Industry Overview

German Utilities

Concentrating on value

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Companies Mentioned
E.ON, EONG.DE
RWE, RWEG.F
Innogy, IOG.L
Powergen, PWG.L

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The business environment for the German utilities in their core domestic market continues to improve. In addition, both E.ON and RWE continue actively to refocus their operations on core utility activities, and should no longer be seen as conglomerates. Despite these positive developments, the share price performance of both companies has been weak, and we are therefore upgrading our recommendation for both companies to 1-Strong Buy.

- A new energy law is passing through the German Parliament, and is likely to come into force later this year. The current method of charging for network access will get legal force, which will serve to strengthen the market position of the incumbent utilities, and limit regulatory threats in the short term.

- Wholesale electricity market prices in Germany have recovered from the lows seen in 1999-2000. Decreasing reserve margins, and increasing market concentration mean that the current price level, of on average €27.3/MWh is sustainable. In addition, E.ON and RWE achieve a premium to market prices because of their position in the balancing and intra-day markets.

- The new strategic focus on utility activities is to be welcomed. The SEC's approval of E.ON's acquisition of Powergen commits it to its strategy of divesting of non-utility assets. RWE has announced that it will dispose of non-core assets by end 2003.

- We are raising our fair value for E.ON to €73.2, to reflect the improved business environment. There are strategic risks associated with its plan to spend €40bn on acquisitions, but our fair value target includes a discount to reflect these risks. With 30% upside, we are upgrading our recommendation to 1-Strong Buy. Near-term catalysts include closure of the Powergen acquisition, an announcement on the proposed Ruhrgas acquisition, quarterly results in August, and further progress on disposals.

- We are also raising our fair value for RWE to €48.8. This gives 28% upside, and we are upgrading our recommendation to 1-Strong Buy. Reports on progress of integration of recent acquisitions, improved financial performance in energy divisions, and progress on the acquisition of American Water Works are likely to act as catalysts to narrow the discount to fair value.

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Summary

New German energy law to be introduced

A new energy law is likely to be enacted in Germany within the next few months. This new law will bring in a number of measures intended to enhance the liberalization of the gas market. In addition, it will strengthen the powers of the Cartel office to enforce decisions about network prices, and will also give enhanced legal status to industry agreements on network prices.

Further radical change to market unlikely in short term

The German energy market was liberalised in 1998, and the industry has changed substantially since then. Our analysis indicates that the changes to the legal framework from the 2002 law are unlikely to lead to further radical change of the market. In the gas market, the agreed method of charging for network access gives a structure of charges that does not facilitate competition. In electricity, we think that the new status given to the current network pricing method will entrench the market power of existing players despite the new powers of the Cartel office.

Fundamentals of wholesale market are improving

We expect recent and pending generation capacity closures to narrow reserve margins. In addition, the wave of mergers in the German electricity sector have increased concentration in the sector. These factors mean that the recent rise in wholesale electricity prices is likely to be sustained. There are threats to the returns to generators, in particular in the markets for short-term electricity, but overall the market outlook is relatively favourable. We have raised our valuation for the generation businesses of E.ON and RWE as a result of this.

Ruhrgas deal beneficial to utilities

E.ON is in the process of acquiring the dominant German gas company, Ruhrgas. Although the acquisition was blocked by the Cartel office, E.ON has applied for the economics minister to overrule this through a *Ministererlaubnis*. Although the minister would be entitled to reject the application, it does appear that there is political support for the deal, both at a Federal and State level. The announcement of the ultimate transfer of control of Degussa from E.ON to RAG in exchange for an additional stake in Ruhrgas seems to confirm this. Approval is not certain, though, and even if a *Ministererlaubnis* is granted, this could, potentially be challenged. We think it likely that the deal will proceed, giving clear strategic advantages to E.ON, and there may also be opportunities for RWE to benefit.

Strategic risks remain

Both E.ON and RWE have changed their strategies, and are more focused on utility activities. Non-utility assets have been sold, or are in the process of being sold, and the companies are making acquisitions of new utility businesses. The potential for over-paying for assets remains a threat. This is an immediate risk for E.ON, and as a result, we apply a discount to our sum of parts valuation. RWE has indicated no further major acquisitions (except for those that have been announced but have not yet completed) and, therefore, a similar discount is inappropriate.

Raising our fair value targets

We think that the outlook for the German electricity market has improved, and that this more favourable outlook will be sustained. We have therefore raised our value for the generation businesses of RWE and E.ON, reflecting higher wholesale electricity prices, and lower risks in the network business. We are therefore raising our fair value target for RWE to €48.8/share, and to €73/share for E.ON.

E.ON: 1-Strong Buy recommendation

E.ON's share price has declined by 4% over the last month, and 3% over the last year, despite the improvement in fundamentals. It now stands at a discount of 30% to our fair value, even taking a substantial discount to reflect acquisition risks, and we increase our recommendation to 1-Strong Buy from 2-Buy. Catalysts that should facilitate the narrowing of this discount to fair value include: the closure of the Powergen acqusition in early July; announcements on the Ruhrgas transaction in mid-July; further evidence of the improvement in the energy business performance at the results on 14th August; and further news on the disposal of non-core assets. If E.ON announces acquisitions that it can demonstrate are value enhancing, there is further upside.

RWE: 1 – Strong Buy recommendation

RWE's share price has declined by 9% in the last month, despite the improvement in business fundamentals. It now stands at a 28% discount to our fair value, and this justifies an upgrade to a 1-Strong Buy recommendation. The main catalysts for the shares are likely to be indications of the progress the company is making in integrating these new acquisitions, as well as the improvement in the underlying operating performance of the group, and news on this is likely at the next results on 12 August. News on the approvals of the American Water Works acquisition and contract wins by Thames Water may also provide support.

Introduction

German energy market changed substantially following deregulation in 1998

The German energy market has been one of the most interesting in Europe, as a result of its distinctive structure and regulatory framework. Following deregulation in 1998, wholesale electricity prices crashed, and the strategic response of the major utility companies was to merge, and focus their activities on utility businesses. Prices have since recovered, and although they have been volatile, the outlook appears reasonably favourable.

There are, however, some important changes taking place in the German energy market:

- A new law is passing through the Parliament that will amend the 1998 Energy Law[1], and will strengthen the powers of the Cartel office by amending the German Cartel Law[2].
- Wholesale electricity prices have now recovered, and appear to have stabilised.
- E.ON plans to acquire control of Germany's dominant gas company, Ruhrgas. The Cartel office has blocked this deal, which is subject to Ministerial approval (*Ministererlaubnis*).

New energy law and Ruhrgas acquisition could facilitate further change…

These developments have the potential to change the operation of the energy market substantially. New legislation could lead to a substantial increase to effective competition, threatening returns in those elements of the energy business where the largest utilities are dominant. Likewise, the conditions attached to a possible ministerial approval of the acquisition of Ruhrgas could be designed to free up the gas market.

…but we think further radical change in the short term is unlikely

We think that radical change to the market is unlikely. The objectives of German energy policy are unclear, and driven by a wide range of fractions within the current coalition government. The government, and competition authorities[3] have missed numerous opportunities to impose the type of transparent regulatory frameworks for the industry that are the norm in the rest of Europe, and it seems to us that this will happen again. Moreover, the changes that are taking place are likely to serve to increase the value of the dominance of the companies, at least in the short term. Enhancing competition in electricity and gas markets does not appear to be an objective of government policy.

In the remainder of this note, we investigate the potential impact of these developments, and explain why we think the role of the major utilities will be enhanced despite the threats to which they are exposed. We then assess the impact of possible developments on valuation.

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[1] *Das Energiewirtschaftgesetz vom 24.April 1998*, BGBl I.S 730 (referred to as EnWG).
[2] *Gesetz gegen Wettbewerbsbeschränkungen*, 26. August 1998, BGBl I S.2992 (referred to as GWB).
[3] In our view, the German Cartel authorities and the European Commission would have been entitled to have imposed much stricter conditions on the mergers of RWE/VEW, and VEBA and VIAG in 2000.

The New German Energy Law

The current legal framework

Concession and demarcation contracts restricted competition until 1998

The 1998 energy law forms the current legal framework for the sector. Prior to April 1998, a system of concession and demarcation contracts prevented competition between companies, so that customers could effectively only buy electricity or gas from the company to which they had a physical connection. The 1998 energy law changed this at a stroke, by simply ending the exemptions from the Anti-Cartel Law that the sector previously enjoyed.

The 1998 law introduced competition and allowed customers to choose their supplier

The 1998 law also placed obligations on companies which were intended to make the right to choose electricity supplier effective. The most important of these are the requirement to publish separate accounts for transmission and distribution, and a requirement to offer third party access on terms which are at least as favourable as those offered to associated companies of the network owner.[4]

Germany has no regulator; instead they are subject to an Association Agreement

In contrast to other European countries, network companies and network access terms are not regulated by an industry regulator, and are not set out in the German energy law or dependent documents. The approach in Germany is for network prices to be agreed by negotiation ("NTPA", or Negotiated Third Party Access), which while allowed by the European electricity Directive, is very rarely used in markets which are intended to be competitive. Access prices are the subject of the *Verbändevereinbarung*, (or the "Association Agreement"), a multilateral agreement between electricity industry associations, and association of other electricity market participants, the BDI and the VIK. The original agreement (known as "VV I") has been modified through new agreements to make third party access easier (known as "VV II" and "VV II+"). A similar *Verbändevereinbarung* has been agreed for the gas industry, with modifications agreed in April 2002.

Forthcoming changes

The 1998 law was not successful in providing a non-discriminatory network access

While the changes to the German energy market resulting from the 1998 law have been dramatic, it has not been successful in providing non-discriminatory electricity network access throughout Germany.[5] Very few domestic customers have switched, and a number of utilities have used non-price barriers to prevent switching. In addition, although the law applies to the gas market, the provisions for gas were weaker than for electricity, and were not sufficient to comply with the EU gas directive.

[4] Article 6(1) of the EnWG.

[5] See, for example, the report *Bericht der Arbeitsgruppe Netznutzung Strom der Kartellbehörden des Bundes und der Länder*, 19 April 2001

Three major changes have been proposed that are likely to be enacted through the new energy law[6] to remedy these problems:

- Giving legal force to the *Verbändevereinbarung*.
- Giving immediate effect to Cartel Office decisions.
- Providing additional legislation to deregulate the gas market.

The Verbändevereinbarung

New law makes Verbändevereinbarung legal

The 1998 law states that electricity companies must make their networks available for third party access. The revision to this law says that the terms of this should correspond to the best of the methods used by experts in the field.[7] Furthermore, it is sufficient for a company to demonstrate that they have complied with the terms of the *Verbändevereinbarung*. This provision applies both to electricity and gas.

It allows companies to cover costs and earn a reasonable return on an asset base

This means that following the enactment of the new law, the *Verbändevereinbarung* has additional legal force, as the method by which companies should set access charges. We have set out details of how this agreement works in an appendix to this report, but essentially the agreement allows companies to set charges that will allow them to cover costs, and earn a reasonable return on an asset base. Some provision is also made to compare charges between companies, which means that in practice, efficient companies can earn superior returns.

There were a number of problems with the initial electricity *Verbändevereinbarung* (VV I), in but the subsequent revisions (VV II and VVII+) have resolved most of these. However, there are still a number of remaining problems:

- Accounting data for separate activities is very rarely published, or may not be easily available, despite the legal obligation to publish this within normal annual business accounts.[8]
- The asset base on which returns are calculated is not published, so customers cannot determine whether the charges are fair. Other details of charge calculations are also not made public.[9]

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6 *Entwurf eines Ersten Gesetzes zur Änderung des Gesetzes zur Neuregelung des Energiewirtschaftsrechts.* 9. May 2002.

7 "*das Versorgungsnetz für Durchleitung zu Bedingungen zur Verfügung zu stellen, die guter fachlicher Praxis entsprechen ….*"

8 RWE does publish separate accounts for the main activities of lignite generation, generation from other fuel sources, transmission, distribution, "sales", and gas. This is better information than is provided by E.ON.

9 Companies have also argued that the Cartel office does not have the right to the information. However, the rights of the Cartel office have been established in a preliminary decision of the Düsseldorf regional court.

- There is no separation of supply and distribution. Companies separate out transmission, distribution, and supply, but supply could be included with either generation or distribution. This makes determination of fair network access charges harder.
- Certain costs associated with keeping the electricity system secure, known as "balancing services" are included within the transmission charge, but are not separately identified. These charges can be volatile, as they relate to the dynamics of the wholesale electricity market.

The new law will not resolve any of these issues, but will mean that the currently established industry practices can be continued.

Gas Verbändevereinbarung is less favourable to competition

The current gas *Verbändevereinbarung* is less favourable to the development of competition. One of the main reasons for this is that use of the system is charged on the basis of a "contract path", between the location where gas is input and taken off the system. On a network, this often does not relate to the costs imposed on the system, and also tends to favour incumbent companies. Again, the new law will entrench the current system of charges.

It could be argued that this aspect of the new German law acts to restrict competition, and is in breach of Articles 81 and 82 of the European Treaty. If so, a challenge to the law and its effects is possible. This does not, however, pose an immediate threat to the German utilities.

