In this respect it has been found that inadequate instruments are likely to

[1934] Cf. Viellechner/ Wulf (2010), pp. 19-21.
[1935] Viellechner/ Wulf (2010), pp. 17-18.

increase inertia. Closely related to misguided environmental perception is that of an inadequate self-perception in that overconfidence and status-orientation, based, e.g., on incumbents' cognitive structures perceiving themselves as national prestige, lead to lower ability to extract value from new strategic options and hinder incumbents from innovating. Thereby they not only risk lower performance outcomes but possibly their survival, as indicated in the studies above. Organisations being experienced with environmental disruption are more likely to behave pro-actively as they can fall back on certain response measures.[1936]

Organisational Leadership

Several other researchers again have emphasised the role of leadership capabilities. In his study on 'Corporate Sustainability Management in the Energy Sector' Salzmann before had already pointed out that particularly in highly complex and hence uncertain situations, soft factors such as corporate culture, leadership, managers' knowledge and mindset are decisive factors since leaders have to fall back on them when making decisions. Removing such barriers would thus increase the likelihood of more pro-active approaches.[1937] Similarly, Spiegel et al. had found that "industry leaders clearly distinguish themselves from the laggards through their capacity to foresee and understand strategic trends"[1938] and to align their organisational development accordingly to meet these challenges. As already shown in the case study and earlier[1939] research, this holds with regards to business-related issues such as making M&As successful as well as in terms of institutional ones. Here, particularly the pivotal role of an organisation's leader or CEO, especially his drive, risk propensity, and authority, but also his educational or professional background and his operational experience can be determined. While a higher degree of willingness to carry risks has been related to a larger likelihood of tackling threats and overcoming resistance, a leader's authority and strong

[1936] Cf. Viellechner/ Wulf (2010). Interestingly, this has been pointed out by public press, referring to academic research results. Cf. Storbeck (2009).
[1937] Cf. Salzmann (2006), pp. 151-153.
[1938] Spiegel et al. (2005), p. 41.
[1939] Cf. Flaherty/ Jirovec (2006).

guidance has been assessed as beneficial due to energising organisational development as "leadership in performance goes hand-in-hand with a willingness to take an active role in furthering policy development"[1940]. At the same time it has been pointed out that a too large degree of authority may also be a disadvantage.[1941]

This can, in fact, be seen in the case of RWE whose CEO Großmann has recently been nominated as the 'lobbyist of the year'[1942] while at the same time having been criticised for his patriarchal leadership style. Critically, the latter has not only resulted in severe power battles within the Group and so created inefficiencies, but also made important organisational members withdraw, such as the chairman of the board or the highly regarded future leader for RWE's efficiency branch with whom Großmann had planned to improve the Group's image.[1943] Also public press has reported on the negative consequences of internal conflicts within RWE. Recently, this has also been the done in the case of E.ON where the mood inside the company was described as having hit "rock bottom"[1944].[1945] In fact, Bernotat was criticised for his 'unintelligent investment behaviour'[1946] which had made organisational structures extremely complicated, and for his leadership style that had 'accrued a lot of things which now have to be tidied up'[1947]. While this supports the assumption that a large degree of activity must not necessarily constitute the best path, it also implies that even if pro-active behaviour has resulted in a positive performance – as in the case of E.ON so far – this status is not sustainable and may be eroded. In fact, RWE has recently overtaken E.ON in different sustainability and CSR rankings,[1948] and is the first of the publicly listed German DAX companies which implemented the Extractive Industries Transparency Initiative (EITI).[1949] Moreover, in the 2010 Investor Relations ranking of German DAX companies RWE is placed

[1940] PWC (2010c), p. 26.
[1941] Cf. Viellechner/ Wulf (2010), p. 25.
[1942] Cf. Trittin (2010), pp. 36-37.
[1943] Cf. Flauger (2009d); Flauger (2009i); Flauger/ Stratmann (2009b). Just recently the chairman of the board was replaced by a famous politician, the former Austrian chancellor Wolfgang Schüssel. Cf. Flauger (2010g). Großmann's personality is also criticised by leaders from other industry who trying to 'get rid of him' as member of their board. Cf. Schneider/ Flauger (2010).
[1944] Lerch (2009). Translation by author. Also cf. Flauger (2010c); Wildhagen (2010b).
[1945] Cf. Gassmann (2009b).
[1946] Cf. Wildhagen (2010c), p. 55. Translation by author.
[1947] Cf. Flauger (2010c). Translation by author.
[1948] Cf. Seiwert (2007), p. 44; Halda (2009), p. 69; Kröher (2009), pp. 94-95; Hajek (2010), pp. 82-86.
[1949] Cf. BMZ (2010).

rank number 9. E.ON, on the contrary, is only ranked number 20, having fallen down from rank 2 in 2009.[1950] E.ON has thus even been portrayed as 'finding friends only within its own shareholders'[1951], a statement indicating a significant change when considering it having been the 'darling of investors' not long ago (see above). RWE has been seen as more successful with regards to cost reductions and efficiency enhancements,[1952] and has become to be recognised as the pioneer in the area of e-mobility, smart metering, and electricity-to-gas transformation,[1953] areas where E.ON has been judged as being too reluctant.[1954]

Even more, E.ON has also recently been accused of having neglected the development of renewable energy technologies to become a 'truly' sustainable company.[1955] This can also be attributed to leadership qualities in that Bernotat has been found to have believed that the topic of energy efficiency was not suitable for corporate endeavours for a too long time.[1956] In fact, as a reaction to such accusations E.ON has recently implemented a new leader. Teyssen, who has been characterised as the "long-time crown prince"[1957] of the company and as being deeply rooted within the energy industry with influential contacts, is attributed the professional competence to introduce a radical strategic and cultural change. Examples which are mentioned include selling E.ON's U.S. subsidiary and divesting Gazprom shares[1958] in order to make E.ON leaner and faster, and taking advantage of new opportunities like intelligent grids and smart metering, two areas where E.ON has been criticised to be following behind.[1959] It is also considered critical in this respect that Teyssen wanted to 'strike new tones' in dealing with political authorities in form of less 'wigging'[1960], and that he is on good terms with employees, trade unions and more approachable than Bernotat.[1961] Furthermore, he has recently imposed the company to 're-invent' itself by radically

[1950] Cf. Hajek (2010), p. 84.
[1951] Cf. Anonymous (2007u), p. 160.
[1952] Cf. Hofmann (2008).
[1953] Cf. Flauger (2009h); Flauger (2010f); Flauger (2010h); Schuster (2010).
[1954] Cf. Focht (2009f), p. 40; Flauger (2010f); Wildhagen/ Dürand (2010), pp. 56-57.
[1955] Cf. Flauger (2009e); Stratmann (2009).
[1956] Cf. Wildhagen (2010b).
[1957] Flauger (2010c). Translation by author. Also cf. Flauger (2009e).
[1958] Despite Putin's appraisal for E.ON's investment in Russia. Cf. Willershausen (2010).
[1959] Cf. Anonymous (2010c); Flauger (2010i); Hosp/ Sturbeck (2010).
[1960] Cf. Anonymous (2010d), p. 4.
[1961] Cf. Lerch (2009); Flauger (2010b), pp. 62-63; Flauger (2010c).

questioning the existing business model and strategy of having to 'control everything ourselves', i.e. being vertically integrated along the whole value-chain. This even includes plans to divest activities so far defined as being part of the core business, such as the electricity distribution and gas transportation grid as well as plans to globalise into emerging countries. Additionally, Teyssen plans to 'take it down several gears' in that E.ON will only participate as a junior partner in large projects. Even more, he wants to transform E.ON from an energy producer into a specialised provider of energy services. With this approach and despite recent criticism, E.ON has again been assessed as the 'daring' pioneer and the implementation of its new business model as an indicator for the fundamental change of energy markets,[1962] also supporting the finding of its leadership role.

Recently, and therefore in line with the overall development as determined above, the notion of leadership and top management attention has been pointed out as particularly critical with regards to sustainability requiring attention at board level.[1963] The CEO of Shell, for example, formulated that: "If you want to continue to succeed as an energy company in the coming decades, you need to understand and meet people's expectations for environmental and social performance, as well as delivering solid technical and financial performance."[1964] Other research found that also tenure of office seems to play a role as those leaders with a long tenure have been found to be hesitant to experiment and prefer to focus on existing structures. They are thus less likely to adopt appropriate behaviour to match environmental change. At the same time a too short period and too high degree of CEO succession is considered as disadvantageous for successful development as proven in the case of RWE. A positive influence on performance instead has been attributed to CEOs who are given more time to develop their paradigms and gain legitimacy. In fact, a pay-off in form of performance improvement has been found to materialise after about six years. Other research determined that in very demanding environments CEOs tend to be exceptionally successful in improving organisational performance only at the beginning of their tenure of office. This could also hold true in E.ON's case, with Bernotat, after having successfully established the company as

[1962] Cf. Anonymous (2010e), pp. 1-2; Gassmann (2010b), p. 1.
[1963] Cf. PWC (2008c), p. 1; Rees et al. (2009), p. 75; Bergius (2010), p. 27; Henzgen/ Klär (2010), pp. 56-59; PWC (2010a), pp. 16, 25; PWC (2010c), pp. 16, 19, 29.
[1964] PWC (2008c), p. 7.

an industry leader, was recently replaced by a new CEO (Teyssen) (see above). Apart from a CEO's personal characteristics another factor of relevance, although seeming common sense, is his formal education in that higher levels are related to a larger degree of organisational innovativeness.[1965]

In addition to the CEO as an influential factor attention has also been directed to the importance of the composition of the top management team. While a heterogeneous structure where members have different backgrounds encourages more innovative forms of behaviour, personal tension within the team has been determined to have negative effects on performance[1966] as found in the case of RWE. Also misguidance through past beliefs, e.g. having been a leader of natural monopolists or state-owned companies, may constrain organisational development so that the behaviour of a CEO may actually reduce performance.[1967] The CEO of Italian Enel, for instance, stated that "leaders of energy companies tend to feel that being in the cradle of stringent regulations will preserve their status as insulated, protected enterprises"[1968]. Enel itself serves as another example for the importance of leadership providing strategic direction. While, in response to increasing competition, it diversified into the water and telecommunication business under its previous CEO, it soon after faced the risk of losing track. The new CEO instead re-focussed the company on the energy business, building the business model on activities such as on energy production from a variety of fossil and renewable sources, on upstream production activities by becoming engaged in Russia as well as on the efficiency-enhancing business. Moreover, by applying innovative approaches to public management, such as a multi-stakeholder perspective and transparent communication methods, the new CEO also addressed what has here been defined as institutional drivers, having turned Enel into one of Europe's largest utility companies.[1969] Interestingly, these examples not only support the importance of organisational leadership, but serve as additional evidence for the commonality of business models. Another example for the impact of leadership is provided by Kofler Energies (see

[1965] Cf. Viellechner/ Wulf (2010), pp. 25-26, 40-41.
[1966] Cf. Viellechner/ Wulf (2010), pp. 28-30, 34.
[1967] Cf. Viellechner/ Wulf (2010), pp. 26-27. Also cf. Salzmann (2006), pp. 152-153.
[1968] Fulvio Conti, CEO of Enel. In: Kleiner (2008), p. 3.
[1969] Cf. Kleiner (2008), p. 1.

above) whose founder successfully installed it in the marketplace by 'cunningly playing to the gallery'.[1970] Apart from the CEO's importance for organisational success this case also provides another example for the observation of increasingly similar business models and forms of behaviour.

Having shown that not only findings from case study research and industry analysis but also from recent studies and publications reinforce each other, these and the other results are now concluded on in the last chapter of this thesis.

[1970] Cf. Hofer (2008), p. 13.

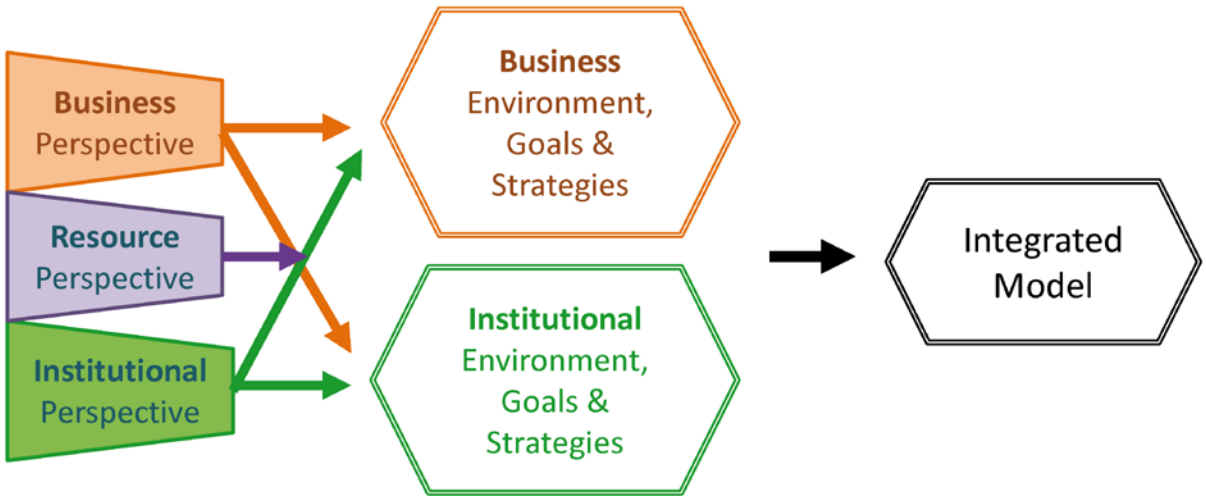
CHAPTER IX CONCLUSION

9.1 Findings and Contributions of Study

Essentially, the above analysis has enabled to achieve the fundamental research aim of this thesis: Illustrating and explaining organisational behaviour of incumbents active in the European gas market in response to elementary changes of European Energy Policy over time. In fact, it was shown that behaviour has been significantly influenced by these changes, even leading to the re-modelling of traditional business models. Apart from providing a detailed analysis of specific examples of the European gas industry, these results enhance overall research on organisational behaviour of incumbents in response to disruptive environmental change, an area which has recently been criticised for still lacking substantial empirical grounding and for focussing only on certain aspects without considering approaches and explanations of different research disciplines.[1971] This again supports the value of this work in that analysis has been based on two apparently contradictious theoretical approaches: Business Theory and Institutional Theory. While mainly analytical in nature, this has enabled to distinguish between different types of environmental drivers and actors and thus organisational forms of behaviour. The adoption of such a two-dimensional approach significantly reinforces and highlightens explanatory value as findings or observations made in some cases revealed different drivers behind organisational behaviour other than normally assumed when only adopting a one-sided perspective. Examples include the application of business tactics to improve or gain legitimacy instead of economic goals. In addition, both approaches illustrate organisational response in reaction to environmental change as lying on a continuum between passive and pro-active forms of behaviour. Consequently, this allows the illustration of changing organisational behaviour over time in form of development paths. By additionally integrating a resource-based perspective explanatory value could be enhanced even further. The contributory value of such an 'integrated' approach is depicted in the following exhibit.

[1971] Cf. Viellechner/ Wulf (2010), p. 3.

Figure 39:[1972] Thesis' contribution – Enhancement through an Integrated Approach



By creating a model built on both perspectives and adopting an integrated perspective for analysis, the author has been able to depict the individual course of development of the cases analysed. While it could be shown that the underlying course of action was characterised by a development from passive to pro-active behaviour, especially as organisations began perceiving environmental change as an opportunity instead of just a threat, analysis also revealed that each company had taken a different path. In fact, four different courses of development were found: One starting development along an institutional path before also driving business development (ENI), another being pro-active and integrated right from the beginning (E.ON), a third revealing an integrated but passive course (GdF), and a fourth which initially showed an active integrated course of development before turning more passive again to only recently indicate more pro-active strategies once more, resulting in what above has been termed a 'zic-zac path' (RWE).

Apart from these differences, commonalities in development also were revealed through case study analysis. Even more, these findings are supported by industry analysis and recent research results. They show that business as well as institutional organisational behaviour has become more similar over the course of time. From a Business Perspective this reveals in the

[1972] Own figure.

increasing similarity of business models as companies engage in the same activities along and outside the gas value-chain. Through an Institutional Lens this manifests itself through the application of similar institutional strategies and tactics. Illustrated on the matrix, this shows as a common development towards the top right hand corner. Another commonality is the growing awareness of the importance of adopting an integrated perspective. This has been particularly revealed in the utilisation of the issue of sustainability for enhancing business development and overall performance in order to gain a competitive advantage. In fact, this finding is supported by results from case study as well as industry analysis. While this emphasises the importance of integrating different methodologies, it also indicates the development towards an increasing homogeneity within the industry. Apart from showing the criticality of accounting for a temporal dimension to reveal such developments, the finding of a growing convergence is particularly crucial with regards to overall industry structure as well as for individual companies and their future behaviour in that they need to find ways to differentiate themselves in such surroundings in order to establish a sustainable competitive advantage.

Essentially, as already indicated above and in addition to having been able to illustrate organisational behaviour in response to change over the course of time, this study also provides explanations of the findings made. These have allowed an explanation of the reasons behind the differences in paths as well as in the development towards an increasing convergence of behaviours. An interesting observation made here is that differences were initially determined particularly by the differences existing in national regimes of Member States. This can be explained by the fact that the EU Commission under the subsidiarity principle had left room for individual national preferences in the beginning. The development towards increasingly similar forms of behaviour and the growing homogenisation detected, has especially been driven by the fact that as EU Energy Policy has evolved over time, requirements also became stricter and obligatory for all members without possibilities for exemption. Another important finding is the explanatory power of internal factors as well as their criticality for organisational behaviour. In particular, it was shown that while organisational characteristics such as its history, learning experience and resource endowment set the basis for successful development, the ability to change and take advantage of arising

opportunities, especially to drive change itself, is predominantly determined by an organisation's capabilities and leadership. This is supported by very recent studies as researchers found evidence for the effect of a CEO's narcissism, age, experience and education on organisational behaviour in disruptive contexts.[1973] This finding not only shows the contribution of this work in that it reveals the importance of integrating the RBV as a supplementary approach to external theories for enhancing explanatory power, but also shows the criticality of such factors for changing an organisation's course of direction and differentiating itself from competitors in increasingly homogeneous industry structures while at the same time maintaining legitimacy. Other recent research revealed that the energy companies recognised as the leading ones, are those which are self-correcting by continuously adapting to changing conditions but without rushing to embrace changes unilaterally, and that those which invest continuously are the most successful in terms of economic performance and public perception.[1974]

In addition to enhancing theoretical research, this study provides significant value in that it allows the extraction of implications for practitioners. First of all, the integrated approach adopted raises awareness for and allows the classification of different types of environmental drivers which can constrain but also enhance organisational development. Secondly, it provides a range of strategies and tactics which can be drawn upon when facing such influential forces. This is particularly valuable for reacting pro-actively and shaping change. In this respect Miles, for instance, believes that it was "important for executive leaders to have a grasp of the full range of options for strategic adaptation if they are to be in a position to engage a wide variety of potential threats to organizational integrity before they become a full-blown reality"[1975]. Even more, the two-dimensional model has revealed how business strategies may be applied to maintain or gain legitimacy and, respectively, how institutional strategies can serve as instruments to obtain business aims, thus revealing the value of adopting an integrated perspective. This is a critical aspect to be considered by practitioners as the conscious application may hold significant power to enhance competitive advantage if

[1973] Cf. Viellechner/ Wulf (2010).
[1974] Cf. Mahler et al. (2009), p. 4.
[1975] Miles (1982), p. 231.

not organisational survival. Bruce, e.g., believes that "who you trade with is going to be one of the key decisions you make"[1976]. The inclusion of internal factors in this study for practitioners again highlightens the criticality of organisational capabilities. These continuously need to be monitored with regards to their appropriateness and, if required, new ones developed if necessary. This also holds in terms of organisational leadership in that certain environmental situations may require specific leadership styles, such as in form of increased attention to institutional forces and agents in phases where these are particularly prevailing.

In fact, the consideration of these findings can be expected to become even more prevalent as European Energy Policy is continuously changing. Requirements are becoming even stricter and thus are exerting more pressure on organisations, threatening their business success as well as their legitimacy. Recent examples include tightening measures to enhance competition and market opening via ownership unbundling. This would lead to the complete dis-aggregation of organisational value-chains to create separate companies. Other examples are additional measures to increase security of supply by enforcing corporate investments into strategic infrastructure. Also legislations with regards to sustainability, such as increasing the share of renewables in supply portfolios[1977] or rulings on the geological storage of carbon dioxide,[1978] are becoming stricter and may constrain the expansion of business activities. The EU's approach to climate protection and its implication for energy markets have recently even been assessed as having become "the single most important defining feature of what Europe is all about"[1979]. Organisational leaders even believe that sustainability is the "single biggest business opportunity of the 21st century, and will be the next source of competitive advantage"[1980]. While this supports the results derived from case study and industry analysis, it again provides an essential finding for practitioners and especially organisational leaders regarding their drive of future organisational behaviour. In fact, changes have been so fundamental that totally new approaches are required. From this perspective, research

[1976] Bruce (2009), p. 3.
[1977] Cf. European Commission (2009).
[1978] Cf. European Parliament and Council (2009).
[1979] Keppler (2009), p. 222.
[1980] As expressed by the CEO of Wal-Mart. In: PWC (2008c), p. 4.

findings can be said to have portrayed the beginning of a fundamental restructuring taking place in the industry. So far, this has been mainly driven by companies deviating from their traditional business of producing, transporting and selling natural gas to focus on one part of the value-chain or into completely new businesses such as renewable sources. Moreover, this is not only restricted to the energy sector anymore, but has been extended into unrelated ones, such as the automotive or building industry. While this supports the assumption of converging industry boundaries, companies should be aware of findings which show that a too large degree of diversification or internationalisation is not honoured by capital markets and key investors as profitability and focus get diluted.[1981] Oil companies, e.g., have been reported to be reassessing their 'green' investments and start divesting these activities again.[1982] Recent research has emphasised that when facing such drastic environmental changes, organisations should adopt a new 'risk culture'[1983] as was mentioned as essential after liberalisation had 'bust loose change' (see chapter III). Support for this can also be found in this study. As depicted above, there are indications of companies considering of leaving their 'centre of gravity', i.e. producing energy, to become mere service providers. In doing so, they are totally re-defining their business model. In fact, one of the most recent examples refers to rumours of E.ON wanting to divest its former 'jewel' Ruhrgas.[1984] While this would constitute a fundamental break with its previous approach, this step would at the same time confirm E.ON's first-mover and leadership attributes.

Based on this it can be concluded that this work significantly contributes to 'opening up the black box'[1985] and turning it into a 'white box'[1986] – as formulated as a requirement above. After having laid out the contributions of this work of enhancing academic research as well as of providing guidance for practitioners, the limitations of this study, as there are to any research, are mentioned.

[1981] Cf. Wiegand (2005), p. B2; Hannes (2007), p. B2.
[1982] Cf. Schürmann (2009d), p. 8.
[1983] Cf. Chevalier (2009), p. 51.
[1984] Cf. Anonymous (2011b).
[1985] Cf. Hutzschenreuter et al. (2007), p. 1057; Delmas/ Toffel (2008), p. 1027.
[1986] Cf. Dyckhoff (1996), p. 264.

9.2 Limitations of Study and Implications for Future Research

As criticised as a general weakness of qualitative case study research, particularly in relation to the small number of cases used and the related limited replicability, it could be argued that findings do not hold to the requirement of having to be generalisable. Here, this has been countered by the additional industry analysis which in fact has supported results from case study research and thus allowed the researcher to draw general conclusions. Mintzberg pointed out that small sample numbers have indeed often turned out to be superior with regards to their explanatory quality, thus asking 'why apologise?' for them.[1987] He also draws attention to the fact that "there would be no interesting hypothesis to test if no one ever generalized beyond his or her data"[1988]. Others again find that when analysing change, as has been done here, observations that are actually valid, are generally not replicable.[1989] Still, as a proposal for future research, additional insights may be generated by supplementing qualitative case study research with quantitative statistical analysis. This could be especially valid for further determining the impact of internal forces shown to be of particular influence here, above all with regards to organisational capabilities and leadership as chosen as one of the most frequent methodologies in research analysing these factors (see literature above). At the same time, the obtaining of such data requires an 'in-depth, real-time and action-research on-site clinical diagnosis' in order to gain full comprehension of strategy formation, a claim which, apart from requiring access, has been pointed out as being extremely work-intensive and expensive.[1990] Another area where the application of quantitative statistical work could be supportive lies with the analysis of organisational performance in relation to strategic behaviour. This would enhance insight on the notion that a higher degree of active and particularly pro-active behaviour is related to organisational economic success and legitimacy. From this, further deductions can be drawn on what is likely to constitute a 'best path' which here as been attributed to E.ON in following an active and integrated path. Additionally, larger samples and quantitative analysis could also be helpful in determining whether findings

[1987] Cf. Mintzberg (1979), pp. 583-584. Also cf. Yin (2003a), p. 145.
[1988] Mintzberg (1979), p. 584.
[1989] Cf. Stevenson/ Harmeling (1990).
[1990] Cf. Miles (1982), pp. 257-258.

above can be attributed to certain "period effects"[1991] where behaviour differs, and possibly classified as typologies. Hambrick, for instance, thinks that "empirical determination of a strategic typology (...) seems a useful research goal in itself"[1992]. In this respect Schneiberg and Clemens propose to use indices such as the Herfindahl index and refer to a study which was able to show how regulations, trade associations, and media coverage shaped organisational diversity in the U.S. power industry.[1993] Still, also statistical analysis has its drawbacks and researchers should consider that "no algorithm exists to weigh each factor, nor can a one-size-fits-all answer suit all companies in all situations"[1994]. Another possible way for optimising findings through improving the research methodology could be by asking key informants to clarify findings as recently pointed out by researchers having analysed incumbent inertia on disruptive change,[1995] or by carrying out additional interviews with industry experts.

9.3 Final Word

Essentially, however, and independent of the methodology chosen, environmental change always holds an element of uncertainty which cannot be eroded by methodology, as perfect as it may be. This also is a critical aspect of organisational stewardship, especially as changes such as liberalisation are irreversible and once 'out of the bottle are taking hold'[1996]. This becomes even more critical when also keeping in mind developments taking place on a global level, such as a generally increasing demand for energy from emerging nations such as China and India in times of decreasing resources and the resulting augmented worldwide competition for access to natural resource endowments. Apart from this, there may be totally unexpected incidents, such as the recent atomic catastrophe of Fukushima which significantly changed global approaches to energy supply and probably created a 'Post-Fukushima' energy era. In Germany, for example, it resulted in the decision to close-down all nuclear power

[1991] Schneiberg/ Clemens (2006), p. 206.
[1992] Hambrick (1980), p. 572.
[1993] Cf. Schneiberg/ Clemens (2006), p. 216.
[1994] Courtney (2001), p. 47.
[1995] Cf. Viellechner/ Wulf (2010).
[1996] Cf. Bruce (2009), p. 6.

plants by the end of the decade. Such decisions expose energy companies, and not only those with investments in this segment, to enormous challenges. In addition to increasing pressures on a global level – here, particularly the recent boom of unconventional gas production the U.S. must be mentioned – also European Energy Policy changes are still exigent and for the organisations subject to such influences this implies that "the battle is not over!"[1997] yet. The uncertainty inherent in the organisational environment is thus likely to remain. What is certain in contrast is that the energy landscape has fundamentally changed over the past decade and with it organisational behaviour. It will be interesting to observe how companies continue to develop.

[1997] Lewiner (2007), p. 11.

References

A.T. Kearny (2008): Ownership Unbundling. Der richtige Weg für mehr Wettbewerb?, Berlin, January 2008.

Abell, D. F. (1978): Strategic Windows, in: The Journal of Marketing, Vol. 42, No. 3, pp. 21-26.

Abell, D. F. (1980): Defining the business: The Starting Point of Strategic Planning, Englewood Cliffs (NJ): Prentice-Hall.

Abrahamson, E. (1996): Management fashion, in: Academy of Management Review, Vol. 21, No. 1, pp. 254-285.

Abrahamson, E./ Fombrun, C. J. (1994): Macrocultures: Determinants and Consequences, in: Academy of Management Review, Vol. 19, No. 4, pp. 728-755.

Abrahamson, E./ Rosenkopf, L. (1993): Institutional and Competitive Bandwagons: Using Mathematical Modeling as a Tool to Explore Innovation Diffusion, in: Academy of Management Review, Vol. 18, No. 3, pp. 487-517.

ABS Energy Research (2004): Energy EU 25. The EU Electricity and Gas Markets. Liberalisation and Enlargement, 1st edition.

Adelman, M. A./ Lynch, M. C. (2002): Natural Gas Supply to 2100, International Gas Union and DRI-WEFA.

Aharoni, Y. (1993): From Adam Smith to Schumpeterian Global Firms, in: Rugman, A. M./ Verbeke, A. (eds.): Research in global strategic management, Vol. 4, Greenwich (CT)/ London: JAI Press, pp. 17-39.

Alasuutari, P. (2004): The globalization of qualitative research, in: Seale, C./ Gobo, G./ Gubrium, J. F./ Silverman, D. (eds.): Qualitative Research Practice, London: Sage, pp. 595-608.

Albert, H. (1988): Hermeneutics and Economics: A Criticism of Hermeneutical Thinking in the Social Sciences, in: Kyklos, Vol. 41, Issue 4, pp. 573-602.

Aldrich, H. E. (1979): Organizations and Environment, Englewood Cliffs (NJ): Prentice-Hall.

Aldrich, H. E./ Fiol, C. M. (1994): Fools Rush In? The Institutional Context of Industry Creation, in: Academy of Management Review, Vol. 19, No. 4, pp. 645-670.

Alich, H. (2006): Fusion von Suez und GDF steht auf der Kippe, in: Handelsblatt, 14 June 2006, http://www.handelsblatt.com/unternehmen/industrie/fusion-von-suez-und-gdf-steht-auf-der-kippe;1093113, 18.08.06.

Alich, H. (2007): Sarkozy treibt Fusionen voran, in: Handelsblatt, 10 September 2007, p. 19.

Alich, H. (2008a): In Frankreich niemals ohne BB, in: Handelsblatt, 16 July 2008, http://www.handelsblatt.com/politik/international/in-frankreich-niemals-ohne-bb;2012053, 24.08.09.

Alich, H. (2008b): Diskreter Kämpfer, in: Handelsblatt, 5 June 2008, http://www.handelsblatt.com/unternehmen/koepfe/diskreter-kaempfer;1439215, 24.08.09.

Alich, H./ Flauger, J. (2008): Eon kämpft mit EDF um Distrigaz, in: Handelsblatt, 27 March 2008, http://www.handelsblatt.com/unternehmen/industrie/eon-kaempft-mit-edf-um-distrigaz/2939164.html?p2939164=all, 17.10.2008.

Alich, H./ Flauger, J. (2009a): Eon-Chef will Frankreichs Strommarkt knacken, in: Handelsblatt, 30 November 2009, http://www.handelsblatt.com/unternehmen/industrie/eon-chef-bernotat-will-frankreichs-strommarkt-knacken/3315132.html, 03.12.2009.

Alich, H./ Flauger, J. (2009b): Eon steigt in Frankreichs Nuklearmarkt ein, in: Handelsblatt, 21 September 2009, http://www.handelsblatt.com/unternehmen/industrie/eon-steigt-in-frankreichs-nuklearmarkt-ein/3263062.html, 30.10.2009.

Al-Khatib, H. (2004): The Future Of Energy: Alternatives Ahead, in: Middle East Economic Survey, Vol. XLVII, No. 27.

Allas, T. (2001): The M&A trap for utilities, in: The McKinsey Quarterly, No. 3, pp. 21-25.

Alt, F. (2002): Krieg um Öl oder Frieden durch die Sonne, München: Riemann.

Alt, J. E./ North D. C. (1990): Political Economy of Institutions and decisions, New York et al.: Cambridge University Press.

Alvesson, M./ Deetz, S. (2000): Doing Critical Management Research, London: Sage.

Amburgey, T. L./ Miner, A. S. (1992): Strategic Momentum: the effects of repetitive, positional, and contextual momentum on merger activity, in: Strategic Management Journal, Vol. 13 (5), pp. 335-348.

Amit, R./ Schoemaker, P. J. H. (1992): Strategic assets and organizational rent, Philadelphia (PA): Wharton School, SEI Center for Advanced Studies in Management.

Amit, R./ Schoemaker, P. J. H. (1993): Strategic assets and organizational rent, in: Strategic Management Journal, Vol. 14, No. 1, pp. 33-46.

Andersen, S. S./ Sitter, N. (2007): Re-politicising Regulation: Politics: Regulatory Variation and Fuzzy Liberalisation in the Single European Energy Market, EUSA Conference, May 2007.

Andersen, T. A./ Ansoff, H. I./ Norton, F./ Weston, J. F. (1959): Planning for Diversification Through Merger, in: California Management Review, Vol. 1, No. 4, pp. 24-35.

Anderson, P./ Tushman, M. L. (1990): Discontinuities and Dominant Designs: A Cyclical Model of Technological Change, in: Administrative Science Quarterly, Vol. 35, pp. 604-633.

Andrews, K. R. (1971): The Concept of Corporate Strategy, Dow Jones-Irwin: Homewood (Ill).

Anonymous (1997): Töchter mit viel Schminke, in: Der Spiegel, No. 29, pp. 76-78.

Anonymous (1998): Freedom for dinosaurs, in: The Economist, 30 April 1998, http://www.economist.com/businessfinance/displayStory.cfm?story_id=E1_TNVGVQ, 31.08.09.

Anonymous (1999a): Puffed up, in: The Economist, 23 December 1999, http://www.economist.com/sciencetechnology/displayStory.cfm?story_id=347437, 03.01.2006.

Anonymous (1999b): French dressing, in: The Economist, 8 July 1999, http://www.economist.com/node/221178, 27.08.2009.

Anonymous (1999c): Tractebel the intractable, in: The Economist, 25 February 1999, http://www.economist.com/businessfinance/displayStory.cfm?story_id=E1_TRSRJJ, 27.08.09.

Anonymous (1999d): Gaz de France open to alliances, in: europe energy, No. 550, pp. 2-3.

Anonymous (2000a): Mariage à la mode, in: The Economist, 27 April 2000, http://www.economist.com/displaystory.cfm?story_id=304540, 02.01.2006.

Anonymous (2000b): Gaz de France's development may be slowed by lack of funds, in: europe energy, No. 560, p. 4.

Anonymous (2001a): Power shoppers, in: The Economist, 25 January 2001, http://www.economist.com/displaystory.cfm?story_id=486881, 02.01.2006.

Anonymous (2001b): The row over the EU's market isn't over, in: The Economist, 29 March 2001, http://www.economist.com/displaystory.cfm?story_id=555363, 02.01.2006.

Anonymous (2001c): They love it, in: The Economist, 24 May 2001, http://www.economist.com/world/europe/displaystory.cfm?story_id=E1_GPTPRJ, 31.08.09.

Anonymous (2002a): Swap shop, in: The Economist, 23 May 2002, http://www.economist.com/displaystory.cfm?story_id=1144056, 02.01.2006.

Anonymous (2002b): E.On, E.Off, in: The Economist, 8 August 2002, http://www.economist.com/displaystory.cfm?story_id=1273654, 02.01.2006.

Anonymous (2002c): Room for improvement, in: The Economist, 14 March 2002, http://www.economist.com/displaystory.cfm?story_id=1034158, 02.01.2006.

Anonymous (2003): Twin powers, in: The Economist, 15 May 2003, http://www.economist.com/displaystory.cfm?story_id=1788359, 02.01.2006.

Anonymous (2004a): Der deutsche Kernkraftausstieg ist kein Exportschlager, in: Frankfurter Allgemeine Zeitung, No. 204, p. 13.

