

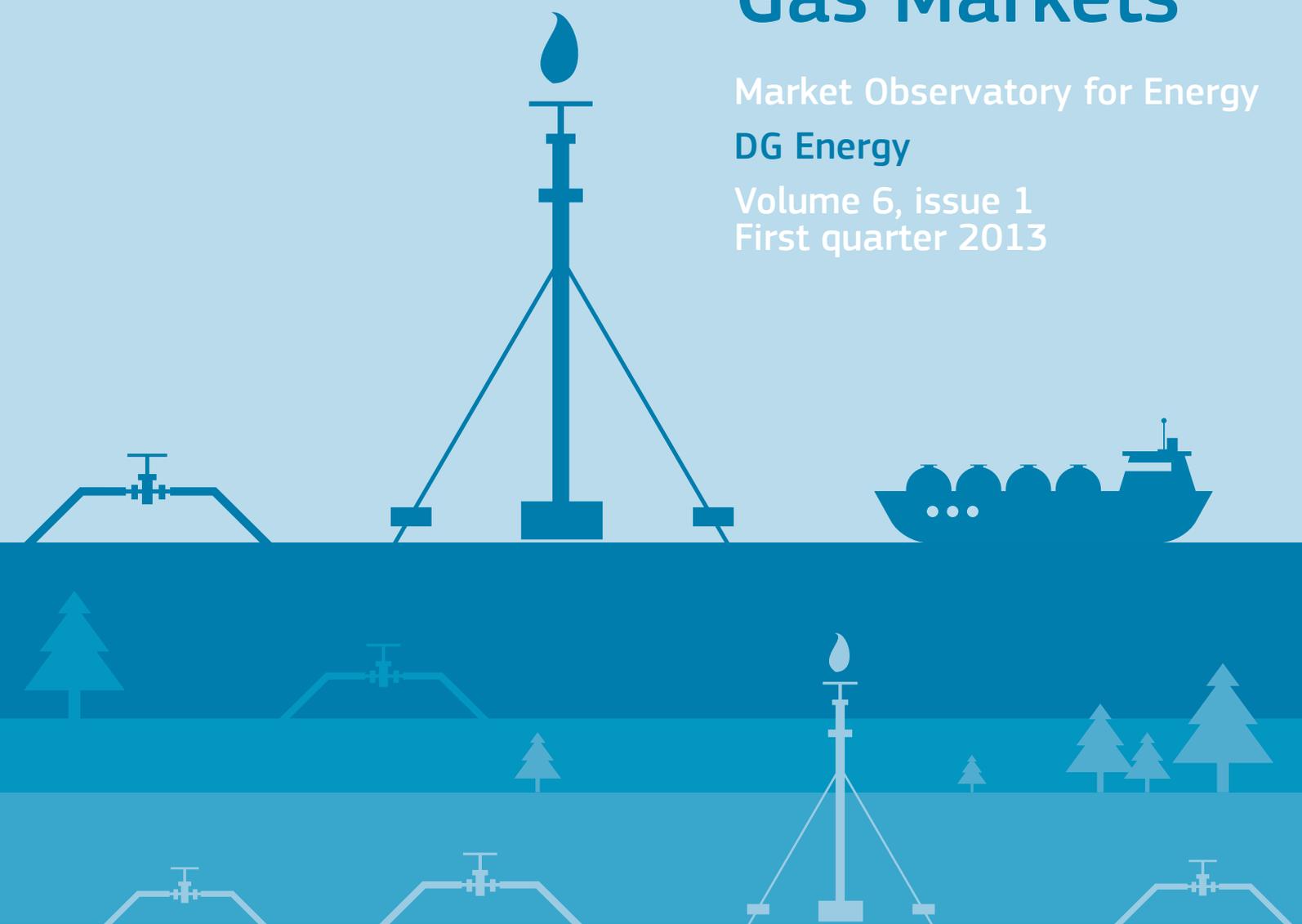


Quarterly Report

on European Gas Markets

Market Observatory for Energy
DG Energy

Volume 6, issue 1
First quarter 2013



Our quarterly reports on gas and electricity have gone through some changes in terms of design, structure and contents.

The overall aim was to make our reports more concise and reader friendly, and also more timely.

At the same time, we will endeavour to make any additional analysis on the EU's gas and electricity markets available on the Market Observatory for Energy pages of the DG Energy web site (http://ec.europa.eu/energy/observatory/index_en.htm).

The Market Observatory for Energy Team, Unit A1 Energy Policy & Monitoring of electricity, gas, coal and oil markets,
DG Energy.

Content

| | |
|---|----|
| Highlights..... | 1 |
| 1. Gas Consumption – Production – Imports..... | 2 |
| 2. Traded volumes on European gas hubs..... | 6 |
| 3. LNG volumes | 8 |
| 4. Gas Storage and heating degree days..... | 12 |
| 5. Wholesale gas prices | 14 |
| 5.1. International comparisons | 14 |
| 5.2. Comparisons between oil, gas and coal prices in the EU..... | 16 |
| 5.3. Wholesale gas prices on gas hubs in the EU | 17 |
| 5.4. Comparing the prices of different contracts for gas in the EU..... | 19 |
| 5.5. LNG gas prices in the EU..... | 22 |
| 6. Retail gas prices..... | 24 |
| 7. Glossary..... | 30 |

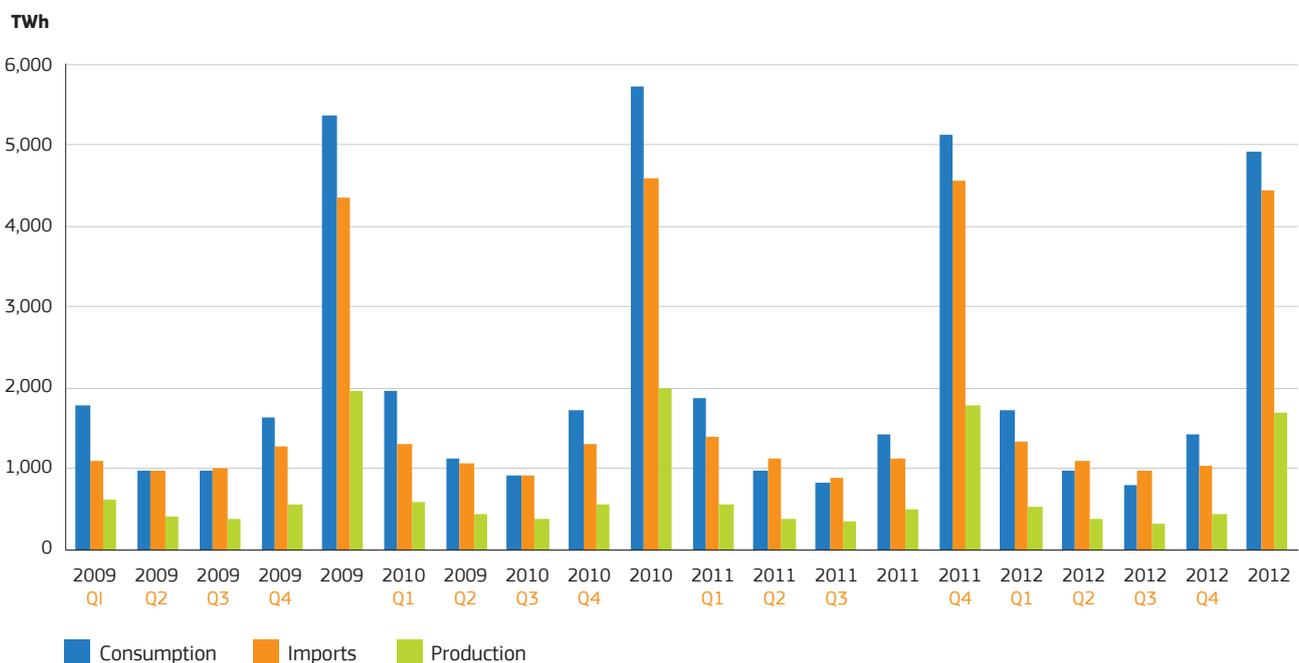
Highlights

- **EU natural gas consumption continues its downward trend**, with 2012 reaching a new record low level in annual consumption in the last decade. Annual consumption in 2012 was 4% lower than in 2011.
- **LNG deliveries to the EU continue to fall faster than consumption**, registering a decrease of 31% in 2012 relative to 2011. Imports from Qatar, Nigeria and Algeria (the three largest exporters of LNG to the EU) were down by 35%, 31% and 18%, respectively. This trend continued over the first two months of 2013. High Asian LNG prices contributed to a drop in the share of the EU in global LNG import volumes from 27% in the first 11 months of 2011 to 21% in the same period of 2012.
- **EU coal consumption and imports continue to rise**. EU consumption and imports of coal (hard coal and lignite) increased by, respectively, 2% and almost 9% over the first 11 months of 2012, relative to the same period in 2011 with coal imports from Colombia and the US up by 13% and 14%. Coal import volumes from Colombia and the US into the EU have doubled since 2009.
- **The major event over the course of the first quarter of 2013 was an unexpected and significant fall in temperatures in Northwest Europe in March 2013**. This late-season cold snap led to a sharp and significant increase in demand for natural gas which in turn put pressure on gas supplies, in particular in the UK. Higher than expected demand against a background of subdued LNG import volumes and sendout to the grid, rapidly depleting storage and disruptions in supplies from Norway, contributed to soaring UK hub spot prices.
- **The benefits of an increasingly flexible, integrated EU gas market were evident during the cold snap** with EU spot prices being effective in attracting the flow of gas to where it was needed most and quickly re-establishing the balance between supply and demand under unforeseen circumstances. Price differentials between the hubs in the UK, the Netherlands and Germany encouraged strong pipeline flows to the UK, attracting gas from Germany's storage facilities into the Dutch market, and then from the Dutch market into the UK via the BBL pipeline and the Interconnector.
- **The role of trading hubs as an instrument for exchange of natural gas volumes in the EU continues to increase**. The volumes physically delivered on EU hubs in 2012 covered about 83% of the total consumption of natural gas in the countries covered by those hubs (UK, NL, BE, DE, FR, AT and IT), compared to 70% in 2011.
- **Falling oil indexation of natural gas contracts in the EU**: since 2010 its share went down by 8% reaching 51% of gas consumption in Europe. In contrast, over the past 5 years spot-priced volumes have doubled, reaching 44% of gas consumption in 2012. Strong regional differences persist in price formation mechanisms with about 70% of gas in North-West Europe priced on a gas-on-gas (spot) basis, compared to less than 40% in Central Europe.
- **Wholesale gas import prices in the EU continue to be highly fragmented**. Import prices of piped gas and LNG across the EU continue to vary widely.
- Globally, **the evolution of the benchmark UK NBP and the US Henry Hub spot prices illustrates the persisting variation among global wholesale prices for natural gas**. On average in Q1, at wholesale level consumers of natural gas in the US paid 20 €/MWh less than consumers in the UK, which represents a discount of more than 65% on UK gas prices for that period.
- **Korea and Japan remained attractive markets to LNG exporters in the first quarter of 2013** with a premium paid for LNG deliveries in those markets of between 45-60% on the average EU LNG price.
- **In contrast to wholesale gas prices or to retail power prices, retail gas prices in the EU have not been converging in recent years**, as the gap between the highest and the lowest household retail prices for gas across the EU has been increasing since 2008. Prices paid in the most expensive Member States continue to be several times higher than the price paid in the cheapest, even if taxes and duties are excluded.

1. Gas Consumption – Production – Imports

- The decline in the EU's natural gas consumption continued over the course of 2012, reaching a new lowest level in annual consumption in the last decade of 4,917 TWh, with gas losing share in power generation to coal and renewables.
- In 2012, EU natural gas consumption was 4% lower than in the previous year. The decrease relative to 2010 consumption amounted to 14%. The fourth quarter of 2012 nevertheless saw an increase of 0.8% in comparison to the same period in the previous year.
- Gas imports into the EU decreased by 7% in the fourth quarter of 2012 relative to the same period in 2011. Total import levels reached 4,448 TWh in 2012, this was on a par with annual import levels recorded in the last few years..
- EU production of natural gas continues its long term decline, amounting to 1,708 TWh in 2012, down by 5% on an annual basis.

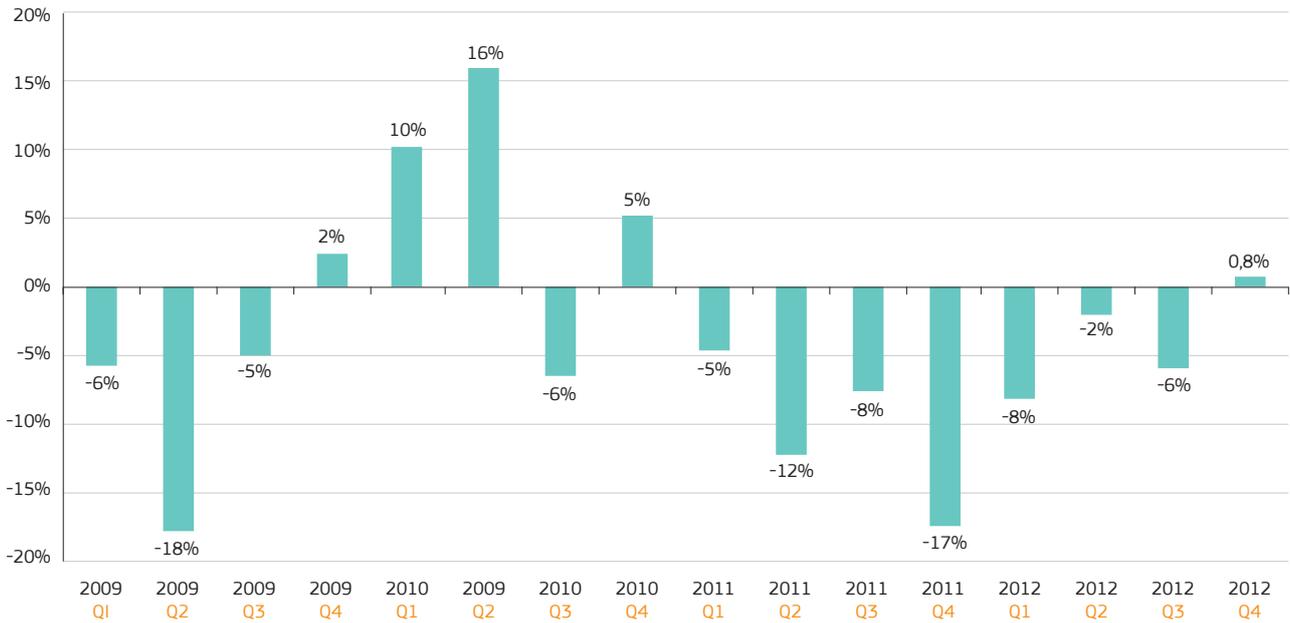
FIGURE 1 - EU 27 GAS CONSUMPTION, IMPORTS AND PRODUCTION (IN TWH)



Source: Eurostat

- The new historical low in annual EU natural gas consumption was registered alongside a contraction of the Gross Domestic Product (GDP) in the EU in the second, third and fourth quarters of 2012 relative to the same quarters of 2011. The contraction in the fourth quarter was -0.6% relative to the fourth quarter of 2011.