Giving immediate effect to Cartel Office decisions

Up till now Cartel office's decision could be easily suspended

One problem that has faced consumers attempting to get fair access to electricity networks, is that it has been hard to challenge the practices of incumbent utilities. If a company finds that access is not possible, or on unfair terms, it must complain to the Cartel office (at a state or Federal level). This tends to be slow. Even if the Cartel office finds that a complaint is justified, an appeal against the decision effectively suspends the decision of the Cartel office, allowing companies to continue anti-competitive practices, whether this is high network access prices, or discriminatory prices.[10]

New energy law does not allow suspension of the Cartel office's decision

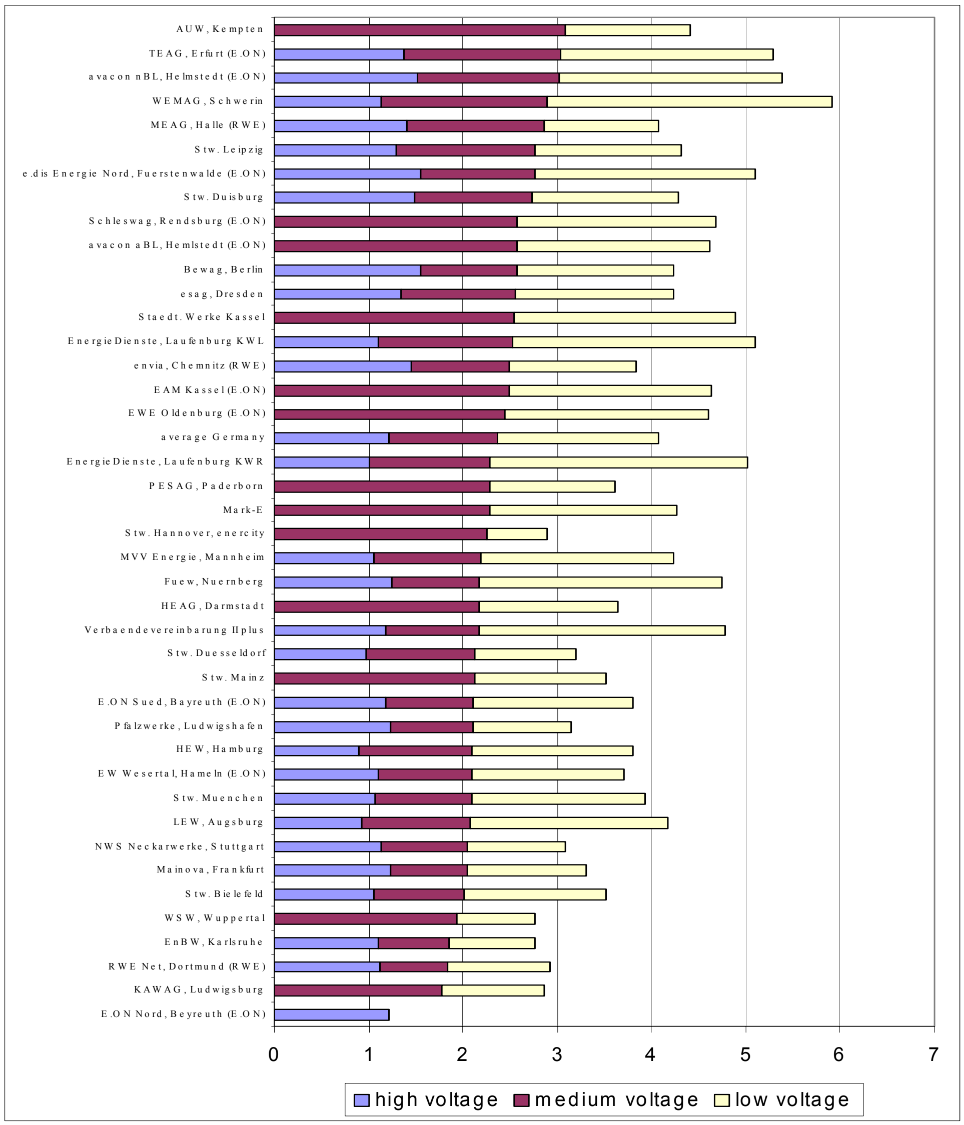
Because of these problems, the new energy law will include a provision that will change the Anti-Cartel Law so that when companies appeal against a Cartel office decision, it would no longer suspend that decision.[11] This type of provision has been found to be effective in the telecoms industry.[12] A network company would be able to appeal to a Court (to a *Beschwerdegericht*), which could suspend the immediate force of the Cartel office decision, which could be used, for example, if the company would face serious financial consequences from the impact of the decision,[13] but we would expect this exception to be used rarely in practice.

10 This is under Article 64(1) of the GWB.
11 Section 61 1 2 of the GWB.
12 Section 80 of the Telekom Gesetz includes a provision of this type.
13 This is under Article 65 (3) 3 of the GWB.

This provision appears to give strong additional powers to the Cartel Office, and could therefore allow the Cartel office to act as a regulator would in other countries, putting appropriate pressure on network prices. We doubt, however, that this will happen. Companies that are accused of any anti-competitive practice will be able to refer to the *Verbändevereinbarung*, and state that if their charging practices are consistent with this, there is no abuse of a monopoly position.

It should also be noted that the Cartel office is less likely to investigate the network charges of RWE and E.ON in the short term. This is because in general, they have lower fees than other German utilities (see Figure 1). Where these prices are higher, they are from subsidiaries where recent investments have been high, or there are other structural reasons for the prices to be higher.

Figure 1: Network fees of German utilities in eurocents/kWh



Source: VIK and Lehman Brothers

Deregulation of the gas market

The new energy law focuses on the liberalisation of the gas market

The most substantial change to the energy market as a result of the new energy law will arise from the provisions to liberalise the gas market:

- The law provides for non-discriminatory access to gas networks, including gas storage facilities.
- Operators of gas companies and gas networks will be obliged to **publish** their internal cost calculations on transmission, distribution and storage. This will include prices, the structure of tariffs, a map of grid or pipe system, current network capacities, and network constraints. These are to be published on the internet and updated regularly.
- Gas operators are required to publish **minimum requirements** to third parties in regards to gas quality and connection terms.

As described above, network access terms and prices will be determined in a similar way to electricity, through an industry agreement.

We do not expect gas prices to fall after the opening of the gas market

In theory, gas deregulation could lead to a substantial change to the market, and the government has stated that it would like a competitive gas market to develop. In electricity, once network pricing principles had been agreed, deregulation led to a large and rapid fall in prices. Given that the economics of electricity and gas networks are similar, will the same thing happen for gas? We think this is unlikely in the short term because:

- There are relatively few players which control the import of gas into Germany.
- Most imports are based on long-term contracts.
- The terms of the Verbändevereinbarung do not facilitate the development of competition, and will preserve returns to gas network operators. (For further details of this, see Appendix).

A Ministererlaubnis could include conditions like allowing customers to switch their long term contracts to other market participants

It is possible that a Ministererlaubnis for E.ON's acquisition of Ruhrgas could include conditions that would change this outlook, for example were it to be required to transfer the rights to long-term import contracts to other market participants. While some contracts may transfer, it seems unlikely to us that the change would be sufficient to lead to effective competition.

Other changes in the new law

There are two other main changes to the German electricity law:

- The lignite protection clause, which gave a quota for electricity generation from East German produced lignite, will be deleted from the law. In practice, this clause did not protect VEAG from the general fall in electricity prices resulting from the introduction of competition, and these assets are now owned by Vattenfall, the Swedish state-owned generation company.

- The reciprocity clause, which allowed refusal of access to the network for gas suppliers for companies from countries with restricted network access, has been deleted for gas. It was thought to be inappropriate, given that Germany imports 80% of its gas needs, and exports very little. It still remains in force for electricity, although we think that in practice it is not effective.

Developments in European law

The European Commission is in the process of updating the 2 Directives on electricity and gas

There are currently two European Directives affecting the industry, one for electricity[14], and one for gas[15]. The European Commission has been working for some time on proposals to accelerate the opening up of energy markets, and has proposed legislation that will amend these Directives, as well as a Regulation on transmission[16].

There are a number of important features of the draft Directive:

- Independence. Measures have been proposed that will strengthen the independence of the network operators from other parts of the business. People responsible for management of the transmission system will need to be outside organisational structures for the rest of an integrated electricity business, and the transmission system operator (TSO) must have separate decision-making rights, in particular with respect to investment, and will need to make a compliance report to ensure that non-discriminatory conduct is excluded.
- System Balancing. Rules for this will need to be objective, transparent, and non-discriminatory.
- Regulation. Member states will be required to appoint a regulatory authority, independent of the industry, and will have powers to scrutinise many aspects of the electricity and gas industry. However, the precise legal form of the regulator is not specified, and it is possible that these functions could be undertaken by a unit of the Cartel office, perhaps an expansion of the existing networks division. Regulation in Australia is performed through the Australian Competition and Consumer Commission (ACCC), rather than a separate regulatory organisation.
- Supply. Companies will be required to keep separate accounts for generation, transmission distribution, and supply. However, under the current draft Directive, these will not need to be published, but just made available to the regulatory authority.

New Directive could pose threats in medium term

The Directive and Regulation are not final, and when they do enter into force, the Directive will need to be translated into National Law. Clearly, these changes pose some threats to the German utilities in the medium term. More effective network regulation, and introduction of more transparent market mechanisms in the intra-day and balancing markets could both lead to reductions in revenues for E.ON and RWE.

In short term, companies can prepare themselves for changes

There remains, however, a great deal of uncertainty about how the Directive would be implemented, exactly what powers a regulatory authority would have, and how it would use them. We think that the existing and proposed German legislation give the companies sufficient protection in the short term, providing them time to respond to the longer term threats. The development of more effective regulation is inevitable in the longer term, and may only be a significant threat to E.ON and RWE if they do not prepare for it.

[14] Directive 96/92/EC concerning rules for the internal market in electricity.
[15] Directive 1998/30/EC concerning rules for the internal market in gas.
[16] The latest proposals are set out in COM(2002) 304 final, published on 7 June 2002.

Electricity Wholesale Prices

The importance of wholesale electricity prices

Electricity prices are volatile

Electricity is probably the most volatile of all commodities, and German electricity prices have shown the same type of volatility that is typical of liberalised markets. Spot prices have been around €10/MWh at their lowest, but have peaked at several hundred €/MWh.

Profits and value are very sensitive to electricity prices

Both profits and value, however, are extremely sensitive to the level of wholesale prices. An additional €1/MWh on wholesale prices in Germany increases profits of the energy generation business by €156m for E.ON, and €116m for RWE. Given that average wholesale electricity prices could reasonably fall within the range €15 – 40 /MWh, this clearly gives a large potential swing in profits. We will see below that the value impact is also significant: this range of wholesale prices will lead to a value for E.ON's generation business of €8.6-34.8bn, and €4.2-33.4bn for that of RWE.

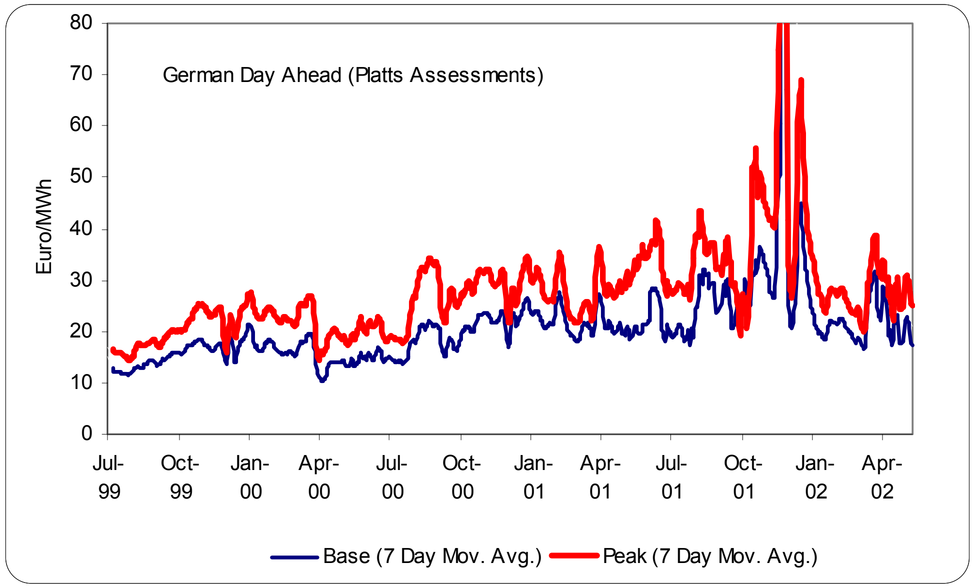
The development of German wholesale electricity prices

Electricity prices have recovered from their lows in 1999 and increased by 42% from 2000 to 2001

Figure 2 below shows how spot prices have developed since active trading began. In summer 1999, baseload prices were around €12/MWh, which rose to around €17/MWh in the winter, falling back in summer 2000. With expectations of capacity closures and other factors such as higher coal prices, average prices rose in 2001 to €27.3/MWh, 42% higher than the previous year. This higher level of prices has been more or less sustained in 2002.

