ABN·AMRO

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Energy monitor

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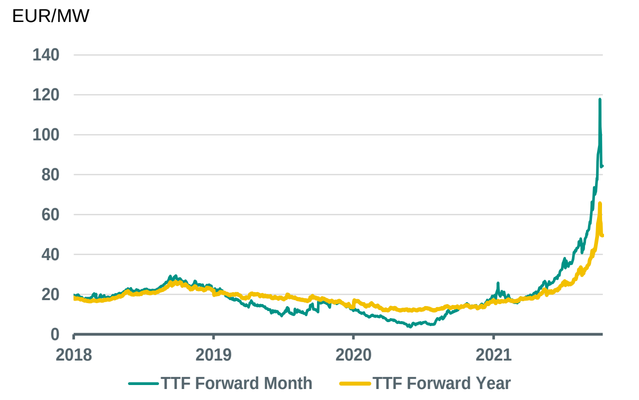
Overheated energy prices

- **Gas prices have broken records due to low inventory levels, while the winter season is yet to begin**
- **We have revised our gas price forecasts upwards**
- **A complete normalization of gas prices is not expected before 2023**
- **Oil prices have broken through the long-term sloping trend**
- **Oil supply has been only marginally increased by OPEC+, while demand has beat expectations**
- **Oil price estimates have been raised as supply/demand conditions point to a tight market**

Gas prices are trading around record highs

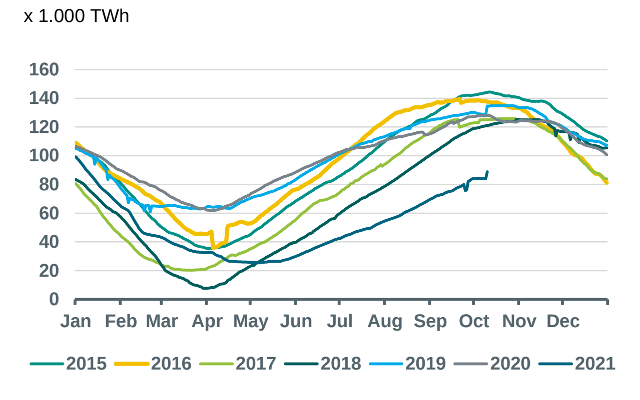
Gas prices are trading at levels far above previous historical highs. A combination of seemingly one-off factors has led to historically low inventory levels going into the coming winter and this has also triggered concerns about gas shortages. Although the price had been rising for some time, gas prices really shot up in early October. Whereas in October 2020 the prices of the 1st futures monthly contract hovered around EUR 15/MWh, the futures price surged to an intraday record high of almost EUR 160/MWh on October 6. Although the volatility of the annual contract (calendar year 2022) is much less significant, that price has also risen significantly recently. At a current price of EUR 52/MWh, this is still over 3.5 times more than last year.

Gas prices of the monthly contracts at record highs



Source: Bloomberg

...due to low inventories



Source: Bloomberg

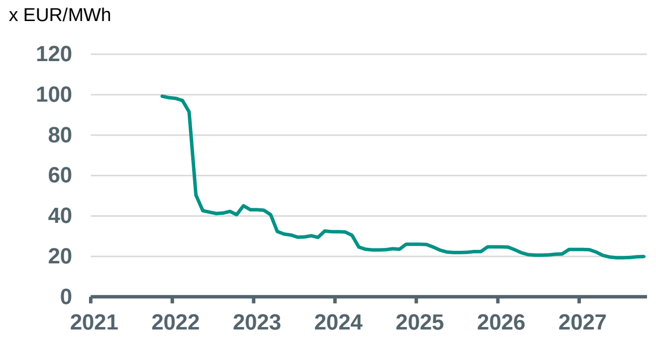
There is a whole medley of factors that have come together to generate this unprecedented situation Due to the relatively harsh winter of 2020/21, stocks were at relatively low levels. At the same time, the rebuilding of stocks was slow. This was partly because gas demand this summer was higher than expected due to lower wind energy yields. In addition, the marginal supply of gas from Russia was under pressure due to a mixture of demand from elsewhere and geopolitical posturing. Although Russia neatly adhered to the agreed long term supply contracts, it turned out that there was little additional supply of gas heading towards Europe. On the one hand because the supply of liquefied natural gas (LNG) - from Russia, but also from other suppliers - was mostly transported to Asia. On the other hand, it is suspected that the Russians wanted to put pressure on European leaders in order to secure the permits for the NordStream 2 pipeline. The demand for gas in Asia has jumped due to problems in the production and import of coal, the main source of energy in China. China's premier has indicated, after the disruptions in the electricity market in recent weeks, that he wants energy security to be guaranteed for the coming winter. This is regardless of the cost. As a result, China is always willing to pay more for, say, coal and LNG than parties here in Europe. It increases the (chance of) scarcity and gives additional upward price pressure on energy-related commodities.

