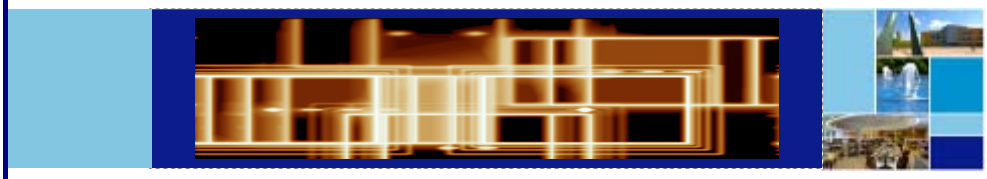

Vertical and Horizontal Integration in the Utilities Sector: The Case of RWE

Philip R. Walsh
School of Management, University of Surrey, Guildford, Surrey, GU2 7XH, U.K.

Emanuela Todeva
School of Management, University of Surrey, Guildford, Surrey, GU2 7XH, U.K.

UniS
University of Surrey
School of Management

Vertical and Horizontal Integration in the Utilities Sector: The Case of RWE

Philip R. Walsh
School of Management, University of Surrey, Guildford, Surrey, GU2 7XH, U.K.

Emanuela Todeva
School of Management, University of Surrey, Guildford, Surrey, GU2 7XH, U.K.

It is the evening of October 24th, 2005 and the staff representatives on Rheinisch-Westfälisches Elektrizitätswerk Aktiengesellschaft's ("RWE") supervisory board are meeting with the RWE's chief executive Harry Roels to discuss the options being considered in regards to the possible divestment of RWE groups water utility investments. Herr Roels had previously met with the non-executive members of the supervisory board and now it was time to set the stage for a final decision to be submitted to the entire board in a few weeks. Of particular importance was the question of dealing with their ownership of the Thames Water business. Thames Water was RWE's water division which included not only Thames Water, the largest water company in the United Kingdom, but also American Water, a U.S. based water business serving 17 million customers across 27 states as well as owning water assets around the globe. RWE had previously indicated that it planned to sell its water businesses in Australia, Chile, Spain, Thailand and the United Arab Emirates.

The acquisition and investment in Thames Water and American Water in 2000 and 2001 respectively was the completion of a electricity-gas-water network expansion by RWE under the direction of Herr Roel's predecessor, Dietmar Kuhnt. RWE had expended close to 17 billion Euros in investing in their global expansion into the water business and the sudden interest in divesting these assets marked a significant reversal in strategy for the company. Unfortunately, by 2005 the value of these businesses had not risen substantially since RWE bought them.

For Herr Roels, and the supervisory board at RWE, significant strategic decisions were required. However, key questions needed to be answered.

1. Why the sudden need to divest the water business assets?
2. Was the original utility network expansion strategy of RWE a mistake? Or was there in an issue with the manner in which RWE implemented its strategy?
3. What should their next step be?

As one article announced "…an exit from Thames Water and American Water would be the latest nail in the coffin for the multi-continent, multi-utility model, enthusiastically pursued by chief executives in the 1990s."

1. Introduction

The purpose of this case is to undertake a review of the effect of deregulation on the energy marketplace, the strategic response of firms to this environmental driver and how the network of a firm changes as part of that strategic response. The analysis is undertaken in the context of Rheinisch-Westfälisches Elektrizitätswerk Aktiengesellschaft (RWE), where the internationalisation of the firm post deregulation is assessed via the vertical and horizontal restructuring of the firm and its performance during the same period.

The liberalization of markets and the open-access directives for third party competition implemented in Europe has provided incentives during the 80's and 90's for vertical and horizontal integration that has resulted in the introduction of new energy suppliers and the re-structuring of incumbent energy suppliers. Incumbent energy suppliers, like RWE, have undergone significant restructuring in response to the deregulation, with the creation of parent holding companies and expanded networks of subsidiaries and affiliates. The purpose of this restructuring has been to capture added value created by the process of market liberalization and to capitalise on the synergies created through network expansion, or in some cases, network contraction.

As one of Europe's largest utility holding companies and energy suppliers, an analysis of RWE's network restructuring during the transition to a liberalized European energy market provides a purview of how network structures change as a result of deregulation and whether such structural changes have resulted in improved firm performance.

2. The History of RWE

In 1898, Rheinisch-Westfälisches Elektrizitätswerk Aktiengesellschaft ("RWE") was founded in the city of Essen, Germany for the purpose of building a power plant for that city. Two years later, RWE completed a 1.2 megawatt electrical generating station on the site of the Victoria Mathias coal mine and used residual steam supplied by the mine to generate electricity.

From 1906 to 1909, RWE acquired ownership in various regional tramway companies that held the right to provide power to the regional municipalities. During this same period RWE acquired two regional electric utilities and completed the construction of a 15 megawatt generating plant near Dusseldorf. In addition, RWE constructed its own gas supply network in 1909 to bypass existing infrastructure held by competing industry players and in 1914 construction began on a coal-fired power plant in the city of Bruhl that, by 1920, was the largest power plant in Europe with generating capacity of 190 megawatts. In that same year, the majority ownership of RWE came under the control of those municipalities in which it operated.

During the 1920's, RWE purchased more coal mines to ensure security of coal supply for its generating activities. It also expanded its building business in order to design and build large dams and hydro-electric plants. The first hydro-electric generating facility became operational in 1930 with an output capacity of 132 megawatts. Co-incidental to the move into hydro-electric power in southern Germany, RWE built a power transmission grid linking its coal-fired generation with its hydro-electric generation that became the basis for a future national power grid. With pre-war industrial growth in the mid to late-1930's, RWE expanded its interest in coal-fired and hydro-electric plants and by 1941 was investing in coal to gasoline technology.

During the Second World War, RWE was involved in the construction of power transmission links into Belgium, the Netherlands and France for the purpose of moving generated electricity in those countries back into Germany to support war-time industry requirements. After the war, these same links would serve to create the beginning of a European-wide interconnected electrical grid system.

Post-war, RWE was involved in the re-building of the German energy infrastructure and acquired a number of electrical generating facilities from Ruhr valley coal companies who had declined to enter the electricity market.

In 1952, RWE was the last electric utility to be released from Allied control and the company, under some of its pre-war management, began the re-construction and expansion of its existing system. By the late 1950's the company was also investing in nuclear power and in 1962 the first industrial nuclear power plant in Germany was completed with a plant capacity of 15 megawatts. A second nuclear plant, Germany's first commercial reactor, was completed in 1966. Initially sized to generate 237 megawatts, the plan was eventually expanded to 600 megawatts before closing in 1980.

This history of strategic development shows that during the first 80 years of its operations RWE focused mainly on its vertical expansion within the energy value chain on the basis of diversifying energy sources and energy-producing technologies.

3. The Market Structure of the Utilities Sector

Prior to deregulation, most energy markets were dominated by regulated companies structured vertically along functional responsibilities with core competencies and related asset investment (Fig. 1). The impact of regulation meant that asset investment and rates of return derived from those assets required the approval of the regulator. The role of the regulator was to encourage the appropriate balance between the quality of service on one hand and the cost of service on the other.