Anonymous (2004b): Creating Euro giants, in: The Economist, 22-28 May 2004, pp. 65-66.

Anonymous (2004c): Monopoly? It all depends whose, in: The Economist, 11 December 2004, p. 60.

Anonymous (2005a): The natural-gas explosion, in: The Economist, 28 February 2005, http://www.economist.com/node/3712621, 02.01.2006.

Anonymous (2005b): The shape of things to come?, in: The Economist, 9 July 2005, pp. 48-50.

Anonymous (2005c): E.on Hanse legt Kalkulation seiner Gaspreise für Kunden offen, in: VDI nachrichten, 25 November 2005, p. 7.

Anonymous (2005d): French Eye Merger With Britain's Centrica, in: Pipeline & Gas Journal, October 2005, p. 12.

Anonymous (2005e): A very long engagement, in: The Economist, 11 August 2005, http://www.economist.com/businessfinance/displayStory.cfm?story_id=E1_QNRQQDJ, 27.08.2009.

Anonymous (2005f): Eine Branche steht unter Strom, in: Frankfurter Allgemeine Zeitung, No. 208, p. 16.

Anonymous (2005g): Gazprom will in Frankreich Gas verkaufen, in: Handelsblatt, 18 November 2005, http://www.handelsblatt.com/unternehmen/industrie/gazprom-will-in-frankreich-gas-verkaufen;992204, 31.08.09.

Anonymous (2005h): Europe's nascent merger boom, in: The Economist, 6 September 2005, http://www.economist.com/agenda/displaystory.cfm?story_id=E1_QPVVGPP, 27.08.2009.

Anonymous (2005i): Fearful Fortress France, in: The Economist, 27 October 2005, http://www.economist.com/world/europe/displaystory.cfm?story_id=E1_VDJDRRG, 27.08.2009.

Anonymous (2005j): Record M&A Activity In Global Electric, Gas Industry Expected to Continue, in: Pipeline & Gas Journal, April 2006, p. 14.

Anonymous (2005k): Energetic efforts, in: The Economist, 8 September 2005, http://www.economist.com/businessfinance/displayStory.cfm?story_id=E1_QPSJDNS, 27.08.2009.

Anonymous (2006a): Löste Gasförderung Erdbeben aus?, in: Energie & Management, 1 May 2006, p. 3.

Anonymous (2006b): Politics of Power, in: The Economist, Special Report February 2009, pp. 3-6.

Anonymous (2006c): Erzeugung und Bedarf in GB driften auseinander, in: Energie & Management, 15 December 2006, p. 3.

Anonymous (2006d): Power games, in: The Economist, 5 January 2006, pp. 12-13.

Anonymous (2006e): Macquarie ist Pionierin bei Infrastruktur, in: Handelsblatt, No. 201, p. 18.

Anonymous (2006f): The heat is on. A survey of climate change, in: The Economist, 9 September 2006, pp. 1-24.

Anonymous (2006g): Schmack Biogas expandiert nach Italien; in: Energie & Management, 15 February 2006, p. 15.

Anonymous (2006h): Schroeder named chairman of pipeline company, in: Pipeline & Gas Journal, May 2006, p. 14.

Anonymous (2006i): Don't take the high roads, in: The Economist, 7 August 2006, http://www.economist.com/agenda/displaystory.cfm?story_id=E1_SNGSVQP, 27.08.2009.

Anonymous (2006j): A magician loses his touch, in: The Economist, 22 June 2006, http://www.economist.com/world/europe/displaystory.cfm?story_id=E1_SDJDPQT, 27.08.2009.

Anonymous (2006k): Breton's battle, in: The Economist, 24 August 2006, http://www.economist.com/businessfinance/displayStory.cfm?story_id=E1_SRPPRQT, 27.08.2009.

Anonymous (2006l): High tension, in: The Economist, 21 October 2006, p. 75.

Anonymous (2006m): Power struggles, in: The Economist, 30 November 2006, http://www.economist.com/businessfinance/displayStory.cfm?story_id=E1_RPVVDQN, 27.08.2009.

Anonymous (2006n): Patriot games, in: The Economist, 29 June 2006, http://www.economist.com/opinion/displaystory.cfm?story_id=E1_STTQQVG, 27.08.2009.

Anonymous (2006o): Steady she goes, in: The Economist, 20 April 2006, pp. 4-5.

Anonymous (2006p): LNG development question of how rather than whether, in: Pipeline & Gas Journal, January 2006, p. 44.

Anonymous (2006q): Colbert vs competition, in: The Economist, 16 November 2006, http://www.economist.com/theworldin/displaystory.cfm?story_id=E1_RTPPSQN, 27.08.09.

Anonymous (2006r): Another arranged marriage in Europe, in: The Economist, 10 May 2006, http://www.economist.com/agenda/displaystory.cfm?story_id=E1_GJDJSTP, 27.08.2009.

Anonymous (2007a): Die externen Kosten der Stromproduktion, in: Energie & Management, 15 May 2007, p. 3.

Anonymous (2007b): When the wells dry up, in: The Economist, 14 July 2007, pp. 35-36.

Anonymous (2007c): Barking Louder, biting less, in: The Economist, 8 March 2007, http://www.economist.com/world/international/PrinterFriendly.cfm?story_id=8815008, 29.10.07.

Anonymous (2007d): A special report on business and climate change, in: The Economist, 2 June 2007, pp. 1-32.

Anonymous (2007e): The greening of America, in: The Economist, 27 January-2 February 2007, p. 9.

Anonymous (2007f): Schmack Biogas wächst weiter; in: Energie & Management, 15 March 2007, p. 11.

Anonymous (2007g): RWE verkleinert ihr Ferngasnetz um ein Drittel, in: Energie & Management, 15 December 2007, p. 6.

Anonymous (2007h): Damned duopoly, in: The Economist, 29 November 2007, http://www.economist.com/businessfinance/displayStory.cfm?story_id=E1_TDNTQSQD, 31.08.09.

Anonymous (2007i): Buy, buy, buy, in: The Economist, 10 February 2007, pp. 11-12.

Anonymous (2007j): The long arm of the state, in: The Economist, 30 August 2007, http://www.economist.com/businessfinance/displayStory.cfm?story_id=E1_JSNVSQJ, 27.08.2009.

Anonymous (2007k): Plus ca change, in: The Economist, 27 January – 2 February 2007, pp. 55-56.

Anonymous (2007l): Mobilisation contre la privatisation de GDF, in: Le Figaro, 15 October 2007, http://www.lefigaro.fr/actualite/2006/06/20/01001-20060620ARTWWW90298-mobilisation_contre_la_privatisation_de_gdf.php, 04.12.09.

Anonymous (2007m): La fusion Suez-GDF, Villepin et la politique du «mi-mi», in: Le Figaro, 15 October 2007, http://www.lefigaro.fr/debats/2006/03/13/01005-20060313ARTFIG90318-la_fusion_suez_gdf_villepin_et_la_politique_du_mi_mi.php, 04.12.09.

Anonymous (2007n): Scrumming down, in: The Economist, 3 September 2007, http://www.economist.com/businessfinance/displayStory.cfm?story_id=E1_JSVTNTG, 27.08.2009.

Anonymous (2007o): Behind the Gazprom-Total deal, in: The Economist, 13 July 2007, http://www.economist.com/node/9495268, 29.10.2007.

Anonymous (2007p): Beyond Suez, in: The Economist, 6 September 2007, http://www.economist.com/businessfinance/displayStory.cfm?story_id=E1_JSGSVJN, 27.08.2009.

Anonymous (2007q): Au revoir, papa?, in: The Economist, 15 November 2007, http://www.economist.com/businessfinance/displayStory.cfm?story_id=E1_TDTQVQSR, 27.08.2009.

Anonymous (2007r): How not to block a takeover, in: The Economist, 3 April 2007, http://www.economist.com/node/8954103, 27.08.2009.

Anonymous (2007s): Harry Roel's ganz persönliche Erfolgsstory; in: Energie & Management, 15 March 2007, p. 29.

Anonymous (2007t): Twists and turns, in: The Economist, 6 December 2007, http://www.economist.com/businessfinance/displayStory.cfm?story_id=E1_TDNVQGQR, 27.08.2009.

Anonymous (2007u): Mit Dynamik, in: WirtschaftsWoche, No. 52, p. 160.

Anonymous (2008a): A chill wind, in: The Economist, 27 September 2008, p. 47.

Anonymous (2008b): A big oil discovery, in: The Economist, 12 February 2008, http://www.economist.com/node/10677726, 20.02.2008.

Anonymous (2008c): Weitere Gasnetzbetreiber müssen Kosten offenlegen, in: Handelsblatt, 21 October 2008, http://www.handelsblatt.com/unternehmen/industrie/weitere-gasnetzbetreiber-muessen-kosten-offenlegen/3039582.html, 01.12.2008.

Anonymous (2008d): Gas de France Mulls Pipeline Linking Bulgaria, Hungary, in: Pipeline & Gas Journal, January 2008, p. 16.

Anonymous (2008d): Grubengasreserven in britischen Kohleflözen, in: Energie & Management, 15 July 2008, p. 4.

Anonymous (2008f): Gazprom will Marktanteil in Frankreich steigern, in: Handelsblatt, 3 January 2008, http://www.handelsblatt.com/unternehmen/industrie/gazprom-will-marktanteil-in-frankreich-steigern;1372500, 24.08.09.

Anonymous (2008g): Neelie's deal, in: The Economist, 6 March 2008, http://www.economist.com/businessfinance/displayStory.cfm?story_id=E1_TDRDRRJS, 31.08.09.

Anonymous (2008h): Power plays, in: The Economist, 19 April 2008, p. 68.

Anonymous (2009a): Pipe down, in: The Economist, 10 January 2009, p. 25.

Anonymous (2009b): Riesige Erdgas-Quelle vor Norwegen entdeckt, http://www.netzeitung.de/wirtschaft/konjunktur/1385720.html, 24.06.09.

Anonymous (2009c): Gas wars, in: The Economist, 10 January 2009, p. 12.

Anonymous (2009d): Power games, in: The Economist, 28 February-6 March 2009, pp. 62-63.

Anonymous (2010a): Amerika und Qatar krempeln Gasmarkt um, in: Frankfurter Allgemeine Zeitung, 19 February 2010, p. 15.

Anonymous (2010b): Eon-Manager wird neuer Präsident des Atomforums, in: Handelsblatt, 14 April 2010, http://www.handelsblatt.com/politik/deutschland/eon-manager-wird-neuer-praesident-des-atomforums/3410984.html, 17.08.2010.

Anonymous (2010c): E.ON vollzieht radikalen Strategieschwenk, in: Energie Informationsdienst, No. 46, pp. 1-3.

Anonymous (2010d): Negative Strahlung, in: Energie Informationsdienst, No. 33, pp. 4-5.

Anonymous (2010e): Teyssens Aufbruch in eine neue Energiewelt, in: Energie Informationsdienst, No. 50, pp. 1-2.

Anonymous (2010f): Kamphues: Verführung oder Druck ist egal für Harmonisierung, in: energate, No. 129, p. 6.

Anonymous (2011a): Vittorio Mincato 1936— Biography, http://www.referenceforbusiness.com/biography/M-R/Mincato-Vittorio-1936.html, 02.01.2011.

Anonymous (2011b): Energieriese E.on schließt drei Standorte, in: Welt Online, 31 July 2011, http://www.welt.de/wirtschaft/article13518572/Energieriese-E-on-schliesst-drei-Standorte.html, 31.07.2011.

Ansoff, H. I. (1965): Corporate Strategy, New York: McGraw-Hill.

Ansoff, H. I. (1975): Managing Strategic Surprise by Response to Weak Signals, in: California Management Review, Vol. 18, No. 2, pp. 21-33.

Ansoff, H. I. (1981): Die Bewältigung von Überraschungen und Diskontinuitäten durch die Unternehmensführung, in: Steinmann, H. (ed.): Planung und Kontrolle: Probleme der strategischen Unternehmensführung, München: Vahlen.

Ansoff, H. I. (1988): The New Corporate Strategy, Toronto et al.: John Wiley & Sons.

Ansoff, H. I./ Hayes, R. L. (1976): Introduction, in: Ansoff, H. I./ Declerck, R., P./ Hayes, R. L. (eds.): From Strategic Planning to Strategic Management, London et al.: John Wiley & Sons, 1976, pp. 1-12.

Apitzsch, B. (2006): Unternehmensnetzwerke und soziale Einbettung: Begriffliche Bestimmungen, Funktionen und Entstehungsbedingungen, in: Duisburger Beiträge zur Soziologischen Forschung, No. 3.

Arentsen, M. J. (2004): Politics and Regulation of Gas in Europe, in: Finon, D./ Midttun, A. (eds.): Reshaping European Gas and Electricity Industries: Regulation Markets and Business Strategies, New York: Elsevier, pp. 69-109.

Argyris, C./ Putnam, R./ Smith, D. M. (1985): Action Science, San Francisco (CA): Jossey-Bass.

Arndt, M./ Bigelow, B. (2000): Presenting Structural Innovation in an Institutional Environment: Hospitals' Use of Impression Management, in: Administrative Science Quarterly, Vol. 45, No. 3, pp. 494-522.

Arnold, C. (2006): Der „Lebenslauf" einer Gasspeicherkaverne, in: Medium Gas, Verbundnetz Gas AG (ed.), March 2006, pp. 24-26.

Arrington, C. B./ Sawaya, R.N. (1984): Managing Public Affairs: Issues Management in an Uncertain Environment, in: California Management Review, Vol. 26, No. 4, pp. 148-160.

Astley, W. G./ Fombrun, C. J. (1983): Technological innovation and industrial structure: The case of telecommunications, in: Advances in Strategic Management, Vol. 1, Greenwich (CT): JAI Press, pp. 205-229.

Audretsch, D. B. (1995): Innovation and industry evolution, Cambridge (MA) et al.: MIT Press.

Auer, J. (2004): Energieperspektiven nach dem Ölzeitalter, Deutsche Bank Research, 2 December 2004, Berlin.

Augter, S. (2008): Deutschland im Dunkeln, in: WirtschaftsWoche, No. 5, pp. 23-26.

Austvik, O. G. (1997): Gas pricing in a liberalized European market; will the rent be taxed away?, in: Energy Policy, Vol. 25, No. 12, pp. 997-1012.

Auty, R. M.(1983): Multinational Resource Corporations, the Product Life-cycle and Product Strategy: the Oil Majors' Response to Heightened Risk, in: Geoforum, Vol. 14, No. 1, pp. l-13.

Baake, P./ Karnecke, U./ Normann, H. (2004): Vertical foreclosure versus downstream competition with capital precommitment, in: International Journal of Industrial Organization, Vol. 22, Issue 2, pp. 185-192.

Babu, S. P. (2001): New and Prospective Technologies for Natural Gas Development, in: Clegg, M. W. (ed.): Introduction, in: The future of natural gas in the world energy market, Abu Dhabi: The Emirates Center for Strategic Studies and Research, pp. 110-124.

Backfisch, M. (2008): „Es ist äußerst schwierig, die Märkte richtig zu lesen“, in: Handelsblatt, 16 October 2008, http://www.handelsblatt.com/unternehmen/industrie/es-ist-aeusserst-schwierig-die-maerkte-richtig-zu-lesen;2064381, 17.10.2008.

Bain, J. S. (1951): Relation of Profit Rate to Industry Concentration: American Manufacturing, 1936-1940, in: Quarterly Journal of Economics, Vol. 65, No. 3, pp. 293-324.

Bain, J. S. (1956): Barriers to new competition, Cambridge (MA): Harvard University Press.

Balzer, A./ Student, D. (2006a): „Frechheit, reine Fantasie“, in: managermagazin, No. 1, pp. 66-73.

Balzer, A./ Student, D. (2006b): „Cash is King“, in: managermagazin, No. 4, pp. 62-71.

Bamberger, I./ Wrona, T. (2004): Strategische Unternehmensführung: Strategien - Systeme - Prozesse, München: Vahlen.

Band, D. C./ Scanlan, G. (1995): Strategic Control through Core Competencies, in: Long Range Planning, Vol. 28, No. 2, pp. 102-114.

Bansal, P./ Clelland, I. (2004): Talking Trash: Legitimacy, Impression Management, and Unsystematic Risk in the Context of the Natural Environment, in: Academy of Management Journal, Vol. 47, No. 1, pp. 93-103.

Bansal, P./ Roth, K. (2000): Why Companies Go Green: A Model of Ecological Responsiveness, in: Academy of Management Journal, Vol. 43, No. 4, pp. 717-736.

Baranes, E./ Mirabel, F./ Poudou, J.-C. (2003): Une analyse économique de la structure verticale sur la chaîne gazière européenne, Cahier N° 03.11.39, Centre de Recherche en Economie et Droit de l'Energie – CREDEN, Université de Montpellier.

Barley, S. R. (1988): Technology, Power, and the Social Organization of Work: Towards a Pragmatic Theory of Skilling and Deskilling, in: Research in the Sociology of Organizations, Vol. 6, pp. 33-80.

Barnett, W. P./ McKendrick, D. G. (2004): Why Are Some Organizations More Competition Than Others? Evidence from a Changing Global Market, in: Administrative Science Quarterly, No. 49, pp. 535-571.

Barney, J. B. (1986a): Types of Competition and the Theory of Strategy: Toward an Integrative Framework, in: Academy of Management Review, Vol. 11, Issue 4, pp. 791-800.

Barney, J. B. (1986b): Strategic factor markets: Expectations, Luck, and Business Strategy, in: Management Science, Vol. 32, No. 10, pp. 1231-1241.

Barney, J. B. (1991): Firm Resources and Sustained Competitive Advantage, in: Journal of Management, Vol. 17, No. 1, pp. 99-120.

Barney, J. B. (1992): Integrating organizational behavior and strategy formulation research: A resource based analysis, in: Advances in Strategic Management, Vol. 8, Greenwich: JAI Press, pp. 39-61.

Barney, J. B. (1997): Gaining and Sustaining Competitive Advantage, Reading (MA): Addison-Wesley.

Barney, J. B. (2001): Is the Resource-Based “View” a Useful Perspective for Strategic Management Research? Yes, in: Academy of Management Review, Vol. 26, No. 1, pp. 41-55.

Baron, D. P. (1995a): Integrated strategy: market and non-market components, in: California Management Review, Vol. 37, No. 2, pp. 47-65.

Baron, D. P. (1995b): The Nonmarket Strategy System, in: Sloan Management Review, Vol. 37, No. 1, pp. 73-85.

Baron, J. P./ Dobbin, F./ Jennings, P. D. (1986): War and peace: The evolution of modern personnel administration in U.S. industry, in: American Journal of Sociology, Vol. 92, pp. 250-283.

Barr, P. S./ Stimpert, J. L./ Huff, A. S. (1992): Cognitive change, strategic action, and organizational renewal, in: Strategic Management Journal, Vol. 13, Issue S1, pp. 15-36.

Barroso, J. M. D. (2006): A European strategy for energy: closing speech, SPEECH/06/649, Lisboa, 30 October 2006.

Bartels, R./ Fiebig, D. G. (1996): Gas or electricity, which is cheaper? An econometric approach with application to Australian expenditure data, in: Energy Journal, Vol. 17, Issue 4, pp. 33-58.

Baum, J. A. C./ Li, S. X./ Usher, J. M. (2000): Making the Next Move: How Experimental and Vicarious Learning Shape the Locations of Chains’ Acquisitions, in: Administrative Science Quarterly, Vol. 45, Issue 4, pp. 766-801.

Baum, J. A. C./ Oliver, C. (1992): Institutional embeddedness and the dynamics of organizational populations, in: American Sociological Review, Vol. 57, No. 4, pp. 540-559.

Baum, J. A. C./ Rao, H. (2004): Evolutionary Dynamics of Organizational Populations and Communities, in: Poole, M. S./ Van de Ven, A. H. (eds.): Handbook of Organizational Change and Innovation, Oxford/ New York: Oxford University Press, pp. 212-258.

Bea, F. X./ Haas, J. (2001): Strategisches Management, 3rd edition, Stuttgart: Lucius und Lucius.

Beckert, J. (1999): Agency, entrepreneurs, and institutional change: The role of strategic choice and institutionalized practices in organizations, in: Organization Studies, Vol. 20, No. 5, pp. 777-799.

Beckmann, J. (2007): Der Energiesektor Frankreichs, Hans Böckler Stiftung.

Beder, S. (2002): Global Spin. The Corporate Assault on Environmentalism, Glasgow (UK): Bell & Bain Ltd.

Behrman, J. N./ Grosse, R. E. (1990): International Business and Governments: Issues and Institutions, Columbia: University of South Carolina Press.

Beilharz, H. (2008): Vergleich und Beurteilung globaler Energieszenarien bis 2030, in: Zeitschrift für Energie, Markt, Wettbewerb, No. 1, pp. 17-24.

Bellman, K. (1996): Produktionsnetzwerke – ein theoretischer Bezugsrahmen, in: Wildemann, H. (ed.): Produktions- und Zuliefernetzwerke, München: TCW Transfer-Centrum-Verlag, pp. 47-63.

Berger, P. L./ Luckmann, T. (1967): The Social Construction of Reality, Garden City (NY): Doubleday.

Bergius, S. (2008a): Zwiespältiges Bekenntnis zum Klimaschutz, in: Handelsblatt, 28 January 2008, http://www.handelsblatt.com/technologie/nachhaltig_wirtschaften/zwiespaeltiges-bekenntnis-zum-klimaschutz;1383228, 29.01.2008.

Bergius, S. (2008b): Klimaschutz wird zum Kerngeschäft, in: Handelsblatt, 4 December 2008, http://www.handelsblatt.com/technologie/energie-umwelt/nachhaltig-wirtschaften/klimaschutz-wird-zum-kerngeschaeft/3066344.html?p3066344=all, 17.10.2009.

Bergius, S. (2008c): Unternehmen verweigern Klimaschutz-Informationen, in: Handelsblatt, 30 October 2008, http://www.handelsblatt.com/technologie/nachhaltig_wirtschaften/unternehmen-verweigern-klimaschutz-informationen;2076259, 18.01.2010.

Bergius, S. (2009): Unternehmen verschweigen Klimastrategie, in: Handelsblatt, 17 October 2009, http://www.handelsblatt.com/unternehmen/management/strategie/unternehmen-verschweigen-klimastrategie/3282202.html?p3282202=all, 17.10.2009.

Bergius, S. (2010): Klimaschutz gewinnt für Unternehmen an Bedeutung, in: Handelsblatt, No. 205, p. 27.

Berke, J. (2010): Leerrohre fürs Internet, in: WirtschaftsWoche, No. 30, p. 9.

Bernardini, O. (2004): The Regulation of the Gas Sector and its Implications for Gas Trade, Italian Regulatory Authority for Electricity and Gas.

Bernotat, W. H. (2007): Speech of Dr. Wulf H. Bernotat at press conference of E.ON AG on 31 May 2007.

Berrone, P./ Gelabert, L./ Fosfuri, A./ Gómez-Mejía, L. R. (2007): Can institutional forces create competitive advantage? Empirical examination of environmental innovation, Working Paper No. 723, IESE Business School, University of Navarra.

Berry, A. J./ Otley, D. (2004): Case based research in accounting, in: Humphrey, C./ Lee, B. (eds.): The real life guide to accounting research: a behind-the-scenes view of using qualitative research methods, Amsterdam/ Boston: Elsevier.

Berschens, R. (2007a): Die nukleare Renaissance, in: Handelsblatt, No. 51, p. 2.

Berschens, R. (2007b): Frankreichs öffentlicher Dienst fährt Sarkozy in die Parade, in: Handelsblatt, 13 November 2007, http://www.handelsblatt.com/politik/international/frankreichs-oeffentlicher-dienst-faehrt-sarkozy-in-die-parade;1351118, 24.08.09.

Berschens, R. (2009): EU verschärft das Kartellrecht, in: Handelsblatt, 27 April 2009, http://www.handelsblatt.com/politik/international/eu-verschaerft-das-kartellrecht;2254733, 27.04.09.

Bethge, P./ Wüst, C. (2007): „Zeit für eine Revolution", in: Der Spiegel, No. 7, pp. 86-89.

Beutel, R. (1988): Unternehmensstrategien international tätiger mittelständischer Unternehmen, Frankfurt a.M./ New York: Peter Lang.

BG Group (2009): Ethical Investing, http://www.bg-group.com/InvestorRelations/CorporateOverview/Pages/EthicalInvesting.aspx, 28.08.2011

BGW (2004): Erdgas – Der umweltschonende fossile Energieträger, Bundesverband der deutschen Gas- und Wasserwirtschaft.

Bible, T./ Ginsburg, H. (2009): Grüner Zar, in: WirtschaftsWoche, No. 51, pp. 63-64.

Biggadike, R. (1989): The Risky Business of Diversification, in: Harvard Business Review, Vol. 57, No. 3, May-June, pp. 103-111.

Bischoff, G. (1990): Geologische Grundlagen: Die Stecknadel im Heuhaufen?, in: Schmitt, D. und Heck, H. (eds.): Handbuch Energie, Pfullingen: Verlag Günther Neske, pp. 20- 33.

Blau, P. M. (1963): The dynamics of bureaucracy; a study of interpersonal relations in two Government agencies, 2nd edition, Chicago: University of Chicago Press.

Bleeke, J. A. (1990): Strategic Choices for Newly Opened Markets, in: Harvard Business Review, Vol. 68, No. 5, pp. 158-165.

Bloodgood, J. M./ Morrow Jr. J. L. (2000): Strategic Organizational Change Within An Institutional Framework, in: Journal of Managerial Issues, Vol. 12, Issue 2, pp. 208-226.

BMWi (2009): Kernkraftwerke der Welt, http://www.bmwi.de/BMWi/Navigation/Energie/energiestatistiken,did=180944.html, 25.08.09.

BMZ (2010): Die Bundesregierung unterstützt Transparenz im Rohstoffsektor, Pressemitteilung Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung, 15 April 2010, http://www.bmz.de/de/presse/aktuelleMeldungen/2010/april/20100415_eiti/index.html, 25.08.2010.

Bockhorst, M. (2002): ABC Energie: Eine Einführung mit Lexikon: Energieerzeugung und Energienutzung, Probleme und Lösungsansätze, Die Deutsche Bibliothek, 2002.

Boddewyn, J. (1966): The Environment of Business, in: Mississippi Valley Journal of Business and Economics, Vol. 2, No. 1, pp. 1-7.

Boeker, W. (1989): Strategic change: The effects of founding and history, in: Academy of Management Journal, Vol. 32, No. 3, pp. 498-515.

Boisot, M./ Child, J. (1999): Organizations as Adaptive Systems in Complex Environments: The Case of China, in: Organization Science, Vol. 10, No. 3, pp. 237-252.

Bolton, M. K. (1993): Imitation Versus Innovation: Lessons to be learned from the Japanese, in: Organizational Dynamics, Vol. 21, No. 3, pp. 30-45.

Bonardi, J. (2004): Global and political strategies in deregulated industries: the asymmetric behaviors of former monopolies, in: Strategic Management Journal, Vol. 25, No. 2, pp. 101-120.

Bonardi, J.-P./ Keim, G. D. (2005): Corporate Political Strategies for Widely Salient Issues, in: Academy of Management Review, Vol. 30, No. 3, pp. 555-576.

Bonardi, J.-P./ Hillman, A. J./ Keim, G. D. (2005): The attractiveness of political markets: Implications for firm strategy, in: Academy of Management Review, Vol. 30, No. 2, pp. 397-413.

Bonifant, B. C./ Arnold, M. B./ Long, F. J. (1995): Gaining Competitive Advantage Through Environmental Investments, in: Business Horizons, July-August, pp. 37-47.

Bonoma, T. V. (1985): Case Research in Marketing: Opportunities, Problems, and a Process, in: Journal of Marketing Research, Vol. 22, No. 2, p. 199-208.

Bonse, E./ Flauger, J. (2009): EU brummt Eon und GdF Milliardenstrafe auf, in: Handelsblatt, 8 July 2009, http://www.handelsblatt.com/unternehmen/industrie/eu-brummt-eon-und-gdf-milliardenstrafe-auf/3215492.html?p3215492=all, 10.08.2009.

Boots, M. G./ Rijkers, F. A. M./ Hobbs, B. F. (2004): Trading in the Downstream European Gas Market: A Successive Oligopoly Approach, in: The Energy Journal, Vol. 25, No. 3, pp. 73-102.

Borger, S. (2005): Tony Blairs Spiel mit der Atomkraft, in: Frankfurter Allgemeine Sonntagszeitung, No. 19, p. 12.

Börsig, C. (1981): Reorganisationsprozesse, in: Kirsch, W. (ed.): Unternehmenspolitik: Von der Zielforschung zum strategischen Management, München: Planungs- und Organisationswissenschaftliche Schriften, pp. 233-253.

Bothe, D./ Seeliger, A. (2005): Forecasting European Gas Supply. Selected results from EUGAS model and historical verification, paper presented on IAEE European Conference, 8/2005, Bergen/ Norway, Cologne: Institute of Energy Economics.

Boulding, K. E. (1968): The Legitimation of the Market, in: Nebraska Journal of Economics and Business, Vol. 7, No. 1, pp. 3-14.

Boulton, W. R./ Lindsay, W. M./ Franklin, S. G./ Rue, L. W. (1982): Strategic Planning: Determining the Impact of Environmental Characteristics and Uncertainty, in: Academy of Management Journal, Vol. 25, No. 3, pp. 500-509.

Bourdaire, J.-M. (2003): Drivers of the energy scene, Presentation held at the 23rd World Energy Council IAEE North American Conference on 21 October 2003 in Mexico City, http://www.iaee.org/documents/Mexico/DRIVERS%20OF%20THE%20ENERGY%20SCENE%20Jean%20Marie%20Bourdaire.pdf, 02.01.2006.

Bourdieu, P. (2008): A Theoretician of Change? The View from Régulation Theory, in: Ebner, A./ Beck, N. (eds): The Institutions of the Market — Organizations, Social Systems, and Governance, Oxford: Oxford University Press, pp. 348-387.

Bourgeois, L. J. (1980): Strategy and Environment: A Conceptual Integration, in: Academy of Management Review, No. 5, pp. 25-40.

Bozem, K. (2008): Strategie – Erfolgsfaktor im liberalisierten Markt, in: Energiewirtschaftliche Tagesfragen, Vol. 58, No. 6, pp. 54-58.

Bozem, K./ Rath, V. (2008): Neue Spielregeln in der Gaswirtschaft, in: Energiewirtschaftliche Tagesfragen, Vol. 58, No. 4, pp. 50-54.

BP (2003): Statistical Review of World Energy 2002, London: BP.

BP (2004): Statistical Review of World Energy 2003, London: BP.

BP (2009): Historical Data, http://www.bp.com/sectionbodycopy.do?categoryId=7500&contentId=7068481, 19.12.2010.

Bracker, J. (1980): The Historical Development of the Strategic Management Concept, in: Academy of Management Review, Vol. 5, No. 2, pp. 219-224.

Brand, R. (2005): Energieszenarien, in: Reiche, D. (ed.): Grundlagen der Energiepolitik, Frankfurt am Main et al.: Peter Lang , pp. 207-217.

Brandenburger, A./ Nalebuff, B. (1996): Co-opetition, New York: Broadway Business.

Bräuninger, M./ Schröer, S. (2007): Die Bedeutung von Erdgas als Energieträger der Zukunft, in: Update No. 2, Oktober 2007, Hamburgisches WeltWirtschaftsInstitut, pp. 1-2.

Breitsohl, H. (2009): Linking Organizational Crises and Reactive Strategies via Dimensions of Legitimacy, in: Schumpeter Discussion Papers, No. 5, Schumpeter School of Business and Economics, University of Wuppertal.

Brendel, M./ Müller, S. (2009): Lippenbekenntnis, in: WirtschaftsWoche, No. 32, p. 85.

Bretschger, L. (2009): Sustainability Economics, Resource Efficiency, and the Green New Deal, Presentation held at Wuppertal Colloquium, September 2009.

Brint, S./ Karabel, J. (1991): Institutional Origins and Transformations: The Case of American Community Colleges, in: Powell, W. W./ DiMaggio, P. J. (eds.): Institutional theory, Chicago/ London: University of Chicago Press, pp. 337-357.

Brito, D./ Hartley, P. R. (2007): Expectations and the Evolving World Gas Market, in: The Energy Journal, Vol. 28, No. 1, pp. 1-24.

Bruce, R. (2009): European energy outlook, in: Energy Risk, 13 January 2009.

Brüggmann, M. (2007): Das Politikum Gas, in: Handelsblatt, No. 116, p. 8.

Brüggmann, M. (2009): Teheran pokert um Gasfelder, in: Handelsblatt, No. 113, p. 2.

Brühl, V./ Oei, J. (2006): Der weltweite M&A-Markt im Überblick, in: M&A Review, No. 7, pp. 334-339.

Brunner, S. (2009): Was für eine Geschichte!, in: WirtschaftsWoche, No. 24, pp. 92-96.

Brunsson, N. (1989): The Organization of Hypocrisy. Talk, Decisions, and Action in Organizations, Chichester/ New York: Wiley.

Bryan, L. L. (2002): Just-in-time strategy for a turbulent world, in: The McKinsey Quarterly, Special Edition: Risk and Resilience, pp. 17-26.

Buck, C. (2009): Biogas schließt Lücken bei der Versorgung, in: Handelsblatt, 29 January 2009, http://www.handelsblatt.com/technologie/energie-umwelt/energie-technik/biogas-schliesst-luecken-bei-der-versorgung/3099568.html, 29.01.2009.

Buehler, S./ Schmutzler, A. (2008): Intimidating competitors - Endogenous vertical integration and downstream investment in successive oligopoly, in: International Journal of Industrial Organization, Vol. 26, Issue 1, pp. 247-265.

Bühner, R. (1987): Assessing International Diversification of West German Corporations, in: Strategic Management Journal, Vol. 8, No. 1, pp. 25-37.

Bundeskartellamt (2008a): Bundeskartellamt leitet Missbrauchsverfahren gegen rund 35 Unternehmen wegen überhöhter Gaspreise ein, Press Release, 5 March 2008, http://www.bundeskartellamt.de/wDeutsch/archiv/PressemeldArchiv/2008/2008_03_05.php, 10.03.2008.

Bundeskartellamt (2008b): Verfahren gegen Gasversorgungsunternehmen im Haushalts- und Gewerbekundenbereich – erste Verfahren abgeschlossen, Press Release, 6 October 2008, http://www.bundeskartellamt.de/wDeutsch/archiv/PressemeldArchiv/2008/2008_10_06.php 18.02.2009.

Bundeskartellamt (2008c): Bundeskartellamt begrüßt geplanten Verkauf der Thüga durch E.ON, Press Release, 12 November 2008, http://www.bundeskartellamt.de/wDeutsch/archiv/PressemeldArchiv/2008/2008_11_12_I.php, 26.11.2008.

Bundesnetzagentur (2006): Nationaler Berichtsbeitrag zum EU-Benchmarkbericht, Bonn.

Burgelman, R. A. (1991): Intraorganizational ecology of strategy making and organizational adaptation: theory and field research, in: Organization Science, Vol. 2, No. 3, pp. 239-262.

Burgelman, R. A. (1994): Fading Memories: A Process Theory of Strategic Business Exit in Dynamic Environments, in: Administrative Science Quarterly, Vol. 39, No. 1, pp. 24-56.

Bürki, D. M. (1996): Der 'resource-based view'-Ansatz als neues Denkmodell des strategischen Managements, Bamberg: Difo-Druck GmbH.

Burns , T. (1986): The shaping of social organization: social rule system theory with applications, London: Sage.

Burns, J./ Ezzamel, M./ Scapens, R. W. (2003): The challenge of management accounting change: Behavioural and cultural aspects of change management, Oxford: Elsevier/ CIMA Publishing.