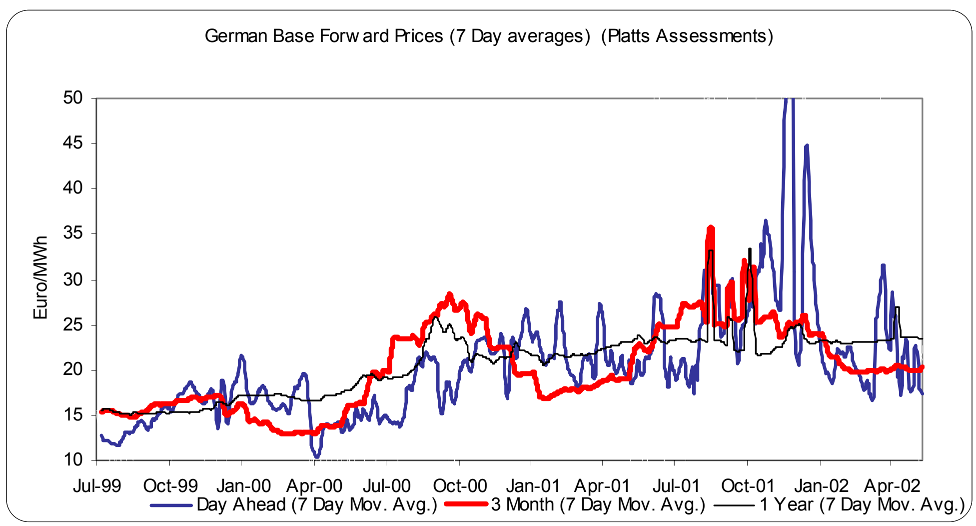
RWE contracts ahead for electricity in the forward market, and although volatile, they are not as volatile as spot prices. Figure 3 shows the trend in forward prices (for baseload).

Figure 2: German spot electricity prices, base and peak, €/MWh



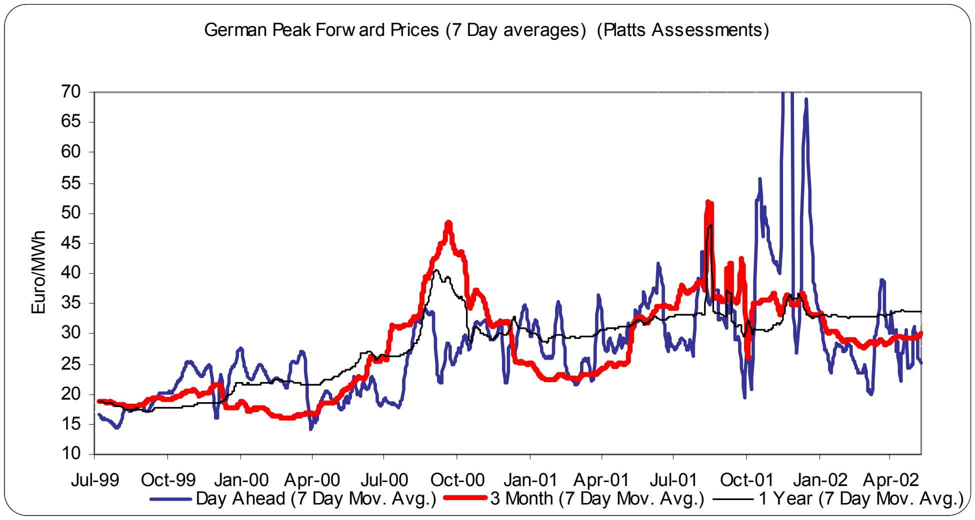
Source: Lehman Brothers

Figure 3: German base forward electricity prices, €/MWh



Source: Lehman Brothers

Figure 4: German peak forward electricity prices, €/MWh



Source: Lehman Brothers

The intraday and balancing markets

Additional revenues are made from balancing and intra-day markets

While an indication of generation revenues can be gained from looking at the spot and forward electricity prices, generators can obtain additional revenues from the "balancing" and "intra-day" electricity markets.

In Germany, active market participants, responsible for energy procurement and generation, must notify grid companies of their expected net injections and withdrawals of electricity for the following day. Deviations from this are bound to occur, and are met through trades in the intra-day market (for trades between 24 hours ahead and 1 hour ahead), and in the balancing market (for deviations occurring within one hour).

We estimate that 10% of RWE's generation revenues come from balancing and intra-day

Activities in these markets appear to provide a substantial source of revenue for the generators. We estimate that for RWE, in the short financial year to December 2001, 10% of electricity generation revenues arose from the balancing and intraday market. We think that higher balancing and intraday prices have boosted the profits of generation substantially in recent months.

The outlook for prices

In our previous research, we have discussed the main determinants of electricity prices in some detail.[17] The most important of these are:

- reserve margins, with lower margins likely to lead to higher prices.
- market concentration, with higher concentration leading to higher prices.

[17] See for example *The Generation Game*, December 2000, and *Trends in wholesale electricity*, November 2001.

Reserve margins are falling

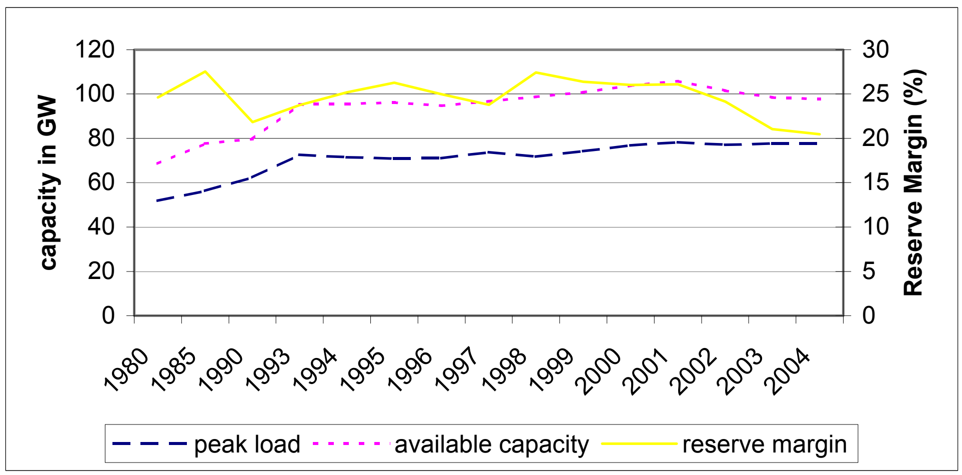
Figure 5 below shows the trend in reserve margins. The combination of relatively slow demand growth, combined with capacity closures, and limited new capacity build, means that reserve margins are set to narrow.

Figure 6 below shows the concentration curve for the German electricity market for 2002. It can be seen that the major mergers in electricity that we have seen in recent years in Germany, (VEBA-VIAG, RWE-VEW, and VEAG/BEWAG/HEW) means that Germany now has an average level of concentration, whereas in the past, it had low concentration.

We expect wholesale prices to increase or to remain at current levels on average

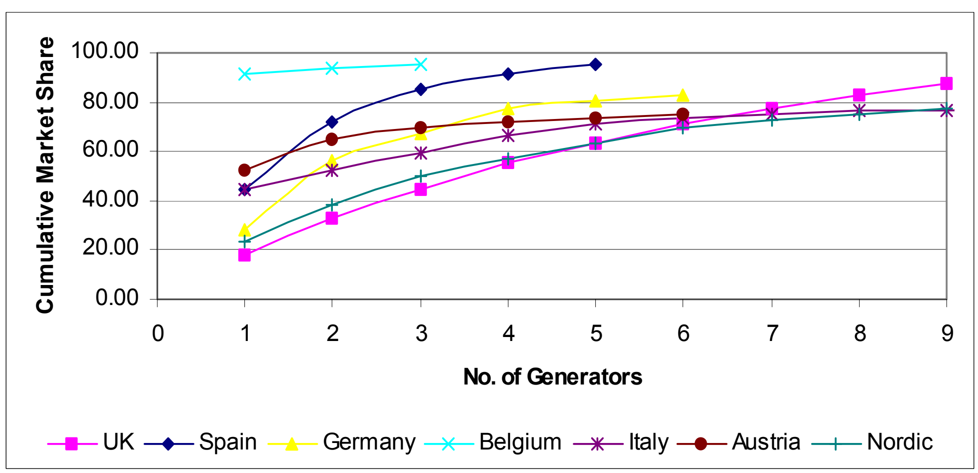
We think that the rise in wholesale electricity prices that we have seen is likely to be sustained, and we therefore base our valuation of generation assets on a wholesale price of €27.3/MWh, excluding an allowance for balancing and intraday revenues.

Figure 5: Reserve margins in Germany.



Source: Lehman Brothers

Figure 6: Concentration curve for Europe 2002.



Source: Lehman Brothers

The main threats are import competition, new power plants and lower balancing revenues

Clearly, there are threats to this optimistic outlook for generation prices:

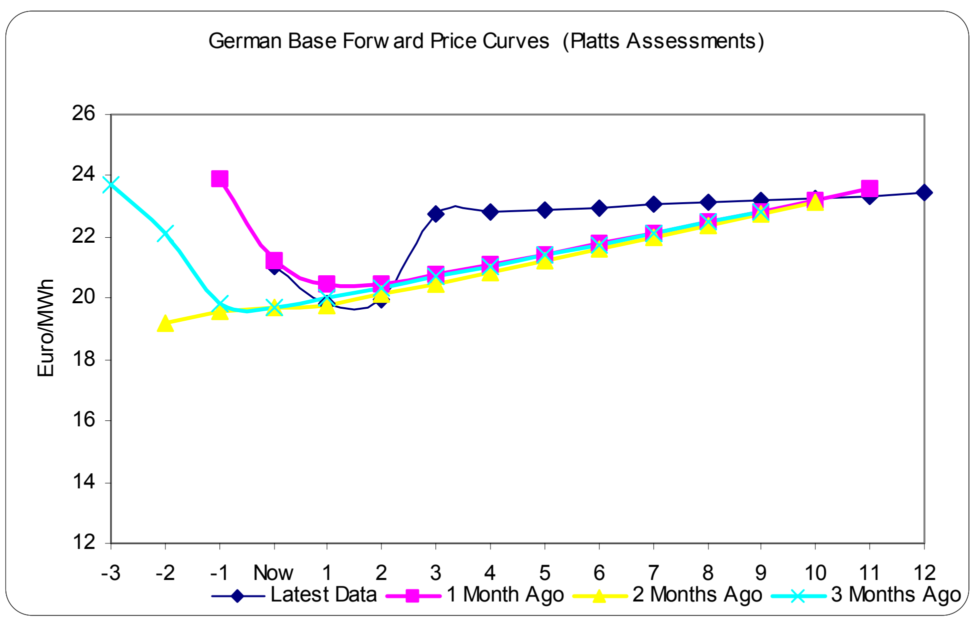
- Import competition. The high level of interconnection with the rest of Europe could keep pressure on prices, despite low reserve margins within Germany. These could arise from the accession of new countries to the EU. It should, however, be noted that there are two export constraints from Germany: one into the Netherlands, and one into Italy. Were these interconnectors to be expanded, we could expect electricity prices in Germany to rise, rather than fall.

- New build. In other European countries, market entry is occurring through the construction of CCGT capacity. This could occur in Germany. However, we think that prices would need to be at least 48% higher to encourage entry.

- Balancing market. Market mechanisms for balancing power have been introduced, as required by the conditions on the mergers of RWE and VEW, and VEBA and VIAG. Despite this, we think that the balancing market is still distorted. Markets operate regionally, rather than nationally, as they could, and the incumbent operators provide most of the balancing services. It is possible that intervention from competition authorities could threaten these revenues. We think, however, that the market structure in Germany will still facilitate higher overall returns to generators, whether returns switch from the balancing and intra-day market to the regular wholesale market.

The outlook implied by forward prices, though, appears to be more favourable, and, despite the risks (see Figure 7), support our more positive stance.

Figure 7: German forward price curve (base load).



Source: Lehman Brothers

Generation valuation

We calculate the generation business value plant by plant

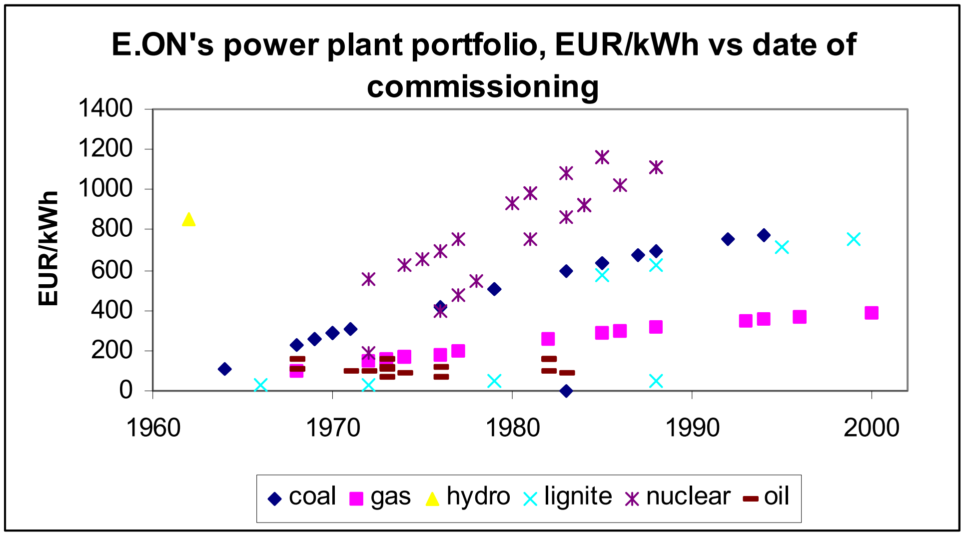
We have valued the generation businesses on a plant-by-plant basis, discounting forecast cash flows over the life of plant, in a similar way to the method we used for other companies. This method allows us to reflect the different mix of plant for different companies, as well as the quality of the assets. Further details of our method are set out, for example, in our note on International Power in June 2002.[18]

Our value for E.ON's and RWE's generation is €20.4bn and €17.0bn.

