

Responsible Investment

**The bumpy road
to net zero**

**European power
price surges**



The bumpy road to net zero

A series of viewpoints by: **Matthew Van de Schootbrugge**, portfolio manager; **Sharon Vieten**, senior credit analyst; **Jess Williams**, portfolio analyst, responsible investment; and **Natalia Luna**, senior thematic investment analyst, responsible investment.



Reaching a net-zero emissions energy system represents the biggest transformation the energy sector has ever seen. As we stand on the precipice of this transition it is becoming increasingly clear that we are in for a bumpy ride. With supply and demand for fossil fuels becoming increasingly difficult to predict – partly due to variable renewables becoming an increasingly significant part of our energy system, carbon pricing schemes taking hold, and technological innovation ramping up – sparks are sure to fly in energy markets, a trend that we are already observing in 2021.

Deep cuts in greenhouse gas emissions from the global economy are required by 2030, with net-zero emissions by 2050. We may be cutting emissions faster than we are adding green and replacing carbon emitting generation. This enormous challenge can only be tackled by governments, businesses and civil society working together to take ambitious action.

In this series we will explore the various challenges and opportunities we face on the road to delivering net-zero emissions in the energy sector by 2050.

European power price surges

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By Matthew Van de Schootbrugge, Sharon Vieten, Natalia Luna, and Jess Williams

European energy markets have been hitting the headlines, with rocketing electricity costs and escalating geopolitical spats, while energy supply retailers in the UK are failing on a daily basis. European power prices have jumped 100% from January 2021 levels, driven by gas; Dutch gas prices, often a proxy for European gas prices, are up 150% year to date¹, coal by 76% and CO₂e (carbon dioxide equivalent) credits by 80%.

Soaring energy bills have the potential to hit households hard at a time when many people's finances are already under pressure due to knock-on effects from the Covid-19 pandemic. So, what exactly is going on?

Soaring demand

There is currently a stronger than usual demand globally for gas, yet European gas storage levels are unusually low for this time of year, especially in Germany. This is due to colder than anticipated weather, lower wind speeds and conventional generation outages. As such, Europe has simply not been able to replenish its gas storage levels, which are currently at around 72% versus 94% last year and a 10-year average of around 85%². Moreover, lower hydro conditions in Latin America have seen supplies of liquid natural gas (LNG) diverted to that market, while Asia is outbidding Europe and the UK for LNG – particularly after the recent order in China for state-owned enterprises to stock fuels “at any cost”³. Flows through NordStream 2, a new export gas pipeline running from Russia to Europe across the Baltic Sea, could alleviate the pressure on natural gas prices, but with additional geopolitical consequences.

A perfect storm of factors

Many have been pointing at the carbon price – which has risen from €10 to €60 in two years – as a major factor behind rising prices, but carbon only accounts for less than 10% of the end electricity bill. EU net zero objectives mean carbon pricing is here to stay and actually would need to rise further to €100 as per World Bank estimations. So while it has a large effect on industry and could push up the likes of flight costs, we don't see carbon pricing as a major driver of consumer energy bills. Nor is the cost of building renewables to blame. Renewables are now in many instances the cheapest form of new electricity generation, subsidies are no longer required in large amounts, and legacy costs will begin to roll off.

The actual cause is a perfect storm of factors. Carbon pricing and renewable costs would go unnoticed alone, but they have combined with rising commodity prices; supply chain disruptions to fossil exploration and production because of the pandemic; higher planned and unplanned outages, partly due to delays caused by the pandemic; cold weather; record low levels of wind and solar; low hydro reservoirs, which are a form of electricity storage; low gas storage levels, notably in the UK; and geopolitics, including Brexit and Europe's relationship with Russia. All of these, combined with a dramatic jump in post-Covid demand for commodities, have resulted in spiking oil, gas and coal prices. It is these commodity price moves that are the primary driver of power price surges for consumers and businesses alike.

¹ www.energylive.cloud. As at 1 October 2021.

² agsi.gie.eu, as at 1 October 2021.

³ *Chinese energy order points to harsher gas crunch for Europe*, FT.com, 30 September 2021.

Higher power prices will push up customer bills

In the UK, suppliers that have not hedged against rising prices run the risk of not being able to afford to buy either electricity or gas in order to serve their customers. Note the majority of suppliers don't actually produce their own electricity or gas and have to buy it. Indeed, 12 suppliers representing around 20% of the UK total and affecting more than two million customers have already failed, with more expected. Such is the concern within the UK industry that regulator Ofgem recently appointed a special administrator to deal with the possible failure of larger suppliers.

Customer affordability

Contrary to our early expectations, governments and regulators across the EU – bar Spain and the UK – appear to be considering rational ways to limit short term resultant sharp increases in their electricity and gas bills. A slice of the customer bill pie is normally due to government policies and renewables surcharges (for example, the renewables surcharge in Germany makes up 22% of an average domestic bill). These levies and taxes can represent up to 40% of the end consumer bill across major European countries⁴.