FIGURE 2 - EU 27 GAS CONSUMPTION Q/Q-4 CHANGE



Source: Eurostat

FIGURE 3 - EU 27 GDP Q/Q-4 CHANGE (%)

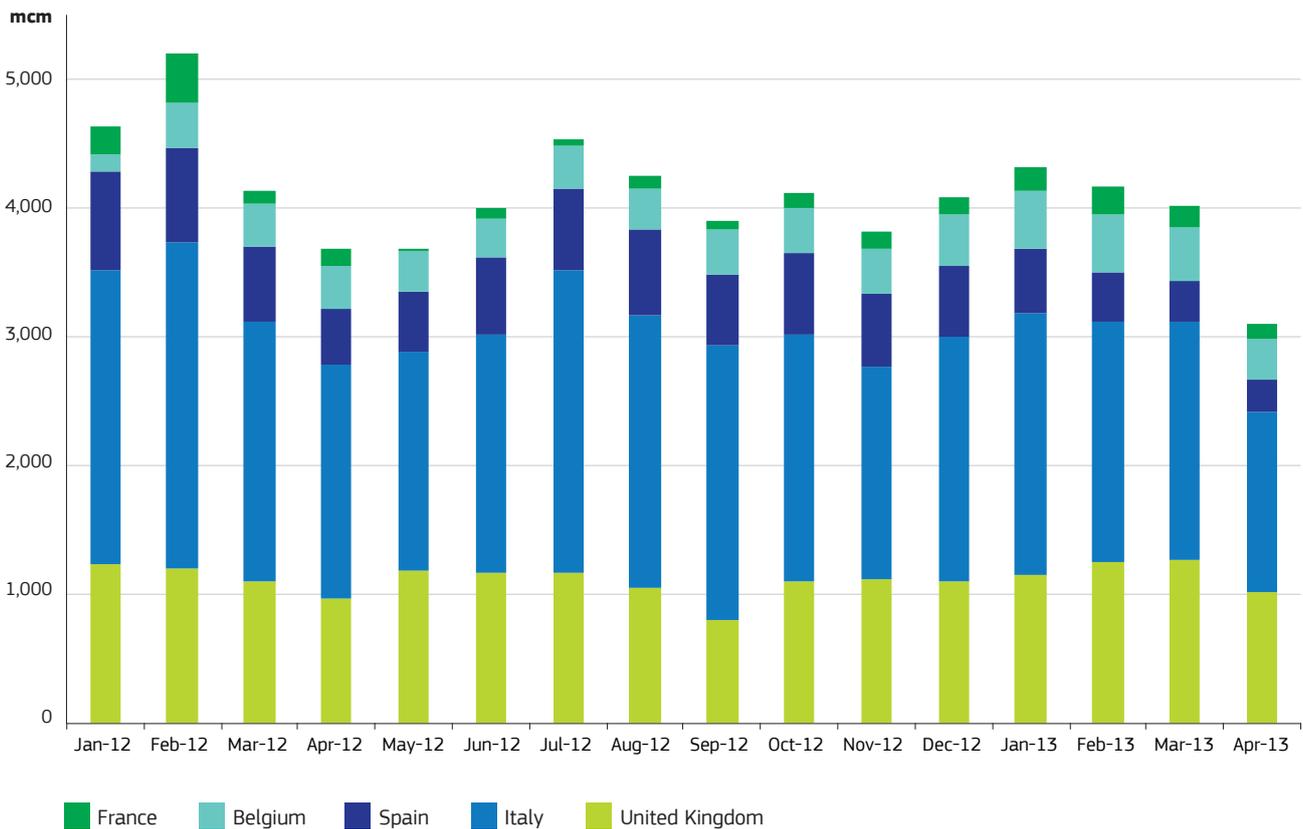


Source: Eurostat

- In Q1 2013, weather was also an important determinant of natural gas consumption. Whereas in January and February 2013 the number of heating degree days continued to be close to the long-term average, March 2013 experienced a particularly high number of heating degree days, far exceeding the long term average (see Figure 13 in section 4).

- Across the UK, Italy, Spain, Belgium and France as a whole, in Q1 2013 gas consumption in the power generation sector went down by 11% relative to Q1 2012. In Spain the drop was 43% in Q1 2013 relative to the same period in 2012, against strong RES generation (especially given high precipitation levels that boasted hydro generation). Gas consumption in the power sector fell by 16% in Italy and remained fairly stable in the UK. With two nuclear reactors offline since the summer of 2012, in Q1 2013 Belgium saw an increase of 65% of gas for power burn relative to Q1 2012.

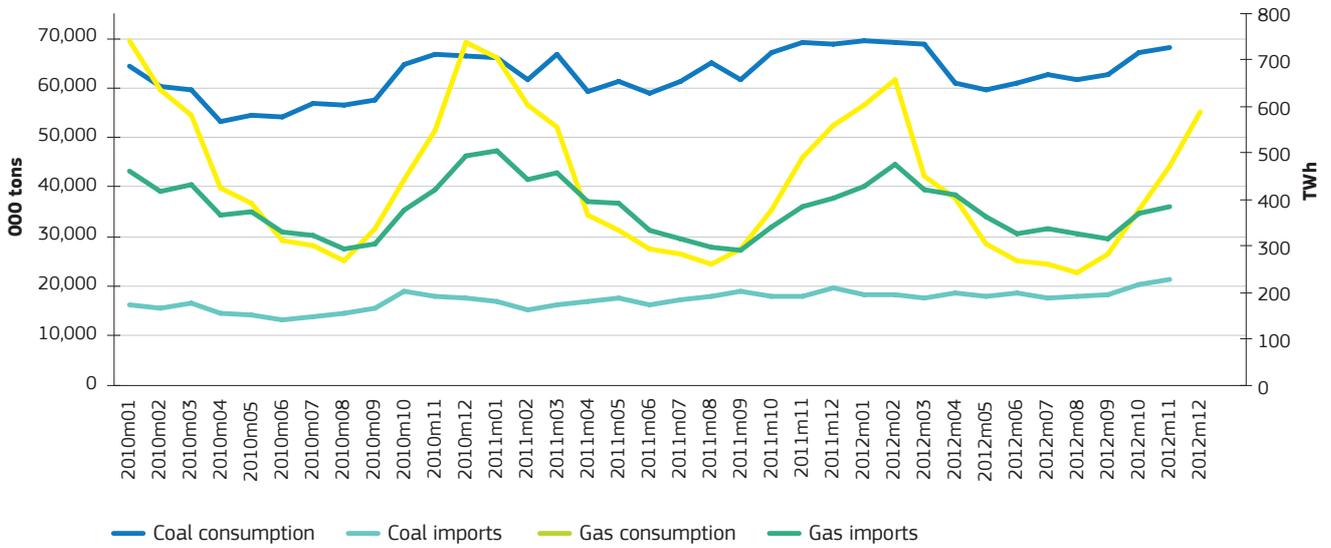
FIGURE 4 - GAS-FIRED POWER GENERATION IN SELECTED EU COUNTRIES



Source: Bentek/Platts

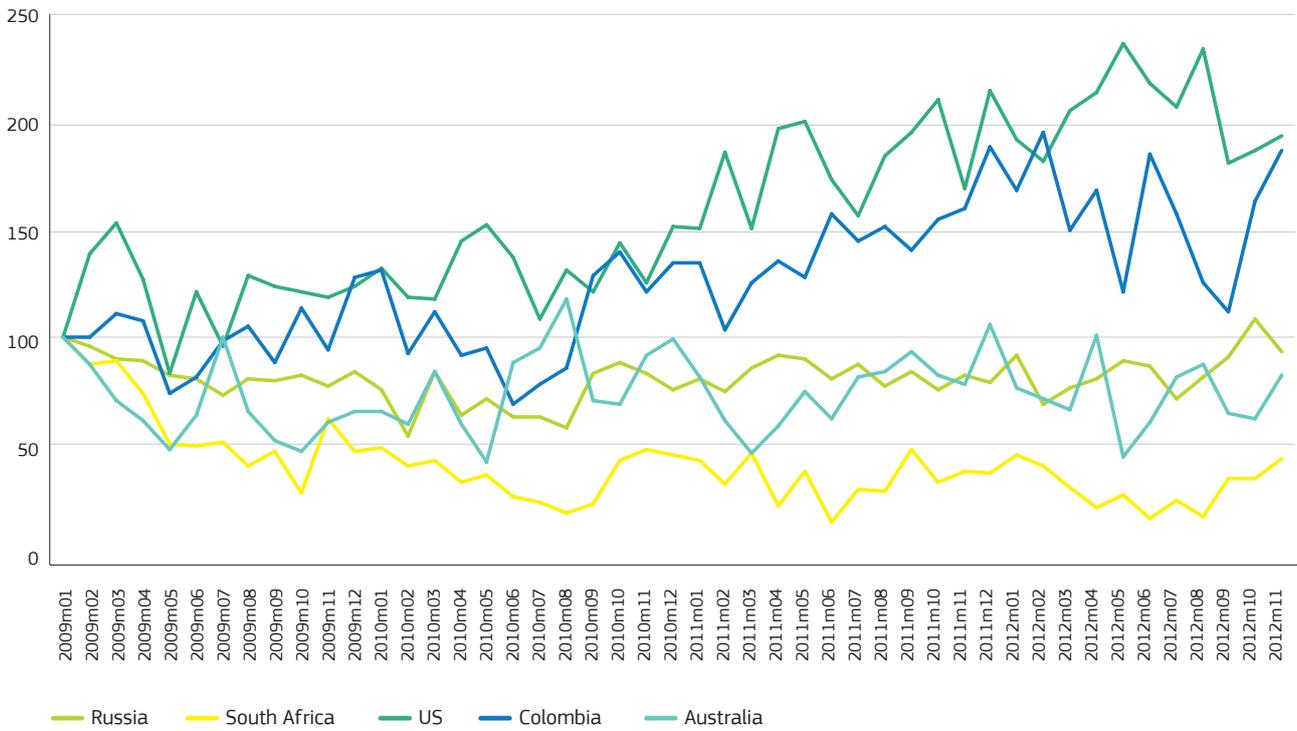
- As reported in previous issues of this report, the developments in gas consumption are in stark contrast with the recent evolution of consumption and import of coal to the EU. The graph below shows that alongside the 4% annual decline in gas consumption, EU consumption of coal (in this graph, hard coal and lignite) has stayed relatively stable and imports have increased by almost 9% over the first 11 months of 2012, relative to the same period in 2011.
- In the UK and Spain, coal consumption (hard coal and lignite) increased by 28% in the first 11 months of 2012 while in France coal consumption grew by 16% and in Germany by 3%. The largest growth in coal consumption was observed in Ireland (doubling of coal consumption in the first 11 months of 2012) and Portugal (+38% over the same period).

FIGURE 5 - EU 27 CONSUMPTION AND IMPORTS OF GAS AND COAL



Source: Eurostat : Left-hand scale: Coal. Right-hand scale : gas
 Note: Left-hand scale: coal. Right-hand scale: gas

FIGURE 6 - EU 27 HARD COAL IMPORTS – FIVE LARGEST EXPORTERS (INDEX, JANUARY 2009=100)



Source: Eurostat

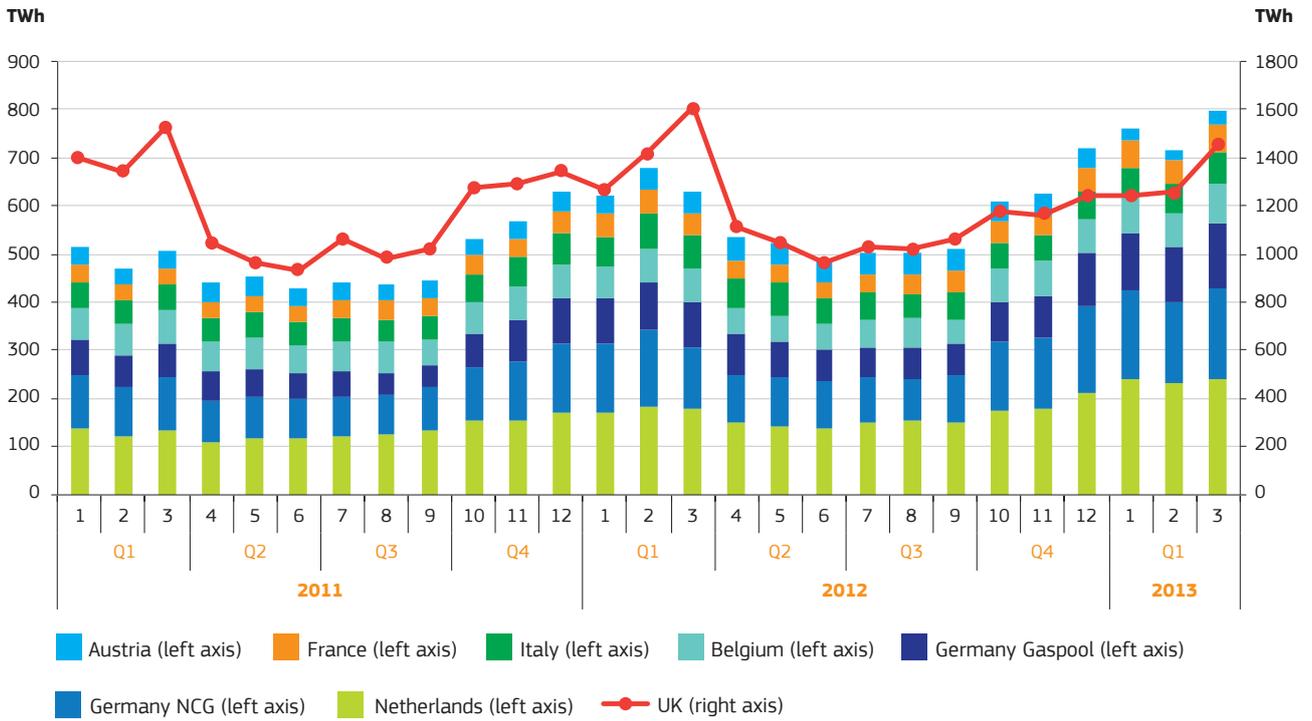
2. Traded volumes on European gas hubs

- In the first three months of 2013 a total of 6,240 TWh was traded on the European gas hubs. The UK NBP hub – the largest and most liquid hub in the EU – traded almost 4,000 TWh, compared to 715 TWh on the Dutch TTF hub and a total of 718 TWh on the two German hubs (366 TWh on Gaspool and 538 TWh on NCG).
- Relative to the first quarter of 2012, the total traded volumes on all hubs remained stable. Three of the continental hubs – Netherlands' TTF and the two German hubs Gaspool and NCG – saw growth in traded volumes of 35%, 28% and 25%, respectively. Traded volumes on NBP dropped by 8% relative to the first quarter of 2012.
- Relative to the previous quarter (2012 Q4), traded volumes increased by 13% with TTF and Gaspool experiencing an increase of 27% and 29%, respectively. Traded volumes on the NBP increased by 11% relative to the previous quarter.
- The volumes physically delivered on EU hubs over the first quarter of 2013 increased by 10% relative to the same period in 2012. The increase was most pronounced in Zeebrugge and Gaspool: +33% and +25%, respectively. Compared to the previous quarter (2012 Q4), the growth in physically delivered volumes increased the most on the TTF (+38%) and was in the range of 17-19% for Gaspool, NCG and NBP.
- In 2011, the volumes physically delivered on EU hubs covered about 70% of the total consumption of natural gas in the countries covered by those hubs (UK, NL, BE, DE, FR, AT and IT). In 2012, this proportion went beyond 80%, showing that the role of trading hubs as an instrument for exchange of natural gas ownership in the EU continues to increase.

Some words on the difficulties in comparing trade volumes...

- Direct comparisons of the traded volumes reported on different hubs should be done with great caution because of the lack of a standard reporting format and the lack of universal definitions used by hub operators. For example, it appears that traded volumes reported by most – but not all – hub operators are nominated values of the active traders, representing netted positions of all trades between two nominating counterparts. Thus, for example, TTF trades without a nomination – such as financial trades – are not registered by the national transmission operator GTS, which reports the traded and physically delivered volumes on TTF. As a consequence of this netting, for hubs such as NBP and especially TTF the traded volumes published by market analysts such as ICIS-Heren and London Energy Brokers' Association (LEBA) are much higher than nomination-based volumes reported by hub operators.
- Another minor discrepancy in reported volumes comes from different conversion factors for natural gas by country of origin and depending on the temperature (e.g. conversion factors for m³ at 20 degrees Celsius or at 0 degrees Celsius).
- Note that traded volumes reported for Austria's CEGH in 2013 are not directly comparable to the traded volumes reported up to the end of 2012 due to the introduction of the entry-exit model in Austria, which has fundamentally changed the calculation method of the hub traded quantities due to the fact that 'entry-cells' are no longer included in the statistics of the hub operator.

