

# German utilities

In control



Return to fundamentals favours E.ON and RWE ►

Generation profits set to rebound, little threat to grid fees ►

40% upside for E.ON, 20% for RWE ►



# German utilities

In control

Following widespread 'Enronitis' and a renewed focus on quality, fundamentals are staging a comeback. This should benefit E.ON and RWE, as their drive towards restructuring and predictable cash flows are finally recognised. We reiterate our Buy recommendation for E.ON and also upgrade RWE to an Add.

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Reuters/Bloomberg

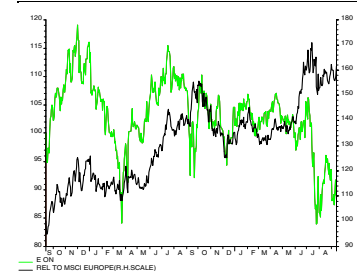
EONG.DE/EOA GR

RWEG.DE/RWE GR

MVVG F/MVV GR

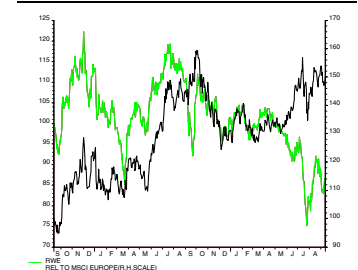
- ▶ **Quality plays:** Despite significant progress towards restructuring E.ON is currently trading at a 35% discount to our sum-of-the-parts, and RWE at 25%. We estimate that E.ON will generate operating cash flow of €7.4bn pa by 2004, and RWE €6.5bn pa. In the current macro environment these defensive cash flows deserve a higher rating, especially in the light of an improving outlook for the core business.
- ▶ **Just the four of us:** E.ON, RWE, Vattenfall Europe and EnBW now control 87% of the generation capacity in Germany, 100% of transmission and about 60%+ of distribution and supply. We believe that this concentration will ensure that pricing discipline will be improved, as the 'Big Four' now control the German electricity market. At the same time we only foresee a gradual reduction in grid access fees.
- ▶ **Tighter reserve margin:** Although control of the German generation capacity does not give the 'Big Four' long-term pricing power, due to interconnections, we believe that the effective reserve margin for the relevant UCTE market could be tighter than is currently anticipated. The UCTE recently reported that during the cold spells of December 2001 the reserve margin on the European grid fell to only 5%.
- ▶ **Lower fuel costs:** Coal prices have fallen by around 40% in euro terms over the past 12 months. E.ON and RWE source about 30% of their output from hard coal. Given that utilities usually buy coal on 12 to 18-month contracts, the main impact on operating costs is still to come.
- ▶ **Lower acquisition risk:** RWE's lack of funds and E.ON's targeting of the US utility sector reduces the chances of value destruction through over-paying.

**E.ON relative to MSCI Europe**



Source: Thomson Financial Datastream

**RWE relative to MSCI Europe**



Source: Thomson Financial Datastream

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# Summary

**After the German electricity market was liberalised on 29 April 1998, the utilities had to adapt to a completely different operating environment practically overnight. Despite early problems, the utilities, by and large, managed the transition process exceptionally well. Aggressive cost control drove out pre-liberalisation inefficiencies, and the consolidation of the sector proceeded at amazing speed. Only four years after liberalisation the German electricity market is practically controlled by four players: RWE, E.ON, Vattenfall Europe and EnBW.**

**Restructuring.** Perhaps most beneficial to shareholders was the strategic re-think of focusing on the core business. Over the last four years E.ON raised €32bn from the sale of non-core activities; quite impressive for a €34bn market cap company. RWE sold around €10bn worth of non-core assets, while spending €32bn (enterprise value) on four major acquisitions in its core business; quite a transformation for a €20bn market cap company.

**Are fundamentals staging a comeback?** Amazingly, these dramatic restructuring drives were more or less ignored by the market, as sector rotation remained the main share price driver during the TMT-bubble and the following rush into defensives. Over the past three years the relative performance of E.ON and RWE against MSCI Europe showed a correlation to the NASDAQ of a remarkable  $-0.92$ .

'Enronitis' has brought the focus back to company fundamentals, however. The utility sector is no longer automatically regarded as defensive, as the sector is not immune to quality issues. Since the beginning of the year the utility sector continues to outperform markets overall, but shows a flat performance against the market ex-TMT. We believe that a greater focus on fundamentals will benefit E.ON and RWE.

**Improving operating environment.** We believe that E.ON and RWE could see rising generation margins over the next two to three years, with rising electricity prices and falling fuel costs. At the same time profitability in distribution and supply will only see limited downward pressure, in our view, as regulation is influenced by politics which is likely to take into account the financial situation of the weakest market participants (Germany's 900+ municipal utilities).

**Tighter 'real' reserve margin.** Inefficiencies encouraged by Germany's 'cost-plus' tariff system mean that the existing power plant portfolio is structurally unbalanced, with the mid-merit section under-represented. As the most inefficient plants are closed or mothballed, peak plants are slipping into the mid-merit section of the market, thus putting upward pressure on prices.

Although the net long position of E.ON and RWE is difficult to determine, due to the significant number of participations, and some uncertainty as to what degree rising wholesale prices can be passed through to end customers, we estimate that every one euro rise in the base load price means an additional €20m income for E.ON and €10m for RWE.

**New entrants a long way off.** We calculate new entrant cost for the German electricity market at €36/MWh. With base load forward prices still trading at €25/MWh, prices could rise by more than 40% from current levels before attracting new entrants. Although we do not believe that prices will rise to this level in the short term, such a move would add €220m to E.ON's operating profit and €110m to RWE's.

**Price targets.** Despite the impressive progress made in their restructuring drives, we still maintain a 10% conglomerate discount for setting our price targets. Assuming the Ruhrgas deal goes through, and E.ON eventually manages to sell its remaining direct shareholding in Degussa, it will still retain an indirect stake of 39.2% via its shareholding in RAG. Given that the chances of disposing of its stake in RAG are remote, E.ON will effectively lock-in part of its conglomerate discount for the foreseeable future. Valuing the core energy business at 7.5x 2002 EV/EBITDA in our sum-of-the-parts (SOTP), we get an equity value of €76.4 per share. After applying a 10% conglomerate discount we get a price target for **E.ON** of **€69**.

RWE still has to dispose of Heidelberger Druck and Hochtief before it stands any realistic chance of shaking off its conglomerate discount. This process could be speeded up if the waste management division were to be sold as well, as it presents the weakest link in RWE's multi-utility strategy. Once RWE's transition is complete it will be able to reap the full benefits of its restructuring. A great IR effort also means that once the remaining non-core activities are sold, attractive earnings visibility should be rewarded. Valuing the electricity business at 7x 2002 EV/EBITDA in our SOTP, we get an equity value of €46.3 per share. After applying a 10% conglomerate discount and allowing for preference shares we get a price target for **RWE** of **€42**.

# Summary

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# European electricity market

With a consumption of 500TWh pa, Germany is the biggest electricity market in Europe, ahead of France and UK. About 48% of this demand comes from bigger industrial users and 26% from residential customers, which compares with European averages of 44% and 29% respectively. By and large the consumption in the various countries is covered by own generation, with the biggest differences occurring in France (surplus due to immense nuclear capacities) and Italy (deficit due to no nuclear capacities).

European electricity market (2000 data)

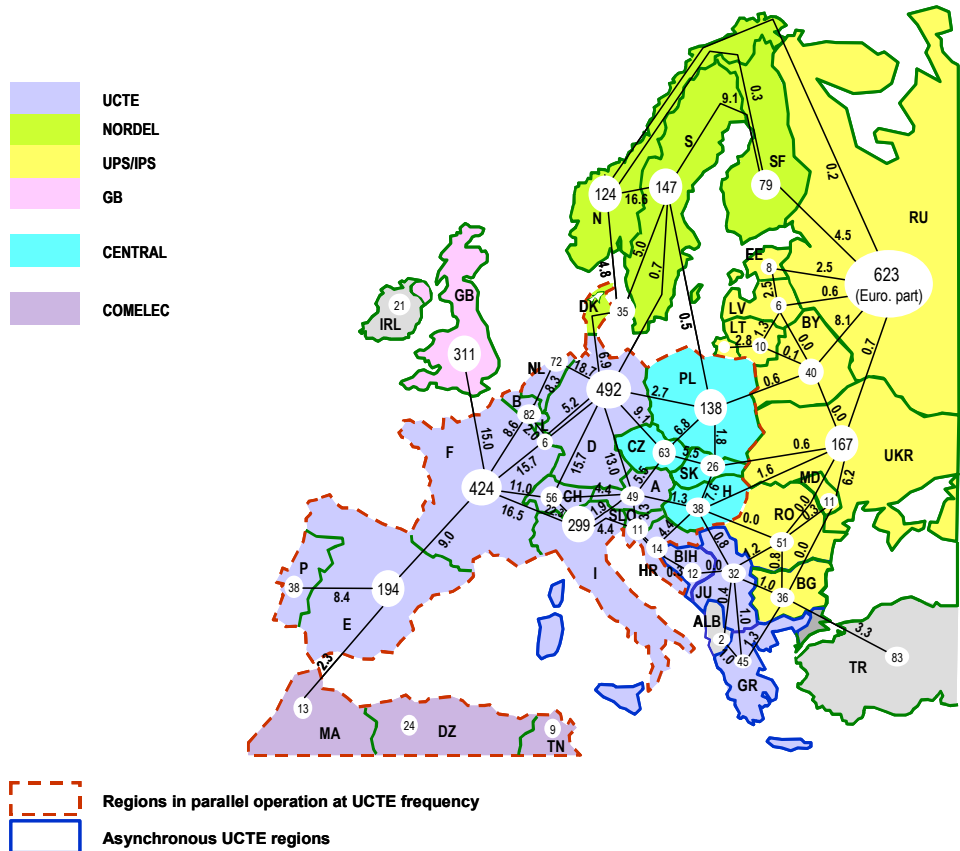
	Consumption			Generation
	Industry %	Residential %	Other %	Net TWh
Germany	47.8	26.0	26.2	526.0
France	40.9	31.6	27.5	499.0
UK	35.8	33.5	30.7	356.4
Italy	50.6	22.0	27.4	262.4
Spain	43.6	25.2	31.2	213.4
Sweden	42.1	30.0	27.9	141.9
Norway	44.4	31.4	24.2	141.1
Netherlands	38.7	21.6	39.7	85.0
Belgium	51.1	21.2	27.7	80.1
Finland	57.0	23.8	19.2	67.2
Austria	51.7	27.3	21.0	60.2
Switzerland	34.5	30.0	35.5	65.7
Greece	34.3	31.7	34.0	46.7
Portugal	42.6	26.1	31.3	41.9
Denmark	30.3	29.6	40.1	34.7
Ireland	38.4	34.5	27.1	22.7
Luxembourg	66.1	14.3	19.6	1.3
<b>Total</b>				<b>2,468.2</b>
<b>Average (%)</b>	<b>44.1</b>	<b>27.0</b>	<b>28.8</b>	

Source: EUROSTAT, VSE, Euroelectric, VDEW

Germany is the biggest electricity market in Europe

A significant amount of electricity is exchanged between European countries, but also with the eastern European states of the CENTREL grid system. The majority of electricity exchanges take place within the UCTE, the continental European grid system. The most active exchange of electricity between the different grid systems takes place between the UCTE and CENTREL, followed by electricity flows between the UCTE and the UK grid system (see chart overleaf).

**Electricity consumption and exchanges in 2000**



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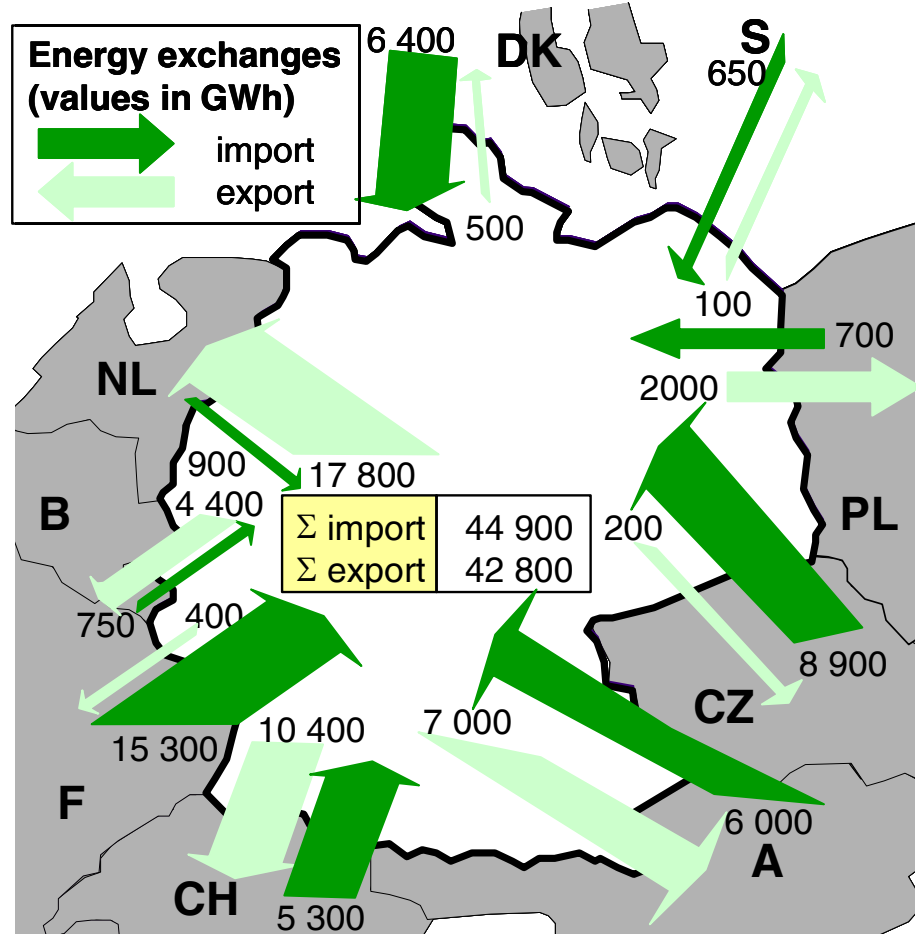
(values in TWh, values for the countries for Ex-Yugoslavia, AL, TR and the COMELEC countries are estimated values)

Source: DVG

Significant cross-border electricity exchanges in Europe

Because of the significant cross-border electricity flows it would be misleading to look at various countries in isolation when trying to determine demand/supply imbalances. In 2000, for example Germany's import/export balance was only 2.1TWh, or less than 0.5% of total consumption. However, combined imports and exports added up to 87.7TWh, or 17.5% of total consumption.

Germany's energy exchanges in 2000



Source: DVG

Relevant market for E.ON and RWE is not restricted to Germany, but consists of almost the whole UCTE system

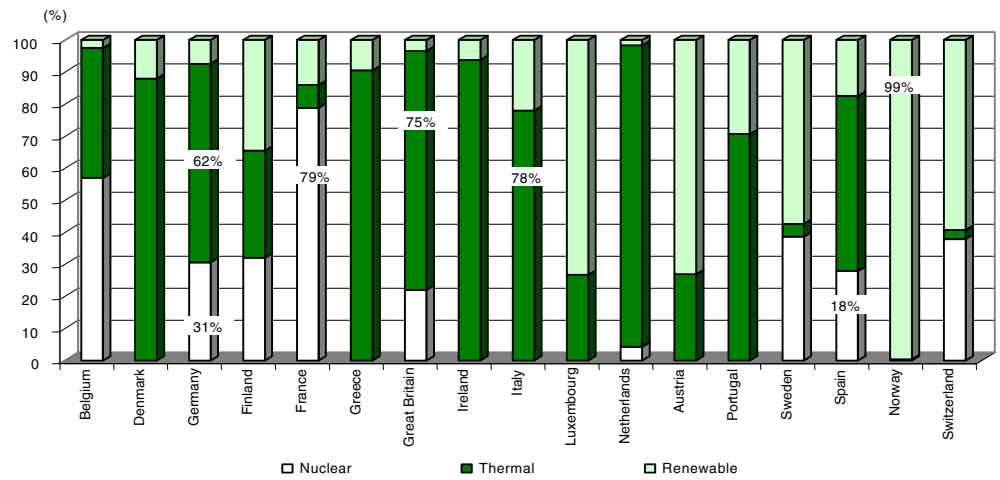
Therefore the European electricity market can be split into five different regions:

- ▶ The Nordic countries of the NORDEL grid system
- ▶ Central Europe down to the Pyrenees and the Alps
- ▶ The three 'isolated' markets of Italy, Spain and the UK

Strictly speaking these markets are not isolated as such, because quite a significant amount of electricity flows between them and central Europe; however, the costs associated with extending the existing capacity are often prohibitive due to the terrain covered.



**Capacities in Europe**



Source: Eurelectric, VDEW

Structure of generation capacities varies significantly from country to country

The structure of the power plant portfolio varies significantly from country to country, partly due to geographic conditions (hydro accounts for 72% of Austrian production, almost 100% in Norway) or political preferences (79% of French capacity is nuclear, while Italy stopped nuclear energy production after the Chernobyl disaster in 1986).

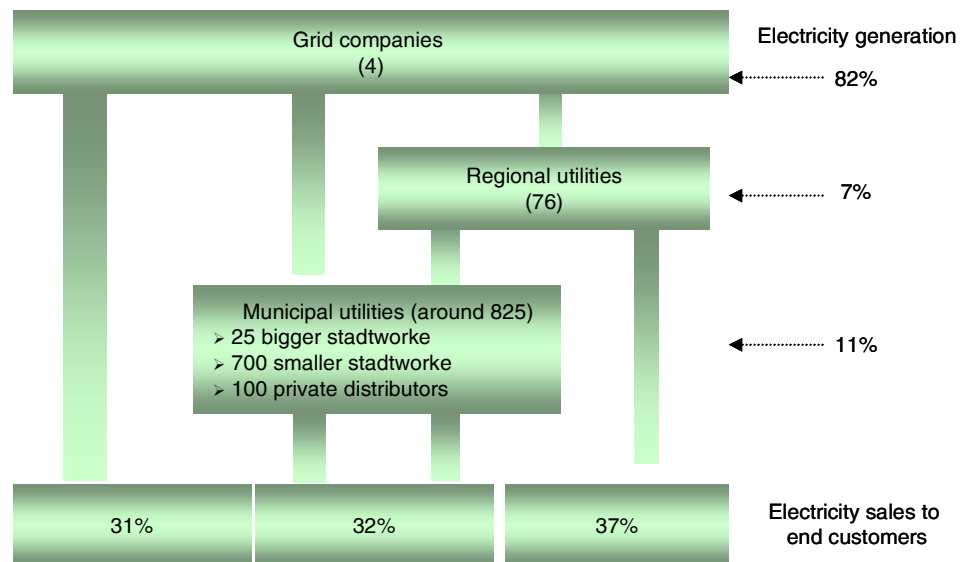
Country	Regulator	Grid access
France	CRE (Commission de Régulation de l'Electricité)	rTPA
Germany	None, Federal Cartel Office slowly assuming this role	nTPA
Italy	AEEG (Autorita' per l'Energia Elettrica e il Gas)	rTPA
Portugal	ERSE (Entidade Reguladora do Sector Electrico)	rTPA
Spain	Ministry of the Economy (advised by CNE)	rTPA
UK	OFGEM (Office of Gas and Electricity Markets)	rTPA

Source: DrKW

# German electricity market

Although there are more than 900 electric utilities in Germany, the industry was always dominated by the ‘grid companies’ who own and operate the high-voltage grid. In 1997, before the consolidation of the sector started to gather pace, there were nine grid companies. In October 1997, Badenwerk and Energie-Versorgung Schwaben (EVS) merged to become EnBW. In September 1999 VEBA and VIAG merged into E.ON, and RWE merged with VEW in October 1999.

Structure of the German electricity market



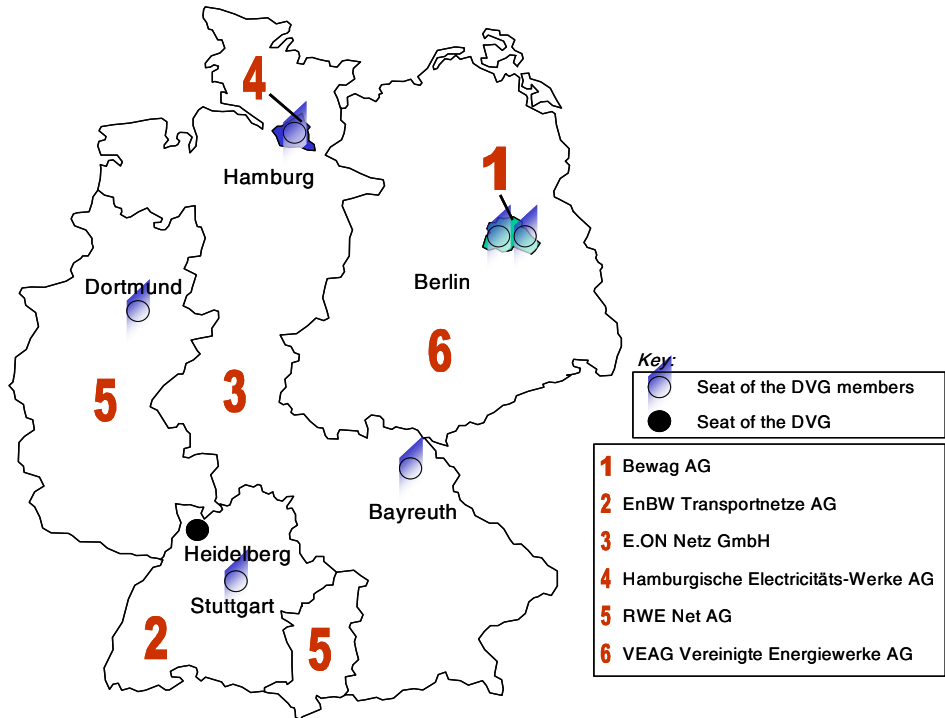
Source: VDEW, RWE Rheinbraun, DrKW

From nine grid companies to four in only five years

The remaining three grid companies, Hamburg’s HEW, Berlin’s Bewag and eastern German VEAG are now in the process of merging into Vattenfall Europe. The first step, the merger between HEW and VEAG, was already completed in August 2002. Bewag is set to follow in Q1 2003.

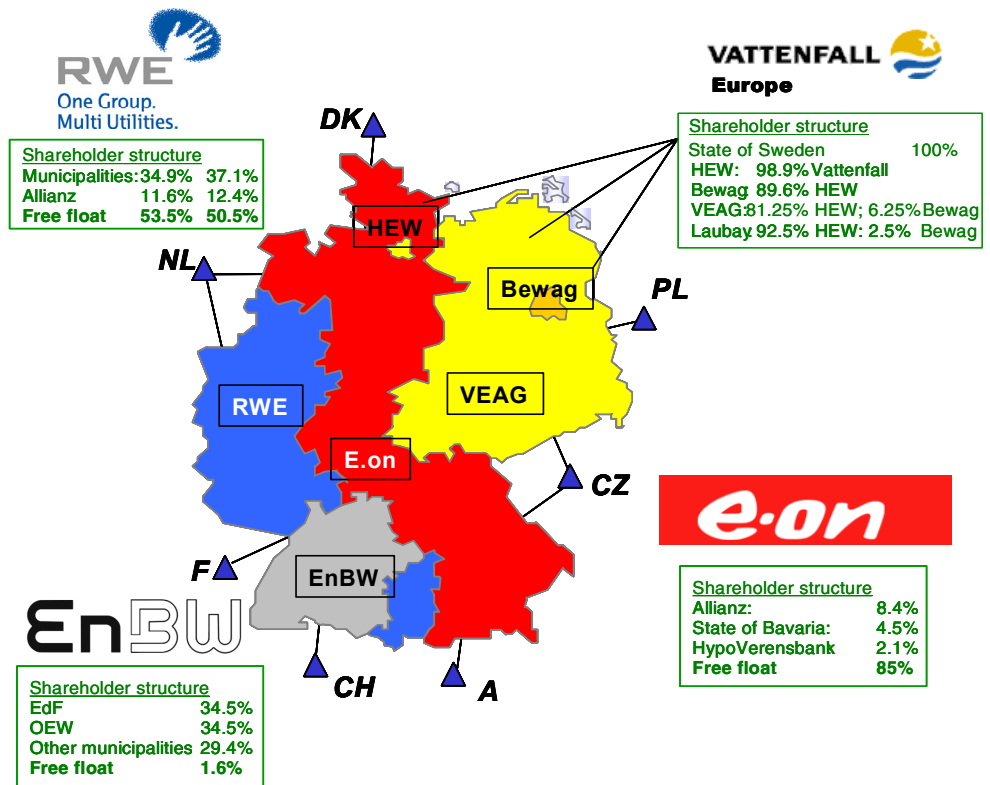
The speed of the consolidation – reducing the number of grid companies from nine to four over just five years – gives an indication of how profound the impact of liberalisation on the German electricity market was.

Control areas of the German Transmission System Operators



Source: DVG

The Big Four



Source: DVG, company data, DrKW

'Big Four' now control 87% of all capacity owned by public utilities...

The 'Big Four' now control 74% of the generation capacity in Germany, with the remaining capacities being owned by other public utilities (11%), auto producers (9%) and private suppliers (6%). Of the capacities controlled by public utilities, the 'Big Four' have a market share of 87%. In terms of actual output the market shares are similar, with the 'Big Four' supplying around 85% of all electricity fed into the grid.

... 100% of transmission, and about 60% of distribution and supply directly

In transmission, of course, the market share of the 'Big Four' is 100%, while in distribution and supply it is around 60%. In the most profitable residential market we estimate that the 'Big Four' control about 50% of the market directly. However, including minority shareholdings the directly and indirectly controlled market share rises to around 80%.

In absolute terms, this leaves Vattenfall Europe in the biggest net long generation position, followed by E.ON, EnBW and RWE. However, this comparison can only give an indication, as it does not take into account participations or the customer mix between industrial and residential.

#### Market shares along the value chain

Capacity	Germany	RWE	E.ON	Vattenfall	EnBW	Big 4	Big 4 (%)
<b>Generation (MW)</b>							
Total	119,471	32,187	25,612	17,000	13,584	88,383	74
Auto producers	11,261						
Private suppliers	7,030						
<b>Utilities</b>	<b>101,180</b>	<b>32,187</b>	<b>25,612</b>	<b>17,000</b>	<b>13,584</b>	<b>88,383</b>	<b>87</b>
<i>% of total</i>		<i>32</i>	<i>25</i>	<i>17</i>	<i>13</i>		
<b>Output (TWh)</b>							
Total	538.5	132.0	118.5	81.5	73.0	405.0	75
Auto producers	54.3						
Private suppliers	12.0						
<b>Utilities</b>	<b>472.2</b>	<b>132.0</b>	<b>118.5</b>	<b>81.5</b>	<b>73.0</b>	<b>405.0</b>	<b>86</b>
<i>% of total</i>		<i>28</i>	<i>25</i>	<i>17</i>	<i>15</i>		
<b>Transmission</b>							
220 kV (km)	18,244	6,822	5,437	4,284	1,701	18,244	100
380 kV (km)	18,985	5,081	5,392	6,725	1,787	18,985	100
<b>Length of circuits (km)</b>	<b>37,229</b>	<b>11,903</b>	<b>10,829</b>	<b>11,009</b>	<b>3,488</b>	<b>37,229</b>	<b>100</b>
<i>% of total</i>		<i>32</i>	<i>29</i>	<i>30</i>	<i>9</i>		
<b>Distribution and supply</b>							
<b>Direct customers (m)</b>	<b>43.5</b>	<b>6.8</b>	<b>7.0</b>	<b>2.9</b>	<b>4.3</b>	<b>21.0</b>	<b>48</b>
<i>% of total</i>		<i>16</i>	<i>16</i>	<i>7</i>	<i>4</i>		
Indirect (m)		6.1	8.0	0.5	1.0		
<b>Direct &amp; indirect (m)</b>	<b>43.5</b>	<b>12.9</b>	<b>15.0</b>	<b>3.4</b>	<b>5.3</b>	<b>36.6</b>	<b>84</b>
<i>% of total</i>		<i>30</i>	<i>34</i>	<i>8</i>	<i>12</i>		
<b>Total sales (TWh)</b>	<b>500</b>	<b>119</b>	<b>89</b>	<b>29</b>	<b>53</b>	<b>290</b>	<b>58</b>
<i>% of total</i>		<i>24</i>	<i>18</i>	<i>6</i>	<i>11</i>		

Source: Company data, DrKW

## Regulation

Pre-liberalisation the utilities were allowed to have demarcation and concession contracts

The two main laws regulating the German energy market are the Energy Law from 1935 and the Law against anti-competitive behaviour from 1957. Both laws have been amended several times over the past few decades. The initial thinking was that the best operating environment for infrastructure-bound energy, ie, electricity and gas, was in closed supply areas instead of open competition. Therefore the utilities were exempt from certain conditions of the Law against anti-competitive behaviour and were allowed to have demarcation contracts (effectively creating the grid companies) and concession contracts that granted the exclusive use of rights of way to local utilities.

### Examples of point connection fees for customers (January 2001)

Pf/KWh	Standard-rate customers (households)	Medium-sized special rate customers (manufacturing)	Large industrial customers (manufacturing)	Largest customers
Grid access fee: This covers the grid operator's costs for providing the grid and system services, for meter reading and for billing.	ca 13.0 comprising: 380KV 1.0 110KV 2.0 10/20KV 3.5 0.4KV 6.5	ca 6.5 comprising: 380KV 1.0 110KV 2.0 10/20KV 3.5Pf?KWh	ca 3.0 comprising: 380KV 1.0 110KV 2.0	ca 3.0 comprising: 380KV 1.0
Protective measures for CHP	0.53P	0.53	0.53	0.53
Concession fee	Maximum rate: 2.60 (communities under 25,000) to 4.69 (communities over 500,000)	Maximum rate: 0.22	Maximum rate: 0.22	Maximum rate: 0.22
Electricity tax	3.0	0.6	0.6	0.6
VAT	From 3.06 to 3.40 (depending on size of concession fee)	1.26	0.7	0.38
<b>Total point of connection fee</b>	<b>22.19 to 24.62</b>	<b>9.11</b>	<b>5.05</b>	<b>2.73</b>

Source: E.ON

Municipalities still raise more than €3bn pa from concession fees

For the exclusive use of the rights of way the distributors pay concession fees, which account for almost €2.4ct/kWh in the residential electricity bill. Overall German municipalities raise more than €3bn pa from these concession fees, which have therefore become a very important source of revenue for municipal finances. All surcharges – and for residential customers they present about 40% of total cost – can be passed on to customers under the 'cost-plus' system.