Vertical integration occurred to provide economic and technical advantages (i.e. natural gas distributors built gas transmission interconnects and underground gas storage). The benefits of this integration typically flow to the rate payer in the form of a reduced cost of service. At the same time there was little incentive for horizontal integration and the utilities in most countries represented almost separate sectors of the economy.

Governments created regulated utility markets because they believed that free enterprise is incapable of ensuring that the public interest is served (Vietor 1996). Organizations working within a regulated environment utilized strategies that enable them to operate effectively within that regulated market and the related political arena. The market structure evolved through political intervention and the strategies of the firms corresponded to that evolution.

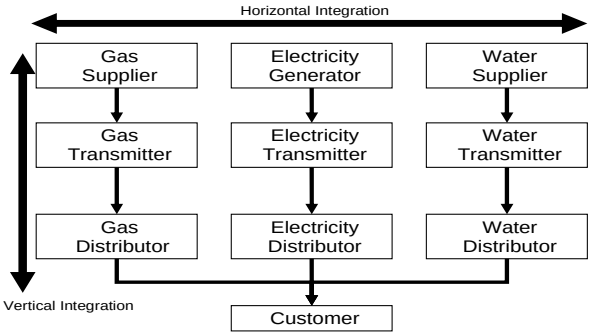

Fig. 1. Vertical Structure of Pre-Deregulation Utility Industries

Prior to deregulation, the applicable government, whether municipal, provincial or federal, developed a regulatory system that determined the structure of the market, shaped the structure and behavior of companies working within that market and generated market participants with diverse political interests. It was the role of the government appointed regulator to oversee the regulatory system and to maintain the mandate of public interest at all times. Regulation served to ensure reliable and quality service to the market. In industries, such as banking and airlines, which were regulated in such a manner as to allow for a structured competitive market, competitive advantage was limited to the quality of service (Vietor 1996). In markets where regulation kept prices above the average cost of an efficient operator, market participants drove the cost up to the regulated price by adding non-price competitive services.

4. Diversification and Vertical and Horizontal Integration of RWE before the Deregulation

In 1969, RWE invested in the petroleum products markets and during the 1970's enlarged its generating portfolio with investments in gas and oil fired plants while continuing to expand its local coal supplies as a result of regulatory encouragement. However, by 1981 the company was internationalizing its business by acquiring interests in U.S. coal and Canadian uranium. The internationalisation of the company during this period was driven mainly by aspirations to enhance its control within the electricity generation market and to enhance the vertical integration of the firm within the energy value chain.

The 1980's brought increased concerns about the environmental impact of coal-fired generation and RWE was forced to begin investing in cleaner burning technology. The company continued to diversify itself into primarily related and non-regulated businesses by developing new environmental technologies and by acquiring the petroleum and chemical interests of the German subsidiary of Texaco. In 1989, with its internal need to deal with environmental issues arising from its operation, RWE expanded into the field of environmental services, incineration and waste water management. It leveraged its internal expertise to expand internationally in the environmental services business. RWE also expanded into the nuclear technology business through the leveraging of internal expertise developed during its involvement in nuclear technology during the 1960's and 70's.

Overall, the diversification of RWE during the 80's and prior to the deregulation wave in the European energy sector, exhibits the form of vertical integration within the whole market by extension of capabilities into related services and industries and strengthening its position within the German market by building expertise and know-how in non-regulated services.

5. Deregulation of the Energy Sector

Deregulation has a major impact on the environment of a marketplace. The liberalizing of energy markets in North America and Europe has taken similar paths with the federal versus state/province paradigm similar to that of the European Union versus member states. With deregulation, the intent is to allow the market forces to establish market segmentation by allowing firms the opportunity to devise strategies that create market segments dictated by price, quality, technology or scale and scope economies (Walsh, 2005). The deregulated market is distinguished by increased volatility and unpredictable changes in the value of the competitive dimensions. Firms operating within a deregulated market are compelled to develop competitive advantage through diversification, innovation and active repositioning on the home and the host market. Unique pricing programs and variable service quality offerings have become strategic tools in a deregulated marketplace. Most

importantly, the introduction of competition provides the opportunity for firms to develop and implement strategies for competitive advantage.

The deregulation of energy markets has been occurring over the past 30 years beginning initially in North America and subsequently in Europe. The first steps took place in the United States during the 1970's when regulatory reform was being espoused by policy makers and public interest groups. Starting with industries with no apparent natural monopoly features such as trucking, railroads and airlines the popular movement towards deregulation continued into the energy industry. It was felt that the risks associated with regulatory failure far outweighed the risks associated with competitive market failure (Vietor, 1996).

In 1978, the U.S. Federal Government introduced the Natural Gas Policy Act (NPGA) to counteract the effects of severe natural gas shortages that had been blamed on the regulation of wellhead prices, and associated low drilling rates (Gurney 1998). The NPGA called for a phased reduction of wellhead price controls. Higher natural gas prices began to stimulate increased deliverability of natural gas to interstate markets by encouraging producers to move surplus natural gas within a producing state to interstate buyers who could deliver the gas to a consuming state.

In October of 1985, the Federal Energy Regulatory Commission (FERC) announced Order 436 that ensured open-access to all interstate pipelines for local distribution companies (LDCs), gas producers, marketers and resellers and large volume customers. Capacity on the pipelines would be determined on a first come - first served basis with a gradual transition from firm long term bundled supply to straight negotiated transportation service. The completion of the deregulation of interstate pipelines in the US put the emphasis on the individual states to evaluate the benefits of deregulation within the state itself, and to monitor the performance of the LDCs.

With deregulation of the pipeline transportation service complete, FERC moved to deregulate ancillary bundled services, such as storage and gathering, associated with the interstate delivery of natural gas. In 1992, Order 636 was introduced to provide for the unbundling of those ancillary services as well as prohibiting the interstate pipeline companies from owning gas for resale. Pipeline companies could create affiliated gas marketing companies but they could not discriminate between third parties and their affiliates when providing unbundled services.

The regulatory framework in Canada has been similarly split between the Federal Government and the Provincial Governments. The regulation of natural gas on the federal level is limited to the production of natural gas from federal lands and the transportation of natural gas from province to province. The production, consumption and transportation of natural gas within the provinces are subject to regulation by the provincial governments and their appointed regulatory bodies. The western Canadian provinces such as Alberta, Saskatchewan and British Columbia are net producers of natural gas while the eastern provinces such as Ontario and Quebec are net consumers.

The provincial governments in Canada and their appointed regulatory body regulate the production, delivery and transportation of natural gas within the provinces. These bodies are commonly known in Canada as Energy or Utility Review Boards. Their responsibilities are to maintain a "cost of service" regulation that approves the costs of the LDC's provision of services such as gas supply, transportation, delivery and load balancing and to fix the rate of return that the owners of the LDC are allowed in providing a monopoly function.