FIGURE 7 - TRADED VOLUMES ON EUROPEAN GAS HUBS



Sources: National Grid (UK), GTS (Netherlands), Huberator (Belgium), Gaspool (Germany), NCG (Germany), GTTGaz (France), Snamrete (Italy), CEGH (Austria).

The chart covers the following trading hubs:

UK: NBP (National Balancing Point); Belgium: Zeebrugge beach, ZTP and ZTPL; Netherlands: TTF (Title Transfer Facility); France: PEG (Point d'Echange Gaz); Italy: PSV (Punto di Scambio Virtuale); Germany: GASPOOL and NCG; Austria: CEGH (Central European Gas Hub)

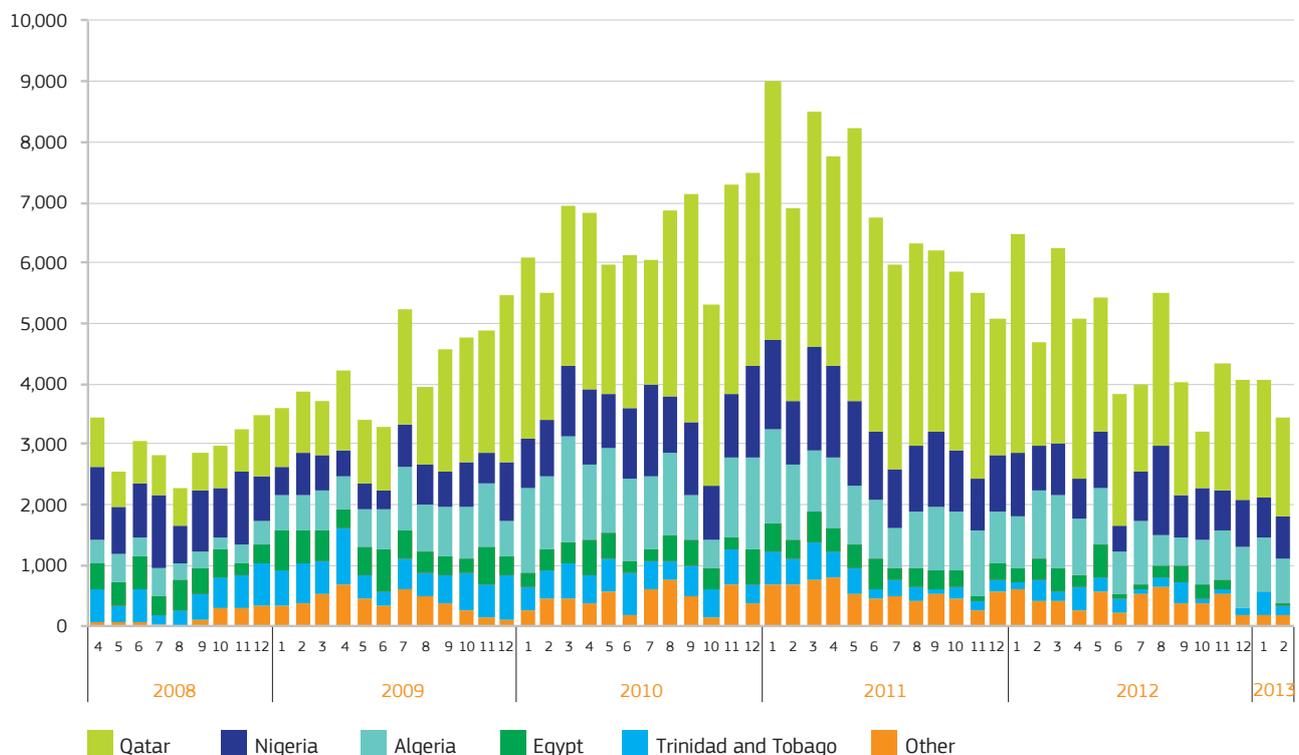
Note: CEGH volumes after January 2013 are not directly comparable with the values before that date due to the entry into force of entry/exit system.

3. LNG volumes

- LNG imports began falling in the second quarter of 2011 and this trend continued in 2012 with volumes going down by 31% in 2012 relative to 2011, while gross inland consumption of natural gas decreased much more modestly (-4%).
- Imports from Qatar, Nigeria and Algeria went down by 35%, 31% and 18%, respectively, in 2012, on a yearly basis. This trend continued in the first two months of 2013 with LNG import volumes falling by similar proportions as in 2012 for the three largest exporters of LNG to the EU (-34%, -24% and -16% for Qatar, Nigeria and Algeria, compared to the first two months of the previous year).
- In 2012, LNG imports into Belgium and the UK almost halved compared to 2011. In the first two months of 2013 this trend continued: LNG imports to the UK went down by 52%, to Belgium by 61% and to Spain by 23% relative to the first two months of 2012.
- Low LNG import volumes were one of the drivers behind the price spikes on the NBP in March 2013 (see section 5).
- Data from Bentek on LNG sendout - gas flowing out of LNG terminals into pipelines - show that in the first quarter of 2013 LNG sendout to the grids in the UK, Belgium and the Netherlands was down by about 60% relative to the same period last year. The drop was in the range of 30% in the case of Spain, Italy and Portugal and 40% in the case of France.

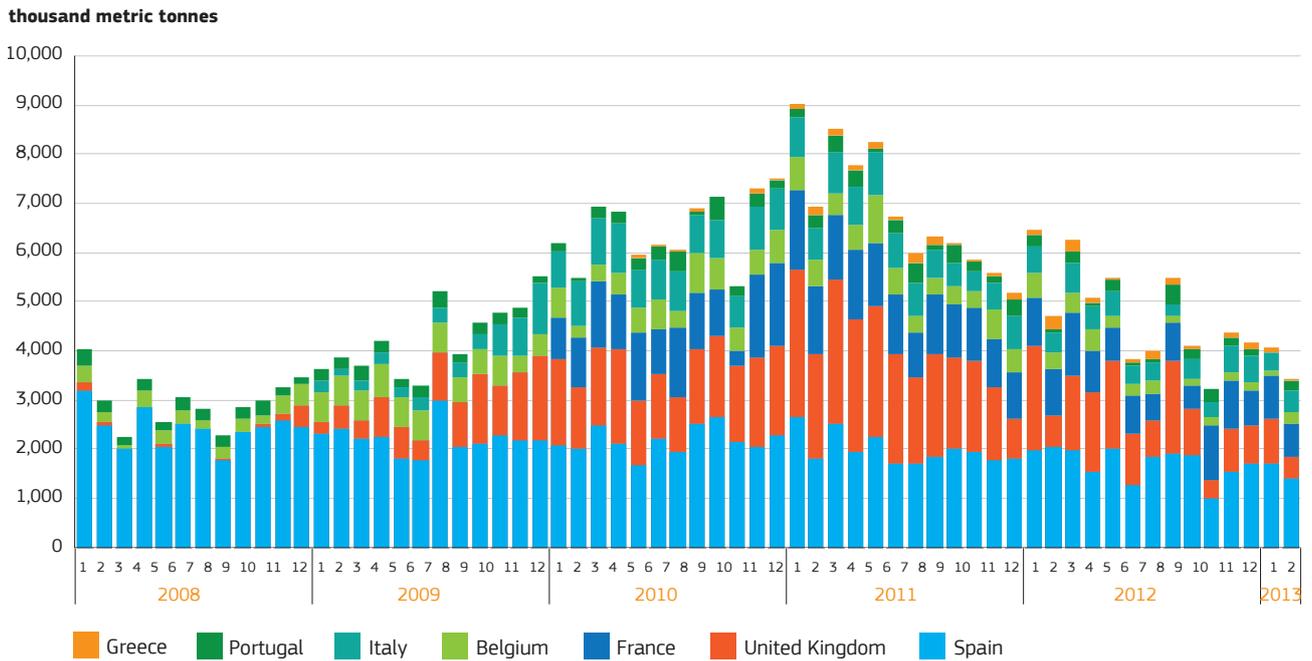
FIGURE 8 -- EU LNG IMPORTS BY COUNTRY OF ORIGIN

thousand metric tonnes



Source: Eurostat COMEXT

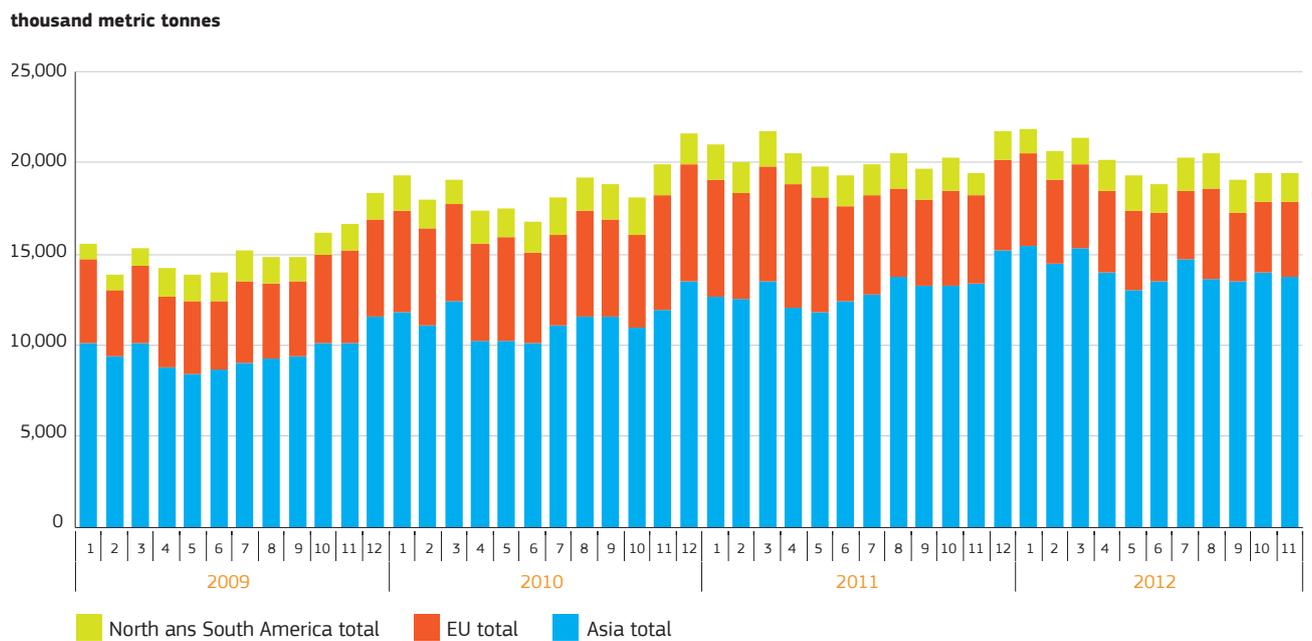
FIGURE 9 - EU LNG IMPORTS BY MEMBER STATE



Source Eurostat COMEXT Italian data reported from January 2009. French data reported from January 2010.

- Globally LNG imports have remained fairly stable over the course of 2011 and 2012, but the share of the EU in global imports decreased from 27% in 2011 to 21% in the first 11 months of 2012, while the share of LNG imports into Asia in world imports has grown from 64% to 70%.

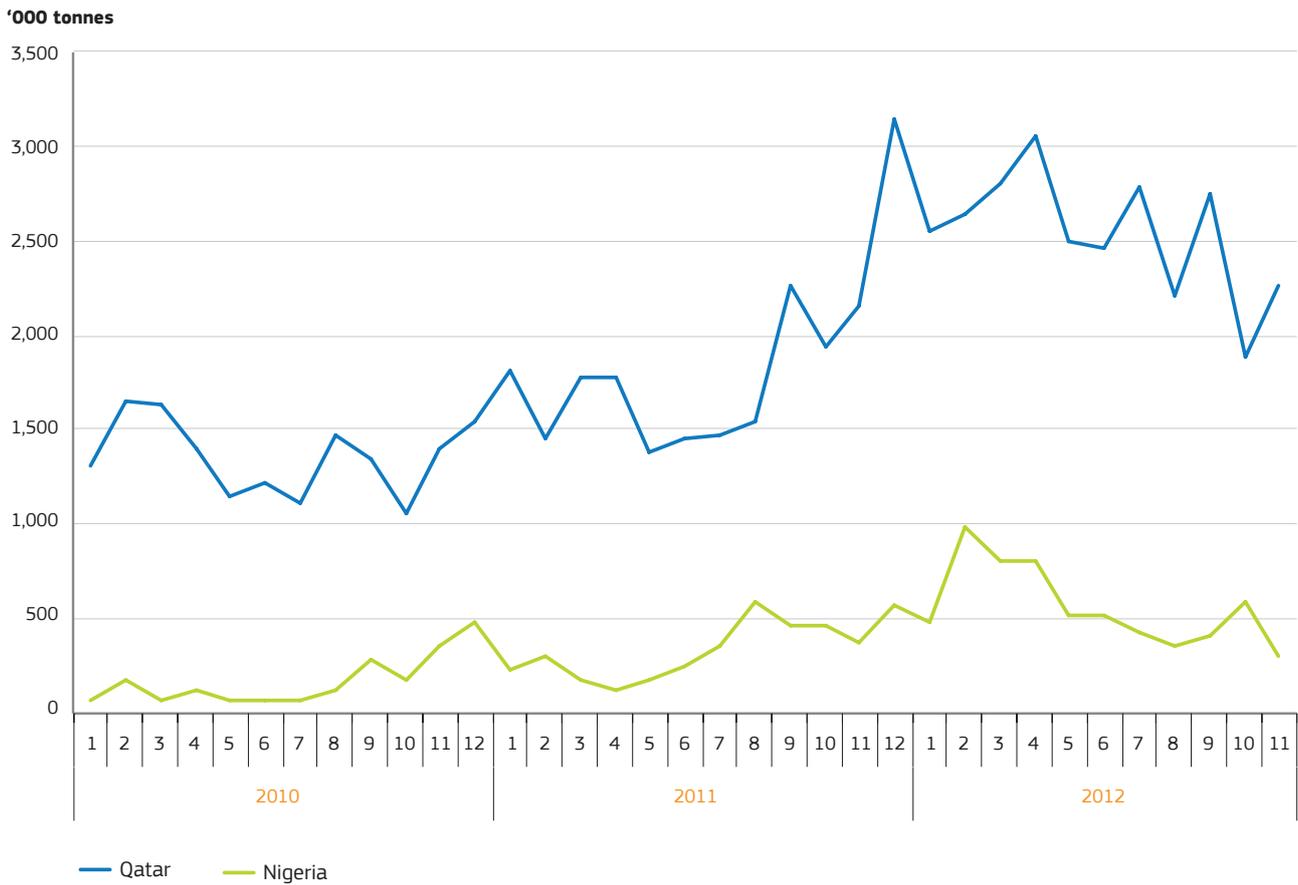
FIGURE 10 - WORLD LNG IMPORTS BY REGION



Source: Thomson-Reuters; Waterborne

- Over the first 11 months of 2012, LNG export volumes from Qatar to Japan, Korea and China increased by 46% relative to the same period in 2011. LNG volumes from Nigeria to these three Asian countries grew by 76% in the same period. This shows the increasing appetite of the region for LNG. In absolute terms, the Asia-Pacific region increasingly depends on global LNG supplies, a trend that has intensified over the period 2007-2011 with near doubling of Qatari supplies.
- The IEA forecasts total Asian-Pacific LNG imports from other regions of the world to grow by 62% in the period 2011-2017.