The most important variable determining the overall value of the portfolios is the expected wholesale electricity price. With a base case wholesale price of €27.3/MWh, our valuations for E.ON and RWE's German electricity generation business are €20.4bn and €17.0bn respectively. However, a 1% change in prices leads to 2.2% change in value, so our valuation is extremely sensitive to our wholesale price assumptions.

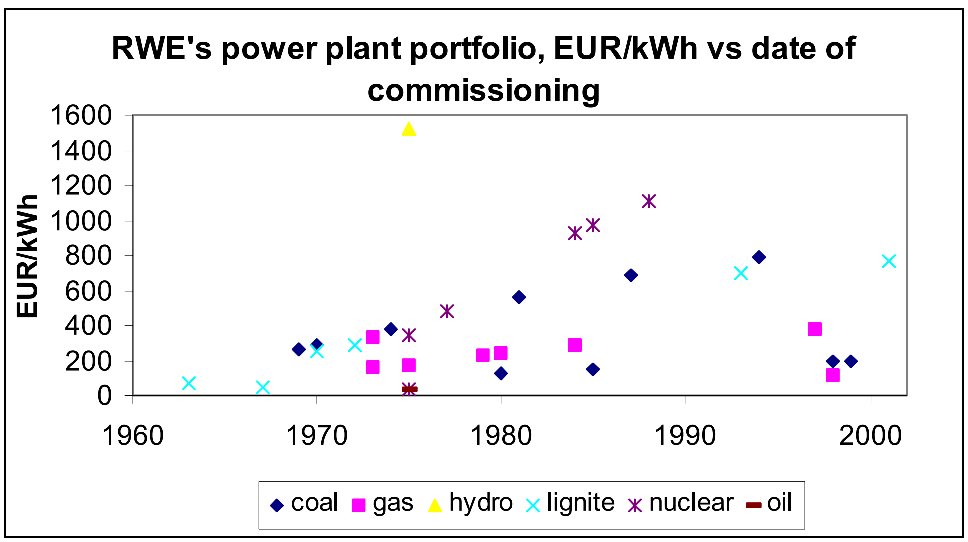
[18] *International Power – Cracking Global Generation Markets, June 2001.*

Figure 8: Value per kW against age for E.ON



Source: Lehman Brothers

Figure 9: Value per kW against age for RWE



Source: Lehman Brothers

E.ON's Acquisition Of Ruhrgas

Ruhrgas

Ruhrgas is the leading German gas importer …

Ruhrgas is the leading gas company in Germany and also has a strong presence in its neighbouring countries. It imports gas through long-term, flexible purchase agreements from the Netherlands, Russia, Norway, Denmark and from the UK. Annual gas sales are around 600bn kWh of gas (or 50bn cubic meters) of which 85% come from imports and 15% comes from Germany. Long-term contracts secure the gas supply of Ruhrgas and the proportion from Norway is expected to increase. Its physical assets include a pipeline network of 1,0837km and underground storage capacity of 4,856million m3 or 48.49bn kWh.

In 2001, Ruhrgas AG had a net turnover of €11,820m, a net income of €432m, and the group had 9,187 employees.

… and currently has a complex ownership

The ownership structure of the group is complex. The main shareholders of Ruhrgas are Bergemann with 34.8% (consisting of 0.2% E.ON, 0.1% Gelsenberg, 23.6% Vodafone, 10.1% RWE, 13.5% ThyssenKrupp, 52.5% RAG) and Gelsenberg with 25% (51% E.ON and 49%BP), which both have together 59.8% and form the pooling agreement. Bergemann has 58.2% and Gelsbenberg 41.8% of this pool. Brigitta has 25% of Ruhrgas (consisting of 50% of Exxon Mobil and 50%of Shell), Schubert has 15% of Ruhrgas (consisting of 49.2% of ExxonMobil, 17.7% Preussag, 3.1% Gelsenberg and 30% of Brigitta).

The acquisition process

E.ON is aiming to acquire a majority stake

E.ON is in the process of trying to acquire a majority stake in Ruhrgas. It has an agreement with BP to acquire Gelsenberg, which has a 25.5% stake in the company, and it also has an agreement to acquire the Bergemann stake (34.8%). It has recently agreed an additional transaction with RAG where it would acquire an additional 18.4% of the company, as part of a transaction which will ultimately transfer control of Degussa from E.ON to RAG.

The Cartel Office blocked the acquisition

Earlier this year, the Cartel office blocked the acquisition of the Gelsenberg and Bergemann stakes. E.ON subsequently applied to the economics ministry to overrule this decision through a *Ministererlaubnis*. This is permitted under Article 42 of the Anti-Cartel law. In advance of this decision, the monopoly commission has to publish a report on the deal. This has now been done, and the commission came out against the deal.

The economics minister is likely to allow the deal to go through

The question is, where next? There appears to be political support for the deal, at a senior level within state and federal governments, and it certainly appears that a Ministererlaubnis might be granted. It is still possible, however, that either European or German law could prevent the completion of the merger.

The European Commission

The deal could be illegal under the Article 81 of the European Treaty

The monopoly commission report highlights that although the European Commission does not have jurisdiction over the deal under the Merger Regulation[19], the deal could be considered illegal under Article 81 of the European Treaty. There are two main reasons for this. First, a reason for the merger was to improve access to the remainder of the EU, to increase trading between countries, so the merger has a community dimension. Second, the combination of E.ON and Ruhrgas increases vertical integration.

The EC can grant exemption …

…the Economics Minister should seek this exemption

The European Commission can grant an exemption to restrictive agreements, under Article 81 (3) of the EU Treaty. Under the 1999 EU Regulation,[20] vertical agreements covering less than 30% of the relevant market could be covered by a block exemption. In the case of E.ON/Ruhrgas, though, we understand that the relationship would be for over 47% of the market, and thus the block exemption provision does not apply. The Monopoly Commission recommends that the Economics Ministry should seek this exemption in advance of a decision on the Ministererlaubnis.

It can be argued that the precedence of European law over German law means that the Ministry has a duty formally to seek an exemption from Article 81 before granting the Ministererlaubnis. If this course of action is taken, this clearly poses a threat to the deal.

E.ON could be exposed to a risk if the Commission is not being invlolved

If, however, the views of the Commission are not sought, what happens then? It appears to us that, under European law, the deal could proceed, but that there could be a situation that is in breach of Article 81. Completion of the merger, without seeking the necessary exemption from Brussels, therefore, would expose E.ON to the risk of infringement proceedings, and we understand that these could arise either from the German cartel authorities or from the European Commission.

Are the terms of a *Ministererlaubnis* satisfied?

The Ministererlaubnis should be granted if restraints outweigh the economical advantages

Article 42 of the German Anti-Cartel law allows the Ministererlaubnis to be granted if, "the restraint of competition is outweighed by advantages to the economy as a whole following from the concentration, or if the concentration is justified by an overriding public interest. In this context the competitiveness of the participating undertakings in markets outside the area of application of this Act shall also be taken into account. Authorisation may be granted only if the scope of the restraint of competition does not jeopardize the market economy system."[21]

The Monopoly Commission sees no economical welfare from acquisition

The Monopoly Commission came to the conclusion that the acquisition does not increase any economic welfare for Germany to weigh up the negative impact of the decreased competition, rejecting the arguments of E.ON:

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[19] Although the size of the two companies is sufficiently large, most turnover within the EU is within Germany.
[20] Commission Regulation (EC) No 2790/1999 of 22 December 1999 on the application of Article 81(3) of the Treaty to categories of vertical agreements and concerted practices (Text with EEA relevance)
[21] Article 42, GWB.

- **Strategic control of Ruhrgas (limited at present by the *Gesellschafterblockade*)**: E.ON has stated that by acquiring Ruhrgas E.ON would take over the shares of many old shareholders like the Bergemann pool which has 60% of the voting rights, BP (Gelsenberg) and maybe Exxon and Shell. The old shareholders have different interests which makes it difficult to make strategic decisions. This limits the scope of Ruhrgas's future. E.ON's acquisition of Ruhrgas would improve decision making through simplifying the shareholder structure and E.ON argues that this would increase economic welfare as German jobs could be secured. The Monopoly Commission does not consider that the abolition of the *Gesellschafterblockade* would increase welfare.

- **Securing German gas supply:** E.ON has stated that the acquisition would secure the German gas supply. The Monopoly Commission has commented that this was not be precisely displayed and it thinks that interruptions of the gas supply cannot be prevented by the acquisition.

- **Climate and environmental aims:** The acquisition would help the government's aims in the context of climate and environment. The Monopoly Commission thinks that this is questionable.

Essentially, the monopoly commission has argued that the benefits of the deal that have been identified by E.ON are either non-existent, or if they are there, they could be achieved in other ways.

The Monopoly Commission report is only advisory

The Monopoly Commission report, though, is only advisory, and the government does not have to accept it.

It is possible for a company to challenge the government decision, and we understand that at least one interested party plans to do so, if the Ministererlaubnis is granted.[22] The challenge would be made to a high court. If this happens, it opens up a series of legal questions including:

- Grounds for challenge. To what extent does the Minister have discretion in the decision. Although the minister may ignore the advice of the Monopoly Commission, does it have limited discretion as to how it uses the evidence. If the minister's duty is to weigh up the benefit to the economy, against the cost of loss of competition, but advisors have identified no benefits, is a positive decision legal?

- Process. Would an appeal against the Ministererlaubnis prevent the acquisition taking place until it is heard, or would the acquisition take place irrespective of an appeal.

This has not happened before, therefore there is no case law on it. Lawyers that are expert in the area cannot foresee how this might develop.

[22] *This right of challenge is set out in Section 63, Paragraph 4 of the Anti-Cartel law.*

Likely outcome

Important politicians support the deal and the Ministererlaubnis is likely to be granted

The political support for the deal, at Federal and State level, means that it is likely to be granted by the Ministererlaubnis. Clearly conditions may be attached. Third party access to the gas network may be given as a condition for the deal, but this is a requirement of European law, and will be translated into German law in the next few months. More substantial conditions are likely to be the disposal of assets such as Thüga, and also a reassignment of some long-term gas contracts. Many of the large industrial groups that could contest the deal are likely to benefit from some of these conditions / disposals.

The other hurdles identified above may serve to delay the finalisation of the deal, but it appears unlikely that they would block them.

Implications

E.ON would have many advantages from the deal

The acquisition of Ruhrgas will have a number of implications. For E.ON, the acquisition would:

- transform its market position in the European gas market, placing it among the leading market participants, with a dominant position in Germany;
- give it an advantage selling to customers buying both gas and electricity in Germany. In addition to the sharing of the customer relationships enjoyed by both companies, it will have a flexibility that neither the pure gas nor pure electricity utilities can provide;
- in the long term, allow it to make savings from sharing of asset management systems between gas and electricity, in the same way as National Grid / Lattice;
- allow it effectively to exploit trading opportunities in gas and electricity, backed up by long-term gas contracts in addition to the physical capacity;
- provide more opportunities to expand in gas markets, in particular in East Europe, using the skills and experience of Ruhrgas, combined with the strong balance sheet of E.ON, building on a number of existing strategic positions, including a 5% stake in Gazprom.
- give it an information advantage over its competitors in Germany, because of the dominant role that the company has in Germany, as well as its investments in regional and other gas companies.