### Cost of electricity supply to residential customers

	€ct/KWh	%
<b>Electricity production</b>	<b>2.5</b>	<b>18</b>
<b>Grid fees</b>	<b>5.6</b>	<b>40</b>
High & medium voltage	1.5	11
Low voltage	4.1	29
<b>Surcharges</b>	<b>4.2</b>	<b>30</b>
Concession fees	2.4	17
Electricity tax	1.5	11
CHP surcharge	0.3	2
<b>Total cost excl. VAT</b>	<b>12.3</b>	<b>88</b>
VAT	1.7	12
<b>Total cost incl. VAT</b>	<b>14.1</b>	<b>100</b>
Direct cost	8.1	58
Surcharges	5.9	42
<b>Total cost incl. VAT</b>	<b>14.1</b>	<b>100</b>

Source: E.ON, DrKW

Surcharges account for about 40% of the residential electricity bill

State authorities set the tariff according to the 'cost-plus' formula

The regulatory framework differentiates between residential 'tariff customers' and industrial 'special rate customers'. While the relevant state – and not federal – authorities determine tariffs according to the 'cost-plus' formula, the special rate customers negotiate their prices directly with the utilities.

In determining the incurred cost the state authorities take into account a number of different factors, but also benchmark the various utilities against each other. The cost of generation and the various surcharges are relatively straightforward to determine. For distribution and supply the returns vary, but are around **6.5% post tax real** on the asset base.

The 'plus' element in the 'cost-plus' formula varies as well, but is usually understood to be close to the yield on the 10-year government bond.

'Cost-plus' encouraged the build-up of inefficient cost structures

The 'cost-plus' system, which is quite common in continental Europe, put a clear emphasis on guaranteeing the security of supply. However, the unwanted side-effect of this form of regulation is that it encourages an inefficient cost structure across the whole industry. It was not until it became clear that fast-paced liberalisation process would open the market to competition over night, that the utilities became more cost conscious.

## Liberalisation

### First stage: European level, 19 February 1997

February 1997 marked the beginning of the liberalisation process

The first change took place on a European level, when European energy ministers – after eight years of negotiations – finally agreed open a common directive to open the European electricity market to competition. The directive came into force on 19 February and opened up the European electricity market in three stages:

- ▶ Member states had until 19 February 1999 to translate the directive into national law. This opened the market for electricity users that consume more than 40GWh/pa to competition, thus effectively liberalising 22% of the market.
- ▶ From 19 February 2000 the threshold is lowered to an annual consumption of 20GWh, exposing 28% of the market to competition.
- ▶ By 19 February 2003 the threshold is further reduced to 9GWh/pa, opening up one-third of the market.

So far two-thirds of the European electricity market are open to competition

These dates are minimum requirements, however, and member states are encouraged to speed up the liberalisation of their electricity markets. So far Germany, Finland Sweden, UK and Austria have opened up their markets completely. All EU member states except France, Portugal and Greece envisage full market opening in a legal sense before 2008.

### Current degree of market opening in the EU

	Eligible customers GWh/pa	Full opening date	Declared market opening %
Austria	All	2001	100
Finland	All	1997	100
Germany	All	1999	100
Great Britain	All	1998	100
Sweden	All	1998	100
Denmark	All distributors	2003	90
Spain	>1	2003	45
Luxembourg	>20		40
Belgium	>100	2007	35
Italy	>30		35
Netherlands	from 2MW		33
France	>16		30
Greece	>40		30
Ireland	>4	2005	30
Portugal	>20		30
<b>Total EU</b>			<b>67</b>

Source: European Commission, VDEW

### Second stage: German market, 29 April 1998

German electricity market became fully liberalised on 29 April 1998

The key-date as far as the German electricity market is concerned is 29 April 1998, the date when the amendment to the Energy Law came into force. Together with amendments to the Law against anti-competitive behaviour, those two amendments put an end to demarcation- and concession contracts. The former, at least theoretically, allows the building of alternative networks by third parties. However, the associated costs mean that there is little practical relevance. The latter has far bigger consequences, as it allows all customers to choose their electricity supplier freely.

Interestingly, although the concession fees were for the exclusive use of the right of way – which no longer is exclusive – they remain in place.

Germany favours self-regulation

The number of utilities in the German electricity market means that regulation via one regulatory authority would be cost intensive and inefficient. Instead, Germany opted for a system of self-regulation, whereby the distributors and users of electricity agree on a fair framework for network access. The first grid-code (*Verbändevereinbarung*, or **VV-1**) was negotiated between the Utilities Association (VDEW), the Federation of German Industry (BDI) and the Association of Industrial Energy Users (VIK) and various other associations (VDN, ARE and VKU) and came into force on 22 May 1998.

There were some teething problems with VV-1, however, as the negotiated third-party access (**nTPA**) regime, due to its case-by-case character, left plenty of room for interpretation. In addition there were a number of cases of abuse of the new system, with some network operators refusing access to the grid because of supposed capacity shortages, or simply charging unreasonable fees.

Third version of grid code came into force in January 2002

These problems were addressed by **VV-2**, which was finally agreed in December 1999 and came into force on 1 January 2000. The grid code was further refined in its third edition, **VV-2 plus**, which was finalised on 13 December 2001 and came into force on 1 January 2002.

Although Germany does not have a regulator as such, the Federal Cartel Office (FCO) increasingly assumes the role of a quasi-regulator. Neither the FCO nor the government are interested in strict regulation, because of the associated cost of setting and tracking tariff controls for Germany's 900-plus utilities.

FCO acts as quasi-regulator

Furthermore, both take the view that strict regulation would actually slow down the pace of liberalisation. However, the FCO is interested in ensuring that the principles of the grid code are adhered to. Under the negotiated third-party access (nTPA) System the FCO does not have direct legal power to enforce the grid code, but it can look into cases where infringements to the grid code also clash with other national legislation. The FCO has already set up a special branch that is monitoring compliance with the grid code.

At the Stockholm Summit of EU energy ministers in March 2001 France and Germany combined to fend off pressure from Loyola de Palacio, the EU Energy and Transport Commissioner, to impose independent regulators for the electricity and gas markets of EU member states.

Negotiated third-party access regimes will be changed to regulated ones

By the time of the Barcelona Summit in March 2002 the tone had changed, and European energy ministers only made provisions for changing negotiated third-party access (nTPA) regimes into regulated third-party access (rTPA) regimes. The EU was calling for the "establishment in every member state of a regulatory function, within the appropriate regulatory framework, with a view to ensuring in particular effective control of the tariff-setting conditions".

Gas grid code took longer to negotiate

In practice this means very little change for the current regulatory framework in Germany, as the FCO was in the process of assuming its role anyway, although it has now some new ex-ante powers relating to tariff conditions.

The process of establishing a similar, self-regulation based regulatory framework for the gas industry was a bit more complicated than in the electricity market and required more political threats to the associations involved (BDI, BGW, VIK and VKU) to reach a compromise. The first grid code (VV Gas) came into force on 4 July 2000 and had to be amended twice (15 March 2001, 21 September 2001) before a second version (VV Gas II) finally settled the remaining differences. VV Gas II was agreed on 3 May 2002 and comes into force on 1 October 2002.



# Prices

## Past

Small- and medium-sized customers saw price reductions of 30-40%

Post 29 April 1998 all electricity customers in Germany had the right to switch their supplier. Although very few actually did switch their supplier (10-20% of total demand, but only 4% of residential customers), it was the first time small- and medium-sized electricity users had pricing powers. Some bundle-customers, smaller electricity users that combine their electricity demand and shop for the cheapest offer, were able to achieve savings of 30-50%. In the first two years post liberalisation the average price for special rate customers fell by 25%, while residential tariff customers confirmed again that inertia has a value to supply companies, with prices in this segment falling by 12% over the same time period.

### Electricity prices by customer groups

	Special-rate customers		Tariff customers		All customers	
	€ct/kWh	%	€ct/kWh	%	€ct/kWh	%
1991	7.73		11.82		9.40	
1992	7.79	0.7	12.21	3.3	9.60	2.2
1993	7.89	1.3	12.41	1.6	9.81	2.1
1994	7.72	(2.1)	12.64	1.9	9.76	(0.5)
1995	7.64	(1.1)	12.70	0.5	9.73	(0.3)
1996	7.34	(3.9)	12.51	(1.4)	9.52	(2.2)
1997	7.10	(3.3)	12.69	1.4	9.37	(1.6)
1998	6.79	(4.2)	12.68	(0.0)	9.15	(2.4)
1999	6.09	(10.4)	12.49	(1.5)	8.64	(5.5)
2000	5.10	(16.3)	11.20	(10.3)	7.42	(14.1)

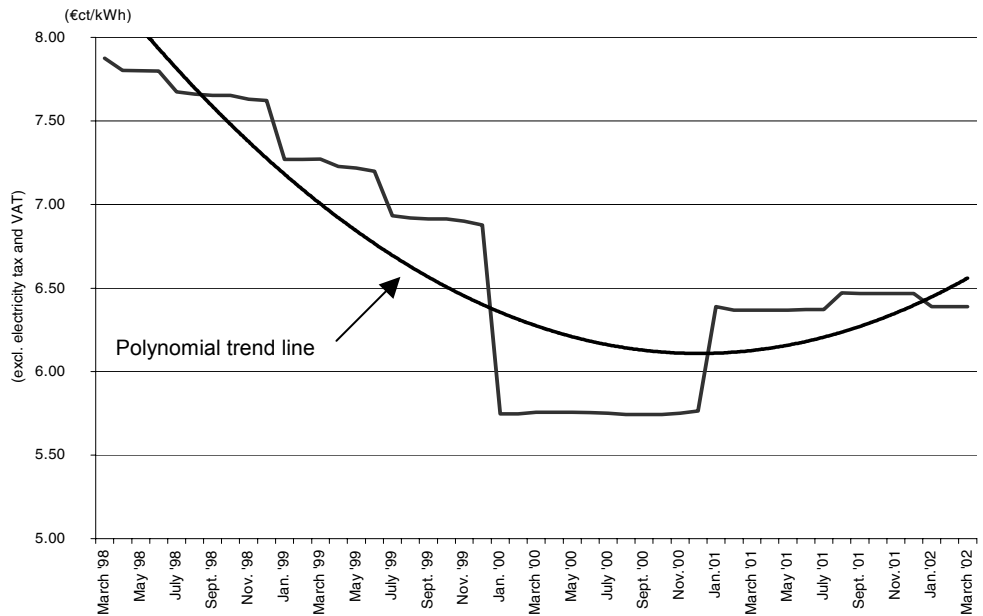
Source: Statistisches Bundesamt

Initially customers did benefit from the time it took the utilities to get used to the new competitive environment. As the utilities clearly struggled in the early days of liberalisation – perhaps understandable given that the market was practically fully liberalised overnight – trying to hang on to as much of the old status quo as possible became to overriding principle. Utilities that were not fast enough off the mark to acquire customers themselves wanted at least to protect their own customer base, even if that meant entering into loss-making contracts.

Painful adjustment process called for swift action...

The fastest customers could enter into very lucrative deals indeed, however, the financial pain incurred by the utilities as a result of this rapid adjustment process was such that they were forced to adjust to the new environment very quickly.

**Dow Jones ViK electricity price index**



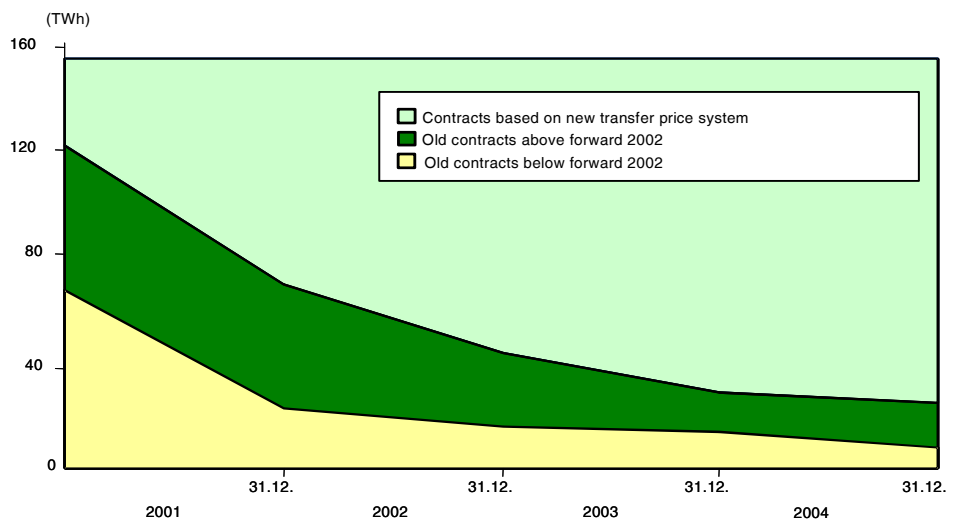
Note: Average price offers for industrial customers consuming between 160MWh/pa and 175GWh/pa

Source: Dow Jones, ViK

...and the utilities delivered; cutting costs and re-establishing pricing discipline

1 January 2000, when many newly negotiated supply contracts came into force, saw German power prices almost bottoming out. After the initial panic the utilities quickly realized that it does not pay to keep customers at all costs and, apart from aggressive cost control, started to renew contracts only at above wholesale price level, thus stabilising the situation. So far average prices have recovered 12% from the trough. As subsidised contracts are being renewed above market level, there will be a further boost to energy earnings.

**Electricity contracts portfolio**



Source: RWE



Only 3.7% of residential customers changed their supplier

The beginning of the liberalisation process in the German electricity market also coincided with the peak of the TMT-bubble and some misguided concepts about the value of the customer. While marketing expenditure of the utilities increased dramatically (in 1999 electricity suppliers spent €200m on print, TV and radio advertising, three times the amount spent in 1998), customer inertia proved too hard to overcome with only 3.7% of households having changed their supplier by the end of 2001. Nevertheless, around 28% of residential customers have changed their contracts without actually changing their supplier.

By far the most successful in terms of acquiring customers is EnBW's Yello, which managed to get more than 50% of all customers that did change their supplier. However, having aggressively priced its offers to grow the customer base, EnBW is finding it difficult to break even with Yello.

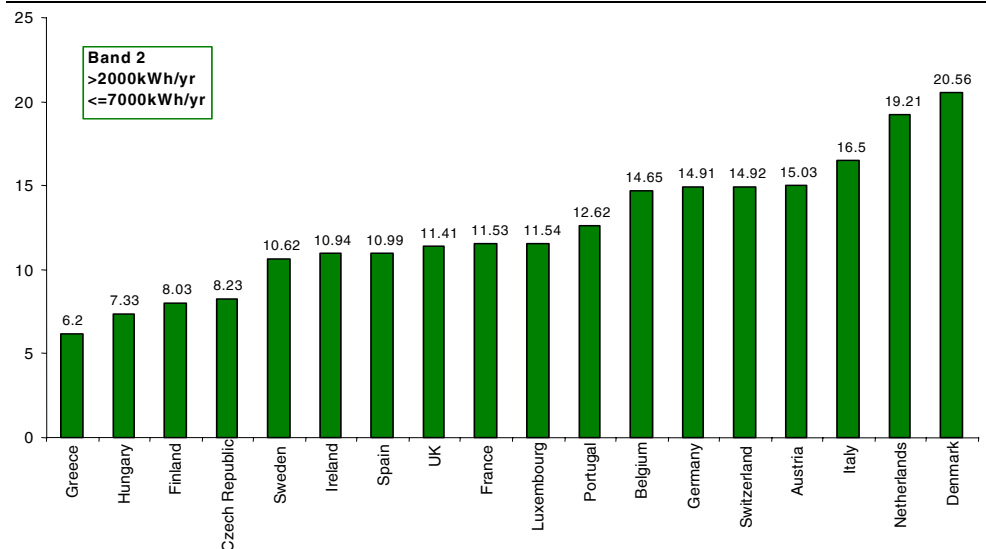
## Present

German power prices are now competitive on a European comparison

After the dramatic first lessons of liberalisation electricity prices in Germany appear to have settled for now. Taking stock after the first five years of liberalisation, we find that German power prices have now become quite competitive on a European comparison, especially as far as prices to small- and medium-sized customers are concerned. Residential prices remain relatively high, but mainly as a result of the various surcharges included in the price. Excluding surcharges of €4.2ct/kWh, even residential prices look very competitive indeed.

Including surcharges German residential electricity prices are at the higher end of the spectrum. Excluding surcharges they are very competitive

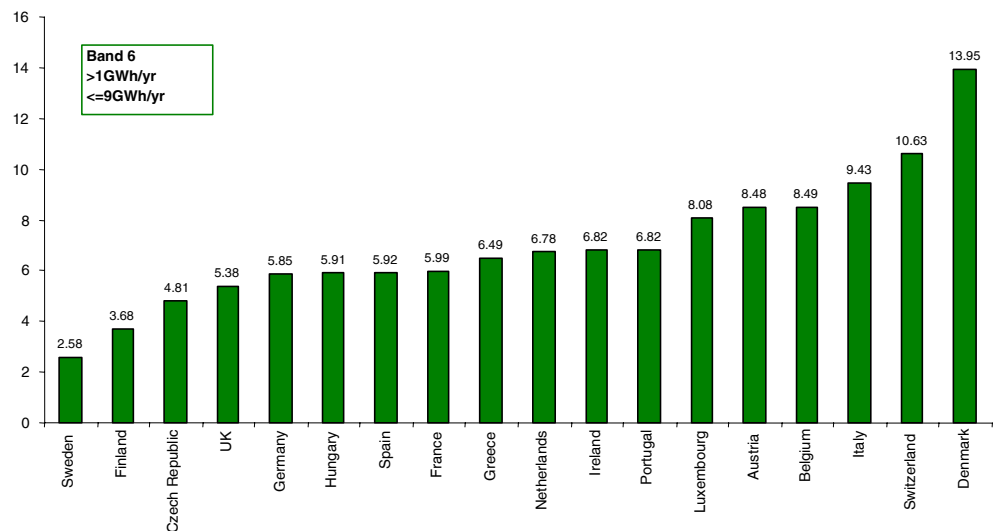
**Band 2 residential prices (electricity + taxes + VAT), 2001**



Source: Power in Europe, EEPO/INRA

Even including surcharges industrial electricity prices in Germany are already very competitive indeed

**Band 6 industrial prices (electricity + taxes + VAT), 2001**



Note: The Prices per Band are based on: Tariff survey prices: arithmetic average of the prices and Field survey prices: arithmetic average of all observations in the band  
 Due to the fact that in Italy 96% of residential consumers falling within band 2 have subscribed to a 3KW contract, the Italian price in this band has been calculated using a 3KW contract tariff  
 Excise taxes, energy/environment taxes, such as EEG and KWKG for Germany, are included in the prices  
 Prices include transport & distribution costs and other (fixed charges)  
 Residential prices include all taxes and VAT  
 Non-residential prices include all taxes except VAT  
 Source: Power in Europe, EEPO/INRA

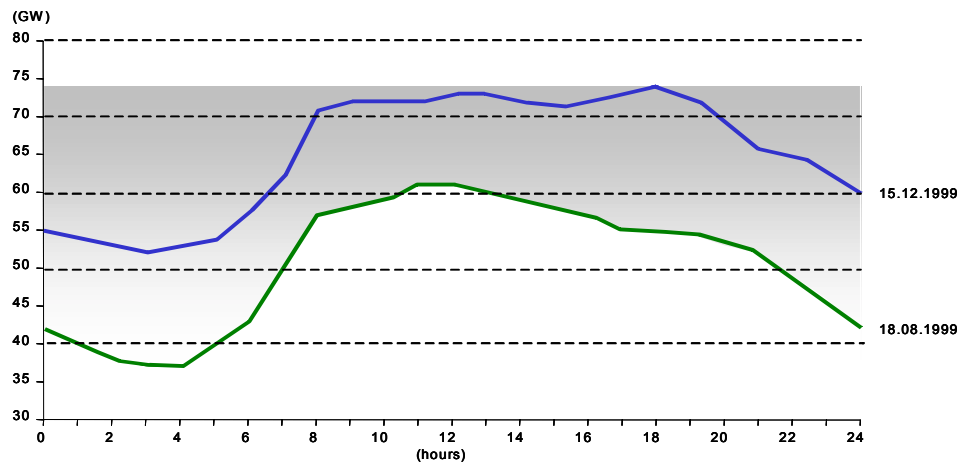
## Future

Electricity can be a very volatile commodity

The development of prices so far has shown that electricity can be an extremely volatile commodity. In a liberalised market commodity prices should be strictly governed by demand and supply. Although there can be wide fluctuations in the daily price on a day-to-day basis, over the year as a whole the demand side of the equation is relatively easy to predict. In order to examine the supply side, it is necessary to look at some of the special characteristics of electricity as a commodity.

Electricity is different from other commodities as it cannot be stored (in economic amounts) and because there are capacity constraints that impose limits to the degree to which it can be transferred from areas with a surplus to areas with a deficit. As a result electricity is not just a commodity, but a very volatile one at that. Constraints and the cost of transferring electricity over longer distances also give it a regional character, while lead times for building new capacity (usually a minimum of two and a half years) should give it a certain predictability.

**Output demand of electricity consumers in GW net**



Source: German Federal Statistical Office, DrKW

There are three distinctly different sections to the electricity market

As electricity has to be delivered when and where it is needed, there are three distinctly different sections to the electricity market. Baseload is the demand that it always there and is usually covered by nuclear (cheap and difficult to switch on/off) and run-of-river hydro. Power plants in this section can usually expect to operate 7,500hr/pa, or load factors of 85% or more.

The next section is the mid-merit section, which covers the majority of the flexible demand. Typical mid-merit plants are coal or lignite fired and although they can sometimes slip into baseload generation, load factors can drop all the way to 35%, or 3,000hr/pa, depending on their efficiency.

Peak demand might just cover the workday working hours, so operate, at best, 12x 250 = 3,000hr/pa, or a load factor of 35% or less. Gas fired CCGTs, oil fired plant or hydro (storage and pumped-storage) usually cover this section of the market which has to be available for production at very short notice. Because demand in this section is difficult to predict with certainty, some plants might only run 400hr/pa, so when they are called upon by the grid operator, they have to charge higher prices in order to cover the costs for the whole year. Lower load factors also mean lower efficiencies, which is another reason why peak-load prices are significantly above baseload prices. Sometimes peak load prices can rise so dramatically that it becomes economically attractive to run very old and inefficient plant for a very short time periods.

Peak load capacities have to earn their return over shorter periods

This is a very important point to bear in mind. Theoretically electricity prices should move in cycles, with under-capacities driving up prices, attracting new capacities into the market. The classic boom-to-bust cycle is then completed by markets anticipating future overcapacity, thereby causing prices to drop while the last of the new capacities are still coming on-line.

In order to determine at which point in the cycle electricity markets are, it is quite popular to look at the capacity reserve margin, ie, to compare the available capacities to the peak demand on the system. A reserve margin of less than 15% usually leads to higher electricity prices (above new entrant cost), while a reserve margin of 25% or more can drive prices all the way down to short-run marginal cost.

At one end of the extreme industrial companies just stop the production process (like aluminium smelters selling their electricity into the market instead of producing aluminium during the Californian energy crisis), at the other end utilities stop operating their plant when the fuel input cost exceed the wholesale price.

#### Installed capacity and output in Germany

	Capacity MW	Output TWh	Implied load factor
Hydro	8,419	22.2	30%
Nuclear	22,241	159.6	82%
Lignite	20,350	130	73%
Hard coal	25,439	114.7	51%
Oil	6,702	1.2	2%
Gas	15,457	32%	24%
Other	2,572	8	36%
	<b>101,180</b>	<b>468</b>	

Source: VDEW, DrKW

The peak demand on the system is easy enough to determine. For the year to December 2000 the peak demand on the German grid was 76.8GW. However, in terms of the capacities available to meet this demand and also leave an appropriate safety margin (for further demand peaks or plant outages) the answer is less straightforward.

This is because official capacity data usually includes all kinds of power plants, such as plants that in all likelihood will never be reconnected to the grid (RWE's Mülheim-Kärlich nuclear power plant was included for a long time), nuclear plants that are likely to be closed down soon or peakers that are so uneconomical that they have load factors of less than 5%.

#### Capacity reserve margin under different scenarios

	MW	Adjusted MW	2005 E MW
Hydro (run-of-river)	2,723	2,723	2,723
Lignite	20,350	20,350	20,350
Nuclear	22,241	20,303	18,292
Base load	45,314	43,376	41,365
Hard coal	25,439	20,000	18,000
Gas	15,457	15,457	16,657
Oil	6,702	0	0
Storage and pumped storage	5,696	5,696	6,752
Other	2,572	2,572	6,000
Peak load	55,866	43,725	47,409
<b>Total capacity</b>	<b>101,180</b>	<b>87,101</b>	<b>88,774</b>
Hydro adjustment	(817)	(817)	(817)
Spare interconnect capacity	2,703	2,703	2,703
Total available capacity	103,066	88,987	90,660
Peak demand	76,800	76,800	80,308
<i>Reserve margin</i>	<i>34%</i>	<i>16%</i>	<i>13%</i>

Source: VDEW, DrKW

The effective reserve margin in Germany could be as low as 16%

Headline numbers suggest a reserve margin of 34%

Taking the capacity available to the public utilities (101,180MW) making a 30% adjustment to the run-of-river hydro capacity and adding our estimate for the currently available interconnect capacity (see table), we get a total available capacity of 103,066MW to meet peak demand of 76,800MW. This suggests a reserve capacity of 34%, pointing towards a rather unattractive and oversupplied market.

#### Interconnect capacity at the German border

To Germany from	Export capacity		Exports GWh	Spare GWh	Spare MW
	MW	GWh			
Austria	1,850	16,206	7,000	9,206	1,051
Belg. & Neth's	3,800	33,288	22,200	11,088	1,266
Switzerland	1,250	10,950	10,400	550	63
France	1,750	15,330	400	14,930	1,704
Denmark	1,350	11,826	500	11,326	1,293
Sweden	370	3,241	100	3,141	359
Centrel	2,000	17,520	2,200	15,320	1,749
<b>Total</b>	<b>12,370</b>	<b>108,361</b>	<b>42,800</b>	<b>65,561</b>	<b>7,484</b>

We believe that there is 2,700MW of realistically available spare capacity to supply the German market

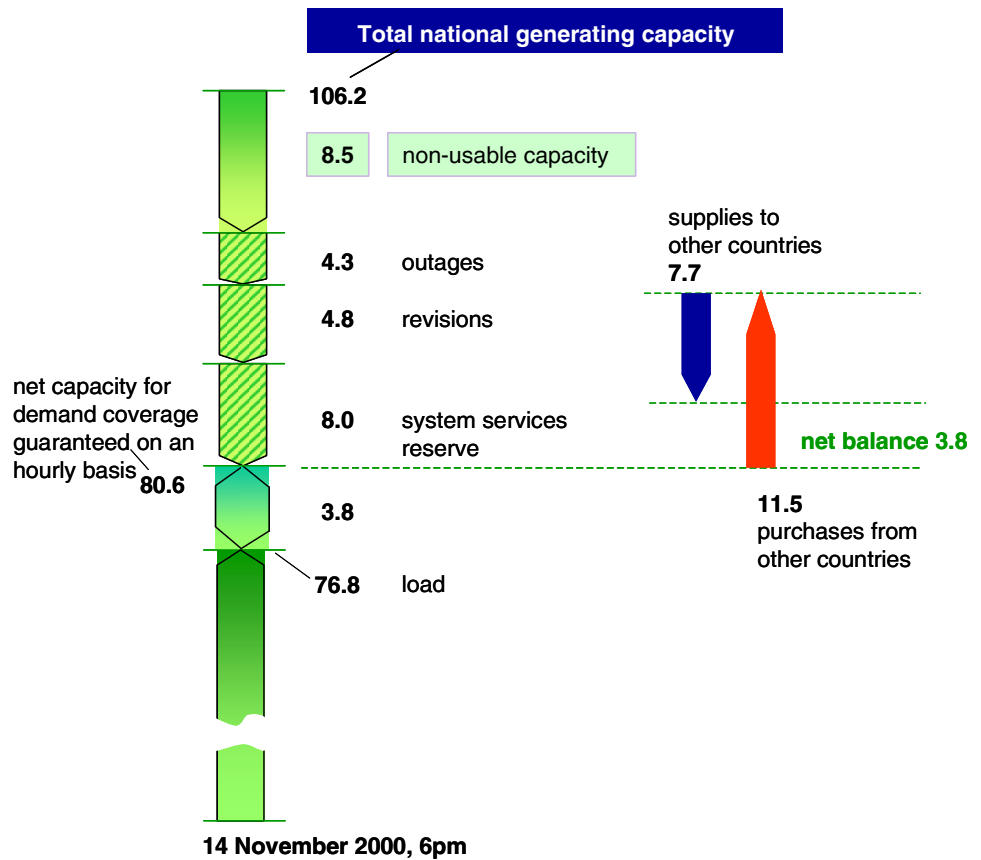
From Germany to	Import capacity		Imports GWh	Spare GWh	Spare MW	Exports – imports GWh	Hydro Production (%)	Spare MW
	MW	GWh						
Austria	1,150	10,074	6,000	4,074	465	1,300	72	0
Belg. & Neth's	1,700	14,892	1,650	13,242	1,512	(23,200)	1	0
Switzerland	1,450	12,702	5,300	7,402	845	7,100	58	845
France	2,350	20,586	15,300	5,286	603	69,400	14	603
Denmark	1,750	15,330	6,400	8,930	1,019	(600)	0	0
Sweden	460	4,030	650	3,380	386	(4,700)	55	0
Centrel	2,350	20,586	9,600	10,986	1,254	NA	NA	1,254
<b>Total</b>	<b>11,210</b>	<b>98,200</b>	<b>44,900</b>	<b>53,300</b>	<b>6,084</b>			<b>2,703</b>

Source: DVG, DrKW

Germany's power plant portfolio is uncharacteristically heavy on inefficient peak load

The nominal capacity reserve margin fails to take into account the structure of the existing power plant portfolio, however. Pre-liberalisation many areas within the German electricity system were treated as almost autonomous regions, each supplying their own peak demand. When one region had to supply another, these 'incidents' sometimes even made it into the local papers. Such un-economic behaviour was of course only possible because of the monopolistic structure of the industry and inefficiency-encouraging 'cost-plus' system. As a result we believe that Germany's power plant portfolio is uncharacteristically heavy on inefficient peak load.

