

# Commodity Markets at a Glance

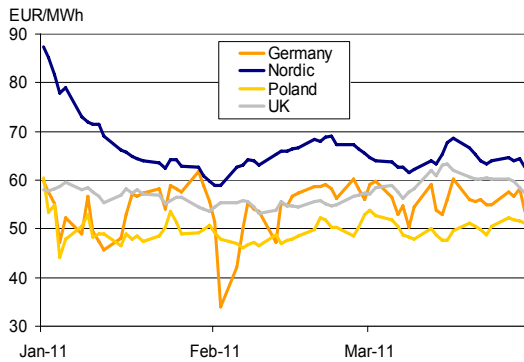
March 2011

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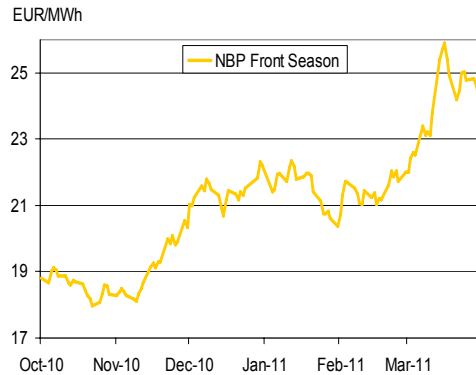
## Market Letter from Vattenfall Energy Trading

### European Power

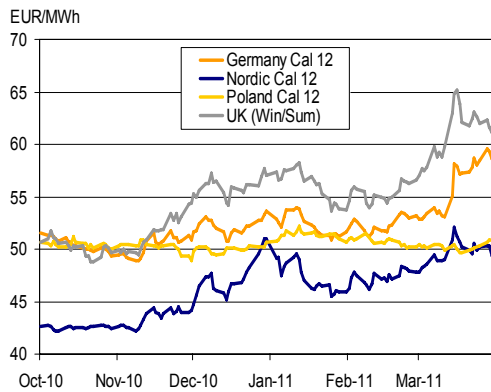
#### Spot markets: Unperturbed prices



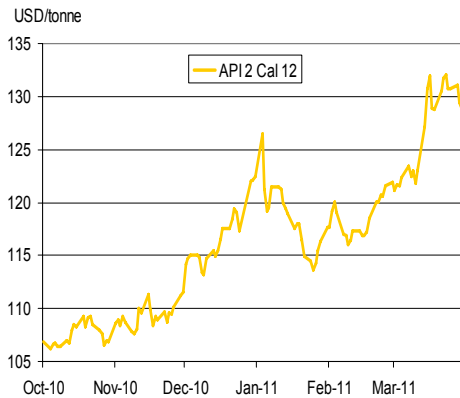
#### Gas Trading: Strong LNG supply



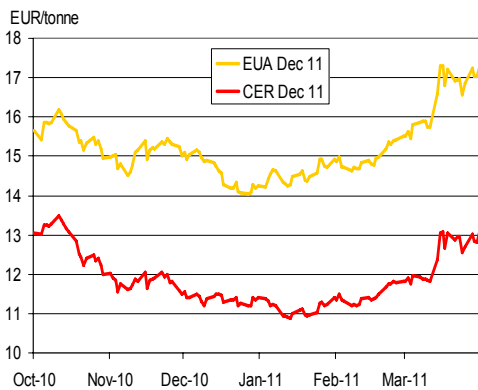
#### Power derivative markets: Upmove



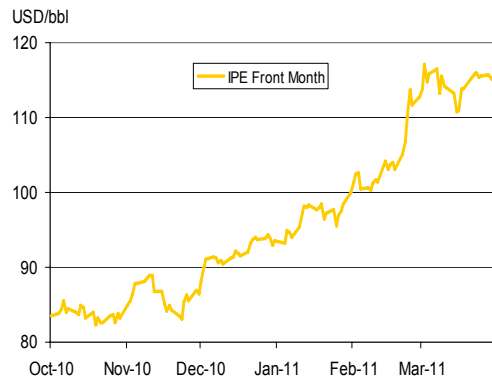
#### Coal Trading: Coal replacing nuclear



