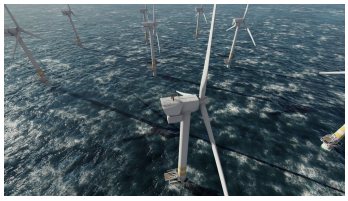
Energy Outlook 2022: Powering ahead

In this series of articles, Gerben Hieminga, Warren Patterson and Nadège Tillier examine the outlook for renewable energy, the oil and gas markets, European power prices and utilities in the year ahead. Like 2021, this will be a year to remember

In this bundle



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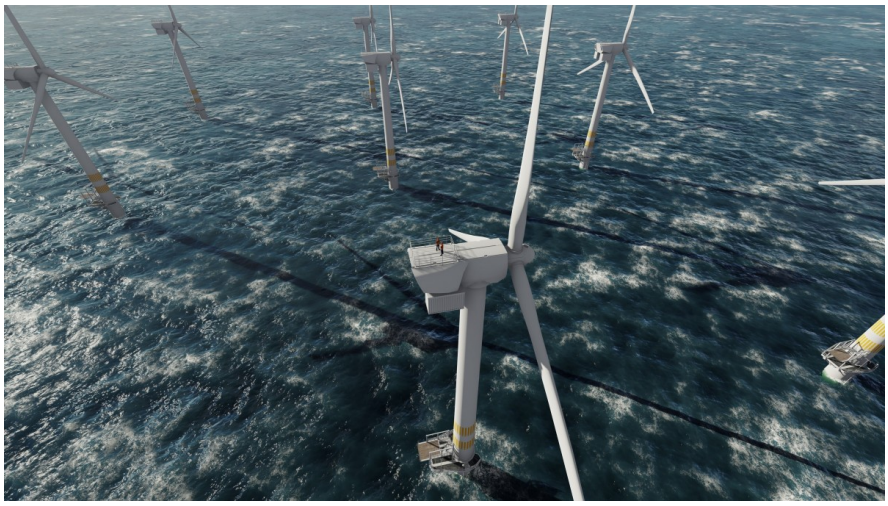


The European wind market is set for growth of 8% in 2022

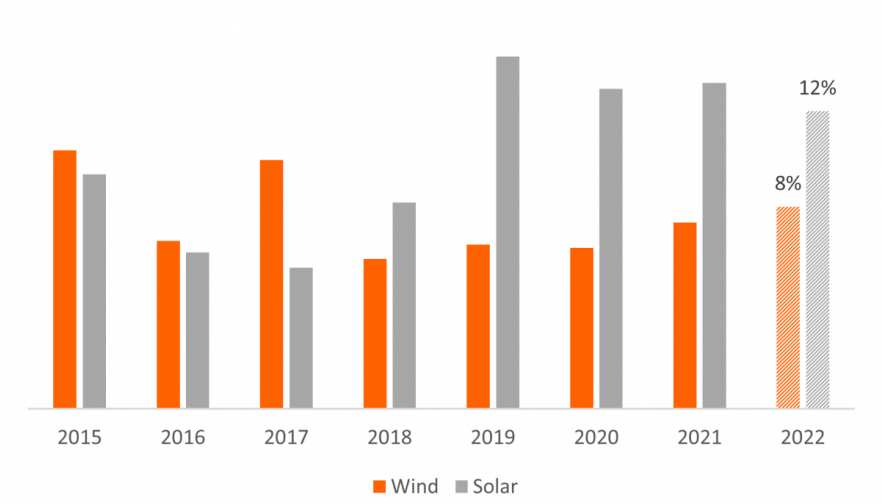
European wind and solar markets expected to grow

The European wind and solar markets are expected to provide solid growth of 8% and 12%, respectively, in 2022, in terms of capacity additions.

Growth in the solar market is highest for large-scale solar plants (+14%), while small-scale rooftop solar is set to increase by 11%. In the wind market, growth is highest in the offshore market (+16%) as some large offshore wind parks will come online in 2022. The onshore wind market is less subject to the timing of large projects and provides steady growth of 7%.

Growth in solar outpaces growth in wind

Annual growth in installed capacity for solar and wind energy in Europe



Source: ING Research based on BNEF

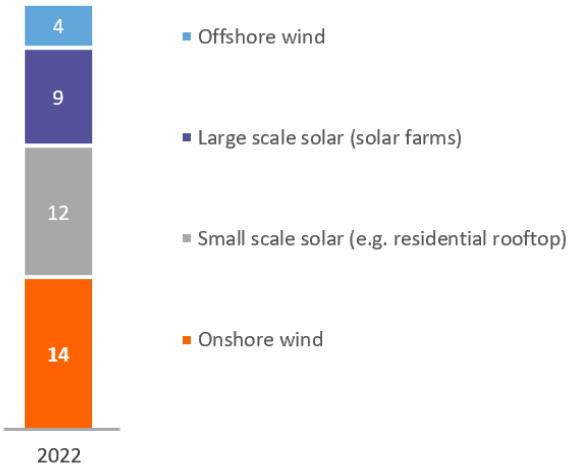
Growth is driven by small-scale rooftop solar and onshore wind farms

In absolute terms, capacity additions are largest in the onshore wind sector (+14 GW) and for small-scale solar projects (+12 GW).

In the offshore wind sector, 4 GW of capacity will be added in 2022. That is relatively small compared to the other segments, but policymakers in the Nordics, UK, Ireland, Germany and the Netherlands continue to work on special planning for offshore wind farms and grid infrastructure. So, much more is about to happen in the coming years for offshore wind farms.

Most capacity is added in onshore wind and small scale solar projects

Added capacity in Europe in gigawatt (GW)



Source: ING Research based on BNEF

Anticipated €50bn investment in wind and solar

All in all, we expect to see 39 GW growth in the combined wind and solar market. This equals €50bn of investment at current capex costs for the different wind and solar projects across Europe.

The energy crisis reveals the shortcomings of the 'sustainability only focus'

Climate change calls for a radical new future energy system that heavily depends on renewable energy and reduces unabated fossil fuels. Solar and wind power will be driving future power systems in a zero-carbon economy, which Europe aims to reach by 2050.