**Power balance of general electricity supply in Germany (in GW)**



Source: DrKW

Some of the most efficient peakers are now slipping into the mid-merit section

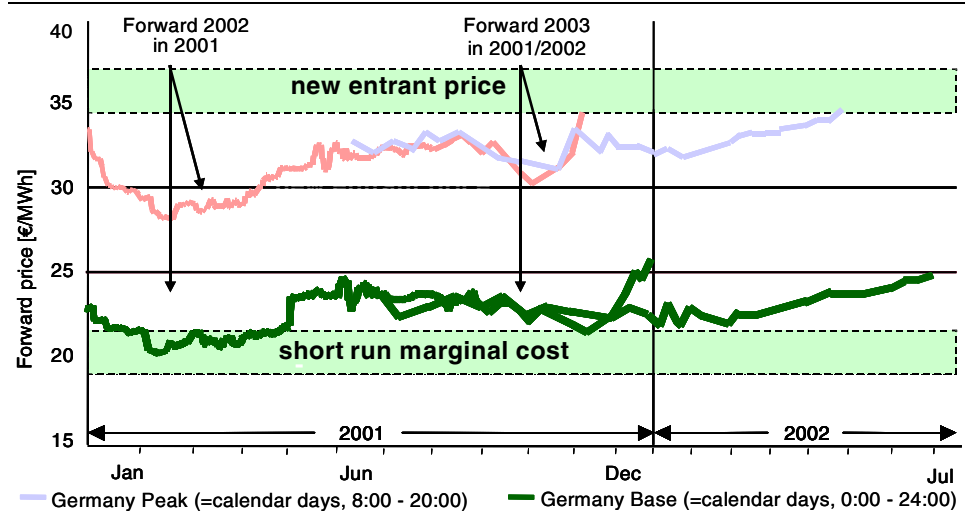
Even official data from the DVG takes into account 8,500MW of non-usable capacity, therefore working on the basis of 97.7GW of capacity being available to cover a peak load of 76.8GW. This is equivalent to a reserve margin of 27%. Of course, with prices still some 30% below new-entrant cost, there still is overcapacity, but the structure of this capacity is only efficient in the base load section and parts of the mid-merit market. The economic pressures of liberalisation have now caused some of the most inefficient plants to be closed or mothballed, which means that some of the most efficient peakers are now slipping into the mid-merit section of the market.

Forward peak prices are heading towards 40€/MWh

We believe that effective reserve margin is much closer to a supply/demand equilibrium (plus, of course, an adequate reserve margin) than is currently anticipated. The test for this theory will come over the next 12-24 months, as more capacity is taken out and the effective reserve margin slips below 15%. In this case we see forward peak prices heading towards €40/MWh, although any improvement in prices is likely to be gradual. Nevertheless, the cold spells of December 2001 might have given an interesting sign of things to come, with the UCTE reporting that the reserve margin over this period fell to only 5% on the grid.



Development of forward prices



source: RWE, DrKW

Mid-merit section likely to see most of the action

With lignite production stable and only limited closures of nuclear capacity, the price-setting mid-merit section of the market is likely to see most of the action. Apart from a tighter effective reserve margin, the mid-merit plants should also benefit from a shift in the demand pattern as Germany gradually shifts from an industrial – to a service economy – although this effect will take some time before it starts to have a real impact on prices.

Demand for balancing power is rising

The peak and mid-merit sections, however, are also likely to benefit from the growing demand for balancing power, which is a side-effect from substantial subsidies for renewable energies. As swing producers, such as wind power plants, feed more electricity into the system, the load factor for coal plants can drop from 60% to 40% because units have to be held in reserve to balance fluctuations in wind energy output. At the same time, when weather conditions are not windy enough or too windy (so the plants are unable to operate for safety reasons), output from gas peakers can rise by as much as 350%. Prices for balancing power can, as a rule of thumb, come to three times the price of normal peak prices or four times normal baseload prices.

## New entrant cost

CCGT's are the new entrant plant of choice...

The bull-case for German electricity prices is further enhanced by the big gap between current prices and new entrant cost. Following the commodity cycle, electricity prices in an under-supplied market rise to, or above, the level where they attract the building of new capacities by either incumbents or new market entrants (the current build-up of capacities in the US is a particularly powerful example).

The type of power plant for a new market entrant depends on various factors, such as the capital cost, fuel cost and availability, as well as the dispatch curve. However, due to the low capital cost and the relatively short lead-time, the new entrant plant of choice is usually a combined-cycle gas turbine (CCGT).



...but full cost would currently only beat variable cost of oil-fired plants

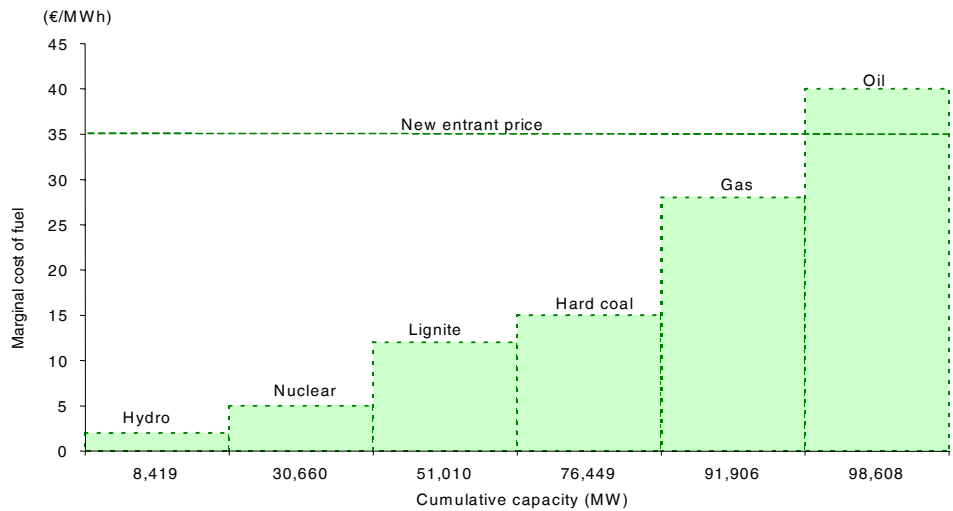
**Capital cost for new generation plant (€/kW)**

Gas (CCGT)	550
Hard coal	850
Lignite	1,100
Nuclear	2,500

Source: Company data, DrKW

Assuming economic behaviour of all market participants, the absolute bottom for power prices is determined by the short-run marginal cost of running a power plant. When it becomes more expensive to operate a plant than to stop production, the most expensive capacities are forced out of the market. Therefore new entry CCGTs in Germany would currently only beat old (and therefore mostly depreciated) oil capacities.

**German dispatch curve**



Source: Company data, DrKW

Due to the comparatively low capital cost, one of the variables for a new entrant is cost of fuel. We assume a continued link between oil and gas prices and use the long-term oil price forecast of our oil team of US\$18/bbl. At current exchange rates this is equivalent to €2.9/MMBtu. However, unlike coal, gas is traded in HHV (higher heating value) units, so in order take into account the lower calorific value, the price has to be adjusted to by the factor of 1.1086 to arrive at LHV (lower heating value) units. Including grid charges the price for gas rises to €3.4/MMBtu. However, fluctuations in the oil price as well as higher grid charges for plants with lower load factors (keeping capacities free for when the gas is actually needed), mean that effective prices, and hence cost, can be significantly higher.

### CCGT entry costs in Germany

Oil price	\$/bbl	18.0	
Exchange rate	€/\$	1.02	
Flat European wholesale gas	€/MMBtu	2.9	
Gas price adj. for HHV/LHV conversion	€/MMBtu	3.2	
Country premium/discount to European gas	€/MMBtu		0.0
Gas delivery	€/MMBtu		0.2
<b>Delivered gas</b>	<b>€/MMBtu</b>		<b>3.4</b>
Thermal efficiency	%	55	
<b>Fuel costs</b>	<b>€/MWh</b>		<b>20.9</b>
Standardised O&M costs	€/kW pa	30	
O&M premium / discount	€/kW pa		0
<b>O&amp;M incl. local taxes, grid connection</b>	<b>€/kW</b>		<b>550</b>
Construction premium/discount	€/kW		0
Construction costs	€/kW		550
Pre-tax nominal WACC	%	12	
Asset life	Years	15	
Load factor for baseload price	%	85	
<b>Capital &amp; O&amp;M costs</b>	<b>€/MWh</b>		<b>14.8</b>
<b>Entry costs</b>	<b>€/MWh</b>		<b>35.7</b>

Note: HHV = Higher Heating Value, LHV = Lower Heating Value, LHV = HHV \* 1.1086  
Source: DrKW

We see new entrant costs at  
36€/MWh for base load...

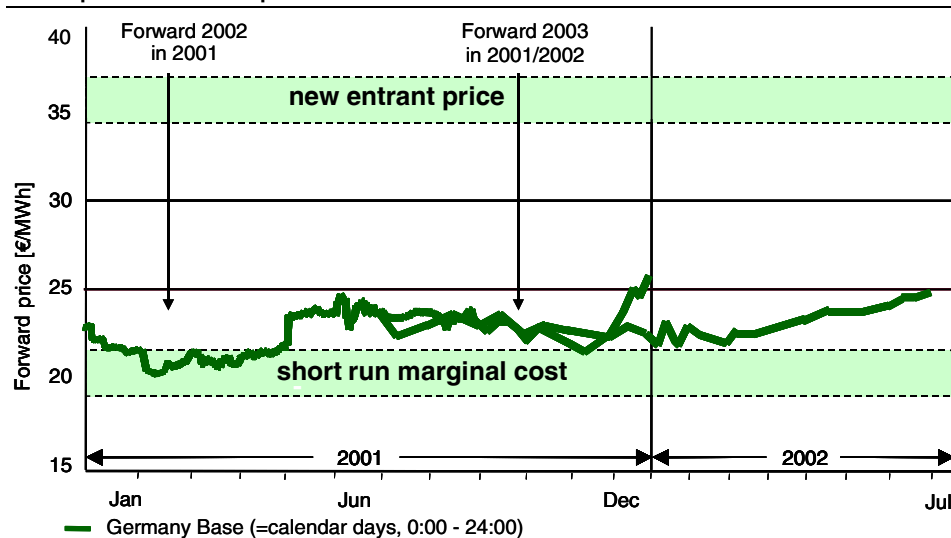
We also reflect the higher risks to the overall economics of the plant (volatile gas prices, extreme conditions for turbines) in our cost of capital, for which we use 12% pre-tax nominal, compared to 10% for normal coal-fired plant. However, we realise that an increasingly optimistic outlook for power prices could well cause the risk adjustment to disappear, driving the WACC back to, or even below, 10%.

...and 44€/MWh for peak load

For the asset life we use 15 years, which might sound harsh compared to the theoretical lifetime of the plant, but we believe that the extreme operating conditions of the turbines justify this assumption.

With capital cost of €550/kW and a load factor of 85% we calculate base load new entry cost for the German market of €36/MWh. For peak load we see the new entrant prices at €44/MWh.

## Development of forward prices



Source: RWE, DrKW

Base load prices could rise by more than 40% before attracting new entrants

With base load forward prices still trading below €25/MWh, prices could rise by more than 40% from current levels before attracting new entrants. We therefore believe that electricity generation in Germany has turned the corner and will see significant rising returns over the next two to three years.

Apart from the fundamental factors mentioned above there is also a certain element of at least short-term market control, with the Big Four utilities now controlling 87% of the capacity. Although interconnections mean that market control is unlikely to be exerted over the medium- to long-term, existing limitations to spare interconnect capacity mean, in our view, that there is a certain flexibility to move profits upstream should the regulatory pressure downstream increase.

## Interconnect capacity at the German border

To Germany from	Export capacity		Exports GWh	Spare GWh	Spare MW			
	MW	GWh				Exports – imports GWh	Hydro Production (%)	Spare MW
Austria	1,850	16,206	7,000	9,206	1,051			
Belg. & Neth's	3,800	33,288	22,200	11,088	1,266			
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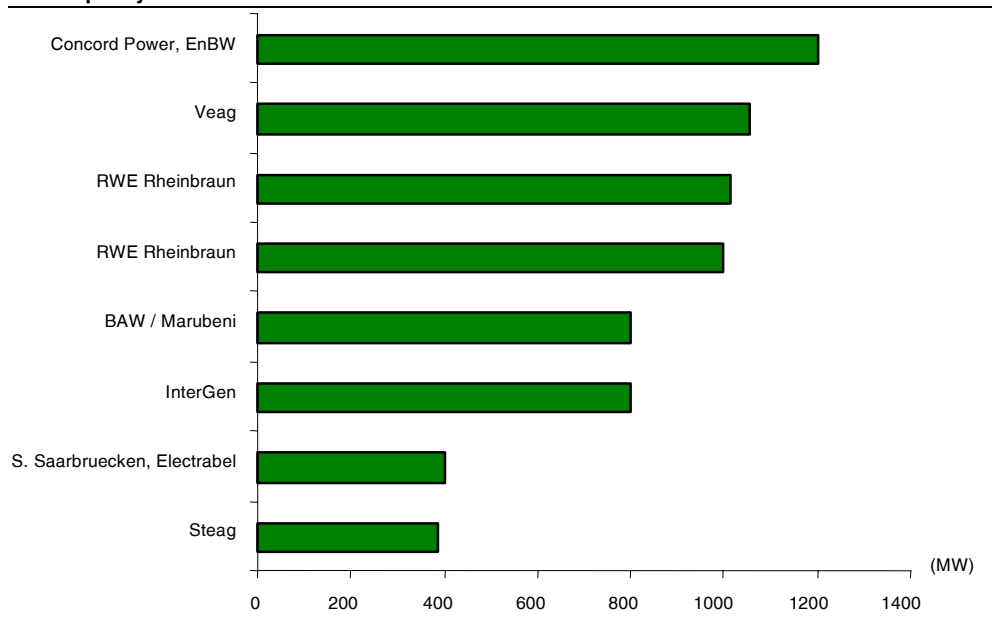
Source: DVG, DrKW



The big unknown variable as far as interconnection is concerned, is Eastern Europe

We believe that there are currently around 6,000MW of spare capacity for electricity flows into Germany. However, a large part of these capacities are from countries with an electricity deficit, or only a small surplus, such as the Netherlands, Denmark and Sweden. Other countries, such as Austria and Switzerland, have significant hydro production and therefore do not have the same flexibility to take advantage of price hikes in Germany. France, as Europe's main exporter has more than enough electricity available, but only has limited spare capacity at its disposal as it is already exporting 15TWh to Germany. The big unknown variable is Eastern Europe, where Poland and the Czech Republic could step up exports into Germany. Overall we believe that the spare capacity that could be used to increase exports into Germany comes to around 2,700MW.

**New capacity**



Note: Steag is average 220-50  
Source: Power in Europe

New-build capacity is not a problem for the German market

New-build capacity is also not a problem for the German electricity market, mainly because power prices are still significantly below new entrant cost, but also politically encouraged capacity build will only have a limited impact. The majority of plant coming on-line is either heavily subsidised renewable capacity (which also increases the demand for balancing power) or new lignite plants that will replace existing capacities. For example RWE Rheinbraun's 950MW Niederaussem Boa (optimised technology) plant has gone online, but the plant which has an efficiency of 43% will replace old capacities, thereby saving 3mt in CO<sub>2</sub> emissions pa.

### Europe's most advanced new generation projects – Germany

Location	Partners	MW	Type	Online	Status
<b>Duisburg-Hamborn, Nordrhein-W</b>	<b>RWE Power, Thyssen-Krupp</b>	<b>255</b>	<b>Cogen, ind. Gas</b>	<b>2002</b>	<b>Construction</b>
<i>Steam generator passed pressure test (Apr 02). EPC contract: Babcock Borsig. Equipment: Siemens 275MW steam turbine. Fuel: blast furnace gas. Offtake: Thyssen-Krupp steelworks 255 Mwe, 180t/hr steam. Plant to replace three of eight power station units on site.</i>					
<b>Goldisthal, Thuerigen</b>	<b>Veag</b>	<b>1,056</b>	<b>Pumped storage</b>	<b>2003</b>	<b>Construction</b>
<i>Construction started four years ago. Veag is currently testing the main dam of the 18.9m cubic metre lower storage basin which will take 18 to 30 months to fill.</i>					
<b>Luenen, Nordrhein-Westfalen</b>	<b>Steag</b>	<b>220-50</b>	<b>CCGT</b>	<b>-</b>	<b>Approved</b>
<i>On hold. Planning consent (early 00) to add a new gas generator at Luenen power station.</i>					
<b>Neurath, Rheinland-Pfalz</b>	<b>RWE Rheinbraun</b>	<b>1,000</b>	<b>Coal</b>	<b>2009</b>	<b>Proposed</b>
<i>Proposed. Site selected (Mar 02). Final decision on construction expected end 2002.</i>					
<b>Niederaussem, Nordrhein-W</b>	<b>RWE Rheinbraun</b>	<b>1,012</b>	<b>Lignite</b>	<b>2002</b>	<b>Construction</b>
<i>Construction. Trial operation expected Q3 2002.</i>					
<b>Lubmin, Mecklenburg-Vorpommern</b>	<b>Concord Power, EnBW</b>	<b>1,200</b>	<b>CCGT</b>	<b>2005</b>	<b>Approved</b>
<i>Construction approval. Equal joint venture partners (Nov 01). Financial close and EPC contract (est. €450m) expected 2002. Construction start expected by 2003. Concord is also project developer for 800MW EnBW CCGT on adjacent site.</i>					
<b>Huerth-Knapsack, Nordrhein-W.</b>	<b>InterGen</b>	<b>800</b>	<b>CCGT</b>	<b>-</b>	<b>Applied</b>
<i>Applied for construction and operation permits (Dec 01) – expected summer 02; public consultation meeting 150502. Talks underway with RWE about using its local transformer station to feed power to network. Talks with Wingas, Ruhrgas and Thyssengas about gas supply.</i>					
<b>Ahaus, Nordrhein-Westfalen</b>	<b>BAW/Marubeni</b>	<b>800</b>	<b>CCGT</b>	<b>-</b>	<b>Proposed</b>
<i>Application for construction and operation permits have been held back by various disputes between Marubeni and BAW. BAW still hopes to bring the project to completion, though possibly with enw partners and with a delay of up to one year. Third partner Dynegy pulled out of the project.</i>					
<b>Saarbruecken, Saarland</b>	<b>S.Saarbruecken, Electrabel</b>	<b>400</b>	<b>CCGT</b>	<b>2005</b>	<b>Proposed</b>
<i>Stadtwerke Saarbruecken and its main shareholder Electrabel plan to bring the plant online by 2005.</i>					

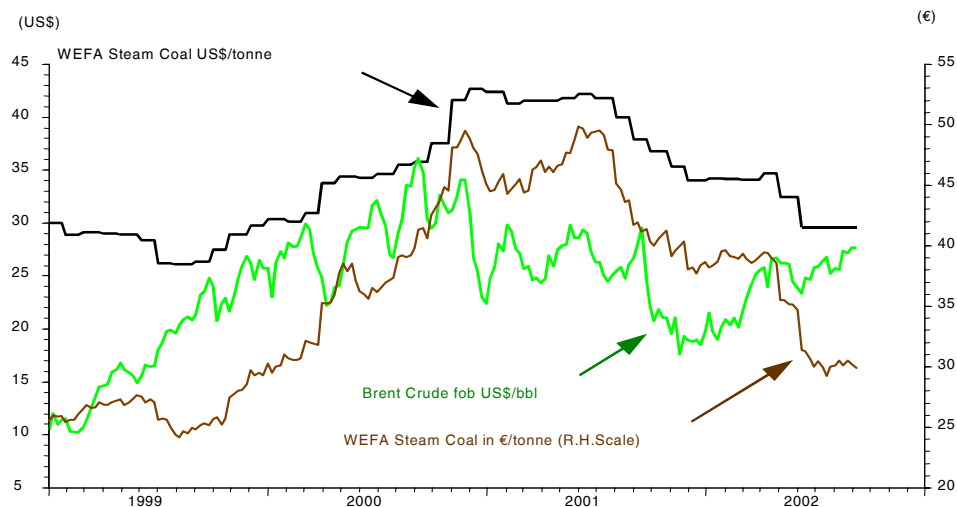
Source: Power in Europe

Lower fuel prices help  
thermal generators

## Generation margins

With the outlook for electricity prices positive, the German utilities stand to benefit further from the impact of lower fuel input prices. Indeed, established incumbent thermal generators should benefit from the combination of high oil prices, with likely consequences on lifting wholesale electricity prices, at a time when coal cost are weak.

### Coal and oil price



Source: Thomson Financial Datastream



E.ON and RWE source about 30% of their output from hard coal

Utilities usually buy coal on 12-18 months contracts and we have not heard of many deals below US\$30/tonne. Likewise, the relationship of electricity prices (wholesale and retail) to oil prices is somewhat convoluted. Nevertheless, the direction of margins, if not the magnitude of any change, is clear. E.ON sources about 30% of its output from hard coal. RWE, including contractually secured output at cost from Steag, also produces 30% of its electricity from hard coal. H1 results of E.ON and RWE have shown that fuel costs are falling. However, we believe that, due to the time lag of the fall in coal prices being translated into contractual agreements, the main impact is still to come.

Downstream profitability is determined by regulation and politics

### Transmission/distribution/supply

While market forces drive the profitability of the generation part of the electricity value chain, downstream profitability is determined by regulation and politics. It is important to bear this in mind, as an often-voiced concern is that the value from this part of the value chain could disappear as quickly as it has in generation post liberalisation.

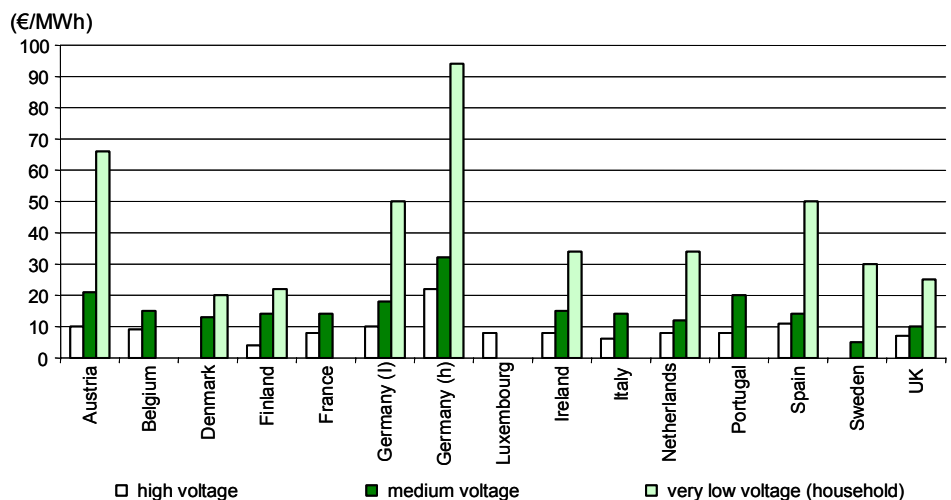
For transmission and distribution, network fees are usually based on a combination of capacity (€/kW/year) and flow (€/MWh). Although the balance between both varies by member state, the variations are no significant obstacle to comparisons.

Furthermore, most European countries do not separate distribution and supply, with the owners of the network automatically undertaking the supply function. Although estimates are difficult, due to different practices in allocating functions and value added between distribution and supply, we believe that supply margins in Germany are around 4%.

We believe that supply margins in Germany are around 4%

Looking at the two natural monopoly activities, transmission and distribution, together, we find that German grid access fees are high on a European comparison, particularly in the low voltage residential area.

**Estimated level of network charges: Electricity**



Note: l = low case; h = high case  
Source: Comillas, Eurostat survey

This often leads to the conclusion that distribution activities could face a similar erosion of profitability as the generation business had to suffer post liberalisation. However, this view ignores four main points (detailed below).

Regulation is unlikely to be as harsh as market forces were in generation

First of all, the profitability of natural monopolies, such as distribution and transmission, is determined by regulation, and not market forces. Although benchmarking against other TSOs (transmission system operators) and distributors does take place, it only affects some cost elements within the 'cost-plus' formula. Any decision to reduce the profitability of grid assets will be driven by regulators and/or politicians, and as such are unlikely to be as severe as in the generation part of the value chain, where profitability can experience some significant volatility.

Surcharges account for about 40% of the residential electricity bill

Second, as we have seen above, surcharges can account for as much as 40% of the total cost component of the electricity price. So high grid fees are, to a large extent, the result of implementing political objectives of the tariff-setting authorities. They are incurred cost that can be passed-through to the end customer under the prevailing 'cost-plus' system, which is unlikely to change any time soon. Average grid fees are further lifted by the relatively recent investments in the eastern German grid, which are still part of the cost component.

#### Cost of electricity supply to residential customers

	€/KWh	%
<b>Electricity production</b>	<b>2.5</b>	<b>18</b>
<b>Grid fees</b>	<b>5.6</b>	<b>40</b>
High & medium voltage	1.5	11
Low voltage	4.1	29
<b>Surcharges</b>	<b>4.2</b>	<b>30</b>
Concession fees	2.4	17
Electricity tax	1.5	11
CHP surcharge	0.3	2
<b>Total cost excl. VAT</b>	<b>12.3</b>	<b>88</b>
VAT	1.7	12
<b>Total cost incl. VAT</b>	<b>14.1</b>	<b>100</b>
Direct cost	8.1	58
Surcharges	5.9	42
<b>Total cost incl. VAT</b>	<b>14.1</b>	<b>100</b>

Source: E.ON, DrKW

Germany's 900 smaller utilities could not cope with a significant reduction of grid fees

Thirdly, any significant pressure on distribution fees will hurt those most that can least afford it – Germany's 900 plus smaller and municipal utilities. Moreover, municipal finances already rely to some extent on the concession fees paid by the German utilities. Pressure on grid fees could encourage the utilities to call into question the practice of charging concession fees in a fully liberalised market.

This could result in a double-blow to municipal finances. Municipalities with their own distribution activities would suffer directly, while municipalities where the distribution assets are owned by the Big Four, could suffer from concerted attempts to squeeze concession fees.



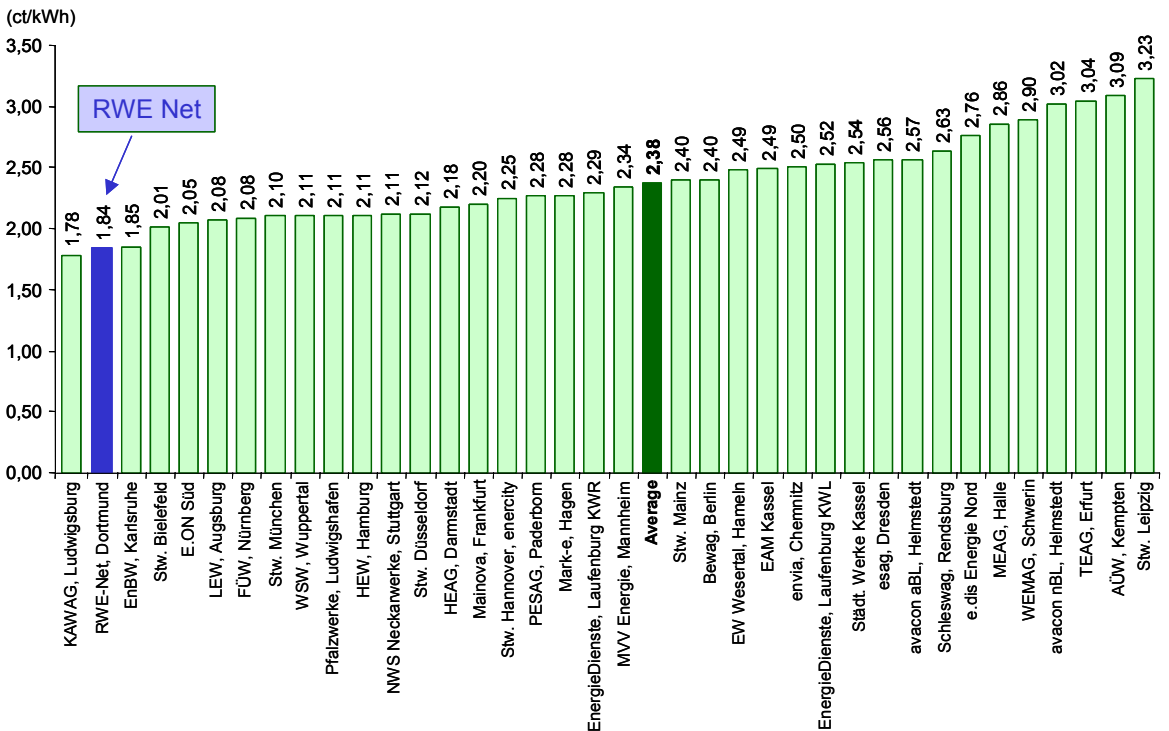
The grid code has been signed by the users of electricity as well...

With the Upper House, where the German States are present, having voted down energy reform proposals in the past, any attempt to significantly reduce grid fees would amount to some political gamble. Whichever party wins the general elections on 22 September will, in our view, have more pressing issues on the agenda than trying to re-arrange various components of the electricity price.

Lastly, although the level of grid fees in Germany is sometimes criticised, it is interesting that a lot of this criticism comes from outside Germany. After all, the grid code, which is the framework for establishing prices for grid access, is the result of negotiations between the network owners and users.

We believe that the price difference excluding surcharges would have to be bigger and the FCO would have to be more inactive in order to make a convincing case that there are significantly bigger impediments to fair grid access in Germany than in other European countries.

**RWE Net: One of the lowest grid fees for medium voltage industrial customers in Germany**



Source: R WE

A gradual reduction in grid fees is the more likely scenario

Instead of a dramatic reduction in grid fees we believe that a gradual transformation is a much more likely scenario. With a wide range of different grid charges in Germany, as a result of the various cost elements recognized by local state authorities, the FCO has sufficient leeway to force average grid fees down by simply questioning the cost inputs from the most expensive distributors. As a result we believe that grid fees in Germany will fall – but only by a very manageable 2-3% pa.

# German gas market

With 198.2TWh domestic production and 873.4TWh imports in 2001, Germany's import ratio was more than 80%. Although 10 companies engage in domestic gas exploration and production, BEB (50% Esso, 50% Shell), Mobil, RWE and Wintershall accounted for 91% of the total.

## Gas transmission companies in Germany

Transmission company	Ownership	Domestic production TWh pa	of total % TWh pa	Imports TWh pa	Domestic procurement TWh pa	Total procurement TWh pa
Ruhrgas	Various (potentially 100% E.ON)			499.5	88.2	587.7
BEB	50% Esso Deutschland, 50% Deutsche Shell	92.5	46.7	90.7	1.4	185.1
VNG	36.8% Ruhrgas, 5.3% E.ON, 15.8% Wintershall			106.8	50.3	157.1
Wingas	65% Wintershall, 35% Gazprom			117.1	4.4	121.5
RWE Gas	80% RWE, 20% municipalities			0.0	77.5	77.5
GVS	62.2% JV from EnBW and Eni, 33.4% NWS			0.4	75.1	75.5
Erdgas Münster	28.8% Wintershall, 27.7% Mobil, 27.7% BEB			1.4	72.7	74.1
Thyssengas	75% RWE, 25% Shell			63.8	2.9	66.7
Mobil Erdgas-Erdöl	100% ExxonMobil Europe	49.3	24.9	14.4	0.0	63.9
Bayerngas	22% E.ON, 22% Ruhrgas, 28% Stw. Munich			0.0	60.5	60.5
Gas-Union	37.7% Mainova, 25.93% Ruhrgas			0.0	43.4	43.4
Saar Ferngas	50.1% RAG, 20% Ruhrgas			0.0	43.4	43.4
EWE	27.4% E.ON, 72.6% municipalities	0.4	0.2	13.3	27.2	40.9
Avacon	83.3 % E.ON, 6.7% Thüga			0.0	38.3	38.3
Ferngas Nordbayern	53.1% Ruhrgas, 16.9% E.ON, 20% Saar Ferngas			0.0	29.5	29.5
EVG	50% Ruhrgas, 50% VNG			0.0	22.4	22.4
EEG	100% Gaz de France Deutschland	6.4	3.2	0.0	0.0	6.4
		<b>148.6</b>	<b>907.4</b>			<b>1,693.9</b>
Wintershall (WIEH)	50% BASF, 50% Gazprom	16.5	8.3			
RWE Upstream		21.6	10.9			
Others		11.6	5.8			
		<b>198.2</b>				

Source: DrKW

E.ON and RWE have significant exposure to the German gas market, which could increase further..