FIGURE 11 - LNG IMPORTS FROM QATAR AND NIGERIA TO JAPAN, KOREA AND CHINA

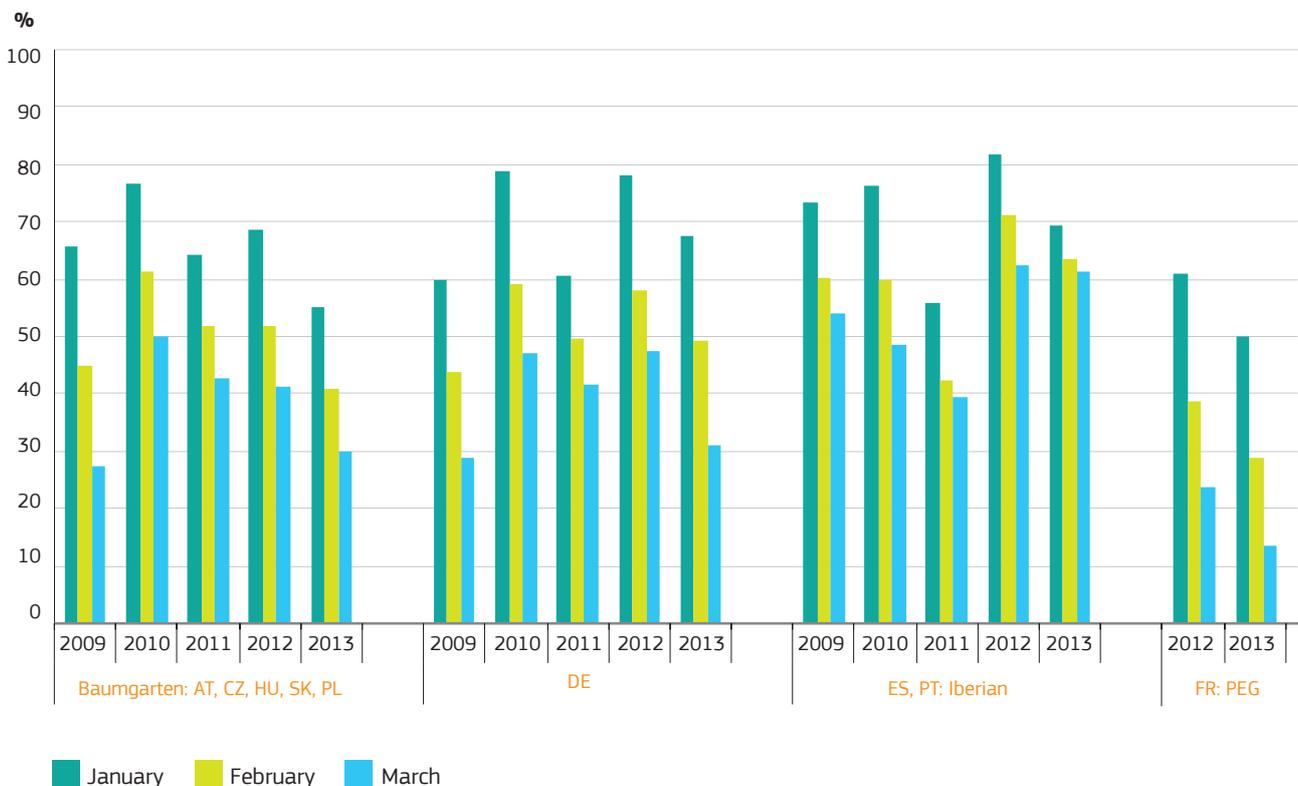


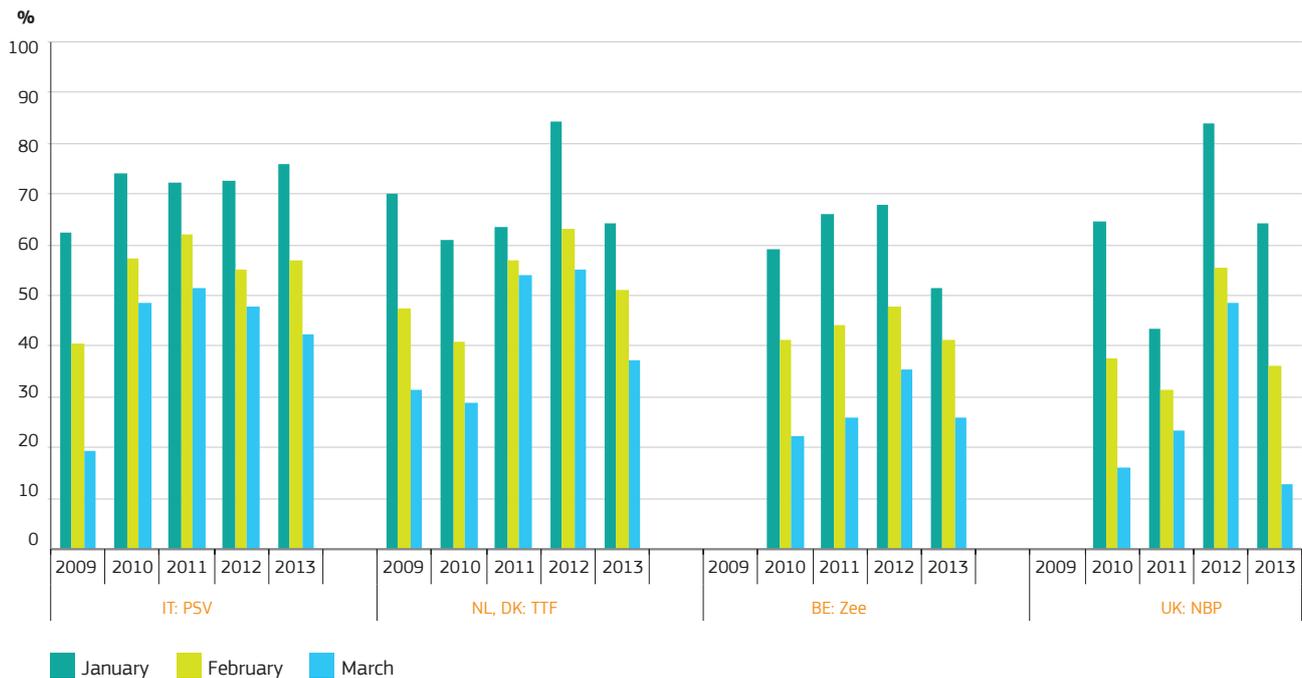
Source: Thomson-Reuters; Waterborne

4. Gas Storage and heating degree days

- The chart below provides a comparison of the storage levels for the first quarter of the years 2009-2013 in the various regions covered by the EU's hubs.
- Q1 2013 storage levels were significantly lower than Q1 2012 levels, reaching critical levels at the end of March 2013 in some Member States. At the end of March 2013 storage levels across Europe were at around 30% of capacity; in comparison a year earlier injections had already begun and levels were half full.
- Storas facilities in the UK were the lowest in Europe with the average values for March at only 14% and below 5% in late March and early April. Late March saw storage levels dropping below 10% in France and below 25% in Germany and the Baumgarten area.
- Very high demand and reduced LNG sendout led to record storage withdrawals for this time of year across Europe.
- The risk of storage depletion was a factor in the March price spike in NBP prices (see section 5.3): with unusually high demand due to low temperatures and LNG deliveries remaining thin, the UK became heavily reliant on storage withdrawals.

FIGURE 12 - GAS STORAGE LEVELS IN GAS REGIONS IN 2012 IN % OF MAXIMUM GAS STORAGE CAPACITY

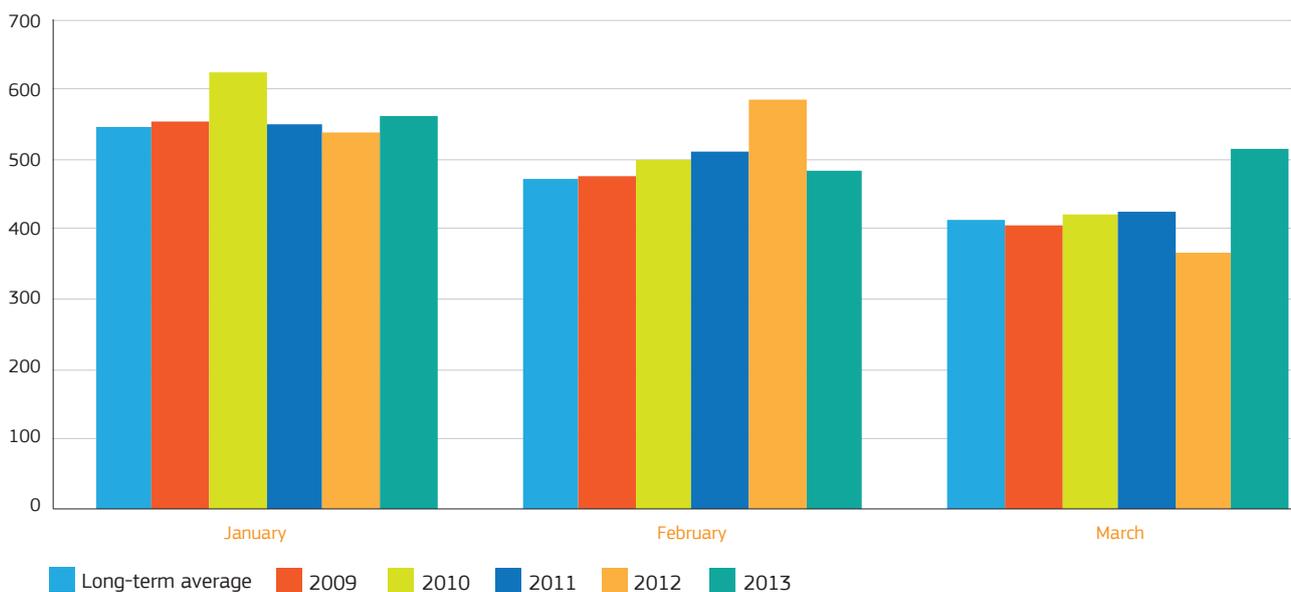




Source: Gas Infrastructure Europe

- As can be seen in the chart further below, temperatures in January and February 2013 for the EU as a whole expressed in heating degree days did not show significant deviations from the long term average values nor from temperatures for the same period in recent years. In contrast, temperatures in March 2013 were much lower than the long-term average temperatures in this month with heating degree days in March 2013 exceeding the February 2013 values.
- General decreases in gas storage levels across the EU have been driven by the falling price differential in recent years between winter and summer gas, which has decreased the incentive to buy in the summer, when prices can be expected to be lower, in order to stock for use in the winter, when prices, and demand, increase.

FIGURE 13 - EU 27 HEATING DEGREE DAYS (HDDs)



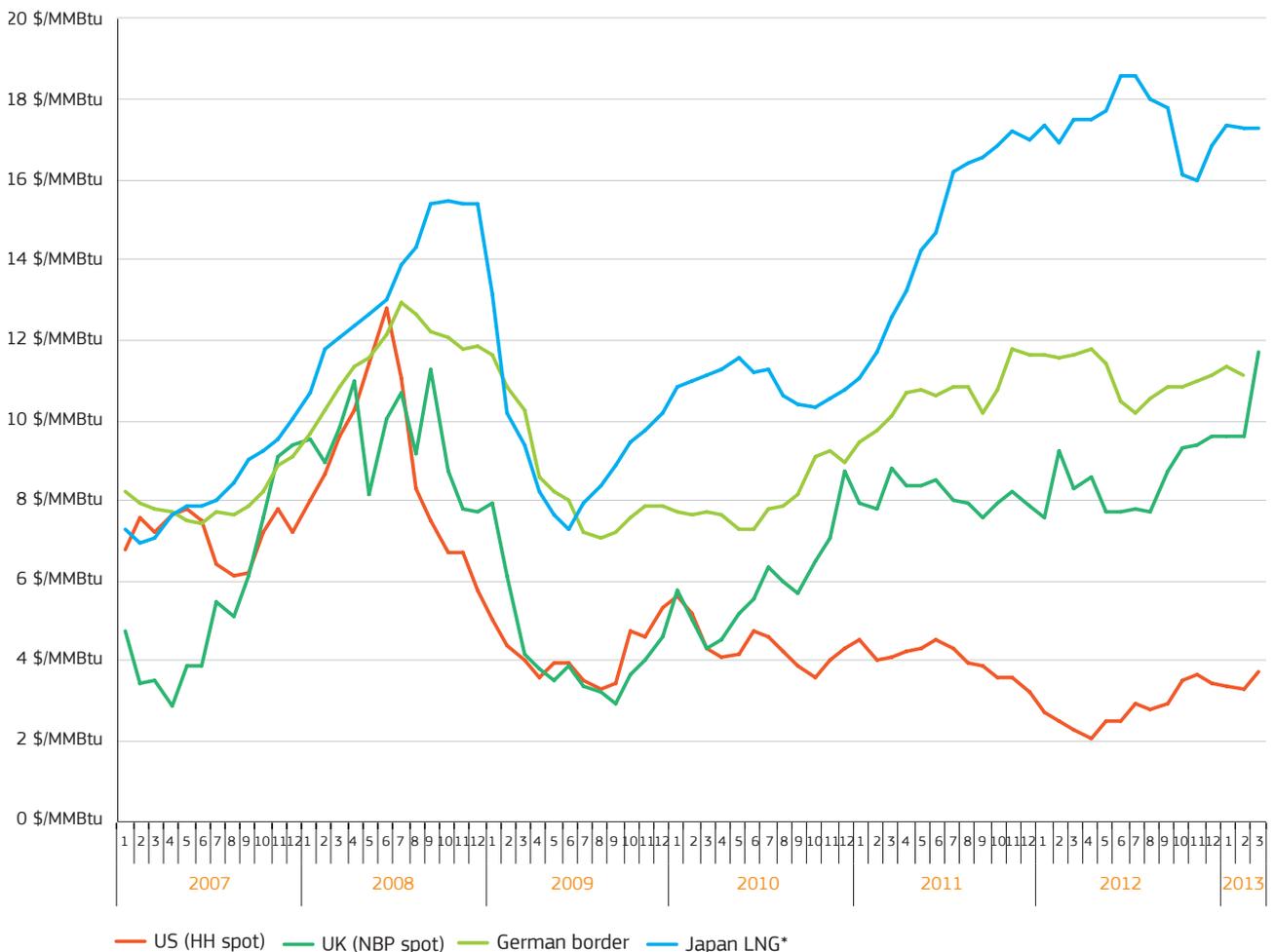
Source: Eurostat/JRC. The colder the weather, the higher the number of HDDs.

5. Wholesale Gas prices

5.1 International comparisons

- The evolution of the benchmark UK NBP and US Henry Hub spot prices, along with LNG prices for Japan and the German border price, illustrate the continuing variation among global wholesale prices for natural gas. With the price spike on the NBP in March 2013 pushing spot prices to record highs, on average in Q1 US wholesale consumers of natural gas paid around 65-70% less than customers on the UK's NBP and wholesale customers in Germany.
- LNG prices in Japan over Q1 were almost four times higher than spot prices in the US and around 40% higher than spot prices in the UK and border prices in Germany.