Burns, T./ Stalker, G. M. (1961): The management of innovation, London: Tavistock Publications.

Butler, R. J./ Carney, M. (1986): Strategy and Strategic Choice: The Case of Telecommunications, in: Strategic Management Journal, Vol. 7, No. 2, pp. 161-177.

Buzzell, R. D./ Gale, B. T./ Sultan, R. G. M. (1975): Market share – a key to profitability, in: Harvard Business Review, January-February 1975, pp. 97-106.

Campbell, J. L. (2004): What's new? General patterns of planned macro-institutional change, Draft Paper, http://www.allacademic.com//meta/p_mla_apa_research_citation/1/0/9/4/8/pages109485/p109485-1.php, 04.05.2005.

Capgemini (2004): 2004 Report Summary. Deregulation: Meeting the delivery and sustainability challenges?, Capgemini.

Capgemini (2005): European Energy Markets Observatory 2005, Capgemini.

Capgemini (2006): European Energy Markets Observatory 2006, Capgemini.

Carrière, J./ Balard, T. (2004): Gaz de France et la Régulation, in: Revue de l'Énergie, Vol. 55, No. 560, pp. 516-521.

Carroll, G. R./ Goodstein, J./ Gyenes, A. (1988): Organizations and the State: Effects of the Institutional Environment on Agricultural Cooperatives in Hungary, in: Administrative Science Quarterly, Vol. 33, No. 2, pp. 233-256.

Carson, I. (2007): Movers and shakers, in: The Economist, 15 November 2007, http://www.economist.com/theworldin/displaystory.cfm?story_id=E1_TDDJQSGN, 27.08.2009.

Casarin, A. A. (2007): Efficient industry configurations in downstream gas markets. An empirical assessment, in: Energy Economics, No. 29, pp. 312-328.

Castanias, R. P./ Helfat, C. E. (1991): Managerial Resources and Rents, in: Journal of Management, Vol. 17, No. 1, pp. 155-171.

Caves, R. E. (1977): American Industry: Structure, Conduct, Performance; Englewood Cliffs (NJ): Prentice-Hall.

Caves, R. E./ Porter, M. E. (1977): From Entry Barriers to Mobility Barriers: Conjectural Decisions and Contrived Deterrence to New Competition, in: The Quarterly Journal of Economics, Vol. 91, No. 2, p. 241-262.

Caves, R. E./ Porter, M. E. (1980): The dynamics of changing seller concentration, in: The Journal of Industrial Economics, Vol. 29, No. 1, pp. 1-15.

CEER (2005): Investment in Gas Infrastructure and role of EU National Regulatory Authorities, Brussels: Council of European Energy Regulators, 12 May 2005.

Chabrelie, M.-F. (2003): A New Trading Model for the Fast-changing LNG Industry, Presentation held at 1st Asia Gas Buyers' Summit, 24-25 March 2003 in Mumbai, India, http://www.cedigaz.org/Fichiers/pdf_papers/TexteMumbaiweb.pdf, 03.01.2006.

Chabrelie, M.-F./ Lecarpentier, A. (2005): The Players on the European Gas Market: Positioning and Strategies, Fifteenth annual session of the Working Party on Gas, 18-19 January 2005, Geneva.

Chakravarthy, B. S. (1985): Business-Government Partnership in Emerging Industries: Lessons from the American Synfuels Experience, in: Advances in Strategic Management, Vol. 3, pp. 257-275.

Chakravarthy, B. S. (1986): Measuring strategic performance, in: Strategic Management Journal, Vol. 7, pp. 437-455.

Chakravarthy, B. S. (1997): A New Strategy Framework for Coping with Turbulence, in: Sloan Management Review, Vol. 38, No. 2, pp. 69-82.

Chandler, A. D. (1962): Strategy and Structure, Cambridge (MA): MIT Press.

Chandler, A. D. (1977): The visible hand: the managerial revolution in American business, Cambridge (MA): Belknap Press.

Chatterjee, S. (1991): Gains in Vertical Acquisitions and Market Power: Theory and Evidence, in: Academy of Management Journal, Vol. 34, No. 2, pp. 436-448.

Chevalier, J.-M. (1992): Unternehmensstrategien auf dem europäischen Gasmarkt, in: Zeitschrift für Energiewirtschaft, No. 3, pp. 175-184.

Chevalier, J.-M. (2009): The New Energy Crisis: Climate, Economics and Geopolitics, Basingstoke: Palgrave Macmillan.

Child, J. (1972): Organizational Structure, Environment and Performance: The Role of Strategic Choice, in: Sociology, Vol. 6, No. 1, pp. 1-22.

Child, J. (1997): Strategic choice in the analysis of action, structure, organizations and environment: Retrospect and prospect, in: Organization Studies, Vol. 18(1), pp. 43-76.

Child, J./ Kieser, A. (1981): Development of organizations over time, in: Nystrom, P. C./ Starbuck, W. H. (eds.): Handbook of Organizational Design, Oxford/ New York: Oxford University Press, pp. 1928-1964.

Child, J./ Smith, C. (1987): The context and process of organizational transformation – Cadbury Limited in its sector, in: Journal of Management Studies, Vol. 24, No. 6, pp. 565-593.

Churchman, C. W. (1968): The systems approach, New York: Delacorte Press.

Clegg, M. W. (2001): Introduction, in: The future of natural gas in the world energy market, Abu Dhabi: The Emirates Center for Strategic Studies and Research (ed.), pp. 1-8.

Clemens, E. S./ Cook, J. M. (1999): Politics and institutionalism: Explaining durability and change, in: Annual Review of Sociology, No. 25, pp. 441-466.

Clemens, B. W./ Douglas, T. J. (2005): Understanding strategic responses to institutional pressures, in: Journal of Business Research, No. 58, pp. 1205– 1213.

Coase, R. H. (1937): The Nature of the Firm, in: Economica, Vol. 4, No. 16, pp. 386–405.

Cohen, W. M./ Levinthal, D. A. (1989): Innovation and Learning: The Two Faces of R & D, in: The Economic Journal, Vol. 99, pp. 569-596.

Collis, D. J. (1991): Corporate advantage: identifying and exploiting resources, Boston (MA): Harvard Business School.

Collis, D. J./ Montgomery, C. A. (1995): Competing on Resources: Strategy in the 1990s, in: Harvard Business Review, Vol. 73, No. 4, pp. 118-128.

Collis, D. J./ Montgomery, C. A. (1996): Corporate strategy: resources and the scope of the firm, London: McGraw-Hill Publishing Company.

Collis, D. J./ Montgomery, C. A. (1997): Corporate strategy: resources and the scope of the firm, Chicago: Irwin.

Commichau, A. (1997): Kostensenkung in der Erdgaskette – Eine wirtschaftliche Notwendigkeit, in: Energiewirtschaftliches Institut an der Universität Köln (ed.): Entscheidungsfindung und -steuerung bei wachsender Unsicherheit in der Energiewirtschaft, Tagungsberichte, Heft 29, München: Oldenbourg Verlag GmbH, pp. 247-278.

Cook, K. S./ Emerson, R. M. (1984): Exchange networks and the analysis of complex organizations, in: Bacharach, S. B./ Lawler, E. J. (eds.): Research in the sociology of organizations, Vol. 3, Greenwich (CT): JAI Press, pp. 1-30.

Cool, K./ Dierickx, I. (1993): Rivalry, Strategic Groups and Firm Profitability, in: Strategic Management Journal, Vol. 14, pp. 47-59.

Cool, K./ Schendel, D. (1988): Performance differences among strategic group members, in: Strategic Management Journal, Vol. 9, No. 3, pp. 207-233.

Corbett, A. C. (2005): Strategic Renewal and the Entrepreneurial Mind: The Importance of Cognition and Learning, in: Floyd, S. W./ Roos, J./ Jacobs, C. D./ Kellermanns, F. (eds.): Innovating Strategy Process, Oxford: Blackwell Publishers, pp 186-198.

Correljé, A. F./ Odell, P. R. (2000): Four decades of Groningen production and pricing policies and a view to the future, in: Energy Policy, No. 28, pp. 19-27.

Courtney, H. (2001): Making the most of uncertainty, in: The McKinsey Quarterly, No. 4, pp. 38-47.

Courtney, H./ Kirkland, J./ Viguerie, P. (1997): Strategy under uncertainty, in: Harvard Business Review 75(6), pp. 66-79.

Covaleski, M. A./ Dirsmith, M. W. (1988): An Institutional Perspective on the Rise, Social Transformation, and Fall of a University Budget Category, in: Administrative Science Quarterly, No. 33, pp. 562-587.

Coyne, K. P./ Subramaniam, S. (1996): Bringing discipline to strategy, The McKinsey Quarterly, No. 4, pp. 14-25.

CRE (2009a): The French wholesale electricity and natural gas markets, December 2009, pp. 64-105.

CRE (2009b): The wholesale gas market, in: Electricity and gas market observatory Q4 2010, pp. 39-47.

CSR Globe (2011): ICCA's global CSR Directory, http://www.csrglobe.com/start.html, 01.06.2011.

Cummings, T. G./ Worley, C. G. (1993): Organization development and change, 5th edition, St. Paul (MN): West Publishing Company.

Cyert, R. M./ March, J. G. (1963): A behavioral theory of the firm, Englewood Cliffs (NJ): Prentice-Hall.

Czakainski, M. (1993): Energiepolitik in der Bundesrepublik Deutschland 1960 bis 1980 im Kontext der außenwirtschaftlichen und außenpolitischen Verflechtungen, in: Hohensee, J./ Salewski, M. (eds.): Energie - Politik - Geschichte, Vol. 5, Stuttgart: Steiner, pp. 17-34.

Czakainski, M./ Lamprecht, F. (2008): Nabucco – mehr Wettbewerb im europäischen Gasmarkt, in: Energiewirtschaftliche Tagesfragen, Vol. 58, Issue 3, pp. 48-49.

Czarniawska, B./ Joerges, B. (1996): Travels of Ideas, in: Czarniawska, B./ Sevón, G. (eds.): Translating Organizational Change, Berlin/ New York: Walter de Gruyter, pp. 13-48.

Czarniawska, B./ Sevón, G. (eds.) (1996): Translating Organizational Change, Berlin/ New York: Walter de Gruyter.

Czycholl, H. (2009): Fortschritt bei der Energieerzeugung, in: Zeit Online, 30 July 2009, http://www.zeit.de/online/2009/32/strom-effizienz-turbine, 03.08.09.

D'Aunno, T./ Succi, M./ Alexander, J. (2000): The Role of Institutional and Market Forces in Divergent Organizational Change, in: Administrative Science Quarterly, Vol. 45, pp. 679-703.

D'Aunno, T./ Sutton, R. I./ Price, R. H. (1991): Isomorphism and external support in conflicting institutional environments: A study of drug abuse treatment units, in: Academy of Management Journal, Vol. 34, pp. 636-661.

Dacin, M. T. (1997): Isomorphism in context: The power and prescription of institutional norms, in: Academy of Management Journal, Vol. 40, No. 1, pp. 46-81.

Dacin, M. T./ Oliver, C./ Roy, J. (2007): The legitimacy of strategic alliances: An institutional perspective, in: Strategic Management Journal, Vol. 28, No. 2, pp. 169-187.

Davis, L. E./ North, D. C./ Smorodin, C. (1971): Institutional change and American economic growth, Cambridge (MA): University Press.

de Figueirdo, J. M./ de Figueirdo, R. J. P. (2002): Managerial decision making in non-market environments: A survey experiment, in: Ingram, P./ Silverman, B. S. (eds.): The New Institutionalism in Strategic Management, Vol. 19, Amsterdam et al.: JAI Press, pp. 67-96.

de Jong, J./ Liao, X. (2006): Energy & Geopolitics. A European and a Chinese Perspective, in: Foreign Voices, No. 4, November 2006.

De Monicault, F. (2007): Gazprom ou l'appétit d'un monster, in: Le Figaro, 15 October 2007, http://www.lefigaro.fr/international/2006/05/08/01003-20060508ARTFIG90120-gazprom_ou_l_appetit_d_un_monstre.php, 04.12.09

de Queiroz, M. A. L./ de Vasconcelos, F. C./ Goldszmidt, R. G. B. (2007): Economic Rents and Legitimacy: Incorporating Elements of Organizational Analysis Institutional Theory to the Field of Business Strategy, in: Brazilian Administration Review, Vol. 4, No. 1, pp. 51-65.

Deephouse, D. L. (1996): Does isomorphism legitimate?, in: Academy of Management Journal, Vol. 4, pp. 1024-1039.

Deephouse, D. L. (1999): To be different, or to be the same? It's a question (and theory) of strategic balance, in: Strategic Management Journal, Vol. 20, No. 2, pp. 147-166.

Deephouse, D. L./ Carter, S. M. (2005): An Examination of Differences Between Organizational Legitimacy and Organizational Reputation, in: Journal of Management Studies, Vol. 42, No. 2, pp. 329-360.

Delacroix, J./ Rao, H. (1994): Externalities and Ecological Theory: Unbundling Density Dependence, in: Baum, J. A. C./ Singh, J. V. (eds.): Evolutionary Dynamics of Organizations, New York: Oxford University Press, pp. 255-268.

Delacroix, J./ Swaminathan, A. (1991): Cosmetic, Speculative and Adaptive Organizational Change in the Wine Industry: A Longitudinal Study, in: Administrative Science Quarterly, Vol. 36, No. 4, pp. 631-661.

Delacroix, J./ Swaminathan, A./ Solt, M. E. (1989): Density Dependence Versus Population Dynamics: An Ecological Study of Failings in the California Wine Industry, in: American Sociological Review, Vol. 54, No. 2, pp. 245-262.

Delhaes, D./ Thelen, F. (2006): Diskrete Operation, in: WirtschaftsWoche, No. 31, pp. 30-31.

Delmas, M. A. (2002): Innovating against European rigidities. Institutional environment and dynamic capabilities, in: Journal of High Technology Management Research, Vol. 13, pp. 19-43.

Delmas, M./ Russo, M. V./ Montes-Sancho, M. J. (2007): Deregulation and environmental differentiation in the electric utility industry, in: Strategic Management Journal, Vol. 28, No. 2, pp. 189-209.

Delmas, M./ Toffel, M. W. (2004): Stakeholders and Environmental Management Practices: An Institutional Framework, in: Business Strategy and the Environment, No. 13, pp. 209–222.

Delmas, M. A./ Toffel, M. W. (2005): Institutional pressure and environmental management, in: Institute for Social, Behavioral, and Economic Research, Paper 05, Santa Barbara, University of California.

Delmas, M. A./ Toffel, M. W. (2008): Organizational responses to environmental demands: opening the black box, in: Strategic Management Journal, Vol. 29, No. 10, pp. 1027-1055.

Delmas, M./ Tokat Y. (2005): Deregulation, governance structures, and efficiency: the U. S. electric utility sector, in: Strategic Management Journal, Vol. 26, No. 2, pp. 441-460.

Demsetz, H. (1982): Barriers to Entry, in: The American Economic Review, Vol. 72, No. 1, pp. 47-57.

Denrell, J./ Fang, C./ Winter, S. G. (2003): The Economics of Strategic Opportunity, in: Strategic Management Journal, No. 24, pp. 977–990.

Denzin, N. K./ Lincoln, Y. S. (1994): Introduction: entering the field of qualitative research, in: Denzin, N. K./ Lincoln, Y. S. (eds.): Handbook of Qualitative Research, Thousand Oaks (CA): Sage, pp. 1-17.

Desarbo, W. S./ Di Benedetto, C. A./ Song, M./ Sinha, I. (2005): Revisiting the Miles and Snow strategic framework: Uncovering interrelationships between strategic types, capabilities, environmental uncertainty, and firm performance, in: Strategic Management Journal, Vol. 26, No. 1, pp. 47-74.

Deschkan, P. (2008): Neues Geschäftsmodell für Speicher, in: Energie & Management, 1 October 2008, p. 23.

Dess, G./ Lumpkin, G. T. (2005): Entrepreneurial Orientation, in: Floyd, S. W./ Roos, J./ Jacobs, C. D./ Kellermanns, F. W. (eds.): Innovating Strategy Process, Malden (MA) et al.: Blackwell Publishing, pp. 3-9.

Deters, H. R. (2009): Statement made at the E-World Press Conference Essen, 11 February 2009, http://www.eon-ruhrgas.com/cps/rde/xbcr/SID-DF4F6289-C29DC697/er-corporate/Statement_Deters_engl.pdf, 30.06.2009.

Devlin, G. (1991): Diversification: A Redundant Strategic Option, in: European Management Journal, Vol. 9, No. 1, pp. 76-81.

Dierickx, I./ Cool, K. (1989): Asset stock accumulation and sustainability of competitive advantage, in: Management Science, Vol. 35, No. 12, pp. 1504-1511.

Dierickx, I./ Cool, K. (1988): Competitive Advantage: a resource based perspective, Fontainbleau: INSEAD.

Dierickx, I./ Cool, K. (1990): A resource based perspective on competitive strategy, Mimeo: INSEAD.

DiMaggio, P. (1988): Interest and agency in institutional theory, in: Zucker, L. G. (ed.): Institutional patterns and Organizations: Culture and Environment, Cambridge (MA): Ballinger, pp. 3-21.

DiMaggio, P. (2001): Conclusion: The Futures of Business Organization and Paradoxes of Change, in: DiMaggio, P. (ed.): The Twenty-First Century Firm: Changing Economic Organization in International Perspective, Princeton/ Oxford: Princeton University Press, pp. 210-243.

DiMaggio, P. J. (1991): Constructing an Organizational Field as a Professional Project: U.S. Art Museums 1920-1940, in: Powell, W. W./ DiMaggio, P. J. (eds.): Institutional theory, Chicago/ London: University of Chicago Press, pp. 267-292.

DiMaggio, P. J./ Powell, W. W. (1983): The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality on Organizational Fields, in: American Sociological Review, Vol. 48, No. 2, pp. 147-160.

DiMaggio, P. J./ Powell, W. W. (1991a): Introduction, in: Powell, W. W./ DiMaggio, P. J. (eds.): Institutional theory, Chicago/ London: University of Chicago Press, pp. 1-38.

DiMaggio, P. J./ Powell, W. W. (1991b): The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields, in: Powell, W. W./ DiMaggio, P. J. (eds.): Institutional theory, Chicago/ London: University of Chicago Press, pp. 63-82.

Dincer, I. (1999): Environmental impacts of energy, in: Energy Policy, No. 27, pp. 845-854.

Dobbin, F. R. (1999): Review of "Industry as a Player in the Political and Social Arena: Defining the Competitive Environment", in: Administrative Science Quarterly, Vol. 44, pp. 195-197.

Dobbin, F. R./ Sutton, J. R. (1998): The strength of a weak state: The rights revolution and the rise of Human Resource Management Divisions, in: American Journal of Sociology, Vol. 104, No. 2, pp. 441-476.

Dörband, R. (2005): Vermarktung von Leitungs- und Speicherkapazitäten in der Gaswirtschaft. Die Entwicklung von Methoden zur effizienten Vergabe der Netzkapazität im liberalisierten Gasmarkt, Dissertation Technische Universität Clausthal, Clausthal-Zellerfeld: Papierflieger.

Dorian, J. P./ Franssen, H. T./ Simbeck, D. R. (2005): Global Challenges Face Energy Industry, in: Pipeline and Gas Journal, November 2005, pp. 41-44.

Dorigoni, S./ Pontoni, F. (2008): Ownership Separation of the Gas Transportation Network: Theory and Practice, Working Paper No. 9, Università Commerciale Luigi Bocconi, IEFE, Istituto di Economia e Politica dell'Energia e dell'Ambiente.

Dosi, G./ Freeman, C./ Fabiani, S./ Aversi, R. (1992): The diversity of development patterns: on the processes of catching up, forging ahead and falling behind, Varenna (I): International Economics Association.

Doucet, G. (2004): Drivers of the Energy Scene - Analysis of Past Trends and Challenges for the Future, World Energy Council.

Dowell, G./ Swaminathan, A./ Wade, J. (2002): Pretty pictures and ugly scenes: Political and technological manoeuvres in high definition television, Ingram, P./ Silverman, B. S. (eds.): The New Institutionalism in Strategic Management, Vol. 19, Amsterdam et al.: JAI Press, pp. 97-133.

Downey, H. K./ Ireland, R. D. (1979): Quantitative versus qualitative: Environmental assessment in organizational studies, in: Administrative Science Quarterly, 24(4), pp. 630-637.

Doz, Y./ Hamel, G. (1991): Alliances in Technology Strategies, Working Paper, Fontainebleau: INSEAD.

Drazin, R./ Glynn, M. A./ Kazanjian, R. K. (2004): Dynamics of Structural Change, in: Poole, M. S./ Van de Ven, A. H. (eds.): Handbook of Organizational Change and Innovation, Oxford / New York: Oxford University Press, pp. 161-189.

DRI/ WEFA (2001): Report for the European Commission: Directorate General for Transport and Energy to determine changes after opening of the Gas Market in August 2000. Volume I: European Overview, July 2001.

Dronnikov, D./ Steuber, D./ Schulz, W. (2003): Integrierte Mikrosysteme der Versorgung – Sektorreport Gas, Gutachten im Auftrag des Bundesministeriums für Bildung und Forschung, Köln: Energiewirtschaftliches Institut an der Universität Köln.

Drucker, P. F. (1971): The New Markets, and Other Essays, London: Heinemann.

Dufour, V. (2009): How to Combine Managerial Performance with Social Responsibility in a Global Firm, in: Jonker, J./ Eskildsen, J. (eds.): Management models for the future, Berlin: Springer, pp. 145-155.

Duncan, R. B. (1972): Characteristics of Organizational Environments and Perceived Environmental Uncertainty, in: Administrative Science Quarterly, Vol. 17, No. 3, pp. 313-327.

Dunker, R. (2007): Handelsplattform soll den Gasmarkt beleben, in: Energie & Management, 15 August 2007, p. 9.

Dutton, J. E./ Duncan, R. B. (1987): The Creation of Momentum for Change Through the Process of Strategic Issue Diagnosis, in: Strategic Management Journal, Vol. 8, No. 3, pp. 279-295.

Dutton, J. M./ Freedman, R. D. (1985): External Environment and Internal Strategies: Calculating, Experimenting, and Imitating in Organizations, in: Advances in Strategic Management, Vol. 3, pp. 39-67.

Dybkjaer, I./ Christensen, T. S. (2001): Syngas for Large Scale Conversion of Natural Gas to Liquid Fuels, in: Iglesia, E./ Spivey, J. J./ Fleisch, T. H. (eds.): Natural Gas Conversion VI, Proceedings of the 6th Natural Gas Conversion Symposium, Vol. 136, Amsterdam et al.: Elsevier, pp. 435-440.

Dyck, B./ Starke, F. A. (1999): The Formation of Breakaway Organizations: Observations and a Process Model, in: Administrative Science Quarterly, No. 44, pp. 792-822.

Dyckhoff, H. (1996): Modellierung von Netzwerkstrukturen im Rahmen einer prozeßorientierten Produktionstheorie, in: Wildemann, H. (ed.): Produktions- und Zuliefernetzwerke, München: TCW Transfer-Centrum-Verlag, pp. 257-278.

Dyner, I./ Larsen, E. R. (2001): From planning to strategy in the electricity industry, in: Energy Policy, Vol. 29, Issue 13, pp. 1145-1154.

E.ON (2001): Annual Report 2000, Düsseldorf: E.ON AG.

E.ON (2002): Annual Report 2001, Düsseldorf: E.ON AG.

E.ON (2003): Annual Report 2002, Düsseldorf: E.ON AG.

E.ON (2004): Annual Report 2003, Düsseldorf: E.ON AG.

E.ON (2005): Annual Report 2004, Düsseldorf: E.ON AG.

E.ON (2006): Annual Report 2005, Düsseldorf: E.ON AG.

E.ON (2007): Annual Report 2006, Düsseldorf: E.ON AG.

E.ON (2008): Annual Report 2007, Düsseldorf: E.ON AG.

E.ON (2009a): Annual Report 2008, Düsseldorf: E.ON AG.

E.ON (2009b): ESMT-Professor C. B. Bhattacharya Inhaber des neuen E.ON-Lehrstuhls für Corporate Responsibility, E.ON-Pressemitteilung, 30.09.2009.

E.ON Gas Transport (2006): Neues Netzzugangsmodell Gas. Informationsveranstaltung für angrenzende Netzbetreiber, Company Presentation, 7 July 2006, Essen.

E.ON Ruhrgas (2007): Jahresbericht 2006, Essen: E.ON Ruhrgas.

E.ON Ruhrgas (2008): Jahresbericht 2007, Essen: E.ON Ruhrgas.

E.ON Ruhrgas (2009): Jahresbericht 2008, Essen: E.ON Ruhrgas.

Ebner, A. (2008): Introduction: The Institutions of the Market, in: Ebner, A./ Beck, N. (eds.): The Institutions of the Market - Organizations, Social Systems, and Governance, Oxford / New York: Oxford University Press.

Eckerle, K./ Hofer, P./ Masuhr, K. P. (1992): Energiereport 2010: die energiewirtschaftliche Entwicklung in Deutschland, Prognos AG, Stuttgart: J. B. Metzlersche Verlagsbuchhandlung und Carl Ernst Poeschel Verlag GmbH.

Eckert, K. (2011): „Dafür lassen sich sehr viele Leute begeistern“, in: Energie & Management, 15 January 2011, p. 23.

Edelman, M. J. (1977): The symbolic uses of politics, Urbana (UA): University of Illinois Press.

Edelman, L. B. (1990): Legal Environments and Organizational Governance, in: American Journal of Sociology, Vol. 95, No. 6, pp. 1401-1440.

Edelman, L. B. (1992): Legal Ambiguity and Symbolic Structures, in: American Journal of Sociology, Vol. 97, No. 6, pp. 1531-1576.

Edwards, K./ Jackson, J. D./ Thompson, H.L. (2000): A Note on Vertical Integration and Stock Ratings of Oil Companies in the U.S, in: The Energy Journal, Vol. 21, No. 2, pp. 145-151.

EIA (2005): International Energy Outlook 2005, Washington D. C.: Energy Information Administration.

EIA (2006): Annual Energy Outlook 2005, Washington D. C.: Energy Information Administration.

Ellig, J./ Kalt, Joseph P. (eds.) (1996): New Horizons in Natural Gas Deregulation, Westport (CT): Praeger Publishers.

Ellis, A./ Bowitz, E./ Roland, K. (2000): Structural change in Europe’s gas markets: three scenarios for the development of the European gas market to 2020, in: Energy Policy, No. 28, pp. 297-309.

Elsbach, K. D. (1994): Managing Organizational Legitimacy in the California Cattle Industry: The Construction and Effectiveness of Verbal Accounts, in: Administrative Science Quarterly, Vol. 39, No. 1, pp. 57-88.

Elsbach, K. D./ Kramer, R. M. (1996): Members’ Responses to Organizational Identity Threats: Encountering and Countering the Business Week Rankings, in: Administrative Science Quarterly, Vol. 41, pp. 442-476.

Elsbach, K. D./ Sutton, R. I. (1992): Acquiring Organizational Legitimacy Through Illegitimate Actions: A Marriage of Institutional and Impression Management Theories, in: Academy of Management Journal, Vol. 35, No. 4, pp. 699-738.

Emerging Energy Research, LLC (2006): Renewable Generation Strategies of Europe's Utilities 2006-2011.

Emery, F. E./ Trist, E. L. (1965): The Causal Texture of Organizational Environments, in: Human Relations, Vol. 18, pp. 21-32.

EnBW (2010): Dr. Christine Kolmar wechselt vom WWF Deutschland zur EnBW, EnBW press release, 22 October 2010, http://www.enbw.com/content/de/presse/pressemitteilungen/2010/10/PM_20101022_kolmar_cu_ys_01/index.jsp, 25.10.2010.

Engdahl, F. W. (2009): Neu entdeckte Öl- und Gasvorkommen machen Südamerika zum Faktor in der Geopolitik, http://info.kopp-verlag.de/news/neu-entdeckte-oel-und-gasvorkommen-machen-suedamerika-zum-faktor-in-der-geopolitik.html, 25.02.2009.

Engerer, H./ Horn, M. (2009): Erdgas für Europa: Die Importe steigen deutlich, in: Wirtschaft Politik Wissenschaft, Vol. 76, No. 17, p. 274.

ENI (2001a): Annual Report 2000, Rome: Eni S.p.A.

ENI (2001b): Fact Book 2000, Rome: Eni S.p.A.

ENI (2001c): Annual Report on Form 20-F. 2001, Rome: Eni S.p.A.

ENI (2002a): Annual Report 2001, Rome: Eni S.p.A.

ENI (2002b): Fact Book 2001, Rome: Eni S.p.A.

ENI (2002c): Annual Report on Form 20-F. 2002, Rome: Eni S.p.A.

ENI (2003a): Annual Report 2002, Rome: Eni S.p.A.

ENI (2003b): Fact Book 2002, Rome: Eni S.p.A.

ENI (2003c): Annual Report on Form 20-F. 2003, Rome: Eni S.p.A.

ENI (2004a): Annual Report 2003, Rome: Eni S.p.A.

ENI (2004b): Fact Book 2003, Rome: Eni S.p.A.

ENI (2004c): Annual Report on Form 20-F. 2004, Rome: Eni S.p.A.

ENI (2005a): Annual Report 2004, Rome: Eni S.p.A.

ENI (2005b): Fact Book 2004, Rome: Eni S.p.A.

ENI (2005c): Annual Report on Form 20-F. 2005, Rome: Eni S.p.A.

ENI (2005c): Annual Report on Form 20-F. 2005, Rome: Eni S.p.A.

ENI (2006a): Annual Report 2005, Rome: Eni S.p.A.

ENI (2006b): Fact Book 2005, Rome: Eni S.p.A.

ENI (2007a): Annual Report 2006, Rome: Eni S.p.A.

ENI (2007b): Fact Book 2006, Rome: Eni S.p.A.

ENI (2007c): Annual Report on Form 20-F. 2007, Rome: Eni S.p.A.

ENI (2008a): Annual Report 2007, Rome: Eni S.p.A.

ENI (2008b): Fact Book 2007, Rome: Eni S.p.A.

ENI (2008c): Annual Report on Form 20-F. 2008, Rome: Eni S.p.A.

ENI (2009a): Annual Report 2008, Rome: Eni S.p.A.

ENI (2009b): Fact Book 2008, Rome: Eni S.p.A.

ENI (2009c): Annual Report on Form 20-F. 2009, Rome: Eni S.p.A.

ENI (2011): Sustainability, http://www.eni.com/en_IT/sustainability/commitment-sustainability/goals-2009/goals-2009.shtml, 02.01.2011.

Epstein, E. M. (2003): How to learn from the environment about the environment - A prerequisite for organizational well-being, in: Journal of General Management, Vol. 29, No. 1, pp. 68-80.

ERGEG (2008): 2008 Status Review, Brussels: European Regulators Group for Electricity and Gas.

ERGEG (2009): ERGEG 2009 Status Review of the Liberalisation and Implementation of the Energy Regulatory Framework, 10 December 2009.

Ertel, M. (2007): „Sicherheit hat Priorität", in: Der Spiegel, No. 1, p. 88.

Esser, H. (2000): Soziologie. Spezielle Grundlagen, Band 5: Institutionen, Frankfurt/ New York: Campus Verlag.

Esterhazy, Y./ Wettach, S./ Wildhagen, A./ Augter, S. (2008): Deutsche Energiekonzerne unter Spannung bei Entflechtung, in: WirtschaftsWoche, No. 11, pp. 57-61.

Esterhazy, Y./ Wildhagen, A./ Henry, A./ Reinert, A. (2010): Auf dem Seziertisch, in: WirtschaftsWoche, No. 28, pp. 50-51.

Estrada, J./ Bergensen, H. O./ Moe, A./ Sydnes, A. K. (1988): Natural gas in Europe: markets, organization and politics, London et al.: Pinter Publishers.

Estrada, J./ Moe, A./ Martinsen, K. D. (1995): The development of European gas markets: environmental, economic, and political perspectives, Chichester: John Wiley & Sons Ltd.

Etzioni, A. (1987): Entrepreneurship, Adaptation and Legitimation, in: Journal of Economic Behavior and Organization, Vol. 8, pp. 175-189.

Eurogas (2007): Natural Gas Demand and Supply – Long Term Outlook to 2030, The European Union of the Natural Gas Industry.

European Commission (1988): The Internal Energy Market, Commission Working Document, COM(88) 238 final, Brussels: Commission of the European Communities.

European Commission (1997): Communication from the Commission - Energy for the future: renewable sources of energy - White Paper for a Community strategy and action plan, COM(1997) 599 final, Brussels: Commission of the European Communities.

European Commission (2000a): Opening up to choice – Launching the single European gas market, Luxembourg: Office for Official Publications of the European Communities, 2000.

European Commission (2000b): Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions - Action Plan to improve energy efficiency in the European Community, COM(2000) 247 final, Brussels: Commission of the European Communities.

European Commission (2000c): Communication from the Commission to the Council and the European Parliament on EU policies and measures to reduce greenhouse gas emissions: towards a European Climate Change Programme (ECCP), COM(2000) 0088 final, Brussels: Commission of the European Communities.

European Commission (2001a): Green Paper - Towards a European strategy for the security of energy supply, COM(2000) 769 final, Brussels: Commission of the European Communities.

European Commission (2001b): Communication from the Commission to the Council and the European Parliament - Completing the internal energy market, COM(2001) 125 final, Brussels: Commission of the European Communities.

European Commission (2001c): Communication from the Commission to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions on alternative fuels for road transportation and on a set of measures to promote the use of biofuels, COM(2001) 547 final, Brussels: Commission of the European Communities.

European Commission (2003a): Communication from the Commission to the Council and the European Parliament on the development of energy policy for the enlarged European Union, its neighbours and partner countries, COM(2003) 262 final, Brussels: Commission of the European Communities.

European Commission (2003b): 2004/20/EC: Commission Decision of 23 December 2003 setting up an executive agency, the "Intelligent Energy Executive Agency", to manage Community action in the field of energy in application of Council Regulation (EC) No 58/2003, Brussels: Commission of the European Communities.

European Commission (2004a): The Unbundling Regime, Note of DG Energy & Transport on directives 2003/54/EC and 2003/55/EC on the internal market in electricity and natural gas, Directorate general for Energy and Transport, 16 January 2004.

European Commission (2004b): Communication from the Commission to the Council and the European Parliament - The Energy Dialogue between the European Union and the Russian Federation between 2000 and 2004, COM(2004) 777 final, Brussels: Commission of the European Communities.

European Commission (2004c): Trans-European energy networks: TEN-E priority projects, Luxembourg: Office for Official Publications of the European Communities.

European Commission (2005a): Communication from the Commission to the Council and the European Parliament - Report on progress in creating the internal gas and electricity market, COM(2005) 568 final, Brussels: Commission of the European Communities.

European Commission (2005b): Green Paper on Energy Efficiency or Doing More With Less, COM(2005) 265 final, Brussels: Commission of the European Communities.

European Commission (2005c): Communication from the Commission - Biomass action plan, COM(2005) 628 final, Brussels: Commission of the European Communities.

European Commission (2005d): Report from the Commission - Annual Report on the Implementation of the Gas and Electricity Internal Market, COM(2004) 863 final, Brussels: Commission of the European Communities.

European Commission (2005e): Energy Sector Inquiry – Issues Paper, 15.11.2005, Brussels: Commission of the European Communities.

European Commission (2006a): Communication from the Commission - an EU Strategy for Biofuels, COM(2006) 34 final, Brussels: Commission of the European Communities.

European Commission (2006b): Green Paper - A European Strategy for Sustainable, Competitive and Secure Energy, COM(2006) 105 final, Brussels: Commission of the European Communities.