Since 1973 Germany has been importing gas from Russia, which in 2001 covered 35.6% of German gas procurement of 1,074TWh. The contracts were secured by Ruhrgas in the 1970s and 1980s and in May 1998 the majority of them was renewed up until 2020. Since December 1998, Ruhrgas has been the only western utility with a direct shareholding in OAO Gazprom. Both companies agreed that Gazprom would cover about one-third of Ruhrgas's gas demand up until 2030.

**Gas procurement 2001 (%)**

Russia	35.6
Norway	21.1
Netherlands	18.8
Domestic	17.1
Great Britain	3.5
Denmark	2.5
Other	1.4
<b>Total</b>	<b>100</b>

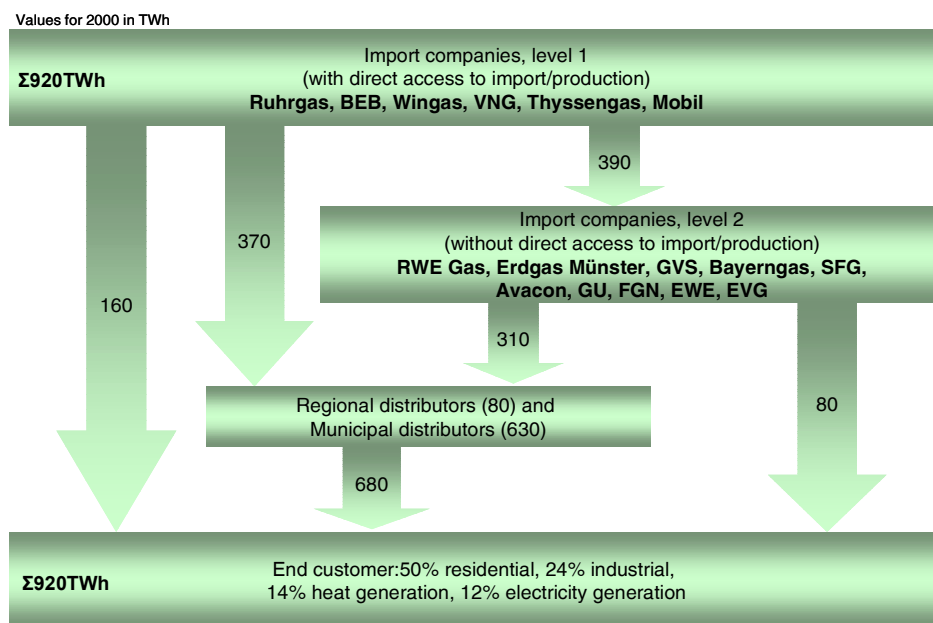
Source: E.ON, DrKW

Ruhrgas is the biggest of Germany's 17 gas transmission companies

There are 17 gas transmission companies in Germany (level 2), of which eight also engage in gas imports (level 1). Total domestic consumption in 2001 was 962TWh, of which the residential market accounted for 477TWh, or just under 50%. So far only 12% of German gas consumption, or 115TWh, is used for electricity generation.

As in the electricity market, distribution and supply is widely fragmented. Apart from the 17 gas transmission companies there are about 80 regional re-distributors and 630 municipal gas distributors.

**Structure of the German gas industry**



Source: RWE Gas

**Wholesale market shares in the German gas market (%)**

Ruhrgas	57.1
Wingas (50% BASF, 50% Gazprom)	14.4
Verbundnetz Gas (VNG)	13.5
BEB	6.0
Thyssengas (RWE)	5.9
Others	3.1

Source: Bundesverband der Gas - und Wasserwirtschaft

E.ON and RWE have a 10% direct market share in residential gas distribution

The residential gas market in Germany has about 16.8m customers, of which E.ON control about 10% directly, but almost 30% indirectly (with minority holdings being enough to block-out potential competitors in these companies). RWE has the same number of direct customers, but slightly less indirect customers, coming to a market share (direct and indirect) of 24%. It is this downstream exposure which E.ON (via Ruhrgas) and RWE (via Transgas and Highland Energy) are keen to hedge.

**Gas customers in Germany**

		E.ON	RWE	Others
	m	m	m	m
Direct customers	16.8	1.6	1.6	13.6
<i>% of total</i>		<i>10</i>	<i>10</i>	<i>81</i>
Indirect		3.4	2.4	
Direct & indirect	16.8	5.0	4.0	
<i>% of total</i>		<i>30</i>	<i>24</i>	

Source: E.ON, RWE

Including minority stakes, the market shares rise to 30% for E.ON and 24% for RWE

**Gas distribution in Germany**



Source: Wingas

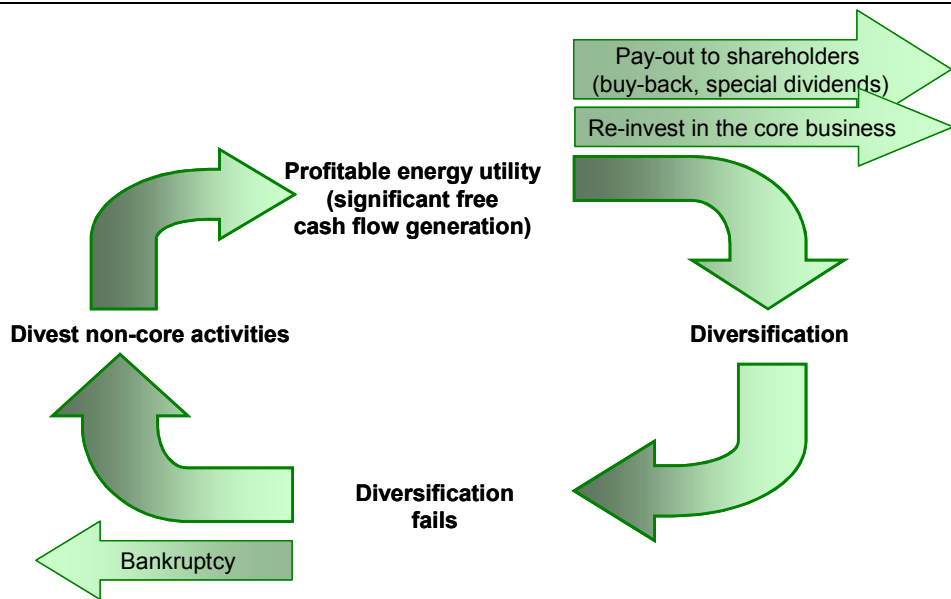
# Share price drivers

**With electricity prices likely to rise, the cost of generation likely to fall, limited pressure on the distribution business and continued restructuring momentum, the fundamentals for E.ON and RWE look very good indeed. But does it matter? Theoretically, utilities that restructure in order to focus on their core business should be rewarded with a re-rating.**

Diversified utilities that start to focus on their core business should be rewarded with a re-rating

In the classic utility cycle, starting at the top, we could see excess free cash flow building up a big net cash position. Pre-liberalisation, opportunities for expansion of the core business were limited, so the excess liquidity was usually spent on diversification adventures, before politicians got attracted to the embarrassing richness. Although there are some rare exceptions, diversification usually failed.

**The classic utility cycle**



Source: DrKW

Sometimes these diversification ventures could leave a firm on the edge of bankruptcy (eg, Motor-Columbus in Switzerland), but usually the cash-flow generation of the core business was so strong that failed diversification merely resulted in overall lower returns. Once companies finally realised that expanding too far away from the core was not such a good idea after all and decided to dispose of the underperforming assets, it was finally the shareholders' turn to be rewarded. The two other ways for shareholders to benefit from utilities are when cash managed to escape the cycle, either by returning it to shareholders (share buy-backs, special dividends), or reinvesting it in the core business.

Re-structuring towards the core energy business hardly gets more aggressive than E.ON's has been over the last four years

Judging by this traditional view of how utilities can achieve attractive returns for shareholders, RWE and especially E.ON should have been phenomenal stock market success stories over the past few years. Although the performance was not bad (E.ON and RWE outperformed MSCI Europe by 27% and 21% over the past three years), it was hardly breath-taking (a fall of 15% in absolute terms for E.ON, 19% for RWE; outperforming MSCI Europe utilities by 8.4% and 2.5% over the past three years) and nowhere near proportional to the dramatic restructuring of E.ON and RWE.

#### E.ON restructuring (disposals) – impressive so far, with more to come

1999: €9.5bn		2001: €5.6bn	
March 1999	10.2% in Cable & Wireless (€2.6bn)	July 2001	100% of VEBA Oel (€5.3bn)
April 1999	51.25% of otelo fixed network (€1,150m)	August 2001	100% of Klöckner & Co. (€300m)
May 1999	51.25% of Telecolumbus (€740m)	October 2001	71.8% of MEMC (€0-165m)
October 1999	30.88% of E-Plus (€3.8bn)		
December 1999	32% of Cablecom (€1,150m)		
2000: €9.7bn		2002: €6.9bn	
April 2000	72.96% of Gerresheimer Glas (€215m)	January 2002	100% of VAW Aluminium (€1.9bn)
June 2000	10% of Schmalbach-Lubeca (€73m)	May 2002	18% of Degussa <sup>1+2</sup> (€1.4bn)
August 2000	100% of VEBA Electronics (€1,000m)	June 2002	2.13% of Orange SA (€950m)
August 2000	45% of VIAG Interkom (€7,250m)	July 2002	65.4% of Stinnes (€1.6bn)
November 2000	42.5% of Orange Switzerland (€1,120m)	August 2002	49% of Schmalbach-Lubeca (€1.0bn)
Still to come			
	100% of Viterra (€3.1bn)		6.55% of Hypo Verinsbank (€700m)
	17.5% of Bouygues Telecom (€1.2bn)		46.5% of Degussa <sup>2</sup> (€3.6bn)
	50% of Connect Austria (€500m)		

<sup>1</sup>to RAG, in which E.ON has a stake...

<sup>2</sup> Assuming Ruhrgas transaction goes ahead

Source: Company data, DrKW

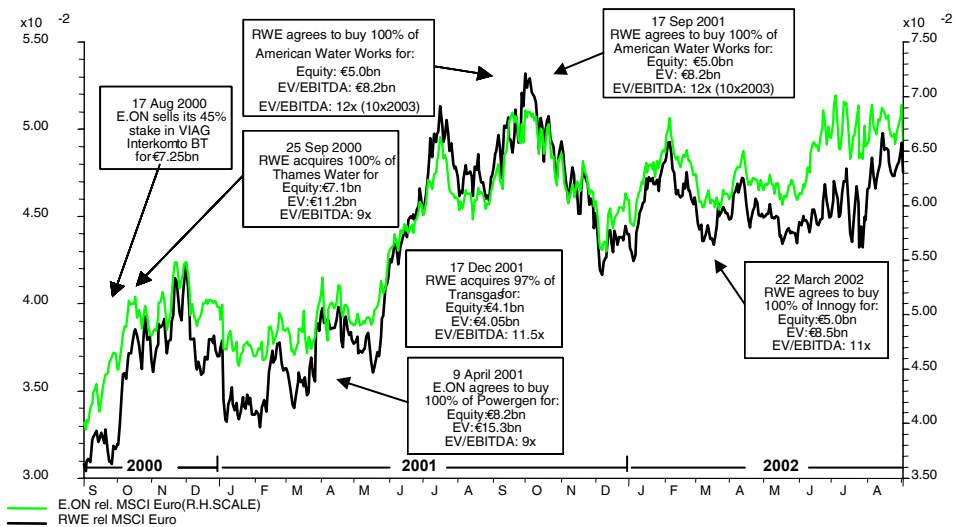


Altogether E.ON raised €32bn from the sale of non-core activities over the last four years, with especially the telecoms disposals being timed extremely well. That is quite impressive for a €34bn market cap company. In terms of enterprise value disposed, the overall number is even more remarkable. RWE also sold around €10bn worth of assets – equivalent to about half its current market value.

E.ON raised €32bn from the sale of non-core activities...

Such dramatic restructuring drives and transformation of the whole business mix into two different directions (E.ON – integrated energy; RWE – multi-utility) should have left a deep impression in the stock price performance of both. Amazingly, it has not.

**No escape from sector rotation**

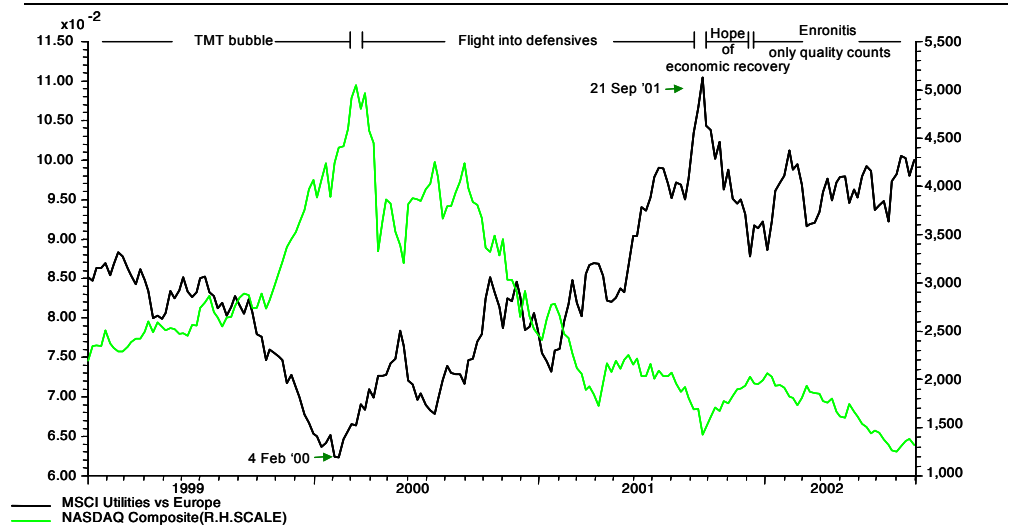


Source: Thomson Financial Datastream, DrKW

...but markets were pre-occupied with sector rotation

Even the big and transforming acquisitions of RWE and E.ON's brilliantly-timed disposal of VIAG Interkom failed isolate both from simple sector rotation. Over the past three years the relative performance of E.ON and RWE against MSCI Europe showed a correlation to the NASDAQ of a remarkable  $-0.92$ . For the sector overall the correlation was  $-0.87$ .

**Time for quality to be rewarded**



Source: Thomson Financial Datastream, DrKW

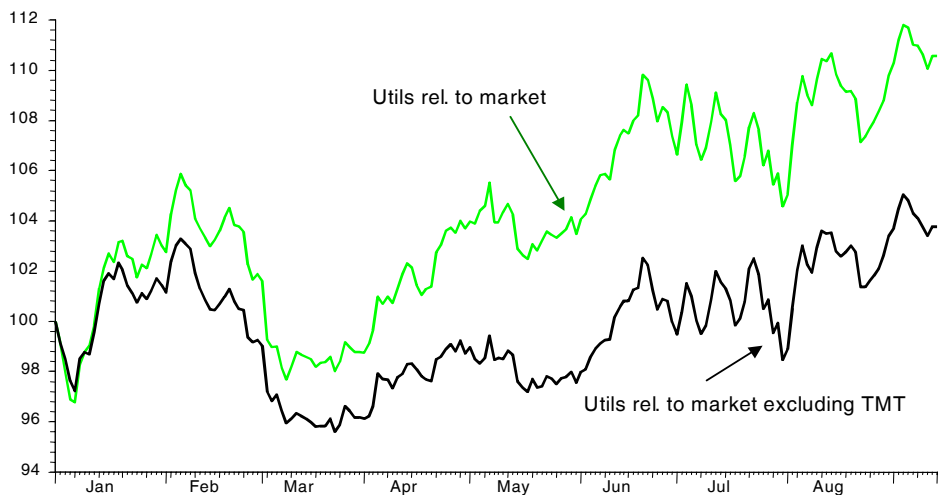


With sector rotation being such a dominant share price driver over the past few years, it is difficult to see why this should change now. However, we believe that this high correlation is a result of the adjustment process to the extreme valuation anomalies caused by the TMT-bubble.

Is sector rotation no longer the main share price driver?

So far this year the utility sector continues to outperform markets overall, but shows a flat performance against the market ex-TMT.

**Utilities sector relative to whole market and relative to market excluding TMT**

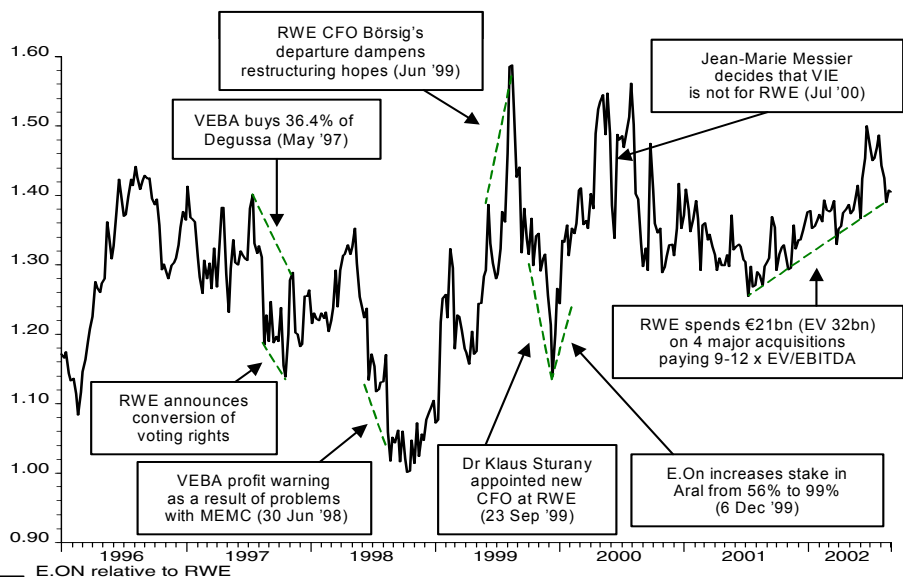


Source: Thomson Financial Datastream

'Enronitis' has brought a new focus on quality

We believe that this indicates a turn away from simple sector rotation, as 'Enronitis' has given a timely reminder that company fundamentals still do matter. As earnings volatility and balance sheet concerns continue to leave their mark outside as well as inside the utility sector, we believe that integrated utilities that can deliver healthy and predictable earnings growth will be in increasing demand in the current macro environment.

**E.ON vs RWE share price**



Source: Thomson Financial Datastream, DrKW



E.ON out-performed RWE since mid-2001

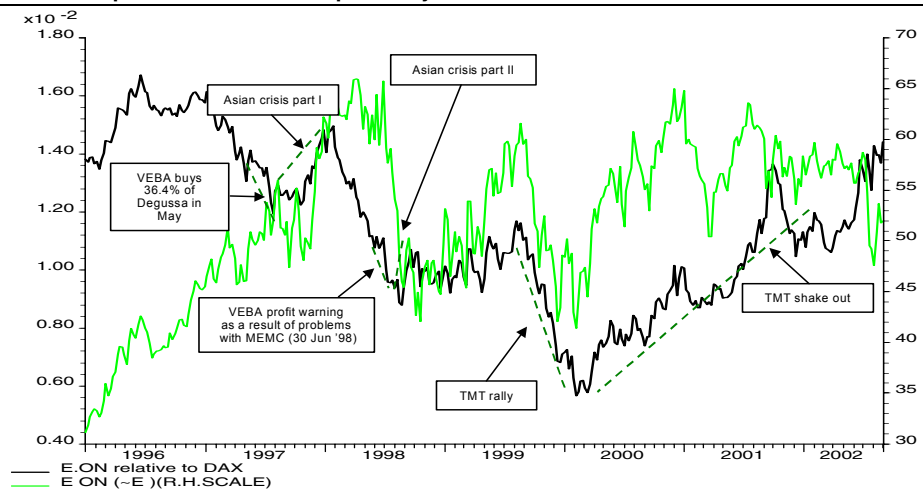
Irrespective of the dominating impact of sector rotation on the relative performance of the sector, looking at E.ON's performance relative to RWE cancels out sector specific themes and gives a good indication of investor perception of both stocks.

We believe that E.ON's (VEBA-VIAG) underperformance of RWE from mid-1996 to Q4 1998 is more the result of the old VEBA losing its previous premium rating, rather than a significant change in the perception of RWE, although the arrival of Clemens Börsig as new CFO in May 1997 did raise restructuring hopes.

The announcement of Börsig's departure in June 1999 and speculation over a merger between VEBA and VIAG (press speculation from 30 July 1999) lead to strong leap of outperformance by E.ON. After the official announcement of the merger on 27 September 1999 E.ON fell relative to RWE, a move that was further amplified by the appointment of Klaus Sturany as the new RWE CFO in September 1999.

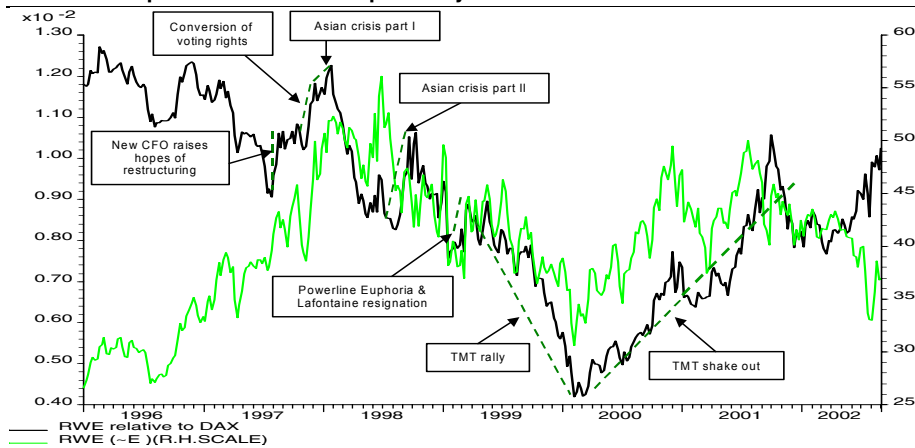
After further wild fluctuation between the two, E.ON managed to establish a trend of steady outperformance from mid-2001, as investors got concerned over the multiples RWE was paying in its aggressive expansion drive.

**E.ON's share price drivers over the past six years**



Source: Thomson Financial Datastream, DrKW

**RWE's share price drivers over the past six years**



Source: Thomson Financial Datastream, DrKW

# Financials

**Forecasting the earnings development of the German utilities is everything but straightforward, even at the best of times. The pace of the restructuring at E.ON and RWE mean that the financial reports struggle to keep up. As a result year-on-year, or sometimes even quarter-on-quarter comparisons are often difficult.**

Pace of re-structuring means that year-on-year comparisons are distorted

When numbers are not distorted due to acquisitions or disposals, they often are restated to reflect various changes in the scope of consolidation or accounting treatment. We provided a short, and by no way comprehensive, list of some of the main distortions below:

## E.ON

- ▶ VAW Aluminium, Stinnes and VEBA Oel are treated as discontinued operations from 2002, historic numbers will be restated.
- ▶ Book gains on those three disposals come under discontinued operations as well, although book gains on STEAG, Sydkraft and Rhenag go above the line.
- ▶ Powergen will be consolidated from 1 July 2002.
- ▶ Telecoms activities are equity accounted (Connect Austria and Bouygues Telecom).
- ▶ As of January 2002 E.ON's reported numbers no longer include goodwill amortization, historic numbers will be restated
- ▶ It is unclear when, or if, Ruhrgas can be consolidated, and therefore when Degussa will only be equity accounted (we assume 1 January 2003). Despite this uncertainty regarding the Ruhrgas transaction, part of the financial capex for Ruhrgas is already accounted for.
- ▶ €1.2bn write-down of 6.55% stake in HypoVereinsbank stake in H1 2002.
- ▶ Disposal of remaining Schmalbach stake (book gain: €550m in H2 2002).

Once the RAG offer for Degussa closes, we estimate that E.ON could realise a further capital gain of €850m.

- ▶ Book gains and valuation adjustments (release of deferred taxes related to the valuation allowances on E.ON's stake in HypoVereinbank) lead to an artificially low tax rate (18% in H1, we forecast 20% for the full year).

## RWE

- ▶ Change of financial year-end from June to December, leading to re-statement of historic numbers.
- ▶ Consolidation of Thames Water (from November 2001), Transgas (May 2002) and Innogy (June 2002).
- ▶ Deconsolidation of Hochtief (equity accounted from January 2002).
- ▶ Disposal of RWE-DEA Downstream from 1 July 2002, but proceeds will only come in 2003, book gain for Q3 2002 is €700m.
- ▶ Book gains and restructuring lead to artificially low tax rate (11% in H1, we forecast 20% for the full year).

Healthy earnings development  
despite complexity of numbers

These are just some of the adjustments. As a result it becomes almost as involving trying to establish (restated) historic numbers, as it does for the actual forecast. However, despite the complex set of numbers, a look at the operating result reveals that both are set for a very healthy earnings development, particularly in the core energy divisions.

### E.ON – internal operating profit

Yr to December (€m)	2000A	2001A	2002F	2003F	2004F	2005F	2006F	2007F		
Electricity	1,725	1,971	2,727	3,271	3,609	4,021	4,395	4,733		
Oil	310		Discontinued operations							
Chemicals	672	541	410	Equity accounted						
Real Estate	212	245	274	296	315	334	354	374		
Telecoms	(750)	(148)	Equity accounted							
Distribution / Logistics	461		Discontinued operations							
Aluminium			Discontinued operations							
Silicon Wafers			Discontinued operations							
Interest from disposals										
Holding / Other	(185)	213	-225	22	65	68	64	56	'01-'06	'02-'07
<b>Internal op. profit</b>	<b>2,445</b>	<b>2,822</b>	<b>3,186</b>	<b>3,589</b>	<b>3,988</b>	<b>4,423</b>	<b>4,814</b>	<b>5,163</b>	<b>11.3%</b>	<b>10.1%</b>
Electricity	212	237	350	797	797	797	797	797		
Chemicals	215	235	235	Equity accounted						
Real Estate	13	5	10	10	10	10	10	10		
Holding / Other										
<b>Goodwill</b>	<b>440</b>	<b>477</b>	<b>595</b>	<b>807</b>	<b>807</b>	<b>807</b>	<b>807</b>	<b>807</b>		
Electricity	1,937	2,208	3,076	4,068	4,406	4,818	5,192	5,530		
Chemicals	887	776	645							
Real Estate	225	250	284	306	325	344	364	384		
Other / consolidation	(185)	52	(225)	22	65	68	64	56	'01-'06	'02-'07
<b>Internal op. profit</b>	<b>2,864</b>	<b>3,286</b>	<b>3,780</b>	<b>4,396</b>	<b>4,795</b>	<b>5,230</b>	<b>5,621</b>	<b>5,970</b>	<b>11.3%</b>	<b>9.6%</b>
Net book gains	4,710	908	950	850	0	0	0	0		
Re-structure expenses	(510)	(360)	(100)	(100)	(100)	(100)	(100)	(100)		
Other non-op. earnings	(699)	(615)	(1,400)	(50)	(50)	(50)	(50)	(50)		
Foreign E&P taxes	552	0	0	0	0	0	0	0	'01-'06	'02-'07
<b>Pre-tax profit</b>	<b>6,917</b>	<b>3,219</b>	<b>3,230</b>	<b>5,096</b>	<b>4,645</b>	<b>5,080</b>	<b>5,471</b>	<b>5,820</b>	<b>11.2%</b>	<b>12.5%</b>

Source: Company data, DrKW

We forecast 7.8% compound EBITDA growth (2001 – '06) for E.ON

For E.ON we forecast compound EBITDA growth between 2001 and 2006 of 7.8%, largely driven by energy earnings where compound growth comes to 17.4% due to organic growth (7%), Powergen and Ruhrgas. Our forecast assumes that Ruhrgas will be fully consolidated and Degussa equity accounted from January 2002. As a result we estimate that more than 90% of E.ON's 2003 EBITDA will come from the energy division.

Book gains on the disposals of VAW (€1,100m), Stinnes (€600m) and VEBA Oel (€1,510m) will only be included under discontinued operations.

For E.ON's main operational number, the internal operating profit (IOP) pre goodwill, we forecast compound growth between 2001 and 2006 of 11.3%, again, driven mainly by the energy division, where we expect compound growth of 18.7% over the period.

#### E.ON – earnings per share (€)

	2001A	2002F	2003F	2004F	2005F	2006F	CAGR 2001-06	%
Pre goodwill (continuing operations)	2.87	2.52	4.19	3.46	3.71	4.06		7.2
Pre goodwill (discontinued operations)	0.17	5.23	0.00	0.00	0.00	0.00		
<b>Pre goodwill (con. and discontinued)</b>	<b>3.04</b>	<b>7.75</b>	<b>4.19</b>	<b>3.46</b>	<b>3.71</b>	<b>4.06</b>		<b>6.0</b>
Post goodwill (con and discontinued)	2.33	6.84	2.95	2.22	2.47	2.82		3.9
Pre goodwill (ex eo, continued only)	2.93	3.20	3.44	3.61	3.86	4.21		7.5
<b>Post goodwill (ex eo, continued only)<sup>1</sup></b>	<b>2.22</b>	<b>2.29</b>	<b>2.20</b>	<b>2.37</b>	<b>2.62</b>	<b>2.97</b>		<b>6.0</b>

Note: <sup>1</sup>DrKW definition  
Source: DrKW

Excluding changes in the tax rate, we forecast 12% compound EPS growth (2001 – '06) for E.ON

A look at the EPS is interesting, as there are a multitude of definitions to choose from. On our main definition (post goodwill, excluding extraordinaries, continued operations only), we forecast 6% compound growth between 2001 and 2006. While this hardly sounds impressive, it is mainly the result of E.ON's low tax rate in 2001 (23.6%) which was impacted by its restructuring. Excluding the difference in tax rates (we assume 35% by 2006) compound earnings growth over the period rises to 12.2%.