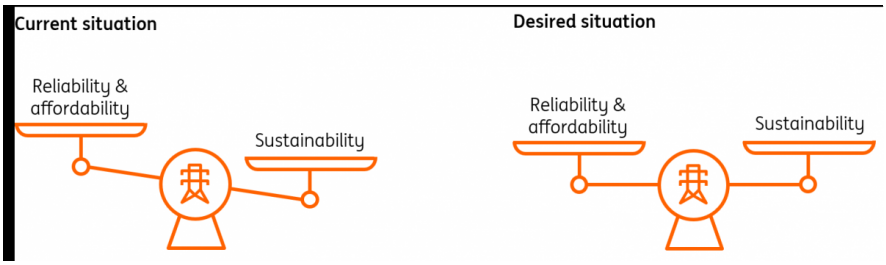
To meet these climate goals, policymakers across Europe have shifted their focus almost entirely to the sustainability aspect of the energy system. The focus has been on phasing out coal- and nuclear-fired power plants, reducing European oil and gas production and increasing power generation from wind turbines and solar panels.

As a result, the supply-side of the energy system has been reformed much faster than the demand-side. Europe now heavily depends on natural gas imports from Russia and Norway and liquefied natural gas (LNG) out of the US and Qatar. That worked fine in abundant energy markets, but not in the current energy crisis for which there is no quick fix.

In short, old energy systems are being taken down faster than the demand for fossil fuels has declined and new renewable energy systems are being built. Investment in upstream oil and gas is stubbornly low and hence commodity and power prices are expected to remain high in the coming years.

Energy crisis calls for a rebalancing of priorities

Weighing of the three main pillars of energy systems: sustainability, reliability and affordability



Source: ING Research

Calls for a rebalancing towards security of supply and affordability

The energy crisis has put the other two pillars of the energy system; reliability and affordability, in the spotlight again.

The reliability of energy systems is no longer a guarantee, particularly in the case of a severe and prolonged winter, be it in Europe, Asia or both. And bankruptcies of energy providers could be a blow to the perceived reliability of the energy system for energy consumers, even if the energy system remains functioning.

The affordability of energy needs little explanation in the current crisis. A perfect storm occurred, with average power prices last year rising eightfold and gas prices sevenfold.

The current energy crisis calls for a rebalancing of priorities: from a sustainability, or 'renewables only' approach towards a balanced approach that includes the reliability and affordability of the European energy systems.

In that respect, today's energy crisis is a wake-up call. Gas consumption in Europe is becoming increasingly dependent on suppliers outside the European continent. As the 'renewables only' approach is not possible, Europe needs to develop more green energy alternatives, such as hydrogen. Well-balanced and coordinated energy transition plans from member states are needed to solve Europe's energy supply challenges.

Such a rebalancing does not mean that growth in wind and solar will slow down. In fact, coordinating the coal and nuclear phase-out across countries, keeping closed coal plants available as a backup instead of tearing them down, and the building of new gas-fired power plants with carbon capture and storage could in fact enable an acceleration of growth in renewables.

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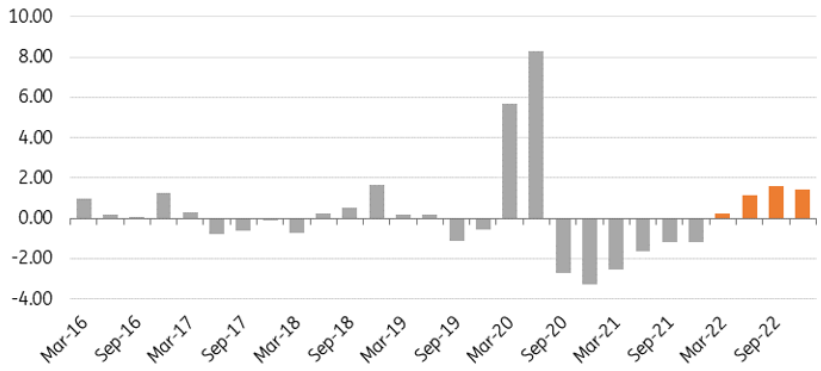
Back to surplus for oil

The continued unwinding of OPEC+ supply cuts, along with strong non-OPEC supply growth, should see the global oil market return to surplus from 2Q22. Several supply issues coming into the new year, along with good demand has delayed the return to surplus. Once back in surplus, we expect that the market will remain well supplied until at least the end of this year. However, if OPEC+ believes that it needs to pause its monthly production increases at any stage through the year, this would have an impact on the oil balance though in the current price environment, this is unlikely.

The global oil market set to move into surplus from 2Q22 onwards

Global quarterly oil balance (MMbbls/d)



Source: IEA, EIA, ING Research

The expected return to surplus means we forecast ICE Brent to average US$76/bbl over 2022, down from the highs seen in early 2022, but still well above the average levels seen since 2015. Longer-term concerns over the lack of investment in upstream oil, along with falling OPEC spare capacity (as the group eases cuts) will likely put a floor under the market while geopolitical risks should also offer support.

There are several risks for the oil market. On the downside, the most obvious is the return of Covid related restrictions. While a number of countries have accepted the need to live with Covid-19, China continues to pursue its zero-Covid policy. This is a clear downside risk for oil demand if we were to see wide-scale lockdowns across China once again. At the moment, the market does not appear to be pricing in this risk.

In terms of the upside risks to prices, two stand out. Firstly, Iranian nuclear talks are ongoing. If these were to fail, it would reduce the scale of the surplus that is expected over 2022. Admittedly, the slow progress made in talks so far means that the market is likely coming to the realisation that there will be no quick return of Iranian barrels.

Secondly, and very important for the market, is the ongoing tension between Russia and Ukraine. Any escalation would likely lead to increased volatility and stronger energy prices. While Russia is a crucial natural gas supplier to Europe, an escalation would also be supportive for oil prices. Russian oil exports averaged around 4.5MMbbls/d over 2021, so any actions which aim to limit these significant flows would be bullish.

Little relief expected for the European gas market

It is difficult to find a quick solution for the tightness in the European natural gas market. EU gas storage is now below 45% full, compared to a five-year average of around 60% for this stage of the year. Russian gas flows into Europe have fallen significantly coming into the New Year, which has tightened up the market at a fairly quick pace. Flows transiting via Ukraine have fallen sharply. The Yamal-Europe pipeline is also seeing reverse flows from Germany into Poland, rather than flowing

in the usual westwards direction.