European Commission (2006c): Fuelling our future: the European Commission sets out its vision for an Energy Strategy for Europe, IP/06/282, Brussels: Commission of the European Communities, Brussels: Commission of the European Communities.

European Commission (2007a): Communication from the Commission - Inquiry pursuant to Article 17 of Regulation (EC) No 1/2003 into the European gas and electricity sectors (Final Report) {SEC(2006) 1724}, Brussels: Commission of the European Communities.

European Commission (2007b): Questions and answers, MEMO/07/362, Brussels, 19 September 2007

European Commission (2007c): Proposal for a Regulation of the European Parliament and of the Council amending Regulation (EC) No 1775/2005 on conditions for access to the natural gas transmission networks, COM(2007) 532 final, Brussels: Commission of the European Communities.

European Commission (2007d): Communication from the Commission - Inquiry pursuant to Article 17 of Regulation (EC) No 1/2003 into the European gas and electricity sectors, COM(2006) 851 final, Brussels: Commission of the European Communities.

European Commission (2007e): Commission staff working document - Accompanying the legislative package on the internal market for electricity and gas - Impact Assessment, COM(2007) 528 final - 532 final, SEC(2007) 1179 and 1180 final.

European Commission (2007f): Proposal for a Council Decision on guidelines for the employment policies of the Member States, COM(2007) 803 final, Brussels: Commission of the European Communities.

European Commission (2007g): Communication from the Commission to the Council and the European Parliament - Prospects for the internal gas and electricity market, COM(2006) 841 final, Brussels: Commission of the European Communities.

European Commission (2007h): Impact Assessment accompanying the legislative package on the internal market for electricity and gas, SEC(2007)1179, Brussels: Commission of the European Communities.

European Commission (2007i): Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions - Towards a European strategic energy technology plan, COM(2006) 847 final, Brussels: Commission of the European Communities.

European Commission (2007j): Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions - A European strategic energy technology plan (SET-plan) - 'Towards a low carbon future', COM(2007) 723 final, Brussels: Commission of the European Communities.

European Commission (2007k): Communication from the Commission to the European Council and the European Parliament - an energy policy for Europe, COM(2007) 1 final, Brussels: Commission of the European Communities.

European Commission (2007l): Accompanying the Communication from the Commission Inquiry pursuant to Article 17 of Regulation (EC) No 1/2003 into the European gas and electricity sectors (Final Report) Priority Interconnection Plan, SEC(2006) 1715 final, Brussels: Commission of the European Communities.

European Commission (2008a): Gas Regulatory Forum (Madrid), 15th meeting, 06-07 November 2008, Madrid, http://ec.europa.eu/energy/gas_electricity/forum_gas_madrid_en.htm, 01.03.2009.

European Commission (2008b): Proposal for a Directive of the European Parliament and of the Council on the promotion of the use of energy from renewable sources, COM(2008) 19 final, Brussels: Commission of the European Communities.

European Commission (2008c): Communication from the Commission to the European Parliament and the Council - Greening Transport, COM(2008) 433 final, Brussels: Commission of the European Communities.

European Commission (2009): Commission publishes its 2009 progress report on renewable energy, IP/09/639, Brussels: Commission of the European Communities.

European Commission (1995): White Paper - An energy policy for the European Union, COM(1995) 682 final, Brussels: Commission of the European Communities.

European Communities (1986): The Single European Act, Official Journal L 169, LUXEMBOURG/ The Hague, 17 February 1986.

European Communities (2002): Consolidated Version of the Treaty establishing the European Community, Official Journal C 325/33, 24.12.2002

European Council (1990): Council Directive 90/377/EEC of 29 June 1990 concerning a Community procedure to improve the transparency of gas and electricity prices charged to industrial end-users, COM(1989) 332, Brussels: Commission of the European Communities.

European Council (1991): Council Directive 91/296/EEC of 31 May 1991 on the transit of natural gas through grids, Brussels: Commission of the European Communities.

European Council (1993): 93/500/EEC: Council Decision of 13 September 1993 concerning the promotion of renewable energy sources in the Community, Brussels: Commission of the European Communities.

European Council (1998): 1999/21/EC, Euratom: Council Decision of 14 December 1998 adopting a multiannual framework programme for actions in the energy sector (1998-2002) and connected measures, Brussels: Commission of the European Communities.

European Council (2002): 2002/358/EC: Council Decision of 25 April 2002 concerning the approval, on behalf of the European Community, of the Kyoto Protocol to the United Nations Framework Convention on Climate Change and the joint fulfilment of commitments thereunder.

European Council (2003): Council Directive 2003/96/EC of 27 October 2003 restructuring the Community framework for the taxation of energy products and electricity, Brussels: Commission of the European Communities.

European Council (2004): Council Directive 2004/67/EC of 26 April 2004 concerning measures to safeguard security of natural gas supply, Brussels: Commission of the European Communities.

European Parliament and Council (1996): Directive 96/92/EC of the European Parliament and of the Council of 19 December 1996 concerning common rules for the internal market in electricity.

European Parliament and Council (1998): Directive 98/30/EC of the European Parliament and of the Council of 22 June 1998 concerning common rules for the internal market in natural gas, Brussels: Commission of the European Communities.

European Parliament and Council (2001): Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity produced from renewable energy sources in the internal electricity market, Brussels: Commission of the European Communities.

European Parliament and Council (2002): Directive 2002/91/EC of the European Parliament and of the Council of 16 December 2002 on the energy performance of buildings, Brussels: Commission of the European Communities.

European Parliament and Council (2003a): Directive 2003/55/EC of the European Parliament and of the Council of 26 June 2003 concerning common rules for the internal market in natural gas and repealing Directive 98/30/EC, Brussels: Commission of the European Communities.

European Parliament and Council (2003b): Directive 2003/30/EC of the European Parliament and of the Council of 8 May 2003 on the promotion of the use of biofuels or other renewable fuels for transport, Brussels: Commission of the European Communities.

European Parliament and Council (2003c): Decision No 1230/2003/EC of the European Parliament and of the Council of 26 June 2003 adopting a multiannual programme for action in the field of energy: "Intelligent Energy Europe" (2003 2006), Brussels: Commission of the European Communities.

European Parliament and Council (2004a): Directive 2004/8/EC of the European Parliament and of the Council of 11 February 2004 on the promotion of cogeneration based on a useful heat demand in the internal energy market and amending Directive 92/42/EEC, Brussels: Commission of the European Communities.

European Parliament and Council (2004b): Directive 2004/101/EC of the European Parliament and of the Council of 27 October 2004 amending Directive 2003/87/EC establishing a scheme for greenhouse gas emission allowance trading within the Community, in respect of the Kyoto Protocol's project mechanisms, Brussels: Commission of the European Communities.

European Parliament and Council (2005): Directive 2005/32/EC of the European Parliament and of the Council of 6 July 2005 establishing a framework for the setting of ecodesign requirements for energy-using products and amending Council Directive 92/42/EEC and Directives 96/57/EC and 2000/55/EC of the European Parliament and of the Council Directive 2005/32/EC, Brussels: Commission of the European Communities.

European Parliament and Council (2006): Decision No 1639/2006/EC of the European Parliament and of the Council of 24 October 2006 establishing a Competitiveness and Innovation Framework Programme (2007 to 2013), Brussels: Commission of the European Communities.

European Parliament and Council (2009): Directive 2009/31/EC of the European Parliament and of the Council of 23 April 2009 on the geological storage of carbon dioxide and amending Council Directive 85/337/EEC, European Parliament and Council Directives 2000/60/EC, 2001/80/EC, 2004/35/EC, 2006/12/EC, 2008/1/EC and Regulation (EC) No 1013/2006, Brussels: Commission of the European Communities.

Eurostat (2007): Energy, transport and environment indicators, Luxembourg: Office for Official Publications of the European Communities.

Eurostat (2010): Database European Energy statistics, http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database.

Eurotreaties (2010): The Messina Declaration, http://www.eurotreaties.com/messina.pdf, 16.03.2010.

Fahey, L./ Narayanan, V. K. (1986): Macroenvironmental Analysis for Strategic Management, St. Paul (MN): West Publishing Company.

Falksohn, R. (2007): „Mächtiger Ruck", in: Der Spiegel, No. 3, pp. 104-105.

Farmer, R. N./ Richman, B. M. (1964): A Model for Research in Comparative Management, California Management Review, Vol. 7, No. 2, pp. 55-68.

Fautz, F./ Leuschner, P. (2006): Gute Perspektiven für 2006, in: M&A Review, No. 4, pp. 180-184.

Faye, P. (2006): Energiekrise auf der Insel, ZDF, 18 March 2006, http://www.heute.de/ZDFheute/drucken/1,3733,3913707,00html, 30.03.2006.

Fechtner, D. (2009): Pipelinebauer Joschka Fischer, in: Stuttgarter Nachrichten Online, 8 September 2009, http://www.stuttgarter-nachrichten.de/stn/page/detail.php/2189832, 09.09.09.

Feddeck, P. (2003): Was ist Energie?, Fachinformationszentrum Karlsruhe (ed.), Bonn.

Feist, M. G. (2008): Bioerdgas muss in den Wärmemarkt, in: Energie & Management, 15 January 2008, p. 16.

Finance (2004): Power Play. Wie RWE und E.on Europa erobern, in: Finance, September 2004.

Finon, D. (2004): European Gas Markets: Nascent Competition and Integration in a Diversity of Models, in: Finon, D./ Midttun, A. (eds.): Reshaping European Gas and Electricity Industries, Amsterdam et al.: Elsevier, pp. 183-235.

Finon, D./ Midttun, A. (2004): Reshaping European gas and electricity industries: regulation, markets and business strategies, Amsterdam et al.: Elsevier.

Finon, D./ Midttun, A./ Johnsen, T. A. (2004): After the grace period: Economic and political challenges when electricity markets face the investment phase, Sandvika: Handelshøyskolen BI.

Flagestad, A./ Hope, C. A. (2001): Strategic success in winter sports destinations: a sustainable value creation perspective, in: Tourism Management, No. 22, pp. 445-461.

Flaherty, T./ Jirovec, T. (2006): Danger! Shooting Too Low Threatens Merger Success, Booz Allen Hamilton.

Flauger, J. (2006a): Energiebranche spürt Gegenwind, in: Handelsblatt, No. 207, p. 14.

Flauger, J. (2006b): Eon steht vor einer neuen hohen Hürde, in: Handelsblatt, No. 187, p. 16.

Flauger, J. (2007a): „Wir engagieren uns nur dort, wo wir willkommen sind", in: Handelsblatt, 14 November 2007, http://www.handelsblatt.com/unternehmen/industrie/wir-engagieren-uns-nur-dort-wo-wir-willkommen-sind/2893092.html?p2893092=all, 22.09.2008.

Flauger, J. (2007b): Gaz de France greift in Deutschland an, in: Handelsblatt, No. 212, p. 15.

Flauger, J. (2007c): RWE darf bei Stadtwerken einsteigen, in: Handelsblatt, No. 212, p. 17.

Flauger, J. (2008a): EnBW drängt nach Norden, in: Handelsblatt, 9 July 2008, http://www.handelsblatt.com/unternehmen/industrie/enbw-draengt-nach-norden;2009625, 24.08.09.

Flauger, J. (2008b): Neues Bündnis auf deutschem Energiemarkt, in: Handelsblatt, 11 July 2008, http://www.handelsblatt.com/politik/international/in-frankreich-niemals-ohne-bb;2012053, 24.08.09.

Flauger, J. (2008c): RWE scheitert in Russland, in: Handelsblatt, 22 September 2008, http://www.handelsblatt.com/unternehmen/industrie/rwe-scheitert-in-russland/3024872.html?p3024872=all, 22.09.2008.

Flauger, J. (2008d): Dürfen es auch etwas mehr Schulden sein?, in: Handelsblatt, 8 August 2008, http://www.handelsblatt.com/unternehmen/management/koepfe/duerfen-es-auch-etwas-mehr-schulden-sein/3000844.html?p3000844=all, 22.09.2008.

Flauger, J. (2008e): Kartellamt entlastet Gaskunden, in: Handelsblatt, 21 November 2008, http://www.handelsblatt.com/unternehmen/industrie/kartellamt-entlastet-gaskunden;2094097, 20.04.09.

Flauger, J. (2009a): Versorger bangen um lukrative Netze, in: Handelsblatt, 28 July 2009, http://www.handelsblatt.com/unternehmen/industrie/versorger-bangen-um-lukrative-netze/3228168.html?p3228168=all, 03.08.2009.

Flauger, J. (2009b): Mittelstand für Strom und Gas, in: Handelsblatt, 27 July 2009, http://www.handelsblatt.com/unternehmen/handelsblatt-kommentar/mittelstand-fuer-strom-und-gas;2437561, 03.08.2009.

Flauger, J. (2009c): Versorger bangen um Klimaprojekte, in: Handelsblatt, 11 December 2009, http://www.handelsblatt.com/unternehmen/industrie/versorger-bangen-um-klimaprojekte/3324172.html?p3324172=all, 11.12.2009.

Flauger, J. (2009d): RWE-Chef Großmanns Stunde schlägt, in: Handelsblatt, 22 April 2009, http://www.handelsblatt.com/unternehmen/industrie/rwe-chef-grossmanns-stunde-schlaegt/3162010.html?p3162010=all, 11.12.2009.

Flauger, J. (2009e): Eons Kronprinz vor der Krönung, in: Handelsblatt, 6 May 2009, http://www.handelsblatt.com/unternehmen/management/koepfe/eons-kronprinz-vor-der-kroenung/3171434.html?p3171434=all, 08.05.2009.

Flauger, J. (2009f): RWE verzichtet auf Atomkraftwerke, in: Handelsblatt, 6 August 2009, http://www.handelsblatt.com/unternehmen/industrie/rwe-verzichtet-auf-atomkraftwerk/3233450.html, 06.08.2009.

Flauger, J. (2009g): Firmen setzen auf billigere Kraftwerke, in: Handelsblatt, 6 January 2009, http://www.handelsblatt.com/unternehmen/industrie/firmen-setzen-auf-billigere-kraftwerke/3082958.html?p3082958=all, 13.01.2009.

Flauger, J. (2009h): Energieversorger setzen auf das Elektroauto, in: Handelsblatt, 24 April 2009, http://www.handelsblatt.com/auto/nachrichten/energieversorger-setzen-auf-das-elektroauto/3163920.html, 28.10.2010.

Flauger, J. (2009i): RWE-Aufsichtsrat Fischer wirft hin, in: Handelsblatt, 22 April 2009, http://www.handelsblatt.com/unternehmen/industrie/rwe-aufsichtsratschef-fischer-wirft-hin/3162162.html?p3162162=all, 11.12.2009.

Flauger, J. (2010a): Das Testat: RWE will internationaler werden – Konkurrent Eon gibt die Richtung vor, in: Handelsblatt, No. 25, p. 29.

Flauger, J. (2010b): Ein Paukenschlag zum Auftakt, in: Handelsblatt, No. 92, pp. 62-63.

Flauger, J. (2010c): Johannes Teyssen ist endlich in der Pole-Position, in: Handelsblatt, 30 April 2010, http://www.handelsblatt.com/unternehmen/management/koepfe/johannes-teyssen-ist-endlich-in-der-pole-position/3424362.html?p3424362=all, 30.04.2010.

Flauger, J. (2010d): Jetzt erst einmal einen Kräuterlikör, in: Handelsblatt, No. 120, p. 62.

Flauger, J. (2010e): Eon und RWE machen gemeinsame Sache, in: Handelsblatt, 22 April 2010, http://www.handelsblatt.com/unternehmen/industrie/eon-und-rwe-machen-gemeinsame-sache/3418198.html?p3418198=all, 22.04.2010.

Flauger, J. (2010f): RWE will am Energiesparen verdienen, in: Handelsblatt, 4 January 2010, http://www.handelsblatt.com/unternehmen/industrie/rwe-will-am-energiesparen-verdienen/3338046.html?p3338046=all, 10.01.2010.

Flauger, J. (2010g): Ex-Kanzler kontrolliert künftig RWE, in: Handelsblatt, 24 February 2010, http://www.handelsblatt.com/unternehmen/management/koepfe/ex-kanzler-kontrolliert-kuenftig-rwe/3376710.html, 30.04.2010.

Flauger, J. (2010h): RWE exportiert Elektromobilität ins Ausland, in: Handelsblatt, 14 July 2010, http://www.handelsblatt.com/unternehmen/industrie/rwe-exportiert-elektromobilitaet-ins-ausland/3489992.html?p3489992=all, 15.07.2010.

Flauger, J. (2010i): Eon verkauft US-Tochter für 5,5 Milliarden Euro, in: Handelsblatt, 28 April 2010, http://www.handelsblatt.com/unternehmen/industrie/eon-verkauft-us-tochter-fuer-5-5milliarden-euro/3422676.html?p3422676=all, 15.07.2010.

Flauger, J./ Heilmann, D. (2009a): RWE und Eon bündeln Kräfte, in: Handelsblatt, 15 January 2009, http://www.handelsblatt.com/unternehmen/industrie/rwe-und-eon-buendeln-kraefte/3089456.html?p3089456=all, 15.01.2009.

Flauger, J./ Heilmann, D. (2009b): Atomkraftschub für Europa, in: Handelsblatt, 29 April 2009, http://www.handelsblatt.com/unternehmen/industrie/atomkraftschub-fuer-europa;2258321, 29.04.2009.

Flauger, J./ Heilmann, D. (2009c): Bernotat strebt Top-Job bei BP an, in: Handelsblatt, 8 May 2009, http://www.handelsblatt.com/unternehmen/management/koepfe/bernotat-strebt-top-job-bei-bp-an/3172914.html?p3172914=all, 08.05.2009.

Flauger, J./ Landgraf, R./ Müller, S. (2006): Um Endesa wird gepokert, in: Handelsblatt, No. 39, p. 14.

Flauger, J./ Stratmann, K. (2009a): Versorger kämpfen an zwei Fronten, in: Handelsblatt, 21 September 2009, http://www.handelsblatt.com/unternehmen/industrie/versorger-kaempfen-an-zwei-fronten/3263066.html, 30.09.2009.

Flauger, J./ Stratmann, K. (2009b): Kohler sagt RWE ab, in: Handelsblatt, 4 May 2009, http://www.handelsblatt.com/unternehmen/management/koepfe/kohler-sagt-rwe-ab/3169554.html, 08.05.2009.

Fleisch, T./ Puri, R./ Sills, R. A./ Basu, A./ Gradassi, M./ Jones, G. R. (2001): Market Led GTL: The Oxygenate Strategy, in: Iglesia, E./ Spivey, J. J./ Fleisch, T. H. (eds.) : Natural Gas Conversion VI, Proceedings of the 6th Natural Gas Conversion Symposium, June 17-22, Studies in Surface Science and Catalysis Vol. 136, Amsterdam et al.: Elsevier, pp. 423-428.

Fleissner, E. (2005): Strategisches Management in der Energiewirtschaft, in: Energiewirtschaftliche Tagesfragen, Vol. 55, Issue 7, pp. 482-487.

Fleming, J. E. (1980): Linking Public Affairs with Corporate Planning, in: Management Review, Vol. 23, No. 2, pp. 35-43.

Flier, B./ van den Bosch, F. A. J./ Volberda, H. W. (2003): Co-evolution in the strategic renewal behaviour of British, Dutch and French financial established organizations: interaction of environmental selection, institutional effects and managerial intentionality, in: Journal of Management Studies, Vol. 40, No. 8, pp. 2163-2187.

Flier, B./ van den Bosch, F. A. J./ Volberda, W./ Baden-Fuller, C. (2005): Strategic Renewal in the Dutch Financial Services Sector: Renewal Trajectories from a Competence-based Perspective, in: Advances in Applied Business Strategy, Vol. 9, pp. 237-274.

Fligstein, N. (1985): The Spread of the Multidivisional Form among Large Firms, 1919-1979, in: American Sociological Review, Vol. 50, No. 3, pp. 377-391.

Fligstein, N. (1990): The transformation of corporate control, Cambridge (MA): Harvard University Press.

Fligstein, N. (1991): The Structural Transformation of American Industry: An Institutional Account of the Causes of Diversification in the Largest Firms, 1919-1979, in: Powell, W. W./ DiMaggio, P. (eds.): The New institutionalism in organizational analysis, Chicago/ London: University of Chicago Press, pp. 311-336.

Fligstein, N. (1996): Markets as politics: A political-cultural approach to market institutions, in: American Sociological Review, No. 61, pp. 228-244.

Fligstein, N. (1997): Social skills and institutional theory, in: American Behavioral Scientist, No. 40, pp. 397-405.

Fligstein, N. (2001): The architecture of markets: an economic sociology of twenty-first-century capitalist societies, Princeton/ Oxford: Princeton University Press.

Fligstein, N. (2008): Myths of the Market, in: Ebner, A./ Beck, N. (eds.): The Institutions of the Market - Organizations, Social Systems, and Governance, Oxford University Press, pp. 131-156.

Fligstein, N./ Dauber, K. (1989): Structural Change in Corporate Organization, in: Annual Review of Sociology, Vol. 15, No. 1, pp. 73-96.

Floyd, S. W./ Lane, P. J. (2000): Strategizing throughout the Organization: Managing Role Conflict in Strategic Renewal, in: Academy of Management Review, Vol. 25, No. 1, pp. 154-177.

Floyd, S. W./ Wooldridge, B. (2000): Building Strategy From the Middle: Reconceptualizing Strategy Process, Thousand Oaks (CA) et al.: Sage Publications.

Focht, P. (2005): Flüssig neue Märkte suchen, in: Energie & Management, 1 September 2005, p. 14.

Focht, P. (2006): E.ON Ruhrgas startet Handelsplattform, in: Energie & Management, 1 October 2006, p. 6.

Focht, P. (2007a): Gasspeicherbau in Deutschland boomt, in: Energie & Management, 1 June 2007, p. 6.

Focht, P. (2007b): Frühlingserwachen am Gasmarkt, in: Energie & Management, 15 February 2007, p. 1.

Focht, P. (2008a): E wie einfach über Wechselbereitschaft erfreut, in: Energie & Management, 1 May 2008, p. 8.

Focht, P. (2008b): Erdgashandel im Wandel, in: Energie & Management, 15 June 2008, p. 9.

Focht, P. (2008c): Eon Ruhrgas wählt Importroute über Rotterdam, in: Energie & Management, 1 September 2008, p. 16.

Focht, P. (2009a): Wohin mit dem Bioerdgas? in: Energie & Management, 15 January 2009, p. 9.

Focht, P. (2009b): Gas im Tank entlastet Klima, in: Energie & Management, 15 July 2009, p. 42.

Focht, P. (2009c): 8KU stärken erneuerbare Energien, in: Energie & Management, 15 June 2009, p. 3.

Focht, P. (2009d): MVV sucht Wachstum mit Klimaschutz, in: Energie & Management, 15 February 2009, p. 8.

Focht, P. (2009e): Ran an die Öko-Kunden, in: Energie & Management, 1 November 2009, p. 21.

Focht, P. (2009f): Bernotat bleibt bei sowohl als auch, in: Energie & Management, 15 July 2009, p. 40.

Fockenbrock, D. (2006): Energiekonzerne stehen vor dem Umbruch, in: Handelsblatt, No. 184, p. 16.

Foss, N. J. (2000): Strategy, Bargaining, and Economic Organization: Some Thoughts on the Transaction Cost Foundations of Firm Strategy, Working Paper Series No. 00-11, Department of Industrial Economics and Strategy, Copenhagen Business School.

Foss, M. M. (2005): Global Natural Gas Issues and Challenges: A Commentary, in: The Energy Journal, Vol. 26, No. 2, pp. 111-128.

Foster, R. N./ Kaplan, S. (2001): Creative destruction, in: The McKinsey Quarterly, No. 3, pp. 41-51.

Fox-Wolfgramm, S. J./ Boal, K. B./ Hunt, J. G. (1998): Organizational Adaptation to Institutional Change: A Comparative Study of First-order Change in Prospector and Defender, in: Administrative Science Quarterly, Vol. 43, pp. 87-126.

Franke, H. (2007): Der sicherste Reaktortyp, in: Capital, No. 4, p. 18.

Freeman, C. (1984): Prometheus Unbound, in: Futures, Vol. 16, No. 5, pp. 494-507.

Freeman, J. (1999): Efficiency and Rationality in Organizations, in: Administrative Science Quarterly, No. 44, pp. 163-175.

Friese, U. (2008): Am Pranger der Verbraucher, in: Frankfurter Allgemeine Zeitung, 3 June 2008, http://www.faz.net/aktuell/wirtschaft/branchen-und-maerkte-146-mineraloelindustrie-am-pranger-der-verbraucher-1539124.html, 03.08.2008.

Fritz-Vannahme, J./ Gammelin, C. (2006): Brüssel ist schon abgeklemmt, in: Die Zeit, No. 10, p. 23.

Fronda, Y./ Moriceau, J.-L. (2008): I am not your hero: change management and culture shocks in a public sector corporation, in: Journal of Organizational Change Management, Vol. 21, Issue 5, pp. 589 – 609.

Fuentelsaz, L./ Gomez, J./ Polo, Y. (2002): Followers' entry timing: evidence from the Spanish banking sector after deregulation, in: Strategic Management Journal, Vol. 23, No. 3, pp. 245-264.

Funk, M./ McKenna, M./ Spiegel, E./ Steinhubl, A. (2006): Looking to the Future, Booz & Co.

Gadhoum, F./ de Monicault, F. (2007): La fusion divise le monde syndical et les personnels des deux enterprises, in: Le Figaro, 15 October 2007, http://www.lefigaro.fr/actualite/2006/06/16/01001-20060616ARTFIG90029-la_fusion_divise_le_monde_syndical_et_les_personnels_des_deux_entreprises.php, 04.12.09

Galaskiewicz, J. (1997): An urban grants economy revisited: Corporate charitable contributions in the Twin Cities, 1979-81, 1987-89, in: Administrative Science Quarterly, No. 42, pp. 445-471.

Galbraith, J. R. (1983): Strategy and Organization Planning, in: Human Resource Management, Vol. 22, No. 1/2, pp. 63-77.

Garcia-Pont, C./ Nohria, N. (2002): Local versus global mimetism: The dynamics of alliance formation in the automobile industry, in: Strategic Management Journal, Vol. 23, No. 3, pp. 307-321.

Gassmann, M. (2009a): Abkehr von Privatisierung: Eon verkauft über 100 Stadtwerke, in: Financial Times Deutschland, 19 June 2009, http://www.ftd.de/unternehmen/handel-dienstleister/:abkehr-von-privatisierung-eon-verkauft-ueber-100-stadtwerke/529038.html, 06.07.2009.

Gassmann, M. (2009b): Zoff bei Eon und RWE, in: Financial Times Deutschland, 5 May 2009.

Gassmann, M. (2010a): Ruhrgas weicht Ölpreisbindung auf, in: Financial Times Deutschland, 19 February 2010, p. 6.

Gassmann, M. (2010b): Eon-Chef will Konzern neu erfinden, in: Financial Times Deutschland, 8 November 2010, p. 1.

Gassmann, M./ Yacoub, Rhourde (2010): Die Suche nach dem Wüstengas, in: Financial Times Deutschland, 12 August 2010,

http://www.ftd.de/unternehmen/industrie/:agenda-die-suche-nach-dem-wuestengas/50155255.html, 13.08.2010.

GdF (2005): Rapport Annuel 2004, Paris: Gaz de France.

GdF (2006): Reference Document 2005, Paris: Gaz de France.

GdF (2007): Reference Document 2006, Paris: Gaz de France.

GdF (2008a): Reference Document 2007, Paris: Gaz de France.

GdF (2008b): Gaz de France enters the Italian storage market, press release, 7 July 2008, http://www.gdfsuez.com/document/?f=files/en/cp-gdf-080707-gazdefrance-enters-the-italian-storage-market-en.pdf, 27.08.09.

GdF (2008c): Purchase and Sale of Natural Gas, Gaz de France Investor Day, 16 April 2008.

GdF (2008d): Gaz de France spins off its natural gas distribution activities and creates GrDF, http://www.gdfsuez.com/document/?f=files/en/cp-gdf-080103-grdf-creation-en.pdf, 27.08.09

GdF (2008e): Statement of objections from the European Commission, press release, 12 June 2008, http://www.gdfsuez.com/document/?f=files/en/cp-gdf-080612-statement-of-objections-from-the-european-commission-en.pdf, 27.08.09.

GDF SUEZ (2008a): Suez and Gaz de France jointly acquire U.K. Teesside Power plant Europe's largest combined-cycle gas turbine plant, press release, 25 February 2008, http://www.gdfsuez.com/document/?f=files/en/cp-gdf-080226-acquisition-of-nass-wind-technologie-en.pdf, 27.08.09.

GDF SUEZ (2008b): GDF SUEZ continues its work to develop the liquidity of the French gas market, press release, 26 November 2008, http://www.gdfsuez.com/document/?f=files/en/cp-081126-gdf-suez-bourse-du-gaz-powernext-va.pdf, 27.08.2009.

GDF SUEZ (2008c): GDF SUEZ wins bid for the privatisation of Turkey's third largest distributor of natural gas, press release, 14 August 2008, http://www.gdfsuez.com/document/?f=files/en/cp-080814-gdf-suez-winsbidturkeynaturalgas-va.pdf, 27.08.2009.

GDF SUEZ (2008d): SUEZ Renewable Energy NA will build New Wind Project in Canada, press release, 27 February 2008, http://www.gdfsuez.com/document/?f=files/en/27022008-cp-suez-suezrenewableenergy-en.pdf, 27.08.09.

GDF SUEZ (2009a): Reference Document 2008, Paris: GdF SUEZ.

GDF SUEZ (2009b): GDF SUEZ agrees finance for 3,300 MW Brazilian hydro power plant, press release, 6 July 2009, http://www.gdfsuez.com/document/?f=files/en/cp-gdf-suez-jirau-va.pdf, 27.08.2009.

GDF SUEZ (2009c): GDF SUEZ begins construction of 800 MW biomass and coal power station in the Netherlands, press release, 22 June 2009, http://www.gdfsuez.com/document/?f=files/en/cp-gdf-suez-centrale-biomasse-charbon-rotterdam-va.pdf, 27.08.2009.

GDF SUEZ (2009d): Activities and Sustainable Development Report 2008, Paris: GdF SUEZ.

GDF SUEZ (2009e): GDF SUEZ Group increases French natural gas network access capacities, press release, 8 July 2009, http://www.gdfsuez.com/document/?f=files/en/cp-gdf-suez-acces-france-va.pdf, 27.08.2009.

GDF SUEZ (2009f): Santos and GDF SUEZ announce strategic partnership in Australia, press release, 18 August 2009, http://www.gdfsuez.com/document/?f=files/en/bonaparte-lng-va.pdf, 27.08.2009.

GDF SUEZ (2011): Environment and Climate, http://www.gdfsuez.com/en/sustainable-development/environment-and-climate/environment-and-climate/, 02.01.2011.

Genoud, C./ Arentsen, M./ Finger, M. (2004a): Energy Regulation: Convergence Through Multilevel Technocracy, in: Finon, D./ Midttun, A. (eds.): Reshaping European gas and electricity industries: regulation, markets and business strategies, Amsterdam et al.: Elsevier, pp. 111-128.

Genoud, C./ Arentsen, M./ Finger, M. (2004b): Regulation in liberalized energy sectors: introduction and concepts, in: Finon, D./ Midttun, A. (eds.): Reshaping European gas and electricity industries: regulation, markets and business strategies, Amsterdam et al.: Elsevier, pp. 13-28.

Gey, F. (2010): Nachhaltigkeit und Klimaschutz bei Unternehmen, in: Energie & Management, 1 February 2010, p. 13.

Ghauri, P. (2004): Designing and conducting case studies in international business research, in: Marschan-Piekkari, R./ Welch, C. (eds.): Handbook of Qualitative Research Methods for International Business, Cheltenham (UK)/ Northampton (USA): Edward Elgar, pp. 109-124.

Ghemawat, P. (1991): Resources and Strategy: an IO Perspective, Working Paper, Harvard Business School.

Ghemawat, P. (1993): The Risk of Not Investing in a Recession, in: Sloan Management Review, Vol. 34, No. 2, pp. 51-58.

Ghemawat, P. (2002): Competition and Business Strategy in Historical Perspective, in: Business History Review, No. 76, pp. 37-74.

Ghobadian, A./ James, P./ Liu, J./ Viney, H. (1998): Evaluating the Applicability of the Miles and Snow Typology in a Regulated Public Utility Environment, in: British Journal of Management, Vol. 9, Issue 1, pp. 71-83.

Ghoshal S./ Moran P. (1996): Bad for Practice: A Critique of the Transaction Cost Theory, in: The Academy of Management Review, Vol. 21, No. 1, pp. 13-47.

Gibbons, R. S. (2003): How Organizations Behave: Towards Implications for Economics and Economic Policy, in: Conference Series, June.

Gimenez, F. A. P. (1999): Miles and Snow's strategy model in the context of small firms, Proceedings of the 1999 ICSB Naples Conference, http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.125.803, 13.10.2007.

Gimeno, J./ Hoskisson, R. E. (1997): Competing to Cooperate: Antecedents of "Follow-the-Leader" Behavior in US Joint Ventures in Latin America, in: Thomas, H./ O'Neal, D./ Alvarado, R. (eds.): Strategic Discovery: Competing in New Arenas, London: John Wiley & Sons, pp. 139-153.

Ginsberg, A. (1984): Operationalizing Organizational Strategy: Toward an Integrative Framework, in: Academy of Management Review, Vol. 9, No. 3, pp. 548-557.

Ginsberg, A. (1988): Measuring and modelling changes in strategy: Theoretical foundations and empirical directions, in: Strategic Management Journal, Vol. 9, No. 6, pp. 559-575.

Ginsberg, A./ Baum, J. A. C. (1994): Evolutionary processes and patterns of core business change, in: Baum, J. A. C/ Singh J. V. (eds.): Evolutionary Dynamics of organizations, New York: Oxford University Press, pp. 127-151.

Ginsburg, H. (2007): Eiskalter Krieg, in: WirtschaftsWoche, No. 33, pp. 32-33.

Girault, V. (2005): Structure de la concurrence sur la chaine du gaz naturel : Le marché européen, Cahier No. 05.01.55, Montpellier Cedex : Centre de Recherche en Economie et Droit de l'Energie.

Goerten, J./ Clement, E. (2005): Competition indicators in the gas market of the European Union, Eurostat: Statistics in focus 8/2005, European Communities, pp. 1-7.

Goerten, J./ Clement, E. (2006): European gas market indicators of the liberalisation process 2004-2005, Eurostat: Statistics in focus 8/2006, European Communities, pp. 1-7.

Goffart, D. (2009): Energiebranche wittert Kampagne gegen Gorleben, in: Handelsblatt, 11 September 2009, http://www.handelsblatt.com/politik/deutschland/energiebranche-wittert-kampagne-gegen-gorleben;2455608, 11.09.09.

Golombek, R./ Gjelsvik, E./ Rosendahl, K. E. (1995): Effects of liberalizing the natural gas markets in Western Europe, in: The Energy Journal, Vol. 16, Issue 1, pp. 85-111.

Goodrick, E./ Salancik, G. R. (1996): Organizational Discretion in Responding to Institutional Practices: Hospitals and Cesarean Births, in: Administrative Science Quarterly, No. 41, pp. 1-28.

Goodstein, J. D. (1994): Institutional Pressures and Strategic Responsiveness: Employer Involvement in Work-Family Issues, in: Academy of Management Journal, Vol. 37, No. 2, pp. 350-382.

Götz, R. (2007): Der künftige Erdgasbedarf Europas, Diskussionspapier FG 5 2007/08, Mai 2007, Stiftung Wissenschaft und Politik; Deutsches Institut für Internationale Politik und Sicherheit, http://www.swp-berlin.org/common/get_document.php?asset_id=4007, 10.02.2007.