On Wednesday, October 6, just after the gas price hit EUR 160/MWh, Russian President Putin gave a speech. He indicated that Russia is willing to export more gas to Europe. A statement which he repeated exactly one week later. As a result, the price quickly dropped again. Nevertheless, the gas price for delivery next month is still trading at around EUR 90-100/MWh at the moment. For comparison, last year around this time the gas price was still trading around EUR 14/MWh.

Biggest pressure on security of supply during the coming winter months

The forward curve (series of prices for delivery in the future) shows that the market expects the greatest uncertainty, and therefore the greatest pressure on prices, in the coming winter months. The contracts for delivery up to and including March are currently trading well above EUR 90/MWh. The contract for delivery in April 2022 is already much lower at EUR 50/MWh. The rest of the contracts with delivery in 2022 are trading between EUR 40 and 45/MWh. The market expectation is therefore that after the winter months ahead, the market will return to better balance. Furthermore, the heating season will be over by then and we can start again with the replenishment of stocks for the winter of 2022/23.

Forward curve TTF natural gas (monthly contracts)



Source: Bloomberg

In the coming months, the uncertainty will remain high. Two factors are crucial here. First, it remains to be seen whether Putin follows up on his words and indeed increases exports towards Europe. It will not automatically lead to higher inventory levels. However, more gas imports into Europe may cause existing stocks to decline more slowly. The second, perhaps even more important, factor is the weather. In the case of a mild winter, the likelihood of gas shortages is limited. At most, if Europe has a mild winter but the winter in Asia is severe, there could still be additional pressure on

European gas supply. But if the winter in Europe is (also) severe, and the gas demand exceeds the current supply levels, energy prices could again reach record levels. So the energy related market circumstances will remain tense for a while.

Incidentally, the Dutch government has reaffirmed that the production of gas from the Groningen field will not be increased in order to bring gas prices down. In the event of a severe winter and possible gas shortages, attempts will first be made to import more natural gas. Here it must be taken into account that gas that is imported cannot be fed directly into the Dutch gas network because of quality differences. Nitrogen would then first have to be added to bring the gas up to 'Groningen quality'. This capacity only has to be just available. If all this proves insufficient, large-scale business consumers will be disconnected first. Only as a last resort will gas production from the Groningen field be increased in order to continue to guarantee the supply of gas to Dutch households.

Revision of gas price estimates

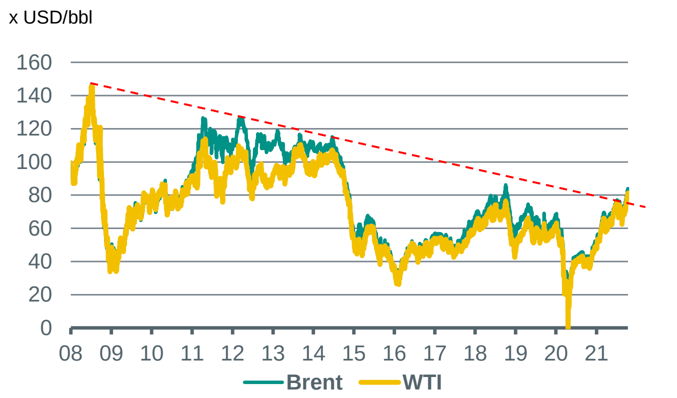
Despite the great uncertainty about the level of gas prices in the coming months, we have already adjusted our gas price estimates upwards. Crucially, our new forecasts assume an average winter and therefore an average demand for gas. We also expect gas stocks to start to fill up again in spring following a normal pattern. A third assumption is that the European Commission will not take any measures to buy extra gas or build up strategic stocks in the short term.