It is still to be seen how much relief the LNG market will provide to Europe. Towards the end of last year, a number of LNG cargoes were directed to Europe given the surge in prices. We could see more of this in the near term given that European prices are trading at a premium to Asia once again. This trend will continue until around the middle of the year.

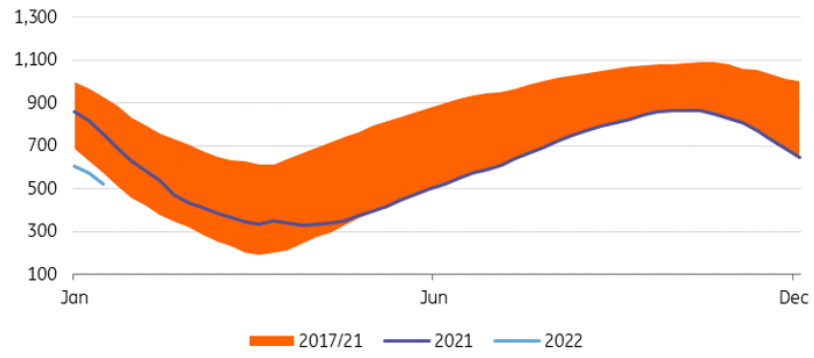
It has become increasingly apparent that the European gas market will likely finish the heating season at record lows. A late end to the heating season could certainly leave the market in an extremely tight spot. This tightness and uncertainty over how low inventories will fall mean that European gas prices are likely to stay at elevated levels for much of 2022. While we should see a downward correction in prices as we head into the lower demand period of spring and summer, prices are likely to remain historically high given the need to rebuild inventories over the injection season.

It has also become clearer that the ongoing tightness in the European natural gas market is likely not a one-off. Instead, we are likely to see a fairly tight European market going into next winter as well. However, this will really depend on developments with Russian gas flows. If these continue to remain below normal levels during the injection season, Europe will likely have to deal with another winter of elevated prices. Regulatory approval of Nord Stream 2 could help with flows but given the growing tensions with Russia, this is not guaranteed.

A key upside risk for European gas prices is a further escalation in tensions between Russia and Ukraine. Ukraine is an important transit route for Russian gas into Europe, whilst Russia is the largest supplier of natural gas to Europe, meeting almost 50% of import demand. Any escalation that leads to conflict or sanctions which target energy exports has the potential to significantly tighten the European gas market. You can read here what this will do to European power prices.

European gas inventories on track to finish heating season very tight

European natural gas inventories (TWh)



Source: GIE

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Energy Outlook: Oil and gas markets to tighten on lack of upstream spending

Oil and gas prices have roared back from the lows seen in 2020. However, investment in upstream production has not seen a similar bounce back. The energy...

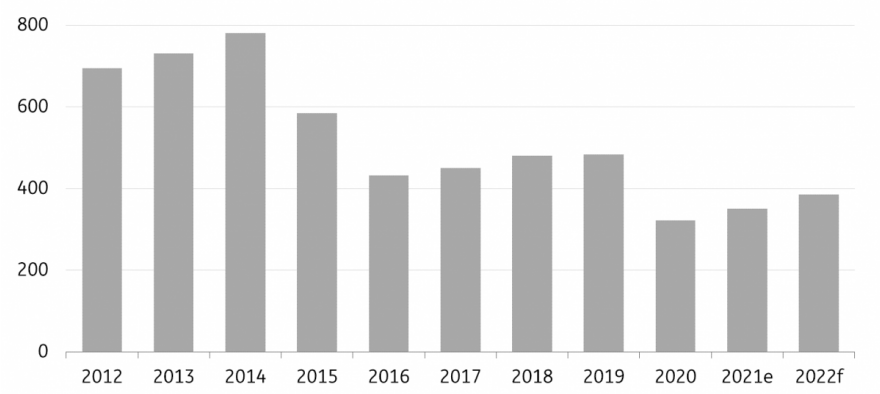
Stubbornly low investment in upstream oil & gas

The upstream industry has struggled to boost spending over the years. According to IEA data, annual investment in upstream oil and gas peaked at around $780b in 2014. Since then, the highest annual spending we have seen was in 2019, which amounted to around $483b, just 62% of 2014 levels. This fall in spending has corresponded with the growth we have seen in US shale.

Covid-19 and the corresponding weakness in oil prices only led to a further decline in spending - estimated at around $320b in 2020. The recovery that we have seen in oil prices since bottoming out in 2Q20 has seen a slight pick-up in spending. However, at just $351b in 2021 it is still a far cry from 2014 levels, and indeed from pre-Covid levels. With the strength in prices in 2021, however, we expect to see another uptick in spending in 2022. Rystad Energy's base case is that spending will increase by 10% year-on-year. This would still leave 2022 annual investments below 2019 levels.

Upstream spending still expected to be well below pre-Covid levels in 2022

Global oil and gas upstream investment (USD b)



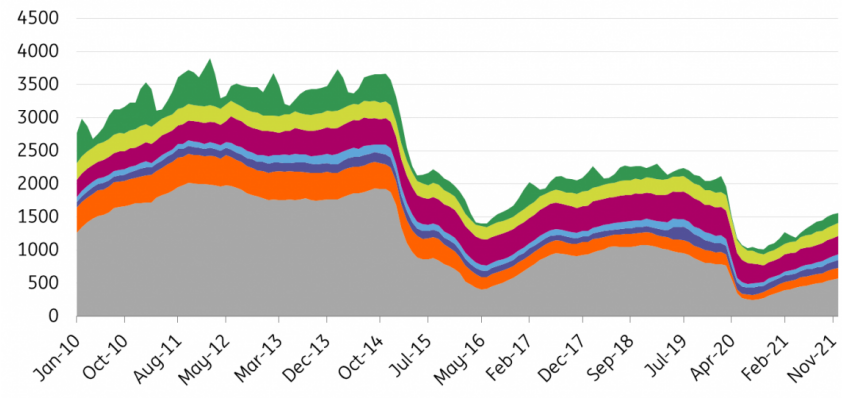
Source: IEA, Rystad, ING Research

In recent years, the share of spending in short-cycle projects (wells that can be drilled and brought online quickly) has increased significantly, as these developments are a lower risk than some offshore projects, which take several years to develop and become operational. This would have been driven largely by growth in the US shale industry. However, post-Covid, we have not seen a strong recovery in drilling activity from US producers. The lack of spending from US independent producers, as well as oil majors, has meant that growth in upstream investment is currently being driven by Russian companies and Chinese and Middle Eastern national oil companies, according to the IEA.