We expect some advantages for RWE

For RWE, there are also implications, although these will not be clear until the conditions that might attach to a merger are announced. However, we believe that RWE will gain something from the deal: as it has a stake in RAG, which is selling a stake in Ruhrgas to E.ON, it has a supervisory board role there, and therefore needs to approve the RAG/Ruhrgas/E.ON/Degussa transaction. However, it appears that RWE may gain:

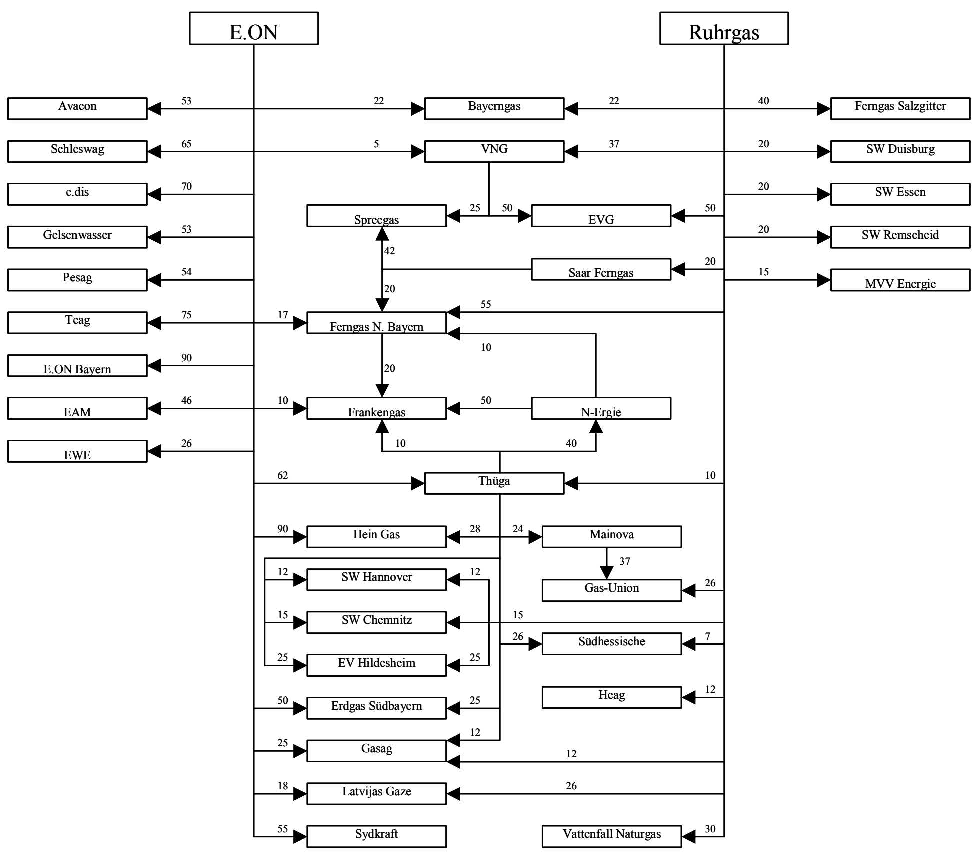
- Gas contracts with Russia. Ruhrgas could be forced to release a proportion of its contracts, and RWE is well positioned to take these. In other European gas markets, gas release (ie, transferring long-term contracts to competitors) has been an important way of developing competition.

- Gaining stakes in other gas utilities. It seems likely that E.ON might be forced to sell some of the holdings in which Ruhrgas and E.ON both have stakes (see Figure 10 below). There may also be forced sales of other regional and/or municipal companies.

The acquisition will change the energy industry in Germany

The acquisition would fundamentally change the energy industry in Germany, and all company strategies will need to change as a result. RWE and E.ON will have different interests in the gas industry, and RWE may seek to put pressure on high pressure gas transportation tariffs. Some way will need to be found to prevent E.ON gaining too much from its information advantage. Electricity companies may feel forced to integrate upstream, for example EnBW is acquiring a controlling stake in GVS. It does appear, though that the acquisition will benefit the two major utility companies.

Figure 10: Business interests of E.ON and Ruhrgas



Source: various sources and Lehman Brothers

Strategy

Enormous strategic change

E.ON and RWE are focused on their core businesses are electricity, gas and water

The introduction of competition in the German electricity market has led both RWE and E.ON radically to change their strategies. Both companies have now decided to focus their strategy on utility activities, and have made the decision to exit from other "non-core" businesses. While there was some scepticism from investors when this process began, both companies have delivered on the promises they made over two years ago:

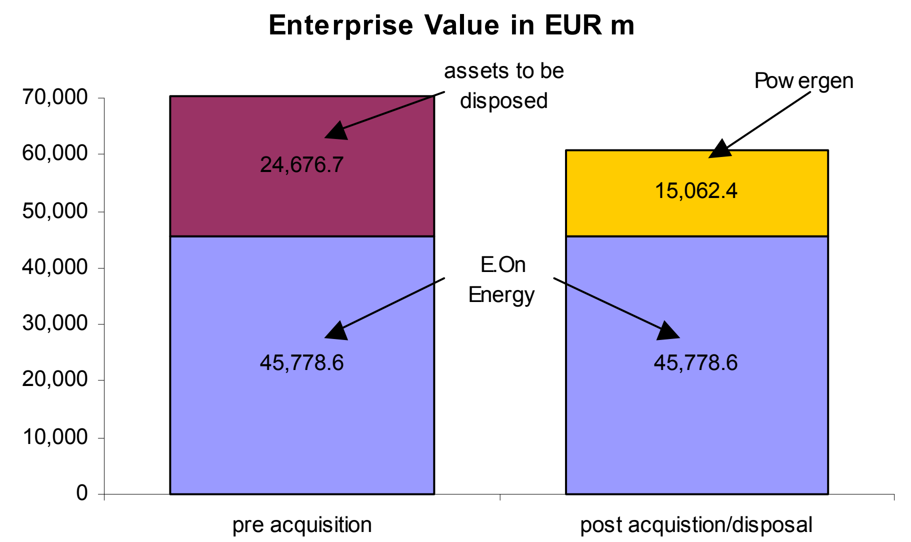
- RWE has agreed to the disposal of its downstream oil assets to Shell, and has committed to sell Heidelberger and Hochtief.
- E.ON has exited from a number of its Distribution & Logistics activities, silicon wafers, and aluminium activities, and has announced that it will exit its put option for the remainder of its oil assets. Divestments of other non-core activities will be required following the acquisition of Powergen.

Both companies have also made a number of utility acquisitions:

- RWE: in water, it has acquired Thames, and is in the process of acquiring American Water Works; in gas, it has acquired Czech company Transgas; in electricity, it has acquired the UK-based company Innogy.
- E.ON has acquired Sydkraft, the Swedish electricity company, and is in the process of acquiring the UK-based Powergen which also has US assets, as well as the German gas company Ruhrgas.

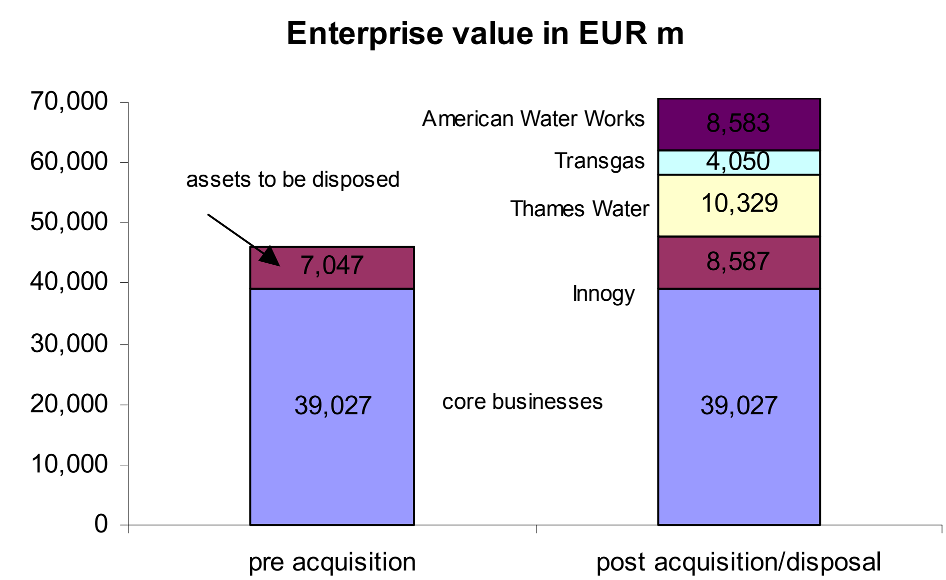
The extent of this change to the asset mix, therefore, is enormous.

Figure 11: Asset mix of E.ON, pre and post acquisitions and disposals.



Source: Lehman Brothers

Figure 12: Asset mix of RWE, pre and post acquisitions and disposals.



Source: Lehman Brothers

RWE and E.ON now have distinct strategies

For many years, the large German utilities have been seen as investment substitutes, with similar asset mix and business drivers. Following the divestments, acquisitions, and pending acquisitions, this is no longer the case.

RWE has a high proportion of water businesses compared to E.ON with limited water assets

At present, around 15.5% of RWE's enterprise value is from the water business, and following the acquisition of AWW, this will rise to around 25%. Although RWE is interested in the US energy business, it only owns has limited interests through its coal business, Consol, and has indicated that it will not be making any significant acquisitions there in the near term.

E.ON, in contrast, has very limited water interests. It will own US electricity assets following the acquisition of Powergen, and has indicated that it will make some significant acquisitions in the near future.

The distinct nature of the strategies means that Suez is, perhaps, a closer investment substitute for RWE than E.ON.

Assessing the strategic risks

RWE will focus on integration and not on acquisitions

RWE has indicated that in the near term, it will not be making any more significant acquisitions, but will focus on integrating recent and pending acquisitions. While this means that concerns about acquisitions in the near future are unfounded, further moves in the medium term may be likely, and could cause concern to investors.

E.ON is expanding and has €40bn to invest in acquisitions, most of them to be in the US.

E.ON, in contrast, has indicated that it has a "war chest" of some €40bn, of which around €30bn is targeted for US acquisitions. We think that a strategy of expansion in the US can be sensible:

- US regulators allow utilities a higher return than is typically available in Europe.
- The deregulation of the electricity market in the US, while slow, provides opportunities to exploit skills developed in other deregulated markets, just as Powergen has in the UK.
- US utilities are typically valued using P/E ratios, which may not reflect the cash generation potential of the underlying assets, so corporate buyers can find assets that create value.
- With group companies that know the market well, E.ON should be able to find good opportunities.

E.ON therefore has a higher risk regarding acquisitions

However, until E.ON makes a move, and demonstrates that it can create value, investors will be concerned about the impact of acquisitions. In assessing the strategic risks, the following issues are relevant:

- Do the companies have a source of competitive advantage that can be exploited, allowing value creation from acquisitions? While the companies are not recognised as being world class in cost management in electricity generation, they do have skills at managing stakeholder relationships that can be used to enhance value in electricity, gas, water and waste industries, provided that they can be extended to new countries.

- Will future acquisitions allow the companies to benefit from synergies, scale economies, or using the skill sets of acquired companies to enhance value in existing operations? The value of scale economies in utility companies is probably overstated. However, the German companies do have the opportunity to exploit skills gained from acquisitions (e.g. Innogy and Powergen) to enhance value of their domestic operations.

- Do the companies have a track record of integrating acquisitions effectively? RWE appears successfully to have integrated VEW's operations, and also those of Thames. We understand that, at E.ON, the integration of the operations of Preussenelektra and Bayernwerk to form E.ON Energie has proved harder.

- Will the companies over-pay for assets? We calculate that RWE paid a premia to fair value of 15% for Thames Water, 21% for Innogy, and E.ON paid a premium of 18% for Powergen. There is therefore a risk that the companies will continue to pay premia for assets that cannot be justified by the financial returns.

The risks for investors, therefore, are clear. The issue is how to reflect this risk in our valuations:

- For RWE, as the company has indicated that no further acquisitions in the near term are likely, we think it inappropriate to adjust our valuation.

We value the risk for E.ON with € 6bn for its future acquisitions

- In contrast, E.ON's bold ambitious impose greater risks. If we assume that it spends €30bn, and pays a 20% premium to fair value for these assets, this would dissipate €6bn of value. We therefore apply this discount to our sum of parts valuation to reflect this risk. If E.ON demonstrates that acquisitions are value neutral, or enhancing, we will change this discount.

It should be noted that discounts applied to reflect acquisition risk could be offset by premia for the sale of assets above fair value.

Group Valuation And Sensitivities

Approach to valuation

We use a sum of parts valuation …

As with all other European utilities that we cover, we use a sum of parts method to value RWE and E.ON:

- With substantial asset disposals and acquisitions, and structural change within the industries, earnings based valuations are misleading.
- Other ratios can also mislead. For example, a water business such as Thames Water can absorb cash, for investment in the business, making it look unattractive on free cash flow measures, but the business can still deliver solid returns.

… calculating each generation plant separately

For our sum of parts method, we value each power station in the domestic electricity business separately, and for network businesses we make an estimate of the returns received on the network businesses, and from this we calculate an estimate of the asset base used in the Verbändevereinbarung to calculate returns. We use a variety of techniques for valuing other businesses, depending on the data available. Nuclear and pension provisions are treated as debt, and we deduct our estimate of their value.

Our sum of parts valuations

Our fair value for both companies has increased due to higher electricity prices

Our sum of parts valuations for E.ON and RWE are set out below. Our fair value for both companies has increased, mainly as a result of the higher electricity prices that we now forecast in Germany.