Grant, R. M. (1991): The resource-based theory of competitive advantage: implications for strategy formulation, in: California Management Review, Spring, pp. 114-135.

Grant, R. M. (2002): Contemporary strategy analysis: concepts, techniques, applications, 4th edition, Malden (MA) et al.: Wiley-Blackwell.

Grant, R. M. (2003): Strategic planning in a turbulent environment: Evidence from the oil majors, in: Strategic Management Journal, Vol. 24, pp. 491-517.

Grant, R. M. (2007): Eni SpA: Building an International Energy Major, in: Grant, R. M. (ed.): Cases to Accompany Contemporary Strategy Analysis, Malden (MA) et al.: Blackwell Publishing, pp. 202-232.

Grant, R. M./ Cibin, R. (1996): Strategy, Structure and Market Turbulence: The International Oil Majors, 1970-1991, in: Scandinavian Journal of Management , Vol. 12, No. 2, pp. 165-188.

Grant, R. M./ Ritter, M. (2007): Eni SpA: Building an International Energy Major, in: Grant, R. M. (ed.): Cases to accompany Contemporary strategy analysis, 6th edition, Malden et al. (MA): Blackwell Publishing, pp. 233-265.

Grathwohl, M. (1982): World Energy Supply. Resources. Technologies. Perspectives. Berlin: de Gruyter.

Green, R./ Keogh, W. (2000): Five years of collaboration in the UK upstream oil and gas industry, in: Strategic Change, No. 9, pp. 249-263.

Greening, D. W./ Gray, B. (1994): Testing a Model of Organizational Response to Social and Political Issues, in: Academy of Management Journal, Vol. 37, No. 3, pp. 467-498.

Greenwood, R./ Hinings, C. R. (1993): Understanding Strategic Change: The Contribution of Archetypes, in: Academy of Management Journal, Vol. 36, No. 5, pp. 1052-1081.

Greenwood, R./ Hinings, C. R. (1996): Understanding Radical Organizational Change: Bringing Together the Old and the New Institutionalism, in: Academy of Management Review, Vol. 21, No. 4, pp. 1022-1054.

Greenwood, R./ Suddaby, R./ Hinings, C. R. (2002): Theorizing change: The role of professional associations in the transformation of institutionalized fields, in: Academy of Management Journal, Vol. 45, pp. 58-80.

Greiner, L. (1972): Evolution and revolution as organizations grow, in: Harvard Business Review, Vol. 50, No. 4, pp. 37-46.

Große-Halbuer, A./ Wildhagen, A. (2008): „Irgendetwas kann da nicht stimmen“, in: WirtschaftsWoche, No. 3, pp. 26-27.

Großmann, J. (2009): Transparenz bei Strom und Gas, in: Handelsblatt, No. 31, p. 9.

Großmann, J. (2011): Unterstellung, in: WirtschaftsWoche, No. 12, p. 118.

Grove, A. S. (1996): Only the Paranoid Survive: How to Exploit the Crisis Point That Challenge Every Company and Career, New York: Dobleday.

Grüttner, A. (2010): Erneuerbare Energien geben Spaniens Bau Hoffnung, in: Handelsblatt, 20 March 2010, http://www.handelsblatt.com/unternehmen/mittelstand/erneuerbare-energien-geben-spaniens-bau-hoffnung/3394582.html, 03.09.2010.

Guillén, M. (2005): The Rise of Spanish Multinationals: European Business in the Global Economy, New York: Cambridge University Press.

Guizot, J.-L. (1998): The changing face of gas supply and distribution in Europe, in: Petroleum Economist, October 1998, pp. 30-32.

Gulati, R. (1995): Social structure and alliance formation patterns: a longitudinal analysis, in: Administrative Science Quarterly, Vol. 40 (4), pp. 619-652.

Gummesson, E. (1991): Qualitative Methods in Management Research, London: Sage.

Guo, B./ Ghalambor, A. (2005): Natural Gas Engineering Handbook, Houston (TX): Gulf Publishing Company.

Haase, N. (2008): European gas market liberalisation: Are regulatory regimes moving towards convergence?, Oxford: Oxford Institute for Energy Studies.

Hainsworth, B./ Meng, M. (1988): How Corporations Define Issue Management, in: Public Relations Review, Vol. 14, No. 4, pp. 18-30.

Hajek, S. (2010): Laut und deutlich, in: WirtschaftsWoche, No. 20, pp. 83-86.

Halda, L. (2009): Jedes gute Management braucht gute Kommunikation, in: Handelsblatt, No. 12, p. 69.

Haltermann, I./ Pfeil, F. (2006): Rohstoffknappheit als Konfliktrisiko und Entwicklungshemmnis?, Documentation on workshop held on 21/ 22 September 2006 in Berlin.

Hambrick, D. C. (1980): Operationalizing the Concept of Business-Level Strategy in Research, in: Academy of Management Review, Vol. 5, Issue 4, pp. 567-575.

Hambrick, D. C. (1983): Some Tests of the Effectiveness and Functional Attributes of Miles and Snow’s Strategic Types, in: Academy of Management Journal, Vol. 26, No. 1, pp. 5-26.

Hamel, G. (1996): Strategy as revolution, in: Harvard Business Review, Vol. 74, No. 4, pp. 69-82.

Hamel, G./ Prahalad, C. K. (1991): Corporate Imagination and expeditionary marketing, in: Harvard Business Review, Vol. 69, No. 4, pp. 81-92.

Hannan, M. T./ Carroll, G. (1992): Dynamics of organizational populations: density, legitimation, and competition, New York: Oxford University Press.

Hannan, M. T./ Freeman, J. (1977): The population ecology of organisations, in: American Journal of Sociology, Vol. 82, No. 5, pp. 929-964.

Hannan, M. T./ Freeman, J. (1989): Organizational Ecology, Cambridge (MA)/ London: Harvard University Press.

Hannes, B. (2007): Gang ins Ausland macht sich oft nicht bezahlt, in: Handelsblatt, No. 208, p. B2.

Harper, N. W. C./ Viguerie, S. P. (2002): Are you too focused?, in: The McKinsey Quarterly, Special Edition: Risk and Resilience, pp. 29-37.

Harrigan, K. R. (1983): Strategies for vertical integration, Lexington (MA): Lexington Books.

Harrigan, K. R. (1984): Formulating Vertical Integration Strategies, in: Academy of Management Review, Vol. 9, No. 4, pp. 638-652.

Harrigan, K. R. (1985a): Strategies for intrafirm transfers and outside sourcing, in: Academy of Management Journal, Vol. 28, No. 4, pp. 914-925.

Harrigan, K. R. (1985b): Strategies for joint ventures, Lexington (MA): Lexington Books.

Harsh, B./ Orr, B./ Nelsen, E. (2006): Natural Gas in Flux. Time to place bets and make business design choices, Oliver Wyman Group.

Hart, S. L. (1995): A Natural-Resource-Based View of the Firm, in: Academy of Management Review, Vol. 20, No. 4, pp. 986-1014.

Hartmann, U. (2000): Energie in Europa: Neue Grenzen, neue Chancen, neue Perspektiven, in: Forum, No. 21, 25 May 2000, Institut der deutschen Wirtschaft Köln.

Hasse, R./ Krücken, G. (1999): Neo-Institutionalismus, 2nd edition, Bielefeld: transcript Verlag.

Hatten, K./ Schendel, D. (1977): Heterogeneity within an industry: firm conduct in US brewing industry, in: The Journal of Industrial Economics, Vol. 26, No. 2, pp. 97-113.

Haunschild, P. R. (1993): Interorganizational Imitation: The Impact of Interlocks on Corporate Acquisition Activity, in: Administrative Science Quarterly, Vol. 38, No. 4, pp. 564-592.

Haveman, H. A. (1992): Between a Rock and a Hard Place: Organizational Change and Performance under Conditions of Fundamental Environmental Transformation, in: Administrative Science Quarterly, Vol. 37, No. 1, pp. 48-75.

Haveman, H. A. (1993a): Organizational Size and Change: Diversification in the Savings and Loan Industry after Deregulation, in: Administrative Science Quarterly, Vol. 38, No. 1, pp. 20-50.

Haveman, H. A. (1993b): Follow the leader: mimetic isomorphism and entry into new markets, in: Administrative Science Quarterly, Vol. 38, No. 4, pp. 593-627.

Haveman, H. A./ Rao, H. (1997): Structuring a Theory of Moral Sentiments: Institutional and Organizational Coevolution in the Early Thrift Industry, in: American Journal of Sociology, Vol. 102, No. 6, pp. 1606-1651.

Hayes, R. H./ Abernathy, W. J. (1980): Managing our Way to Economic Decline, in: Harvard Business Review, Vol. 58, No. 4, pp. 67-77.

Hecking, C./ Proissl, W. (2008): Kalter Krieger, in: Financial Times Deutschland, 22 July 2008, p. 23.

Hedberg, B. (1981): How organizations learn and unlearn, Stockholm: Arbetslivscentrum.

Hedberg, B./ Nystrom, P./ Starbuck, W. (1976): Camping on Seesaws: Prescriptions for a Self-Designing Organization, in: Administrative Science Quarterly, Vol. 21, pp. 41-65.

Hegel, M./ Schulte-Beckhausen, S. (2007): „Neue Player“ für alte Netze, in: Energie & Management, 15 August 2007, p. 30.

Heidenreich, H. (2006): Energiewirtschaft, in: M&A Review, No. 1, pp. 35-36.

Heider, T. (2007): Gasprognosen - Basis für Erfolg im liberalisierten Gasmarkt, in: Zeitschrift für Energie, Markt, Wettbewerb, No. 6, pp. 44-49.

Heinrich, A. (2003): Internationalisation of Russia’s Gazprom, in: Journal for East European management studies, Vol. 8, No. 1, pp. 46-66.

Helm, D. (2008): Credible energy policy. Meeting the challenges of security of supply and climate change, London: Policy Exchange.

Helm, D./ McGowan, F. (1989): Electricity Supply in Europe: Lessons for the UK, in: Helm, D./ Kay, J./ Thompson, D. (eds.): The Market for Energy, Oxford : Clarendon Press, pp. 237-260.

Henisz, W. J./ Delios, A. (2002): Learning about the institutional environment, in: Ingram, P./ Silverman, B. S. (eds.): The New Institutionalism in Strategic Management, Vol. 19, Amsterdam et al.: JAI Press, pp. 339-372.

Hensing, I./ Pfaffenberger, W./ Ströbele, W. (1998): Energiewirtschaft. Einführung in Theorie und Politik, München/ Wien: Oldenbourg.

Henzgen, D./ Klär, A. (2010): Der lange Weg zur Nachhaltigkeit, in: Energiewirtschaftliche Tagesfragen, Vol. 60, No. 9, pp. 56-59.

Herbermann, J. D./ Rinke, A. (2008): Wettlauf um die Verteilung der Meere, in: Handelsblatt, No. 95, p. 3.

Heren, P. (1999): Removing the government from European gas, in: Energy Policy, Vol. 27, pp. 3-8.

Heß, W. (2005): Energie für die Welt von morgen – Trends, Szenarien und Zukunftsmärkte, Dresdner Bank.

Heumann, P. (2009): Vom Immobilienmagnaten zum Gasbaron, in: Handelsblatt, 5 May 2009, http://www.handelsblatt.com/unternehmen/koepfe/vom-immobilienmagnaten-zum-gasbaron;2265333, 06.05.09.

Hill, C. W. L./ Hoskisson, R. E. (1987): Strategy and Structure in the Multiproduct Firm, in: Academy of Management Review, Vol. 12, No. 2, pp. 331-341.

Hinings, C. R./ Greenwood, R. (1988): The dynamics of strategic change, Oxford: Basil Blackwell.

Hinings, C. R./ Greenwood, R./ Reay, T./ Suddaby, R. (2004): Dynamics of Change in Organizational Fields, in: Poole, M. S./ van de Ven, A. H. (eds.), Handbook of Organization Change and Innovation, Oxford : Oxford University Press, pp. 304-323.

Hinings, C. R./ Malhotra, N. (2008): Change in Institutional Fields, in: Ebner, A./ Beck, N. (eds.): The Institutions of the Market: Organizations, Social Systems and Governance, Oxford: Oxford University Press, pp. 106-128.

Hinterhuber, H. H./ Friedrich, S. A./ Handlbaur, G./ Stuhec, U. (1996): Die Unternehmung als kognitives System von Kernkompetenzen und strategischen Geschäftseinheiten, in: Wildemann, H. (ed.): Produktions- und Zuliefernetzwerke, München: TCW Transfer-Centrum-Verlag, pp. 67-103.

Hirn, W./ Student, D. (2006): „Das gefällt uns nicht“, in: Manager Magazin, No. 7, pp. 54-58.

Hirsch, R. L./ Bezdek, R./ Wendling, R. (2005): Peaking of world oil production: impacts, mitigation, & risk management, http://www.projectcensored.org/newsflash/The_Hirsch_Report_Proj_Cens.pdf, 10.02.2007.

Hirschl, R./ Schlaak, T./ Waterlander, O. (2007): International Gas Markets, Vienna et al.: Booz Allen Hamilton.

Hofer, C. W./ Schendel, D. (1978): Strategy Formulation: Analytical Concepts, St. Paul (MN): West Publishing Co.

Hofer, J. (2008): Ein Mann, eine Marke, in: Handelsblatt, No. 100, p. 13.

Höfermann-Kiefer, F./ Waltemath, A. (2005): Kostensenkung mit Akzeptanz, in: Zeitschrift für Energie, Markt, Wettbewerb, No. 7, pp. 2-5.

Hoffman, A. J. (1997): From Heresy to Dogma: an institutional history of corporate environmentalism, San Francisco: The New Lexington Press.

Hoffman, A. J. (1999): Institutional Evolution and Change: Environmentalism and the U. S. Chemical Industry, in: Academy of Management Journal, Vol. 42, No. 4, pp. 351-371.

Hoffman, A. J. (2001): From Heresy to Dogma, Stanford (CA): Stanford University Press.

Hoffmann, G. (1994a): Erdgas, in: Schaefer, H. (ed.): VDI-Lexikon Energietechnik, Düsseldorf: VDI-Verlag, pp. 390-393.

Hoffmann, G. (1994b): Gasfamilien, in: Schaefer, H. (ed.): VDI-Lexikon Energietechnik, Düsseldorf: VDI-Verlag, pp. 498-500.

Hoffmann, G. (1994c): LNG, in: Schaefer, H. (ed.): VDI-Lexikon Energietechnik, Düsseldorf: VDI-Verlag, pp. 830-834.

Hofmann, S. (2008): Deutsche Unternehmen haben Kosten unter Kontrolle, in: Handelsblatt, 31 October 2008, http://www.handelsblatt.com/unternehmen/industrie/deutsche-unternehmen-haben-kosten-unter-kontrolle/3045692.html?p3045692=all, 04.04.2011.

Hofstede, G./ Neuijen, B./ Ohayv, D. D./ Sanders, G. (1990): Measuring Organizational Cultures: A Qualitative and Quantitative Study across Twenty Cases, in: Administrative Science Quarterly, Vol. 35, No. 2, pp. 286-316.

Holburn, G. L. F./ Vanden Bergh, R. G. (2002): Policy and process: A game-theoretic framework for the design of non-market strategy, in: Ingram, P./ Silverman, B. S. (eds.): The New Institutionalism in Strategic Management, Vol. 19, Amsterdam et al.: JAI Press, pp. 33-66.

Hollas, D. R./ Macleod, K. R./ Stansell, S. R. (2002): A data envelopment analysis of gas utilities' efficiency, in: Journal of Economics and Finance, Vol. 26, No. 2, pp. 123-138.

Holst, K.-E. (1998): Neue Akzente im euopäischen [sic!] Gashandel, in: Energiewirtschaftliches Institut an der Universität Köln (ed.): Energiehandel und Energiemärkte, München: R. Oldenbourg Verlag, pp. 145-168.

Holz, F. (2007): Supply of LNG on the European Market – Modelling Analyses and Related Research, Presentation held at Jacobs University Conference "Energy in Changing Environments" on 13-15 December 2007 in Bremen.

Hopf, C. (1993): Soziologie und qualitative Sozialforschung, in: Hopf, C. / Weingarten, E. (eds.): Qualitative Sozialforschung, 3rd edition, Stuttgart: Klett-Cotta, pp. 11–37.

Horsnell, P. (2001): The future of natural gas in the world energy market, Abu Dhabi: The Emirate Center for Strategic Studies and Research.

Hoskisson, R. E./ Hitt, M. A./ Wan, W. P./ Yiu, D. (1999): Theory and research in strategic management: Swings of a pendulum, in: Journal of Management, Vol. 25, No. 3, pp. 417-456.

Hoskisson, R. E./ Yiu, D./ Kim, H. (2000): Capital and labor market congruence and corporate governance: Effects on corporate innovation and global competitiveness, in: Cohen, S. S./ Boyd, G. (eds.): Corporate governance and globalization, Northampton (MA): Edward Elgar, pp. 129-154.

Hosp, G./ Sturbeck, W. (2010): Eon nimmt Abschied von Gasprom, in: Frankfurter Allgemeine Zeitung, 25 November 2010, http://www.faz.net/aktuell/wirtschaft/unternehmen/erdgas-eon-nimmt-abschied-von-gasprom-11066800.html, 26.11.2010.

Hrebiniak, L. G./ Joyce, W. F. (1985): Organizational Adaptation: Strategic Choice and Environmental Determinism, in: Administrative Science Quarterly, Vol. 30, No. 3, pp. 336-349.

Hrebiniak, L. G./ Snow, C. C. (1980): Research Notes: Industry Differences in Environmental Uncertainty and Organizational Characteristics Related to Uncertainty, in: Academy of Management Journal, Vol. 23, No. 4, pp. 750-759.

Huet, S. / Jeudy, B. / Waintraub, J. (2007): Fonctionnaires, Suez-GDF : Villepin force le tempo, in: Le Figaro, 15 October 2007, http://www.lefigaro.fr/economie/2006/06/13/04001-20060613ARTFIG90168-fonctionnaires_suez_gdf_villepin_force_le_tempo.php, 04.12.09.

Huff, A. (1982): Industry influences on strategy formulation, in: Strategic Management Journal, Vol. 3, pp. 119-130.

Hunter, T./ Bansal, P. (2007): How Standard is Standardized MNC Global Environmental Communication, in: Journal of Business Ethics, Vol. 71, No. 2, pp. 135-147.

Hutzschenreuter, T./ Pedersen, T./ Volberda, H. W. (2007): The role of path dependency and managerial intentionality: a perspective on international business research, in: Journal of International Business Studies, Vol. 38, No. 7, pp. 1055-1068.

IEA (1982): Natural gas. Prospects to 2000, Paris: International Energy Agency and Organisation for Economic Co-operation and Development.

IEA (1997): Energy technologies for the 21st century, Paris: International Energy Agency and Organisation for Economic Co-operation and Development.

IEA (1998): Natural Gas Pricing, Paris: International Energy Agency.

IEA (2002): World Energy Outlook 2002, Paris: International Energy Agency.

IEA (2004): World Energy Outlook 2004, Paris: International Energy Agency.

IEA (2005): World Energy Outlook 2005, Paris: International Energy Agency.

IEA (2006): World Energy Outlook 2006, Paris: International Energy Agency.

IEA (2007): Natural Gas Market Review 2007, Paris: International Energy Agency.

IEA (2009): World Energy Outlook 2009, Paris: International Energy Agency.

Iglesia, E./ Spivey, J. J./ Fleisch, T. H. (eds.) (2001): Natural Gas Conversion VI, Proceedings of the 6th Natural Gas Conversion Symposium, 17-22 June 2001 in Alaska (USA), Studies in Surface Science and Catalysis, Vol. 136, Amsterdam et al.: Elsevier.

IGU (2008): From Monopoly to Competition, International Gas Union, 31 August 2008.

Immenga, U./ Schwintowski, H.-P./ Quack, U./ Velte, R. (eds.) (2003): Die Liberalisierung der Energiemärkte in Europa, Internationale Berliner Wirtschaftsgespräche, Band 6, Baden-Baden: Nomos Verlagsgesellschaft.

Ingram, P./ Baum, J. C. (1997): Opportunity and Constraint: Organizations' Learning from the Operating and Competitive Experience of Industries, in: Strategic Management Journal, Vol. 18, Issue S1, pp. 75-98.

Ingram, P./ Silverman, B. S. (2002): Introduction: The new institutionalism in strategic management, in: Ingram, P./ Silverman, B. S. (eds.): The New Institutionalism in Strategic Management, Vol. 19, Amsterdam et al.: JAI Press, pp. 1-30.

Ingram, P./ Simons, T. (1995): Institutional and Resource Dependence Determinants of Responsiveness to Work-Family Issues, in: Academy of Management Journal, Vol. 38, No. 5, pp. 1466-1482.

Inzerilli, G. (1990): The Italian Alternative: Flexible Organization and Social Management, International Studies of Management & Organization, Vol. 20, No. 4, pp. 6-21.

Ipsen, D. (2003): Transaktionskostenökonomie und soziologische Institutionentheorie, in: Schmid, M./ Maurer, A. (eds.): Ökonomischer und soziologischer Institutionalismus : interdisziplinäre Beiträge und Perspektiven der Institutionentheorie und -analyse, Marburg: Metropolis-Verlag, pp. 191-209.

Itami, H./ Numagami, T. (1992): Dynamic interaction between strategy and technology, in: Strategic Management Journal, Vol. 13, Issue S2, pp. 119-135.

Jacobides, M. G. (2005): Industry change through vertical disintegration: How and why markets emerged in mortgage banking, in: Academy of Management Journal, Vol. 48, No. 3, pp. 465-498.

Jacobson, R. (1992): The "Austrian" school of strategy, in: Academy of Management Review, Vol. 17, No. 4, pp. 782-807.

Jacoby, S. M. (1990): The new institutionalism: what can it learn from the old?, in: Industrial Relations, No. 29, No. 2, pp. 316-359.

Jacquemin, A. (1987): Industrieökonomik, Frankfurt/ New York: Campus.

Jemison, D. B. (1981): The Contributions of Administrative Behavior To Strategic Management, in: Academy of Management Review, Vol. 6, No. 4, pp. 633-642.

Jenkins, G. (2000): Developments in the strategic planning of the major oil companies, in: Energy Exploration & Exploitation, Vol. 18, No. 6, pp. 623-634.

Jennings, D. (2001): PowerGen: Planning and strategy change, in: Strategic Change, Vol. 10, Issue 7, pp. 391-401.

Jennings, P. D./ Zandbergen, P. A. (1995): Ecologically Sustainable Organizations: An Institutional Approach, in: Academy of Management Review, Vol. 20, No. 4, pp. 1015-1052.

Jensen, J. T. (2003): The LNG Revolution, in: The Energy Journal, Vol. 24, No. 2, pp. 1-45.

Jensen, K. B. (2002): The complementarity of qualitative and quantitative methodologies in media and communication research, in: Jensen, K. B. (ed.): A Handbook of Media and Communication Research: Qualitative and Quantitative Methodologies, Abingdon (OX)/ New York (NY): Routledge, pp. 254-272.

Jepperson, R. L. (1991): Institutions, Institutional Effects, and Institutionalism, in: Powell, W. W./ DiMaggio, P. J. (eds.): The New Institutionalism in Organizational Analysis, Chicago/ London: University of Chicago Press, pp. 143-163.

Jepperson, R. L. (2002): The Development and Application of Sociological Neoinstitutionalism, in: Berger, J./ Zelditch, M. (eds.): New Directions in Contemporary Sociological Theory, Lanham (MD): Rowman & Littlefield Publishers, pp. 229-266.

Jeudy, B. (2007): La fusion Suez-GDF face à l'obstruction de la gauche, in: Le Figaro, 15 October 2007, http://www.lefigaro.fr/actualite/2006/08/30/01001-20060830ARTFIG90018-la_fusion_suez_gdf_face_a_l_obstruction_de_la_gauche.php, 04.12.09.

Johnson, G./ Scholes, K. (2002): Exploring Corporate Strategy: Text and Cases, 6th edition, London: Prentice Hall.

Johnson, G./ Thomas, H. (1987): The industry context of strategy, structure and performance: The UK Brewing Industry, in: Strategic Management Journal, Vol. 8, No. 4, pp. 343-361.

Johnson, R. A./ Kast, F. E./ Rosenzweig, J. E. (1963): The Theory and Management of Systems, New York et al.: McGraw-Hill.

Johnson, R. A./ Kast, F. E./ Rosenzweig, J. E. (1973): The Theory and Management of Systems, 3rd edition, New York et al.: McGraw-Hill.

Jones, C. (2001): Co-evolution of entrepreneurial careers, institutional rules, and competitive dynamics in American film, 1895-1920, in: Organization Studies, Vol. 22, pp. 911-944.

Jones, G. R./ Hill, C. W. L. (1988): Transaction Cost Analysis of Strategy-Structure Choice, in: Strategic Management Journal, Vol. 9, No. 2, pp. 159-172.

Jung, W./ Kaffsack, J. (2009): Putin punktet im Pipeline-Poker, in: Handelsblatt, 7 August 2009, http://www.handelsblatt.com/politik/international/putin-punktet-im-pipeline-poker;2442423, 10.08.2009.

Jurkovich, R. (1974): A Core Typology of Organizational Environments, in: Administrative Science Quarterly, Vol. 19, No. 3, pp. 380-394.

Kahane, A. (1990): World Electricity and Gas Industries: Pressures for Structural Change, in: Annual Reviews Energy, No. 15, pp. 245-253.

Kalkoffen, G. (2005): Die deutsche Erdöl- und Erdgasproduktion – wirtschaftliche Notwendigkeiten und politische Herausforderungen, in: Quade, H. (ed.): Die Zukunft von Erdöl und Erdgas, in Akademie der Geowissenschaften zu Hannover, No. 25, pp. 7-11.

Kanngießer, A. (2007): Hürden bei der Biomethan-Einspeisung, in: Energie & Management, 15 March 2007, p. 6.

Kaserman, D. L./ Mayo, J. W. (1991): The Measurement of Vertical Economies and the Efficient Structure of the Electric Utility Industry, in: The Journal of Industrial Economics, Vol. 39, No. 5, pp. 483-502.

Kast, F. E./ Rosenzweig, J. E. (1973): Contingency Views of Organization and Management, Chicago: Science Research Associates.

Kast, F. E./ Rosenzweig, J. E. (1974): Organization and Management: A Systems Approach, 2nd edition, New York: McGraw-Hill.

Katz, D./ Kahn, R. L. (1966): The social psychology of organizations, New York: Wiley.

Katz, D./ Kahn, R. L. (1978): The social psychology of organizations, 2nd edition, New York: Wiley.

Katz, J. P./ Simanek, A./ Townsend, J. B. (1997): Corporate Mergers and Acquisitions: One more wave to consider, in: Business Horizons, January-February, pp. 32-40.

Katzensteiner, T. (2008): „Kurzfristige Profitgier", in: Wirtschaftswoche, No. 26, p. 183.

Keers, G. (2002): Free internal Markets Tune Energy Enterprises for the Future, in: Power Economics, Vol. 6, No. 2, p. 12.

Kehrer, W. (1970): Entstehung der flüssigen und gasförmigen Kohlenwasserstoffe, in: Laurien, H. (ed.): Taschenbuch Erdgas, München/ Wien: R. Oldenburg Verlag, 1970, pp. 1-46.

Keim, G./ Zeithaml, C. (1986): Corporate Political Strategies and Legislative Decision Making: A Review and Contingency Approach, in: Academy of Management Review, Vol. 11, No. 4, pp. 828-843.

Kelly, D. / Amburgey, T. L. (1991): Organizational Inertia and Momentum: A Dynamic Model of Strategic Change, in: The Academy of Management Journal, Vol. 34, No. 3, pp. 591-612.

Kemmer, H./ Borris, B./ Heinecke, K.-H. (1970): Erdgaseinsatz in der öffentlichen Versorgung, in: Laurien, H. (ed.): Taschenbuch Erdgas, München/ Wien: R. Oldenburg Verlag, 1970, pp. 756-809.

Kemp, G./ Harkavy, Robert E. (1997): Strategic Geography and the Changing Middle East, Washington: Carnegie Endowment for International Peace in cooperation with Brookings Institution Press.

Kempkens, W. (2008): Brennendes Eis, in: WirtschaftsWoche, No. 27, pp. 79-85.

Kempkens, W. (2009): In Salz und Sand, in: WirtschaftsWoche, No. 3, pp. 82-83.

Keppler, J. H. (2009): Climate Change, Security of Supply and Competitiveness: Does Europe Have the Means to Implement its Ambitious Energy Vision?, in: Chevalier, J.-M. (ed.): The New Energy Crisis, New York: Palgrave Macmillan, pp. 202-230.

Kessler, R. A./ Dietert, J. A./ Stewart, Ruairidh R./ Reeves, M. T. (2005): Liquefied Natural Gas, Integrated Oil Research, 7 April 2005, Simmons & Company International.

Khandwalla, P. N. (1972): Environment and its impact on the organization, in: International Studies of Management & Organization, Vol. 2, No. 3, pp. 297-313.

Khandwalla, P. N. (1977): Design of Organizations, New York: Harcourt Brace Jovanovich.

Khartukov, E./ Starostina, E. (2002): Gas Export Potential of Russia's East: Will It Match Asia-Pacific Markets?, in: Energy Exploration & Exploitation, Vol. 20, No 2&3, pp. 207-218.

Kidnay, A. J./ Parrish, W. R. (2006): Fundamentals of natural gas processing, Boca Raton (FL): Taylor & Francis.

Kieser, A. (1995): Anleitung zum kritischen Umgang mit Organisationstheorien, in: Kieser, A./ Ebers, M. (eds.): Organisationstheorien, 2nd edition, Stuttgart: Kohlhammer, pp. 1-30.

Kikulis, L. M./ Slack, T./ Hinings, B. (1992): Institutionally Specific Design Archetypes: A Framework for Understanding Change in National Sport Organizations, in: International Review for Sociology of Sport, Vol. 27, No. 4, pp. 343-370.

Kirsch, W./ Trux, W. (1981): Perspektiven eines strategischen Managements, in: Kirsch, W. (ed.): Unternehmenspolitik: Von der Zielforschung zum strategischen Management, München: Planungs- und Organisationswissenschaftliche Schriften, pp. 290-396.

Klein, C. C. (1993): A comparison of cost-based pricing rules for natural gas distribution utilities, in: Energy Economics, Vol. 15, Issue 3, pp. 176-182.

Klein, K. (2007): Biogas aus Holz verringert Abhängigkeit von Exporten, in: Handelsblatt, No. 208, p. B12.

Kleiner, A. (2008): The Thought Leader Interview: Fulvio Conti, in: strategy+business, Issue 52, Booz & Company Inc.

Klinski, S. (2006): Studie Einspeisung von Biogas in das Erdgasnetz, Gülzow: Fachagentur Nachwachsende Rohstoffe.

Klom, A. (1996): Electricity deregulation in the European Union, in: Energy in Europe, Vol. 27, pp. 28-37.

Knauß, F. (2007): Das Bewusstsein ändert sich, in: Handelsblatt, No. 17, p. 10.

Kneissl, K. (2006): Der Energiepoker. Wie Erdöl und Erdgas die Weltwirtschaft beeinflussen, München: FinanzBuch Verlag.

Knell, W. (2004): Energiemarkt Europa: Herausforderung und Chance zugleich, Presentation at Coeur – Conference on EuroPreneurship on 30 September 2004.

Knickerbocker, F. T. (1973): Oligopolistic reaction and multinational enterprise, Boston: Harvard University.

Köckritz, V. (ed.) (2005): Erdöl/ Erdgas – Förderung und Speicherung, Freiberger Forschungsforum, 56. Berg- und Hüttenmännischer Tag, 16-17 June 2005, Freiberg: Technische Universität Bergakademie Freiberg.

Koenen, J. (2009): Unternehmen kommunizieren zu konservativ, in: Handelsblatt, 10 September 2009, http://www.handelsblatt.com/unternehmen/strategie/unternehmen-kommunizieren-zu-konservativ;2455333, 11.09.09.

Kögler, J. (2007): E.ON mit mehr Gewinn und europäischen Visionen, in: Energie & Management, 1 April 2007, p. 32.

Kogut, B. (1988): Joint ventures: Theoretical and empirical perspectives, in: Strategic Management Journal, Vol. 9, Issue 4, pp. 319-332.

Kolk, A./ Levy, D. (2001): Winds of Change: Corporate Strategy, Climate Change and Oil Multinationals, in: European Management Journal Vol. 19, No. 5, pp. 501–509.

Komornyik, S. (2008): Anforderungen an Gasverbrauchsprognosen, in: Zeitschrift für Energie, Markt, Wettbewerb, No. 1, pp. 89-92.

Kondra, A. Z./ Hinings, C. R. (1998): Organizational diversity and change in institutional theory, in: Organization Studies, Vol. 19, No. 5, pp. 743-767.

Köpke, R. (2007a): Der Plan ist aufgegangen, in: Energie & Management, 15 March 2007, p. 22.

Köpke, R. (2007b): Biogaswachstum ohne Börsengang, in: Energie & Management, 15 September 2007, p. 15.

Köpke, R. (2007c): Merkel wirbt für Kohle- und Kernkraftwerke, in: Energie & Management, 15 December 2007, p. 29.

Köpke, R. (2008): Erdgasnetze jetzt für Biomethan geöffnet, in: Energie & Management, 15 March 2008, p. 20.

Köpke, R. (2009): Wingas strotzt vor Selbstbewusstsein, in: Energie & Management, 15 July 2009, p. 42.

Kort, K. (2008): Die ölig-schwarze Eminenz, in: Handelsblatt, 13 May 2008, http://www.handelsblatt.com/die-oelig-schwarze-eminenz/2957480.html, 13.05.2008.

Körting, J. (1963): Geschichte der deutschen Gasindustrie, Essen: Vulkan-Verlag.

Koubek, N./ Cleff, T./ Pierotti, C./ Schafmeister, S. (1996): Unternehmensstrategien in der Triade, 1st edition, Baden-Baden: Nomos Verlagsgesellschaft.

Kowalewsky, R. (2005): Rally ohne Ende, in: Capital, No. 16, pp. 50-53.

Kraatz, M. S. (1998): Learning by Association? Interorganizational Networks and Adaptation to Environmental Change, in: Academy of Management Journal, Vol. 41, No. 6, pp. 621-643.

Kraatz, M. S./ Moore, J. H. (2002): Executive Migration and Institutional Change, in: Academy of Management Journal, Vol. 45, No. 1, pp. 120-143.

Kraatz, M. S./ Zajac, E. J. (1996): Exploring the Limits of the New Institutionalism: The Causes and Consequences of Illegitimate Organizational Change, in: American Sociological Review, Vol. 61, No. 5, pp. 812-836.

Krahl, M. (2005): Entwicklung und Perspektive der deutschen Stromerzeugung, in: Energiewirtschaftliche Tagesfragen, Vol. 55, Special Issue , pp. 21-24.

Kramer, A. E. (2006): Ukrainians Admit Withdrawing Gas, in: International Herald Tribune, 4 January 2006, http://www.iht.com/articles/2006/01/03/news/gazprom.php, 04.01.2006.

Kraus, M. (2004): Lexikon der Energiewirtschaft. Liberalisierte Strom- und Gasmärkte von A-Z. Wirtschaft-Recht-Technik, München/ Unterschleißheim: Deutscher Wirtschaftsdienst.

Krickx, G. A. (2000): The relationship between uncertainty and vertical integration, in: The International Journal of Organizational Analysis, Vol. 8, No. 3, pp. 309-329.

Kröher, M. O. R. (2009): Das Gute im Kapitalismus, in: Manager Magazin, No. 5, pp. 92-95.

Krude, G./ Halstrup, D./ Wolf, S. (2007): LNG – Zukünftige Bedeutung für die europäischen Erdgasmärkte und globale Marktentwicklungen, in: e/m/w, Zeitschrift für Energie, Markt, Wettbewerb, No. 2, pp. 22-26.

Kuchenbecker, T. (2008): Frankreichs neuer Stolz, in: Handelsblatt, 6 June 2008, http://www.handelsblatt.com/unternehmen/industrie/frankreichs-neuer-stolz/2967576.html?p2967576=all, 22.09.2008.

Kuck, J. (1999): Eigenschaften und Austausch von Brenngasen, in: Cerbe, G. (ed.): Grundlagen der Gastechnik, München/ Wien: Carl Hanser Verlag, pp. 37-86.

Kumar, R. (2003): Managing Alliances in the Power Generation Industry, in: Journal of General Management, Vol. 28, No. 4, pp. 64-82.

Kümmel, R. (2007): Ökonomische Bewertungen der Klimawandel-Folgen, http://www.physik.uni-wuerzburg.de/~kuemmel/TP1/klimaoek.pdf, 10.08.2008.

Kunde, E. (1995): Aktueller Stand der Gasdarbietung und des Erdgaseinsatzes in der Industrie, in: Altemark, D. (ed.): Erdgas in der Industrie: wirtschaftlich und umweltentlastend eingesetzt, Essen: Vulkan-Verlag, 1995, pp. 2-14.

Kutschker, M. (1994): Strategische Kooperationen als Mittel der Internationalisierung, in: Schuster, L. (ed.): Die Unternehmung im internationalen Wettbewerb, Berlin: Erich Schmidt Verlag, pp. 129-157.

Kutschker, M. (1999): Perspektiven der internationalen Wirtschaft, Wiesbaden: Gabler.

Lamberg, J. A./ Savage, G. T./ Pajunen, K. (2002): Negotiated Order in Inter-Organizational Relations : Toward an Institutional Theory of Stakeholder Negotiations, Paper submitted for presentation in the Second European Academy of Management Conference in Stockholm, http://ecsocman.hse.ru/data/114/652/1219/stakeholder_negotiation.pdf, 13.10.2007.

Lamberg, J.-A./ Tikkanen, H./ Nokelainen, T./ Suur-Inkeroinen, H. (2009): Competitive Dynamics, Strategic Consistency, and Organizational Survival, in: Strategic Management Journal, Vol. 30, No. 1, pp. 45–60.

Laudicina, P. A./ Pau, J. (2007): New Concerns in an Uncertain World, Chicago: A. T. Kearney.

Lawrence, P. R./ Lorsch, J. W. (1967): Organization and Environment: Managing Differentiation and Integration, Boston (MA): Harvard Business School Press.

Lawrence, T. B. (1999): Institutional Strategy, in: Journal of Management, Vol. 25, No. 2, pp. 161-188.

Lawrence, T. B./ Hardy, C./ Philips, N. (2002): Institutional Effects of Interorganizational Collaboration: The Emergence of Proto-Institutions, in: Academy of Management Journal, Vol. 45, No. 1, pp. 281-290.

Lawrence, T. B./ Suddaby, R. (2006): Institutions and institutional work, in: Clegg, S./ Hardy, C./ Nord, W. R./ Lawrence, T. (eds.): Handbook of Organization Studies, 2nd edition, London/ Thousand Oaks (CA): Sage Publications, pp. 215-254.

Lawrence, T. B./ Winn, M. I./ Jennings, P. D. (2001): The Temporal Dynamics of Institutionalization, in: Academy of Management Review, Vol. 26, No. 4, pp. 624-644.

Learned, E. P./ Christensen, C. P./ Andrews, K. P./ Guth, W. (1965): Business policy. Text and Cases, Illinois: Irwin: Homewood.

Leblebici, H./ Salancik, G. R./ Copay, A./ King, T. (1991): Institutional Change and the Transformation of Interorganizational Fields: An Organizational History of the U.S. Radio Broadcasting Industry, in: Administrative Science Quarterly, Vol. 36, pp. 333-363.

Lee, K./ Pennings, J. M. (2002): Mimicry and the market: Adoption of a new organisational form, in: Academy of Management Journal, Vol. 45, pp. 144-162.

Leiblein, M. J./ Miller, D. J. (2003): An empirical examination of transaction- and firm-level influences on the vertical boundaries of the firm, in: Strategic Management Journal, Vol. 24, No. 9, pp. 839–859.

Lempp, C./ Lerche, I./ Paleologos, E. (2002): Environmental Concerns: Catastrophic Events and Insurance, Energy Exploration & Exploitation, Vol. 20, No. 4, pp. 309-324.

Lenz, D. (2008): Die Geburt eines Riesen, in: Handelsblatt, 17 July 2008, http://www.handelsblatt.com/panorama/presseschau/die-geburt-eines-riesen/2990472.html?p2990472=all, 17.07.2008.

Lenz, R. T. (1980a): Environment, strategy, organization structure, and performance: Patterns in one industry, in: Strategic Management Journal, Vol. 1, No. 3, pp. 209-226.

Lenz, R. T. (1980b): Strategic Capability: A Concept And Framework for Analysis, in: Academy of Management Review, Vol. 5, No. 2, pp. 225-234.

Lerch, D. (2009): Aus dem E.on-Vize wird der Chef, in: Zeit Online, 11 August 2009, http://www.zeit.de/online/2009/33/temperamentvoller-taxifahrer, 27.10.2010.

Lerche, I. (2000): Estimates of worldwide gas hydrate resources, in: Energy Exploration & Exploitation, Vol. 18, No. 4, pp. 329-337.

Lerche, I. (2007): Natural Hydrates: 21 Questions for the 21st Century, in: Energy Exploration & Exploitation, Vol. 25, No. 5, pp. 325-338.

Leuschner, M. (2007): Biogaseinspeisung in L-Gas-Netze, in: energie/ wasser-praxis, No. 5, pp. 30-32.

Lévêque, F./ Monturus, R. (2008): Mergers and Acquisitions within the European Power and Gas Sectors. Cases and Patterns, Report of the CERNA - Centre d'Économie Industrielle, January 2008, Ecole Nationale Supérieure des Mines de Paris.

Levitt, B./ March, J. G. (1988): Organizational Learning, in: Annual Review of Sociology, Vol. 14, No. 1, pp. 319-340.

Levitt, B./ March, J. G. (1990): Chester I. Barnard and the Intelligence of Learning, in: Williamson, O. E. (ed.): Organization theory: From Chester Barnard to the Present and Beyond, New York/ Oxford: Oxford University Press, pp. 11-37.

Levitt, T. (1983): The Globalization of Markets, Boston (MA): Harvard Business Review.

Lewin, A. Y./ Kim, J. (2004): The nation-state and culture as influences on organizational change and innovation, in: Poole, M. S./ Van de Ven, A. H. (eds.): Handbook of Organization Change and Innovation, Oxford : Oxford University Press, pp. 324-353.

Lewin, A. Y./ Weigelt, C. B./ Emery, J. D. (2004): Adaptation and selection in strategy and change: perspectives on strategic change in organizations, in: Poole, M. S./ Van de Ven, A. H. (eds.): Handbook of Organizational Change and Innovation, Oxford / New York : Oxford University Press, pp. 108-160.

Lewiner, C. (2007): European energy markets observatory, 9th edition, New York: Capgemini.

Lewiner, C./ Easton, B. W. (2004): Deregulation: Meeting the delivery and sustainability challenges?, New York: Capgemini.

LichtBlick (2007): Produktinnovation beflügelt Wettbewerb um Gaskunden: Öko-Gas als echte Alternative zu etablierten Konzernen, Press Release, 17 September 2007, http://www.lichtblick.de/ufile/080630_PE_Gasmarkteintritt_LichtBlick.pdf, 17.09.2007.

Lieberman, M. B./ Montgomery, D. B. (1988): First-Mover Advantages, in: Strategic Management Journal, Vol. 9, pp. 41-58.

Liebl, F. (1994): Issue Management. Bestandsaufnahme und Perspektiven, in: Zeitschrift für Betriebswirtschaft, Vol. 64, No. 3, pp. 359-383.

Liedtke, C./ Roeder, O. (2006): Ressourceneffizienzpolitik zur Steigerung der Wettbewerbsfähigkeit, in: Wirtschaftspolitische Blätter, Vol. 53, No. 4, pp. 523-540.

Lienhard, J. (1994): "I sell here, Sir, what all the world desires to have--POWER.", in: the Energy Laboratory Newsletter, No. 31, Houston TX: University of Houston Energy Lab., pp. 3-9.

Lohmann, H. (2007): Topic of the month: Interview with the managing directors of RWE Transportnetz Gas, in: Energate (ed.): Gasmarkt Deutschland, September 2007, pp. 23-25.

Losse, B./ Seiwert, M./ Hohensee, M. (2007): Zweite Welle, in: WirtschaftsWoche, No. 12, pp. 27-30.

Lounsbury, M. (2001): Institutional Sources of Practice Variation: Staffing College and University Recycling Programs, in: Administrative Science Quarterly, Vol. 46, No. 1, pp. 29-56.

Lounsbury, M./ Glynn, M. A. (2001): Cultural Entrepreneurship: stories, legitimacy, and the acquisition of resources, in: Strategic Management Journal, Vol. 22, Issue 6-7, pp. 545-564.

Lu, J. (2005): Firm Welfare Spending during China's Economic Transition: Strategic Choices and Institutional Mechanisms, Paper presented at the annual meeting of the American Sociological Association, Philadelphia, 12 August 2005.

Luber, T. (2004): Spannungswechsel, in: Capital, No. 21, pp. 48-53.

Lund, T. (2005): The qualitative-quantitative distinction: Some comments, in: Scandinavian Journal of Educational Research, Vol. 49, No. 2, pp. 115-132.

Lundberg, C. (1989): On Organizational Learning: Implications and Opportunities for Expanding Organizational Development, in: Woodman, R./ Pasmore, W. (eds.): Research on Organizational Change and Development: an annual series featuring advances in theory, methodology and research, Vol. 3, Greenwich (CT): JAI Press, pp. 61-82.

Lundquist (2010): Lundquist CSR Online Awards 'Global Leaders' 2010, http://www.lundquist.it/media/files/Lunquist_CSR_Online_Awards_2010_Global_Leaders_Executive_Summary_191010.pdf, 24.10.2010.

Luo, X./ Chung, C. N. (2007): Institutional Logics and Corporate Restructuring of Business Groups in Emerging Economies, Paper presented at the annual meeting of the American Sociological Association, TBA, 11 August 2007, New York.

Luthans, F./ Stewart, T. I. (1977): A General Contingency Theory of Management, in: Academy of Management Review, April, pp. 181-195.

Lütkehus, R. (2008): Unklares Unbundling, in: Energie & Management, 15 January 2008, p. 4.

Lyles, M. A./ Salk, J. E. (1996): Knowledge acquisition from foreign partners in international joint ventures, in: Journal of International Business Studies, Vol. 27, No. 5, pp. 877-904.

Lynch, R. (1997): Corporate Strategy, London/ Melbourne: Pitman Publishing.

Lynch, R. (2003): Corporate Strategy, 3rd edition, Harlow: Financial Times/ Prentice Hall.

Lyon, T. P./ Hackett, S. C. (1993): Bottlenecks and Governance Structures: Open Access and Long-term Contracting in Natural Gas, in: The Journal of Law, Economics & Organization, Vol. 9, No. 2, pp. 380-398.

Mabro, R./ Wybrew-Bond, I. (1999): Gas to Europe: The Strategies of Four Major Suppliers, Oxford: Oxford University Press.

Mahler, D./ Barker, J./ Besland, L./ Schulz, O. (2009): "Green" Winners, Chicago: A. T. Kearney.

Mahon, J. F./ McGowan, R. A. (1996): Industry as a player in the political and social arena: defining the competitive environment, Westport (CT): Quorum.

Mahon, J. F./ Murray, E. A. (1980): Deregulation and Strategic Transformation, in: Journal of Contemporary Business, Vol. 9, No. 2, pp. 123-138.

Mahon, J. F./ Murray, E. A. (1981): Strategic planning for regulated companies, in: Strategic Management Journal, Vol. 2, No. 3, pp. 251-262.

Maier, K./ Petz, M./ Cord, M. (2006): Der Stau des großen Geldes, in: Energie & Management, 25 February 2006, pp. 4-5.

Maier, K.-D./ Lukas, J. (1999): Internationalisierung als Erfolgsstrategie, in: Energiewirtschaftliche Tagesfragen, Vol. 49, Issue 6, pp. 362-366.

Makadok, R. (2001): Toward a Synthesis of the Resource-Based and Dynamic-Capability Views of Rent Creation, in: Strategic Management Journal, Vol. 22, No. 5, pp. 387-402.

Makhija, M. (2003): Comparing the resource-based and market-based views of the firm: Empirical evidence from Czech privatization, in: Strategic Management Journal, Vol. 24, No. 5, pp. 433-451.

Makridakis, S. G. (1990): Forecasting, Planning, and Strategy for the 21st century, New York: Free Press.

Management Engineers (2004): Erfolgsstrategien in differenzierten Märkten der Energiewirtschaft - Fit for the Future?, Düsseldorf.

Mantzos, L./ Capros, P./ Kouvaritakis, N./ Zeka-Paschou, M. (2003): European Energy and Transport Trends to 2030, European Commission Directorate-General for Energy and Transport, Luxembourg: Office for Official Publications of the European Communities.

March, J. G. (1991): Exploration and Exploitation in Organizational Learning, in: Organization Science, Vol. 2, No. 1, pp. 71-87.

March, J. G. (1994): A Primer on Decision Making: How Decisions Happen, New York: Free Press.

March, J. G./ Simon, H. A. (1958): Organizations, New York: Wiley.

Markides, C. (1997): Strategic Innovation, in: Sloan Management Review, Vol. 38, No. 3, pp. 9-23.

Marschan-Piekkari, R./ Welch, C. (2004): Qualitative Research Methods in International Business: The State of the Art, in: Marschan-Piekkari, R./ Welch, C. (eds.): Handbook of Qualitative Research Methods for International Business, Cheltenham (UK)/ Northampton (USA): Edward Elgar, pp. 5-24.

Martinez, R. J./ Dacin, M. T. (1999): Efficiency motives and normative forces: Combining transactions costs and institutional logic, in: Journal of Management, Vol. 25, No. 1, pp. 75-96.

Mason, E. (1939): Price and production policies of large-scale enterprises, in: The American Economic Review, Vol. 29, No. 1, pp. 61-74.

Mastepanov, A. (2005): Energy Strategy of the Russian Federation to the Year 2020, http://ec.europa.eu/energy/russia/presentations/doc/energy-strategy2020_en.pdf, 05.03.2010.

Matthes, F. C./ Ziesing, H. (2008): Die Entwicklung des deutschen Kraftwerksparks und die aktuelle Debatte um die künftige Strombedarfsdeckung, Okö-Institut Discussion Paper.

Mc Grath, J. E./ Tschan, F. (2004): Dynamics in Groups and Teams, in: Poole, M. S./ Van de Ven, A. H. (eds.): Handbook of Organizational Change and Innovation, Oxford / New York: Oxford University Press, pp. 50-72.

McClintock, C. C./ Brannon, D./ Maynard-Moody, S. (1979): Applying the Logic of Sample Surveys to Qualitative Case Studies: The Case Cluster Method, in: Administrative Science Quarterly, Vol. 24, No. 4, pp. 612-629.

McGahan, A. M./ Porter, M. E. (1997): How much does industry matter, really?, in: Strategic Management Journal, Vol. 18, pp. 15-30.

McKenna, M. G./ Wilczynski, H./ VanderSchee, D. (2006): Capital Project Execution in the Oil and Gas Industry, Booz Allen Hamilton.

Meadows, D. H./ Meadows, D. L./ Randers, J./ Behrens III, W. W. (1972): The limits to growth, New York: Universe Books.

Mechnig, S. P. (2008): Drang zur Größe, in: Capital, No. 14, pp. 164-167.

Meier, L./ Ruch, M. (2008): GdF und Suez zurren Fahrplan für Großbritannien fest, in: Financial Times Deutschland, 5 June 2008, p. 3.

Meissner, H. G./ Gerber, S. (1980): Die Auslandinvestition als Entscheidungsproblem, in: Betriebswirtschaftliche Forschung und Praxis, Vol. 32, No. 3, pp. 217-228.

Melcher, A. J./ Melcher, B. H. (1980): Toward a Systems Theory of Policy Analysis: Static versus Dynamic Analysis, in: Academy of Management Review, Vol. 5, No. 2, pp. 235-247.

Mendelsohn, R. O. (2006/ 2007): A Critique of the Stern Report, in: Regulation, Winter 2006-2007, pp. 42-46.

Merger Report (1999): Merger Agreement between VIAG AG and VEBA AG, English Translation of the German Merger Report.

Mestrallet, G. (2007): Pour la sécurité énergétique de l'Europe, fusionnons Suez et GDF, in: Le Figaro, 15 October 2007, http://www.lefigaro.fr/debats/2006/07/15/01005-20060715ARTFIG90384-pour_la_securite_energetique_de_l_europe_fusionnons_suez_et_gdf.php, 04.12.09.

Meyer, J. W. (1977): The effects of education as an institution, in: American Journal of Sociology, Vol. 83, No. 1, pp. 55-77.

Meyer, A. D. (1982): Adapting to Environmental Jolts, in: Administrative Science Quarterly, Vol. 27, No. 4, pp. 515-537.

Meyer, A. D. (1991): What Is Strategy's Distinctive Competence?, in: Journal of Management, Vol. 17, No. 4, pp. 821-833.

Meyer, A. D./ Brooks, G. R./ Goes, J. B. (1990): Environmental jolts and industry revolutions: organizational responses to discontinuous change, in: Strategic Management Journal, Vol. 11, Special Issue: Corporate Entrepreneurship, pp. 93-110.

Meyer, A. D./ Goes, J. B./ Brooks, G. R. (1993): Organizations reacting to hyperturbulence, in: Huber, G./ Glick, W. H. (eds.): Organizational change and redesign: ideas and insights for improving performance, New York: Oxford University Press, pp. 66-111.

Meyer, J. W./ Rowan, B. (1977): Institutionalized Organizations: Formal Structure as Myth and Ceremony, in: American Journal of Sociology, Vol. 83, No. 2, pp. 340-363.

Meyer, J. W./ Rowan, B. (1991): Institutionalized Organizations: Formal Structure as Myth and Ceremony, in: Powell, W. W./ DiMaggio, P. J. (eds.): The New Institutionalism in Organizational Analysis. Chicago/ London: University of Chicago Press, pp. 41-62.

Meyer, M. W./ Zucker, L. G. (1989): Permanently failing, Beverly Hills (CA): Sage.

Meyer, J. W./ Scott, W. R./ Deal, T. E. (1983): Institutional and technical sources of organizational structures, in: Meyer, J. W./ Scott, W. R. (eds.): Organizational Environments: Ritual and Rationality, Newbury Park (CA): SAGE Publications, pp. 45-67.

Meyer, K. E./ Wright, M./ Pruthi, S. (2009): Managing Knowledge in Foreign Entry Strategies: A Resource-Based Analysis, in: Strategic Management Journal, Vol. 30, No. 5, pp. 557-574.

Mez, L. (2001): Corporate Strategies in the German Electricity Supply Industry: From Alliance Capitalism to Diversification, in: Midttun, A. (ed.): European Energy Industry Business Strategies, Oxford et al.: Elsevier Science Ltd., pp. 195-224.

Mez, L. (2002): Braucht Deutschland einen Megaplayer?, Bund der Energieverbraucher, http://www.energieverbraucher.de/de/Energiebezug/Erdgas/site/Warum-die-Fusion-den-Wettbewerb-verhindert__723/, 26.11.2008.

Mezias, S. J. (1990): An Institutional Model of Organizational Practice: Financial Reporting at the Fortune 200, in: Administrative Science Quarterly, Vol. 35, No. 3, pp. 431-457.

Michelatsch, S. (2009): Biomass from flue gas, in: innovation & energy, No. 1, p. 9.

Midttun, A. (2001): Perspectives on Commercial Positioning in the Deregulated European Electricity Markets, in: Midttun, A. (ed.): European Energy Industry Business Strategies, Oxford et al.: Elsevier Science Ltd., pp. 1-22.

Midttun, A./ Henriksen, J. T./ Micola, A. R. (2001): Strategic Development and Regulatory Challenges in West-European Electricity Markets, in: Midttun, A. (ed.): European Energy Industry Business Strategies, Oxford et al.: Elsevier Science Ltd., pp. 375-416.

Midttun, A./ Omland, T. (2004): Configuration and Performance of Large European Energy Companies: A Statistical Analysis, in: Finon, D./ Midttun, A. (eds.): Reshaping European Gas and Electricity Industries, Oxford et al., pp. 273-296.

Miles, M. B. (1979): Qualitative Data as an Attractive Nuisance: The Problem of Analysis, in: Administrative Science Quarterly, Vol. 24, pp. 590-601.

Miles, M. B./ Huberman, A. M. (1994): Qualitative data analysis, 2nd edition, Thousand Oaks (CA): Sage.

Miles, R. E. and Snow, C. C. (1978). Organizational strategy, structure, and process. New York: McGraw-Hill.

Miles, R. E./ Snow, C. C./ Meyer, A. D./ Coleman, H. J. (1978): Organizational Strategy, Structure, and Process, in: Academy of Management Review, July, pp. 546-562.

Miles, R. H. (1982): Coffin nails and corporate strategies, Englewood Cliffs (NJ): Prentice-Hall.

Miller, D. (1993): Industry and country effects on managers' perceptions of environmental uncertainties, in: Journal of International Business Studies, Vol. 24(4), pp. 693-714.

Miller, D. (1994): What happens after success: The perils of excellence, in: Journal of Management Studies, Vol. 31, No. 3, pp. 325-358.

Miller, D./ Chen, M. J. (1994): Sources and Consequences of Competitive Inertia: A Study of the U. S. Airline Industry, in: Administrative Science Quarterly, Vol. 39, No. 1, pp. 1-23.

Miller, D./ Friesen, P. (1980): Archetypes of Organizational Transition, in: Administrative Science Quarterly, Vol. 25, No. 2, pp. 268-299.

Miller, D./ Friesen, P. H. (1982): Innovation in conservative and entrepreneurial firms: Two models of strategic momentum, in: Strategic Management Journal, Vol. 3, No. 1, pp. 1-25.

Miller, D./ Friesen, P. H./ Mintzberg, H. (1984): Organizations: A Quantum View, Englewood Cliffs (NJ): Prentice-Hall.

Milne, R./ Atkins, R./ Crooks, E. (2007): Eon chief plays down break-up fears, in: Financial Times, 11 November 2007, http://www.ft.com/cms/s/0/acb2336e-9081-11dc-a6f2-0000779fd2ac.html#axzz1cYySrc4L, 06.03.2008.

Minchin, L. T. (1968): Gas. Gewinnung, Verteilung und Verwendung, München: Oldenbourg Verlag.

Minsaas, R./ Strowger, V. (2008): Under the influence of oil. UK gas prices and their prospects in a global gas market looking towards 2020, Stavanger/ London: Eclipse Energy Group.

Mintzberg, H. (1978): Patterns in strategy formation, in: Management Science, Vol. 24, No. 9, pp. 934-948.

Mintzberg, H. (1979): An Emerging Strategy of Direct Research, in: Administrative Science Quarterly, Vol. 24, No. 4, pp. 582-589.

Mintzberg, H. (1987): Crafting Strategy, in: Harvard Business Review, Vol. 65, No. 4, pp. 66-75.

Mintzberg, H. (1988): Generic Strategies: Toward a comprehensive framework, in: Advances in Strategic Management, Vol. 5, pp. 1-67.

Mintzberg, H. / Waters, J. A. (1985): Of Strategies, Deliberate and Emergent, in: Strategic Management Journal, Vol. 6, No. 3, pp. 257-272.

Mintzberg, H./ Westley, F. (1992): Cycles of organizational change, in: Strategic Management Journal, Vol. 13, Issue S2, pp. 39-59.

Mitchell, R. K./ Agle, B. R./ Wood, D. J. (1997): Toward a Theory of Stakeholder Identification and Salience: Defining the Principle of Who and What Really Counts, in: Academy of Management Review, Vol. 22, No. 4, pp. 853–886.

Mizruchi, M. S./ Fein, L. C. (1999): The Social Construction of Organizational Knowledge: A Study of the Uses of Coercive, Mimetic, and Normative Isomorphism, in: Administrative Science Quarterly, Vol. 44, No. 4, pp. 653-683.

Mohrdieck, C. (2007): Energy Efficient Mobility from the Car Manufacturers Point of View, presentation at the Energy Efficiency Conference EU/ G8 in Berlin on 21 April 2007.

Moldaschl, M./ Diefenbach, T. (2003): Regeln und Ressourcen - Zum Verhältnis von Institutionen- und Ressourcentheorien, in: Maurer, A. (ed.): Ökonomischer und soziologischer Institutionalismus - Chancen einer interdisziplinären Annäherung?, Marburg: Metropolis, pp. 139-162.

Mönninger, M. (2006): Machen das nicht alle so?, in: Die Zeit, No. 10, p. 24.

Monopolkommission (2002): Zusammenschlussvorhaben der E.ON AG mit der Gelsenberg AG und der E.ON AG mit der Bergemann GmbH, Sondergutachten der Monopolkommission gemäß § 42 Abs. 4 Satz 2 GWB, May 2002, Bonn.

Moran, P./ Ghoshal, S. (1996): Theories of Economic Organisation: The Case for Realism and Balance, in: The Academy of Management Review, Vol. 21, No. 1, pp. 58–72.

Morgan, R. E. (2003): Outsourcing: Towards the Shamrock Organization', in: Journal of General Management, Vol. 29, No. 4, pp. 35-52.

Morgenthaler, K. (1960): Der Einfluß des steigenden Gasangebotes auf die Entwicklung der öffentlichen Gasversorgung, in: Das Gas- und Wasserfach, 101. Jg., No. 53, pp. 839-846.

Mühlstein, J. (2009): Schub für Gas, in: Energie & Management, 15 May 2009, p. 20.

Mulder, M./ ten Cate, A./ Zwart, G. (2007): The economics of promoting security of energy supply, in: EIB Papers, Vol. 12, No. 2, pp. 39-58.

Müller, U./ Wetzel, D. (2005): Elektrisierende Geschäfte, in: Die Welt, 7 September 2005, http://www.welt.de/data/2005/09/07/771493.html?prx=1, 27.09.2005.

Musil, L. (1972): Allgemeine Energiewirtschaftslehre, Wien/ New York: Springer-Verlag.

Nag, R./ Hambrick, D. C./ Chen, M. (2007): What is strategic management, really? Inductive derivation of a consensus definition of the field, in: Strategic Management Journal, Vol. 28, No. 9, pp. 935-955.

Nelson, R. R./ Winter, S. G. (1982): An evolutionary theory of economic change, Cambridge (MA): Belknap Press of Harvard University Press.

NetConnect Germany (2009): Company Profile, http://www.net-connect-germany.de/cps/rde/xchg/SID-1311188A-D5210909/ncg/hs.xsl/797.htm, 26.08.09.

Neuhäuser, K./ Schwerin, F./ Nickel, M. (2005): Controlling in Marketing und Vertrieb von Energieversorgern, in: Energiewirtschaftliche Tagesfragen, Vol. 55, Issue 11, pp. 810-814.

Neumann, A. (2003): Security of (Gas) Supply: Conceptual Issues, Contractual Arrangements, and the Current EU Situation, in: Globalization of Natural Gas Markets Working Papers, WP-GG-02, Reprint from Presentation at the EU-Conference INDES in Amsterdam on 6-7 May 2003.

Newell, S. E. (1988): From Steel to Energy: The Evolution of a Diversification Strategy At United States Steel: 1945-1985, Best Papers Proceedings, Philadelphia (PA): Academy of Management, pp. 133-137.

Newman, K. L. (2000): Organizational Transformation During Institutional Upheaval, in: Academy of Management Review, Vol. 25, No. 3, pp. 602-619.

Nickerson, J. A./ Hamilton, B. H./ Wada, T. (2001): Market Position, Resource Profile, and Governance: Linking Porter and Williamson in the Context of International Courier and Small Package Services in Japan, in: Strategic Management Journal, Vol. 22, No. 3, pp. 251-273.

Nicolai, A. T./ Thomas, W. T. (2006): De-Diversification Activities of German Corporations from 1988 to 2002: Perspectives from Agency and Management Fashion Theory, in: Schmalenbach Business Review, Vol. 60, Issue 2, pp. 205-210.

Nikionok-Ehrlich, A. (2008): GdF-Suez: bald ist die Hochzeit vollzogen, in: Energie & Management, 1 April 2008, p. 4.

Nikionok-Ehrlich, A. (2010): Frankreich: Umweltgesetz nimmt Wind aus den Segeln, in: Energie & Management, 1 June 2010, p. 5.

Nikionok-Ehrlich, A./ Focht, P. (2009): Versorger am Pranger, in: Energie & Management, 15 May 2009, p. 1.

North, D. C. (1990): Institutions, Institutional Change, and Economic Performance, New York: Cambridge University Press.

Nystrom, P. C./ Starbuck, W. H. (1984): To avoid organizational crises - Unlearn, in: Organizational Dynamics, Vol. 12, No. 4, pp. 53-65.

Observatoire Méditerranéen de l'Energie (2001): Assessment of Internal and External Gas Supply Options for the EU, Evaluation of the Supply Costs of New Natural Gas Supply Projects to the EU and an Investigation of Related Financial Requirements and Tools, Sophia-Antipolis, Observatoire Méditerranéen de l'Energie.

O'Dwyer, J. R. (2004): O'Dwyer's Directory of Corporate Communications, New York: J. R. O'Dwyer Company.

Odell, P. R. (1969): Natural Gas in Western Europe: a Case Study in the Economic Geography of Energy Markets, Haarlem: de Erven F. Bohn N.V.

Odell, P. R. (1979): Oil and world power, Harmondsworth et al.: Penguin Books.

Odell, P. R. (1992a): Prospects for Natural Gas in Western Europe, in: The Energy Journal, Vol. 13, No. 3, pp. 41-59.

Odell, P. R. (1992b): Global and regional energy supplies, in: Energy Policy, Vol. 20, Issue 4, pp. 284-296.

Odell, P. R. (2004): Why carbon fuels will dominate the 21st century's global energy economy, Brentwood (UK): Multi-Science Pub. Co.

Oesterwind, D. (2007): Die europäische Energiepolitik erfindet sich selbst, in: e/m/w, Heft 2/ 97, pp. 30-33.

Oliver, C. (1991): Strategic Responses to Institutional Processes, in: Academy of Management Review, Vol. 16, No. 1, pp. 145-179.

Oliver, C. (1992): The antecedents of deinstitutionalization, in: Organization Studies, Vol. 13, No. 4, pp. 563-588.

Oliver, C. (1996): The institutional embeddedness of economic activity, in: Advances in Strategic Management, Vol. 13, pp. 163-186.

Oliver, C. (1997): Sustainable competitive advantage: Combining Institutional and Resource-based views, in: Strategic Management Journal, Vol. 18, No. 9, pp. 697-713.

Ollier, P. (2007): Suez-Gaz de France, une fusion qui profitera au consommateur, in: Le Figaro, 15 October 2007, http://www.lefigaro.fr/debats/2006/07/26/01005-20060726ARTFIG90060-suez_gaz_de_france_une_fusion_qui_profitera_au_consommateur.php, 04.12.09

Ontras (2009a): Neues Marktgebiet heißt GASPOOL, press release, 7 May 2009, http://www.ontras.com/content_en/Unternehmen/Presse_Aktuelles/090507_PI_GASPOOL_en.pdf, 26.08.09.

Ontras (2009b): GASPOOL starts as of 1 October 2009, press release, 6 August 2009, http://www.ontras.com/content_en/Unternehmen/Presse_Aktuelles/2009-08-06_fv_Press_Release_GASPOOL.PDF, 26.08.09.

Osborn, R. N./ Hagedoorn, J. (1997): The Institutionalization and Evolutionary Dynamics of Interorganizational Alliances and Networks, in: Academy of Management Journal, Vol. 40, No. 2, pp. 261-278.

Osborn, R. N./ Hunt, J. G. (1974): Environment and Organizational Effectiveness, in: Administrative Science Quarterly, Vol. 19, No. 2, pp. 231-246.

Oster, C. V./ Pickrell, D. H. (1986): Marketing alliances and competitive strategy in the airline industry, in: Logistics and Transportation Review, Vol. 22, No. 4, pp. 371-387.

Ott, M. (2007): Biogas ist beautiful? - Smart ist beautiful!, in: Energie & Management, 1 May 2007, p. 10.

Otzen, K. (2005): Renaissance in Großbritannien, in: Energie & Management, 1 September 2005, p. 11.

Otzen, K. (2007a): Gefährliche Abhängigkeit von Russland, in: Energie & Management, 1 April 2007, p. 5.

Otzen, K. (2007b): London setzt auf Kernkraft, Wasser und Wind, in: Energie & Management, 15 June 2007, p. 14.

Otzen, K. (2009a): Britische Nordsee-Gasförderung in der Krise, in: Energie & Management, 1 April 2009, p. 5.

Otzen, K. (2009b): Großbritannien vor immensen Energie-Investitionen, in: Energie & Management, 1 March 2009, p. 4.

Otzen, K. (2010a): Briten befürchten Gasmangel in: Energie & Management, 15 February 2010, p. 4.

Otzen, K. (2010b): GdF-Suez in Verhandlungen mit International Power, in: Energie & Management, 2 February 2010, p. 4.

Owen, B. M./ Braeutigam, R. (1978): The regulation game : strategic use of the administrative process, Cambridge (MA): Ballinger Pub. Co.

Øygard, S. H./ Tryggestad, J. C. (2001): The M&A trap for utilities, in: The McKinsey Quarterly, No. 3, pp. 21-25.

Parker, D. N. (2006): The Growing Role of Storage, in: American Gas, Vol. 88, No. 8, p. 6.

Parsons, T. (1964): Evolutionary Universals in Society, in: American Sociological Review, Vol. 29, No. 3, pp. 339-357.

Pasmore, W. A./ Woodman, R. W. (1997): Research in Organizational Change and Development, Greenwich (CT): JAI Press.

Pasternak, M./ Brinkmann, S./ Messner, J./ Sedlack, R. (2005): Erdöl und Erdgas in der Bundesrepublik Deutschland 2004, Hannover: Niedersächsisches Landesamt für Bodenforschung, pp. 1-45.

Pearce, J. A. (1982): Selecting Among Alternative Grand Strategies, in: California Management Review, Vol. 24, No. 3, pp. 23-32.

Pecka, M. (2007): Noch erhebliche Optimierungspotenziale, in: Energie & Management, 15 September 2007, p. 13.

Pecka, M. (2008a): Biogas-Modell für die Geflügelbranche, in: Energie & Management, 1 March 2008, p. 9.

Pecka, M. (2008b): Substratpreise belasten die Branche, in: Energie & Management, 15 June 2008, p. 27.

Pecka, M. (2009a): „Die Einspeisung muss im Wettbewerb stattfinden", in: Energie & Management, 15 October 2009, p. 17.

Pecka, M. (2009b): Mineralöl, Holz und Biogas, in: Energie & Management, 15 October 2009, p. 20.

Pederson, J. P. (2001) (ed.): International directory of company histories, St. James Press.

Peebles, M. (1980): Evolution of the gas industry, London/ Basingstoke: The Macmillan Press Ltd.

Peebles, M. (1999): Dutch gas: Its role in the Western European gas markets, in: Mabro, R./ Wybrew-Bond, I. (eds.): Gas to Europe, Oxford: Oxford University Press.