Global rig data shines a light on the impact lower spending is having on drilling activity. According to Baker Hughes data, at the end of December 2021, the global rig count totalled 1,563. This is a significant increase from the low of 1,016 seen in October 2020. However, the global rig count is still about 23% below December 2019 levels. Looking at the count by region, only Canada's rig count is above 2019 levels.

Global drilling activity recovering, but still plenty of room to grow

Global active rig count



Source: Baker Hughes

What is holding back upstream investment?

There are several factors holding back upstream spending. More recently, the demand hit from Covid-19 and the resulting low oil and gas prices saw a drastic cut in spending. While capex will recover from the lows (and already is), the longer-term trend is downwards.

In the US, there has been a shift in the behaviour of producers. The days of rampant production growth appear to be behind us. Instead, the industry is focusing on capital discipline, which has led to record levels of free cash flow generated amongst US producers. Shareholders have put significant pressure on producers to focus more on shareholder returns and it appears that this is what we are seeing now. While US oil output will continue to grow from current levels, capital discipline means that growth will be more gradual, unlike in previous up cycles.

Oil majors have also slashed upstream spending significantly. While part of this would reflect the low-price environment seen over 2020, there is again a structural change. ESG is becoming an increasingly important factor for the oil & gas industry, both to meet internal climate policies and from external pressure. Therefore, we are seeing majors reducing their share of upstream spending, while increasing the amount going to renewables. In fact, the IEA estimates that in 2021, investment in renewables exceeded spending in upstream oil and gas. While there will be pressure on majors to address carbon emissions, there is also uncertainty over the pace of the energy transition, which only adds to the reluctance to make significant upstream investments.

According to the IEA, oil majors make up around 25% of total upstream spending at the moment, compared to closer to 40% in the mid-2010s. This highlights the changes in attitude and behaviour we are seeing coming through from majors. But it's not just majors which are taking ESG more seriously. US independents are also putting more focus on it. Historically, CEO pay packages of independents were largely tied to production and production growth. ESG, capital spending and cash flow generation are becoming increasingly important factors for determining these pay packages.

What are the longer-term implications of a lack of investment?

The oil market should be able to meet demand in the medium term (next two years). However, the significant fall in spending and the lack of willingness of some producers to invest does leave the market in a vulnerable state in the longer term. It is important to remember that given natural declines rates, producers need to invest in order just to keep production flat. Decline rates are in the region of 6% per year. Obviously, the market will need to ensure that production doesn't remain just flat, but grow in the years ahead, given the need to meet demand growth.

There is plenty of uncertainty over how much investment is needed, given the big question mark around when global oil demand will peak. The key agencies have different views on when this will happen. OPEC is of the view that oil demand will plateau around 2035, while the IEA has different scenarios which see demand peaking soon after 2025 or as late as the mid-2030s. Clearly, if the demand peak in oil is still more than a decade away, it suggests that we need to see a pickup in investment. As a result, this suggests that there is upside for oil prices in the longer term. These higher prices will be needed to either attract further spending or to bring forward peak demand.

The gas market should attract a larger share of future upstream investment. In fact, Rystad sees upstream gas and LNG investments growing by 14% YoY in 2022, compared to 7% growth in upstream oil. However, spending is still expected to be below 2019 levels. Natural gas is seen as a bridging fuel for the energy transition, and this should support robust demand growth in gas/LNG over the next decade. Asia should drive this demand growth with LNG, as we see coal to gas switching. We estimate that LNG export capacity will grow by around 3% per annum through until 2025, which will likely fall short of what is needed, particularly if demand follows the same trend we have seen in recent years, with trade in LNG growing by around 8% per year since 2015.

All these factors suggest that prices will remain above historical averages.

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Energy Outlook: Three scenarios for European power prices

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What happens next to power prices predominantly depends on weather conditions, the economic recovery from Covid-19, and geopolitics

2021: a year to remember

"European power markets ease, but prices remain high"; that's what we wrote last year in our first power market outlook. The typical seasonal easing of power markets during the summer months did not happen. And we were right about prices remaining high. In fact, they skyrocketed.

We indeed had a perfect storm and power prices in European markets, on average, increased eightfold. Gas prices rose fourfold in 2021 and carbon prices threefold. European natural gas inventories were unusually low even before the start of the winter season, and so was power supply from renewables, particularly from wind turbines. Added to all that we had geopolitical tensions which also weighed heavily on prices.

Unfortunately, there is no quick fix for policymakers. Some governments have responded by compensating consumers and small businesses, capping profits for utilities, or by implementing minimum filling levels for gas inventories. But these measures don't give us any viable

or immediate solution to the current imbalance in energy markets.

We are likely to remember 2022 too

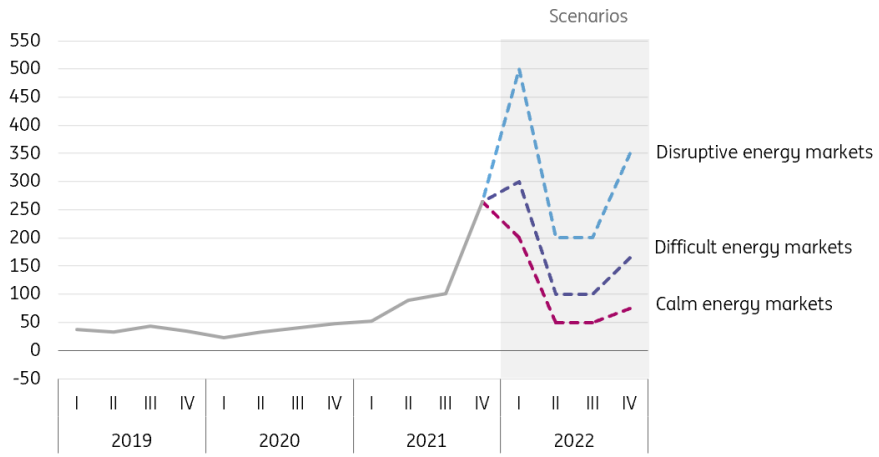
Nobody knows the path for power prices as the drivers that set them apart are almost impossible to predict:

- A cold or warm winter makes all the difference but scientists can't accurately predict the weather beyond 10 to 14 days.
- The geopolitical situation also holds a firm grip on power markets, in particular the relations between Russia and Ukraine and its repercussions for the Nord Stream 2 pipeline.
- The Omicron variant also adds a lot of uncertainty to the macro-economic outlook.