As opposed to Canada which has less than a dozen LDCs, there are nearly 1000 investor owned LDCs in the US with 30 of the largest LDCs having access to two or more interstate pipelines.

The success of natural gas deregulation would provide a template for FERC with regard to the development of competitive wholesale electricity markets and open access to transmission capacity. The Electricity Title of the Energy Policy Act was brought into law in 1992 and resulted in major changes in the market for electricity generation and retail access. The new law empowered FERC to order any "transmitting utility" to provide transmission for wholesale electricity transactions whenever the requested transmission could be provided consistent with maintaining reliability and would be in the public interest. The definition of "transmitting utility" includes "any electric utility, qualifying cogeneration facility, qualifying small power production facility, or Federal power marketing agency which owns or operates electric power transmission facilities which are used for the sale of electric energy at wholesale." Granting FERC authority to require wheeling of power from new independent wholesale generators began the move toward a wholesale electricity market.

In May 1996 the state of New Hampshire became the first state to enact restructuring legislation followed by Rhode Island and California. Some states such as North Carolina, Minnesota, and Alabama took a very cautious

approach to deregulating their markets while certain states (Arkansas, New Mexico, Oklahoma, and West Virginia) chose to delay or postpone retail access altogether with California eventually suspending its retail access program.

The deregulation experience of the gas and the energy sectors in Europe had its beginnings in the early 1990's coinciding with the ending of the Cold War and the lower perceived risks related to importing Russian natural gas. Combined with surpluses in power generation capacity this led to initiation by the European Union (EU) of Natural Gas and Electricity Market Directives that created rules for the supply, transmission and distribution of energy amongst EU member-states. The intent of these rules was the implementation of processes to encourage third party access and competition through the creation of guaranteed accessibility, equality, security and affordable prices for energy (Cohen and Heretier, 2000).

However, Europe finds itself, in much the same situation as the United States and Canada with its federal versus state/province regulatory structure, dealing with a myriad of distinctive jurisdictions with their own unique regulatory and market characteristics. The liberalization of the energy markets in Europe has yet to create a consistent European regulatory model and thus energy companies doing business in Europe must remain flexible in dealing with ambiguities falling out of regulatory inconsistencies between various jurisdictions.

The implementation of the EU directives varied significantly between member-states, with the UK government leading this process (Brigham and Waterson, 2003, Jamasb and Pollitt, 2005). The liberalisation of the energy market in the EU created a new landscape of competition with rapidly expanding internationalisation of EU and North American energy companies.

6. The Effect of Deregulation on the EU Energy Sector and the Restructuring of the UK Market

With the deregulation of energy markets, profit-oriented and privatized utilities began to integrate vertically and horizontally through jurisdictional and cross-jurisdictional mergers and acquisitions. Some of the most active energy companies driving the European mergers and acquisitions wave have been the already vertically integrated electricity utilities (Codognet, et. al., 2002). The result has been that more than two-thirds of the European electrical generating market is now concentrated in the hands of eight large companies (Fig. 2) with a four-firm concentration ratio at 50% (Jamasb and Pollitt, 2005).

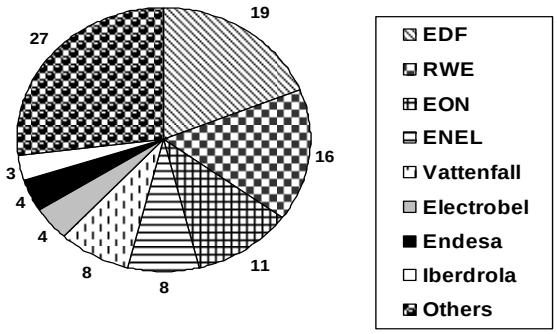

Fig. 2. Power Generation Market Share in Western Europe (in ercantage)
Source: Jamasb and Pollitt, 2005

In addition, the integrative effect of combining aspects of energy service such as generation and retail supply has created cost saving synergies that allow for additional capital investment. In the United Kingdom, the vertical integration of the energy markets have been taking place since 1998 with mergers and acquisitions resulting in increased fragmentation of the market in terms of ownership structure (see Fig. 3).

The post-liberalisation ownership structure of the UK Electricity market exhibits a good international mix of electricity suppliers with the German and French energy companies gradually taking ownership and control over the UK market through the acquisition of UK operations (Fig. 3), whereas at the same time certain UK firms such as British Gas ("BG") internationalised their operations in North America.

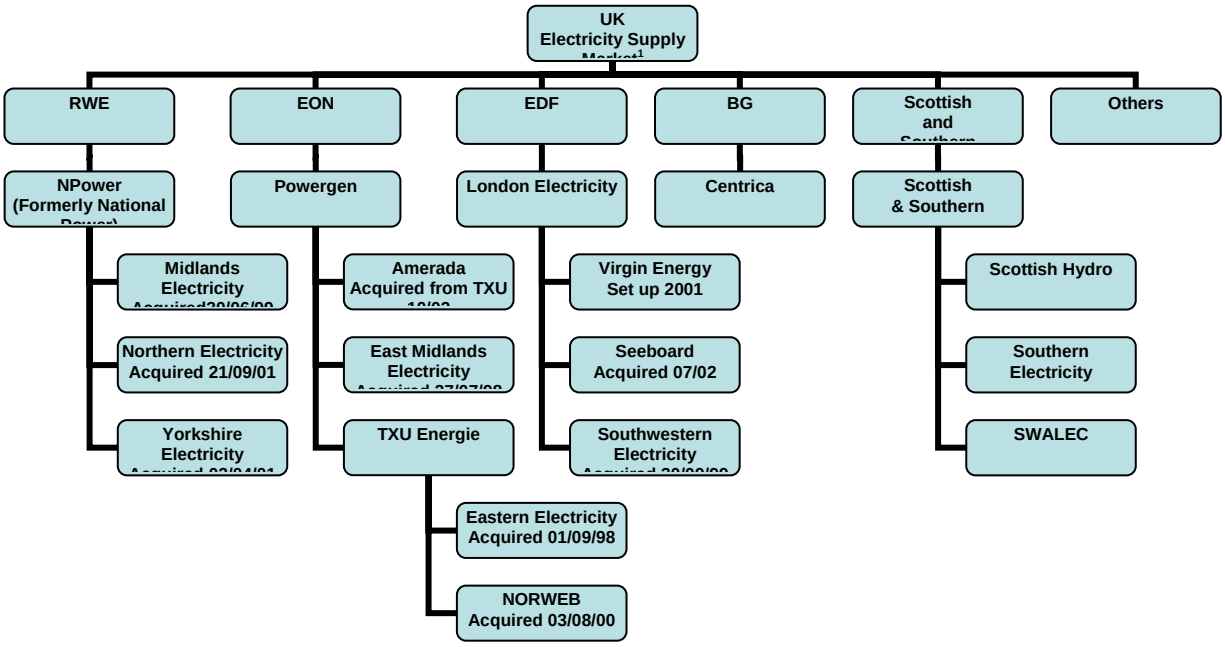

Fig. 3. Concentration of the U.K. Electricity Market (as of December 2002)
Source: Brigham and Waterson, 2003

A second move in market restructuring resulting from the impact of deregulation is the expansion horizontally of major utility holding companies across different utility markets. Commercial synergies arising out of the supply, transmission and distribution of energy sources such as natural gas, electricity, coal and oil were to be exploited through the horizontal investments across utility sectors. The liberalizing of markets allowed for the convergence of fuels in a competitive market place which creates value for those companies both operationally (i.e. gas-fired electrical generation and dual fuel capability) and financially (commodity market imperfections). The subsequent section of this paper on the expansion of the RWE business network demonstrates the positioning of the firm in multiple related energy markets through simultaneous horizontal and vertical expansion.