FIGURE 14 - INTERNATIONAL COMPARISON OF WHOLESALE GAS PRICES

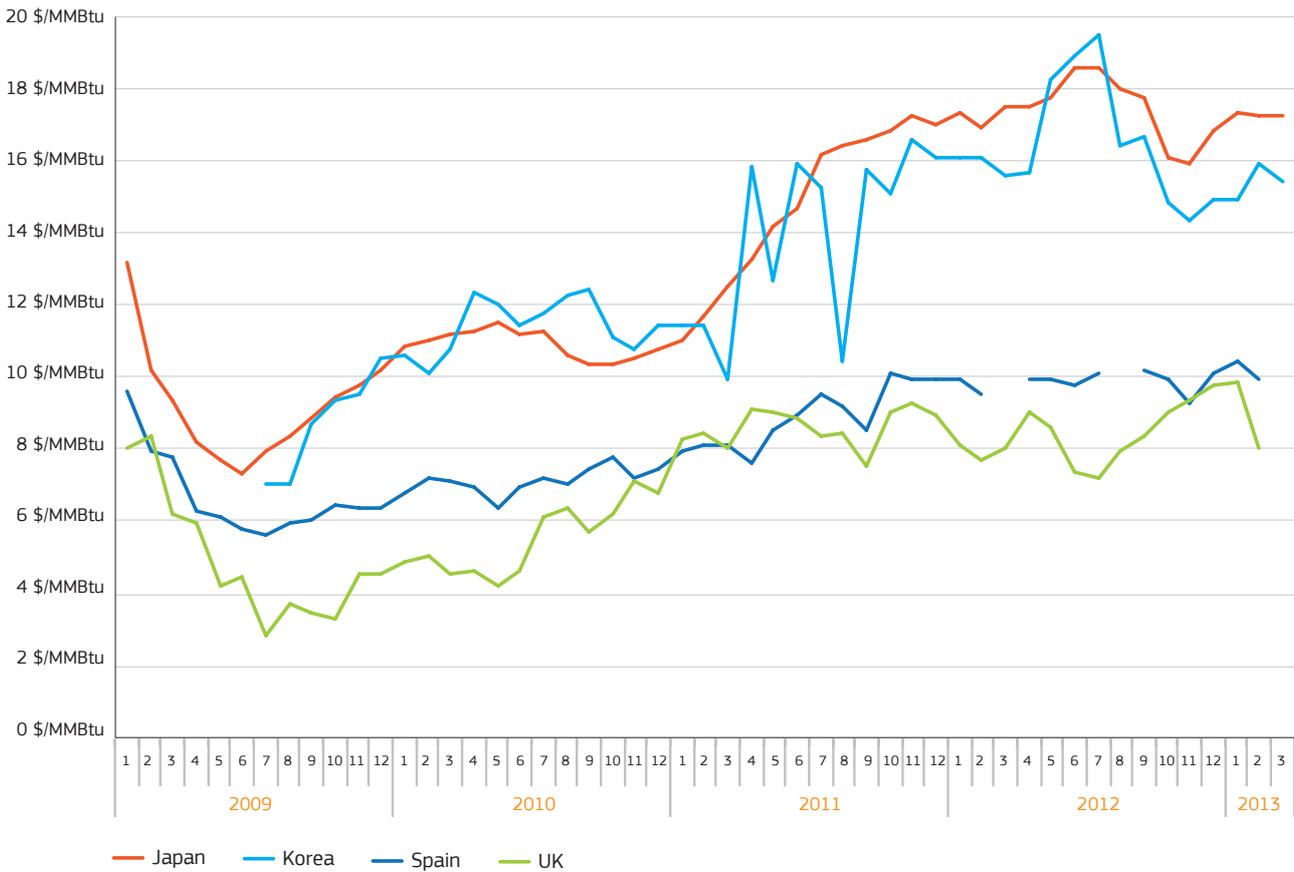


Source: Sources: Platts, Thomson Reuters

For Japan: average price of four largest suppliers: Qatar, Malaysia, Indonesia and Nigeria

- The spot price on the UK NBP surged to a record high (42 Euro/MWh on 22 March 2013, see section 5.3 below), slightly exceeding the levels seen during the cold spell of February 2012, and exceeding the German border prices, but still remaining well below Japan LNG prices.
- If we turn to the graph below, showing a comparison of LNG prices in competing markets of the EU, Korea and Japan, it can be seen that Korea and Japan remained attractive markets to LNG exporters in the first quarter of 2013. The premium relative to EU LNG contracts remains large with average EU LNG prices about 60% below the average price paid by Japan in February 2013 and 45% below average prices paid by Korea. The average price paid for LNG in Korea was estimated at 15.9 USD/MMBtu in February 2013 and that in Japan was estimated at 17.28 USD/MMBtu.

FIGURE 15 - LNG PRICES IN THE EU, US, JAPAN AND KOREA



Source: Thomson-Reuters Waterborne, Eurostat Comext, European Commission estimations

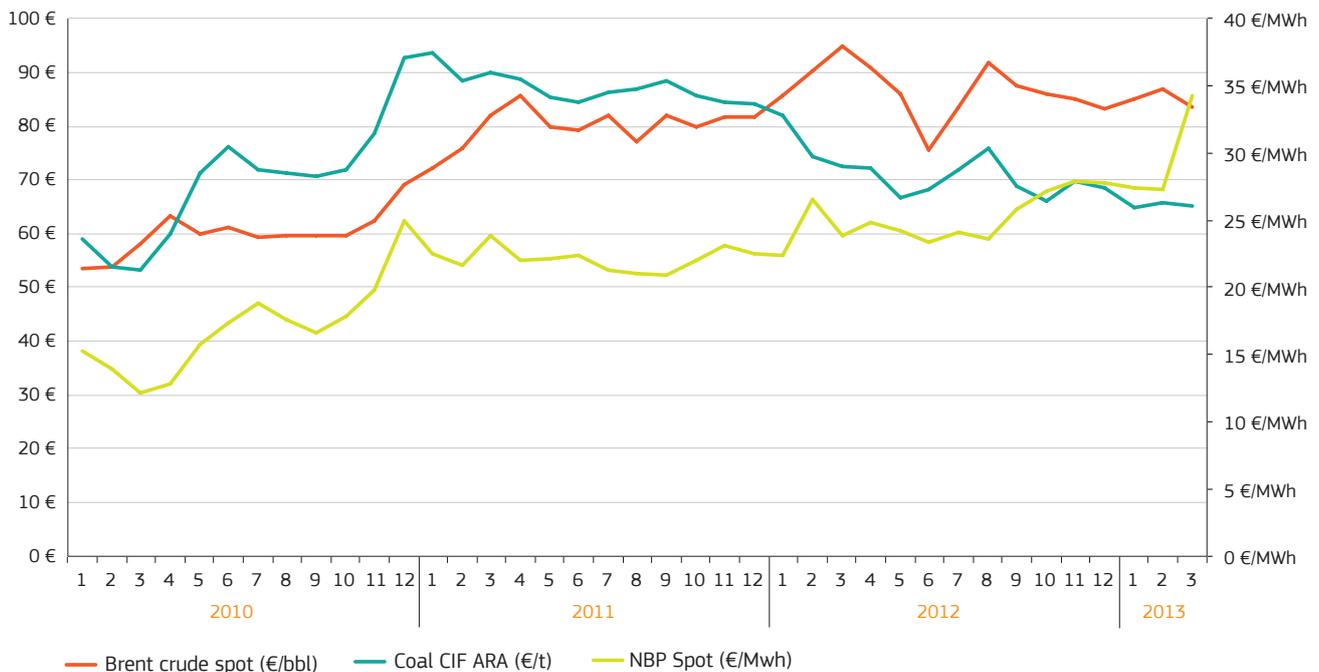
Note: Prices for Japan are average of the prices from its four largest suppliers (Qatar, Malaysia, Indonesia and Nigeria). Prices for Korea are averages of the prices of its three largest suppliers (Qatar, Indonesia and Oman)

- The premium offered by Japan for LNG imports represents a continued incentive for exporters, which would explain falling LNG deliveries to the EU. The IEA points that producers located in the Middle East (Qatar) are well-positioned to be the swing producers to both Asian and Atlantic basins. As highlighted in the previous issue of this report, it is estimated that it costs an exporter such as Qatar some 4 USD/MMBtu for the extra costs of freight to Japan. It means that it remains profitable for exporters to send volumes there rather than to Europe.

5.2 Comparisons between oil, gas and coal prices in the EU

- As we have highlighted in recent issues, there has been a clear decoupling between coal prices on the one hand and oil and gas prices on the other since 2011. During the 12 months to February 2013, the EU coal price fell by 19% relative to the 12 preceding months, while the price of oil increased by 5% and that of natural gas also increased, by 14%.

FIGURE 16 - SPOT PRICES OF OIL, COAL AND GAS IN THE EU

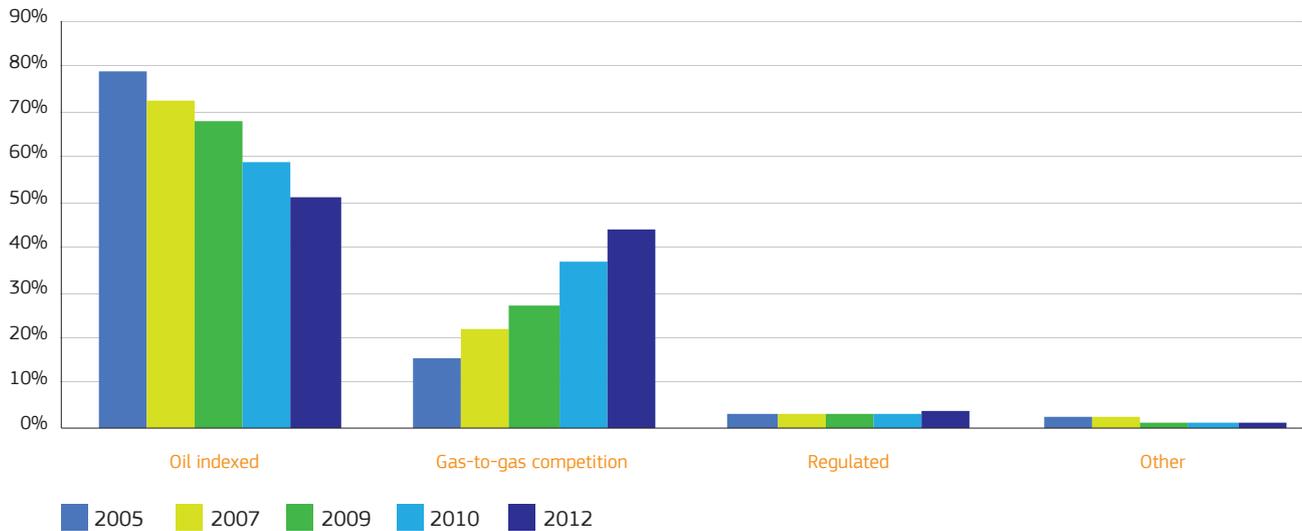


Source: Platts

Note: Left scale: oil (Brent, €/bbl) and coal (CIF ARA €/tonne). Right scale: gas (UK NBP, €/MWh)

- The different price dynamics between the various energy commodities is important as it has been defining demand. EU coal demand and imports have been sustained as prices for the commodity have been falling. In contrast, demand for natural gas has been falling as prices have been rising.
- In terms of power generation, coal-fired power generation remained profitable in the first quarter of 2013 as shown by the evolution of clean dark spreads in Germany and the UK (see the latest issue of the Commission's Quarterly Report on Electricity Markets). In contrast, German day-ahead clean spark spreads continued falling as strong renewables generation heightened the disconnect between power and gas prices and unprecedented levels of production from German wind and solar plants gave rise to negligible profit margins for CCGT even at times of peak demand. UK day-ahead spark spreads were extremely volatile in March, with overall March average remaining weak.
- Turning to wholesale gas price formation in Europe, data from the 2012 annual survey on wholesale price mechanisms by the International Gas Union shows that 44% of gas consumption in Europe was priced on a gas-on-gas competition basis, as opposed to 51% which was still oil-indexed. The share of gas-on-gas priced volumes has increased by a factor of 3 since 2005 and by more than 7% over the period 2010-2012. In contrast, oil-indexed consumption has gone down from representing almost 80% of consumption in 2005 to 51% in 2012.
- Strong regional differences persist in price formation mechanisms with about 70% of gas in North-West Europe (defined in the survey as UK, Ireland, France, Belgium, Netherlands, Germany, Denmark) priced on a gas-on-gas basis in 2012, compared to less than 40% in Central Europe (Austria, Czech Republic, Hungary, Poland, Slovakia and Switzerland). Nevertheless, the International Gas Union survey reveals that the share of gas-on-gas competition has doubled in Central Europe over the period 2010-2012.

FIGURE 17 - WHOLESALE GAS PRICE FORMATION MECHANISMS IN EUROPE (% OF CONSUMPTION)



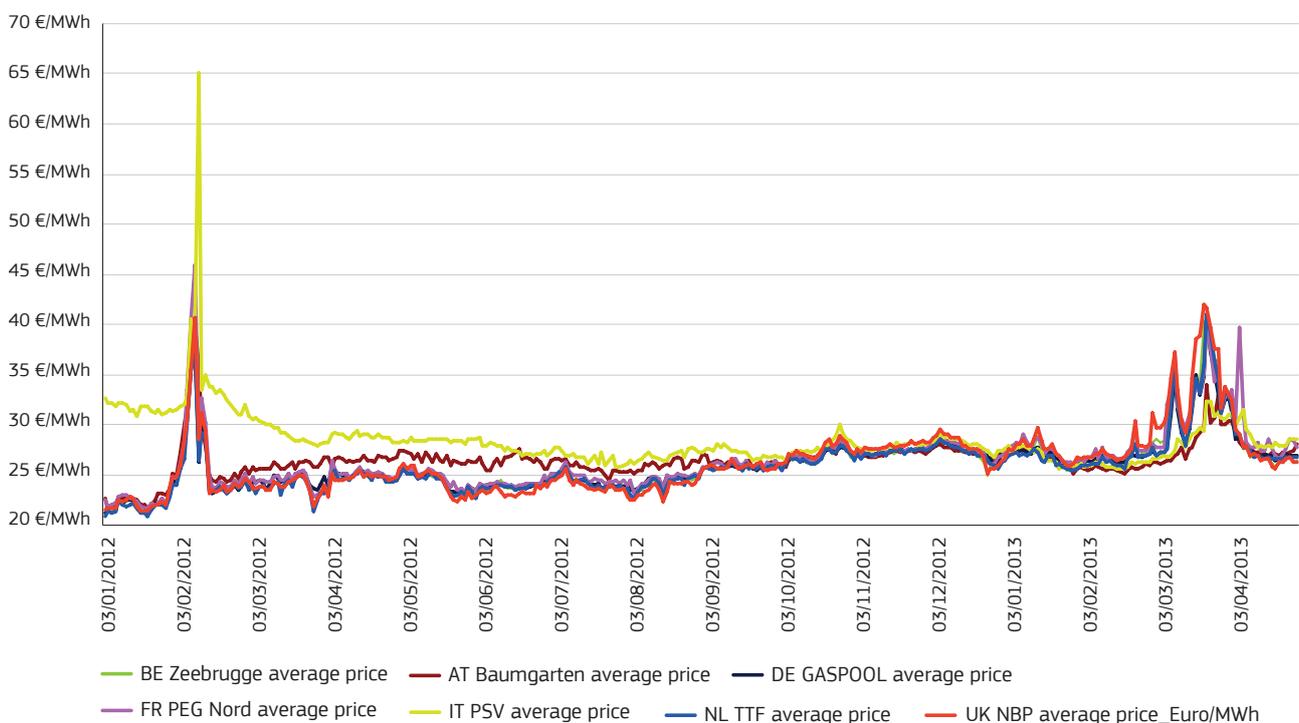
Source: International Gas Union

5.3 Wholesale gas prices on gas hubs in the EU

- The graph below shows the evolution of European hub day-ahead natural gas prices in the period from January 2012 until the end of April 2013. Over the last quarter of 2012 and in January 2013 there was a remarkable convergence in those prices with the difference between the highest and the lowest day-ahead hub price in the range of 1-2 Euro/MWh.
- European spot gas prices were stable between January and mid-February 2013. The situation changed after mid-February and especially during March 2013, on account of a surge in demand due to a late season cold snap, and a tight supply situation represented by low LNG import volumes and low storage levels.
- Day-ahead prices averaged upwards of 30 €/MWh in March on most of the hubs – NBP, Zeebrugge, TTF, Gaspool, NCG and the PEGs. Zeebrugge and NBP were the highest priced hubs in March and – together with Gaspool, NCG and TTF – went beyond the 40 €/MWh mark on some days. Ultimately, hub prices rose sufficiently to attract piped gas to high demand areas of Europe.
- Over the month of March, Italian prices – which typically trade at a premium to other hubs – remained stable and, together with Baumgarten prices, were the lowest among all European hubs. Italian gas storage levels were high.
- The difference between the highest and the lowest day-ahead hub price went up to 12 €/MWh and was above 6 €/MWh for most days in March 2013. Day-ahead prices started converging again in April even though the French PEGs remained higher than other hubs.
- Subsiding stock levels in the UK and France boosted demand for gas from German storage sites. Over March, the average UK price was above the Dutch hub price, which in turn was priced above the German gas hubs. These price differentials promoted strong pipeline flows to the UK, including gas from Germany’s storage facilities which was shipped via the Dutch market, and then from the Dutch market into the UK via the BBL pipeline and the Interconnector.
- Over the whole March, NBP day-ahead prices stayed in the range of 30-40 Euro/MWh, peaking at 42 Euro/MWh on 22 March. Extraordinary low temperatures boosted demand to about 370 mcm/d on 25 March 2013 - higher than average winter days’ demand and 40% higher than seasonal average – at a time when gas storage levels were at only 10% . With scarce LNG cargo arrivals to the UK, March 2013 saw a drop in LNG sendout to the National grid at 280 mcm as compared to 328 mcm in February 2013 and 1062 mcm in March 2012. The temporary interruption of supplies via the UK-Belgium Interconnector on 22 March, along with outages on the Norwegian Ormen Lange field that on average provides 20% of UK’s consumption, were other factors contributing to high spot prices on the NBP over the whole March.