So, the future of power prices is highly uncertain and in fact, 2022 could be the year of new records. But it could also be the year where we see sharp power price declines. Whatever the outcome, 2022 is likely to be a year to remember, too.

A perfect storm in power markets

Baseload power price in Germany in €/MWh



Source: ING Research based on Refinitiv

What happens next to power prices mainly depends on weather conditions, the economic recovery from Covid-19, and geopolitics. Energy supply factors also play a major role. In such an uncertain world, we're setting aside our forecasting tools and applying scenario analysis instead.

Here are our three scenarios for 2022:

Unusually high degree of uncertainty for gas and power markets

Three scenarios for European gas and power prices

	Disruptive	Difficult	Calm
Weather: Temperature	Prolonged cold winter	Average winter	Warm winter
Weather: renewables supply	Dunkelflaute: low wind and solar supply	Average wind and solar supply	High wind and solar supply
Economic recovery and power demand	'Optimistic omicron'; continued GDP and power demand growth as recovery continues	'Omicron difficult not disaster'; lower GDP and power demand growth in winter	'Omicron a significant blow'; lockdowns hit GDP and power demand
Nord Stream 2	Uncertainty whether Nord Stream 2 will go ahead as tension between Russia and Ukraine intensifies	Commissioning of Nord Stream 2 after winter	Commissioning of Nord Stream 2 this winter
Gas storage	Gas reserves turn out to be insufficient and need to be topped up in tight gas markets	Gas reserves turn out to be sufficient and can be filled after the winter	No need to tap into gas reserves
LNG supply	LNG predominantly shipped to Asia	LNG flows to Europe and Asia	LNG predominantly shipped to Europe
Coal supply	Governments continue to phase out coal. Plants recently shut down remain closed	Coal phase out is paused and plans to fire up recently closed coal plans reduces market fear	Phase out is paused and recently shut down plants are brought back to life for security of supply
Nuclear supply	Higher than normal nuclear plant outages	Normal nuclear plant outages	No nuclear plant outages
Outcome for energy prices	**Gas and power prices continue to rise in winter and half in spring, but remain well above historic levels**	**Gas and power prices stay at current levels during the winter, half in spring but remain above historic levels**	**Gas and power prices fall sharply to historic levels as fear rapidly leaves the market**

Source: ING Research

1 Disruptive energy markets

Weather conditions, an escalation in geopolitical tensions, and limited energy supply all turn for the worse in energy markets. The low levels of gas inventories turn out to be insufficient during a prolonged and cold winter. Nord Stream 2 will not be operational during the winter and LNG supply mainly flows to Asia as prices are even higher in that region.

Omicron turns out to be a significant blow to the economy. Lockdowns ease energy demand to some degree but that cannot compensate for the strong increase in heating demand from the cold winter. The firing up of coal plants that were recently closed but not yet dismantled, cannot either. Unforeseen problems with nuclear power plants further add to the supply problems.

Gas supply is too low to meet demand. In most countries, consumers are protected so they can

continue to heat their homes, but energy-intensive businesses are forced to reduce energy demand and thus output. Many have done so already as they operate at a loss given the high energy prices. Power prices set new records in European markets and stay at elevated levels throughout the winter.

Tightness in energy markets results in disruptive spillovers to the real economy. A major political concern will be whether output reduction based on market forces is optimal from a societal point of view.

Energy-intensive producers of fertilisers are likely to scale down production at an early stage in the cycle. But this could induce negative feedback loops on food production in particular because this energy crisis is more or less a global thing. Aluminium producers are also likely to reduce output at an early stage, but this could negatively impact supply chains in manufacturing and construction.

2 Difficult energy markets

The winter won't be extremely cold or warm, but normal. Political tensions normalise. The Nord Stream 2 pipeline is not put to the test between Europe and Russia and opens late this winter. But an early announcement could already reduce market fears of shortages. While Omicron is difficult to manage, it does not turn into a disaster for the economy.

Gas supply can just about meet demand as gas inventories turn out to be sufficient and vast amounts of LNG are shipped to Europe. Companies can continue to produce, albeit at high energy costs. Hence, energy markets turn out to be extremely difficult and challenging, but they are not disruptive.

3 Calm energy markets

A cold and prolonged winter, little supply from renewables (Dunkelflaute), and an escalation of the situation in Ukraine did not materialise. Omicron starts to fade quickly; its less-lethal spread means there's far more natural immunity around the globe and mass vaccinations also enable the economic recovery to continue.

Gas supply exceeds demand and energy prices are in for a rapid decline, leaving no room for negative feedback loops to the economy.

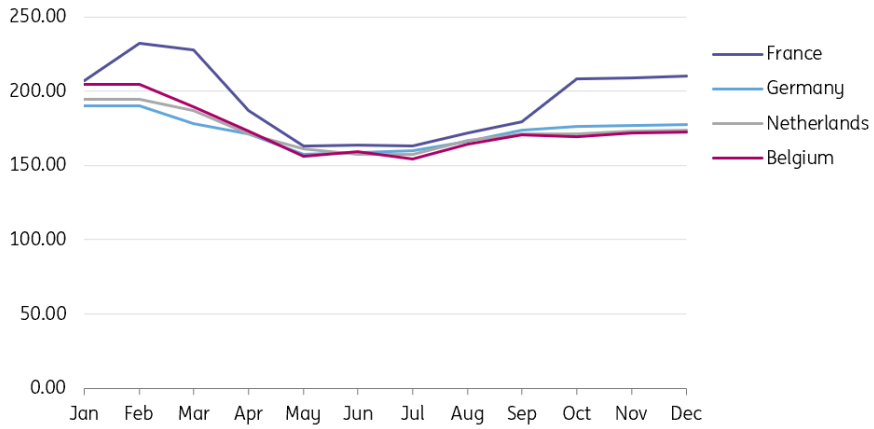
The market currently expects a difficult scenario

Market participants often can't wait to see what scenario materialises. Large energy-intensive companies in manufacturing and agriculture need to act now to secure their energy supply or hedge power price risks. Power market futures provide insights into how the market expects prices to evolve.