#### RWE – internal operating profit

Yr to June (€m)	'99/'00A	'00/'01A	2002F	2003F	2004F	2005F	2006F	
Electricity	1,890	1,730	2,584	3,167	3,543	3,825	4,081	
Gas (incl. RWE-DEA upstream)	0	295	714	760	845	1,001	1,051	
Water	0	563	941	974	1,586	1,652	1,715	
Environmental Services	122	135	143	152	160	169	177	
<b>Total core business</b>	<b>2,012</b>	<b>2,723</b>	<b>4,382</b>	<b>5,052</b>	<b>6,135</b>	<b>6,647</b>	<b>7,024</b>	
RWE-DEA Downstream	407	844	(6)	Sold				
Heidelberger Druck	463	510	255	420	565	653	725	
HOCHTIEF	156	97	Equity accounted					
Other	(234)	(221)	(300)	(163)	(47)	(33)	(22)	'00-'06
<b>Total operating result</b>	<b>2,804</b>	<b>3,953</b>	<b>4,331</b>	<b>5,310</b>	<b>6,653</b>	<b>7,268</b>	<b>7,726</b>	<b>14.3%</b>
Gains on disposals			1,368	0	0	0	0	
Goodwill			(752)	(935)	(1,031)	(1,031)	(1,031)	
Other			(475)	0	0	0	0	
<b>Non-operating result</b>			<b>141</b>	<b>(935)</b>	<b>(1,031)</b>	<b>(1,031)</b>	<b>(1,031)</b>	
<b>Financial result</b>			<b>(2,286)</b>	<b>(2,520)</b>	<b>(3,282)</b>	<b>(3,456)</b>	<b>(3,513)</b>	'00-'06
<b>Pre-tax profit</b>	<b>2,151</b>	<b>2,238</b>	<b>2,187</b>	<b>1,855</b>	<b>2,340</b>	<b>2,781</b>	<b>3,182</b>	<b>7.3%</b>

Source: Company data, DrKW

For RWE we forecast 10.4% compound EBITDA growth (2001 – '06)...

For RWE we forecast compound EBITDA growth between 2001 and 2006 of 10.4%, largely driven by earnings from the core business, where we see compound growth of 15.8%. Excluding Innogy, Transgas and American Water Works compound growth falls to 8.9%. As with E.ON, we estimate that more than 90% of RWE's 2003 EBITDA will come from its core businesses (electricity, gas, water and environmental services).

For RWE's operating result we expect compound growth of 14.3%, again, mainly driven by the energy division where we forecast compound growth of 20.9%. Within the electricity division the biggest contribution to the 18.7% compound growth comes from RWE Rheinbraun, Power Generation and the consolidation of Innogy.

#### RWE - operating result, energy

	'99/'00A	'00/'01A	2002F	2003F	2004F	2005F	2006F	
Power generation		(35)	582	704	781	845	901	
Lignite-fired power gen. & mining		173	525	768	922	985	1,047	
Consol		491	215	296	337	353	370	
Rheinbraun		(318)	309	472	585	632	677	
Trading		54	60	79	89	99	109	
Net		587	615	620	621	623	621	
Sales		815	416	361	347	350	339	
Solutions	56	38	17	29	48	70	97	
Innogy			320	575	705	823	936	
Other		98	50	30	30	30	30	'01-'06
<b>Electricity</b>	<b>1,890</b>	<b>1,730</b>	<b>2,584</b>	<b>3,167</b>	<b>3,543</b>	<b>3,825</b>	<b>4,081</b>	<b>18.7%</b>
<b>Gas</b>		<b>295</b>	<b>714</b>	<b>760</b>	<b>845</b>	<b>1,001</b>	<b>1,051</b>	<b>'01-'06</b>
<b>Total energy</b>	<b>1,890</b>	<b>2,025</b>	<b>3,298</b>	<b>3,927</b>	<b>4,388</b>	<b>4,826</b>	<b>5,132</b>	<b>20.4%</b>

Source: Company data, DrKW

...although book gains are needed to lift PBT in 2002

RWE's aggressive expansion drive has left its mark on the financial line, reducing compound EPS growth over the same period to 8.1%. We include Innogy from 1 June 2002 and Transgas from 1 May. Although the acquisition of American Water Works looks set for clearing all regulatory hurdles by mid-2003, we consolidate the group from 1 January 2004. Nevertheless, the full financial impact of its acquisitions is leaving its mark on 2002 results. It is only the significant amount of book gains (€668m in H1, with a further €700 to come in Q3 from the disposal of RWE-DEA) that will bring this year's PBT to the level of previous years.

# Valuation

**Just like the restructuring of E.ON and RWE leads to frequent re-statements of historic numbers and various adjustments, the valuation is also anything but straightforward, mainly due to the treatment of the significant amount of provisions and the associated assets on the other side of the balance sheet.**

For E.ON provisions provide almost 30% of total equities and liabilities, for RWE the number is almost 40%. Because of the importance of the capital structure, simple multiple valuations or a normal DCF fail to take into account either the financial investments themselves, or the resulting income from them.

Sum-of-the-parts valuation is the least imperfect way to value the German utilities

As a result we believe that the least imperfect way of valuing the German utilities is by using the sum-of-the-parts (SOTP) or a straight EV/EBITDA multiple. Within the SOTP we use EV/EBITDA multiples to value the various parts, unless there is a market quote for a particular business unit (eg, Heidelberger Druck, Hochtief) or a trade transaction has already been announced (eg, Stinnes, RWE-DEA).

## E.ON sum of the parts

		Stake %	EV/EBITDA x	EV €m	Equity €m	Equity for E.ON
Energy	E.ON Energie	100.00	7.50	48,759	25,768	25,768
Chemicals	Degussa	64.55	5.77	10,475	6,138	3,962
Real Estate	Viterra	99.95	6.00	3,613	2,926	2,924
Stinnes	Stinnes	65.40	Sold	3,594	2,491	1,629
Holding / Other						6,444
<b>Group</b>						<b>40,729</b>
Equity investments						5,642
Securities held as fixed assets						2,395
Minorities debt						1,919
Other						2,157
<b>Equity valuation (€m)</b>						<b>52,841</b>
Shares						692.00
<b>Value per share (€)</b>						<b>76.36</b>
Conglomerate discount (%)						10.0
<b>Value per share (€)</b>						<b>68.72</b>

Source: Company data, DrKW



We value E.ON's core energy division of the sector average EV/EBITDA multiple

We value E.ON's energy division at 7.5x 2002 EV/EBITDA, which is in-line with the current average for the sector (7.4x 2002). Given E.ON's EBITDA growth of 8.4% compound (2001-05), compared to 6% for the sector, we believe that 7.5x is a conservative estimate. Overall the valuation range for pure defensive utility earnings ranges from 5x EV/EBITDA (when defensive earnings are out-of-favour, including conglomerate or small-cap discount) to 9x EV/EBITDA (which appears to be something like a rating-barrier). So 7.5x, in the current macro environment does not look too ambitious.

Due to the significant movement in E.ON's financial assets, we have only used the participations we are aware of instead of the book value of financial investments. For example, we had already valued E.ON's 6.55% stake in HypoVereinbank at market value and therefore did not have to downgrade our SOTP after E.ON's €1.2 write-down on the stake in H1 2002.

#### E.ON – EV/EBITDA

Conglomerate Discount	Price	EV/EBITDA	
%	€	x	
0	76.36	9.0	
5	72.54	8.7	
10	68.72	8.4	Target
15	64.91	8.1	
20	61.09	7.7	
25	57.27	7.4	
30	53.45	7.1	
35	49.63	6.8	Current
40	45.82	6.4	

Source: DrKW

We still maintain a 10% conglomerate discount for E.ON and RWE

Despite the impressive progress made in their restructuring drives, we still maintain a 10% conglomerate discount for setting our price targets for E.ON and RWE. Assuming the Ruhrgas deal will go through, and E.ON will eventually manage to sell its remaining direct shareholding in Degussa, it will still retain an indirect stake of 39.2% via its shareholding in RAG. Given that the chances of disposing of its stake in RAG are remote, E.ON will effectively lock-in part of its conglomerate discount for the foreseeable future. Valuing the core energy business at 7.5x 2002 EV/EBITDA in our SOTP, we get an equity value of €76.4 per share. After applying a 10% conglomerate discount we get a **price target for E.ON of €69**.

E.ON could see short-term catalyst to trigger a re-rating

At our price target E.ON would trade at 8.4x 2003 EV/EBITDA, or at a 22% premium to the sector average. While a premium rating is justified, in our view, by E.ON's growth prospects and quality of earnings, we are valuing E.ON's financial assets prudently. Using book values the EV/EBITDA at our target price would fall to 8.0x, or a 16% premium to the sector.

## Catalyst: E.ON

Apart from a general focus on predictable earnings, there are also more company specific catalyst to drive a re-rating of the shares. For E.ON we believe that a positive conclusion to the Ruhrgas saga might be nearer than currently thought. This would open the door for E.ON's next move in the US. If E.ON manages to pay around 9x EV/EBITDA or less, concerns over acquisition risk could finally be put to rest.

### RWE sum of the parts

	Stake %	EV/EBITDA x	EBITDA €m	Equity €m	Equity for RWE	
Electricity	100.00	6.95	27,448	1,427	1,119	
Gas (incl. RWE-DEA Upstream)	100.00	8.00	7,733	4,555	4,555	
Water	Thames Water	100.00	8.00	11,461	7,461	7,461
Environmental Services	100.00	5.00	1,430	(465)	(465)	
Total core business	100.00		48,072	12,979	12,671	
RWE-DEA Downstream	RWE DEA	100.00	0.00	2,000	0	1,500
Heidelberger Druck	Heidelberger Druck	50.00		6,535	2,594	1,297
HOCHTIEF		62.00		2,159	1,055	654
Other						(3,650)
<b>Group</b>						<b>12,472</b>
Equity investments						4,963
Securities held as fixed assets						7,341
Minorities debt						1,970
American Water Works						(1,180)
<b>Equity valuation (€m)</b>						<b>25,566</b>
Ordinary shares						523.41
Preference shares						39.00
<b>Value per share (€)</b>						<b>46.26</b>
Conglomerate discount (%)						10.0
<b>Value per share (€)</b>						<b>41.63</b>

Source: Company data, DrKW

We use a weighted EV/EBITDA for RWE's electricity division

For RWE we value the electricity division at 7x 2002 EV/EBITDA, and the gas and water divisions at 8x. The 6.95x multiple for the electricity division is the weighted average of the multiples we give to the various sub-sections of the within the division.

### RWE – electricity EV/EBITDA multiple

	2002F	EV/EBITDA x	EBITDA €m	Weighting %	EV/EBITDA x
Power generation	745	7.00	5,214	20.7	1.45
Lignite-Fired Power Generation and Mining	850		5,537	23.7	0.00
Consol	212	8.06	1,710	5.9	0.48
Rheinbraun	638	6.00	3,828	17.8	1.07
Trading	68	4.00	270	1.9	0.08
Net	859	7.50	6,442	23.9	1.79
Sales	584	7.50	4,377	16.2	1.22
Solutions	72	3.00	217	2.0	0.06
Other	415	7.00	2,903	11.5	0.81
<b>Total</b>	<b>3,592</b>			<b>100.0</b>	<b>6.95</b>

Source: RWE, DrKW



RWE has got more to do in order to shake off its conglomerate discount

RWE still has to dispose of Heidelberger Druck and Hochtief before it stands any realistic chance of shaking off its conglomerate discount. This process could be speeded up if the waste management division were to be sold as well, as it presents the weakest link in RWE's multi-utility strategy. Once RWE's transition is complete it will be able to reap the full benefits of its restructuring. A great IR effort also means that once the remaining non-core activities are sold, attractive earnings visibility should be rewarded. Valuing the electricity business at 7x 2002 EV/EBITDA in our SOTP, we get an equity value of €46.3 per share. After applying a 10% conglomerate discount and allowing for preference shares we get a **price target for RWE of €42**.

#### RWE – EV/EBITDA

Conglomerate discount	Price	EV/EBITDA	
%	€	x	
0	46.26	7.9	
5	43.95	7.8	
10	41.63	7.6	Target
15	39.32	7.5	
20	37.01	7.3	
25	34.70	7.1	
30	32.38	7.0	
35	30.07	6.8	Current
40	27.76	6.7	

Source: DrKW

At out price target RWE would trade at 7.6x 2003 EV/EBITDA, or a 10% premium to the sector, which we believe would be justified by the quality and visibility of RWE's earnings.

## Catalyst: RWE

RWE needs to prove that its acquisitions created value

RWE needs to complete the disposal of its two main remaining non-core businesses, Heidelberger Druck and Hochtief, if its wants to reap the benefits of its restructuring. Although both disposals were initially marked for end-2003 at the latest, recent signs are that the management is not in a rush. Following recent acquisitions in water, gas and electricity RWE has its work cut out to demonstrate that investors should not worry about integration risk. As a result we believe that company specific catalysts are unlikely to emerge in the short term.

## E.ON still the better bet

E.ON offers more upside and greater chances of a short-term catalyst

E.ON remains our preferred pick of the German utilities for three main reasons:

- ▶ Both E.ON and RWE are undervalued at current market prices, but shares can remain cheap for a long time. We believe that E.ON has the potential for a clearer short-term catalyst in a potential positive solution to the Ruhrgas saga and putting to rest concerns over acquisition risk.
- ▶ The most likely targets for E.ON's next move in the US, in our view, are Cinergy and DPL. They are currently trading at 8.3x and 8.1x current EV/EBITDA and would offer significant synergies to LG&E, E.ON's existing asset in the US. If E.ON is able to acquire these assets by paying around 9x EV/EBITDA or less, than concerns over acquisition risk would prove unfounded.



- Valuation. E.ON currently trades at a 35% discount to our SOTP, and 2003 EV/EBITDA of 6.7x and offers 40% upside to our price target (based on a 10% discount to the SOTP) of €69. This compares with RWE's 25% discount to our SOTP, a 2003 EV/EBITDA of 7.1x and 20% upside to our price target.

## Other utilities in the German electricity market

### Vattenfall Europe (not rated)

Bewag free-float has to rely on Vattenfall's generosity

Investors could get a chance to get exposure to the third biggest player in the German electricity market in early 2003, when Vattenfall has to decide whether to buy-out the remaining 10% free float in Bewag (€15.30, not rated) or merge the free-float into Vattenfall Europe. When HEW and VEAG merged to create Vattenfall Europe, the merger document valued HEW at €3.9307bn and VEAG at €1.0596bn. Using Bewag's current market cap of €3.0bn as an indication for the group's value, the free float in Bewag could end up with 3.75% of the enlarged Vattenfall Europe. However, whether Vattenfall decides to buy out the Bewag minorities or merge them into the bigger group, any upside to Bewag's share price depends on Vattenfall's generosity. Given Vattenfall's financial situation, we believe that this cannot be taken for granted. Moreover, even if Vattenfall decides against an offer for the Bewag free float, it is questionable how attractive a small free-float in a company with significant integration risk would be to investors.

### EnBW (€31.50, not rated)

Free-float of EnBW could be increased to 25%

The current free float in EnBW is only 1.6%, but Electricité de France and OEW (Zweckverband Oberschwäbischer Elektrizitätswerke), who together control 69% of EnBW, have plans to increase the free-float to 25%. In January 2002, EnBW postponed plans to do so, citing unfavourable market conditions. However, once the current restructuring is completed the company is likely to have another look.

### MVV (€15, Add)

Small, but fine

Outside the 'Big Four', Mannheim-based MVV is one of the bigger regional utilities. With a free float of only 12.5% (€100m) investment opportunities are limited. The management remains keen to increase the free float to 25%, possibly later this year if the City reduces its shareholding or Ruhrgas's 15% stake comes to the market. We believe that front-end loaded 10% pa EBITDA growth is not reflected in the current multiple of only 5x 2003 EV/EBITDA and have a price target of €17.



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# Companies



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# E.ON

## Integrated Energy

Target: €69

Current: €49.15

**Buy**

Unchanged

E.ON firmly believes in the integrated energy strategy, focussing on electricity and gas. If E.ON manages to implement this strategy by achieving a positive solution to the Ruhrgas saga and not destroying value in its expansion drive, the shares will have to be re-rated. We maintain our Buy recommendation with a €69 target.

Price  
US\$47.63

Market Cap  
€34,012m  
US\$32,961m

ReutersBloomberg  
EONG.DE/EOA GR

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- **Current perception:** E.ON is finding it difficult to shake off the believe that utilities with a lot of money to spend – and E.ON repeatedly stated that it could spend up to €40bn – are more likely than not to destroy value. There is also some scepticism whether E.ON will be able to acquire Ruhrgas soon and some worry over what plan B might look like.
- **Bull case:** If E.ON is able to ease concerns over acquisition risk (by paying around 9xEV/EBITDA or less for companies that offer significant synergies) and sort out the Ruhrgas acquisition, than the shares are unlikely to trade at a 35% discount to our SOTP for long. As regards Ruhrgas, we believe that a 'public' out-of-court settlement, which would prevent long legal battles, is possible, while the management's track record on expansion in core business is good (for deals done and deals avoided!).
- **Bear case:** A long delay in the acquisition of Ruhrgas would certainly hold back any re-rating of the shares, as would US acquisitions at 10x EV/EBITDA or higher. However, with the most likely targets in our view (Cinergy and DPL) trading at 8.3x and 8.1x current EV/EBITDA and offering significant synergies, we believe that E.ON is more likely to surprise on the upside.
- **Upcoming events:** Q3 results are due on 14 November 2002.

Year to end Dec	Pre-tax profit €bn	EPS €	CFPS €	P/E x	P/CF x	Yield %	EV/EBIT x	EV/EBITDA x
2001	3.3	2.22	7.02	22.7	7.2	3.2	14.4	7.2
2002E	3.8	2.29	8.45	22.0	6.0	3.5	11.7	7.0
2003E	4.4	2.20	9.80	22.9	5.1	3.8	10.9	6.2
2004E	4.8	2.37	10.57	21.2	4.8	4.2	9.4	5.5

Source: Company reports, DrKW estimates

E.ON relative to MSCI Europe



Source: Thomson Financial Datastream



**E.ON – summary information**

Summary P&L (€m)	2000A	2001A	2002F	2003F	2004F	2005F	2006F	
Sales	88,858	37,182	41,671	49,719	51,721	53,337	54,945	'01-'06
Sales (excl. petroleum tax)	79,923	36,488	40,958	48,977	50,950	52,546	54,133	8.2%
Total income	82,456	39,986	44,844	53,575	55,681	57,373	59,052	
Operating costs	71,313	29,467	32,966	40,364	41,788	42,823	43,887	
Other	3,102	3,798	4,222	5,000	5,150	5,259	5,364	'01-'06
<b>EBITDA</b>	<b>8,041</b>	<b>6,721</b>	<b>7,656</b>	<b>8,210</b>	<b>8,743</b>	<b>9,290</b>	<b>9,801</b>	7.8%
Depreciation	4,905	3,343	3,119	3,499	3,659	3,758	3,857	'01-'06
<b>EBIT</b>	<b>3,136</b>	<b>3,378</b>	<b>4,537</b>	<b>4,712</b>	<b>5,084</b>	<b>5,532</b>	<b>5,944</b>	12.0%
IOP (cont. ops, pre GW)	2,864	3,286	3,780	4,396	4,795	5,230	5,621	11.3%
% Change		14.7	15.0	16.3	9.1	9.1	7.5	
Net financial	(139)	(92)	(756)	(316)	(289)	(302)	(323)	
Extraordinaries	3,501	(67)	(550)	700	(150)	(150)	(150)	'01-'06
<b>Profit before tax</b>	<b>6,498</b>	<b>3,219</b>	<b>3,230</b>	<b>5,096</b>	<b>4,645</b>	<b>5,080</b>	<b>5,471</b>	11.2%
Tax	2,542	761	646	1,529	1,533	1,778	1,915	
<b>Profit after tax</b>	<b>3,956</b>	<b>2,458</b>	<b>2,584</b>	<b>3,567</b>	<b>3,112</b>	<b>3,302</b>	<b>3,556</b>	
Minorities	(516)	(527)	(939)	(834)	(858)	(884)	(910)	'01-'06
<b>Net income (cont. ops)</b>	<b>3,440</b>	<b>1,931</b>	<b>1,645</b>	<b>2,733</b>	<b>2,254</b>	<b>2,418</b>	<b>2,646</b>	6.5%
Adjustment	(2,131)	40	440	(490)	101	98	98	'01-'06
<b>Recurring net income</b>	<b>1,309</b>	<b>1,971</b>	<b>2,085</b>	<b>2,243</b>	<b>2,354</b>	<b>2,516</b>	<b>2,743</b>	6.8%
Shares	726.13	673.85	652.03	652.03	652.03	652.03	652.03	'01-'06
<b>EPS (€)</b>								
Stated, post-GW	4.74	2.87	2.52	4.19	3.46	3.71	4.06	7.2%
Stated, pre-GW	5.95	3.57	3.43	5.43	4.69	4.95	5.30	8.2%
Recurring, pre-GW	1.80	2.93	3.20	3.44	3.61	3.86	4.21	7.5%
Recurring, post-GW	0.59	2.22	2.29	2.20	2.37	2.62	2.97	6.0%
%	(18.7)	62.3	9.3	7.6	5.0	6.8	9.0	
<b>Summary cash flow (€m)</b>	<b>2000A</b>	<b>2001A</b>	<b>2002F</b>	<b>2003F</b>	<b>2004F</b>	<b>2005F</b>	<b>2006F</b>	
Net income	1,309	1,971	2,085	2,243	2,354	2,516	2,743	
Depreciation	4,905	3,343	3,119	3,499	3,659	3,758	3,857	
Provisions	(544)	(734)	306	646	881	880	876	
<b>Cash flow</b>	<b>5,670</b>	<b>4,580</b>	<b>5,511</b>	<b>6,388</b>	<b>6,894</b>	<b>7,153</b>	<b>7,476</b>	
Other operating items	(1,781)	(673)	63	(213)	550	807	962	
<b>Operating cash flow</b>	<b>3,889</b>	<b>3,907</b>	<b>5,574</b>	<b>6,175</b>	<b>7,444</b>	<b>7,960</b>	<b>8,438</b>	
Capex	(14,961)	(7,931)	(18,345)	(5,109)	(3,352)	(3,306)	(3,271)	
Disposals	8,644	20,135	10,913	500	500	500	500	
Dividends	(759)	(850)	(1,043)	(1,141)	(1,239)	(1,369)	(1,467)	
Others	(925)	(3,539)	0	0	0	0	0	
<b>Free cash flow</b>	<b>(4,113)</b>	<b>11,722</b>	<b>(2,902)</b>	<b>425</b>	<b>3,353</b>	<b>3,785</b>	<b>4,200</b>	
<b>Summary balance sheet (€m)</b>	<b>2000A</b>	<b>2001A</b>	<b>2002F</b>	<b>2003F</b>	<b>2004F</b>	<b>2005F</b>	<b>2006F</b>	
Fixed assets	63,340	60,041	72,834	74,944	74,138	73,185	72,099	
Current assets	42,875	39,005	37,823	40,248	44,038	47,993	52,346	
<b>Total assets</b>	<b>106,215</b>	<b>99,046</b>	<b>110,657</b>	<b>115,193</b>	<b>118,176</b>	<b>121,179</b>	<b>124,445</b>	
Shareholders' Funds	33,156	30,824	36,326	37,428	38,543	39,690	40,966	
Current liabilities	23,265	19,943	22,830	27,118	28,105	29,082	30,196	
Provisions	33,535	32,801	32,003	30,149	31,030	31,910	32,785	
Long-term liabilities	16,259	15,478	19,498	20,498	20,498	20,498	20,498	
<b>Equity &amp; liabilities</b>	<b>106,215</b>	<b>99,046</b>	<b>110,657</b>	<b>115,193</b>	<b>118,176</b>	<b>121,179</b>	<b>124,445</b>	
BVPS	38.61	36.30	45.95	47.64	49.36	51.11	53.07	
Net debt / (cash)	5,546	612	7,534	8,109	4,756	970	(3,229)	
<b>Net gearing (%)</b>	<b>16.7</b>	<b>2.0</b>	<b>20.7</b>	<b>21.7</b>	<b>12.3</b>	<b>2.4</b>	<b>(7.9)</b>	



Key ratios (@€49.15)	2000A	2001A	2002F	2003F	2004F	2005F	2006F
<b>EPS (€) (recurring, post goodwill)</b>	<b>0.59</b>	<b>2.22</b>	<b>2.29</b>	<b>2.20</b>	<b>2.37</b>	<b>2.62</b>	<b>2.97</b>
P/E (x)	82.7	22.2	21.5	22.3	20.7	18.8	16.6
<b>DPS (€)</b>	<b>1.35</b>	<b>1.60</b>	<b>1.75</b>	<b>1.90</b>	<b>2.10</b>	<b>2.25</b>	<b>2.40</b>
Yield (%)	2.7	3.3	3.6	3.9	4.3	4.6	4.9
<b>CFPS (€)</b>	<b>5.36</b>	<b>5.80</b>	<b>8.55</b>	<b>9.47</b>	<b>11.42</b>	<b>12.21</b>	<b>12.94</b>
P/CF (x)	9.2	8.5	5.7	5.2	4.3	4.0	3.8
<b>BVPS (€)</b>	<b>38.61</b>	<b>36.30</b>	<b>45.95</b>	<b>47.64</b>	<b>49.36</b>	<b>51.11</b>	<b>53.07</b>
P/BV (x)	1.3	1.4	1.1	1.0	1.0	1.0	0.9
<b>EV / EBITDA (x)</b>	<b>6.0</b>	<b>7.6</b>	<b>6.5</b>	<b>6.7</b>	<b>6.0</b>	<b>5.2</b>	<b>4.5</b>
	<b>2000A</b>	<b>2001A</b>	<b>2002F</b>	<b>2003F</b>	<b>2004F</b>	<b>2005F</b>	<b>2006F</b>
Market cap	34,012	34,012	34,012	34,012	34,012	34,012	34,012
Net debt (cash)	5,546	612	7,534	8,109	4,756	970	(3,229)
Minorities (estimated MV)	5,123	7,634	7,634	7,634	7,634	7,634	7,634
Pension & other financial liabilities	20,822	20,423	17,991	15,629	15,871	16,117	16,370
Equity holdings (estimated MV)	(17,323)	(11,381)	(10,194)	(10,194)	(10,194)	(10,194)	(10,194)
<b>Enterprise value</b>	<b>48,180</b>	<b>51,300</b>	<b>56,977</b>	<b>55,191</b>	<b>52,079</b>	<b>48,540</b>	<b>44,593</b>
<b>EBITDA (x)</b>	<b>8,041</b>	<b>6,721</b>	<b>8,769</b>	<b>8,210</b>	<b>8,743</b>	<b>9,290</b>	<b>9,801</b>
<b>EV / EBITDA (x)</b>	<b>6.0</b>	<b>7.6</b>	<b>6.5</b>	<b>6.7</b>	<b>6.0</b>	<b>5.2</b>	<b>4.5</b>

Source: DrKW





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RWE  
Multi-utility

Target: €42

Current: €34.49

Add  
Upgraded

RWE continues to believe in multi-utility strategy and has backed this belief by sizeable investments – spending €32bn (EV) in water, electricity and gas acquisitions. Now that RWE has positioned itself strategically, the focus is on integration, thus making the cash flows more predictable. We upgrade RWE to Add with a €42 target.

Price  
US\$33.42

Market Cap  
€19,130m  
US\$18,539m

Reuters/Bloomberg  
RWEG.DE/RWE GR

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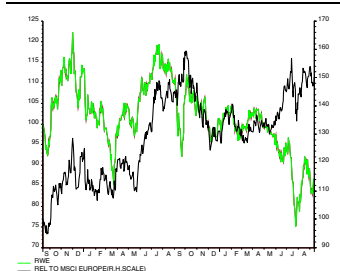
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- **Current perception:** Having acquired four companies at EV/EBITDA's of 9-12x, RWE is often accused of overpaying. However, this money is now spent and the prices paid are already reflected in the share price. We don't believe that RWE has the balance sheet or management capacity to undertake more sizeable acquisitions. Ironically, after concerns over acquisition risk, there are now concerns over balance sheet strength, although we do not believe that this is an issue.
- **Bull case:** Once RWE has completed its restructuring drive by selling Heidelberger Druck and Hochtief (plus, hopefully the waste business), the conglomerate discount has to disappear. With a predictable earnings stream and, thanks to a great IR effort great visibility, the shares are likely to be re-rated. Nevertheless, this scenario might require some patience.
- **Bear case:** If the remaining disposals take too long to materialize, RWE risks losing its restructuring momentum. At the same time RWE has to convince a sceptical audience that the recent acquisitions are creating value and that the integration process is running smoothly.
- **Upcoming events:** Although the disposal of Heidelberger Druck and Hochtief was initially marked for end-2003 at the latest, recent signs are that management is not in a rush. Q3 results are due on 13 November.