An additional dimension of horizontal integration across utility markets is that of water. Like natural gas and electricity utilities, water utilities have been operated by similar holding companies with similar cost of service strategies that employed similar physical assets (i.e. pipelines) and non-physical assets (i.e. billing and collecting, marketing etc.). These similarities in liberalized markets offered multiple exploitable synergies that the large utility companies attempted to reap.

7. Diversification and Integration of RWE after the Deregulation

In the 1990's, RWEs diversification strategy resulted in the creation of distinct business groups involved in energy, mining, petroleum and petrochemicals, environmental services and, construction and civil engineering (Fig. 4). With the move towards deregulation and the liberalizing of markets, RWE merged its private-sector telecommunications operations into a joint venture with VEBA AG in 1998. The inability to provide reasonable rates of return in the newly competitive telecommunications market resulted in RWE disposing of its interest in that business sector. This disposal coincided with the re-structuring of RWE in 1999. With the liberalization of European energy markets in the late 1990's, RWE focused its activities and resources on the core business of energy and energy-related services by undertaking a vertical and horizontal integration strategy of multi-utility/multi-energy/multi-market operations. In 1999, the management of RWE established a corporate structure as shown in Fig. 4 that includes its major business groups plus the creation of an industrial systems group that manages "common" systems issues amongst the other groups.

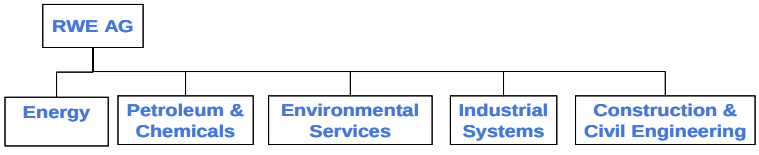

Fig. 4. RWE Business Network Structure – 1990 to 1999
Source: History of RWE, www.rwe.com

This structure demonstrates the scope of RWE competences built in their home market and prior to launching their internationalisation strategy. In response to the deregulation and liberalization of energy markets in Europe, RWE completed a series of acquisitions and a series of dispositions between 1999 and 2005. Among the major foreign acquisitions prior to this consolidation include the UK utility Thames Water PLC and the UK integrated energy company Innogy/ NPower. The first consolidation of these acquisitions took place in 2001 when RWE revised its structure in order to manage its expansion across regional jurisdictions and utility industries (Fig. 5). RWE established functional areas for its subsidiaries including the division of the energy group into distinctive gas and electricity groups. The Construction and Civil Engineering Group became non-core to its strategic plans and the petrochemicals and downstream petroleum business was disposed of. The upstream petroleum business was combined with the newly formed gas group.

This structure corresponds to the global position of RWE in different markets: third in the European energy market and in the world water supply market, second in the UK Energy market and the German Gas market, and first in the German, UK and US water supply market. Driven by high earnings growth and high stability in the water supply market, RWE continued its diversification across the electricity, gas and water supply markets, enhanced by environmental services.

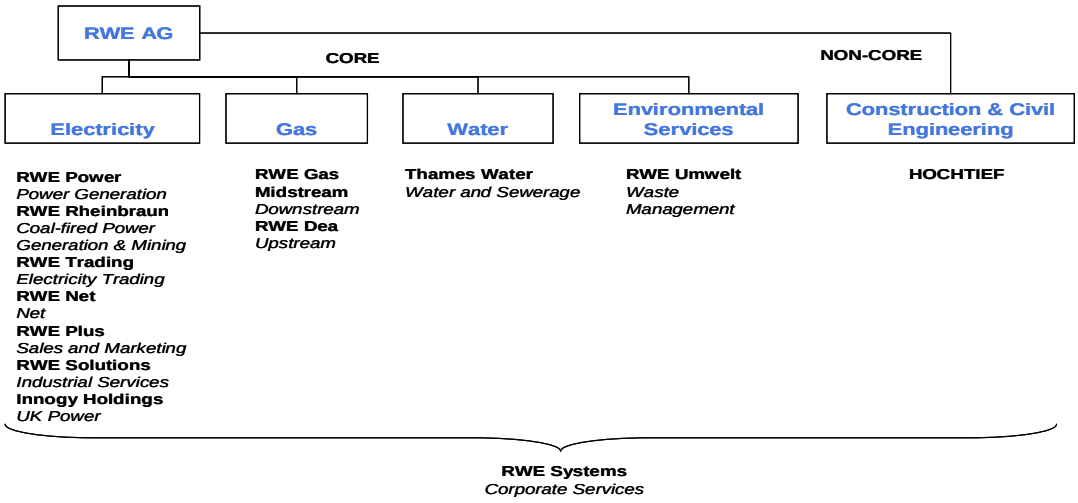

Fig. 5. RWE Business Network Structure – 2001
Source: RWE 2001 Annual Report

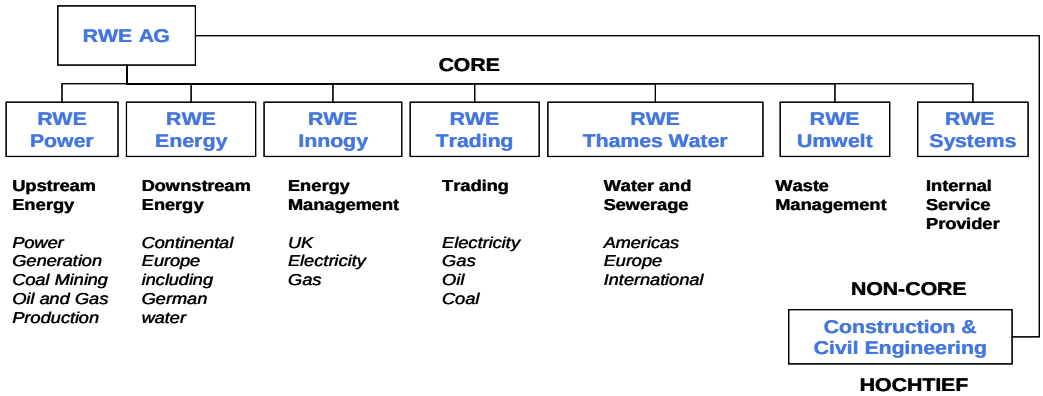

Fig. 6. RWE Business Network Structure – 2003
Source: RWE 2003 Annual Report

By 2003 (Fig. 6) the company had formalized its functional areas into distinct operating companies with the U.K. acquisitions managing the international expansion strategy and the electrical group becoming the power group with the addition of the upstream petroleum business. This strategic realignment, and the formation of a trading company to take advantage of the convergence of fuel types and the growth of commodity and related financial trading activity, was consistent with the increase in natural gas-fired power generation and the dual fuel capability of many power plants.