Power traders collectively believe that prices will halve when the European spring arrives, which is in line with the base case scenario. But still, power prices remain well above normal levels for April until September at around €40/MWh.

Power prices are expected to remain high in 2022

Future baseload power prices for 2022 in €/MWh



Source: ING Research based on Refinitiv

We could be here for at least another year

Interestingly, future prices stay high throughout 2022, with only a modest decline during the spring and summer.

So 2021 will turn out to be an important turning point in energy markets if these future prices turn out to be an accurate forecast. Until 2021, gas supply was abundant and power prices were relatively stable over longer periods of time, except for increased short-term volatility from intermittent sources such as wind and solar energy.

The market became very tight in 2021 and this could be a new normal, for a few reasons;

- Governments are phasing out some of the key pillars of the energy systems from the past, notably coal in countries such as the UK, Netherlands and Germany, nuclear energy in Germany, Belgium and France, and gas production in the Netherlands.
- Investment in the oil and gas industry has been stubbornly low over the past few years.
- Demand for gas has been rising, particularly in Asia.
- Russia has met its long-term commitments to deliver gas but has been reluctant to provide additional supplies in tight markets.
- Some gas storage facilities in Europe were closed, such as the biggest UK gas storage facility, with no new backup facilities in place such as hydrogen storage.

In short, old fossil fuel energy systems have been taken down faster than demand has declined and new renewable energy systems have been built. These structural trends are not easily solved and hence the market currently expects prices to remain high in the coming years.

Omicron and negative feedback loops from high prices determine the course of power demand

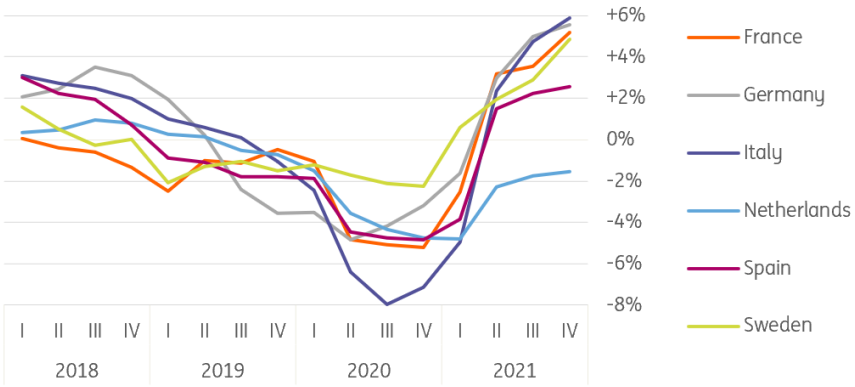
Electricity demand showed a robust recovery in the second and third quarters of 2021 when lockdowns ended and shops reopened. Growth has continued since, especially in countries that

were hit hard, like Italy and France. On a 12-month basis, Italy's power consumption at the end of 2021 came in 5.9% stronger than a year ago. Germany and France registered 5.6% and 5.2% growth, respectively.

The future trajectory of electricity demand depends on the strength of the economic recovery and whether or not we will have more lockdowns in 2022. Extremely high power prices are likely to lower electricity demand, especially when they persist in scenarios one and two.

Strong recovery in power demand growth from 2020 lows

Year-on-year growth in power demand, four-quarter moving average



Source: ING Research based on Entso-E

Smaller utilities suffer, but the larger ones do relatively well

These are hard times for the smaller utilities, with almost 40 of them going bankrupt in Europe in the past few months.

Elevated power and gas prices created an acute crisis for the weakest players, especially in the UK. Those worst hit were energy suppliers without any power generation assets. With a business model based on contracting new customers on low tariffs in order to gain market share, a large number of retailers faced a price squeeze in 2021.

The larger utilities are doing relatively well and can now benefit from new clients. In the UK alone, Shell Energy, EDF, British Gas and E.ON gained approximately 630,000, 580,000, 530,000 and 250,000 clients, respectively, as the UK regulator assigned the failed customers to larger utilities.

Read more on this in our utilities outlook.

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Energy Outlook: European utilities driven by higher tariffs and investment

While many smaller energy companies are struggling, larger ones are doing well. This year we expect an average 6% EBITDA growth in the European utility...

We expect the European utility sector's average EBITDA to grow by 6% in 2022

These are great times for European utilities, but not all of them

In 2021, power and gas consumption recovered across Europe. At the same time, power and gas prices reached incredibly high levels on the back of the economic recovery in most European countries. Other elements also played a crucial role in pushing up prices, including natural gas shipment shortages, high carbon prices, and the decommissioning of coal power plants.

Costly power and energy tariffs have become a challenge for a number of energy-intensive sectors. As a whole, we believe that the European utilities sector will benefit strongly from the elevated prices, but not every player in the sector is benefiting – smaller utilities, most of them pure retailers, have declared bankruptcy due to margins being squeezed.

The energy crisis and its implications for utilities

In the UK, more than anywhere else in Europe, elevated power and gas prices have turned into the most acute crisis for the weakest players in the sector, mostly energy suppliers without any power-

generation assets. With business models based on contracting new customers on low tariffs in order to gain market share, a large number of retailers have faced a price squeeze in 2021. Last year, some 29 gas and electricity companies declared bankruptcy in the UK.