Year to end Dec	Pre-tax profit €bn	EPS €	CFPS €	P/E x	P/CF x	Yield %	EV/EBIT x	EV/EBITDA x
2001	2.1	2.061	8.183	16.7	4.2	2.9	7.3	3.5
2001E	2.2	2.401	8.400	14.4	4.1	2.9	13.0	7.6
2002E	1.0	0.480	9.581	71.8	3.6	3.2	11.2	5.5
2003E	1.9	1.668	10.534	20.7	3.3	3.5	8.8	4.5

Source: Company reports, DrKW estimates

RWE relative to MSCI Europe



Source: Thomson Financial Datastream



**RWE – summary information**

Summary P&L (€m)	'99/'00A	'00/'01A	20002F	2003F	2004F	2005F	2006F	
Sales	47,918	62,878	56,993	60,633	68,214	73,547	78,204	'00/'01-'06
Sales (excl. taxes)	42,426	56,751	53,934	59,904	67,475	72,796	77,442	6.4%
Total income	45,671	60,697	56,631	62,967	71,002	76,688	81,676	
Operating costs	40,889	54,124	49,644	54,808	61,362	66,388	70,869	'00/'01-'06
<b>EBITDA</b>	<b>4,782</b>	<b>6,573</b>	<b>6,987</b>	<b>8,158</b>	<b>9,640</b>	<b>10,299</b>	<b>10,807</b>	10.5%
Depreciation	2,419	3,412	3,573	3,950	4,373	4,550	4,697	'00/'01-'06
<b>EBIT</b>	<b>2,363</b>	<b>3,161</b>	<b>3,414</b>	<b>4,209</b>	<b>5,267</b>	<b>5,750</b>	<b>6,110</b>	14.1%
Operating result	2,804	3,953	4,331	5,310	6,653	7,268	7,726	14.3%
% change		41.0	9.6	22.6	25.3	9.2	6.3	
Net financial & extraord.	(212)	(923)	(1,227)	(2,354)	(2,927)	(2,969)	(2,928)	
<b>Profit before tax</b>	<b>2,151</b>	<b>2,238</b>	<b>2,187</b>	<b>1,855</b>	<b>2,340</b>	<b>2,781</b>	<b>3,182</b>	
Tax	595	478	437	575	749	918	1,050	
Profit after tax	1,556	1,760	1,749	1,280	1,591	1,863	2,132	
Minorities	(344)	(496)	(311)	(342)	(380)	(404)	(424)	'00/'01-'06
<b>Net income</b>	<b>1,212</b>	<b>1,264</b>	<b>1,438</b>	<b>938</b>	<b>1,211</b>	<b>1,459</b>	<b>1,708</b>	6.2%
Adjustment	(190)	272	(416)	935	1,031	1,031	1,031	'00/'01-'06
<b>Recurring net income</b>	<b>1,022</b>	<b>1,536</b>	<b>1,022</b>	<b>1,873</b>	<b>2,242</b>	<b>2,490</b>	<b>2,739</b>	12.3%
Avg. number of shares	541.55	564.57	562.41	562.41	562.41	562.41	562.41	'00/'01-'06
<b>EPS (€)</b>								
Stated, post-GW	2.24	2.24	2.56	1.67	2.15	2.59	3.04	6.3%
Stated, pre-GW	2.62	2.90	3.89	3.33	3.99	4.43	4.87	10.9%
Recurring, pre-GW	1.89	2.72	1.82	3.33	3.99	4.43	4.87	12.3%
Recurring, post-GW	1.51	2.06	0.48	1.67	2.15	2.59	3.04	8.1%
%		36.8	(76.7)	247.4	29.1	20.4	17.1	
<b>Summary cash flow (€m)</b>	<b>'99/'00A</b>	<b>'00/'01A</b>	<b>20002F</b>	<b>2003F</b>	<b>2004F</b>	<b>2005F</b>	<b>2006F</b>	
Fixed assets	34,493	54,589	68,850	70,412	80,250	81,428	82,320	
Current assets	30,496	32,837	34,174	36,770	38,389	40,803	43,745	
<b>Total assets</b>	<b>64,989</b>	<b>87,426</b>	<b>103,024</b>	<b>107,182</b>	<b>118,639</b>	<b>122,231</b>	<b>126,066</b>	
Minorities	3,191	3,522	3,522	3,522	3,522	3,522	3,522	
Shareholders' funds	9,557	10,843	11,711	12,031	12,567	13,295	14,215	
Current liabilities	13,561	16,997	31,699	32,852	38,737	39,969	41,154	
Provisions	35,082	40,062	40,139	42,926	44,861	46,593	48,423	
Long-term liabilities	6,789	19,524	19,474	19,374	22,474	22,374	22,274	
<b>Equity &amp; liabilities</b>	<b>64,989</b>	<b>87,426</b>	<b>103,024</b>	<b>107,182</b>	<b>118,639</b>	<b>122,231</b>	<b>126,066</b>	
BVPS	11.76	12.97	14.56	15.13	16.08	17.38	19.01	
Net debt / (cash)	(15,097)	(135)	15,204	14,129	21,842	21,114	19,740	
<b>Net gearing (%)</b>	<b>(158.0)</b>	<b>(1.2)</b>	<b>129.8</b>	<b>117.4</b>	<b>173.8</b>	<b>158.8</b>	<b>138.9</b>	
<b>Key ratios (@€34.49)</b>	<b>'99/'00A</b>	<b>'00/'01A</b>	<b>20002F</b>	<b>2003F</b>	<b>2004F</b>	<b>2005F</b>	<b>2006F</b>	
<b>EPS (€)</b>	<b>1.51</b>	<b>2.06</b>	<b>0.48</b>	<b>1.67</b>	<b>2.15</b>	<b>2.59</b>	<b>3.04</b>	
P/E (x)	22.9	16.7	71.8	20.7	16.0	13.3	11.4	
<b>DPS (€)</b>	<b>1.00</b>	<b>1.00</b>	<b>1.10</b>	<b>1.20</b>	<b>1.30</b>	<b>1.40</b>	<b>1.50</b>	
Yield (%)	2.9	2.9	3.2	3.5	3.8	4.1	4.3	
<b>CFPS (€)</b>	<b>6.19</b>	<b>8.18</b>	<b>9.58</b>	<b>10.53</b>	<b>11.37</b>	<b>12.87</b>	<b>13.75</b>	
P/CF (x)	5.6	4.2	3.6	3.3	3.0	2.7	2.5	
<b>BVPS (€)</b>	<b>11.76</b>	<b>12.97</b>	<b>14.56</b>	<b>15.13</b>	<b>16.08</b>	<b>17.38</b>	<b>19.01</b>	
P/BV (x)	2.9	2.7	2.4	2.3	2.1	2.0	1.8	
<b>EV / EBITDA (x)</b>	<b>4.9</b>	<b>6.7</b>	<b>7.8</b>	<b>7.1</b>	<b>7.0</b>	<b>6.5</b>	<b>6.2</b>	
	<b>'99/'00A</b>	<b>'00/'01A</b>	<b>20002F</b>	<b>2003F</b>	<b>2004F</b>	<b>2005F</b>	<b>2006F</b>	
Market capital	19,131	19,131	19,131	19,131	19,131	19,131	19,131	
Net debt (Cash)	(15,097)	(135)	15,204	14,129	21,842	21,114	19,740	
Minorities (est. MV)	3,191	3,522	3,522	3,522	3,522	3,522	3,522	
Pension & oth. fin. liab's	23,344	26,365	24,740	25,569	26,753	27,697	28,700	
Equity holdings (est. MV)	(7,356)	(4,963)	(4,219)	(4,219)	(4,219)	(4,219)	(4,219)	
<b>Enterprise Value</b>	<b>23,213</b>	<b>43,920</b>	<b>58,378</b>	<b>58,132</b>	<b>67,029</b>	<b>67,246</b>	<b>66,874</b>	
<b>EBITDA (x)</b>	<b>4,782</b>	<b>6,573</b>	<b>7,450</b>	<b>8,158</b>	<b>9,640</b>	<b>10,299</b>	<b>10,807</b>	
<b>EV / EBITDA (x)</b>	<b>4.9</b>	<b>6.7</b>	<b>7.8</b>	<b>7.1</b>	<b>7.0</b>	<b>6.5</b>	<b>6.2</b>	

Source: Company data, DrKW



# MVV Energie

## Business progress overlooked

Target: €17

Current: €15.2

Add

Unchanged

Having stood still during recent market declines, MVV's valuation no longer looks quite so attractive relative to its peers, especially allowing for a small cap discount. News on acquisitions may now be needed to trigger further outperformance. Nevertheless, front-end loaded 10% pa EBITDA growth is not in the current multiple.

Price

US\$14.73

Market Cap

€770.7m

US\$748.7m

Reuters/Bloomberg

MVVG F/MVV GR

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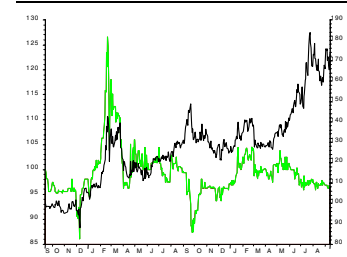
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- **Management forecasts do not look aggressive:** MVV's management forecast of €141m of underlying EBIT for 2001/02E looks set to be beaten – after the strong H1, we increased estimated EBIT to €143m.
- **Attractive EBITDA profile:** next year should see a 20%+ step-up in EBITDA helped by a full year's consolidation of recent Statdwerke acquisitions, the removal of trading related losses, and a return to normal weather patterns. After next year to 2006, we see EBITDA from existing assets growing at 10% pa, driven by the commissioning of high margin renewable generation projects.
- **Funded for acquisitions:** after selling its GVS stake for €189m, MVV has funds to continue reaping consolidation benefits from acquiring municipal distributors. Excluding further M&A, net debt could fall below 75% of equity by the end of next financial year.
- **Risk to network fees:** the German Federal Cartel Office continues to keep pressure on regional distributors' network fees. MVV has lower than average fees, nevertheless the range is likely to narrow and the average fall.
- **Valuation:** Based on a 15% discount to sector EBITDA, reflecting low liquidity, our price target is €17. Management remains keen for the free float to rise from 12.2% to 25%, possibly later this year if the City sells down or if Ruhrgas' 15% comes to the market.

Year to end Dec	Net income €m	EPS €	CFPS €	DPS €	P/E x	P/CF x	Yield %	EV/EBIT x	EV/EBITDA x
2001	38	0.94	3.45	0.75	16.2	4.4	4.9	10.3	4.8
2002E	54	1.07	3.65	0.60	14.3	4.2	3.9	12.2	6.4
2003E	206	4.07	4.34	0.63	3.7	3.5	4.1	9.4	5.0
2004E	84	1.66	4.95	0.66	9.2	3.1	4.3	8.0	4.4

Source: Company reports, DrKW estimates

MVV relative to MSCI Europe



Source: Thomson Financial Datastream



**MVV – summary information**

	2001A	2002E	2003E	2004E	2005E	2006E
<b>Sales</b>						
Power	538	1056	1196	1217	1234	1271
District heating	133	216	316	310	305	300
Gas	267	224	195	200	206	209
Water	58	66	70	71	75	75
MHKW	94	103	124	136	139	143
Services	86	0	40	60	70	80
Other	4	3	20	36	112	156
<b>Total sales</b>	<b>1180</b>	<b>1667</b>	<b>1961</b>	<b>2029</b>	<b>2141</b>	<b>2234</b>
<b>EBIT</b>						
Power	121	29	34	37	40	45
District heating	21	43	63	65	67	69
Gas	-2	38	33	34	35	36
Water	7	8	8	9	9	9
MHKW	-7	29	35	38	39	40
Services	-7	0	2	3	4	4
Other	0	-3	-8	9	28	39
<b>Total EBIT</b>	<b>133</b>	<b>143</b>	<b>167</b>	<b>194</b>	<b>221</b>	<b>241</b>
Finance charges	-33	-46	-49	-41	-37	-29
Disposal gains	0	0	140	0	0	0
<b>PBT</b>	<b>100</b>	<b>97</b>	<b>259</b>	<b>153</b>	<b>184</b>	<b>212</b>
Taxation	-56	-34	-42	-56	-68	-78
Minorities	-5	-9	-11	-12	-12	-13
<b>Net income</b>	<b>38</b>	<b>54</b>	<b>206</b>	<b>84</b>	<b>104</b>	<b>120</b>
EPS	0.76	1.07	4.07	1.66	2.04	2.37
DPS	0.75	0.60	0.63	0.66	0.69	0.72
Payout (%)	99	56	15	40	34	30
<b>Cash flow summary</b>						
Profit after tax	43	63	217	96	116	133
Depreciation	156	127	148	160	170	177
Gains on disposals	-56	0	-140	0	0	0
W/Cap & other	-49	-25	-10	-10	-10	-10
CF from operations	95	165	215	246	276	300
Proceeds from disposals	157	0	189	0	0	0
Capex	-112	-185	-185	-185	-150	-105
Acquisitions	-218	-300	0	0	0	0
Dividends	-29	-38	-30	-32	-33	-35
Net cash flow	-107	-358	189	29	92	160
<b>Balance sheet ratios</b>						
Net debt	483	841	652	623	531	370
Net debt: Equity (%)	72	119	73	65	51	33
EBIT Coverage	3.7	2.8	3.4	4.7	5.9	8.2
EBITDA Coverage	8.0	5.3	6.5	8.5	10.4	14.3

Source: Company data, DrKW

# Appendix

## German utility valuation summary

General valuations	2001A	2002F	2003F	2004F	2005F	2006F	5 year CAGR
	x	x	x	x	x	x	%
<b>Price/earnings (recurring, pre goodwill)</b>							<b>2001 - 2006</b>
E.ON	16.8	15.4	14.3	13.6	12.7	11.7	7.5
RWE	12.7	19.0	10.4	8.7	7.8	7.1	12.3
<b>Average</b>	<b>14.7</b>	<b>17.2</b>	<b>12.3</b>	<b>11.1</b>	<b>10.3</b>	<b>9.4</b>	<b>9.9</b>
<b>Price/earnings (recurring, post goodwill)</b>							
E.ON	22.2	21.5	22.3	20.7	18.8	16.6	6.0
RWE	16.7	71.8	20.7	16.0	13.3	11.4	8.1
<b>Average</b>	<b>19.4</b>	<b>46.7</b>	<b>21.5</b>	<b>18.4</b>	<b>16.0</b>	<b>14.0</b>	<b>7.0</b>
<b>Price/cash flow (stated CFPS)</b>							
E.ON	8.5	5.7	5.2	4.3	4.0	3.8	17.4
RWE	4.2	3.6	3.3	3.0	2.7	2.5	10.9
<b>Average</b>	<b>6.3</b>	<b>4.7</b>	<b>4.2</b>	<b>3.7</b>	<b>3.4</b>	<b>3.2</b>	<b>14.2</b>
<b>EV/EBITDA</b>							<b>EBITDA growth</b>
E.ON	7.6	6.5	6.7	6.0	5.2	4.5	7.3
RWE	6.7	7.8	7.1	7.0	6.5	6.2	9.2
<b>Average</b>	<b>7.2</b>	<b>7.2</b>	<b>6.9</b>	<b>6.5</b>	<b>5.9</b>	<b>5.4</b>	<b>8.3</b>
<b>Price to book</b>							
E.ON	1.4	1.1	1.0	1.0	1.0	0.9	
RWE	2.7	2.4	2.3	2.1	2.0	1.8	
<b>Average</b>	<b>2.0</b>	<b>1.7</b>	<b>1.7</b>	<b>1.6</b>	<b>1.5</b>	<b>1.4</b>	
General valuations	2001A	2002F	2003F	2004F	2005F	2006F	5 year CAGR
	%	%	%	%	%	%	%
<b>Yield (net dividend)</b>							<b>DPS growth</b>
E.ON	3.3	3.6	3.9	4.3	4.6	4.9	8.4
RWE	2.9	3.2	3.5	3.8	4.1	4.3	8.4
<b>Average</b>	<b>3.1</b>	<b>3.4</b>	<b>3.7</b>	<b>4.0</b>	<b>4.3</b>	<b>4.6</b>	<b>8.4</b>
RWE pref.	3.6	4.0	4.3	4.7	5.1	5.4	
<b>Payout ratio</b>							
E.ON	72.2	76.5	86.3	88.5	85.9	80.8	
RWE	48.5	229.1	71.9	60.4	54.0	49.4	
<b>Average</b>	<b>60.3</b>	<b>152.8</b>	<b>79.1</b>	<b>74.4</b>	<b>69.9</b>	<b>65.1</b>	

**German utility valuation summary continued**

Performance	2001A	2002F	2003F	2004F	2005F	2006F
	%	%	%	%	%	%
<b>RoE</b>						
E.ON	7.5	7.7	7.4	7.4	7.7	8.1
RWE	22.5	13.2	22.4	25.5	26.5	26.8
<b>Average</b>	<b>15.0</b>	<b>10.4</b>	<b>14.9</b>	<b>16.5</b>	<b>17.1</b>	<b>17.4</b>
<b>RoCE</b>						
E.ON	6.0	6.5	6.8	7.4	8.0	8.7
RWE	5.9	6.3	7.5	8.1	8.7	9.1
<b>Average</b>	<b>6.0</b>	<b>6.4</b>	<b>7.2</b>	<b>7.7</b>	<b>8.3</b>	<b>8.9</b>
<b>NOPAT return</b>						
E.ON	4.3	6.5	6.8	7.3	7.4	7.6
RWE	6.1	6.9	8.4	8.8	9.5	9.6
<b>Average</b>	<b>5.2</b>	<b>6.7</b>	<b>7.6</b>	<b>8.0</b>	<b>8.5</b>	<b>8.6</b>
<b>EBITDA margin</b>						
E.ON	18.4	18.7	16.8	17.2	17.7	18.1
RWE	11.6	13.0	13.6	14.3	14.1	14.0
<b>Average</b>	<b>15.0</b>	<b>15.8</b>	<b>15.2</b>	<b>15.7</b>	<b>15.9</b>	<b>16.0</b>
<b>EBIT margin</b>						
E.ON	9.3	11.1	9.6	10.0	10.5	11.0
RWE	5.6	6.3	7.0	7.8	7.9	7.9
<b>Average</b>	<b>7.4</b>	<b>8.7</b>	<b>8.3</b>	<b>8.9</b>	<b>9.2</b>	<b>9.4</b>
<b>Financial strength</b>						
	2001A	2002F	2003F	2004F	2005F	2006F
	%	%	%	%	%	%
<b>Net gearing (net debt/SF)</b>						
E.ON	2.0	20.7	21.7	12.3	2.4	(7.9)
RWE	196.9	282.0	267.9	322.8	302.5	276.3
<b>Average</b>	<b>99.4</b>	<b>151.4</b>	<b>144.8</b>	<b>167.6</b>	<b>152.5</b>	<b>134.2</b>
<b>Net gearing (incl. Securities held as FA)</b>						
E.ON	23.3	34.2	27.9	18.5	8.5	(1.9)
RWE	129.2	219.3	206.9	264.4	247.3	224.6
<b>Average</b>	<b>76.3</b>	<b>126.7</b>	<b>117.4</b>	<b>141.4</b>	<b>127.9</b>	<b>111.4</b>
<b>Gross gearing (debt/(debt + SF))</b>						
E.ON	41.4	42.1	39.9	39.2	38.6	37.9
RWE	71.8	77.0	76.6	79.2	78.3	77.3
<b>Average</b>	<b>56.6</b>	<b>59.6</b>	<b>58.3</b>	<b>59.2</b>	<b>58.4</b>	<b>57.6</b>
<b>EBITDA / Net interest (x)</b>						
E.ON	7.2	4.6	5.4	5.6	5.7	5.8
RWE	13.8	4.3	4.3	4.5	4.8	5.1
<b>Average</b>	<b>10.5</b>	<b>4.4</b>	<b>4.9</b>	<b>5.0</b>	<b>5.3</b>	<b>5.5</b>

Source: Company data, DrKW

## European utility companies ordered by country

	Curr.	Share price	Rec	Price target (6-9M)	Up/down side %	Free float €bn	Mkt cap €bn	Firm value €bn	Year-end	EBITDA' (x)			EBITDA' 01-05E % pa	PE'(x)			Div yld' FY1 02E %	DPS' 01-05E % pa	Performance rel. to MSCI Europe %			
										LFY 2001	FY1 2002E	FY2 2003E		LFY 2001	FY1 2002E	FY2 2003E			01-05E % pa	FY1 02E %	01-05E % pa	-1M
<b>Belgium</b>																						
Electrabel	€	235	Hold	230	-2	7.1	12.8	21.1	Dec	9.0	8.7	8.5	2	15.6	15.6	15.1	3	6.2	4	2	19	25
<b>Finland</b>																						
Fortum	€	5.9	Add	6.2	5	1.9	5.0	8.8	Dec	5.8	7.2	5.6	3	10.4	8.6	5.0	9	4.6	5	8	27	35
<b>France</b>																						
Suez	€	21	Hold	21	2	18.3	21.1	66.1	Dec	7.6	7.6	7.3	6	17.7	19.4	18.0	5	3.7	6	-10	-12	-29
Vivendi Environnement	€	22	Add	32	45	3.3	8.9	27.0	Dec	6.5	6.1	6.0	12	18.2	16.8	14.5	12	2.7	8	-6	-18	-41
<b>Germany</b>																						
E.ON	€	49.0	Buy	69	43	25.3	31.9	60.6	Dec	7.3	6.8	6.5	8	22.1	21.4	22.2	4	3.6	9	-2	4	8
MVV	€	15.1	Add	17	13	0.1	0.8	1.4	Sep	4.7	6.4	5.3	9	20.0	14.2	10.9	28	4.0	-2	1	14	21
RWE	€	34.8	Add	42	21	13.7	19.6	50.9	Dec	6.8	8.1	7.4	11	17.4	13.6	20.9	7	3.2	9	0	8	-1
<b>Italy</b>																						
Acegas	€	5.8	Add	7.0	20	0.1	0.2	0.3	Dec	6.0	5.7	5.3	7	24.8	19.6	15.7	17	4.0	4	-5	17	
Enel	€	5.34	Add	6.4	20	10.3	32.4	56.2	Dec	5.2	5.9	5.6	-2	13.8	24.9	22.5	-4	6.7	0	2	3	-4
Italgas	€	10.33	Hold	12.0	16	1.4	3.6	5.0	Dec	7.6	7.2	6.7	8	16.6	16.0	14.4	12	2.2	14	3	12	14
<b>Portugal</b>																						
EDP	€	1.7	Add	2.3	36	3.3	5.1	11.6	Dec	4.6	7.0	4.2	2	11.8	10.5	9.6	11	8.3	6	0	-7	-24
<b>Spain</b>																						
Agua de Barcelona	€	10.0	Hold	11.6	17	0.6	1.4	3.6	Dec	4.8	4.5	4.2	9	10.0	11.0	9.7	6	3.0	6	-5	-10	-16
Endesa	€	11.8	Buy	17.5	48	11.7	12.5	39.8	Dec	6.4	6.0	5.6	4	8.4	8.4	8.4	5	5.8	5	0	-13	-16
Gas Natural	€	17.8	Hold	20.0	13	3.2	7.9	12.1	Dec	7.9	7.8	6.8	9	14.0	12.8	11.5	12	2.7	21	-3	6	8
Iberdrola	€	13.2	Add	15.3	16	10.1	11.9	22.3	Dec	7.3	7.7	6.9	7	13.1	13.0	11.8	9	4.4	8	6	6	5
Red Electrica	€	9.8	Add	12.5	28	0.4	1.3	1.7	Dec	6.0	5.4	4.7	11	14.6	14.4	13.5	9	4.7	9	-1	6	21
Union Fenosa	€	13.2	Hold	16.5	25	3.4	4.0	11.9	Dec	6.9	6.2	5.9	12	15.3	13.2	11.0	23	4.2	16	12	-18	-9
<b>UK Electricity</b>																						
British Energy	p	21.9	Sell	u/r		0.2	0.2	1.6	Mar	2.8	5.8	3.0	6	n/a	n/a	7.2	n/a	36.5	0	-75	-83	-92
International Power	p	110	Add	140	27	1.9	1.9	3.7	Dec	6.3	6.0	5.2	2	6.4	7.0	6.5	5	0.0	0	-13	-26	-47
National Grid	p	465	Hold	425	-9	13.1	13.1	26.2	Mar	13.1	8.8	8.1	9	14.5	15.9	13.3	10	3.7	8	5	15	21
Scottish & Southern Energy	p	632	Add	660	4	8.6	8.6	10.5	Mar	8.3	8.0	7.6	3	12.6	12.1	11.6	3	5.5	7	-1	14	20
ScottishPower	p	377	Add	360	-5	11.0	11.0	20.9	Mar	8.7	7.4	7.0	3	14.5	11.3	10.8	7	7.6	-10	5	22	14
<b>UK Gas</b>																						
Centrica	p	175	Add	180	3	11.7	11.7	13.4	Dec	8.3	6.9	5.9	12	14.5	11.7	10.3	15	1.9	10	5	0	-5
Lattice	p	174	Hold	159	-9	9.8	9.8	19.4	Mar	8.0	9.8	8.9	3	16.4	17.9	14.7	13	4.3	4	5	18	36
<b>UK Water</b>																						
awg	p	489	Add	550	12	2.2	2.2	6.3	Mar	7.4	7.9	7.8	2	11.7	13.1	10.9	-4	9.2	1	3	10	5
Kelda	p	390	Add	450	15	2.4	2.4	4.7	Mar	7.6	7.9	8.1	3	15.3	14.9	14.5	3	6.7	3	0	9	24
Pennon	p	653	Add	760	16	1.4	1.4	2.6	Mar	8.2	8.3	7.9	5	12.9	12.8	11.7	3	6.0	3	-4	12	24
Severn Trent	p	669	Add	710	6	3.7	3.7	7.5	Mar	6.8	7.2	7.0	2	13.2	15.4	14.7	-1	6.9	0	5	6	7
United Utilities	p	629	Hold	570	-9	5.6	5.6	10.4	Mar	7.6	7.8	7.5	6	12.2	13.6	12.7	1	7.6	1	3	19	22
<b>Totals/weighted averages</b>																						
<b>Continental Europe</b>						<b>114</b>	<b>180</b>	<b>400</b>		<b>6.8</b>	<b>7.0</b>	<b>6.6</b>	<b>6</b>	<b>16.0</b>	<b>17.4</b>	<b>17.2</b>	<b>5</b>	<b>4.6</b>	<b>7</b>	<b>0</b>	<b>2</b>	<b>-4</b>
<b>United Kingdom</b>						<b>72</b>	<b>72</b>	<b>127</b>		<b>9.0</b>	<b>8.2</b>	<b>7.6</b>	<b>5</b>	<b>13.9</b>	<b>13.7</b>	<b>12.2</b>	<b>8</b>	<b>5.0</b>	<b>3</b>	<b>1</b>	<b>10</b>	<b>9</b>
<b>Pan-Europe</b>						<b>186</b>	<b>252</b>	<b>528</b>		<b>7.4</b>	<b>7.4</b>	<b>6.9</b>	<b>6</b>	<b>15.4</b>	<b>16.3</b>	<b>15.8</b>	<b>6</b>	<b>4.7</b>	<b>6</b>	<b>0</b>	<b>4</b>	<b>-2</b>

<sup>1</sup>For companies with a March year end, 2001 refers to the financial year ending in 2002. For companies with a September year end, 2001 refers to the financial year ending in 2001. Similarly for 2002 and 2003.  
Source: Thomson Financial Datastream, DrKW estimates



## European utility companies ordered by category

	Curr	Share price	Rec	Price target (6-9M)	Up/down side %	Free float €bn	Mkt cap €bn	Firm value €bn	Year-end	EBITDA' (x)			EBITDA' % pa	P/E'(x)			EPS' % pa	Div yld' %	DPS' % pa	Performance rel. to MSCI Europe %									
										LFY	FY1	FY2		LFY	FY1	FY2				01-05E	FY1	FY2	01-05E	FY1	FY2	01-05E	-1M	-3M	-1yr
										2001	2002E	2003E		2001	2002E	2003E					2001	2002E	2003E		2001	2002E	2003E		
<b>Mixed</b>																													
Aguas de Barcelona	€	10.0	Hold	11.6	17	0.6	1.4	3.6	Dec	4.8	4.5	4.2	9	10.0	11.0	9.7	6	3.0	6	-5	-10	-16							
E.ON	€	49	Buy	69	43	25.3	31.9	60.6	Dec	7.3	6.8	6.5	8	22.1	21.4	22.2	4	3.6	9	-2	4	8							
Endesa	€	11.8	Buy	17.5	48	11.7	12.5	39.8	Dec	6.4	6.0	5.6	4	8.4	8.4	8.4	5	5.8	5	0	-13	-16							
Enel	€	5.3	Add	6.4	20	10.3	32.4	56.2	Dec	5.2	5.9	5.6	-2	13.8	24.9	22.5	-4	6.7	0	2	3	-4							
Fortum	€	6	Add	6	5	1.9	5.0	8.8	Dec	5.8	7.2	5.6	3	10.3	8.6	4.9	9	4.6	5	7	26	34							
Gas Natural	€	17	Hold	20	16	3.1	7.7	11.9	Dec	7.7	7.6	6.7	9	13.6	12.5	11.1	12	2.8	21	-4	-9	-15							
Iberdrola	€	13.2	Add	15.3	16	10.1	11.9	22.3	Dec	7.3	7.7	6.9	7	13.1	13.0	11.8	9	4.4	8	6	6	5							
RWE	€	34.8	Add	42.0	21	13.7	19.6	50.9	Dec	6.8	8.1	7.4	11	17.4	13.6	20.9	7	3.2	9	0	8	-1							
Union Fenosa	€	13.2	Hold	16.5	25	3.4	4.0	11.9	Dec	6.9	6.2	5.9	12	15.3	13.2	11.0	23	4.2	16	12	-18	-9							
<b>Competitive</b>																													
British Energy	p	21	Sell	u/r		0.2	0.2	1.6	Mar	2.8	5.8	3.0	6	n/a	n/a	7.2	0	36.5	0	-75	-83	-92							
Centrica	p	175	Add	180	3	11.7	11.7	13.4	Dec	8.3	6.9	5.9	12	14.5	11.7	10.3	15	1.9	10	5	0	-5							
Electrabel	€	235	Hold	230	-2	7.1	12.8	21.1	Dec	9.0	8.7	8.5	2	15.6	15.6	15.1	3	6.2	4	2	19	25							
International Power	p	110	Add	140	27	1.9	1.9	3.7	Dec	6.3	6.0	5.2	2	6.4	7.0	6.5	5	0.0	0	-13	-26	-47							
MVV	€	15.1	Add	17.0	13	0.1	0.8	1.4	Sep	4.7	6.4	5.3	9	20.0	14.2	10.9	28	4.0	-2	1	14	21							
Suez	€	20.60	Hold	21	2	18.3	21.1	66.1	Dec	7.6	7.6	7.3	6	17.7	19.4	18.0	5	3.7	6	-10	-12	-29							
Vivendi Environnement	€	22.1	Add	32.0	45	3.3	8.9	27.0	Dec	6.5	6.1	6.0	12	18.2	16.8	14.5	12	2.7	8	-6	-18	-41							
<b>Regulated</b>																													
Acegas	€	5.8	Add	7.0	20	0.1	0.2	0.3	Dec	6.0	5.7	5.3	7	24.8	19.6	15.7	17	4.0	4	-5	17								
awg	p	489	Add	550	12	2.2	2.2	6.3	Mar	7.4	7.9	7.8	2	11.7	13.1	10.9	-4	9.2	1	3	10	5							
EDP	€	1.69	Add	2.3	36	3.3	5.1	11.6	Dec	4.6	4.4	4.2	2	11.8	10.5	9.6	11	8.3	6	0	-7	-24							
Italgas	€	10.3	Hold	12.0	16	1.4	3.6	5.0	Dec	7.6	7.2	6.7	8	16.6	16.0	14.4	12	2.2	14	3	12	14							
Kelda	p	390	Add	450	15	2.4	2.4	4.7	Mar	7.6	7.9	8.1	3	15.3	14.9	14.5	3	6.7	3	0	9	24							
Lattice	p	174	Hold	159	-9	9.8	9.8	19.4	Mar	8.0	9.8	8.9	3	16.4	17.9	14.7	13	4.3	4	5	18	36							
National Grid	p	465	Hold	425	-9	13.1	13.1	26.2	Mar	13.1	8.8	8.1	9	14.5	15.9	13.3	10	3.7	8	5	15	21							
Pennon	p	653	Add	760	16	1.4	1.4	2.6	Mar	8.2	8.3	7.9	5	12.9	12.8	11.7	3	6.0	3	-4	12	24							
Red Electrica	€	9.8	Add	12.5	28	0.4	1.3	1.7	Dec	6.0	5.4	4.7	11	14.6	14.4	13.5	9	4.7	9	-1	6	21							
Scottish & Southern Energy	p	632	Add	660	4	8.6	8.6	10.5	Mar	8.3	8.0	7.6	3	12.6	12.1	11.6	3	5.5	7	-1	14	20							
ScottishPower	p	377	Add	360	-5	11.0	11.0	20.9	Mar	8.7	7.4	7.0	3	14.5	11.3	10.8	7	7.6	-10	5	22	14							
Severn Trent	p	669	Add	710	6	3.7	3.7	7.5	Mar	6.8	7.2	7.0	2	13.2	15.4	14.7	-1	6.9	0	5	6	7							
United Utilities	p	629	Hold	570	-9	5.6	5.6	10.4	Mar	7.6	7.8	7.5	6	12.2	13.6	12.7	1	7.6	1	3	19	22							
<b>Totals/weighted averages</b>																													
<b>Mixed</b>						<b>75</b>	<b>114</b>	<b>245</b>		<b>6.5</b>	<b>6.7</b>	<b>6.3</b>	<b>6</b>	<b>16.1</b>	<b>18.3</b>	<b>18.9</b>	<b>4</b>	<b>4.8</b>	<b>6</b>	<b>2</b>	<b>2</b>	<b>0</b>							
<b>Competitive</b>						<b>48</b>	<b>71</b>	<b>155</b>		<b>7.5</b>	<b>7.3</b>	<b>6.9</b>	<b>7</b>	<b>15.5</b>	<b>15.1</b>	<b>13.6</b>	<b>8</b>	<b>3.7</b>	<b>8</b>	<b>-3</b>	<b>-2</b>	<b>-14</b>							
<b>Regulated</b>						<b>63</b>	<b>68</b>	<b>127</b>		<b>8.7</b>	<b>7.9</b>	<b>7.4</b>	<b>5</b>	<b>14.1</b>	<b>14.1</b>	<b>12.6</b>	<b>7</b>	<b>5.8</b>	<b>3</b>	<b>2</b>	<b>12</b>	<b>12</b>							
<b>Pan-Europe</b>						<b>186</b>	<b>252</b>	<b>528</b>		<b>7.4</b>	<b>7.4</b>	<b>6.9</b>	<b>6</b>	<b>15.4</b>	<b>16.3</b>	<b>15.8</b>	<b>6</b>	<b>4.7</b>	<b>6</b>	<b>0</b>	<b>4</b>	<b>-2</b>							

<sup>1</sup> For companies with a March year end, 2001 refers to the financial year ending in 2002. For companies with a September year end, 2001 refers to the financial year ending in 2001. Similarly for 2002 and 2003.