- The peak of NBP day-ahead prices at 42 €/MWh on 22 March came alongside a failure of the Interconnector that lasted a few hours; for the first time over 7 years IUK was unable to meet shippers' nominations in full. Within-day trade was seen at about 60 €/MWh on that day, a price level that far exceeds LNG prices in Japan and South America.
- As reported by Platts, the Belgium-UK Interconnector saw record flows already in early March, with 98% of capacity being reached. The Interconnector imported a total of 18,000 GWh to the UK in March 2013, breaking the previous monthly flow record which dated back to August 2003. It also set a new daily flow record on 21 March delivering a total of 787 GWh (over 72 mcm) into the UK. This was one of three daily flow records during the month, with the previous record dating back to February 2006. The Interconnector supplied up to 25% of gas demand in Great Britain during March, and – by allowing a rapid response to changes in the market price differential between the UK and the continent – it allowed access to significant volumes of continental storage gas.
- As regards flows through the BBL pipeline from the Netherlands to the UK, it sold out its flow capacity to the UK.
- An analysis of aggregate flows for the three major supply routes for Russian gas by Platts further points to the benefit of getting gas directly to the German grid at a time when Germany has become the most important transit zone on the European gas network. ICIS Heren reports that gas flows from Russia into Germany through the Nord Stream pipeline reached record highs towards the end of March, with a total of 855 GWh on 26 March, which is 62% more than the daily flow volume of 528 GWh in the first two months of the year. However, even with the increase in direct gas transports from Russia to Germany, the two strings of the pipeline remained far from being fully utilised with flow levels rising to more than half of the 55 bcm/y technical capacity of the two strings. Nonetheless, this represented a significant increase compared to the 27% utilisation rate since the launch of the second string in October 2012.
- The tight supply situation put the UK's supply system under pressure, but no crisis level was declared in accordance with the UK's Emergency Plan and Regulation 994/10 as other supply sources were adequate in providing assurance that no gas supply deficit would occur.

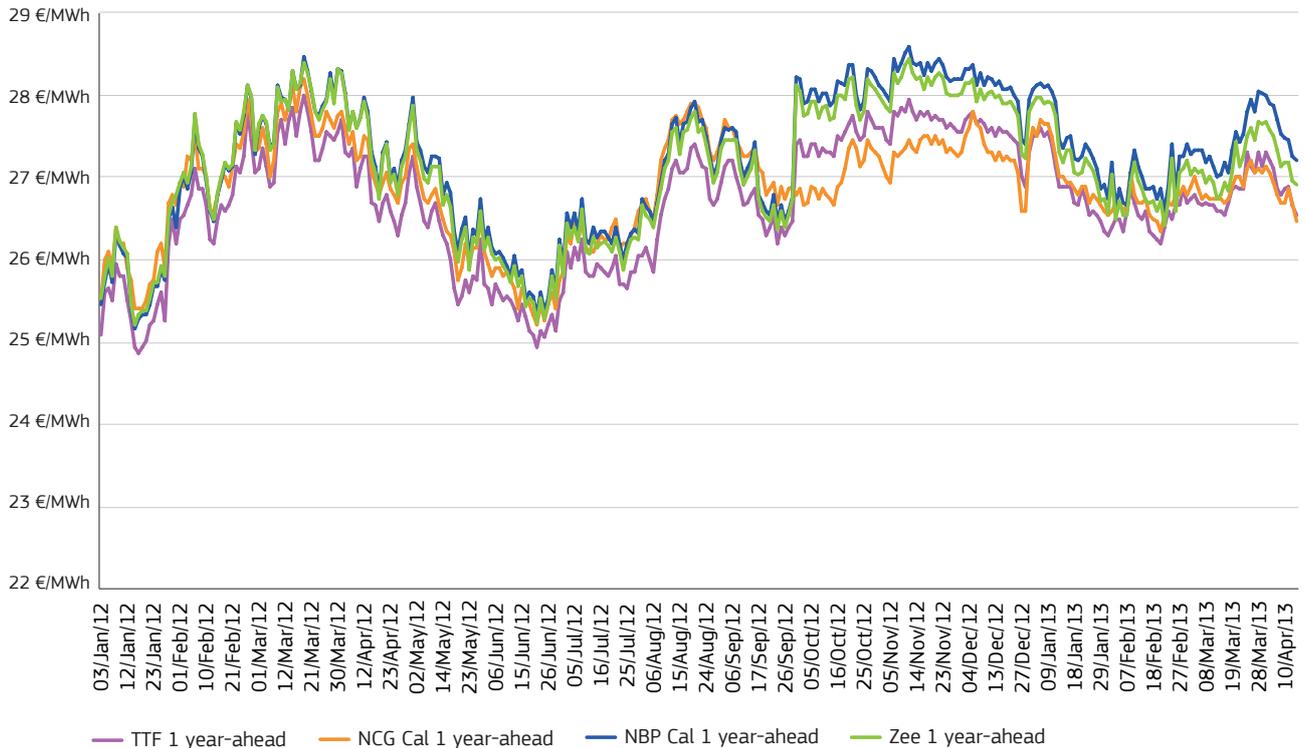
FIGURE 18 – WHOLESALE DAY-AHEAD GAS PRICES ON GAS HUBS IN THE EU



Source: Platts

- At the end of April 2013, when day-ahead prices returned to their pre March-cold snap levels, one year forward prices returned to a situation of slight contango, with continued slight differences between current and one year forward prices.

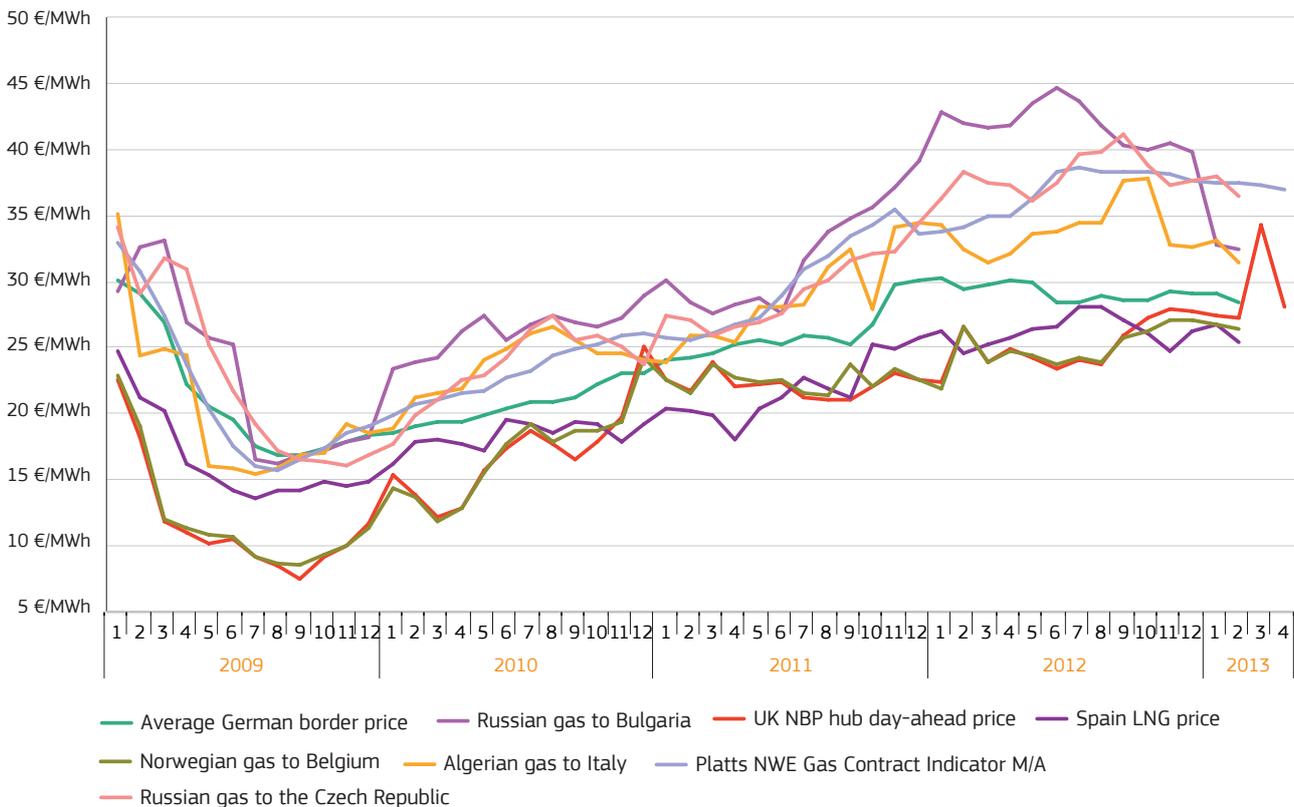
FIGURE 19 – ONE YEAR FORWARD GAS PRICES ON GAS HUBS IN THE EU



5.4 Comparing the prices of different contracts for gas in the EU

- A comparison of different contracts of natural gas prices, as shown in the graph below, shows that despite falling consumption since 2011, the trend over 2011 was generally one of continued increases in natural gas prices. Since 2012, one could observe some stability and a drop in the highest wholesale price estimations in this selection, most notably the price estimate of Russian gas to Bulgaria and the Czech Republic.
- If we focus on the selection of estimated border prices for piped gas in the EU shown in the graph, we can see that there is a great deal more variation in levels and in evolution.
- As already discussed, spot prices on NBP skyrocketed in March 2013 and exceeded oil-linked levels on some days in March, even if the average price in March on NBP was still lower than the Platts North West Europe Gas Contract Indicator (which shows a theoretical price under a traditional oil-linked import contract without any discounts). The average NBP spot prices in March, which traditionally are the lowest in Europe, exceeded the levels of all price estimates reported in the selection below, except the price of Russian gas to the Czech Republic. In March 2013, NBP spot was above the average German border price, the LNG price to Spain and even the usually much higher priced Russian imports to Bulgaria and Algerian imports to Italy.

FIGURE 20 – COMPARISON OF EU WHOLESALE GAS PRICE ESTIMATIONS

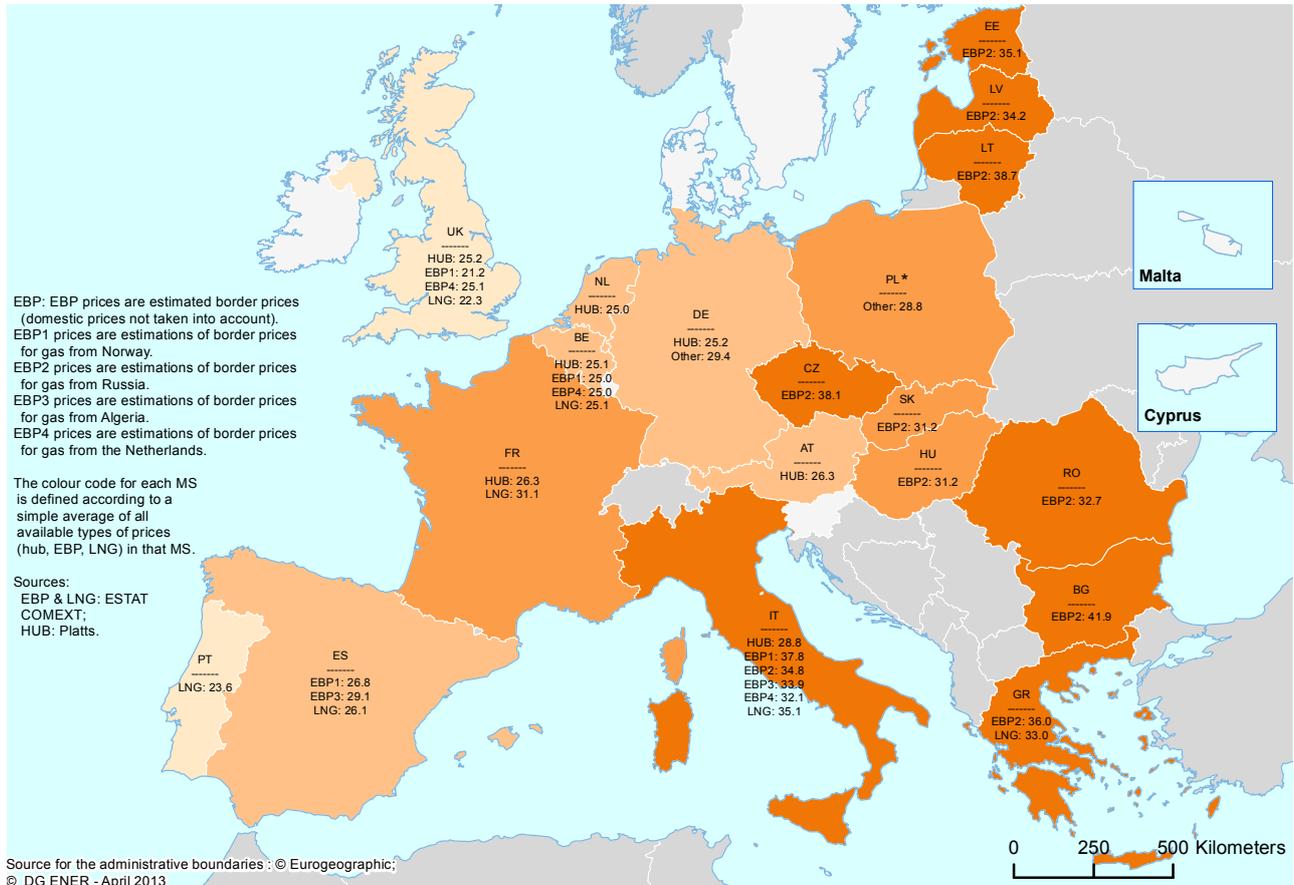


Source: Eurostat COMEXT, European Commission estimations.

Note: Border prices are estimations of prices of piped gas imports paid at the border, based on information collected by customs agencies, and is deemed to be representative of long-term oil-indexed gas contracts.

- In the second half of 2012 and during the first two months of 2013 the German border price continued to converge towards the NBP spot price, suggesting that Germany is increasingly paying a price for gas imports which is approximating to a hub traded price for gas, and one which is increasingly less related to a pure oil-indexed price. The average German price for gas imports was 28.5 €/MWh in February 2013.
- The gap between the German border price and the estimations of typically much higher priced deliveries, such as Russian gas to Bulgaria and Algerian gas to Italy, has been decreasing to less than 4 €/MWh in the first two months of 2013 compared to more than 12 €/MWh in the case of Russian gas to Bulgaria over the course of 2012. The gap between the German border price and Russian gas to the Czech Republic was more than 8 €/MWh, which is twice as high as it was in 2011, but is almost unchanged since the beginning of 2012. In February 2013, Russian deliveries to the Czech Republic were estimated at 36.5 €/MWh and to Bulgaria at 32.4 €/MWh, while Algerian deliveries to Italy were estimated at 31.5 €/MWh.
- Over the last few months of 2012 and the first two months of 2013, there was an increasing divergence between on the one hand the level of a theoretical pure oil-indexed price for gas (37-38 €/MWh in this period) and, on the other hand, the price estimates for higher priced deliveries. In the case of deliveries to Bulgaria, this seems to confirm reports late in 2012 of a 20% discount that Bulgaria received from its suppliers. Recent reports say that Gazprom's European partners, including French GDF Suez, Austrian Ecomgas and German Wingas and WIEH, have asked to review gas prices for 2013.
- The price of LNG in Spain continues to be competitive for the EU's largest importer of LNG and since October 2012 traded at levels below the NBP hub price. The same holds for Norwegian gas to Belgium.
- Comparing the first two months of 2013 to the first two months of 2012, the following increases could be observed: Norway to Belgium (+10%), Spain LNG (+3%), Platts North West Europe Gas Contract Indicator (+10%) and NBP spot (+12%). In contrast, the German border price went down by 4% in the same period, the estimated price of Russian deliveries to Bulgaria went down by 23% and that of Algerian gas to Italy by 3%.