29 UK utilities declared bankruptcy in 2021

Incumbents gain customers on the back of retailer bankruptcies

Locking clients into mid- and long-term contracts at low tariffs, while they had to buy electricity and gas volumes at wholesale prices that rose steeply over time, is the main reason why UK utilities went bust. These companies, based on a low margin business model to attract customers, either abruptly or progressively sank as wholesale prices continued to spiral upwards, resulting in deep negative operating margins. In the UK, energy supplier bankruptcies affected about 2.6 million customers in 2021.

In order to maintain energy deliveries to residential homes and businesses, the UK regulator assigned the failed customers to other utilities. The winners have been Shell Energy, EDF, British Gas and E.ON which gained approximately 630,000, 580,000, 530,000 and 250,000 clients, respectively.

> *With nine energy suppliers going bankrupt in 2021, the Benelux (Belgium, the Netherlands, and Luxembourg) market has been less impacted, but more utilities could fall in 2022*

In the **Netherlands**, seven companies lost their license to operate due to a margin squeeze by the end of December 2021. The biggest bankrupt utility, Welkom Energie, shifted its clients to Eneco, the market leader in the country.

In **Belgium**, two small retailers – Energy2Business and the Vlaamse Energieleverancier – ceased activity and existing clients were transferred to Fluvius, the Belgian Flemish network distribution company, before finding a replacement utility. More Belgian energy suppliers could disappear in 2022. The company Watz, for instance, asked for protection from its debt holders at the end of 2021.

In **France**, one energy supplier, Hydroption, went bankrupt in October 2021 having been in difficulty since 2018. Hydroption was the energy supplier of 18,500 corporate clients including the Paris city hall and its branches, as well as cities of the French army. This year could see more bankruptcies. Barry energy (owned by Fortum) and Bulb are in great trouble. The clients of the bankrupt utilities will be handed over to the incumbents operating the local distribution network. Across French territory, 90% of the electricity distribution grids are operated by EDF.

In **Spain** and **Italy,** no energy suppliers have filed for bankruptcy due to the energy crisis so far.

This can be largely explained by the fact that many consumers pay variable tariffs which are closely linked to the fluctuation in wholesale prices. This has allowed retailers to cover their high procurement costs when wholesale prices surge.

Regulation in the UK and France limits the ability to pass on high energy prices

There are two reasons why utilities do not fully benefit from high energy prices in France and the UK.

1. Regulations in place can restrict passing high energy prices on to customers

If the highest number of bankrupted utilities can be found in the UK, this is in part because of the cap put in place by the regulator, Ofgem, on how much utilities can charge their clients per year.

For a household with a typical energy use, this cap was re-evaluated at £1,277 (+£139) on 1 October 2021. This increase does allow utilities to boost revenues but does not reflect wholesale power prices that grew threefold over the course of 2021. Many energy suppliers continue to sell electricity at a loss. The UK regulator revises the tariffs cap twice a year and it could be revised upwards significantly.

France still has retail regulated electricity and gas tariffs that consumers can choose from instead of signing up for market tariffs.

More importantly, energy suppliers that operate on French territory can buy an aggregated volume of 100TWh per year from the national incumbent, EDF. These volumes have a fixed price of €42/MWh and have benefited EDF's competitors during this energy crisis with a wholesale price that has remained stable and affordable. Earlier this month, the French authorities announced that the volume will be upgraded to 120TWh, at a price of €46.2/MWh. This 120TWh corresponds to a bit more than 30% of EDF's total power generation in France in 2022.

While the French government's measures are meant to partly protect consumers from energy price hyperinflation, EDF estimates it will cost the company some €8.3bn. EDF withdrew its 2022 leverage and result guidance.

2. Clawback taxes could confiscate profits for subsidies distribution to consumers

Already subject to windfall taxes during periods of economic crises in the past, the sector saw this issue reappearing last June. Despite the limited announcements so far, we would not be surprised to see the subject coming back into the spotlight if energy prices stay elevated for a very long time. Windfall taxes imposed on power-generating companies are generally meant to compensate government subsidies to sweeten high energy bills.

With gas and electricity bills expected to increase by 42% and 55%, respectively, in the first quarter of 2022, the **Italian government** is looking for ways to limit the negative impact of heavy energy bills on the poorest consumers. A package of measures, potentially including clawback taxes on energy suppliers accused of benefiting from windfall gains in this current energy crisis, could be introduced. The Italian authorities, however, want to give themselves the time to study the effectiveness of reintroducing clawback taxes before a final decision is made.

Also in January 2022, the **Belgian Federal government** announced it was working on a package of measures to limit the impact of high gas and electricity prices. The high profits in 2021 of the utilities operating on Belgian territory have drawn attention.

In June 2021, the **Spanish government** said it would retain €2.6bn of the profits from utilities generating electricity from renewables and hydropower, given the lower cost of these technologies. The introduction of this taxation resulted in Iberdrola paying €85m, but exemptions brought to the decree in November had positive implications for the company.

Higher energy tariffs and investment will be key growth drivers

The European utility sector remains a defensive one. We had expected to see a much more severe impact of the Covid-19 pandemic restrictions on European utilities' 2020 financials, but overall the sector's EBITDA retrenched by around 2% during the height of the pandemic.

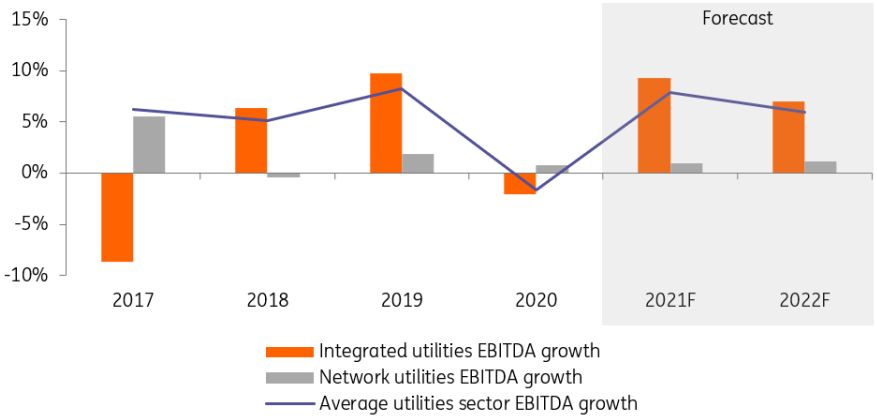
After an already strong recovery in 2021, integrated European utilities will benefit from the higher wholesale power prices hedged in 2021 and are expected to remain elevated during 2022. Large previous and upcoming investments in networks and renewables will also boost the sector with a growing asset base and cash flow generation.