The structure of the RWE network in 2003 demonstrates that the core competencies of the firm span across multiple markets and multiple value chains, and that the firm is reaping synergies from operations across all utility sectors. The internationalisation strategy of RWE is applied by all core business segments to its vertically and horizontally integrated business network.

The strategic intent of RWE was to maximize corporate value through the expansion of its business networks in key strategic functional areas while reducing its business networks in non-strategic areas. Today, RWE has focused its activities even further with the disposal of its non-core businesses and its environmental services companies (Fig. 7).

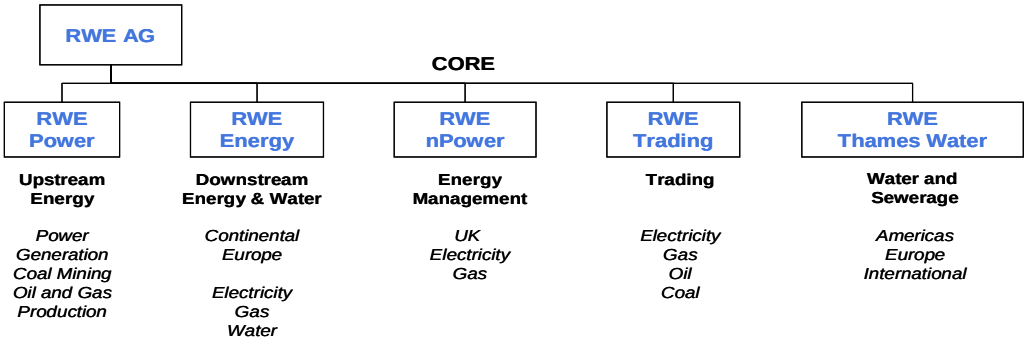

Fig. 7. RWE Business Network Structure – 2005
Source: RWE May 2005 Corporate Update

8. Internationalisation of the Core Power and Energy Business Segments of the Group

For the purpose of illustrating the international expansion of RWEs network structure, only two of the business units present in 2005 are considered and reflected upon retrospectively - its core energy group which combined the upstream power and the downstream electricity and gas groups. By 2005, the network structures of RWE's power (Fig. 8) and energy (Fig. 9) groups had expanded greatly, signifying the vertical and horizontal integration strategy undertaken by the company and implemented through the foreign and domestic acquisition of, or investment in new subsidiaries (RWE, 2005). These subsidiaries included regulated and non-regulated businesses with related synergies and spread across new foreign markets (Fig. 8).

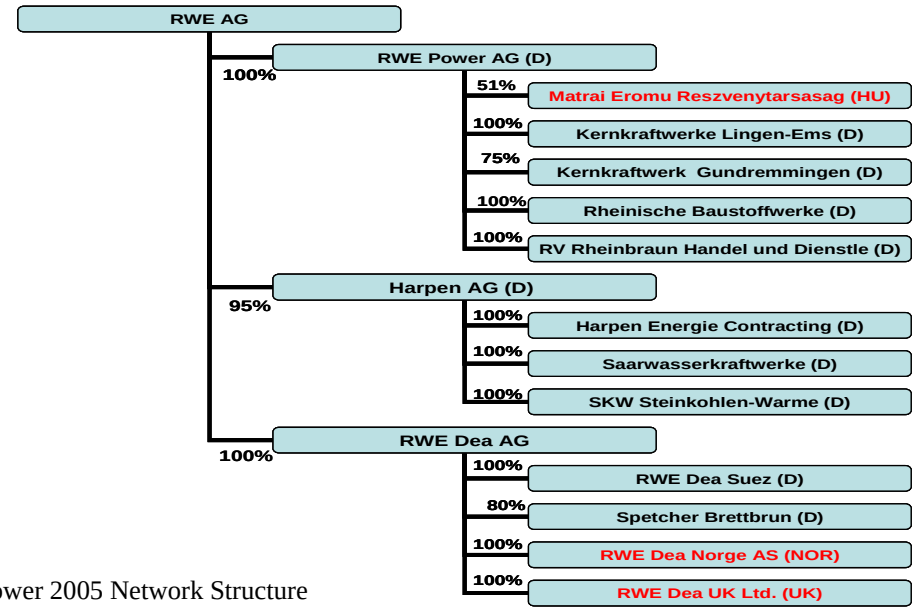

Fig. 8. RWE Power 2005 Network Structure
Source: RWE 2004 Annual Report
Note: International operations in RED

In addition, RWE has expanded its business network to include energy trading in the global markets (RWE Trading), water and sewerage outside of Germany (RWE Thames Water) and, retail and wholesale energy in the United Kingdom (NPower).