Regulators are considering options that include: freezing tariffs temporarily; reducing these levies or taxes, or funding government policy driven costs out of state budgets. Other options include reducing or eliminating system charges; tax offsets; rebates; and various forms of direct support for vulnerable customers. In France and Portugal customers are shielded through regulated or fixed feed-in tariffs. Spain initially implemented a windfall tax on nuclear and hydro producers, but has since suspended this following constructive discussions with Spanish utilities. This windfall tax, though well meaning, aimed to clawback unintended profits for non-carbon emitting generators, without acknowledging that most generators have prices locked in for several years and therefore would not receive those profits, and that punishing the non-carbon emitting generators was not conducive to encouraging further investments into the energy transition.

The EU has now introduced a sensible toolbox containing a suite of options to help member states formulate quick responses to price spikes while remaining within EU parameters.

Low levels of wind and solar

One pitfall of renewables is that the wind doesn't always blow and the sun doesn't always shine. In the past three months the wind has not been strong globally and in the UK has been at its slowest for 70 years. These are issues we can address, however, and we have been getting better at doing so over time. Notably, these have included: investments in the power grid; the use of hydro storage, ie filling the reservoirs; increasing the use of battery storage, although only for short duration; using interconnectors to borrow electricity from our neighbours; and using gas as a back-up. Indeed, some countries happily operate stable power systems where non-carbon emitting generation accounts for over 75% of electricity without issues. But UK renewables on average account for only 30% of electricity generation in a year – not usually a major problem but in combination with the aforementioned factors have caused issues.

Geopolitics

Gas suppliers such as Russia benefit when prices are higher because they generate increased revenues. Indeed, questions have been raised over whether prices have been manipulated, not only to apply pressure on Europe to continue using gas but specifically to hasten the approval of Nordstream 2, with the German government hesitating to give the major new supply route the green light. Nordstream 2 will clearly be a major source of revenue for Russia, but it will also give it increased bargaining power in the region, notably in terms of being able to squeeze Ukraine.

⁴ Source: BAML, October 2021.

EU power market redesign

The EU will be meeting in late October to consider a redesign of the region's wholesale electricity market. The balancing mechanism in place at present has been designed to ensure electricity prices are linked to a marginal figure that reflects production costs at which bids and offers for electricity clear. However, this does not necessarily reward the lowest-cost producer. Due to a combination of factors, such as plant efficiency and flexibility (typically favouring gas) and market participant behaviour, the price ends up being aligned with gas. Gas only generates 20% of the electricity needs of Europe, yet is marginal for approximately 75% of the time⁵.

France is calling for long-term power contracts or tariffs to be linked to an average cost of electricity production in each member state, and de-linking the price from gas (or any single fuel) in the process. The EU is also considering ways to curb speculative trading in energy markets, create a strategic gas reserve or buy gas at the EU level vs allowing Member States to source supplies independently. A capacity market may be one option to be considered, or linking prices to the NPV of generation costs needed to produce a particular unit of energy, referred to as the levelized cost of energy.

What about oil?

It is easier for corporates to stop investing in new oil production than it is for consumers to stop using it, especially as alternatives can for now still be materially more costly. In fact, despite current efforts to transition away from oil, global oil demand is not forecasted to peak for anywhere between another five and 15 years, before the transition to cleaner fuels offsets expanding industrial and consumer demand, notably in emerging markets.

The IEA expects demand to decline as soon as 2025, however we are more cognisant of the slow speed at which consumer trends can change, the importance of costs and the need for innovation for corporates, and the hurdles to regulatory enforcement, and therefore recognise the risk of "higher for longer". At the same time, if the private oil industry, which accounts for almost 50% of global oil production (with the other 50% coming from sovereigns such as Saudi Arabia), is forcibly discouraged from investing in replenishing supply, production may drop by 4% a year. This divergence will create a material lack of supply, which will subsequently force up oil prices to the detriment of all.

What can be done?

The perfect storm of factors is unfortunate. Some of the causes are one-off in nature, such as Covid, while other factors may prove to be more prolonged or recurring. So what can ultimately be done to prevent pricing spikes?

- Build more renewables – at a rate fast enough to keep up with the closure of the carbon-emitting generation. A notable barrier to growth has been planning consent, as local communities, while supportive of renewables in theory, remain resistant to obstruction of views – behaviour described as "Nimby" or Not In My Backyard.
- Increase storage capacity for both gas and pumped hydro, investing in interconnections and grid balancing.

⁵ Source: Goldman Sachs Equity Research.

- Consider a new pricing mechanism for electricity. Currently, the electricity price is determined by the price of gas in Europe. This made sense in the past, when gas or coal accounted for the vast majority of electricity generation, because it was representative of the cost of the system. But as renewables grow it makes more sense to have 80% of renewable generation costing €30-€40/mwh, and 20% of gas generation costing a highly variable €30-€80/mwh, but with the latter determining the price for all. In this scenario, the tail should stop wagging the dog.

Conclusion

All in all it is a question of timing – costs may rise further before they fall. While gas and oil are needed for the time being, their use will eventually decline.

However, the current energy issues have taught us one (conceptual) lesson: gas and oil will be needed for the transition to net zero.

What this energy crisis also showcases is that the transition to net zero may be bumpy. Renewables will be a deflationary force in the power sector, and therefore a solution to the current crisis, not the problem. But the transition from an over-reliance on gas to build the necessary renewables capacity will require more effort, investments, supportive policies, and regulation.

The long-term picture towards net zero is not derailed by potential short- or even medium-term spikes in prices, and EU and UK governments are determined that the energy transition needs to accelerate, not slow down.

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