Figure 13: RWE –sum of parts

RWE - Sum of Parts Valuation

Business	Valuation	Methodology
Electricity	**37,273**	
Generation	17,020	Plant by Plant Valuation
Mining	2,982	Listed & DCF / Multiples
Network & Supply	8,267	Estimate of implied RAV
Overseas	417	Listed
Innogy	8,587	Lehman utilities team sum of parts value
Others	819	Listed
Gas	**10,400**	
Upstream	3,012	Multiples
Gas	3,338	Multiples
Transgas	4,050	Acquisition price
Water	**10,329**	
Thames Water	10,329	RAV + Adjustments
American Water Works	0	not included
Environmental & Industrial Services	**3,992**	
RWE Environment	2,894	DCF / Multiples
TESSAG	1,098	DCF / Multiples
Businesses for disposal	**7,047**	
RWE DEA Downstream	2480	DCF / Multiples
Heidelberger	4735	Listed
Hochtief	-168	Listed
Total Enterprise Value	**69040**	
Associates	2307	Listed & Estimates / Discount to BV
Cash / debt	-11853	Projected year end debt
Provisions	-28496	100% Pension, 50% (Nuclear and Other)
Minorities	-3558	Listed
Equity Value	**27440**	
Number of shares outstanding	562.4	
Fair value per share	48.79	
Interim dividend per share	0.00	
Fair value per share	**48.79**	
Current share price	38.2	
Upside	27.73%	

Source: Lehman Brothers

Figure 14: E.ON – sum of parts

E.ON - Sum of Parts Valuation

Business	E.ON	Methodology
Energy		
Generation	20,409	Plant by Plant Valuation
Network & Supply	17,746	
Gas	3,952	EV multiple
Overseas	3,672	Acquisition Price, adjusted for generation value
Powergen	15,062	
Total	60,841	
Businesses to be disposed		
Degussa	14,942	Listed equity value plus debt and provisions
Viterra	5,056	DCF
Stinnes	2,927	Listed
Telecoms	1,752	Merger document
Total	24,677	
Total Enterprise Value	85,518	
Associates and other assets	7,649	Separate valuation of each associate, discount to BV of financial assets
Minorities	-3,879	Degussa, Stinnes, Sydkraft
Provisions	-20,775	100% Pension, 50% (Nuclear and Other)
Cash / (Debt)	-11,839	Projected; Dec 2002
Acquisition risk discount	-6,000	
Equity Value	50,674	
Number of shares outstanding	692.00	
Fair value per share	73.23	
Interim Dividend per share	0.00	
Fair Value per share	**73.23**	
Current share price	56.70	
Upside / Downside	29.15%	

Source: Lehman Brothers

Sensitivities

The valuation is very sensitive to wholesale prices… we expect wholesale prices to remain stable or to increase on average

Wholesale electricity prices remain volatile, and our value is sensitive to our assessment of these prices. Our fair value target is also sensitive to the extent to which the companies create or dissipate value from future strategic moves. The sensitivity to value, and the upsides, are shown in the following table. This indicates that even if one is pessimistic about the future strategic development of both companies, our investment case remains intact.

Figure 15: Sensitivity of E.ON's value to wholesale prices and value creation

share price in EUR		value creation in EUR bn						
		-8	-6	-4	-2	0	2	4
wholesale prices in EUR /MWh	22.5	64.2	67.1	70.0	72.9	75.7	78.6	81.5
	25.0	68.1	71.0	73.9	76.8	79.7	82.6	85.5
	27.3	70.3	73.2	76.1	79.0	81.9	84.8	87.7
	30.0	75.7	78.6	81.4	84.3	87.2	90.1	93.0
	32.5	79.3	82.2	85.1	88.0	90.9	93.8	96.7

Source: Lehman Brothers

Figure 16: Sensitivity of RWE's value to wholesale prices and value creation

share price in EUR		value creation in EUR bn				
		-4	-2	0	2	4
wholesale prices in EUR /MWh	22.5	33.3	36.9	40.4	44.0	47.6
	25.0	38.7	42.2	45.8	49.3	52.9
	27.3	41.7	45.3	48.8	52.4	55.9
	30.0	49.0	52.6	56.1	59.7	63.3
	32.5	54.1	57.7	61.2	64.8	68.3

Source: Lehman Brothers

Recommendations

We upgrade E.ON and RWE to 1-Strong Buy

With over 25% upside as a base case for both companies, we are upgrading our recommendations on both companies to 1-Strong Buy.

RWE has more exposure to regulated water assets

Which is the most attractive? We think that depends on the investment portfolio. RWE has a heavy exposure to regulated water assets, in the UK, Chile, and the US, and the contribution of this type of asset to its enterprise value is likely to increase. As an investment, it has very defensive qualities.

E.ON will focus on energy in the US.

E.ON, in contrast, will be much more focused on energy, and in particular the US electricity market. The upside for the company is greater, if there is assumed to be no execution risk associated with the disposal and acquisition programme. Clearly, if the company can demonstrate that it can enhance value, the potential is greater.

RWE – Company Profile And Financials

Profile

RWE is second largest utility in Germany

- RWE is Germany's second largest utility after E.ON by market capitalisation. Over the last few years, it has refocused its operations, and now sees electricity, gas, water and waste as its core activities:

- In generation, in Germany it has 24.8GW installed capacity, through two subsidiaries, RWE Power (with all non-lignite generation including nuclear and hard coal) and RWE Rheinbraun (which has lignite generation and the associated mining activities). The lignite operations are key to RWE, and they contributed 46.6% of total generation. Outside Germany, RWE has 1.5GW in Hungary, Portugal, Croatia, Spain and the Czech Republic.

- Transmission and distribution operations are operated through RWE Net and RWE Plus, with the latter performing energy supply as well as distribution. In total, RWE has a network of 355,000km, with 7.4m customers.

- In Gas, it sells around 340TWh annually, and owns and operates a transmission and distribution network, and serves 5.8m private household and business customers, and 3,900 industrial customers. It also has retained upstream oil and gas assets within this division.

- Other energy business operations include trading, industrial solutions, and a stake in a major US coal company, CONSOL.

- The water business is mainly regulated UK assets, through Thames Water, but the company has other international assets, including E'Town in the US, and significant positions in the Chilean water market.

RWE has also recently acquired two major businesses:

Latest acquisitions are Innogy and Transgas

- In the UK, it has bought the electricity company Innogy for €5bn, which has 8.7GW of capacity, and 6.8m customers, as well as an electricity storage business.

- In the Czech Republic, it has recently completed the acquisition of Transgas and related distribution utilities for €4.1bn.

Non-core assets, earmarked for disposal include: Heidelberger Druckmaschinen, Hochtief AG (Construction and civil engineering) and Shell & DEA Oil GmbH (production, refining and sales of petroleum products).

RWE had (short year 2001, consisting of six months) sales of €33,301m, EBITDA EUR €3,637m , net profit €621m, EPS €1.10 (including goodwill), paid a dividend of €1.00 per share and had 155,634 employees.

Strategy

RWE's strategy is to: …

RWE now aims to be a leading multi regional utility player, in all of the main markets in which it operates. In the near term, its strategy involves:

… sell its non –core businesses

- The sale of non-core assets. RWE has committed to the disposal of all non-core assets by the end of 2003.

… further cost cutting in electricity

- Efficiency in domestic operations. RWE plans further cost cutting in its domestic electricity business. Generation costs are currently around €30/MWh, and it plans to reduce these to €2.6/MWh by 2004, through further cost cuts in generation and lignite production.

… integrate recent acquisitions

- Integration of recent acquisitions. The acquisition of Innogy has recently completed, as has Transgas, and these need to be integrated into the RWE group. This will involve transfer of best practice between the new group companies, both to and from the new companies. In the UK, there may also be savings from the integration of customer managements systems of Thames and Innogy.

… complete acquisition of American Water Works

- Completion of acquisition of American Water Works. This is expected to complete in Q1 or Q2 2003. Thereafter, savings can be achieved through merger of head offices and combination of billing systems of E'Town and AWW.
- Acquisitions. The company has stated that no further substantial acquisitions will take place in the near term. We do, however, expect smaller investments to continue, such as investments in German municipal utilities, or in other acquisitions which are small extensions to existing operations.

Historic Performance

The most important factor determining RWE's operating performance in recent years was the effect of competition in electricity markets which led to poor performance in particular in 1999, but there has subsequently been a recovery resulting partly from higher prices, partly from cost cuts, as well as the integration of the businesses of VEW from 2000. Operating performance has also benefited in the last two years from the sale of telecoms businesses (removing these losses from the operations), as well as the inclusion of the water business.

Net profit has been distorted by asset sales, as well as the treatment of provisions, and this has allowed a stable growth in reported profit despite the radical underlying change in the financial performance of the core business.

RWE reported the period July 2001 to December 2001 as a "truncated" financial year, and from now on will report with a December year end (previously it had a June year end). In this short fiscal year, net profit (compared to a pro-forma short fiscal 2000) rose 26%, but the combination of the changed fiscal year and asset mix complicates analysis of trends.

Future Prospects

We expect operating profit to improve as a result of cost cutting and possible higher electricity prices

At the operating level, we expect financial performance to improve as a result of continuing cost-cutting programmes, and continued higher electricity prices. Operating performance should also be enhanced by the acquisition of Innogy, and of Transgas, and the latter's profits should also increase materially over the first two years of ownership of the asset.

The improvement in the operating performance should allow net profit to rise steadily over the next three years, and further enhancements could occur as assets are disposed.

Key Issues

Key issues affecting the company include

… higher electricity prices

- The outlook for wholesale electricity prices. With the closure of capacity in Germany, and the increased concentration in the sector, the outlook is more favourable than for many years.

… stable network prices

- Network prices. While there does not appear to be an imminent regulatory threat, in the medium term it is possible that returns will be forced downwards.
- Germany is in the process of updating its energy law. The reason for this is to increase competition in the gas sector and to set up rules for allowing third parties to use the gas pipes for transmission and their storage facilities. Other changes are discussed in the body of this report.
- The Ruhrgas acquisition by E.ON. The conditions that are imposed on this could materially affect RWE. RWE could release some of its long-term contracts with Ruhrgas as a condition of the deal, and may also be able to acquire gas assets that E.ON or Ruhrgas might be required to sell.

… synergies through integration

- The level of synergies that can be achieved by RWE through the integration of newly acquired companies.

… American Water Works acquisition

- The acquisition process for American Water Works, and its subsequent integration into Thames Water's existing operations (E'Town).

… success of the new CEO Harry Roels

- The success of the new CEO, Harry Roels.

Valuation

We use a sum of parts valuation …

The diverse nature of RWE's business, and the structural change that is underway in its core markets, means that a sum of parts method of valuation is appropriate. We value the separate elements of the electricity business separately using DCF methodologies. For other businesses, we use market values where appropriate, or our own valuation based on DCF techniques, or ratios where information supplied is relatively limited.

… and have a 28% discount to our fair value

RWE is trading at a discount of 28% to our fair value, following recent weakness in the share price. We are therefore upgrading our recommendation to 1-Strong Buy.

Figure 17: RWE financial projections

RWE

Profit and Loss (Euro m)	1999/00 A	2000/01 A	2001 A*	2002 F	2003 F	2004 F	2005 F	2006 F
Sales	47,918.0	62,878.0	33,301.0	60,845.8	69,139.2	72,537.6	74,550.9	76,823.8
EBITDA - adjusted	**4,608.0**	**6,546.0**	**3,520.0**	**7,584.3**	**8,825.3**	**9,652.0**	**10,170.4**	**10,540.4**
EBITDA plus associates	4,735.0	7,190.0	3,538.0	7,612.3	8,856.9	9,686.5	10,207.4	10,579.6
Depreciation and amortisation	-2,419.0	-3,412.0	-1,836.0	-3,178.6	-3,513.1	-3,680.3	-3,810.5	-3,944.6
Operating exceptionals	-2,234.0	-186.0	0.0	0.0	0.0	0.0	0.0	0.0
Operating profit - adjusted	**2,189.0**	**3,134.0**	**1,684.0**	**4,405.7**	**5,312.2**	**5,971.7**	**6,359.9**	**6,595.8**
Operating profit - reported	-45.0	2,948.0	1,684.0	4,405.7	5,312.2	5,971.7	6,359.9	6,595.8
Associates & income from investments	31.0	571.0	-15.0	23.5	27.2	30.3	32.9	35.3
Financial exceptionals	3,055.0	280.0	395.0	0.0	0.0	0.0	0.0	0.0
PBIT - adjusted	**2,220.0**	**3,705.0**	**1,669.0**	**4,429.1**	**5,339.4**	**6,002.0**	**6,392.8**	**6,631.1**
PBIT - all activities	3,041.0	3,799.0	2,064.0	4,429.1	5,339.4	6,002.0	6,392.8	6,631.1
Net interest	595.0	13.0	-127.0	-569.7	-787.3	-663.4	-479.1	-262.1
PBT - adjusted	**1,330.0**	**2,144.0**	**748.0**	**2,017.8**	**2,619.3**	**3,310.6**	**3,786.2**	**4,137.5**
PBT - all activities	2,151.0	2,238.0	1,143.0	2,017.8	2,619.3	3,310.6	3,786.2	4,137.5
Tax	-595.0	-478.0	-339.0	-616.0	-800.3	-1,004.1	-1,147.4	-1,256.6
Minorities	-344.0	-496.0	-183.0	-380.0	-383.8	-387.6	-391.5	-395.4
Extraordinaries	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net attributable profit - adjusted	**637.3**	**1,198.2**	**344.5**	**1,021.8**	**1,435.2**	**1,918.9**	**2,247.2**	**2,485.5**
Net Attributable profit - reported	**1,212.0**	**1,264.0**	**621.0**	**1,021.8**	**1,435.2**	**1,918.9**	**2,247.2**	**2,485.5**