Nevertheless, we are also assuming higher gas prices for all of 2022 compared to recent years. This is due to the continuing high global demand for natural gas in order to reduce the use of other energy sources (such as coal and nuclear power). Also, the supply of LNG is no longer increasing, so there are more buyers for an at best unchanged amount of natural gas. The persistently high price of CO2 also contributes to the higher price of natural gas. In our estimates, we look at the contract with delivery for the coming delivery year. For the end of this year, we have increased our estimate from EUR 30/MWh to EUR 50/MWh. For the end of 2022, we still expect a price of EUR 30/MWh, which is 50% higher than in our previous estimate. Only in 2023 do we see a normalization of gas prices. For more details, see the table at the end of this note.

Oil prices broke through the long-term trend

The Brent oil price has risen due to unexpectedly faster demand growth to the point that the long-term downward trend line was broken at the end of September. OPEC+ recently confirmed that it will continue to increase production by 400,000 (kb/d) per day as previously pledged. OPEC+ is reluctant to increase production faster because of the uncertainties surrounding measures to suppress any new upticks in COVID19.

Oil price development



Source: Bloomberg

Oil demand has picked up faster than expected. Partly due to economic growth, but also partly due to additional demand as a result of high prices in other energy markets. With the high price of coal and natural gas, more oil is being used worldwide for electricity production and in the form of fuel oil for industrial processes and for heating. The market had hoped that OPEC+ would be willing to increase production more quickly. As a result, the oil price found even more support.

Oil price estimates revised up

Oil demand is now roughly back to the level it was before the start of the corona crisis (100 million barrels per day (mb/d)) and with the current economic growth - especially in Asia - demand is expected to increase further. As a result, the balance between supply and demand is currently slightly out of sync. This will be able to lead to continued upward price pressure. Only towards the fourth quarter of 2022, according to the current production plan, OPEC+ has increased oil production to the level of early 2020 and supply and demand should be more balanced.

The main risks on the demand side remain new measures to counteract rebounds from COVID19, the hit to industrial production from supply-chain bottlenecks and weaker consumer demand as higher energy prices hurt purchasing power. From the supply side, it is mainly OPEC+ compliance (to what extent OPEC+ countries are complying with their own production agreements), geopolitical conditions and weather conditions that could prove to be determining disruptive factors.

Oil and gas price forecasts

End of period		14-Oct	Dec-21	Mar-22	Jun-22	Sep-22	Dec-22	Mar-23	Jun-23	Sep-23	Dec-23		
Brent *	USD/bbl	*83.94*	80	85	80	75	70	64	65	65	65		
WTI *	USD/bbl	*81.13*	76	82	77	72	67	61	61	62	62		
Natural Gas (HH) *	USD/mmBtu	*5.70*	5.00	4.50	4.00	3.30	3.50	3.00	2.90	2.90	3.20		
TTF *	EUR/MWh	*52.03*	50	40	35	30	30	25	25	23	22		
Average		**2020**	**Q4 21**	**2021**	**Q1 22**	**Q2 22**	**Q3 22**	**Q4 22**	**2022**	**Q1 23**	**Q2 23**	**Q3 23**	**2023**
Brent	USD/bbl	43.21	79	72	83	83	78	73	79	67	65	65	66
WTI	USD/bbl	39.34	76	69	79	80	75	70	76	64	61	62	62
Natural Gas (HH)	USD/mmBtu	2.13	5.40	4.00	4.80	4.30	3.70	3.40	4.10	3.30	3.00	2.90	3.10
TTF	EUR/MWh	13.48	53	33	45	38	33	30	37	28	25	24	25

* Brent, WTI and Henry Hub: active month contract; TTF: next calendar year