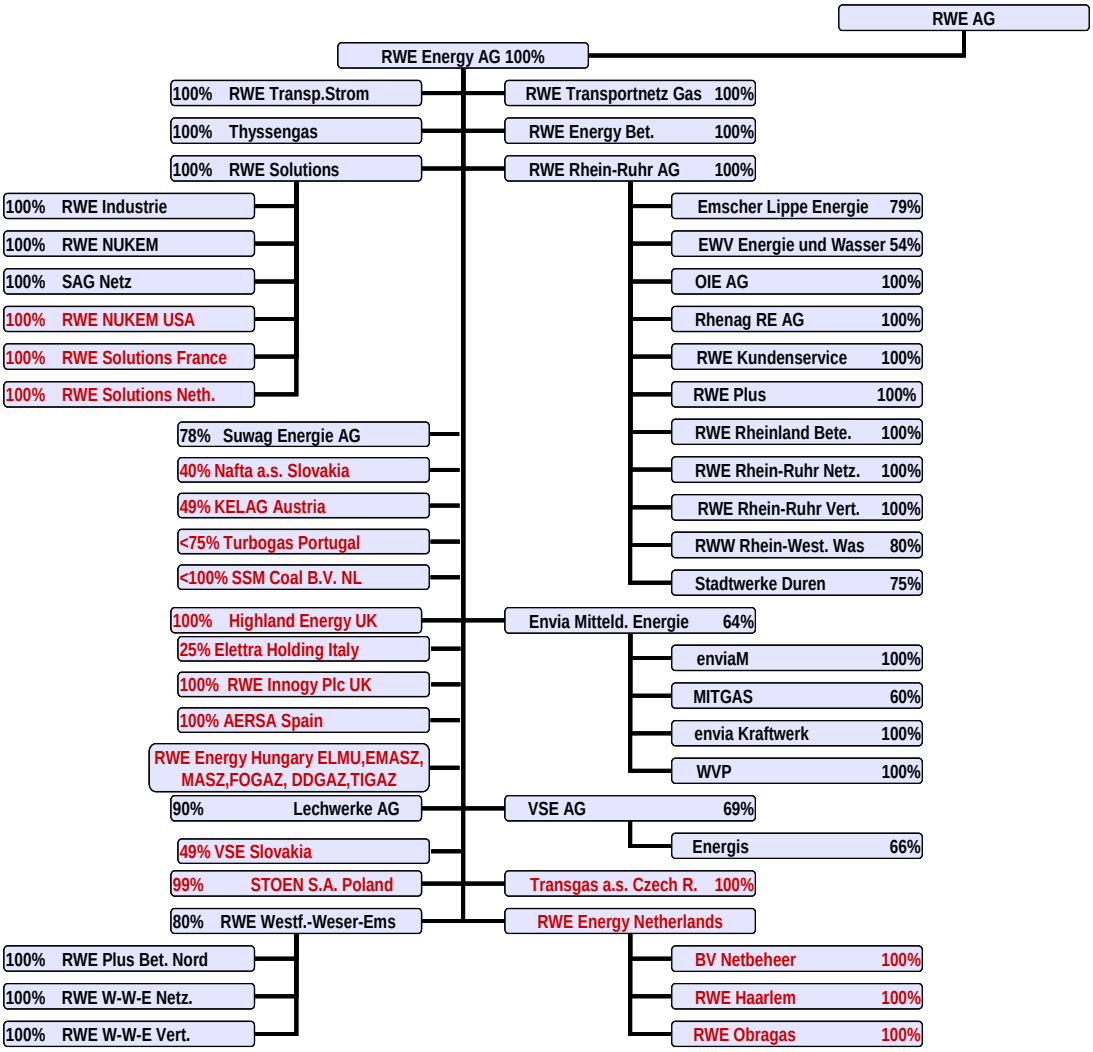

Fig. 9. RWE Energy 2005 Network Structure
Source: RWE 2004 Annual Report
Note: International operations in RED

The structure of the upstream and the downstream energy of RWE by 2005 shows significant exposure to competition in the European market, as well as seeking synergies at regional level through acquisitions in Central and Eastern Europe and in Netherlands. The structure of ownership in Fig. 9. shows also that RWE has experimented with smaller shareholdings and more diluted control via ownership wrights.

9. Evaluation of the Impact of International Strategic Positioning of RWE on Firm Performance

In determining whether or not the expansion of its networks has improved the performance of RWE, an analysis of the following key performance indicators was undertaken: Return on Equity (ROE), Cash flow per Non-Current Assets (CPNCA) and Cash Flow per Employee (CFPE). The measure of each was taken over the period before, during and after (1996 to 2004) the transition to a liberalized energy market in Europe.

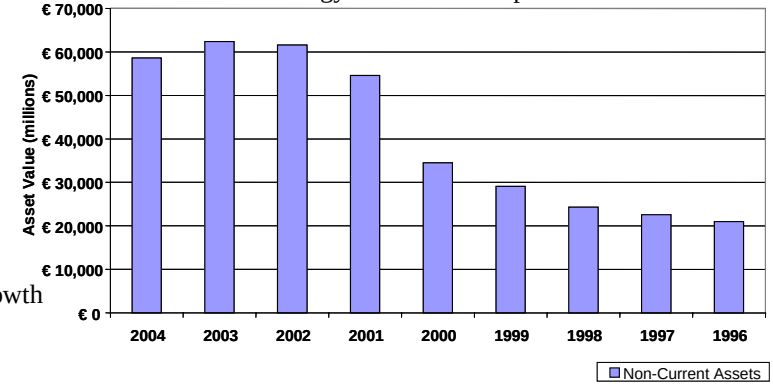

Fig.10. RWE AG – Non-current Asset Growth
Source: RWE Annual Report 2004

Although Fig. 10 shows significant asset growth during the period post 1996, Fig. 11 shows that the ROE exhibits only a slight increase over time, with an average annual increase over that period equal to 1.48%.

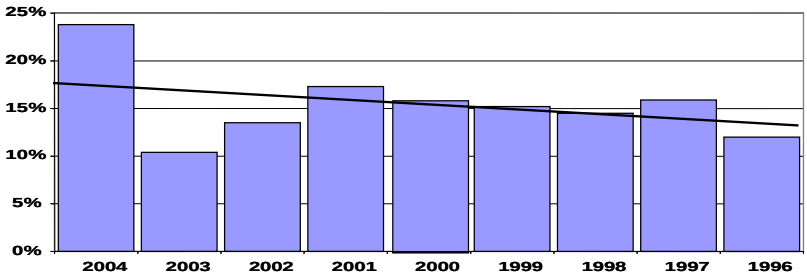

Fig.11. RWE AG – Return on Equity
Source: RWE Annual Report 2004

Taking a closer look at the positive ROE trend, when one applies an analysis of Debt/Equity (Fig. 12) the increase in ROE is even less impressive considering the increased element of risk associated with greater debt loads and the lack of any real improvement in ROE arising out of the leveraging of debt to enhance the equity position.

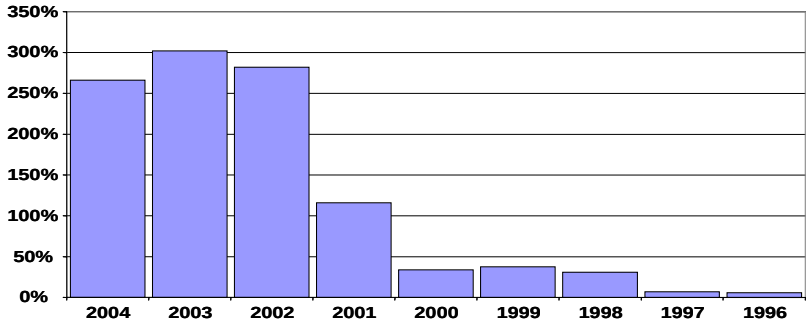

Fig. 12. RWE AG – Debt/Equity Ratio
Source: RWE Annual Report 2004

Perhaps a more telling story is provided in undertaking the CPNCA analysis. This analysis provides an indication of the operating performance of the firm from the perspective of a firm's ability to generate cash from its fixed assets. During the transition period (See Fig. 13) there was a marked decline (-1.65% per year) in the amount of cash being generated for every euro invested in operating assets. This would suggest that RWE has not improved its performance through the expansion of its networks in key strategically functional areas relative to the assets it continues to employ.