6% We expect the European utility sector's average EBITDA to grow by 6% in 2022

After a very challenging Covid-19 pandemic and accompanying restrictions, the rebound of the world's economies, which is set to continue in 2022, should benefit utilities greatly. We expect European utilities to post a sector EBITDA of approximately 9% for the full year 2021 and to register 6% growth on average in 2022 (excluding the potential impact on EDF's EBITDA).

EBITDA continues to do well, with integrated utilities outperforming regulated utilities

Earnings before interest depreciation and amortisation, year-on-year growth (%)



The high investment cycle is set to continue for many years

The Covid-19 pandemic has not stopped European utilities from investing massively. The capital expenditure plan of our sample of 37 European utilities shows that investment will increase by another 10% in 2022.

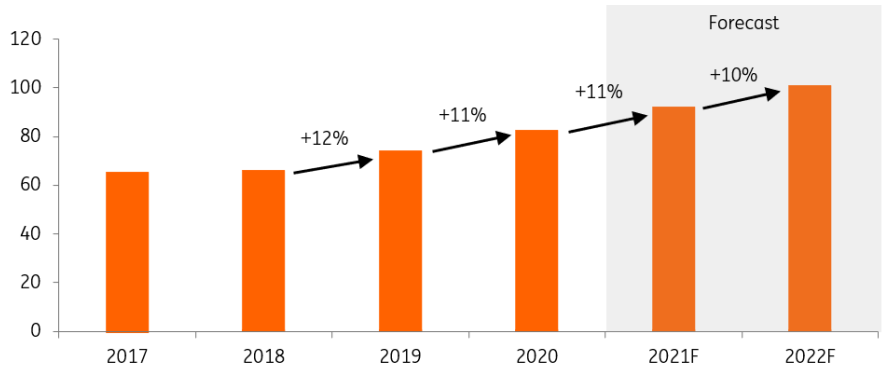
10% We expect the European utility sector's investment to grow by 10% in 2022

This is in line with the beginning of the high investment cycle that started in 2019. The 37 European utilities* should reach the €100bn line of investment in 2022. By comparison, they spent a mere €65bn in 2017.

With their international size, integrated utilities form the bulk of the total investment which should see a 9% jump in 2022 vs. 2021 according to the companies' business plans. However, network companies continue to show the strongest progress with capital expenditure set to increase by 12% in 2022.

European utilities will increase investment again in 2022

European utilities' investment plans (€bn)



Source: Companies' business plans, ING

European utilities are at the heart of the green transition

The European Union has a set target for 2030 of a 55% net reduction in greenhouse gas emissions. According to preliminary data published by the European Environment Agency in 2021, the EU's net emissions in 2020 were 34% below 1990 levels. While carbon emissions have declined in all sectors, the energy sector has been at the forefront of the energy transition.

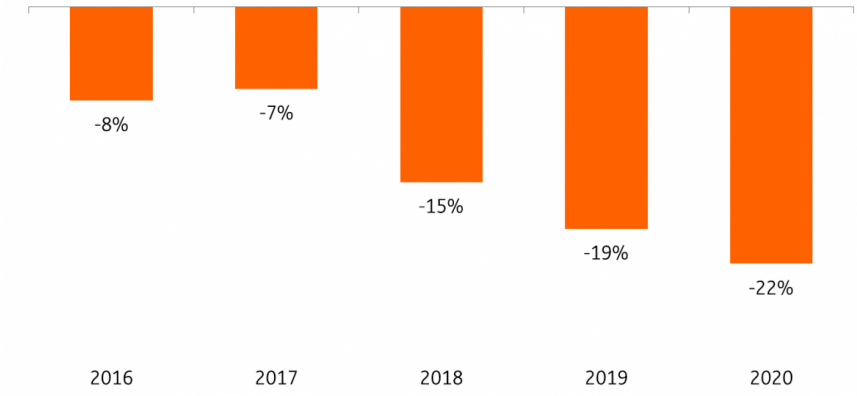
The 15 biggest utilities in Europe halved their carbon emissions between 2016-20

The efforts of Europe's biggest energy players have resulted in a significant reduction of CO2 emissions. Data provided by the 15 biggest utilities in Europe shows that they halved carbon emissions between 2016 and 2020 with a sharp reduction of 19% in 2019 and 22% in 2020.

An important part of the reduction is due to the replacement of the most polluting power-generation assets, notably coal-fired power plants, by renewables. But, part of the carbon emission reduction is also due to asset disposals which do not cancel carbon emissions but transfer them to other owners.

The top 15 European utilities continue to improve on their carbon emissions

Carbon emissions reduction per annum of the top 15 European utilities



Source: Company data, ING

Utilities are expected to issue €35bn of sustainability bonds to finance investment

Globally, we expect corporates to issue €100bn of benchmark size sustainability euro-denominated bonds in 2022. By sustainability, we mean green, sustainable and sustainability-linked bonds. This compares with €80bn in 2021 and €38bn in 2020.

These numbers represent 9% of total euro corporate bond issuance in 2020, 27% in 2021, and would account for 35% of total corporate euro bond issuance in 2022. Out of this €100bn, we believe the energy sector (utilities and oil & gas companies) will account for 45% of the total.

70% of utilities' euro new bonds will be sustainability bonds

For utilities alone, we expect another strong increase in the issuance of euro bonds in the sustainable bond market in 2022, with about 70% of the bonds marked as green, sustainable or sustainability-linked. This means some €35bn of benchmark-size bonds out of a total sector

issuance of c.€47-50bn. In 2021, 45% of the sector's new euro bonds were sustainability bonds.

*The 37 utilities in our sample are: A2A, Acea, Alliander, Centrica, CEZ, EDF, EDP, Elia Belgium, Enagas, EnBW, Enel, Enexis, Engie, E.ON, Eurogrid, Fluvius, Fortum, Hera, Iberdrola, Italgas, National Grid, