

# ELECTRICITY MARKET AFFECTED BY FLUCTUATING COMMODITY PRICES

Average prices on Europe's electricity exchanges were higher in 2008 than in 2007. However, turbulence in the financial market and falling commodity prices during the autumn led to falling prices on the spot and futures markets.

Even though the European electricity market has been de-regulated, it is not uniform. Prices are still steered primarily by local production conditions, while the price correlation between different countries has increased. The Nordic countries and certain eastern European countries are characterised by relatively low prices, while Germany, France and Switzerland are usually characterised as areas with medium-high prices. The highest prices are generally found in the Benelux countries, Italy and the UK.

In the Nordic countries, water levels are a key pricing factor: a weak hydrological balance (i.e., low water levels) leads to higher prices and vice versa. In many other countries it is commodity prices that are decisive – for example, the price of coal and natural gas. Trading in emission allowances in the EU has also had an increasingly noticeable impact on electricity prices.

A growing share of Europe's electricity trading is con-

ducted on electricity exchanges, where producers, retailers, major industrial companies and financial players conduct trading. Trading is done either through direct delivery on the spot market, or for future delivery in the futures market. The Nordic electricity exchange, Nord Pool, and the European Energy Exchange (EEX) in Germany are clearly the largest exchanges in terms of volume and the number of market participants.

## Effective pricing on the electricity exchanges

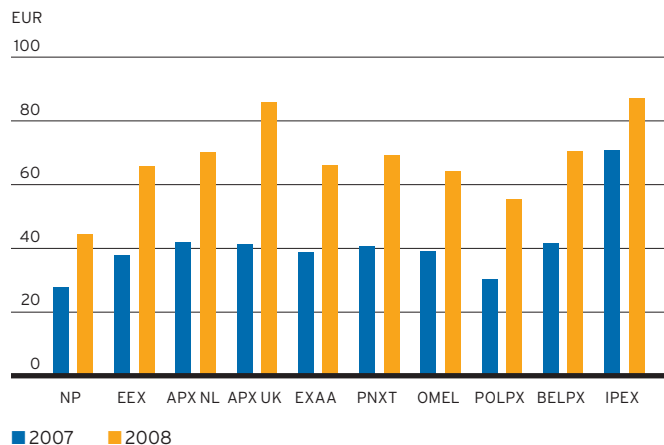
Prices on the electricity exchanges are determined by supply and demand, and also serve as a benchmark for other electricity trading. Generation facilities are utilised by merit order, which means that the plants with the lowest variable costs are put in operation first<sup>1</sup>. As demand rises, more expensive forms of generation are put into operation. Customer demand determines which type of generation is the last

Spot market volumes, TWh

	2008	2007
NP, Nord Pool, Nordic countries	298	292
EEX, European Energy Exchange, Germany	154	124
APX NL, Amsterdam Power Exchange, Netherlands	25	21
APX UK, Amsterdam Power Exchange, UK	14	11
EXAA, Energy Exchange Austria, Austria	3	2
PNXT, Powernext, France	52	44
OMEL, Spanish Power Exchange, Spain	222	179
POLPX, Polish Power Exchange, Poland	2	2
BELPX, Belgian Power Exchange, Belgium	11	8
IPEX, Italian Power Exchange, Italy	233	231

Volumes traded on Nord Pool's spot market are considerably higher than corresponding volumes in most of Europe's other electricity spot markets.

Average spot prices on Europe's electricity exchanges



Compared with other European exchanges, prices on Nord Pool, the Nordic electricity exchange, were significantly lower in 2008 than prices on the Continent. In the UK (APX UK) and Italy (IPEX), average spot prices in 2008 were roughly twice as high as on Nord Pool.

producing unit, and based on this, the price of all electricity is determined. This enables generation resources to be used more efficiently and also sends clear signals for future investment decisions. Customers receive fair pricing, while electricity producers receive the same price and compete on equal terms.

The EU's goal of increasing the share of renewable energy in generation – from slightly more than 8% today to 20% by 2020 – is also having an effect on prices. Many countries have introduced economic incentives to stimulate investment in renewable energy, and these costs are ultimately passed on the consumers. For example, Germany subsidises electricity from renewable sources through a fixed level of compensation for generated electricity. Sweden has a system based on electricity certificates, where electricity generators receive one electricity certificate for each MWh of electricity generated from renewable energy sources that is delivered to the grid. Electricity generators can sell these electricity certificates on the market at the market price. This system is made possible by the fact that electricity trading companies are obligated to buy a certain amount of elec-