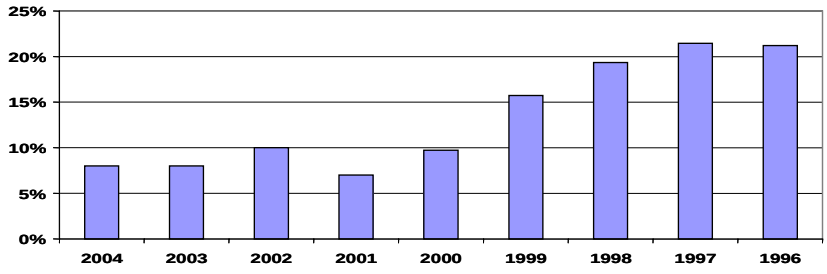

Fig. 13. RWE AG – Cash-flow as a Percentage of Non-current Assets (Tangible, Intangible, Financial)
Source: RWE Annual Report 2004

The CFPE analysis shown in Fig. 14 highlights the operational efficiency performance of RWE through its measure of the amount of cash being generated per employee. In this case its network expansion strategy appears to have improved the efficiency of the firm.

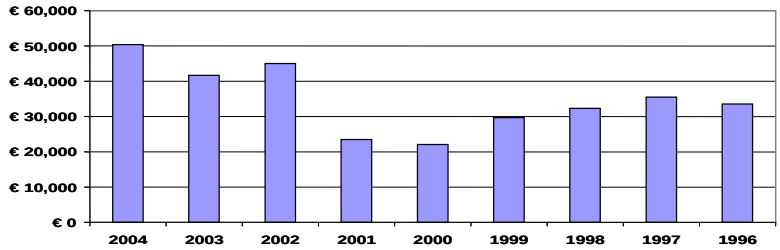

Fig. 14. RWE AG – Cash-flow per Employee (CFPE)
Source: RWE Annual Report 2004

To summarise these findings, the data in Fig. 11 shows how volatile are market transactions with assets that can release such a quick return on equity growth following a range of three consecutive years of decline. The data in Figures 12 and 13 even more categorically show that the internationalisation of RWE and its expansion both in the domestic and in foreign markets has a cost, and that the scale of vertical and horizontal integration which the company has reached is not sustainable under the current financial situation, as its Debt/Equity ration is not sustainable at its level and the company is endangered to starve for cash provided its steady decline of cash-flow as a percentage of its non-current assets. It is clear that the company has to address these issues and to undertake short-term and long-term measures to strengthen its market leadership position and to consolidate its assets. This is how the question of the water assets arose and it is pending strategic decision.

10. Theoretical Discussion of Strategic Responses to Deregulation

In a regulated environment the impact of focused strategies is less important because there is a reduced need for creating competitive advantage as the firm is either a monopoly, or the regulatory authority controls the distribution of product and/or service. Most energy distributors that evolved during the period of regulation were able to expand vertically almost as much as they saw fit. Since these "non-price" services were provided within a regulated bundled price, the customer had little opportunity to recognize the various costs involved in the service being provided. Regulated companies had little incentive to reduce costs to the customer if the regulator was convinced that the cost structure was justified in order to maintain the quality of service.

In contrast, according to the literature, deregulated environments support focused strategies based on core competences and clearly identified sources of competitive advantage (Smith and Grimm, 1987, Shortell and Zajac, 1990, Corsi, et.al., 1992, Haveman, 1992, Rajagopalan and Spreitzer 1996, Chwalowski, 1997, Kim and McIntosh, 1999). Companies in deregulated market are facing more competition, and are expected to concentrate on one or more identifiable competitive dimensions. In fact, research into deregulated markets (Smith & Grimm, 1987, Shortell and Zajac 1990, Haveman 1992, Corsi, et.al., 1992, Chwalowski 1997, Kim and McIntosh 1999) indicates that firms with focused strategies pre-deregulation continued to do so after deregulation.

During the 1990's various strategic management theorists (Barney, 1991, Grant, 1991; Mahoney and Pandian, 1992; Peteraf, 1993; Collis and Montgomery, 1995) resurrected the resource-based approach to creating competitive advantage. This approach does not distinguish between regulated and non-regulated environment and stresses the analysis of an organization's resources and competencies that lead to the selection of focused versus diversified strategy. If the organization has greater resources and capabilities greater than their competition, given the appropriate opportunity in the external environment, this resource edge may become a competitive advantage (Barney 1991, Peteraf, 1993, Baden-Fuller and Volberda, 1997).

The resource-based view (RBV) of the firm stresses that an organization can leverage its capabilities and resources to take advantage of changes in the external environment (Hamel and Prahalad, 1993). The extent to which an organization uses its capabilities and resources is subject to debate but the evidence to date supports the theory that resource advantage provides better organizational performance when utilized in diversification into a related product or industry (Chatterjee and Wernerfelt, 1991, Mahoney and Pandian, 1992, van der Heijden, 2001).

Overall the resource-based view of the firm justifies mergers and acquisitions and all forms of vertical and horizontal integration as potential sources of competitive advantage. At the same time various regulatory theories suggest that deregulation changes the rules of competition and hence requires an alteration of strategies.

The main arguments in support of deregulation point to the fact that increased competition undermines the market power of firms that generates monopoly rents or profits (Peteraf, 1993). Hence the strategic choices both

for a focused or for a diversified portfolio of operations has to lead to improved market efficiency and productivity gains.

As a result of various environmental pressures and competition in deregulated markets firms are expected to transform and organise their resources into capabilities, which are selectively employed to build competitive advantage that protects their market share, their customer base, or their profit margins. The re-organisation of resources and capabilities does not indicate a specific strategic direction of the firms and hence can involve both - related and non-related diversification, or simultaneous vertical and horizontal integration of operations.

Another significant factor that determined the specific response of utilities to deregulation is the fact that the companies represented a network of geographically distributed operational units with different level of integration under the main office, and represented natural holding companies with varying degree of upstream and downstream integration and horizontal spread. Hence these firms prior to deregulation had experiences in both vertical and horizontal coordination and control of operations.

Under the regulation regime the traditional utility services such as gas, electricity and water evolved as highly specialized operations with management structures designed to focus on the delivery of service at a regulated price with costs recovered by the utility firm under a pre-determined base-rate mechanism. The mechanism recouped the costs of both tangible assets such as wires and pipe and certain intangible assets such as information technology, customer service and marketing skills that existed in each utility segment.

Deregulation of these utility segments has seen the convergence of utility service offerings and the expansion of factors that affect competitiveness of these firms, all of which drive the competition between these segments, rather than within each separate market segment. What is observed is a multi-market contact between competitors, which strengthens rivalry, rather than weakening it (Todeva and John, 2001). Large firms, such as RWE, are forced to compete in multiple market segments, where they face competition from new and aggressive market entries with more focused capabilities developed for a single market segment. For the large incumbent energy firms the response has been to restructure their network structure in such a way that they can best align themselves with the appropriate resources in each of the multiple market segments.

11. Conclusions

This case served to provide a review of the effect of deregulation on the energy marketplace and the strategic response of one of the largest German utility firms to this environmental change. Firms operating in regulated or deregulated markets are expected to approach the application of strategy differently.