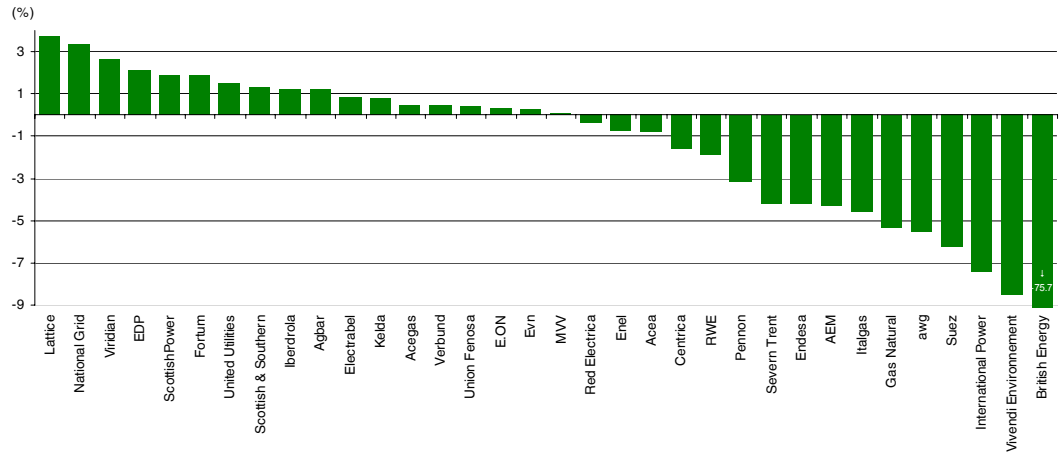
Source: Thomson Financial Datastream, DrKW estimates

# European utilities share price performance

Long-term sector relative



Weekly performance: share prices relative to MSCI Europe from 06/09/02 to 13/09/02

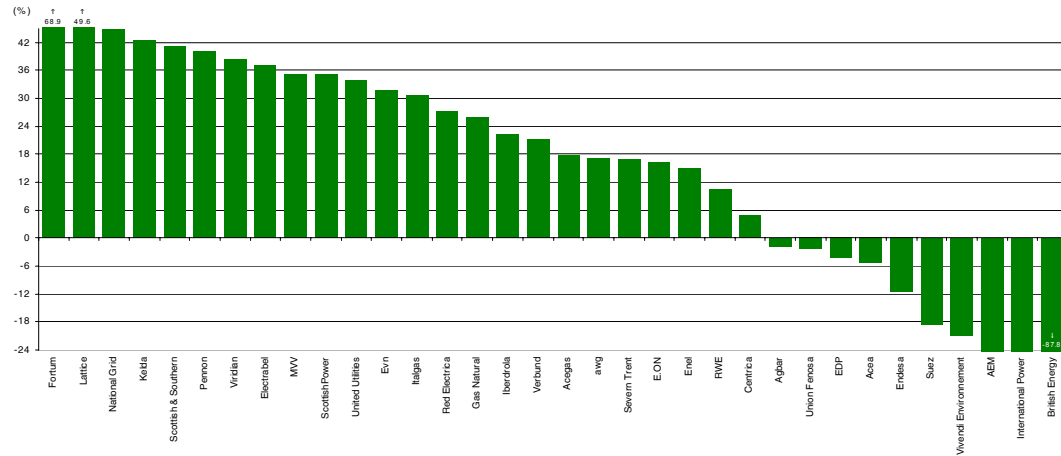


Source: Thomson Financial Datastream, DrKW

Sector relative since start 2001



Year-to-date performance: share price relative to MSCI Europe since start 2002



Source: Thomson Financial Datastream, DrKW

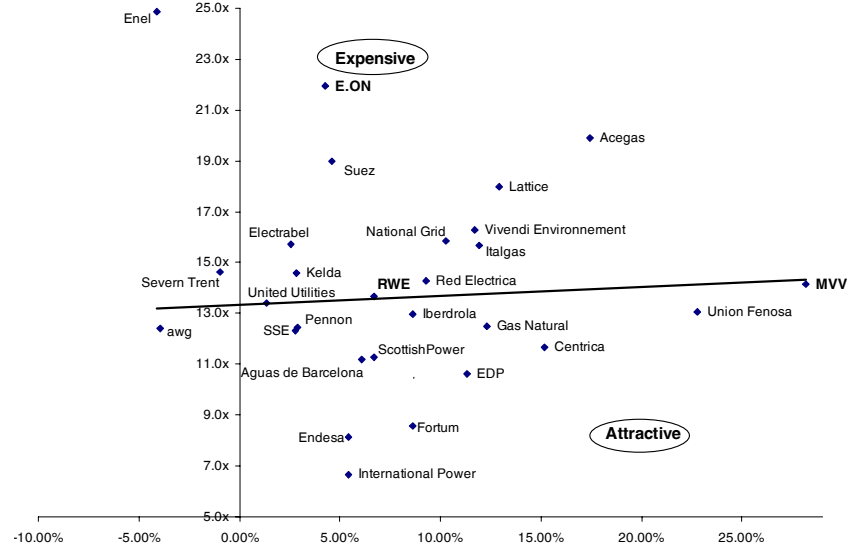
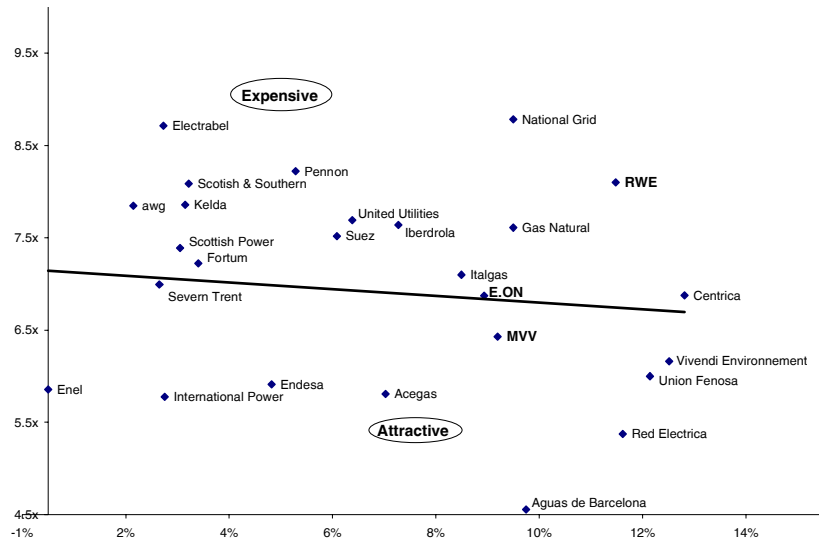


# European utilities valuation charts

EBITDA multiples and EBITDA growth rates

P/E multiples and EPS growth rates (excluding exceptionals)

66



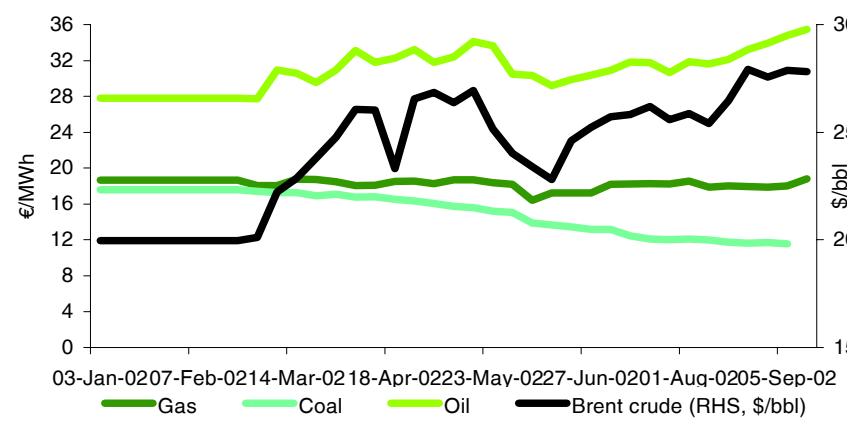
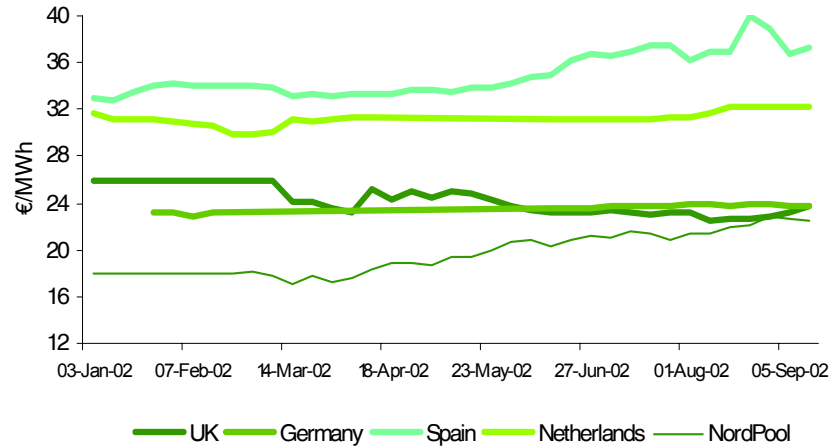
Source: DrKW



## European utilities fuel generation charts

European electricity prices (€/MWh) – forward contract prices for calendar year 2003 (baseload)

Generation fuel costs (€/MWh)



Gas: UK Calendar 2003 gas + 55% thermal efficiency  
 Coal: European coal marker price + 32% thermal efficiency  
 Source: DrKW estimates

## Market shares along the value chain

	Capacity	Germany	RWE	E.ON	Vattenfall	EnBW	Big 4	Big 4 %
<b>Generation</b>	Total	119.471	32.187	25.612	17.000	13.584	88.383	74
	Auto producers	11,261						
	Private suppliers	7,030						
	<b>Utilities</b>	<b>101,180</b>	<b>32,187</b>	<b>25,612</b>	<b>17,000</b>	<b>13,584</b>	<b>88,383</b>	<b>87</b>
	% of total		32	25	17	13		
	<b>Output (TWh)</b>							
	Total	538.5	132.0	118.5	81.5	73.0	405.0	75
Auto producers	54.3							
Private suppliers	12.0							
<b>Utilities</b>	<b>472.2</b>	<b>132.0</b>	<b>118.5</b>	<b>81.5</b>	<b>73.0</b>	<b>405.0</b>	<b>86</b>	
% of total		28	25	17	15			
<b>Transmission</b>	220 kV (km)	18,244	6,822	5,437	4,284	1,701	18,244	100
	380 kV (km)	18,985	5,081	5,392	6,725	1,787	18,985	100
	<b>Length of circuits (km)</b>	<b>37,229</b>	<b>11,903</b>	<b>10,829</b>	<b>11,009</b>	<b>3,488</b>	<b>37,229</b>	<b>100</b>
	% of total		32	29	30	9		
<b>Distribution &amp; Supply</b>	<b>Direct customers (m)</b>	<b>43.5</b>	<b>6.8</b>	<b>7.0</b>	<b>2.9</b>	<b>4.3</b>	<b>21.0</b>	<b>48</b>
	% of total		16	16	7	4		
	Indirect (m)		6.1	8.0	0.5	1.0		
	<b>Direct &amp; indirect (m)</b>	<b>43.5</b>	<b>12.9</b>	<b>15.0</b>	<b>3.4</b>	<b>5.3</b>	<b>36.6</b>	<b>84</b>
	% of total		30	34	8	12		
	<b>Total sales (TWh)</b>	<b>500</b>	<b>119</b>	<b>89</b>	<b>29</b>	<b>53</b>	<b>290</b>	<b>58</b>
% of total		24	18	6	11			

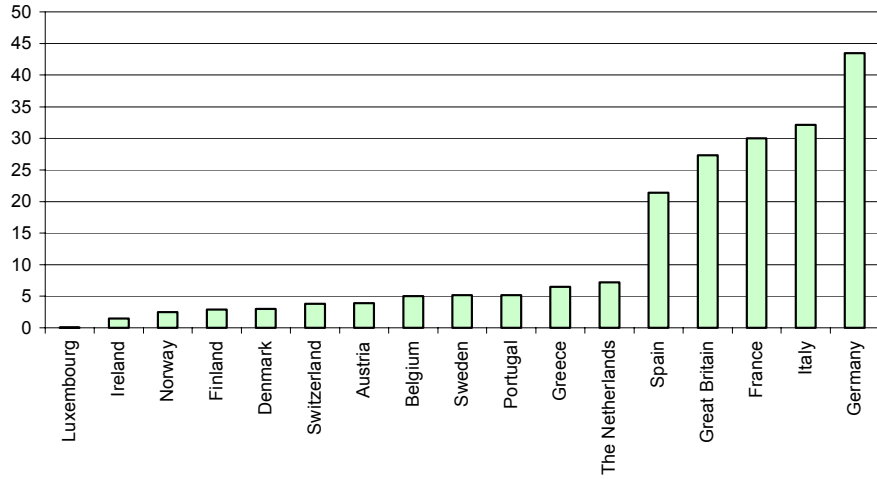
Source: Company data, DrKW

## Cost of electricity supply to residential customers

Transmission company	Ownership	Domestic production TWh pa	Of total %	Imports TWh pa	Domestic procurement TWh pa	Total procurement TWh pa	Total gas sales TWh pa	Of which to		
								Cust. TWhpa	Re-distributors TWh pa	Eports TWh pa
Ruhrgas	Various (potentially 100% E.ON)			499.5	88.2	587.7	601.3	63.7	493.0	44.6
BEB	50% Esso Deutschland, 50% Deutsche Shell	92.5	46.7	90.7	1.4	185.1	179.8			
VNG	36.8% Ruhrgas, 5.3% E.ON, 15.8% Wintershall			106.8	50.3				30.9	116.6
Wingas	65% Wintershall, 35% Gazprom			117.1	4.4	121.5	123.9	42.0	59.8	22.2
RWE Gas	80% RWE, 20% municipalities			0.0	77.5	77.5	75.5	29.3	46.2	
GVS	62.2% JV from EnBW and Eni, 33.4% NWS			0.4	75.1				0.3	73.2
Erdgas Münster	28.8% Wintershall, 27.7% Mobil, 27.7% BEB			1.4	72.7				6.7	67.4
Thyssengas	75% RWE, 25% Shell			63.8	2.9	66.7	67.0	22.0	44.9	
Mobil Erdgas-Erdöl	100% EonMobil Europe	49.3	24.9	14.4	0.0	63.9	63.7			
Bayerngas	22% E.ON, 22% Ruhrgas, 28% Stw. Munich			0.0	60.5				6.9	53.6
Gas-Union	37.7% Mainova, 25.93% Ruhrgas			0.0	43.4	43.4	43.4	14.3	29.1	
Saar Ferngas	50.1% RAG, 20% Ruhrgas			0.0	43.4	43.4	43.2	4.3	38.9	
EWE	27.4% E.ON, 72.6% municipalities	0.4	0.2	13.3	27.2	40.9	41.3	35.9	5.3	0.1
Avacon	83.3 % E.ON, 6.7% Thüga			0.0	38.3	38.3	38.3	20.2	18.1	
Ferngas Nordbayern	53.1% Ruhrgas, 16.9% E.ON, 20% Saar Ferngas			0.0	29.5				8.1	21.4
EVG	50% Ruhrgas, 50% VNG			0.0	22.4	22.4	22.4	6.6	15.8	
EEG	100% Gaz de France Deutschland	6.4	3.2	0.0	0.0	6.4	6.4	0.4	6.0	
		<b>148.6</b>		<b>907.4</b>		<b>1,693.9</b>	<b>1,696.7</b>	<b>291.6</b>	<b>1,089.4</b>	<b>72.3</b>
Wintershall	50% BASF, 50% Gazprom	16.5	8.3							
RWE Upstream		21.6	10.9							
Others		11.6	5.8							
		<b>198.2</b>								

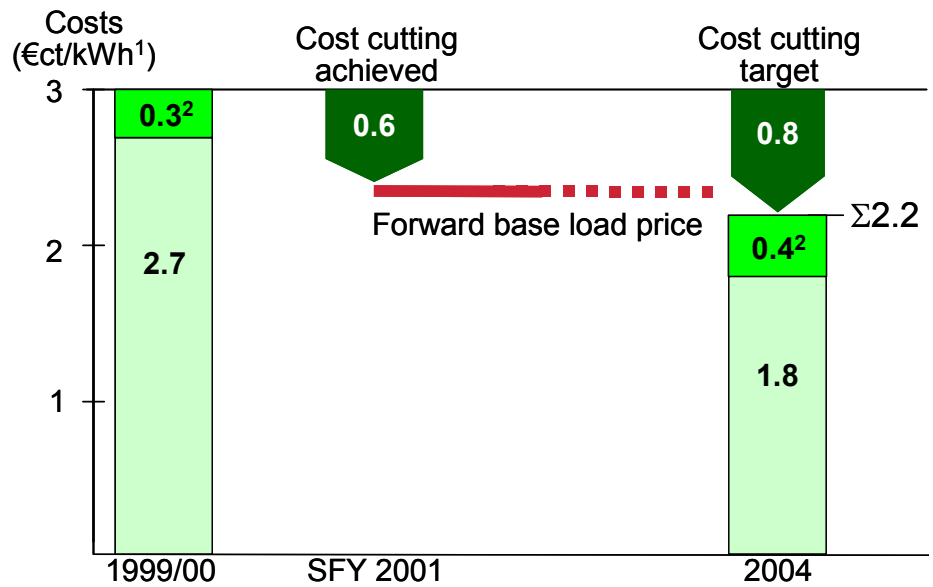
Source: DrKW

**Number of customers throughout Europe**



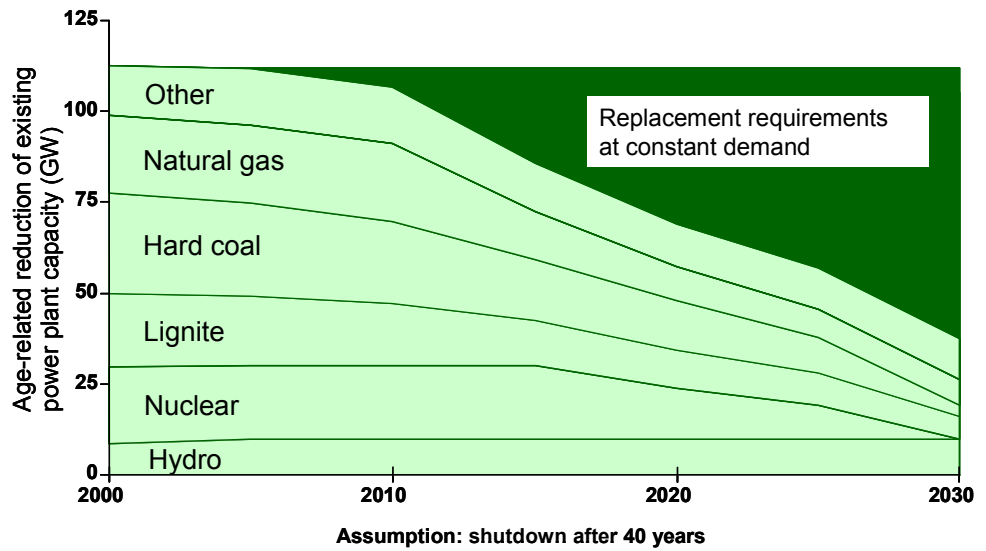
Source: DrKW

**Generation costs match forward earlier than expected**



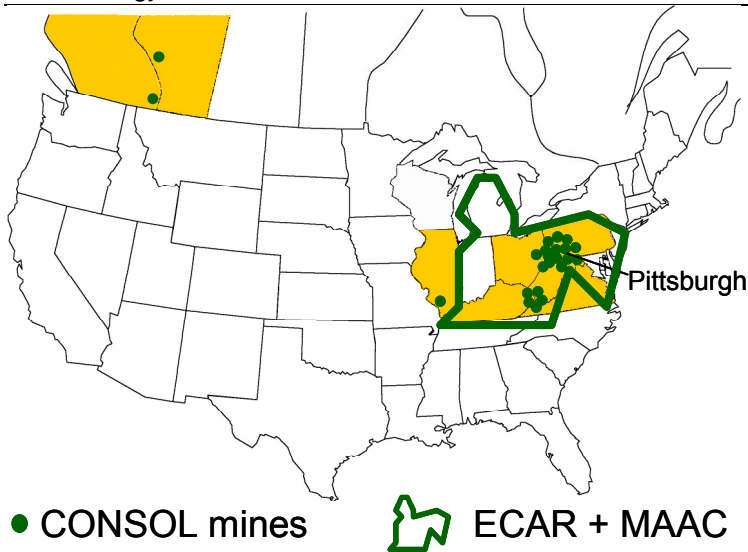
Notes <sup>1</sup> Lignite fired power generation for base load (Germany); <sup>2</sup> Electricity pre-tax WACC of 10 % (RWE value management concept; increase in 2004 due to new BoA power plant) Source: RWE Rheinbraun

Power plant population in Germany: €billions investment required



Source: RWE

Consol Energy



**Hard coal** is indispensable for power generation in the US: 52% of power is based on hard coal

CONSOL presently has 20 active mines, some of them ranking among the best underground operations in the world (Bailey, Enlow Fork)

CONSOL has a large market share in its main sales area (25 % of the generation markets of ECAR + MAAC which cover 750TWh/yr)

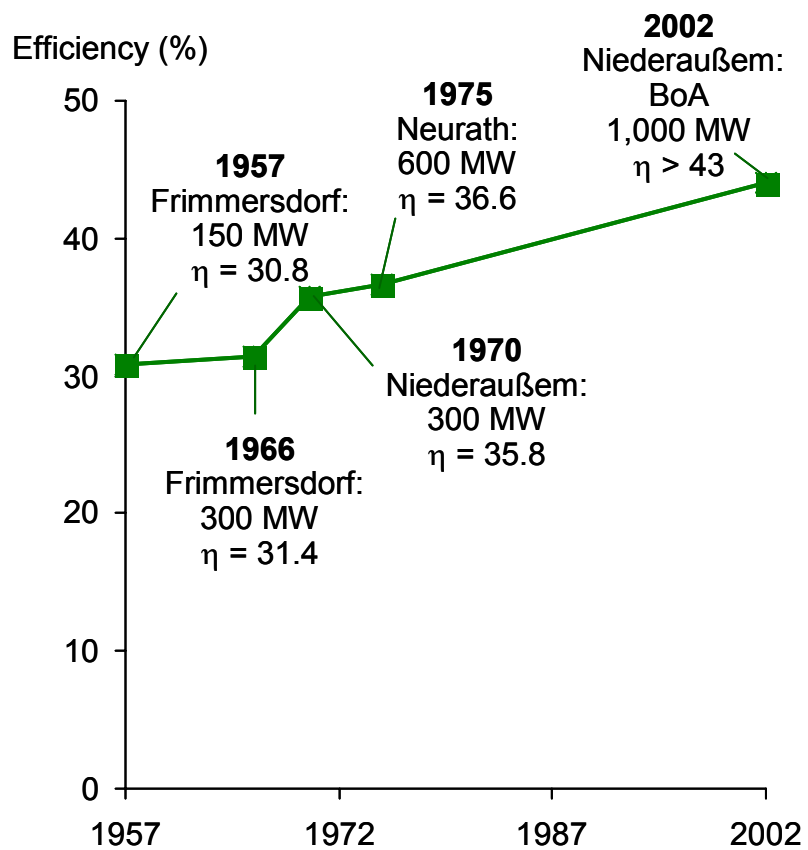
Solid, expandable position in **coalbed methane gas** business (20 % of the Eastern US cbm gas market)  
 Access to **gas-based power generation** recently fulfilled

Source: RWE



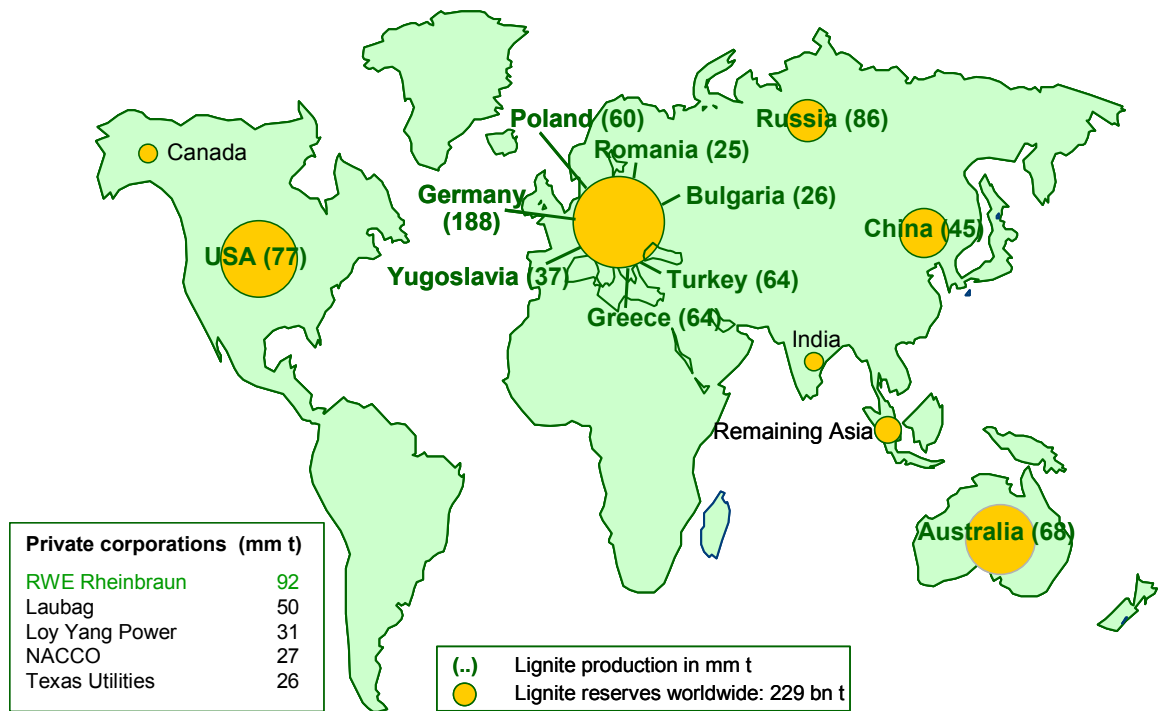


Lignite: Advanced technology, more power, less CO2 - example Rhineland



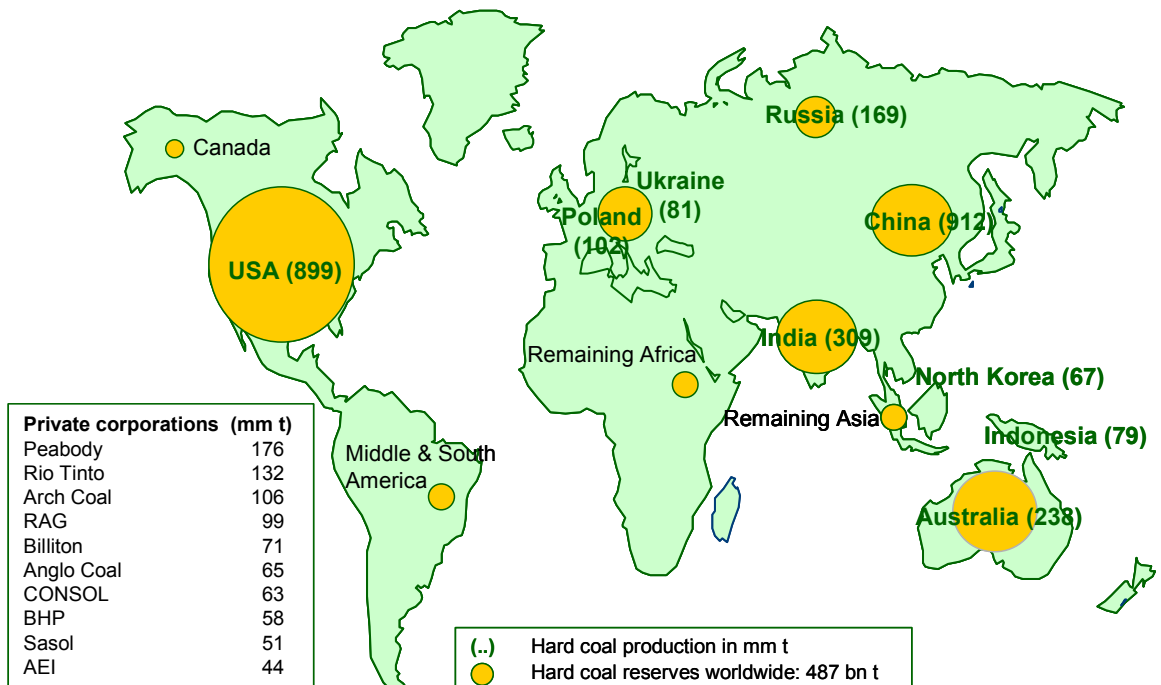
Source: RWE

**The largest lignite producers 2000 and lignite reserves**



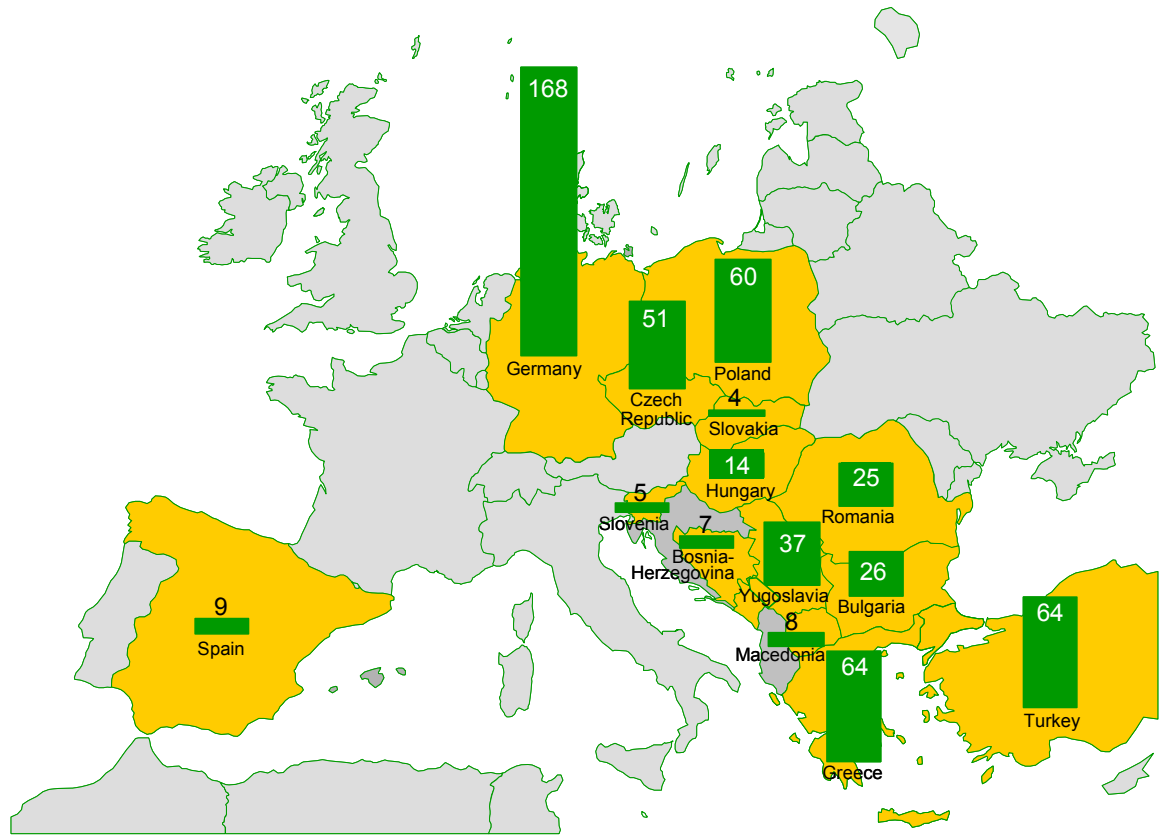
Source: RWE, BP, IEA, Oil & Gas Journal, national statistics, corporate data