Cash flow (Euro m)	1999/00 A	2000/01 A	2001 A*	2002 F	2003 F	2004 F	2005 F	2006 F
Operating cash flow	**3241.0**	**3814.0**	**1021.0**	**3348.0**	**6600.2**	**7738.9**	**8451.9**	**8902.0**
Cash flow after minority dividend & working capital change	3,027.0	3,533.0	785.0	3,112.0	6,110.2	7,243.9	7,952.0	8,397.0
Capex	-2,827.0	-3,518.0	-2,295.0	-3,887.5	-4,046.5	-4,068.5	-4,181.1	-4,298.3
Acquisitions and investment in associates	-2,096.0	-9,890.0	-1,411.0	-9,100.0	0.0	0.0	0.0	0.0
Proceeds of disposals	5,804.0	2,071.0	927.0	0.0	0.0	0.0	0.0	0.0
Group dividends	-556.0	-1,078.0	0.0	-562.0	-562.4	-554.8	-547.2	-539.6
Issue/(redemption) of group equity	-1,141.0	1,419.0	0.0	-290.3	-290.3	-290.3	-290.3	-290.3
Change in net debt	**921.0**	**-13,154.0**	**9,928.0**	**-14,077.8**	**1,210.9**	**2,330.3**	**2,933.3**	**3,268.8**

Balance Sheet (Euro m)	1999/00 A	2000/01 A	2001 A*	2002 F	2003 F	2004 F	2005 F	2006 F
Fixed assets	18,765.0	40,071.0	40,812.0	50,616.3	51,145.3	51,529.3	51,895.8	52,245.6
Financial & Deferred assets	15,728.0	14,518.0	8,370.0	8,370.0	8,370.0	8,370.0	8,370.0	8,370.0
Net working capital	4,695.0	4,019.0	105.0	3,044.4	3,907.2	4,381.0	4,703.6	5,056.2
Net cash/(debt)	**5,451.0**	**-7,703.0**	**2,225.0**	**-11,852.8**	**-10,641.9**	**-8,311.6**	**-5,378.3**	**-2,109.5**
Provisions/special reserves	-35,082.0	-40,062.0	-40,383.0	-43,077.6	-45,200.3	-47,418.3	-49,735.8	-52,157.2
Minorities	-3,191.0	-3,522.0	-3,399.0	-3,288.9	-3,177.8	-3,065.5	-2,952.1	-2,837.6
Shareholders Funds	**6,366.0**	**7,321.0**	**7,730.0**	**3,811.4**	**4,402.5**	**5,484.9**	**6,903.2**	**8,567.4**

Key statistics	1999/00 A	2000/01 A	2001 A*	2002 F	2003 F	2004 F	2005 F	2006 F
EPS - Reported (Euro)	2.25	2.31	1.09	1.80	2.57	3.48	4.14	4.64
EPS - adjusted (Euro)	1.18	2.19	0.60	1.80	2.57	3.48	4.14	4.64
EPS growth		85.5%	-72.4%	198.6%	42.4%	35.5%	18.7%	12.2%
DPS (Euro)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DPS growth	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cashflow/share (Euro)	7.82	7.54	2.60	11.14	12.48	14.00	15.22	16.32
Cashflow/share growth		-3.6%	-65.5%	328.0%	12.0%	12.2%	8.7%	7.2%
EBITDA margin (%)	10.9%	11.5%	11.7%	13.8%	14.5%	15.1%	15.5%	15.6%
Operating margin (%)	5.2%	5.5%	5.6%	8.0%	8.7%	9.3%	9.7%	9.7%
Average tax rate (%)	27.7%	21.4%	29.7%	30.5%	30.6%	30.3%	30.3%	30.4%
ROCE	5.8%	7.6%	3.1%	8.0%	8.5%	9.4%	9.9%	10.2%
ROE	9.8%	17.5%	4.6%	17.7%	34.9%	38.8%	36.3%	32.1%
Gearing (%)	-57.0%	71.0%	-20.0%	166.9%	140.4%	97.2%	54.6%	18.5%
Dividend cover	1.22	2.13	0.61	1.82	2.59	3.51	4.16	4.67
Interest cover	-3.7	-285.0	13.1	7.8	6.8	9.0	13.3	25.3
EPS - average 5 yr growth	24.1%	13.5%	30.9%	23.2%	17.1%	12.4%		
DPS - average 5 yr growth	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
CFPS - average 5 yr growth	12.3%	15.1%	25.7%	9.9%	8.8%	7.8%		
EBITDA - average 5 yr growth	15.4%	7.3%	8.4%	7.5%	4.9%	3.7%		

Source: Lehman Brothers

E.ON – Company Profile And Financials

Profile

E.ON is Germany's largest utility

E.ON is Germany's largest utility company by market capitalisation. It was formed in June 2000 from the merger of VEBA and VIAG, two energy-based conglomerates, and is in the process of restructuring its operations around core energy operations. Its activities are dominated by its energy business:

- Generation. Within Germany, it owns and operations power stations with a total installed capacity of 24.8GW. Nearly 45% of electricity production is from nuclear, and around one-third is from hard coal. Total installed capacity is some 33.6GW, and total production in 2001 was 141.8TWh.

- Its high voltage transmission network is some 32,700km, running through the central portion of Germany from Schleswig-Holstein in the north, to Bavaria in the south.

- It has stakes in regional utilities and Stadtwerke, through which it operates distribution systems and supplies electricity, gas, water, and heat.

- Internationally, it has significant operations in Sweden (Sydkraft, 55%), the Netherlands, the Czech Republic and Hungary.

- Gas. E.ON currently has stakes in 18 gas companies, which together serve around 5m customers.

Its non-core activities include chemicals (Degussa), transportation (Stinnes), real estate (Viterra) and telecommunications (Bouygues and Connect).

E.ON is in the process of making two major acquisitions:

- Powergen. SEC approval for this has been given, and we expect the deal to close in July 2002. This will give E.ON 7.8GW of capacity in the UK, 3m customers, and, through LG&E, 8.3GW of generation capacity and 1.2m energy accounts. The SEC approval requires E.ON to dispose of non-utility operations within five years.

- Ruhrgas. E.ON has agreement to acquire control of Ruhrgas from several sources, which is subject to a *Ministererlaubnis* (see Appendix 1).

In 2001, E.ON had sales of €79,664m, EBITDA of €8,626m, Net income €2,048m, EPS €3.03, paid€1.60 dividend per share and had 151,953 employees.

Strategy

E.ON is in the process of a radical restructuring of its operations to focus on electricity and gas, which it now sees as its core businesses. It wishes to become a leading global player in the business. The strategy has the following main elements:

Big portfolio of disposals

- Disposals. Non-core assets with a total enterprise value of some €25bn are earmarked for disposal. Stinnes is scheduled for disposal by the end of 2002, telecoms assets are expected to be sold shortly, if the Ruhrgas acquisition is approved, control of Degussa will eventually transfer to RAG, and advisors for the sale of the property assets (Viterra) have already been appointed.

Ongoing cost cutting

- Cost cutting. While profits in the German electricity business have risen sharply this year so far, performance is still unsatisfactory, and E.ON will continue to cut costs to improve performance, through adoption of best practice and mergers of subsidiary units to exploit potential economies of scale.

- Expansion in Germany. Where possible, E.ON will continue to enhance its market position, as it has recently with the acquisition of Wesertal, and is planned with Ruhrgas.

Further acquisitions to focus on the US, Nordic region and Eastern Europe

- International Expansion. E.ON has announced that it will spend some €40bn on acquisitions in the near future, including €10bn for Ruhrgas, with a focus on the US. Other areas for expansion include the Nordic Region, Eastern Europe, and the UK.

Historic Performance

Volatile income due to disposals

E.ON' s net income has been volatile in the recent past, because of the high level of disposals. For example, in 2000 E.ON had gains from disposals of fixed assets of €5bn, while in 2001 these amounted to only €1bn.

At the operating level, one of the main drivers has been the energy division. Internal operating profit fell from €1.6bn in 1997 to around €1.5bn in 1999, when electricity prices crashed. Profits rose in 2000, and again in 2001, but this was on a much larger business, following the merger of Preussenelektra (from VEBA) with Bayernwerk (from VIAG).

Performance of non-core businesses has also been volatile, and influenced by disposals of parts of divisions. However, the most important effect driving the strong improvement in "internal operating profit" in 2001 was the sale of telecoms assets, which narrowed losses from this division substantially.

Future Prospects

Operating profits expected to improve in 2002

At the operating level, we expect a substantial improvement in 2002 and beyond in the performance of the core energy division. This is a result of sustained higher electricity prices, combined with cost cuts (E.ON expects to reduce its headcount in the energy division by some 700 staff in 2002). Earnings should also be boosted by the full consolidation of Sydkraft and Heingas. In addition, E.ON will gain from additional assets acquired, in particular Powergen which we estimate will add €623m to internal operating profit in 2002 and €1,482m for 2003.

In other divisions, we estimate there will be a number of offsetting changes: oil profits will reduce, because of the transfer of control to BP; we expect a modestly improved performance at Chemicals; real estate profits should rise by around 12%; telecoms losses should narrow further; while distribution/logistics division profits should fall following the sale of KloCo.

High book gains expected in 2002

At the net level, we expect a higher net book gain in 2002 than in 2001 following the sale of VAW Aluminium, the reduction in the stake of VEBA Öl, the break up of Rhenag, and the diposal of Steag. Further gains may also arise, if the Ruhrgas deal completes, as E.ON will then sell part of its shares in Degussa. In addition, other asset sales, such as telecommunications, Stinnes and/or Viterra are possible.

Key Issues

Key issues affecting the company include:

- The outlook for wholesale electricity prices. With the closure of capacity in Germany, and the increased concentration in the sector, the outlook is more favourable than for many years.
- Network prices. While there does not appear to be an imminent regulatory threat, in the medium term it is possible that returns will be forced downwards.
- Germany is in the process of updating its energy law. The reason for this is to increase competition in the gas sector and to set up rules for allowing third parties to use the gas pipes for transmission and their storage facilities. Other changes are discussed in the body of this report.
- The Ruhrgas acquisition. This has been blocked by the Cartel office, but E.ON has asked for a Ministererlaubnis, and a decision on this is expected in July. The key investment issue will be the conditions that are attached to the deal, and whether these are acceptable to E.ON.
- Completion of the Powergen acquisition. This has now received SEC approval, and is expected to close in July.

Risk of further acquisitions and paying a to high premium

- Whether additional acquisitions will create value. With over €40bn to spend, this is a clear risk. E.ON needs to demonstrate that it has an enduring competitive advantage that will allow it to enhance value from these.
- The disposal programme. There is a clear execution risk, although it is possible that the risk may be on the upside.
- The new CEO, who will take over from Ulrich Hartmann when he retires.

Valuation

Our valuation is based on a sum of parts valuation…

The diverse nature of E.ON's business, and the structural change that is underway in its core markets, means that a sum of parts method of valuation is appropriate. We value the separate elements of the electricity business separately using DCF methodologies. For other businesses, we use market values where appropriate, or our own valuation based on DCF techniques, or ratios where information supplied is relatively limited.

… including a €6bn reduction for acquisition risk

We also make a reduction in value of €6bn to reflect the potential for the company to dissipate value through acquisitions. This is consistent with premia of 20% to fair value on acquisitions of €30bn.

We upgrade E.ON to a 1-Strong Buy

Even with the acquisition discount, we still find substantial value in E.ON, and our fair value is some €73/share. Our recommendation is therefore 1-Strong Buy.