Under deregulation, the intent is to allow the market forces to establish market segmentation by allowing firms the opportunity to devise strategies that create market segments dictated by price, quality, technology or economies of scale and scope. In much the same manner that regulation determined market structure and participants, deregulation also shaped market structure and the manner in which organizations operate within that market.

Deregulation of the utility sectors has seen the convergence of utility service offerings and the expansion of factors that affect competitiveness of firms, all of which drives the competition between different segments, rather than within each separate market segment. What is observed is a multi-market contact between competitors, which strengthens rivalry, rather than weakening it. Large incumbent firms, such as RWE, are forced to compete in multiple market segments.

In analyzing the performance of RWE before, during and after the transition to a liberalized energy market it is seen that the restructuring of its business network has exposed the firm to competition in multiple energy and utilities markets. RWE has responded aggressively to deregulation leveraging its capabilities across multiple foreign markets and industry segments. There is some positive indication of improved efficiency based on the increased operating cash flow per employee of the firm. However, the evaluation of the impact from its internationalisation strategy is still premature. The analysis of RWE performance during the period of its internationalisation raises questions as to whether the re-structuring of network assets improves or reduces the performance of firms in deregulated markets.

On the question of the water market competition and the performance of RWE, the strategic decisions will be affected by key trends in technology and global market liberalisation that have not been covered by this case, and invite future research.

References

Baden-Fuller, C. and Volberda, H. (1997) Strategic Renewal: How Large Complex Organizations Prepare for the Future. International Studies of Management & Organization, 27(2): 95-120.

Barney, J.B. (1991) 'Firm Resources and Sustained Competitive Advantage', Journal of Management. 17: 99-120.

Boeker, W. (1989) 'Strategic Change: The Effects of Founding and History', Academy of Management Journal. 32(3): 489-515.

Boots, Maroeska G., Rijkers, Fieke A.M. and Hobbs, Benjamin F. (2004) 'Trading in the Downstream European Gas Market: A Successive Oligopoly Approach', The Energy Journal. 25(3): 73-102.

Brigham, B. and Waterson, M. (2003) "Strategic change in the market for domestic electricity in the UK" Warwick Business School, University of Warwick, Coventry, <http://users.wbs.warwick.ac.uk/cmur/publications/2003paper01.pdf

Chatterjee, S. and Wernerfelt, B. (1991) 'The Link Between Resources and Type of Diversification: Theory and Evidence', Strategic Management Journal.12: 33-48.

Chwalowski, M. (1997) 'Predicting Success After Deregulation; An Evaluation of Airline, Trucking and Telecommunication Firms. Issues and Trends Briefing Paper. *EEI*, 76, January 1997.

Codognet, M.K., Glachant, J.M., Leveque, F. and Plagnet, M.A. (2002) 'Mergers and Acquisitions in the European Electricity Sector – Cases and Patterns', CERNA, Centre d'economie industrielle, Ecole Nationale Superieure des Mines de Paris, August, Paris.

Coen, David and Heritier, Adrienne (2000) Business Perspectives on German and British Regulation: Telecoms, Energy and Rail Business. *Strategy Review*. 11(4):29-37

Collis, D.J. and Montgomery, C.A. (1995) 'Competing on Resources: Strategy in the 1990's', *Harvard Business Review*, July-August 1995.

Corsi, R.D. et.al. (1992) 'The Effects of LTL Motor Carrier Size on Strategy and Performance', *Logistics and Transportation Review*. 28(2): 129.

Grant, Richard M. (1991) 'The Resource-Based Theory of Competitive Advantage: Implications for Strategy Formulation', *California Management Review*, Spring 1991.

Gurney, Judith (1998) 'The Midstream Marketers', *Energy Economist*. 195: 10-14.

Hamel, G. and Prahalad, C.K. (1993) 'Strategy as Stretch and Leverage', *Harvard Business Review*, March-April 1993.

Haveman, Heather A. (1992) 'Between a Rock and a Hard Place: Organizational Change and Performance Under Conditions of Fundamental Environmental Transformation', *Administrative Science Quarterly*. 37(1) 48.

Jamasb, Tooraj and Pollitt, Michael (2005) 'Electricity Market Reform in the European Union: Review of Progress toward Liberalization & Integration', *The Energy Journal* (special issue on European Energy Liberalization), 11-41.

Kelly, Dawn and Amburgey, Terry L. (1991) 'Organizational Inertia and Momentum: A Dynamic Model of Strategic Change', *Academy of Management Journal.* 34(3): 591-612

Kim, E. and McIntosh, J.C. (1999) 'Strategic Organizational Responses to Environmental Chaos', *Journal of Managerial Issues*. 11(3): 344-362.

Mahoney J.T. and Pandian, R.J. (1992) 'The Resource Based View within the Conversation of Strategic Management', *Strategic Management Journal*. 13: 363-380.

Peteraf, M.A. (1993) 'The Cornerstones of Competitive Advantage: A Resource-Based View', *Strategic Management Journal*. 14: 179-191.

Rajagopalan, Nandini and Spreitzer, Gretchen M. (1996) 'Toward a Theory of Strategic Change: A Multi-Lens Perspective and Integrative Framework', *Academy of Management Review*. 22(1): 48-79.

RWE (2005) RWE Facts & Figures 2005 (Updated May 2005) www.rwe.com/generator.aspx/investorrelations/language=en/id=502/ir-home-alt.html (accessed 10.02.2006)

Shortell, S.M and Zajac, E.J. (1990) 'Perceptual and Archival Measures of Miles and Snow's Strategic Types: A Comprehensive Assessment of Reliability and Validity', *Academy of Management Journal*. 33(4): 817-832.

Smith, Ken G. and Grimm, Curtis M. (1987) 'Environmental Variation, Strategic Change and Firm Performance: A Study of Railroad Deregulation', *Strategic Management Journal*. 8(4): 363-377.

Soares, Maria Isabel R.T. and Marques, Victor (2004) 'Competition and Market Power in Europe: Warnings from the Electricity and Gas Markets', Proceedings of the 3rd European Congress on Economics and Management of Energy. April, Lisbon, 2004.

Todeva, E. and John, R. (2001) 'Shaping the Competition and Building Competitive Advantage in the Global Telecommunication Industry: The Case of British Telecommunications Plc.', Proceedings of the EAM 9th International Conference on Firm Behaviour, Competitive Advantage, and Sustainable Development: Linkages, Parallels and Contradictions. Costa Rica, 2001.

van der Heijden, Kees (2001) 'Back to Basics: Exploring the Business Idea', *Strategy & Leadership*. 29(3): 13-18.

Vietor, Richard H.K. (1996) Contrived Competition, Regulation and Deregulation in America, Boston, Harvard University Press.

Walsh, Philip (2005) 'Dealing with the Uncertainties of Environmental Change by Adding Scenario Planning to the Strategy Reformulation Equation', *Management Decision*. 43(1): 113-122.

Zajac, E.J. and Shortell, S.M. (1989) 'Changing Generic Strategies: Likelihood, Direction, and Performance Implications', *Strategic Management Journal*. 10: 413-430.