FIGURE 21 – COMPARISON OF EU WHOLESALE GAS PRICES



Price in €/MWh

- no data
- < 24.01
- 24.01 - 28.00
- 28.01 - 32.00
- > 32.00

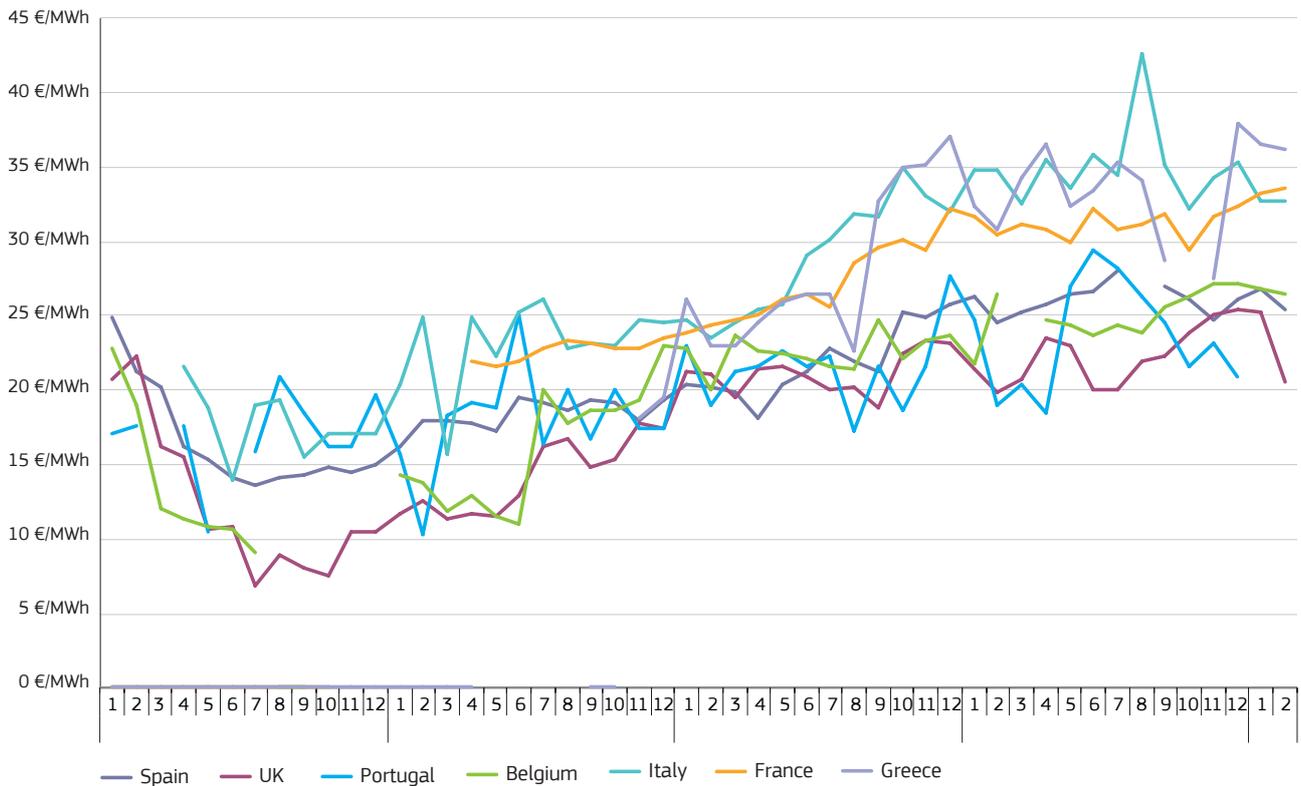
* Regulated prices for natural gas in Poland, net of transmission charges, as of 16.03.2012; Recipients of high natural gas (consumer group E). Border prices for Germany as reported by BAFA.

Note: Border prices are estimations of prices of piped gas imports paid at the border, based on information collected by customs agencies, and is deemed to be representative of long-term oil-indexed gas contracts.

5.5 LNG gas prices in the EU

- Estimated monthly average spot LNG prices in the EU in the first two months of 2013 traded within a price range of between 22 and 33 €/MWh for the seven countries for which data is available. As with piped gas imports, there is wide variation in prices paid for LNG in the EU.
- As already highlighted in the last issue, the EU's LNG importers can be split into two price groups. One group benefits from levels which are close to or at a discount to hub prices. Among others, this group contains the UK and Portugal, which in February 2013 paid relatively low amounts for LNG deliveries (estimated around 22 €/MWh) compared to other LNG importers, which paid as much as 32.7 €/MWh (Italy) and 36.3 €/MWh (Greece).

FIGURE 22 - LNG GAS PRICES IN EU MEMBER STATES

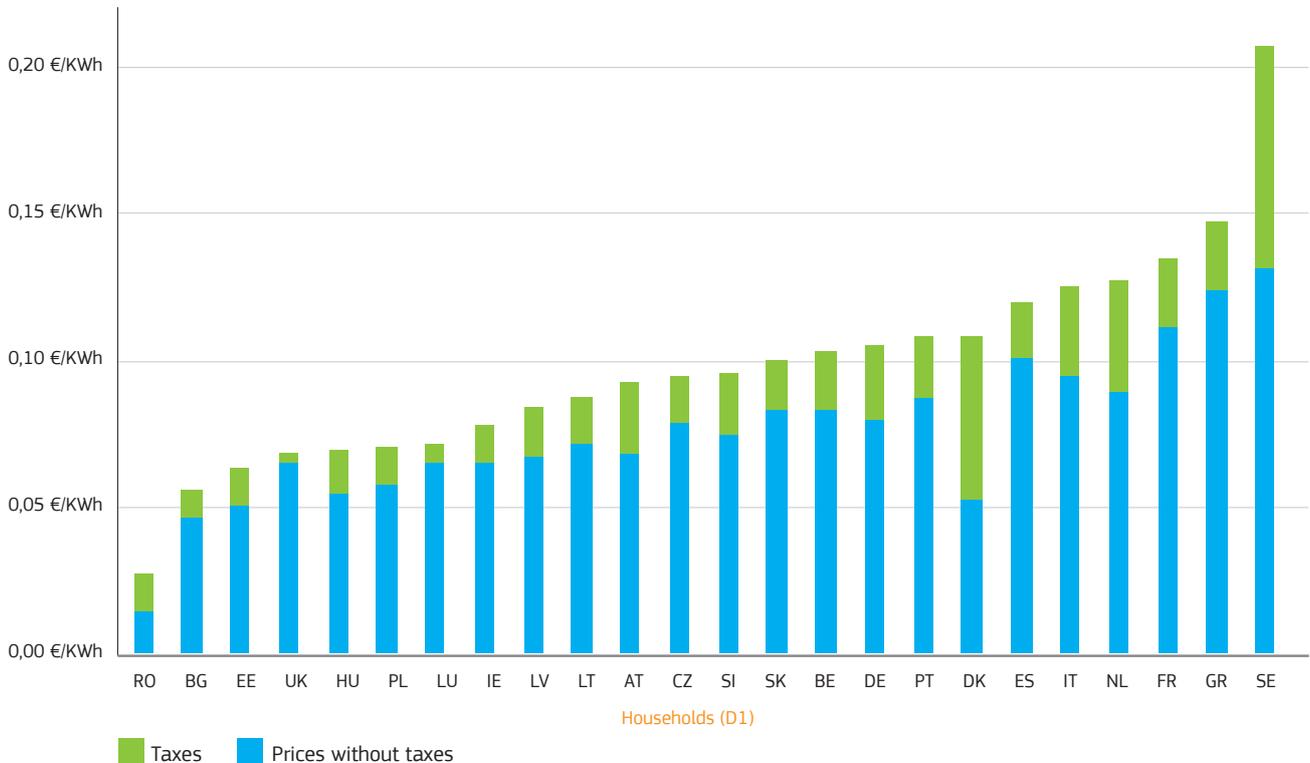


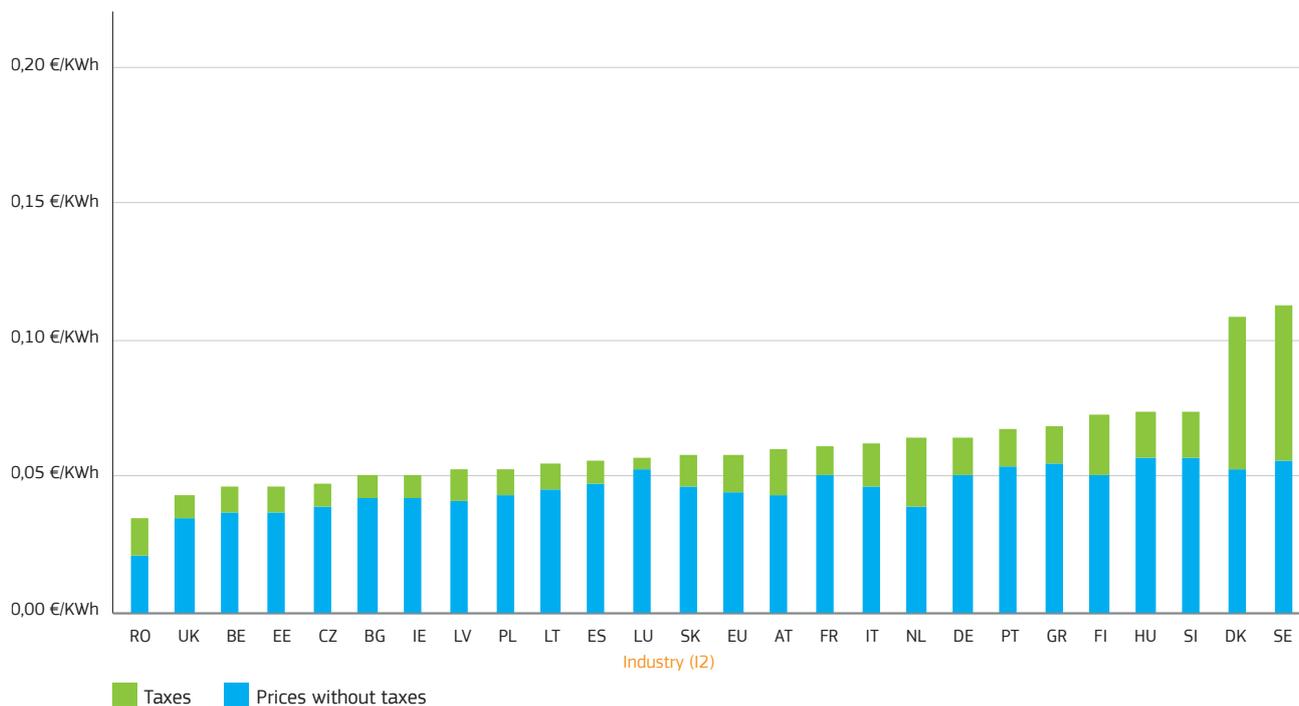
Source: Eurostat COMEXT, European Commission estimations.

6. Retail gas prices in the EU

- The comparison of retail gas prices across the EU continue to reveal significant differences, with the prices paid in the most expensive Member States representing several times the price paid in the cheapest (even if we exclude taxes and duties).
- In household consumption band D1 (annual consumption up to 5.56 MWh) consumers in Romania paid the lowest prices (2.75 Eurocents/kWh with taxes), while consumers in Sweden paid the highest prices (20.7 Eurocents/kWh with taxes).
- Equally, in industrial consumption band I2 (annual consumption between 0.278 GWh and 2.778 GWh) consumers in Romania paid the lowest price (3.4 Eurocents/kWh), while consumers in Sweden paid now the highest price (11.2 Eurocents/kWh).
- The fact that the largest differences in retail prices, both for household and industrial sectors, can generally be found in the smallest consumption bands seems to suggest that there may exist cross-subsidisation across consumer groups and socially and politically-motivated subsidies.

FIGURE 23 - RETAIL GAS PRICES IN EU MEMBER STATES, SECOND HALF OF 2012

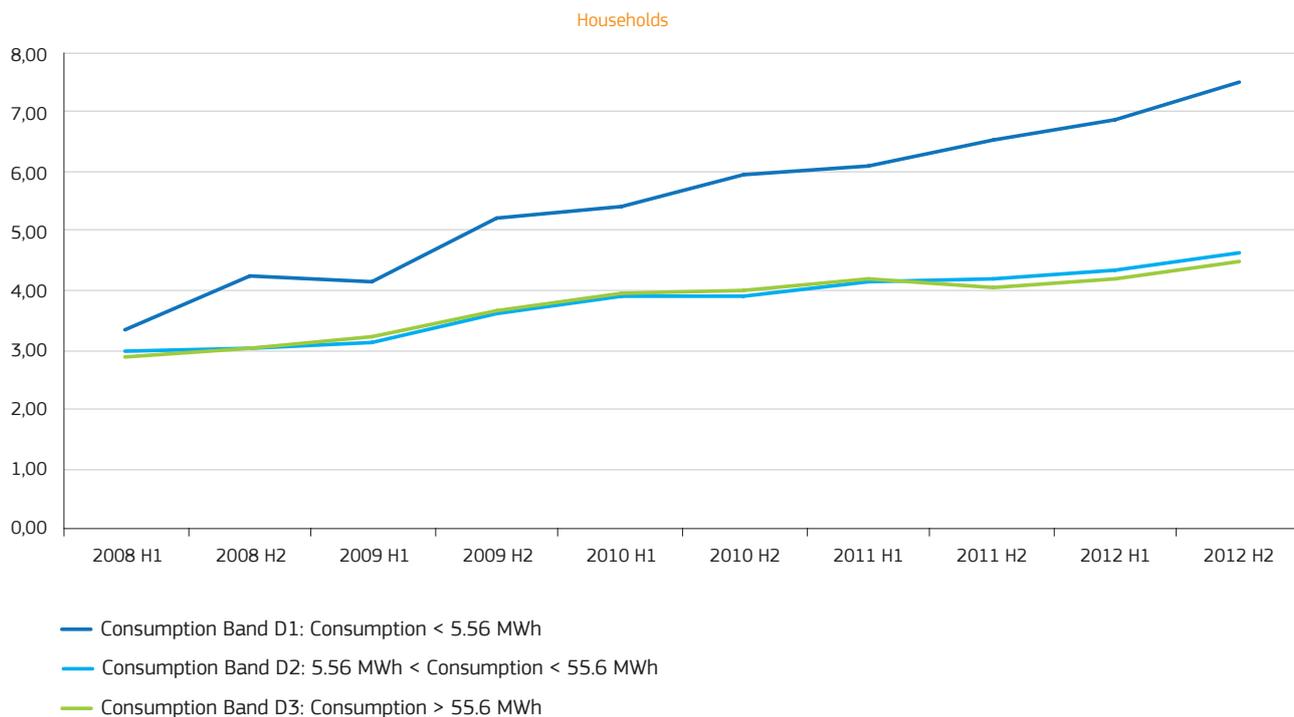




Source: Eurostat. Consumption bands D1 (households with annual consumption up to 5.56 MWh) and I2 (industries with annual consumption between 0.278 MWh and 2.778 MWh). All taxes included.