**The largest hard coal producers 2000 and lignite reserves**



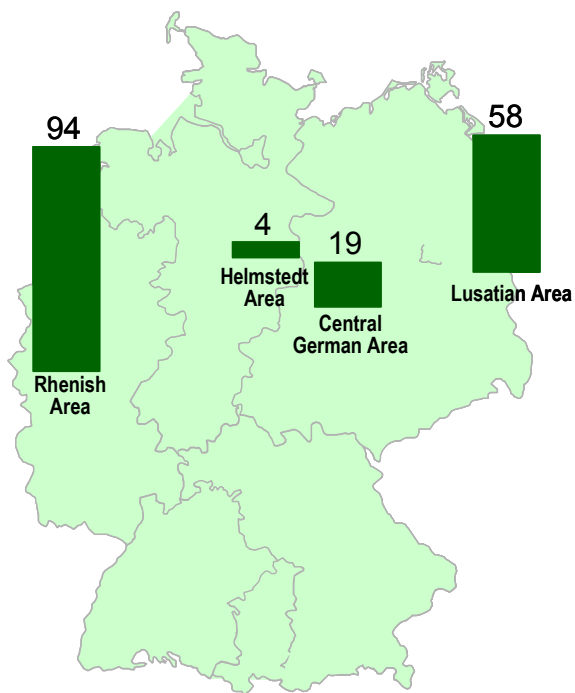
Source: RWE, BP, IEA, Oil & Gas Journal, national statistics, corporate data

**Lignite output in Europe in 2000 (mm t)**



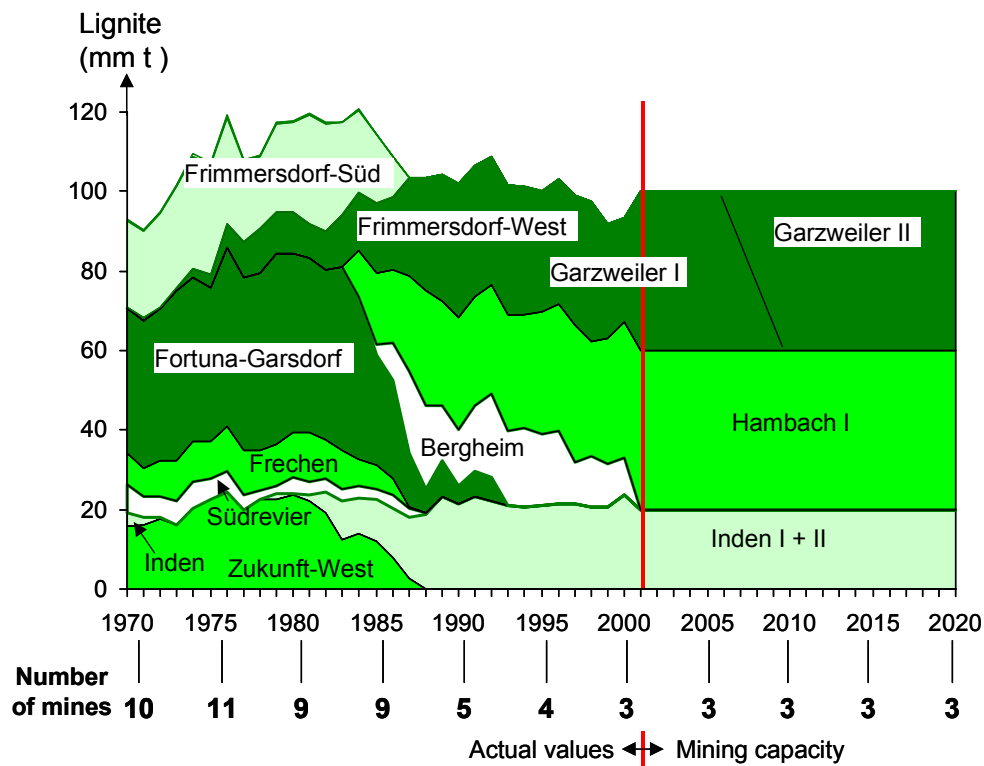
Source: RWE

**German lignite mining areas: output in mm t in 2001**



Source: RWE Rheinbraun

**Lignite production in the Rhenish area**



Source: RWE

**Wholesale market shares in the German market (%)**

Ruhrgas	57.1
Wingas (65% Wintershall, 35% Gzprown)	14.4
Verbundnetz Gas(VNG)	13.5
BEB (50% ESSO, 50% Shell)	6.0
Thyssengas (RWE)	5.9
Others	3.1

Source: Bundesverband der Gas - und Wasserwirtschaft

**Energy consensus: granted electricity production by plant**

	Remaining production from 1-1-2000 (net TWh)	First Grid Synchronisation	Net capacity (MW)	Owner (%)
Obrigheim	8.7	29-Oct-68	340	EnBW (63)
Stade	23.18	29-Jan-72	640	E.ON (76), HEW (33)
Biblis A	62	25-Aug-74	1,167	RWE (100)
Neckarwestheim 1	57.35	03-Jun-76	785	Various utilities
Biblis B	81.36	06-Apr-76	1,240	RWE (100)
Brunsbüttel	47.67	13-Jul-76	771	E.ON (33), HEW (67)
Isar 1	78.35	03-Dec-77	870	E.ON (100)
Unterweser	117.98	29-Sep-78	1,285	E.ON (100)
Philippsburg	87.14	07-May-79	890	EnBW (100)
Grafenrheinfeld	150.03	21-Dec-81	1,275	E.ON (100)
Krümmler	158.22	28-Sep-83	1,260	E.ON (50), HEW (50)
Gundremmingen B	160.92	16-Mar-84	1,284	RWE (75), E.ON (25)
Philippsburg 2	189.61	17-Dec-84	1,358	EnBW (100)
Grohnde	200.9	04-Sep-84	1,360	E.ON (50)
Gundremmingen C	168.35	02-Nov-84	1,288	RWE (75), E.ON (25)
Brokdorf	217.88	14-Oct-86	1,370	E.ON (80), HEW (20)
Isar 2	231.21	22-Jan-88	1,365	E.ON (75), Stw Munich (25)
Emsland	230.07	19-Apr-88	1,290	RWE (87.5), E.ON (12.5)
Neckarwestheim 2	236.04	03-Jan-89	1,269	Various utilities
<b>Sub-total</b>	<b>2,516.05</b>			
Mülheim-Kärlich	107.25	14-Mar-86	1,219	RWE (100)
<b>Total</b>	<b>2,623.30</b>			

Note: the agreement from 14 June 2000 guarantees remaining production volumes for the nuclear power plants  
Source: Company data

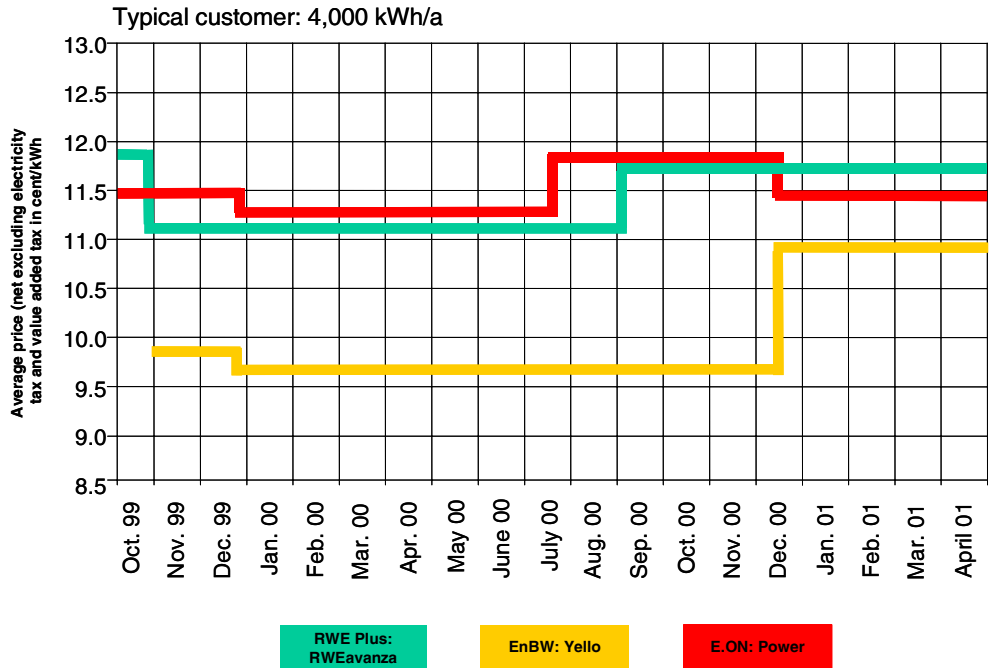
**RWE Plus: target groups**

	Private and commercial customers	Industrial customers	Municipal utilities	Majority-owned subsidiaries
<b>Sales volume (TWh)</b>	18	61	77	50
<b>Net sales (€bn)</b>	1.8	2.1	2.4 <sup>1</sup>	3.3
<b>Customers served</b>	3.3m	25,000	150	3.5m through 13 regional group companies
	→ Customer bonding instead of price cuts	→ Changing over all contracts to "Forward Plus"	→ "Forward Plus" → Full service portfolio through RWE profi-partner	→ Integrated sales strategy based on "Forward Plus"
	→ RWE avanza for all customers	→ Multi-utility		

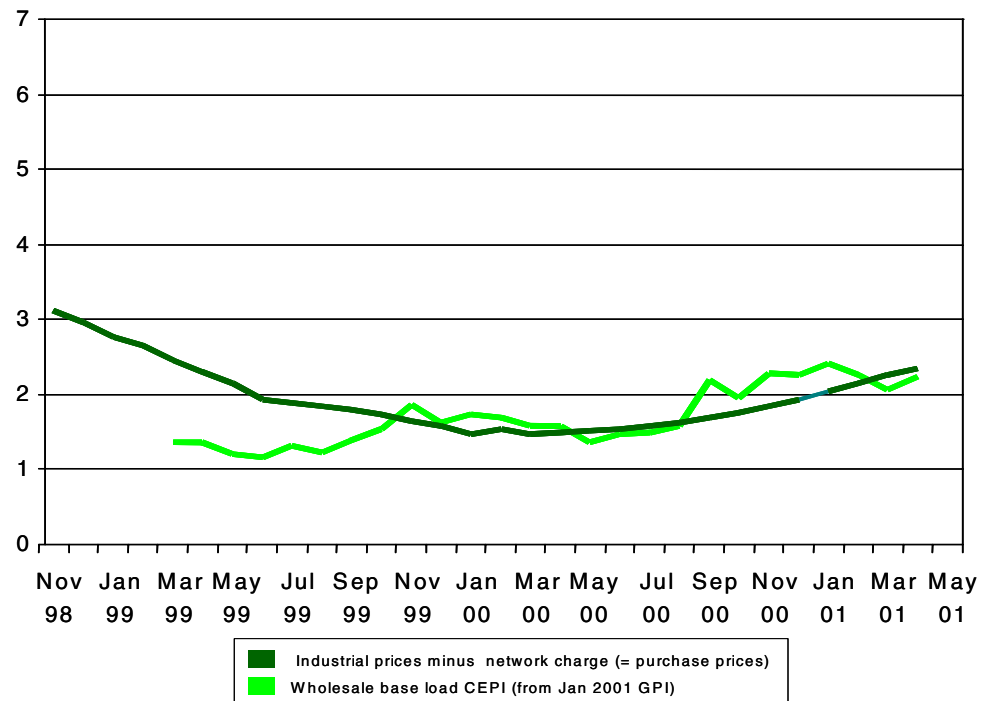
Note: <sup>1</sup>including consolidations of 21TWh/€0.7m  
Source: RWE



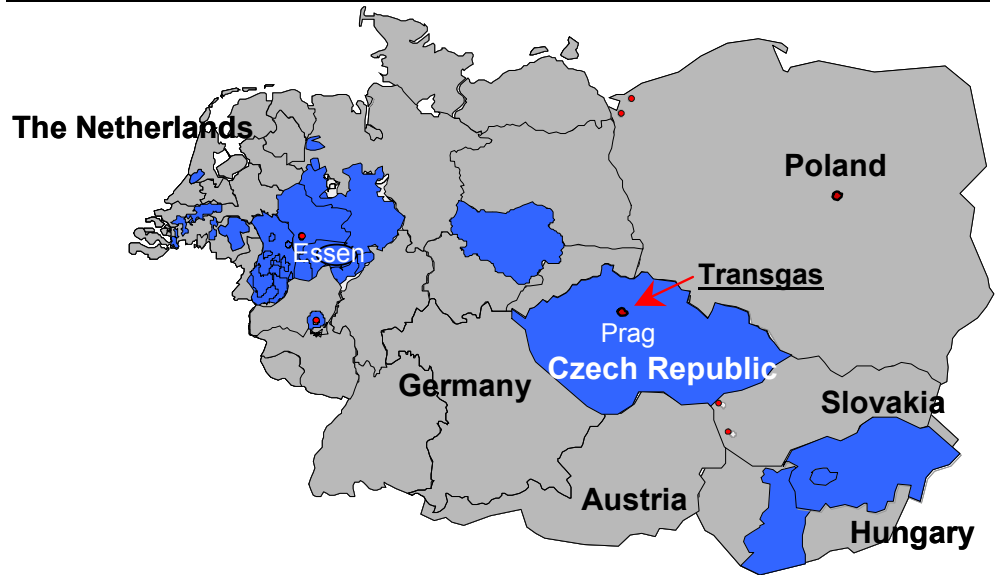
**Domestic prices**



**Industrial prices - RWE prices in € cent/kWh**

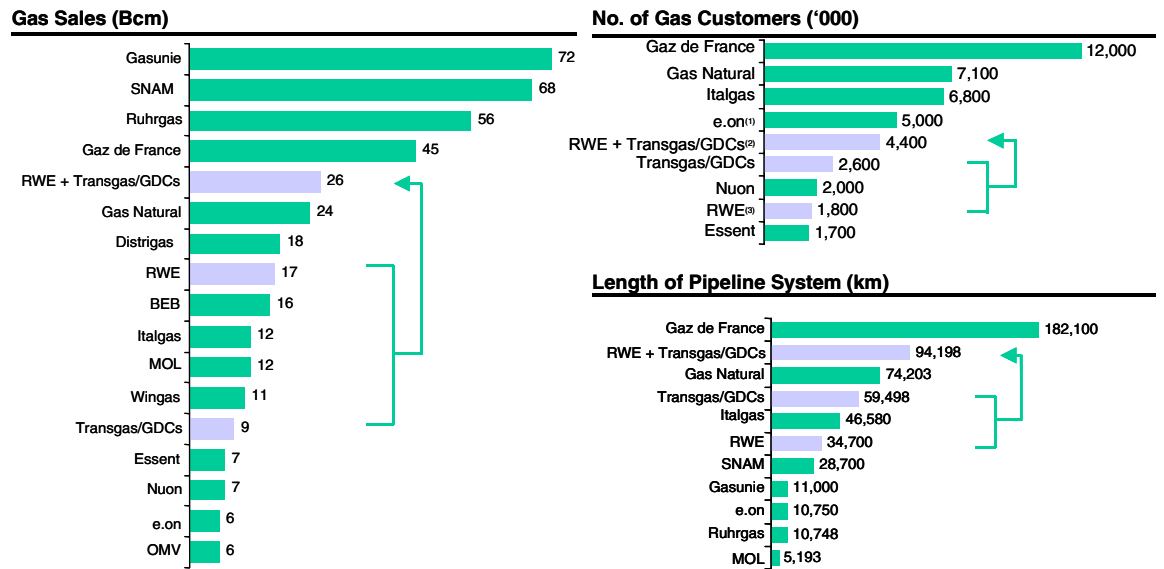


RWE's gas interests



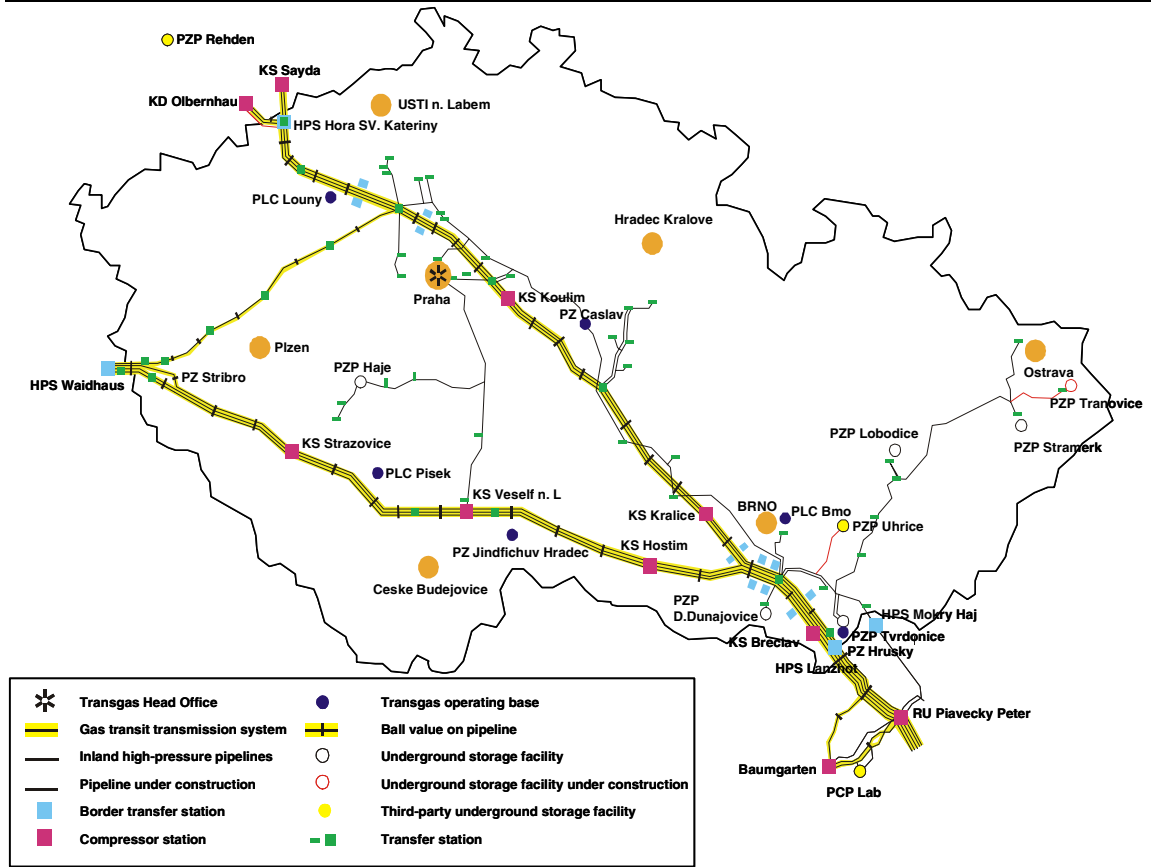
Source: RWE

RWE's gas interests



Source: RWE

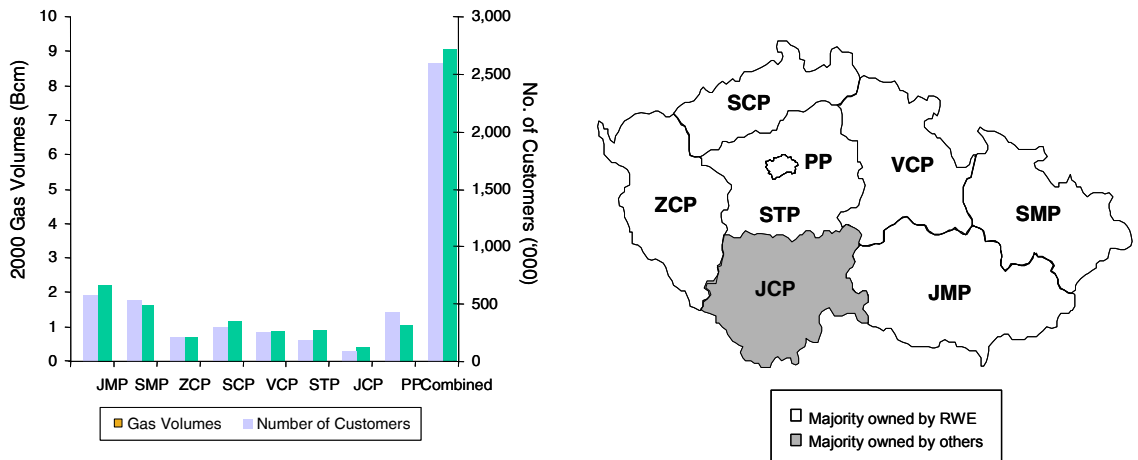
Transgas transmission



Source: Transgas

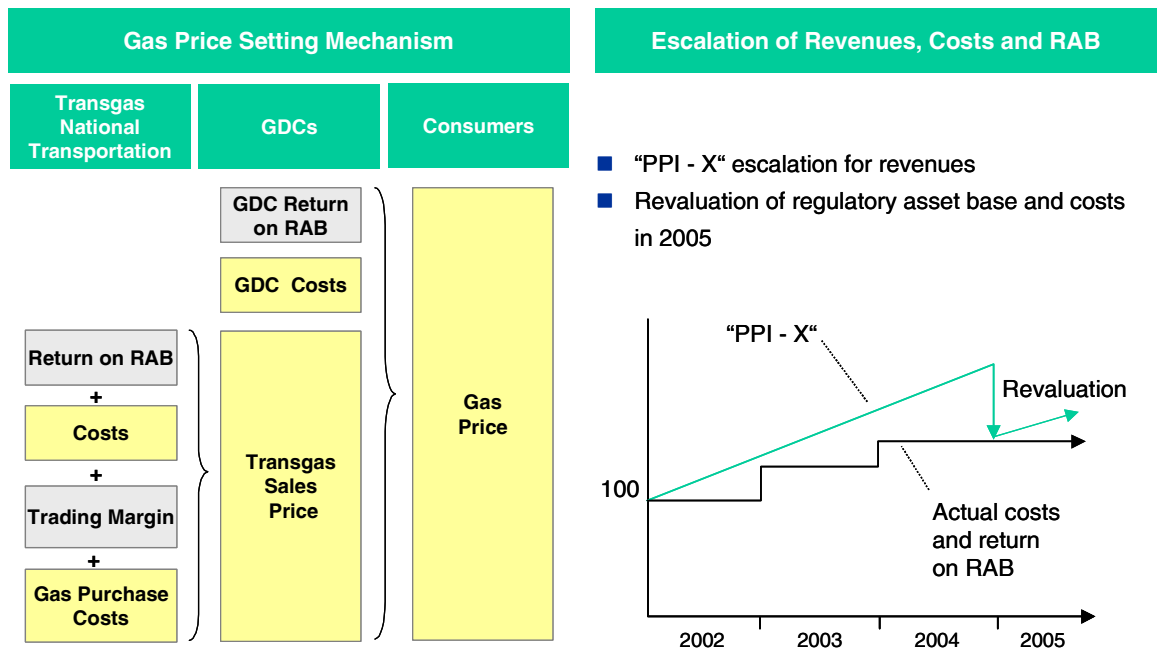


**Transgas distribution**



Source: Transgas

**Transgas regulation**



Source: Transgas

**Main European energy traders**

Electricity traders	Gas traders
RWE	Duke
AEP	Essent
TXU	Electrabel
Electrabel	Centrica
Entergy	Distrigas

Source: RWE, DrKW


**Share prices not mentioned elsewhere in this report**

Company	Price
AEP	US\$28
American Water Works	US\$44.6
Cinergy	US\$30.88
Degussa	€28.08
Distrigas	€700
DPL	US\$16.18
Duke	US\$21.50
Entergy	US\$39.3
Gazprom	US\$0.701
Heidelberger Druck	€26.23
Hochtief	€15.2
HypoVereinsbank	€17.54
Motor-Columbus	SwFr2.425
Stinnes	€32.6
TXU	US\$42.6

Source: Reuters, Bloomberg

**ADR data**

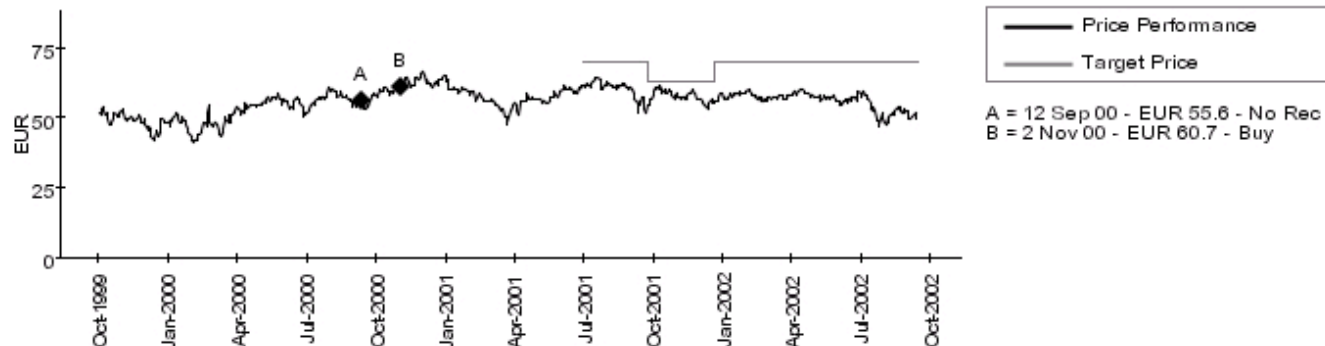
	Shares/ADR	Recent price US\$	EPS					P/E				DPS Dividend	
			LFY 2001 (3/2002) US\$	FY1 2002 (3/2003) US\$	FY2 2003 (3/2004) US\$	FY3 2004 (3/2005) US\$	LFY 2001 (3/2002) x	FY1 2002 (3/2003) x	FY2 2003 (3/2004) x	FY3 2004 (3/2005) x	FY1 2002 (3/2003) US\$	Yield 2002 (3/2003) %	
E.ON	1	47.87	1.78	3.89	4.42	4.92	26.9	12.3	10.8	9.7	1.85	3.86	
RWE	1	33.15	2.21	2.36	1.95	1.96	15.0	14.0	17.0	16.9	1.20	3.62	

Source: DrKW estimates, company data

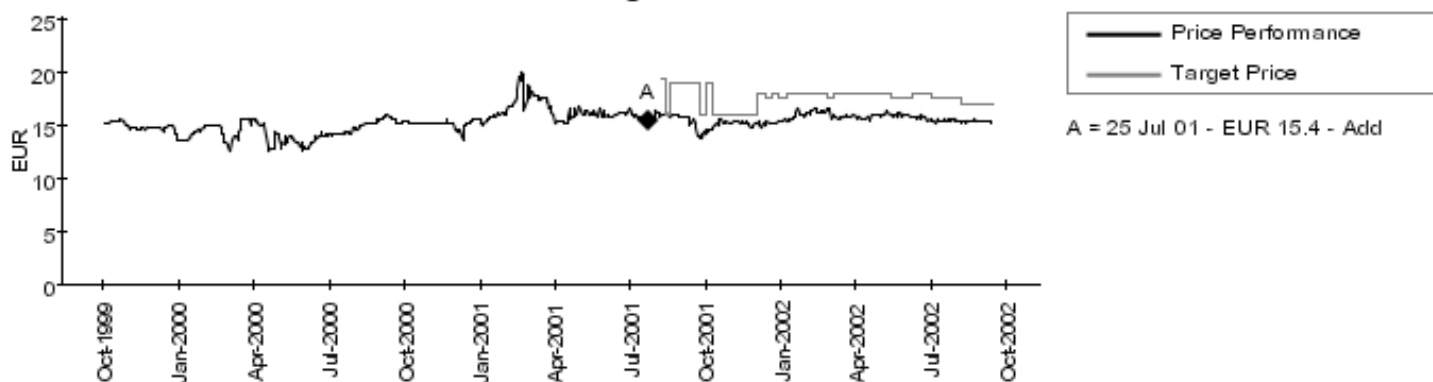


# | Notes

### E.on Stock Performance



### MVV Energie Stock Performance





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#### DRESDNER KLEINWORT WASSERSTEIN RESEARCH – RECOMMENDATION DEFINITION

(Except as otherwise noted, expected performance over next 12 months)

Buy	10% or greater increase in share price	Reduce	5-10% decrease in share price
Add	5-10% increase in share price	Sell	10% or more decrease in share price
Hold	+5%/-5% variation in share price		

#### Distribution of DrKW recommendations as of 22 Aug 2002

	All covered companies		Companies where a DrKW company has provided investment banking services (in the last 12 months)	
Buy/Add	490	58%	113	67%
Hold	274	32%	46	27%
Sell/Reduce	86	10%	9	5%
Total	850		168	

Source: DrKW

F: 2762 G: 1076