#### CO<sub>2</sub> Trading: Expected demand rise



#### Oil Trading: Geopolitical tensions



Sources: EPEX Spot, EEX Power Derivatives, Nord Pool, PolPX, Vattenfall Energy Trading

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## 1. EUROPEAN POWER

### Spot markets: *Unperturbed prices*

Spot prices on European energy markets remained relatively unaffected by the Japanese earthquake and associated consequences, such as the nuclear shutdowns in Germany. On average, UK spot prices rose by 5.11 EUR/MWh compared to the previous month. The German spot market rose by 3.61 euros, while the Polish spot market rose by 1.53 euros. The average Nordic system price dropped by 0.25 EUR/MWh compared to the previous month.

[EUR/MWh]	Germany	Nordic	Poland	UK
Current month avg.	54.47	64.22	49.83	59.43
Previous month avg.	50.86	64.46	48.30	54.33
Difference	3.61	-0.25	1.53	5.11

### Continental Europe

The German Day-ahead Base opened at 58.25 EUR/MWh. After the announcement of the moratorium on German nuclear power plants, prices rose for the short term over 60 euro until 18 March. But overall, this measure did not have a strong influence on the spot market. Until the end of the month, pressure on the market was reduced by rising solar and wind generation as well as imports from neighbouring countries. Overall, the average wind generation forecast was 4.4 GWh. Peak solar generation was 4.5 GWh early in the month, rising to 11.5 GWh by the end of March. The hydro deficit in the Alps persisted, while the hydro balance in Scandinavia improved. The Nordic countries were able to support Germany with power exports, especially during peak hours.

In France high peak temperatures (4°C above normal) resulted in a modest load. Nuclear availability remained high. On average, France imported 640 MWh from Germany. At the end of the month, however, exports to Germany exceeded imports.

The situation in the Benelux market was very dependent on developments in Germany. Flows across the German/Dutch border reversed after the unexpected shutdown of several nuclear power stations in Germany. The Netherlands went from being a net importer from Germany to a flatter profile

with more exports during peak hours. Overall, March settled at 55.35 EUR/MWh on APX, close to the delivery price in Germany, with normal wind generation during the month and healthy power plant availability. Mild temperatures and high coal and gas generation enabled the Netherlands to start exporting to Germany in the tightest hours during the second half of the month and kept the Central Western European markets coupled most of the time.

### Nordic

The system price was stable during March despite a strengthening of the hydrological balance and unusually warm weather. On 21 March precipitation was above normal. Inflows started to increase on the back of high precipitation combined with higher than normal temperatures. The spot price dropped by 2 EUR/MWh from week 11 to week 12 and another 1.50 EUR/MWh by week 13. Early in the month the spot price rose in response to higher demand and slightly drier than normal forecasts. Most of the time all nuclear plants were running, but on 20 March Oskarshamn 3 changed to reduced output, 450 MW instead of 1200 MW, and on 23 March it went offline for the rest of the month. However, the load was low and inflows had increased above normal, so the spot price dropped slightly. The hydrological balance improved strongly. Inflows started well below normal levels, but increased when the weather became more dynamic. The precipitation results in Norway and Sweden were approximately 15 TWh during January, nearly 4 TWh more than normal. Swedish reservoirs were at 12% of maximum by the end of week 13, 17% lower than normal at this time of year. Norwegian reservoirs were at 18% of maximum, 21% lower than normal. In both Sweden and Norway, reservoir drawdown was much less than normal during March. It has been both warmer and wetter, and low reservoir levels make it hard for generators to produce at normal levels. Natural storage from snow melt and ground water still shows a large deficit in Norway.

### Poland

The average temperature in Poland was rather warm at 4°C, almost 1°C above normal. Despite the milder weather, demand increased by 3% year-on-year.

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However, the critical fundamental factor affecting power prices was low supply, which decreased by 5% compared to March 2010. This was the result of a strong reduction in generation capacity due to scheduled and unplanned outages. The average price for baseload on PPX was 49.83 EUR/MWh, representing an 11% increase year-on-year. The price increase was triggered by lower supply coupled with slightly higher demand. The Polish spot price was significantly lower than in Sweden (on average 14.39 euro) and lower than in neighbouring countries (3.31 euro less than the Czech Republic and 4.65 euro less than Germany). This resulted in substantial power exports to linked power grids. Tightness in the Polish power system caused by soaring outages resulted in towering prices on the balancing market in the last week of March 2011.