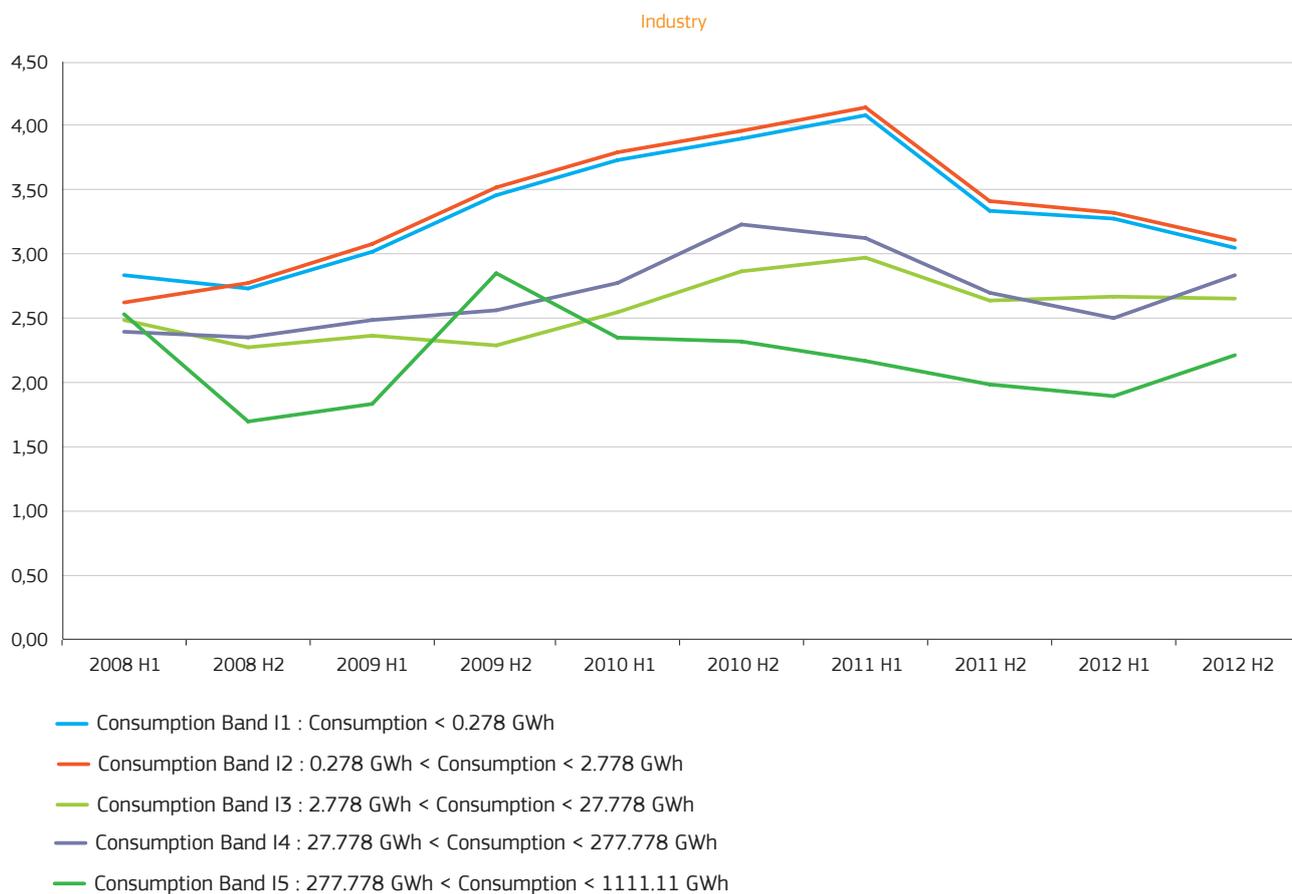
- In contrast to the general trend observed with wholesale gas prices or to retail power prices, retail gas prices in the EU have not been converging in recent years, as the gap between the highest and the lowest household retail prices for gas across the EU has been increasing since 2008.
- This gap between the highest and the lowest household retail prices for gas has been constantly increasing since 2008. Since our last report (fourth quarter of 2012), for the smallest household consumers (consumption band D1, annual consumption up to 5.56 MWh) the difference between the lowest and the highest priced country has increased, when taxes are included, from a factor 6 to a factor of 7.5. The ratio between the highest and the lowest retail household price has also increased for the medium and large household consumers (consumption bands D2 and D3) – from about 3 in 2008 to 4.5 in 2012 (taxes included).
- The gap between the highest and the lowest retail prices for industrial consumers in consumption band I2 (annual consumption between 0.278 GWh and 2.778 GWh) is less than that for average household consumers. The ratio between the highest and the lowest retail industrial prices paid by the two smallest consumption bands went up from about 2.5 in 2008 to more than 4 in 2011, before decreasing to 3 (VAT excluded). The divergence has been relatively smaller for the larger industrial consumers, even though there is a difference in the order of magnitude of 2.5 between the industrial prices for gas in the highest and the lowest priced Member State.

FIGURE 24 - EVOLUTION OF THE RATIO OF HIGHEST-TO-LOWEST RETAIL GAS PRICES IN EU MEMBER STATES: HOUSEHOLDS (ALL TAXES INCLUDED)



Source: Eurostat

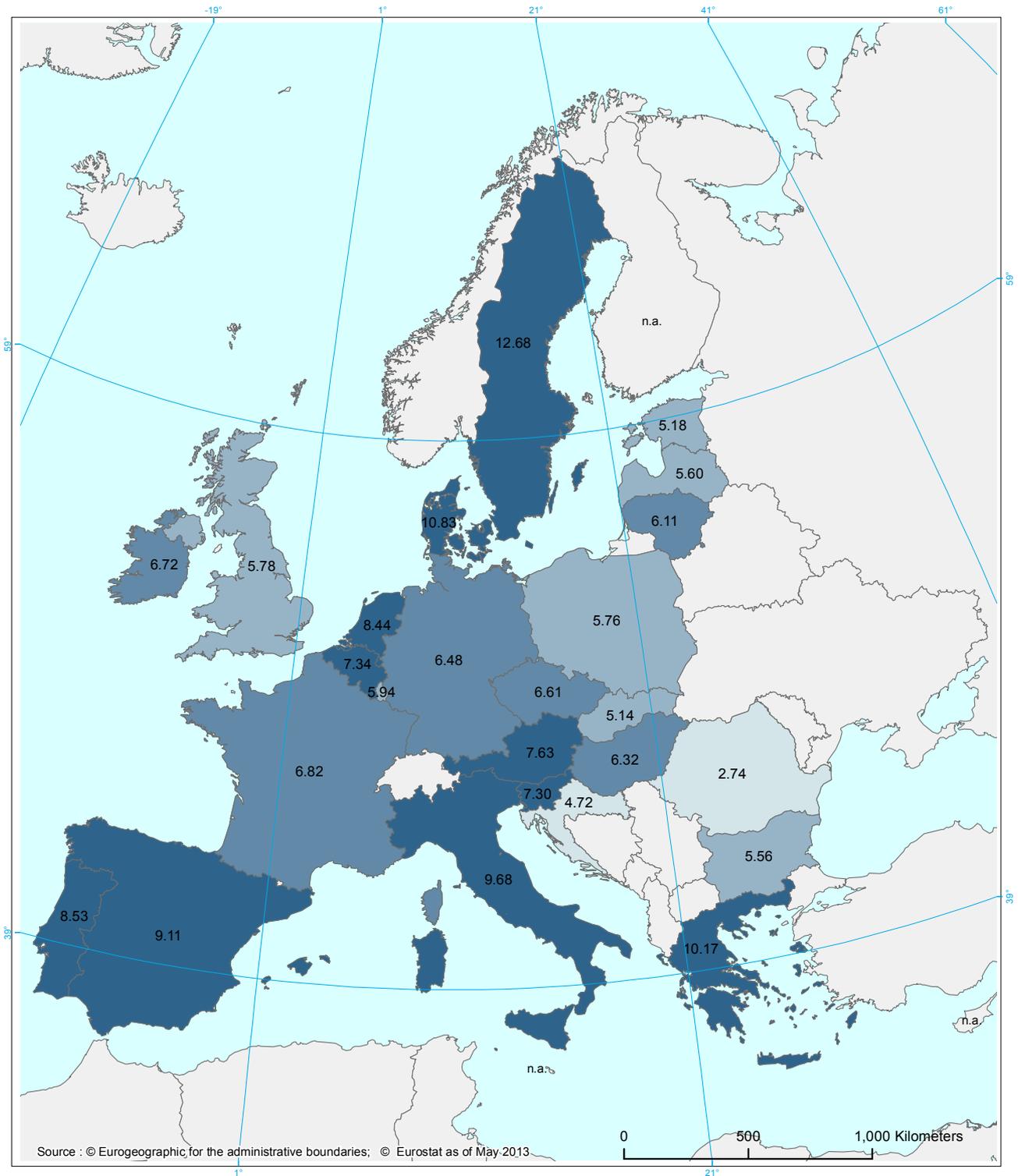
FIGURE 25 - EVOLUTION OF THE RATIO OF HIGHEST-TO-LOWEST RETAIL GAS PRICES IN EU MEMBER STATES: INDUSTRY (EXCLUDING VAT)



Source: Eurostat

FIGURE 26 - RETAIL GAS PRICES IN EU MEMBER STATES FOR HOUSEHOLDS

Prices: 2nd semester 2012

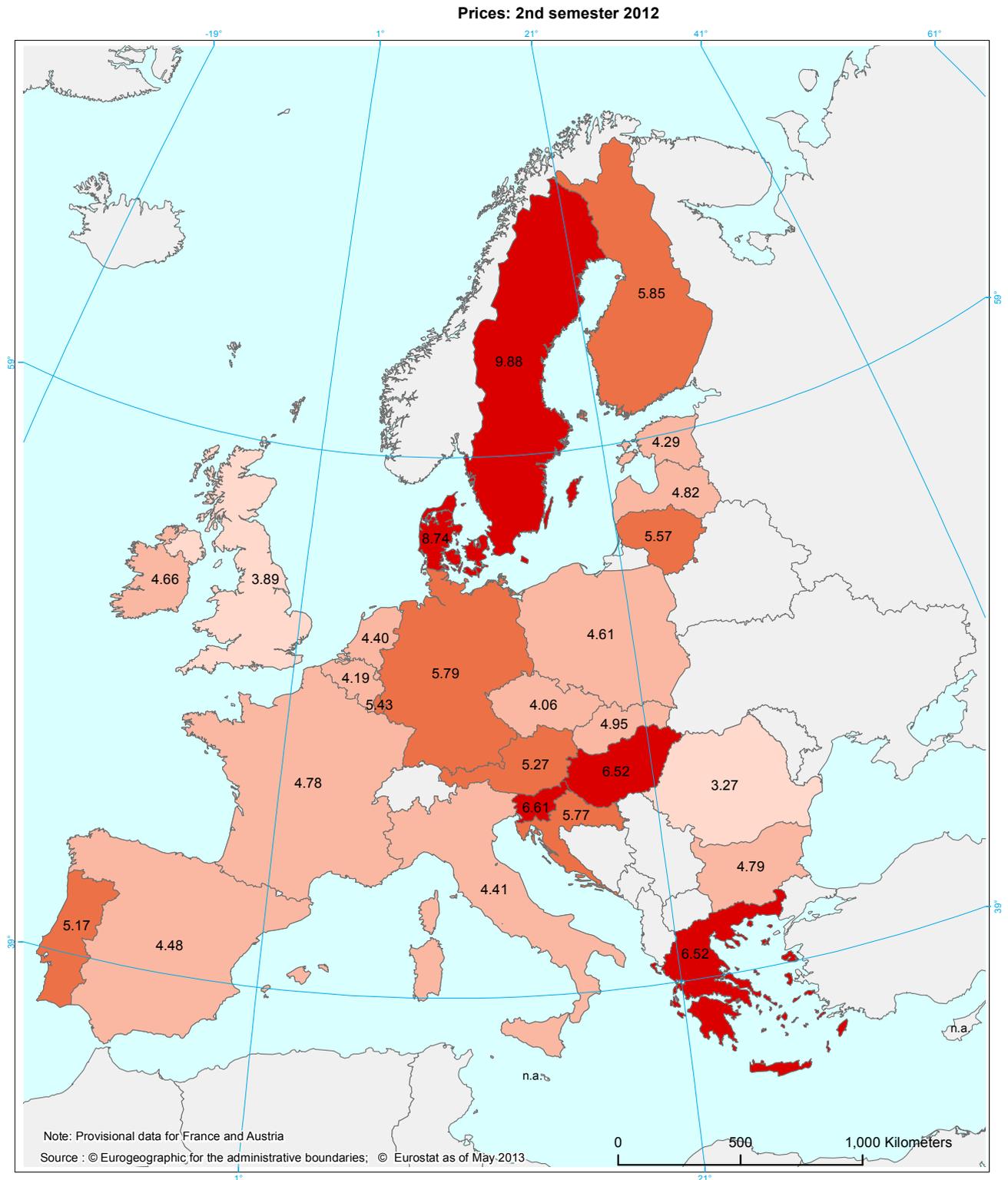


Prices per kWh (€)

- no data
- < 5.01
- 5.01 - 6.00
- 6.01 - 7.00
- > 7.00

Band D2: 5.56 MWh < Consumption < 55.6 MWh

FIGURE 27 - RETAIL GAS PRICES IN EU MEMBER STATES FOR INDUSTRIAL CONSUMERS



Prices per kWh (c€)

- no data
- < 4.01
- 4.01 - 5.00
- 5.01 - 6.00
- > 6.00

Band I3: 2.77 GWh < consumption < 27.8 GWh

7. Glossary

Backwardation occurs when the closer-to-maturity contract is priced higher than the contract which matures at a later stage.

Clean dark spreads are defined as the average difference between the price of coal and carbon emission, and the equivalent price of electricity. Dark spreads are reported as indicative prices giving the average difference between the cost of coal delivered ex-ship and the power price. As such, they do not include operation, maintenance or transport costs. Spreads are defined for a coal-fired plant with 35 % efficiency. Dark spreads are given for UK and Germany, with the coal and power reference price as reported by Platts.

Clean spark spreads are defined as the average difference between the cost of gas and emissions, and the equivalent price of electricity. Spark spreads are indicative prices showing the average difference between the cost of gas delivered on the gas transmission system and the power price. As such, they do not include operation, maintenance or transport costs. The spark spreads are calculated for gas-fired plants with standard efficiencies of 50% and 60%. This report uses the 50% efficiency. Spreads are quoted for the UK, German and Benelux markets.

Contango: A situation of contango arises when the closer to maturity contract has a lower price than the contract which is longer to maturity on the forward curve.

Flow against price differentials (FAPDs): By combining daily price and flow data, Flow Against Price Differentials (FAPDs) are designed to give a measure of the consistency of economic decisions of market participants in the context of close to real time operation of natural gas systems. With the closure of the day-ahead markets (D-1), the price for delivering gas in a given hub on day D is known by market participants. Based on price information for adjacent areas, market participants can establish price differentials. Later in D-1, market participants also nominate commercial schedules for day D. An event labelled as an FAPD occurs when commercial nominations for cross border capacities are such that gas is set to flow from a higher price area to a lower price area. The FAPD event is defined by the minimum threshold of price difference under which no FAPD is recorded. The minimum threshold for gas is set at 0.5 €/MWh. After the day ahead market closes, market participants still have the opportunity to level off their positions on the balancing market. That is why a high level of FAPD does not necessarily equate to irrational behaviour. In addition, it should be noted that close-to real time transactions represent only a fractional amount of the total trade on gas contracts. The FAPD chart provides detailed information on adverse flows. It has two panels: The first panel estimates the ratio of the number of days with adverse flows to the total number of trading days in a given period. It also estimates the monetary value of energy exchanged under adverse flow conditions (mark-up) compared to the total value of energy exchanged across the border. The mark-up is also referred to as «welfare loss». A colour code informs about the relative size of FAPD events in the observed sample, going from green if less than 10% of traded days in a given period are FAPDs to red if more than 50% of the days are FAPDs. The second panel gives the split of FAPDs by sub-category of pre-established intervals of price differentials. It represents the average exchanged energy and relative importance of each sub-category on two vertical axes.

Heating degree days (HDDs) express the severity of a meteorological condition for a given area and in a specific time period. HDDs are defined relative to the outdoor temperature and to what is considered as comfortable room temperature. The colder is the weather, the higher is the number of HDDs. These quantitative indices are designed to reflect the demand for energy needed to heat a building.

LNG sendout expresses the amount of gas flowing out of LNG terminals into pipelines.