Peer, M. (2009): Strom aus Abfall hilft beim Klimaschutz, in: Handelsblatt, 10 March 2009, http://www.handelsblatt.com/technologie/energie_technik/strom-aus-abfall-hilft-beim-klimaschutz;2197280, 10.03.2009.

Peng, M. W. (2000): Business Strategies in Transition Economies, Thousand Oaks et al.: Sage Publications.

Peng, M. W. (2001): The resource-based view and international business, in: Journal of Management, Vol. 27, No. 6, pp. 803-829.

Peng, M. W. (2003): Institutional transitions and strategic choices, in: Academy of Management Review, Vol. 22, No. 2, pp. 275-296.

Peng, M. W./ Heath, P. S. (1996): The Growth of the Firm in Planned Economies in Transition: Institutions, Organizations, and Strategic Choice, in: Academy of Management Review, Vol. 21, No. 2, pp. 492-528.

Peng, M. W./ Lee, S.-H./ Wang, D. Y. L. (2005): What determines the scope of the firm over time? A focus on institutional relatedness, in: Academy of Management Review, Vol. 30, No. 3, pp. 622-633.

Penrose, E. T. (1956): Foreign investment and the growth of the firm, in: Economic Journal, Vol. 66, No. 262, pp. 220-235.

Penrose, E. T. (1959): The theory of the growth of the firm, New York: John Wiley & Sons.

Percebois, J. (1999): The gas deregulation process in Europe: economic and political approach, in: Energy Policy, No. 27, pp. 9-15.

Perrow, C. (1970): Organizational Analysis, London: Tavistock Publications.

Perrow, C. (1981): Markets, Hierarchies and Hegemony, in: Van de Ven, A. H./ Joyce, W. F. (eds.): Perspectives on organization design and behavior, New York: Wiley, pp. 371-386.

Perrow, C. (1985): Comment on Langton's "Ecological Theory of Bureaucracy", in: Administrative Science Quarterly, Vol. 30, No. 2, pp. 278-283.

Perrow, C. (1986): Complex organizations: A critical essay, 3rd edition, New York: McGraw Hill.

Peteraf, M. A. (1990): The Resource-based Model: An Emerging Paradigm for Strategic Management, Working Paper No. 90-29, Northwestern University.

Peteraf, M. A. (1993): The cornerstones of competitive advantage: A resource-based view, in: Strategic Management Journal, Vol. 14, No. 3, pp. 179-191.

Peteraf, M. A./ Bergen, M. E. (2003): Scanning Dynamic Competitive Landscapes: A Market-based and Resource-based Framework, in: Strategic Management Journal, Vol. 24, No. 10, pp. 1027-1041.

Peters, T. J./ Waterman, R. H. (1982): In search of excellence: Lessons from America's best-run companies, New York: Harper & Row.

Petrovic, L. (2000): European Energy Utility Company to 2010, London: Business Insights.

Pettigrew, A. M. (1992): The character and significance of strategy process research, in: Strategic Management Journal, Vol. 13, Issue: S2, pp. 5-16.

Pettigrew, A. M./ Ferlie, E./ McKee, L. (1992): Shaping strategic change: Making change in large organizations: the case of the National Health Service, London/ Newbury Park: Sage Publications.

Pfaff, P. (2008): Strahlende Aussichten für den Energiemarkt, in: Handelsblatt, 4 July 2008, http://www.handelsblatt.com/panorama/presseschau/strahlende-aussichten-fuer-den-energiemarkt/2984476.html?p2984476=all, 07.07.2008.

Pfeffer, J./ Leblebici, H. (1973): Executive recruitment and the development of interfirm organizations, in: Administrative Science Quarterly, Vol. 18, No. 4, pp. 449–461.

Pfeffer, J./ Salancik, G. R. (1978): External Control of Organizations: a resource dependence perspective, New York: Harper & Row.

Pfeil, M. (2009): Naturaldividende und bonifreie Banker, in: Die Zeit, No. 52, p. 35.

Phillips, N./ Lawrence, T. B./ Hardy, C. (2000): Inter-organizational collaboration and the dynamics of institutional fields, in: Journal of Management Studies, Vol. 37, No. 1, pp. 23-43.

Picot, A. (1982): Transaktionskostenansatz in der Organisationstheorie, in: Die Betriebswirtschaft, Vol. 42, No. 2, pp. 267-284.

Piller, T. (2006): Übernahmen in der Energiebranche bringen kaum Synergieeffekte, in: Frankfurter Allgemeine Zeitung, No. 68, p. 13.

Pinnock, R. (2002): Industry-focused management consulting in the changing world of energy, Jaakko Pöyry Group.

Pohl, I. (1998): Die Bewertung von Umweltschutztechnologien aus Sicht der Investitionsrechnung, in: Diskussionspapiere, Vol. 84, Halle: Institut für Wirtschaftsforschung.

Point, S./ Tyson, S. (1999): What Do French Annual Reports Reveal About the Internationalisation of Companies?, in: European Management Journal, Vol. 17, No. 5, pp. 555-565.

Poole, M. S. (2004): Central Issues in the Study of Change and Innovation, in: Poole, M. S./ Van de Ven, A. H. (eds.): Handbook of Organizational Change and Innovation, Oxford / New York: Oxford University Press, pp. 3-31.

Poole, M. S./ Van de Ven, A. H. (2004): Theories of Organizational Change and Innovation Processes, in: Poole, M. S./ Van de Ven, A. H. (eds.): Handbook of Organizational Change and Innovation, Oxford/ New York: Oxford University Press, pp. 374-397.

Porac, J. F./ Thomas, H./ Baden-Fuller, C. (1989): Competitive groups as cognitive communities: The case of Scottish knitwear manufacturers, in: Journal of Management Studies, Vol. 26, No. 4, pp. 397-416.

Porac, J. F./ Thomas, H./ Wilson, F./ Kanfer, A. (1995): Rivalry and the industry model of Scottish knitwear producers, in: Administrative Science Quarterly, Vol. 40, No. 2, pp. 203-227.

Porter, M. E. (1980): Competitive Strategy. Techniques for Analyzing Industries and Competitors, New York: Free Press.

Porter, M. E. (1981): The Contributions of Industrial Organization To Strategic Management, in: Academy of Management Review, Vol. 6, No. 4, pp. 609-620.

Porter, M. E. (1985): Competitive Advantage, New York: The Free Press.

Porter, M. E. (1987): From Competitive Advantage to Corporate Strategy, in: Harvard Business Review, Vol. 65, No. 3, May-June, pp. 43-59.

Porter, M. E. (1996): What is strategy?, in: Harvard Business Review, Vol. 74, No. 6, November-December, pp. 61-78.

Porter, M. E./ van der Linde, C. (1995): Toward a new conception of the environment-competitiveness relationship, in: Journal of Economic Perspectives, Vol. 9, No. 4, pp. 97-118.

Porter, M./ Fuller, M. B. (1989): Koalitionen und globale Strategie, in: Porter, M. (ed.): Globaler Wettbewerb, Wiesbaden: Gabler, pp. 363-399.

Post, J. E./ Mahon, J. F. (1980): Articulated turbulence: the impact of regulatory agencies on corporate responses to social change, in: Academy of Management Review, Vol. 5, No. 3, pp. 399-407.

Powell, W. W. (2001): The Capitalist Firm in the Twenty-First Century: Emerging Patterns in Western Enterprise, in: DiMaggio, P. (ed.): The Twenty-First Century Firm: Changing Economic Organization in International Perspective, Princeton/ Oxford: Princeton University Press, pp. 33-68.

Prahalad, C. K./ Hamel, G. (1990): The Core Competence of the Corporation, in: Harvard Business Review, Vol. 68, No. 3, pp. 79-91.

Priem, R. L./ Butler, J. E. (2001): Is the Resource-Based "View" a Useful Perspective for Strategic Management Research?, in: Academy of Management Review, Vol. 26, No. 1, pp. 22-40.

Prinz, M./ Papanikolau, N./ Albin, J. (2007): Der deutsche Gasnetzzugang im europäischen Vergleich, in: e/m/w, Zeitschrift für Energie, Markt, Wettbewerb, No. 2, pp. 6-11.

PWC (2002): Energy trading. Re-establishing sound foundations, PricewaterhouseCoopers.

PWC (2003a): Movers and Shapers 2003, PricewaterhouseCoopers.

PWC (2003b): Going Global. Change and challenge in the gas market, PricewaterhouseCoopers.

PWC (2004a): Supply Essentials. Utilities Global Survey 2004, PricewaterhouseCoopers.

PWC (2004b): Power Deals. 2003 Annual Review, PricewaterhouseCoopers.

PWC (2005a): Under Pressure. Utilities Global Survey 2005, PricewaterhouseCoopers.

PWC (2005b): Power Deals. 2004 Annual Review , PricewaterhouseCoopers.

PWC (2006a): The Big Leap. Utilities Global Survey 2006, PricewaterhouseCoopers.

PWC (2006b): Power Deals. 2005 Annual Review, PricewaterhouseCoopers.

PWC (2008a): A World of Difference. Utilities Global Survey 2006, PricewaterhouseCoopers.

PWC (2008b): Power Deals. 2007 Annual Review, PricewaterhouseCoopers.

PWC (2008c): The sustainability agenda: Industry perspectives, PricewaterhouseCoopers.

PWC (2009a): Green Electricity Making a Difference, PricewaterhouseCoopers.

PWC (2009b): Power Deals. 2008 Annual Review, PricewaterhouseCoopers.

PWC (2010a): Carbon Disclosure Project 2010. Global 500 Report, PricewaterhouseCoopers.

PWC (2010b): Power Deals. 2009 Annual Review, PricewaterhouseCoopers.

PWC (2010c): Carbon Disclosure Project 2010. FTSE 250 Report, PricewaterhouseCoopers.

Quinn, J. B. (1980a): Managing strategic change, in: Sloan Management Review, Vol. 21, No. 4, pp. 3-20.

Quinn, J. B. (1980b): Strategies for Change: Logical incrementalism, Homewood (IL): Richard D. Irwin.

Radetzki, M. (1999): European natural gas: market forces will bring about competition in any case, in: Energy Policy, Vol. 27, No. 1, pp. 17-24.

Rahmstorf, S. / Schellnhuber, H. J. (2006): Der Klimawandel: Diagnose, Prognose, Therapie, München: Beck.

Rajagopalan, N./ Spreitzer, G. M. (1996): Toward a Theory of Strategic Change: A Multi-Lens Perspective and Integrative Framework, in: Academy of Management Review, Vol. 22, No. 1, pp. 48-79.

Rao, H. (1994): The social construction of reputation: Certification contests, legitimation, and the survival of organisations in the American automobile industry: 1895-1912, in: Strategic Management Journal, Vol. 15, Winter Special Issue, pp. 29-44.

Rao, H./ Singh, J. T. (1999): Types of variation in organizational populations, Thousand Oaks (CA): Sage Publications.

Rapp, A. (1992): Die gemeinschaftsrechtliche Verwirklichung von Wettbewerb in der leitungsgebundenen Energiewirtschaft, Frankfurt am Main et al.: Peter Lang.

Rappaport, A. (1998): Creating shareholder value, 2nd edition, New York et al.: Free Press.

Rasche, C. (1994): Wettbewerbsvorteile durch Kernkompetenzen: ein ressourcenorientierter Ansatz, Wiesbaden: Gabler.

Rathmann, U./ Ruppert, K. (1985): Treatment and Liquefaction of Natural Gas in Barge- and Platform-Mounted Process Plants, in: Rathmann, U./ Ruppert, K. (eds.): Treatment and Liquefaction of Natural Gas in Barge- and Platform-Mounted Process Plants, 16th World Gas Conference, Munich: International Gas Union, pp. 1-8.

Rebhan, E. (ed.) (2002): Energiehandbuch. Gewinnung, Wandlung und Nutzung von Energie, Springer-Verlag: Berlin et al.

Reed, R./ DeFillippi, R. J. (1990): Causal Ambiguity, Barriers to Imitation, and Sustainable Competitive Advantage, in: Academy of Management Review, Vol. 15, No. 1, pp. 88-102.

Rees, J./ Dürand, D./ Gerth, M./ Matthes, S./ Sekareva, K. (2009): Guter Eindruck, in: WirtschaftsWoche, No. 49, pp. 72-82.

Reger, R. K./ Duhaime, I. M./ Stimpert, J. L. (1992): Deregulation, Strategic Choice, Risk and Financial Performance, in: Strategic Management Journal, Vol. 13, No. 3, pp. 189-204.

Reger, R. K./ Huff, A. S. (1993): Strategic groups: A cognitive perspective, in: Strategic Management Journal, Vol. 14, Issue 2, pp. 103-124.

Regnér, P. (2003): Strategy creation in the periphery: Inductive versus deductive strategy making, in: Journal of Management Studies, Vol. 40, No. 1, pp. 57-82.

Regnér, P. (2005): The Pre-history of Strategy Processes, in: Floyd, S. W./ Roos, J./ Jacobs, C. D./ Kellermanns, F. W. (eds.): Innovating Strategy Process, Malden (MA) et al.: Blackwell Publishing, pp. 23-32.

Reischauer, C. (2005): Glänzende Geschäfte, in: Capital, No. 1, p. 48.

Reitz, U./ Schneider, Mark C. (2006): Stimmenwechsel, in: Capital, No. 17, pp. 40-41.

Rempel, H. (2002): Natural Gas for Europe – Present State and Predictions for a Stable Supply in the Future, in: Energy Exploration & Exploitation, Vol. 20, No. 2&3, pp. 219-237.

Reutersberg, B. (2008): Einleitende Ausführungen anlässlich der Jahrespresskonferenz der E.ON Ruhrgas AG, 27 May 2008, Essen.

Rider, G. (1999): Ten Lessons for the Changing European Electricity Landscape, in: Electricity Journal, Vol. 12, No. 3, pp. 13-19.

Ringbakk, K. (1976): Strategic Planning in a Turbulent International Environment, in: Long Range Planning, Vol. 9, Issue 3, pp. 2-11.

Rinke, A. (2006): Sieben Fragen an: Gahr Store: „Wir werden Europa mehr Gas liefern“, in: Handelsblatt, No. 219, p. 3.

Ristau, O. (2006): LNG aus der Kälte, in: Energie & Management, 15 February 2006, p. 9.

Ristola, M. (2008): Die Knotenpunkte des europäischen Gashandels, in: Energie & Management, 15 February 2008, p. 6.

Ritti, R. R./ Silver, J. H. (1986): Early Processes of Institutionalization: The Dramaturgy of Exchange in Interorganizational Relations, in: Administrative Science Quarterly, Vol. 31, No. 1, pp. 25-42.

Rivkin, J. (2000): Imitation of complex strategies, in: Management Science, Vol. 46, No. 6, pp. 824-844.

Roberts, P. W./ Greenwood, R. (1997): Integrating Transaction Cost and Institutional Theories: Toward a Constrained-Efficiency Framework for Understanding Organizational Design Adoption, in: Academy of Management Review, Vol. 22, No. 2, pp. 346-373.

Rodrigues, S./ Child, J. (2003): Co-evolution in an Institutionalized Environment, in: Journal of Management Studies, Vol. 10, No. 8, pp. 2137-2162.

Roeber, R. J. C. (1973): The organization in a changing environment, Reading (MA): Addison-Wesley Publishing Company.

Roeder, O./ Bleischwitz, R. (2006): Materialeffizienz als Wettbewerbsstrategie, in: UmweltWirtschaftsForum, Vol. 14, No. 4, pp. 6-12.

Rojey, A. (2002): Natural Gas Fundamentals, Institut Français du Pétrole (IFP), 25 September 2002, Cedigaz.

Roland Berger Strategy Consultants (2003): Fusionspotenziale in Europa, Hamburg: Roland Berger Strategy Consultants.

Roland Berger Strategy Consultants (2006): Best of European Business Awards, http://www.best-of-european-business.com/best-of-european-business-awards/winners/2006/european-summit/, 20.02.2009.

Röller, L.-H./ Delgado, J./ Friederiszick, H. W. (2007): Energy: Choices for Europe, Brussels: Bruegel.

Romanelli, E. (1999): Blind (But Not Unconditioned) Variation: Problems with Copying in Socio-Cultural Evolution, in: Baum, J.A.C./ McKelvey, B. (eds.): Variations in Organization Science, Newbury Park (CA): Sage Publications.

Rosendahl, K. E. (2008): Introduction to Natural Gas in Norway and Natural Gas Research at Statistics Norway, European Doctoral Seminar on Natural Gas, 30 May 2008.

Rossert, B. (1996): The Western European Gas market. Future Gas Infrastructure in Western Europe, European Investment Bank. http://www.eib.org/attachments/pj/western_european_gas_market_en.pdf, 04.01.2011.

Rostrup-Nielsen, J. R. (2005): Natural Gas: Fuel or feedstock?, in: Derouane, E. G./ Parmon, V./ Lemos, F./ Ribeiro, F. R. (eds.): Sustainable Strategies for the Upgrading of Natural Gas: Fundamentals, Challenges, and Opportunities, Dordrecht (NL): Springer, pp. 3-24.

Rott, W. (2004): Security of supply provided by WINGAS – technical expertise for Europe's growing demand for natural gas, Presentation at "Journalists and Scientists in Dialogue – Energy Management", 25/ 26 October 2004, Mannheim: BASF News Release.

Rovik, K. A. (1996): Deinstitutionalization and the logic of fashion, in: Czarniawska, B./ Sevon, G. (eds.): Translating organizational change, Berlin/ New York: de Gruyter, pp. 139-172.

Rowan, B. (1982): Organizational Structure and the Institutional Environment: The Case of Public Schools, in: Administrative Science Quarterly, Vol. 27, pp. 259-279.

Ruch, M. (2008): Erdgas profitiert vom Klimaschutz, in: Financial Times Deutschland, 14 March 2008, http://www.ftd.de/politik/deutschland/324052.html, 25.03.2008.

Ruef, M. (2000): The emergence of organizational forms: a community ecology approach, in: The American Journal of Sociology, Vol. 106, No. 3, pp. 658-714.

Ruef, M./ Scott, W. R. (1998): A multidimensional model of organizational legitimacy: hospital survival in changing institutional environments, in: Administrative Science Quarterly, Vol. 43, No. 4, pp. 877-904.

Rugman, A. M./ Verbeke, A. (1990): Global corporate strategy and trade policy, London: Routledge.

Rugman, A. M./ Verbeke, A. (1998): Corporate Strategy and International Environmental Policy, in: Journal of International Business Studies, Vol. 29, No. 4, pp. 819-833.

Rugman, A. M./ Verbeke, A. (2000): Six Cases of Corporate Strategic Responses to Environmental Regulation, in: European Management Journal, Vol. 18, No. 4, pp. 377-385.

Rühli, E./ Sachs, S. (2005): Practical issues in implementing the stakeholder view as a core competence, in: Sanchez, R./ Heene, A. (eds.): Competence perspectives on resources, stakeholders and renewal, in: Advances in Applied Business Strategy, Vol. 9, Amsterdam et al.: Elsevier, pp. 217-233.

Ruhrgas (2002): Geschäftsbericht 2001, Essen: Ruhrgas.

Ruhrgas (2003): Annual Report 2002, Essen: Ruhrgas.

Ruhrgas (2004): Jahresbericht 2003, Essen: Ruhrgas.

Ruhrgas (2005): Jahresbericht 2004, Essen: Ruhrgas.

Ruhrgas (2009): Annual Report 2008, Essen: Ruhrgas.

Rumelt, R. P. (1974): Strategy, Structure, and Economic Performance, Cambridge (MA): Harvard University Press.

Rumelt, R. P. (1982): Diversification Strategy and Profitability, in: Strategic Management Journal, Vol. 3, No. 4, pp. 359-369.

Rumelt, R. P. (1984): Towards a strategic theory of the firm, in: Lamb, R. B. (ed.): Competitive strategic management, Englewood Cliffs (NJ): Prentice-Hall.

Rumelt, R. P. (1987): Theory, strategy and entrepreneurship, in: Teece, D. J. (ed.): The Competitive Challenge, New York: Harper & Row, pp. 137-158.

Rumelt, R. P. (1991): How much does industry matter?, in: Strategic Management Journal, Vol. 12, No. 3, pp. 167-185.

Rumelt, R., Schendel, D., & Teece, D. J. (eds.) (1994): Fundamental issues in strategy: A research agenda, Boston: Harvard Business School Press.

Russo, M. V. (1992): Power plays: Regulation, diversification, and backward integration in the electric utility industry, in: Strategic Management Journal, Vol. 13, pp. 13-27.

Rüster, S./ Neumann, A. (2006): Corporate Strategies along the LNG Value Added Chain - An Empirical Analysis of the Determinants of Vertical Integration, Globalization of Natural Gas Markets Working Papers WP-GG-17.

Rutledge, I./ Wright, P. (2000): Corporate Realignments in the Natural Gas Industry: Does the North American Experience Foretell the Future for the European Union?, Cahier No. 00.09.18, September 2000, Energy Studies Programme, University of Sheffield.

RWE (2001): Geschäftsbericht 1999/ 2000, Essen: RWE Aktiengesellschaft.

RWE (2002): Annual Report 2000/ 2001, Essen: RWE AG.

RWE (2004): Annual Report 2003, Essen: RWE Aktiengesellschaft.

RWE (2005): Annual Report 2004, Essen: RWE Aktiengesellschaft.

RWE (2006): Annual Report 2005, Essen: RWE Aktiengesellschaft.

RWE (2007): Annual Report 2006, Essen: RWE Aktiengesellschaft.

RWE (2008): Annual Report 2007, Essen: RWE Aktiengesellschaft.

RWE (2009a): Annual Report 2008, Essen: RWE Aktiengesellschaft.

RWE (2009b): Joschka Fisher to support political communication of Nabucco project, Press Release, 6 July 2009, http://www.rwe.com/web/cms/en/239932/rwe-supply-trading/press/press-release/?pmid=4003647, 20.10.2011.

RWE (2011): Responsibility, http://www.rwe.com/web/cms/en/179662/rwe/responsibility/, 02.01.2011.

Sahlin-Andersson, K. (1996): Imitating by editing success. The construction of organizational fields and identities, in: Czarniawska, B./ Sevón, G. (eds.): Translating organizational change, Berlin: De Gruyter, pp. 69-92.

Salzmann, O. (2006): Corporate Sustainability Management in the Energy Sector – An Empirical Contingency Approach, Berlin: Technische Universität, Dissertation 2006.

Sampat, B. N./ Nelson, R. R. (2002): The evolution of university patenting and licensing procedures: An empirical study of institutional change, in: Ingram, P./ Silverman, B. S. (eds.): The New Institutionalism in Strategic Management, Vol. 19, Amsterdam et al.: JAI Press, pp. 135-164.

Sanders, C. (2006): Kühl kalkulieren, in: Die Zeit, No. 31, p. 25.

Sandhövel, U. (2007): Das Netz als Schatz?, in: Energie & Management, 15 August 2007, pp. 34-35.

Sanktjohanser, M./ Schermer, G./ Schulz-Wal, F. (2009): Mit Strom stramm voraus, in: Energie & Management, 15 January 2009, p. 8.

Sauder, M. (2008): Interlopers and Field Change: The entry of U.S. News into the Field of Legal Education, in: Administrative Science Quarterly, Vol. 53, pp. 209-234.

Sauvage, É. (2008): Key competitive advantages, in: GdF (2008): Purchase & Sale of Natural Gas. A global player with key competitive advantages in changing energy markets, Gaz de France Investor Day 'Purchase & Sale of Natural Gas', April 16, 2008, pp. 22-38.

Scallon, M./ Sten, M. J. (1997): Environmental Positioning for the Future, in: Ledgerwood, G. (ed.): Greening the Boardroom: Corporate Governance and Business Sustainability, Sheffield: Greenleaf Publishing, pp. 145-163.

Scapens, R. W. (2004): The many skills of the case Researcher, in: Marschan-Piekkari, R./ Welch, C. (eds.): Handbook of Qualitative Research Methods for International Business, Cheltenham (UK)/ Northampton (USA): Edward Elgar, pp. 107-108.

Schacht, R. (2007): Brennendes Eis vom Ozeangrund, in: Die Welt, 15 December 2007, p. W1.

Schaudwet, C./ Ginsburg, H. J. (2006): Von Putins Gnaden, in: WirtschaftsWoche, No. 43, pp. 59-66.

Scheer, H. (2002): Solare Weltwirtschaft. Strategie für die ökologische Moderne, Ort: Verlag Antje Kunstmann.

Scheer, H. (2005): Energieautonomie. Eine neue Politik für erneuerbare Energien, München: Verlag Antje Kunstmann.

Scherer, F. M. (1970): Industrial market structure and economic performance, Chicago: Rand McNally College Pub. Co.

Scherer, F. M./ Ross, D. (1990): Industrial Market Structure and Economic Performance, 3rd edition, Boston: Houghton Mifflin.

Schikarski, A./ Wältken, U. (2005a): Erfolgreiche Markenbildung durch neue Erkenntnisse zu Kundenbedürfnissen, Teil 3, in: Energiewirtschaftliche Tagesfragen, Vol. 55, Issue 11, pp. 807-809.

Schikarski, A./ Wältken, U. (2005b): Erfolgreiche Markenbildung durch neue Erkenntnisse zu Kundenbedürfnissen, Teil 1, in: Energiewirtschaftliche Tagesfragen, Vol. 55, Issue 7, pp. 497-499.

Schmalensee, R. C. (1987): Industrial Organization, in: Eatwell, J./ Milgate, M./ Newman, P. (eds.): The New Palgrave, London: Macmillan Press, Vol. 2, pp. 803-808.

Schmalensee, R. C. (1988): Industrial economics: an overview. Economic Journal, Vol. 98, Issue 392, pp. 643-681.

Schmidt-Carré, A. (2008): Industrie setzt auf Flüssigerdgas, in: Financial Times Deutschland, 26 April 2008, http://www.ftd.de/unternehmen/industrie/347521.html?mode=print, 07.05.2008.

Schmitt, D. (1994): Sekundärenergieträger, in: Schaefer, H. (ed.): VDI-Lexikon Energietechnik, Düsseldorf: VDI-Verlag, p. 1124.

Schmitz, W. (2006): Auf dem Weg in die Erdgasmärkte der Zukunft, in: Gas, No. 2, pp. 24-27.

Schneiberg, M. (2004): Institutional Embeddedness, Movement Legacies, and Organizational Form in the US Electrical Utility Industry, Prepared for presentation at the annual meetings of the American Sociological Association, August 2004, San Francisco (CA).

Schneiberg, M. (2007): What's on the path? Path dependence, organizational diversity and the problem of institutional change in the US economy, 1900-1950, in: Socio-Economic Review, No. 5, pp. 47-80.

Schneiberg, M./ Clemens, E. S. (2006): The Typical Tools for the Job: Research Strategies in Institutional Analysis, in: Sociological Theory, Vol. 24, No. 3, pp. 195-227.

Schneider, M. C./ Flauger, J. (2010): RWE-Chef stößt im VW-Aufsichtsrat auf Widerstand, in: Handelsblatt, 12 March 2010, http://www.handelsblatt.com/unternehmen/management/koepfe/machtverhaeltnisse-rwe-chef-stoesst-im-vw-aufsichtsrat-auf-widerstand/3389190.html, 13.03.2010.

Schoeffler, S./ Buzzell, R./ Heany, D. (1974): Impact of strategic planning on profit performance, in: Harvard Business Review, Vol. 52, No. 2, pp. 137-145.

Schomburg, A./ Grimm, C. M./ Smith, K. G. (1994): Avoiding new product warfare: The role of industry structure, in: Advances in Strategic Management, Vol. 10, Part B, pp. 145–173.

Schreiter, H. (1965): Die deutsche Gaswirtschaft und ihre ordnungspolitischen Probleme, Dissertation: Rheinische Friedrich-Wilhelms-Universität Bonn.

Schreyögg, G. (1984): Unternehmensstrategie: Grundfragen einer Theorie strategischer Unternehmensführung, Berlin/ New York: Walter de Gruyter.

Schroeder, R. G./ Bates, K. A./ Junttila, M. A. (2002): A resource-based view of manufacturing strategy and the relationship to manufacturing performance, in: Strategic Management Journal, Vol. 23, No. 2, pp. 105-117.

Schroeter, S. (2007a): Biomassevergaser für Strom, Wärme, Gas und Kraftstoff, in: Energie & Management, 1 May 2007, p. 4.

Schroeter, S. (2007b): Kohlendioxid unter dem Meeresboden, in: Energie & Management, 1 October 2007, p. 22.

Schroeter, S. (2007c): GdF ist Favorit für Leipziger Stadtwerke-Anteile, in: Energie & Management, 1 November 2007, p. 5.

Schubert, P. F./ Bayens, C. A./ Weick, L./ Haid, M. O. (2001): Expanding Markets for GTL Fuels and Specialty Products, in: Iglesia, E./ Spivey, J. J./ Fleisch, T. H. (eds.): Natural Gas Conversion VI, Proceedings of the 6th Natural Gas Conversion Symposium, in: Studies in Surface Science and Catalysis, Vol. 136, Amsterdam et al.: Elsevier, pp. 459-464.

Schuh, H. (2006): Das Ende der Gemütlichkeit, in: Die Zeit, No. 19, pp. 41-42.

Schülein, J. A. (1987): Theorie der Institution. Eine dogmengeschichtliche und konzeptionelle Analyse, Opladen: Westdeutscher Verlag.

Schulze, H. (1994): Neo-Institutionalismus. Ein analytisches Instrument zur Erklärung gesellschaftlicher Transformationsprozesse, in: Arbeitspapiere des Bereichs Politik und Gesellschaft, April, Osteuropa-Institut der Freien Universität Berlin.

Schulze-Berndt, M. (1989): Geschichte der Gas-, Elektrizitäts- und Wasserversorgung in Köln bis 1914, Dissertation Rheinische Friedrich-Wilhelms-Universität Bonn.

Schumpeter, J. A. (1950): Capitalism, Socialism and Democracy, New York: Harper.

Schürmann, H. J. (2004): Mehr Vielfalt, in: Handelsblatt, No. 246, p. 11.

Schürmann, H. J. (2007): Energiebranche feilt an der Strategie, in: Handelsblatt, No. 208, p. B3.

Schürmann, H. J. (2008): Machtspiele auf dem Erdgas-Markt, in: Handelsblatt, No. 33, p. B03.

Schürmann, H. J. (2009a): Blockierte Kernkraft. Deutsche Versorger können nur noch im Ausland expandieren, in: Handelsblatt, 12 August 2009, No. 153, p. 6.

Schürmann, H. J. (2009b): Warum es die deutschen Versorger so schwer haben, in: Handelsblatt, 12 August 2009, http://www.handelsblatt.com/warum-es-die-deutschen-versorger-so-schwer-haben/3237058.html?p3237058=all, 12.08.2009.

Schürmann, H. J. (2009c): Versorger zapfen neue Quellen an, in: Handelsblatt, 25 June 2009, http://www.handelsblatt.com/technologie/energie-umwelt/energie-technik/versorger-zapfen-neue-quellen-an;2389957, 29.06.2009.

Schürmann, H. J. (2009d): Grün wird wirtschaftlich, in: Handelsblatt, No. 117, p. 8.

Schuster, J. (2010): Strom zu Gas, in: FOCUS Online, 23 March 2010, http://www.focus.de/wissen/wissenschaft/klima/neue_technologien/tid-17665/energie-strom-zu-gas_aid_492070.html, 03.09.2010.

Schwandt, T. A. (2001): Dictionary of Qualitative Inquiry, Second Edition, London: Sage Publications.

Schweer, D./Thieme, W. (1998): RWE. Der gläserne Riese. Ein Konzern wird transparent, Wiesbaden: Gabler.

Schwintowski, H. (2002): E.ON/Ruhrgas - Untersagung des Bundeskartellamtes vom 18. Januar 2002, EWeRK Humboldt-Universität zu Berlin.

Scott W. R./ Meyer, J. W. (1991): The organization of societal sectors: Propositions and early evidence, in: Powell, W. W./ DiMaggio, P. J. (eds.): The New Institutionalism in Organizational Analysis, Chicago/ London: University of Chicago Press, pp. 108-140.

Scott, W. R. (1981): Organizations: Rational, Natural, and Open Systems, Englewood Cliffs (NJ): Prentice-Hall.

Scott, W. R. (1983): Health care organizations in the 1980s. The convergence of public and professional control systems, in: Meyer, J. W./ Scott, W. R. (eds.): Organizational Environments: Ritual and Rationality, Beverly Hills: Sage Publications, pp. 99-113.

Scott, W. R. (1987a): The Adolescence of Institutional Theory, in: Administrative Science Quarterly, Vol. 32, pp. 493-511.

Scott, W. R. (1987b): Organizations: Rational, Natural and Open Systems, 2nd edition, Englewood Cliffs (NJ): Prentice Hall.

Scott, W. R. (1994): Institutions and Organizations: Toward a Theoretical Synthesis, in: Scott W. R./ Meyer, J. W. (eds.): Institutional Environments and Organizations. Structural Complexity and Individualism, Thousand Oaks (CA): Sage Publications, pp. 55-80.

Scott, W. R. (1995): Institutions and Organizations, Thousand Oaks (CA): Sage Publications.

Scott, W. R. (2001): Institutions and Organizations, 2nd edition, Thousand Oaks (CA): Sage Publications.

Scott, W. R. (2002): Organizations and the natural environment: Evolving models, in: Hoffman, A./ Ventresca, M. (eds.): Organizations, Policy, and the Natural Environment: Institutional and Strategic Perspectives, Stanford (CA): Stanford University Press, pp. 453-464.

Scott, W. R. (2004): Institutional Theory: Contributing to a Theoretical Research Program, Chapter prepared for: Smith, K. G./ Hitt, M. A. (eds.): Great Minds in Management: The Process of Theory Development, Oxford: Oxford University Press.

Seel, A./ Timm, M. (2008): Simulieren für mehr Rendite, in: Energie & Management, 15 August 2008, p. 24.

Seeliger, A. (2004): Die Europäische Erdgasversorgung im Wandel, EWI Working Paper No. 04-2, Energiewirtschaftliches Institut an der Universität zu Köln.

Seeliger, A. (2005b): Eiskaltes für den Wärmemarkt, in: Energie & Management, 1 September 2005, p. 10.

Seeliger, A. (2006): Entwicklung des weltweiten Erdgasangebotes bis 2030, Dissertation Universität zu Köln, München: Oldenbourg Industrieverlag.

Seiferth, T./ Hannes, B. (2002): Auf internationalem Parkett zum Erfolg, in: Energie &Management, 15 July 2002.

Seiwert, M. (2007): Noch Spielraum, in: WirtschaftsWoche, No. 12, pp. 44-45.

Seiwert, M. (2008): Grüner Motor, in: WirtschaftsWoche, No. 39, pp. 51-63.

Seiwert, M./ Dürand, D./ Kempkens, W./ Krumrey, H./ Salz, J./ Wildhagen, A. (2009): Der Sahara-Pakt, in: WirtschaftsWoche, No. 26, pp. 40-47.

Selznick, P. (1957): Leadership in administration: A sociological interpretation, Berkeley: University of California Press.

Selznick, P. (1996): Institutionalism "Old" and "New", in: Administrative Science Quarterly, No. 41, pp. 270-277.

Senge, K. (2006): Zum Begriff der Institution im Neo-Institutionalismus, in: Senge, K./ Hellmann, K.-U. (eds.): Einführung in den Neo-Institutionalismus, Wiesbaden: VS Verlag für Sozialwissenschaften, pp. 35-47.

Seo, M./ Creed, W. E. D. (2002): Institutional Contradictions, Praxis, and Institutional Change: A Dialectical Perspective, in: Academy of Management Review, Vol. 27, No. 2, pp. 222-247.

Sevón, G. (1996): Organizational Imitation in Identity Transformation, in: Czarniawska, B./ Sevón, G. (eds.): Translating organizational change, Berlin/ New York: Walter de Gruyter, pp. 49-67.