## **UK**

The UK Day-ahead Base opened at 56.94 EUR/MWh and closed at 57.25 EUR/MWh. The sharp rise in prices resulted from several factors, including Germany taking some of its older nuclear plants offline. Fuel prices strengthened across the board on the possibility that Japan would need a larger volume of fuel to replace any nuclear capacity that might go offline in the aftermath of the earthquake. This put upward pressure on the National Balancing Point, which is highly dependent on LNG imports. Despite higher prices being countered by increased supply, prices remained high as people placed much higher risk premiums on contracts.

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## ***Derivative markets: Upmove***

Prices moved up on most European markets on the back of the consequences of the Japan disaster. In the Polish market, the trend was dampened by currency exchange effects.

### **Continental Europe**

The German Cal 12 opened at 52.81 EUR/MWh. After the German government announced its decision to take several power plants offline, market players tried to hedge their long-term energy supplies. Driven by higher demand and increasing commodity prices, Cal 12 prices rose strongly in the second half of the month, closing at 59.38 EUR/MWh. The daily traded volume increased mid-month to almost 5 GWh. By the end of the month, however, it returned to normal at 1.5 GWh.

Dutch Cal 12 prices also rose massively in March on the back of Germany shutting down its oldest nuclear reactors. The contract was up by 6 EUR/MWh throughout the month, and Dutch–German spreads dropped by more than 1 euro as the German Cal 12 was the main bullish product.

### **Nordic**

Most contracts increased during the month despite the strengthening of the hydrological balance. On 1 March most contracts traded at a monthly low. When the forecasts turned drier and colder at the same time as fuel and CO<sub>2</sub> prices continued to rise, prices followed suit and most contracts reached a monthly high on 16 March. The Q3/2011 contract started at 49.75 EUR/MWh on 1 March, peaked at 59.50 EUR/MWh mid-month, and closed at 54.15 EUR/MWh at the end of the month. The Nordic Cal 12 closed at 50.15 EUR/MWh, 2.40 euro higher than at the end of February.

### **Poland**

Liquidity on the term market was healthy, with 698 MW of April 2011, 325 MW of Q2/2011 and 1170 MW of Cal 12 traded in March. Events on the Polish term market showed a strong correlation with the German term market and the Polish spot market. Cal 12 was rather volatile, showing two significant spikes – after the announcement of the closure of several German nuclear stations followed by a

German Cal 12 spike, and at the end of the month as a result of rocketing prices on the spot and balancing markets. However, volatility was dampened by the EUR/PLN exchange rate. Cal 12 finished the month at 50.59 EUR/MWh. Front-end products were also highly volatile and showed significant price increases. April 2011 soared by 9% to 49.12 EUR/MWh, while Q2/2011 rose by 6% to 46.71 EUR/MWh. The Polish Monetary Council resolved on 5 April to raise the interest rate by 25 base points.

### **UK**

Long-term products were driven by events at the front end. The Middle East acted as a catalyst to push the curve up, and this upward trend was further fuelled by continuing tensions in the Middle East as well as other global problems related to Japan and LNG usage. Spark spreads remained strong as power outstripped gas products by a healthy margin. Summer 2011 opened the month at 57.07 EUR/MWh and closed at 62.21 EUR/MWh.

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## 2. CO<sub>2</sub> TRADING: Expected demand rise

### Higher demand for fossil fuelled power boosts CO<sub>2</sub> prices after Japan disaster

Prices for European Union Allowances (EUA) opened at 15.50 EUR/tonne. After the earthquake in Japan, prices rose above 17 EUR/tonne on the back of the expected demand for fossil fuelled generation. CO<sub>2</sub> prices settled at this level and traded sideways until the end of the month. They closed at 17.29 EUR/tonne on 31 March. Time spreads started widening in March due to higher expected interest yields and demand outperforming supply. This supported the forward products. The daily traded EUA future contracts volume on the European Climate Exchange rose from 10 million tonnes to 20–40 million tonnes in the second half of the month.

Prices of Certified Emission Reductions (CER) were slightly weaker due to a good CER supply and lingering uncertainties regarding the future of these certificates. CER prices opened at 11.82 EUR/tonne and climbed to 13.10 EUR/tonne. The spread between EUAs and CERs continued to increase during the month to 4.19 EUR/tonne on 31 March.

## 3. GAS TRADING: Strong LNG supply

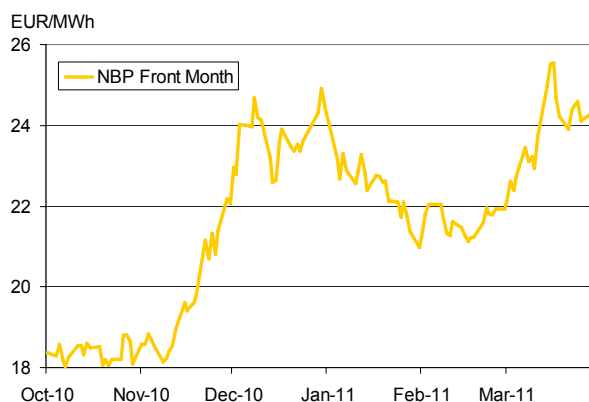
### Middle East tensions and the Japan disaster pushed up gas prices despite low demand and good supply

Although low demand and strong LNG supply put pressure on the prompt, unrest in the Middle East and North Africa (MENA) as well as the Japanese earthquake, tsunami and other consequences provided support for gas prices. The front month opened at 22.15 EUR/MWh and was led upwards by unrest in the MENA and interruption of the flow from the Greenstream pipeline connecting Libya to Italy. It gradually increased to a high of 25.53 EUR/MWh on 16 March on the back of anticipated higher Japanese LNG demand and revised nuclear policies in several countries. April 2011 eased off on the back of excellent supply and settled at 24.09 EUR/MWh.

The seasons received additional support from the Brent oil market. Summer 2011 was squeezed

between a generally weaker prompt and stronger later dated contracts, which are still driven by oil-indexed prices. This caused widening of the Summer–Winter spread, which peaked above 4 EUR/MWh with the Japanese catastrophe and then eased off to 2.85 EUR/MWh. Demand has been consistently well below the seasonal normal. LNG supply remains very strong.

### NBP Front Month in EUR/MWh



Source: Vattenfall Energy Trading

## 4. COAL TRADING: Coal replacing nuclear

### For the third month in a row, coal prices were driven by global events

January saw cold spells in Europe along with unseasonably heavy rains in coal-producing regions due to the La Niña effect. February's focus was on tensions in North Africa and the Middle East and associated potential disruptions to oil and gas supplies, while March focussed on nuclear with the events in Japan prompting nuclear policy reviews in Germany and other parts of the world.

The impact of the devastation in Japan caused Newcastle prices to slump but API2 and API4 to rise. Newcastle prices, especially at the front, decreased on the back of the expectation of reduced power usage in Japan with many plants and ports badly damaged. Rolling blackouts also occurred in some parts of the country. The API2 and API4 curves rose on the back of stronger European gas prices,

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which rose on the expectation that LNG originally destined for the UK and Spain would be redirected to Japan to compensate for the loss of nuclear capacity. A further spike in API2 and API4 prices occurred on the back of the announcement by Germany's chancellor, Angela Merkel, of a three-month shutdown of seven nuclear plants in Germany for reassessment. This required the procurement of around 1 million tonnes of replacement coal, causing coal prices to go through the roof. API2 Cal 12 rose by 9 USD/tonne over the month, moving from 121.11 to 131.49 USD/tonne. Newcastle Cal 12 increased by 6.10 USD/tonne over the month, moving from 123.65 to 129.75 USD/tonne. By comparison, the Newcastle Quarter 2/2011 curve lost 4.25 USD/tonne over the month.