Figure 18: E.ON – financial projections

E.ON

Profit and Loss (Euro m)	1999 A	2000 A	2001 A	2002 F	2003 F	2004 F	2005 F	2006 F
Sales	52,905.0	82,983.0	79,664.0	52,853.1	60,056.7	61,637.1	63,619.7	65,707.2
EBITDA - adjusted	**3,372.0**	**7,487.0**	**7,102.0**	**7,994.7**	**9,404.3**	**9,670.6**	**9,639.5**	**9,811.9**
EBITDA plus associates	3,823.0	7,497.0	8,010.0	9,040.1	10,432.3	10,761.2	10,813.5	11,056.4
Depreciation and amortisation	-3,165.0	-4,917.0	-3,827.0	-4,160.7	-4,598.9	-4,676.8	-4,765.9	-4,871.1
Operating exceptionals	846.0	-715.0	-975.0	-150.0	0.0	0.0	0.0	0.0
Operating profit - adjusted	**207.0**	**2,570.0**	**3,275.0**	**3,834.0**	**4,805.4**	**4,993.8**	**4,873.6**	**4,940.8**
Operating profit - reported	1,053.0	1,855.0	2,300.0	3,684.0	4,805.4	4,993.8	4,873.6	4,940.8
Associates & income from investments	451.0	10.0	908.0	1,045.4	1,027.9	1,090.6	1,174.0	1,244.5
Financial exceptionals	2,562.0	4,755.0	908.0	3,322.0	0.0	0.0	0.0	0.0
PBIT - adjusted	**658.0**	**2,580.0**	**4,183.0**	**4,879.4**	**5,833.4**	**6,084.3**	**6,047.6**	**6,185.3**
PBIT - all activities	4,066.0	6,620.0	4,116.0	8,051.4	5,833.4	6,084.3	6,047.6	6,185.3
Net interest	-113.0	-69.0	-218.0	-167.5	-587.3	-325.1	-56.9	199.8
PBT - adjusted	**545.0**	**2,511.0**	**3,965.0**	**4,712.0**	**5,246.1**	**5,759.2**	**5,990.7**	**6,385.1**
PBT - all activities	3,953.0	6,551.0	3,898.0	7,884.0	5,246.1	5,759.2	5,990.7	6,385.1
Tax	-1,051.0	-2,512.0	-761.0	-2,055.0	-1,358.6	-1,494.0	-1,555.1	-1,659.3
Minorities	-234.0	-469.0	-527.0	-542.8	-559.1	-575.9	-593.1	-610.9
Extraordinaries	0.0	0.0	-562.0	0.0	0.0	0.0	0.0	0.0
Net attributable profit - adjusted	**282.4**	**742.0**	**2,656.9**	**3,065.8**	**3,328.4**	**3,689.3**	**3,842.4**	**4,114.9**
Net Attributable profit - reported	**2,668.0**	**3,570.0**	**2,048.0**	**5,286.2**	**3,328.4**	**3,689.3**	**3,842.4**	**4,114.9**

Cash flow (Euro m)	1999 A	2000 A	2001 A	2002 F	2003 F	2004 F	2005 F	2006 F
Operating cash flow	**3255.0**	**3473.0**	**3907.0**	**7873.6**	**7927.5**	**8779.5**	**9007.8**	**9392.5**
Cash flow after minority dividend	3,149.0	3,399.0	3,631.0	7,597.6	7,651.5	8,503.5	8,731.8	9,116.5
Capex	-2,526.0	-3,759.0	-3,768.0	-2,535.6	-2,237.8	-2,310.1	-2,585.6	-2,679.2
Acquisitions and investment in associates	-5,493.0	-9,716.0	-4,163.0	-8,886.0	0.0	0.0	0.0	0.0
Proceeds of disposals	6,309.0	8,719.0	20,135.0	882.0	0.0	0.0	0.0	0.0
Group dividends	-540.0	-628.0	-954.0	-954.0	-1,312.2	-1,555.2	-1,843.3	-2,184.6
Issue/(redemption) of group equity	0.0	-925.0	-3,359.0	0.0	0.0	0.0	0.0	0.0
Change in net debt	**-233.0**	**-2,419.0**	**4,902.0**	**-10,996.0**	**4,101.5**	**4,638.2**	**4,302.9**	**4,252.7**

Balance Sheet (Euro m)	1999 A	2000 A	2001 A	2002 F	2003 F	2004 F	2005 F	2006 F
Fixed assets	21,781.0	38,558.0	44,744.0	52,004.9	49,643.8	47,277.0	45,096.8	42,904.8
Financial & Deferred assets	13,865.0	24,782.0	15,297.0	15,297.0	15,297.0	15,297.0	15,297.0	15,297.0
Net working capital	4,920.0	9,096.0	4,427.0	2,935.9	3,331.8	3,286.3	3,218.7	3,098.6
Net cash/(debt)	**-3,326.0**	**-5,745.0**	**-843.0**	**-11,839.0**	**-7,737.5**	**-3,099.3**	**1,203.6**	**5,456.3**
Provisions/special reserves	-19,868.0	-33,535.0	-32,801.0	-32,881.0	-32,961.0	-33,041.0	-33,121.0	-33,201.0
Minorities	-2,990.0	-5,123.0	-6,362.0	-6,628.8	-6,911.9	-7,211.8	-7,528.9	-7,863.9
Shareholders Funds	**14,382.0**	**28,033.0**	**24,462.0**	**18,889.1**	**20,662.3**	**22,508.3**	**24,166.2**	**25,691.9**

Key statistics	1999 A	2000 A	2001 A	2002 F	2003 F	2004 F	2005 F	2006 F
EPS - Reported (Euro)	5.31	5.64	2.96	7.64	4.81	5.33	5.55	5.95
EPS - adjusted (Euro)	0.56	1.17	3.84	4.43	4.81	5.33	5.55	5.95
EPS growth	-53.2%	108.7%	227.6%	15.4%	8.6%	10.8%	4.1%	7.1%
DPS (Euro)	1.25	1.35	1.60	1.90	2.25	2.66	3.16	3.74
DPS growth	16.8%	8.0%	18.5%	18.5%	18.5%	18.5%	18.5%	18.5%
Cashflow/share (Euro)	6.26	5.37	5.25	10.98	11.06	12.29	12.62	13.17
Cashflow/share growth	4.9%	-14.3%	-2.3%	109.2%	0.7%	11.1%	2.7%	4.4%
EBITDA margin (%)	6.9%	10.1%	10.2%	15.3%	15.9%	15.9%	15.3%	15.1%
Operating margin (%)	0.4%	3.5%	4.7%	7.4%	8.1%	8.2%	7.8%	7.6%
Average tax rate (%)	26.6%	38.3%	19.5%	26.1%	25.9%	25.9%	26.0%	26.0%
ROCE	1.8%	4.6%	6.1%	7.2%	8.4%	9.1%	9.3%	9.9%
ROE - adjusted	2.2%	3.5%	10.1%	14.1%	16.8%	17.1%	16.5%	16.5%
Gearing (%)	19.1%	17.3%	2.7%	46.4%	28.1%	10.4%	-3.8%	-16.3%
Dividend cover	0.4	1.2	2.8	2.3	2.1	2.0	1.8	1.6
Interest cover	5.8	37.4	19.2	29.1	9.9	18.7	106.3	-31.0
EPS - average 5 yr growth	56.8%	36.5%	9.1%	7.4%	6.8%	5.8%	5.9%	
DPS - average 5 yr growth	16.3%	18.5%	18.5%	18.5%	18.5%	18.5%	18.5%	
CFPS - average 5 yr growth	14.4%	18.6%	20.2%	4.6%	5.3%	3.9%	4.2%	

Source: Lehman Brothers

Appendix. Network Prices In Germany

Price regulation

Most countries have regulators. Germany does not have a regulator

Electricity transmission and distribution are both natural monopolies, which means that in most countries with liberalised electricity markets this element of the electricity price is regulated to ensure that customers are charged reasonable prices. It is often stated that prices in Germany are not regulated, because there is no independent regulatory body. This is not entirely true. Although there is no formal independent regulatory body like there is in the UK, Italy, and Portugal, the law does provide some restrictions on charging structures, and companies can be challenged by customers if charges are inappropriate.

… Association Agreement used to determine network prices

There are a number of legal restrictions on network prices that can be derived from the 1998 German energy law, the 1996 EU Electricity Directive, as well as Competition Law (both German and EU). The main requirements that can be derived are that prices should be transparent, objective, and should not discriminate between users.

In practice, these legal requirements are met by system users through industry-wide agreements for the method of determining access prices. These are known as the *Verbändevereinbarungen*, or Association Agreements. Signatories to these agreements include all the main network operators, as well as industrial customers, electricity producers, and municipal utilities through their respective industry associations.

Individual network operators set out prices using the methodology set out in the *Verbändevereinbarungen*. The German Cartel Offices examine prices *ex post* to ensure that there has been no abuse of pricing, but in practice this is relatively light scrutiny as the resources available for this are low. In addition, customers may bring cases against individual network operators using competition law if they believe prices have been unfair.

Finland and Sweden have similar regulatory style

This style of regulation is different from that of many European countries with independent regulators. However, the process of regulation is quite similar to the regulatory style adopted in both Finland and Sweden. In Finland, for example, customers can take complaints about network fees to a local court, which rules on whether prices are reasonable. The regulatory authority has provided a methodology for determining whether prices are reasonable, and this is used by the courts to assess prices. There is a major difference between the German method and that used in the Nordic region: in the latter, case, legal unbundling of network activities, and use of a centrally approved methodology makes court decisions consistent, transparent, and deregulation has therefore been effective.

Prices in the electricity *Verbändevereinbarung*

Verbändevereinbarung is a framework for access prices for all network operators

The electricity *Verbändevereinbarung* is an agreement between the market participants and industry associations in the German electricity industry which gives a framework for how network prices are determined. This sets out the principles of how prices will be determined, but does not agree individual prices for each company. The aim of the agreement is to provide a framework for access pricing, so that the approach is consistent between different network operators. The key elements of the agreement are:

- Use of system charges are paid by electricity suppliers, which pass on their costs to consumeres based on the voltage level at which they are connected, electricity consumption, and their peak demand.

German customers pay a single network access charge

- There is a single network access charge that covers network infrastructure, as well as ancillary services, balancing services, and losses. The network access charge to a German customer, therefore, is comparable to the sum of the Transmission Use of System charge, the Balancing Services use of system charge, as well as Distribution Use of System charges that are paid by UK customers.
- Generators do not pay use of system charges. They pay a one-off charge to connect to the system, and new generators may be asked to pay for any remote system reinforcement necessary to connect them, but use of system is essentially paid for by load, rather than generation.
- Cost plus. The method of pricing is still "cost-plus". Under the agreement, network operators are allowed to pass through all cash costs including materials, personnel costs, taxes, and interest, and earn a reasonable return on invested capital. However the asset base used for the calculation is not related to the asset base in the accounts, but is calculated on a different basis. We understand that the asset base is related to the depreciated replacement value of the asset, rather than the net historic cost value.
- There is provision for the use of benchmark costs as a method of determining prices in future.

The gas Verbändevereinbarung

The Verbändevereinbarung for gas is similar to that for electricity, but structure of charges is different

The gas Verbändevereinbarung is similar to that for electricity.

The level of charges is set to allow a reasonable rate of return (7.8%) on a value of an asset base, which as with electricity is a calculated asset value.

The structure of charges is different from those for electricity networks under the current *Verbändevereinbarung*:

- The network is divided into five different levels, depending on the size of the pipe. The largest group is for pipes greater than 1,000mm in diameter (A), the smallest for pipes less than 350mm (E).

- Each element of the network is assigned a number of points. These points will depend on the pipe diameter group, the length of the pipe, location, and other factors. Elements of the network cannot exceed 20km, or 10 points, so that the charging structure can be sufficiently fine.

- A deemed contract path between the location of gas injection and withdrawal is chosen, and the points are added up to determine the charge.

Storage use will be priced at market prices

It is presumed in the agreement that storage will be priced according to a market mechanism. The need for gas balancing pricing is recognised, and a different price can be charged for gas surpluses and deficits, but a detailed balancing methodology has not been identified.

First come, first served

Long-term contracts retain priority when there is congestion – the transport company cannot (in theory) arbitrarily refuse access.

The agreement also sets out various technical terms and conditions, ways of dealing with gas that is not "compatible" with the network, and dispute resolution procedures.

Assessment of method of pricing

The Association Agreements are often criticised and often changed

There have been numerous criticisms of network pricing in Germany. While in theory the German industry was fully liberalised in 1998, the operation of the Verbändevereinbarung has been thought by many to slow the development of effective competition. Some of the major problems, such as the complexity and distortions of contract-path based transmission charges, were addressed in the second Verbändevereinbarung. Other problems were resolved by competition authority conditions imposed on the mergers of VEBA and VIAG, and RWE and VEW. Some of the other problems, such as high charges to customers for switching suppliers, have been forbidden in recent rulings by the Cartel office.

The current version is still not perfect

The charges are evolving, and improving, but are still not perfect. For investors, we think that the most important changes that can be made would be to increase transparency.

We can see no reason why the regulatory asset base, and its method of calculation, should not be published for each network operator. This would provide transparency for customers. It would also help investors to place an appropriate value on the business.

We think that there is also a need to separately identify the costs of balancing services and ancillary services. We understand that the ratio of Transmission Operator costs to System operator costs is broadly 75:25. Revenues for system operator services are currently collected by transmission operators, and passed through to generation companies, and transparency would help understand the value that generation assets create through provision of these services, in addition to the value of energy production.

Implications for German electricity companies

A number of features of the German electricity market are relatively complex and opaque, and these are characteristics of regulation, and the determination of network prices:

- It does appear that, in the short term, there is a limited threat from tougher regulation of network fees in Germany. The current system of access pricing is far from perfect. However, it is an improvement over the contract-based method of charging that was established shortly after liberalisation. Scrutiny by the Cartel office, with enhanced resources, and pressure from customers will lead to further evolution of this system, and for particular utility companies (some subsidiaries of E.ON and RWE) there may be revenue reductions, but overall there does not appear to be a substantial immediate threat to RWE or E.ON.

- Regulatory change in the medium term remains likely. The basis of calculation of charges is not transparent. Customer cannot themselves check that returns on an allowed regulatory asset base are reasonable. Given that the book value of assets is far lower than the regulatory asset base, accounting returns in the business are high. As separate accounting data for these businesses becomes more widely available, pressure for more transparency will increase.

- Cost-cutting incentives in the business are poor. Under the current system, cost cuts should be passed to customers. However, it is likely that there is a lag between cost cuts being achieved and price cuts being made, and this lag probably allows the company to earn returns above the cost of capital. There is not sufficient information at present to check whether this does happen, but we believe it seems likely.

- Publication of separate accounts for the network business will facilitate separate valuation of this business. However, while the separate commercial accounts will be published, it seems that companies are not prepared to publish the "regulatory asset value" which is the basis for determining prices.

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