Shaffer, B./ Hillman, A. J. (2000): The Development of Business-Government Strategies by Diversified Firms, in: Strategic Management Journal, Vol. 21, No. 2, pp. 175-190.

Sharkey, W. W. (1982): The theory of natural monopoly, Cambridge (Cambridgeshire)/ New York: Cambridge University Press.

Sharma, S. (2000): Managerial Interpretations and Organizational Context as Predictors of Corporate Choice of Environmental Strategy, in: Academy of Management Journal, Vol. 43, No. 4, pp. 681-697.

Sharma, S./ Vredenburg, H. (1998): Proactive corporate environmental strategy and the development of competitively valuable organizational capabilities, in: Strategic Management Journal, Vol. 19, Issue 8, pp. 729-753.

Shelton, R. D./ Shopley, J. B. (1997): Beyond the Green Wall. Rethinking the Environment for Business Advantage, in: Ledgerwood, G. (ed.): Greening the Boardroom, Sheffield: Greenleaf Publishing, pp. 119-128.

Shenkar, O./ Li, J. (1999): Knowledge search in international cooperative ventures, in: Organization Science, Vol. 10, No. 2, pp. 134-143.

Sherer, P. D./ Lee, K. (2002): Institutional Change in Large Law Firms: A Resource Dependency and Institutional Perspective, in: Academy of Management Journal, Vol. 45, No. 1, pp. 102-119.

Sieber, D. (2008): Tight Gas - producing gas from extremely low permeable reservoirs, in: Quade, H. (ed.): Die Zukunft von Erdöl und Erdgas, Vol. 25, Hannover: Akademie der Geowissenschaften zu Hannover, pp. 63-65.

Sietz, H. (2006): Flüssiges Erdgas kann künftig in Deutschland gelöscht werden, in: Frankfurter Allgemeine Zeitung, No. 101, p. T1.

Siggelkow, N. (2001): Change in the Presence of Fit: The Rise, the Fall, and the Renaissance of Liz Claiborne, in: Academy of Management Journal, Vol. 44, No. 4, pp. 838-857.

Simerly, R. L./ Li, M. (2000): Environmental Dynamism, Capital Structure and Performance: A Theoretical Integration and an Empirical Test, in: Strategic Management Journal, Vol. 21, No. 1, pp. 31-49.

Simon, H. A. (1964): On the Concept of Organizational Goal, in: Administrative Science Quarterly, Vol. 9, No. 1, pp. 1-22.

Singh, J. V./ Tucker, D. J./ House, R. J. (1986): Organizational Legitimacy and the Liability of Newness, in: Administrative Science Quarterly, No. 31, pp. 171-193.

Singh, J./ Tucker, D. J./ Meinhard, A. G. (1991): Institutional Change and Ecological Dynamics, in: Powell, W. W./ DiMaggio, P. J. (eds.): Institutional theory, Chicago/ London: University of Chicago Press, pp. 390-422.

Slesser, Malcolm (ed.) (1988): Macmillan Dictionary of Energy, 2nd edition, London/ Basingstoke: The Macmillan Press Ltd.

Smith, K. G./ Grimm, C. M. (1987): Environmental variation, strategic change and firm performance: A study of railroad deregulation, in: Strategic Management Journal, Vol. 8, No. 4, pp. 363-376.

Smith, K. G./ Guthrie I. P. / Chen M.-J. (1986): Miles and Snow's Typology of Strategy, Organizational Size and Organizational Performance, Academy of Management Proceedings, pp. 45-49.

Snijder, R. (2006): Gas Market Reforms/ Liberalisation and Regulations in Europe, Presentation held at 3rd ASEAN+3 Natural Gas Forum in Kuala Lumpur on 19 January 2006.

Snow, C. C./ Hrebiniak, L. G. (1980): Strategy, distinctive competence, and organizational performance, in: Administrative Science Quarterly, Vol. 25, pp. 317-336.

Specht, D. (1996): Dynamische Produktionsstrukturen, in: Wildemann, H. (ed.): Produktions- und Zuliefernetzwerke, München: TCW Transfer-Centrum-Verlag, pp. 147-168.

Spiegel, E./ Neilson, G. L./ Flaherty, T. J./ Raghavan, S. (2005): Test Your Company's DNA, in: Electric Perspectives, March/April, pp. 32-41.

Spreckelsen, T. (2008): …stand eine Laterne und steht sie noch davor, in: Frankfurter Allgemeine Zeitung, No. 50, pp. 72-73.

Steger, U./ Winter, M. (1997): Early Warning of Environmentally-Driven Market Changes. A Theoretical Approach and an Empirical Investigation, in: Ledgerwood, G. (ed.): Greening the Boardroom: corporate environmental governance and business sustainability, Sheffield: Greenleaf Publishing, pp. 57-75.

Steinkirchner, P. (2010): Ein Stück Elefant, in: WirtschaftsWoche, No. 17, pp. 54-57.

Stern, J. P. (1998): Competition and Liberalization in European Gas Markets. A Diversity of Models, London: The Royal Institute of International Affairs.

Stern, N. (2006): Stern Review on the Economics of Climate Change, http://www.occ.gov.uk/activities/stern.htm, 23.11.2008.

Stern, N. (2009): Blueprint for a Safer Planet: How to Manage Climate Change and Create a New Era of Progress and Prosperity, London: Bodley Head.

Stevenson, H. H./ Harmeling, S. (1990): Entrepreneurial management's need for a more 'chaotic' theory, in: Journal of Business Venturing, Vol. 5, No. 1, pp. 1-14.

Stigler, G. J. (1971): The Theory of Economic Regulation, in: Bell Journal of Economics and Management Science, Vol. 2, No. 1, pp. 3–18.

Stinchcombe, A. L. (1965): Social Structure and Organizations, in: March, J. G. (ed.): Handbook of Organizations, Chicago: Rand McNally&Company, pp. 142-193.

Stonham, P. (2000): BP Amoco: Integrating Competitive and Financial Strategy. Part One: Strategic Planning in the Oil Industry, European Management Journal, Vol. 18, No. 4, pp. 411-419.

Storbeck, O. (2009): Warum Marktführer träge werden, in: Handelsblatt, 21 November 2009, http://www.handelsblatt.com/politik/oekonomie/nachrichten/wirtschaft-im-wandel-warum-marktfuehrer-traege-werden/3308970.html, 21.11.2009.

Strati, A. (2000): Theory and Method in Organization Studies: Paradigms and Choices, London et al.: SAGE Publications.

Stratmann, K. (2008a): Emissionshandel bringt neue Milliardenlasten, in: Handelsblatt, 10 December 2008, http://www.handelsblatt.com/unternehmen/industrie/emissionshandel-bringt-neue-milliardenlasten/3070340.html?p3070340=all, 10.12.2008.

Stratmann, K. (2008b): Energiebranche schreibt Gesetze selbst, in: Handelsblatt, 4 December 2008, http://www.handelsblatt.com/politik/deutschland/energiebranche-schreibt-gesetze-selbst/3066544.html?p3066544=all, 10.12.2008.

Stratmann, K. (2009): Eon verspricht klimafreundlichere Stromproduktion, in: Handelsblatt, 16 December 2009, http://www.handelsblatt.com/unternehmen/industrie/eon-verspricht-klimafreundlichere-stromproduktion/3328342.html, 27.10.2010.

Student, D.(2002a): Der Mann fürs Feine, in: managermagazin, No. 4, pp. 41-44.

Student, D.(2002b): Volles Rohr, in: managermagazin, No. 1, pp. 108-115.

Student, D. (2007): Prima Klima, in: managermagazin, No. 7, pp. 84-90.

Student, D. (2009): Der neue Gaspromi, in: managermagazin, No. 7, pp. 8-9.

Suchman, M. C. (1995): Managing Legitimacy: Strategic and Institutional Approaches, in: The Academy of Management Review, Vol. 20, No. 3, pp. 571-610.

Suez (2002): Annual Report 2001, Paris: Suez.

Suez (2004): Annual Report 2003, Paris: Suez.

Suez (2005): Annual Report 2004, Paris: Suez.

Suez (2008a): SUEZ: Disposal of holding in Distrigas following merger with Gaz de France: shortlist of three candidates published, press release, 26 March 2008, http://www.gdfsuez.com/document/?f=files/en/cp-080326-3candidates-en.pdf, 27.08.09.

Suez (2008b): SUEZ acquires ENI energy assets, strengthening its position and strategic development in Italy, press release, 29 May 2008, http://www.gdfsuez.com/document/?f=files/en/cp-080529-rachat-actifs-eni-en.pdf, 27.08.09.

Suez (2008c): Annual Report 2007, Paris: Suez.

Sunnevåg, K. J. (2000): How sustainable is the framework for Norwegian gas sales?, in: Energy Policy, Vol. 28, No. 5, pp. 311-320.

Sydow, J. (1992): Strategische Netzwerke: Evolution und Organisation, Habilitation, Freie Universität Berlin, Wiesbaden: Gabler.

Szulanski, G./ Amin, K. (2001): Learning to Make Strategy: Balancing Discipline and Imagination, in: Long Range Planning, Vol. 34, No. 5, pp. 537-556.

TACD (2009): Resolution on Consumer Expectations for Governments' Action on Climate Change, DOC No. CC 02-09.

Taylor-Bianco, A./ Schermerhorn Jr, J. (2006): Self-regulation, strategic leadership and paradox in organizational change, in: Journal of Organizational Change Management, Vol. 19, Issue 4, pp. 457-470.

Teece, D. J. (1984): Economic Analysis and Strategic Management, in: California Management Review, Vol. 26, No. 3, pp. 87-110.

Teece, D. J. (1990a): Contributions and impediments of economic analysis to the study of strategic management, in: Fredrickson, J. W. (ed.): Perspectives on strategic management, New York et al.: Harper Business, pp. 39-81.

Teece, D. J. (1990b): Structure and organization of the natural gas industry: Differences between the United States and the Federal Republic of Germany and Implications for the Carrier Status of Pipelines, in: Energy Journal, Vol. 11, Issue 3, pp. 1-25.

Teece, D. J./ Rumelt, R. P./ Schendel, D. (1991): Strategic Management and Economics, in: Strategic Management Journal, Vol. 12, pp. 5-29.

Teece, D. J./ Pisano, G./ Shuen, A. (1997): Dynamic capabilities and strategic management, in: Strategic Management Journal, Vol. 18, No. 7, pp. 509-553.

Tenbrunsel, A. E./ Wade-Benzoni, K. A./ Messick, D. M./ Bazerman, M. H. (2000): Understanding the Influence of Environmental Standards on Judgments and Choices, in: Academy of Management Journal, Vol. 43, No. 5, pp. 854-866.

Teng, B. (2005): The Emergence and Popularization of Strategic Alliances: Institutional and Entrepreneurial Views, in: International Entrepreneurship and Management Journal, Vol. 1, pp. 61-82.

Terreberry, S. (1968): The Evolution of Organizational Environments, in: Administrative Science Quarterly, Vol. 12, No. 4, pp. 590-613.

Thibault, B. (2007): La fusion Suez-GDF est dangereuse pour la France, in: Le Figaro, 15 October 2007, http://www.lefigaro.fr/debats/2006/09/04/01005-20060904ARTFIG90274-la_fusion_suez_gdf_est_dangereuse_pour_la_france.php, 04.12.09.

Thibaut, M. (2010): Briten verteufeln Deregulierung, in: Handelsblatt, 4 February 2010, http://www.handelsblatt.com/politik/international/energiesicherheit-briten-verteufeln-deregulierung;2524330, 04.02.2010.

Thielen, W. (1999): Brenngas im Energiemarkt; Vorkommen, Gewinnung und Aufbereitung, in: Cerbe, G. (ed.): Grundlagen der Gastechnik, München/ Wien: Carl Hanser Verlag, pp. 1-36.

Thomas, P. S. (1974): Environmental Analysis for Corporate Planning, in: Business Horizons, Vol. 17, Issue 5, pp. 27-38.

Thomas, S. (2001): Corporate Strategies in the British Electricity Supply Industry, in: Midttun, A. (ed.): European Energy Industry Business Strategies, Oxford et al.: Elsevier Science Ltd., pp. 75-150.

Thomas, G. M./ Meyer, J. W. (1984): The Expansion of the State, in: Annual Review of Sociology, No. 10, pp. 461-482.

Thompson, J. D. (1967): Organizations in action, New York et al.: McGraw-Hill.

Thompson, J. D./ McEwen, W. J. (1958): Organizational Goals and Environment, in: American Sociological Review, Vol. 23, No. 1, pp. 23-31.

Thornton, P. H. (2002): The rise of the corporation in a craft industry: Conflict and conformity in institutional logics, in: Academy of Management Journal, Vol. 45, pp. 81-101.

Thornton, P. H./ Jones, C./ Kury, K. (2005): Institutional Logics and Institutional Change in Organizations: Transformation in Accounting, Architecture, and Publishing, Paper presented at the annual meeting of the American Sociological Association, 25 May 2009, http://www.allacademic.com/meta/p23018_index.html.

Thrän, D./ Seiffert, M./ Müller-Langer, F./ Plättner, A./ Vogel, A. (2007): Möglichkeiten einer europäischen Biogaseinspeisungsstrategie, Leipzig: Institut für Energetik und Umwelt gGmbH.

Thumann, M. (2006): Gerdprom macht's möglich, in: Die Zeit, http://www.zeit.de/2006/15/Gerdprom_macht's_moeglich, 30.05.2008.

Thumann, M. (2008): Machiavelli für Gas und Öl, in: Die Zeit, No. 2, p. 19.

Tolbert, P. S. (1985): Institutional environments and resource dependence: sources of administrative structure in institutions of higher education, in: Administrative Science Quarterly, Vol. 30, pp. 1-13.

Tolbert, P. S./ Zucker, L. G. (1983): Institutional Sources of Change in the Formal Structure of Organizations: The Diffusion of Civil Service Reform, 1880-1935, in: Administrative Science Quarterly, No. 30, pp. 22-39.

Tolbert, P. S./ Zucker, L. G. (1996): The institutionalization of institutional theory, in: Clegg, S.R./ Hardy, C./ Nord, W. R. (eds.): Handbook of Organization Studies, London: Sage, pp. 175-190.

Tolmasquim, M. T./ Pires, J. C. L./ Rosa, L. P. (2001): New Strategies for Power Companies in Brazil, in: Midttun, A. (ed.): European Energy Industry Business Strategies, Oxford et al.: Elsevier Science Ltd., pp. 337-374.

Tosi, H. L./ Carroll, S. J. (1976): Management: Contingencies, Structure, and Process, Chicago (IL): St. Clair Press.

Townley, B. (2002): The role of competing rationalities in institutional change, in: Academy of Management Journal, Vol. 45, pp. 163-179.

Traufetter, G. (2007): Menetekel am Ozeangrund, in: Der Spiegel, No. 50, pp. 144-146.

Tregoe, B. B./ Zimmerman, J. W. (1980): Top Management Strategy. What it is and how to make it work, New York: Simon and Schuster.

Trimm, D. (2005): The challenges in converting remote natural gas to valuable products, in: Derouane, E. G./ Parmon, V./ Lemos, F./ Ribeiro, F. R. (eds.): Sustainable Strategies for the Upgrading of Natural Gas: Fundamentals, Challenges, and Opportunities, Dordrecht (NL): Springer, pp. 125-136.

Tripsas, M. (1997): Unraveling the process of creative destruction: complementary assets and incumbent survival in the typesetter industry, in: Strategic Management Journal, Vol. 18, Issue S1, pp. 119-142.

Trittin, J. (2010): Der Großmeister, in: Handelsblatt, No. 249, pp. 36-37.

Tushman, M. L./ Anderson, P. (1986): Technological Discontinuities and Organizational Environments, in: Administrative Science Quarterly, Vol. 31, No. 3, pp. 439-464.

Tushman, M. L./ Romanelli, E. (1985): Organizational evolution: A metamorphosis model of convergerce and reorientation, in: Cummings, L. L./ Staw, B. M. (eds.), Research in Organizational Behavior, Vol. 7, Greenwich, CT: JAI Press, pp. 171-222.

Tykvová, T. (2006): Neue M&A-Welle in der europäischen Energiebranche?, in: M&A Report, October 2006, Mannheim/ Frankfurt am Main: Zentrum für Europäische Wirtschaftsforschung GmbH/ Bureau van Dijk Electronic Publishing.

Umbach, F. (2005): Europäische und deutsche Energieversorgungssicherheit am Scheideweg, in: Energiewirtschaftliche Tagesfragen, Vol. 55, Issue 9, pp. 629-639.

United Nations (1992): United Nations Framework Convention on Climate Change, New York: United Nations.

United Nations (1997): Kyoto Protocol to the United Nations Framework Convention on Climate Change, Kyoto: United Nations.

Usunier, J.-C. (1998): International and Cross-Cultural Management Research, London: Sage.

Uyterlinde, M. A./ Martinus, G. H./ van Thuijl, E. (eds.) (2004): Energy trends for Europe in a global perspective – Baseline projections by twelve E3-models in the CASCADE MINTS project, ECN-C—04-094, Energy research Centre of the Netherlands, December 2004.

van Bohemen, A. (2008): Oil and Gas Security, Presentation held for 'Seminar on Security of Energy Supplies: A role of NATO and other International Organisations?' on 17 January 2008 in Brussels, International Energy Agency.

Van de Ven, A. (1992): Suggestions for studying strategy process: a research note, in: Strategic Management Journal, Vol. 13, pp. 169-188.

Van de Ven, A. H./ Hargrave, T. J. (2004): Social, Technical, and Institutional Change: a literature review and synthesis, in: Poole, M. S./ Van de Ven, A. H. (eds.): Handbook of Organizational Change and Innovation, Oxford / New York: Oxford University Press, pp. 259-303.

Van Maanen, J. (1983): Reclaiming qualitative methods for organizational research: a preface, in: Van Maanen, J. (ed.): Qualitative Methodology, Beverly Hills, CA: Sage, pp. 9-18.

Vaughan, D./ Scott, P./ Mickle, C. (1997): Environment : What Do Europe's Boardrooms Think?, in: Ledgerwood, G. (ed.): Greening the Boardroom : Corporate Environmental Governance and Business Sustainability, Sheffield (England): Greenleaf Publishing, pp. 165-173.

VEBA (1998): Annual Report 1997, Düsseldorf: VEBA AG.

VEBA (1999): Annual Report 1998, Düsseldorf: VEBA AG.

VEBA (2000): Annual Report 1999, Düsseldorf: VEBA AG.

VEBA (2001): Annual Report 2000, Düsseldorf: VEBA AG.

Védrine, J. C. (2005): Natural gas as feedstock, in: Derouane, E. G./ Parmon, V./ Lemos, F./ Ribeiro, F. R. (eds.): Sustainable Strategies for the Upgrading of Natural Gas: Fundamentals, Challenges, and Opportunities, Dordrecht (NL): Springer, pp. 403-413.

Venkatraman, N./ Prescott, J. E. (1990): Environment-Strategy Coalignment: An Empirical Test of its Performance Implications, in: Strategic Management Journal, Vol. 11, No. 1, pp. 1-23.

Venkatraman, N./ Loh, L./ Koh, J. (1994): The Adoption of Corporate Governance Mechanisms: A Test of Competing Diffusion Models, in: Management Science, Vol. 40, No. 4, pp. 496-507.

Verde, S. (2008): Everybody merges with somebody – The wave of M&As in the energy industry and the EU merger policy, in: Energy Policy, No. 36, pp. 1125-1133.

Vernon, R. (1994): Research on transnational corporations: shedding old paradigms, in: Transnational Corporations, Vol. 3, Issue 1, pp. 137-156.

VIAG (2000): Annual Report 1999, Munich: VIAG AG.

Viedt, A. (2005): Kundenbindung durch Markenbindung im Energiemarkt, in: Energiewirtschaftliche Tagesfragen, Vol. 55, Issue 9, pp. 626-628.

Viellechner, O./ Wolf, T. (2010): Incumbent Inertia Upon Disruptive Change in the Airline Industry: Causal Factors For Routine Rigidity and Top Management Moderstors, HHL Working Paper No. 100.

VIK (2007): E.ON Ruhrgas Choice Market, VIK-Brennstoff-Barometer, No. 2, Essen: Verband der Industriellen Energie- und Kraftwirtschaft e.V., pp. 29-30.

Volberda, H. W. (2005): Rethinking the Strategy Process: A Co-evolutionary Approach, in: Floyd, S. W./ Roos, J./ Jacobs, C. D./ Kellermanns, F. W. (eds.): Innovating Strategy Process, Malden (MA) et al.: Blackwell Publishing, pp. 81-87.

Volberda, H. W./ van den Bosch, F. A. J./ Flier, B./ Gedajlovic E. R. (2001): Following the Herd or Not? Patterns of Renewal in the Netherlands and the UK, in: Long Range Planning, Vol. 34, Issue 2, pp. 209-229.

von Bechtolsheim, M./ Meckenstock, L./ Overdiek, L. (2009): Erfolgreich „flexibel" mit Gasspeichern, in: Energy and Utilities Viewpoint, Arthur D. Little

von Bertalanffy, L. (1973): General System Theory: Foundations, Development, Applications, New York: G. Braziller.

von der Weiden, S. (2007): Biogas soll den Wärmemarkt beleben, in: Handelsblatt, 29 October 2007, No. 208, p. B3.

von Hirschhausen, C./ Beckers, T./ Brenck, A. (2004): Infrastructure regulation and investment for the long-term – an introduction, in: Utilities Policy, No. 12, pp. 203-210.

von Hirschhausen, C./ Neumann, A./ Weigt, H. (2007): Entflechtung als Instrument einer aktiven Wettbewerbspolitik: Funktionsweise und Lehren aus internationalen Erfahrungen, Electricity Markets Working Papers, WP-EM-25.

Vorholz, F. (2007a): Die Welt ist noch zu retten, in: Die Zeit, No. 11, pp. 23-26.

Vorholz, F. (2007b): Klimaschutz aus der Leitung, in: Die Zeit, No. 17, pp. 26-27.

Voss, I. (2006): M&A-Jahr 2005 in Deutschland: Deutlicher Aufschwung, in: M&A Review, No. 1, pp. 1-7.

Voswinkel, J. (2008): Alle Rohre führen nach Moskau, in: Die Zeit, No. 2, p. 21.

VSG (1993): Erdgas-Transport, http://www.erdgas.ch/fileadmin/authors/pdf/bas2_93_d.pdf, 07.09.2006.

VSG (1996): Die Aufbereitung von Erdgas, Verband der Schweizerischen Gasindustrie VSG.

Waeterloos, C. (1997): The competitiveness of nuclear power in relation to natural gas, in: European Commission: Energy in Europe, July 1997, pp. 13-14.

Walgenbach, P. (1995): Institutionalistische Ansätze in der Organisationstheorie, in: Kieser, A. (ed.): Organisationstheorien, Stuttgart et. al.: Kohlhammer, pp. 269-301.

Walgenbach, P. (2002): Neoinstitutionalistische Organisationstheorie – State of Art und Entwicklungslinien, in: Managementforschung, Vol. 12, pp. 155-202.

Walgenbach, P. (2006): Neoinstitutionalistische Ansätze in der Organisationstheorie, in: Kieser, A./ Ebers, M. (eds.): Organisationstheorien, 6th edition, Stuttgart: Kohlhammer.

Walgenbach, P./ Meyer, R. E. (2008): Neoinstitutionalistische Organisationstheorie, Stuttgart: Kohlhammer.

Walker, O. C./ Boyd, H. W./ Mullins, J./ Larréché, J.-C. (2003): Marketing Strategy: Planning and Implementation, Homewood (IL): Irwin/ McGraw-Hill.

WCED (1987): Our Common Future, Oxford: Oxford University Press.

Weber, H./ Schuler, M. (2004): Wege zu rentabilitätsorientiertem Wachstum - Der Aufbau neuer Geschäftsfelder im EVU, in: Energiewirtschaftliche Tagesfragen, Vol. 54, No. 11, pp. 736-738.

Wehrmann, W. (1958): Die Entwicklung der deutschen Gasversorgung von ihren Anfängen bis zum Ende des 19. Jahrhunderts, Köln.

Weick, K. (1977): Organization Design: Organizations as Self-Designing Systems, in: Organizational Dynamics, Vol. 6, No. 2, pp. 30-46.

Weick, K. E. (1979): The social psychology of organizing, 2nd edition, Reading (MA) et al.: Addison-Wesley.

Weidemann, J. (2002): Ruhrgas-Einstieg bei SPP setzt RWE unter Druck, in: Handelsblatt, 14 March 2002, http://www.handelsblatt.com/archiv/ruhrgas-einstieg-bei-spp-setzt-rwe-unter-druck;511307, 31.08.09.

Weil, S. (2009): Kommunen und Stadtwerke als Akteure einer nachhaltigen Energiepolitik, 4. Deutscher Energiekongress, 7 September 2009.

Weinert, S./ Meyer, K. (2007): Cross-Border-Akquisitionen: Ein Einblick in zentrale Trends, in: Mergers and Acquisitions Review, No. 1, pp. 14-20.

Welch, D. E./ Welch, L. (2004). Getting published: The last great hurdle?, in: Marschan-Piekkari, R./ Welch, C. (eds.): Handbook of Qualitative Research Methods for International Business, Cheltenham (UK)/ Northampton (USA): Edward Elgar, pp. 551-569.

Wellmer, F.-W./ Dalheimer, M. (2000): Rohstoffe und Energie-Auswirkungen der Globalisierung auf die Versorgungssicherheit Deutschlands, Forum, No. 31, Köln: Institut der deutschen Wirtschaft Köln.

Wernerfelt, B. (1984): A resource-based view of the firm, in: Strategic Management Journal, Vol. 5, pp. 171-180.

Werthschulte, S./ Bruns, M./ Paatz, O. (2007): Stürmische Zeiten im Gasmarkt - Implikationen der Entscheidung zum Zweivertragsmodell für Händler und Netzbetreiber, in: Energiewirtschaftliche Tagesfragen, Vol. 57, No. 1/2, pp. 48-50.

Westney, D. E. (1993): Cross Pacific Internationalization of R&D by U.S. and Japanese Firms, in: R&D Management, Vol. 23, No. 4, pp. 171-183.

Weston, J. F./ Johnson, B. A./ Siu, J. A. (1999): Mergers and restructuring in the world oil industry, in: Journal of Energy Finance and Development, Vol. 4, No. 2, pp. 149-183.

Wetzel, D. (2006): RWE weist Vorwürfe zu Strategie-Fehler zurück, in: Welt Online, 20 October 2006, http://www.welt.de/print-welt/article88482/RWE_weist_Vorwuerfe_zu_Strategie_Fehler_zurueck.html, 17.06.2007.

Whan, E. (2007): Measuring and Monitoring Global Consumer Progress Towards Sustainable Consumption: Qualitative Interviews, National Geographic Society.

Whittington, R. (1992): Putting Giddens into action: Social systems and managerial agency, in: Journal of Management Studies, Vol. 29, pp. 693-712.

Wiegand, M. (2005): Investoren verzweifelt gesucht, in: Frankfurter Allgemeine Zeitung, No. 112, p. B2.

Wiegand, M./ Krüger, D. (2004): National Champions to Global Giants? A Review of Utilities Mergers & Acquisitions, PricewaterhouseCoopers, April 2004.

Wigand, R./ Picot, A./ Reichwald, R. (1999): Information, Organization and Management: Expanding markets and corporate boundaries, 3rd edition, Chichester et al.: John Wiley & Sons, pp. 97-160.

Wildhagen, A. (2005): Für die Katz, in: WirtschaftsWoche, 8 December 2005, http://www.wiwo.de/unternehmen-maerkte/bald-nur-noch-ein-riesenstadtwerk-123139/2/, 03.01.2006.

Wildhagen, A. (2007): Nerven strapaziert, in: WirtschaftsWoche, No. 42, pp. 82-83.

Wildhagen, A. (2008): E.On-Ruhrgas-Chef Reutersberg: Der Mann für das Schnelle, in: WirtschaftsWoche, 27 May 2008, http://www.wiwo.de/unternehmen/portraet-e-on-ruhrgas-chef-reutersberg-der-mann-fuer-das-schnelle/5429478.html, 30.05.2008.

Wildhagen, A. (2009a): „Unsere Fantasie ist groß“, in: WirtschaftsWoche, No. 19, pp. 102-104.

Wildhagen, A. (2009b): Eine Frage der Netze, in: WirtschaftsWoche, No. 45, pp. 58-59.

Wildhagen, A. (2010a): Falsches Etikett, in: WirtschaftsWoche, No. 23, pp. 50-51.

Wildhagen, A. (2010b): Warum bei E.on, RWE und Co. die Nerven blank liegen, in: Zeit Online, 26 November 2010, http://www.zeit.de/wirtschaft/unternehmen/2010-11/energie-Energiekonzerne-Management, 04.01.2011.

Wildhagen, A. (2010c): Knallhart ran, in: WirtschaftsWoche, No. 21, pp. 54-57.

Wildhagen, A./ Dürand, D. (2010): Nirgendwo erprobt, in: WirtschaftsWoche, No. 1/2, pp. 56-57.

Wildhagen, A./ Müller, S. (2006): Macht der Juristen, in: WirtschaftsWoche, 7 August 2006, pp. 46-49.

Wildhagen, A./ Schuermann, C./ Bläske, G. (2007): Pariser Großformat, in: WirtschaftsWoche, No. 37, pp. 74-80.

Willershausen, F. (2010): Putin greift Oligarchen an und lobt Eon, in: Handelsblatt, 25 February 2010, http://www.handelsblatt.com/politik/international/putin-greift-oligarchen-an-und-lobt-eon/3377436.html, 22.10.2010.

Williamson, O. E. (1975): Markets and hierarchies: Analysis and antitrust implication, New York/ London: Free Press.

Williamson, O. E. (1979): Transaction-cost economics: The governance of contractual relations, in: Journal of Law and Economics, No. 22, pp. 233-261.

Williamson, O. E. (1981): The Modern Corporation: Origins, Evolution, Attributes, in: Journal of Economic Literature, Vol. 19, No. 4, pp. 1537-1568.

Williamson, O. E. (1985): The economic institutions of capitalism, New York/ London: Free Press.

Williamson, O. E. (1991): Comparative Economic Organization: The Analysis of Discrete Structural Alternatives, in: Administrative Science Quarterly, No. 36, pp. 269-296.

Williamson, O. E. (1993): The Economic Analysis of Institutions and Organisations - in General and with Respect to Country Studies, in: OECD Economics Department Working Papers 133, OECD Publishing.

Williamson, O. E. (1994): Strategizing, Economizing, and Economic Organization, in: Rumelt, R. (ed.): Fundamental issues in strategy, Harvard Business School Press, pp. 361-401.

Williamson, O. E. (1996): Efficiency, power, authority and economic organization, in: Groenewegen, J. (ed.): Transaction Costs Economics and Beyond, Dordrecht: Kluwer.

Williamson, O. E. (2000): The new institutional economics: Taking stock, looking ahead, in: Journal of Economic Literature, Vol. 38, No. 3, pp. 595-613.

Williamson, P. (1999): Strategy as options on the future, Sloan Management Review, Vol. 40, No. 3, pp. 117-126.

Wirtz, B. W./ Mathieu, A./ Schilke, O. (2007): Strategy in High-Velocity Environments, in: Long Range Planning, Vol. 40, No. 3, pp. 295-313.

Wischnevsky, J. D. (2004): Change as the winds change: The impact of organizational transformation on firm survival in a shifting environment, in: Organizational Analysis, Vol. 12, No. 4, pp. 361-377.

Witt, M./ Lewin, A. Y. (2007): Outward Foreign Direct Investment as Escape Response to Home Country Institutional Constraints, in: Journal of International Business Studies, Vol. 38, No. 4, pp. 579-594.

Wolf, H. G./ Remmler, O./ Pockrandt, T. (2007): Wie entwickelt sich der europäische Energiemarkt? in: Energie & Management, 15 November 2007, p. 31.

Wölfer, W./ Leunig, S. (2004): Well Provided for with the Largest Natural Gas Storage in Western Europe, in: Oil Gas European Magazine, No. 3, pp. 116-123.

Woodward, J. (1965): Industrial organization: Theory and practice. New York: Oxford University Press.

World Energy Council (ed.) (1992): Energy Dictionary, 1992.

Wörmann, B. (2006): Italien diskutiert Fusion der Energiekonzerne Eni und Enel, in: Die Welt, 2 March 2006, p. 15.

Wright, L. L. (1996): Qualitative international management research, in: Punnett, B. J./ Shenkar, O. (eds.): Handbook for International Management Research, Cambridge (MA): Blackwell, pp. 63-81.

Wright, M./ Filatotchev, I./ Hoskisson, R. E./ Peng, M. W. (2005): Strategy research in emerging economies: Challenging the conventional wisdom, in: Journal of Management Studies, Vol. 42, No. 1, pp. 1-33.

Wright, P. (2006): Gas Prices in the UK, Demand, Supply and Liberalisation, Oxford: Oxford University Press.

Wrona, T. (1999): Globalisierung und Strategien der vertikalen Integration: Analyse, empirische Befunde, Gestaltungsoptionen, Wiesbaden: Gabler Verlag.

Wuppertal Institut/ Institut für Energetik und Umwelt GmbH/ Fraunhofer Institut Umwelt-, Sicherheits-, Energietechnik (UMSICHT) (2006): Analyse und Bewertung der Nutzungsmöglichkeiten von Biomasse, Wuppertal et al.

Wüst, C. (2007): Anstich im Paradies, in: Der Spiegel, No. 51, pp. 148-150.

Yin, R. K. (1984): Case Study Research: Design and Methods, Beverly Hills (CA): Sage Publications.

Yin, R. K. (1994): Case Study Research: Design and Methods, 2nd edition, Beverly Hills (CA): Sage Publishing.

Yin, R. K. (2003a): Case study research, design and methods, 3rd edition, Thousand Oaks: Sage.

Yin, R. K. (2003b): Applications of case study research, 2nd edition, Thousand Oaks: Sage

Yip, G. S. (1982): Barriers to entry: a corporate perspective, Lexicon (MA): Lexicon Books.

Zajac, E. J./ Shortell, S. M. (1989): Changing generic strategies: Likelihood, direction, and performance implications, in: Strategic Management Journal, Vol. 10, No. 5, pp. 413-430.

Zalan, T./ Lewis, G. (2005): Writing about methods in qualitative Research: Towards a more transparent approach, in: Marshan-Piekkari, R./ Welch, C. (eds.): Handbook of Qualitative Research Methods for International Business Edward Elgar, pp. 507-528.

ZEW (2003): Eon-Ruhrgas-Fusion: Durchbruch auch für Wettbewerber und Konsumenten?, Mannheim: Zentrum für Europäische Wirtschaftsforschung, September 2003, pp. I-II.

Zimmer, M./ Lang, C./ Schwarz, H.-G. (2007): Marktstruktur und Konzentration in der deutschen Stromerzeugung, in: e/m/w, No. 2, pp. 42-48.

Zimmerman, M. A./ Zeitz, G. J. (2002): Beyond Survival: Achieving New Venture Growth by Building Legitimacy, in: Academy of Management Review, Vol. 27, No. 3, pp. 414-431.

zu Knyphausen-Aufseß, D. (2000): Globalisierung als Herausforderung der Betriebswirtschaftslehre, Wiesbaden: Gabler.

Zucker, L. G. (1977): The Role of Institutionalization in Cultural Persistence, in: American Sociological Review, Vol. 42, No. 5, pp. 726-743.

Zucker, L. G. (1983): Organizations as institutions, in: Bacharach, S. B. (ed.): Research in the sociology of organizations, Greenwich (CT): JAI Press, pp. 1-47.

Zucker, L. G. (1987): Institutional Theories of Organizations, in: Annual Review of Sociology, Vol. 13, pp. 443-464.