## 5. OIL TRADING: Geopolitical tensions

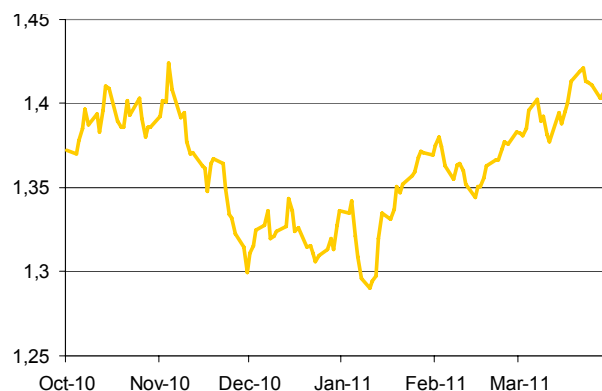
### Oil slowly headed towards 120 USD/bbl, with a mid-month dip

At the end of March, Brent had conclusively broken the 116 USD/bbl barrier. Geopolitical tensions – mainly unrest in Libya, but also in Yemen, Gabon and Nigeria – and the premium they attract have been the main drivers. The Japanese earthquake and tsunami also damaged the prospects of nuclear power as an alternative to oil, increasing the premium for sweet crudes such as Brent and Bonny Light. Besides a geopolitical premium of around 15 USD/bbl, the crudes also benefited from a firmer EUR/USD rate as well as increased global economic strength. On the other side, however, we saw a few negative developments on the horizon: increasing inflation, mainly in food and energy prices, possibly leading to higher interest rates, and of course Eurozone debt crises, in particular Portugal, Greece and Ireland, potentially spreading to Spain.

## 6. FX TRADING: Strengthening euro

### The EUR/USD exchange rate rose from 1.38 to 1.42 EUR/USD

The natural disaster in Japan and geopolitical tensions in the Middle East eclipsed most other news in March. However, publication of official comments by the US Federal Reserve Board regarding discontinuation of quantitative easing (QE2) weakened the US dollar. The euro rose further against the dollar after comments by the head of the European Central Bank reinforced expectations of higher interest rates, while the yen held steady with the focus on Japan's nuclear crisis. These comments also helped to relieve pressure on euro resulting from the eurozone debt crisis, with rising concerns regarding Portugal's ability to finance its debts.



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## ABBREVIATIONS

API2	All Publications Index at the Amsterdam-Rotterdam-Antwerp Range
API4	All Publications Index for South African free on board (FOB) coal
ARA	Amsterdam-Rotterdam-Antwerp, major coal-importing ports in north-west Europe
C4	Voyage freight rate between Richards Bay and ARA
CCGT	Combined cycle gas turbine
CDM	Clean Development Mechanism
CHP	Combined heat and power plant
CER	Certified Emission Reduction, resulting from an emission-reducing project in developing countries that has been certified
Dark spread	Spread between the fuel and power price for a generator
ECX	European Climate Exchange
EEX	European Energy Exchange, Leipzig
EPEX Spot	European Power Exchange, German-French spot exchange, Paris
ETS	European Union Emissions Trading System
EUA	European Union Allowance Unit
FOB	Free on board: a shipping term which indicates that the supplier pays the shipping costs from the point of manufacture to a specified destination
IMF	International Monetary Fund
IPE	International Petroleum Exchange, London
IUK	Interconnector UK – gas pipeline connecting the UK and Europe
LNG	Liquefied natural gas
MCM/D	Million cubic metres per day
NBP	National Balancing Point, gas hub in Great Britain
NCG	NetConnect Germany – German gas market area
N <sub>2</sub> O project	CDM project to reduce nitrous oxide (N <sub>2</sub> O)
OECD	Organisation for Economic Co-operation and Development
OPEC	Organization of the Petroleum Exporting Countries
OTC	Over-the-counter trading
PPX	Polish Power Exchange, Towarowa Gielda Energii S.A.
Spark spread	Difference between the price of electricity sold by a producer and the price of the used fuel
TSO	Transmission system operator
TTF	Title Transfer Facility: virtual gas trading hub in the Netherlands
UNFCCC	United Nations Framework Convention on Climate Change

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