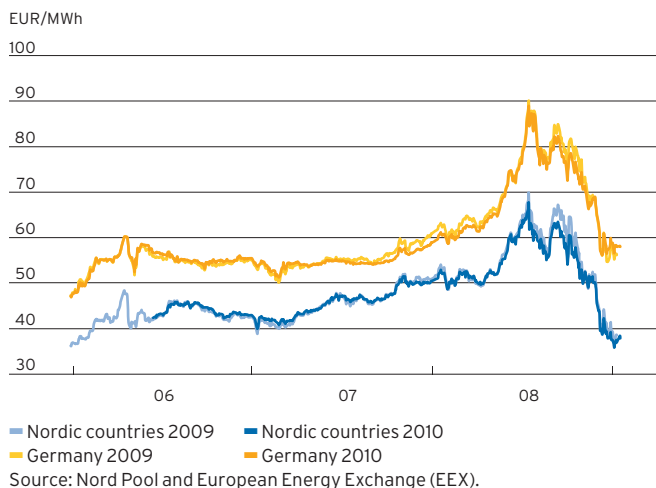
tricity certificates. The difference between the Swedish and German support systems is that in the Swedish system, the desired volume of renewable energy is set, and the certificate market sets the price, while in the German system, the price is set in such a way so as to generate the desired volume.

### Sharply fluctuating wholesale prices

Spot prices for electricity rose gradually during the first half of the year in pace with rising commodity prices and higher prices for CO<sub>2</sub> emission allowances. Oil and coal prices rose during the first half of the year to record levels, but fell back dramatically during the autumn as a result of the financial crisis. Despite sharply lower commodity prices during the second half of 2008, on average they were higher for the year than in 2007. Electricity spot and forward prices also fell during the autumn, while the average price level for the full year was higher than corresponding prices in 2007.

1) Hydro power has a so called "water value", which affects the order in which it is utilised.

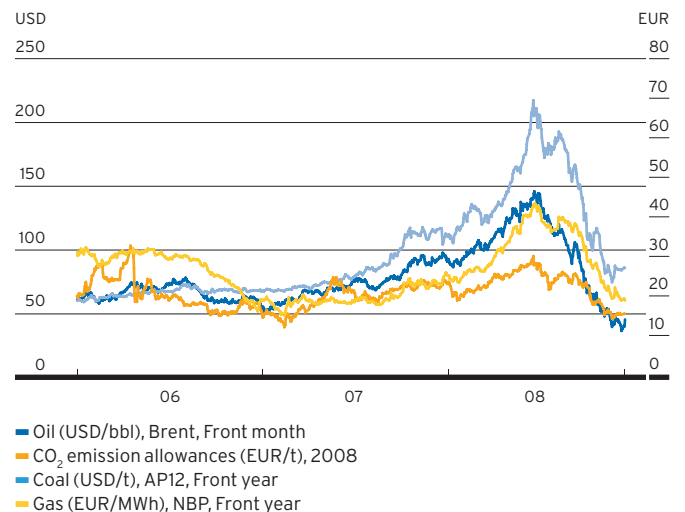
German and Nordic electricity futures prices



Nordic forward contracts for 2009 and 2010 closed on 30 December 2008 at EUR 30.60/MWh and 37.90/MWh, respectively, compared with EUR 51.70/MWh and EUR 50.88/MWh, respectively at year-end 2007. However, the closing price for the 2009 contract (annual average) was EUR 54.70/MWh, which is nearly EUR 9/MWh higher than in 2007, when the corresponding figure was EUR 45.72/MWh.

Forward prices for the 2009 and 2010 contracts in Germany closed on 30 December 2008 at EUR 56.21/MWh and EUR 58.02/MWh, respectively, compared with EUR 61.50/MWh and EUR 59.39/MWh, respectively, at year-end 2007. The annual average value of closing prices for the 2009 contract was EUR 70.10/MWh, which is EUR 14.23/MWh higher than in 2007, when the corresponding figure was EUR 55.85/MWh.

Price trend for oil, coal, gas and CO<sub>2</sub> emission allowances



At year-end 2008, prices of coal, oil, gas and CO<sub>2</sub> emission allowances were below the corresponding prices at year-end 2007. Following a long period of rising prices, the price of oil (Brent) peaked at USD 148.06/barrel in July, and thereafter fell sharply towards the year's bottom quotation of USD 36.61/barrel, on 24 December. This price level has not been seen since 2004. Similarly, the price of coal fell from USD 217.50/tonne to USD 74.76/tonne. Prices of gas and CO<sub>2</sub> emission allowances also fell sharply during the second half of the year. Despite the dramatic fall in commodity prices during the second half of 2008, on average they were higher than in 2007.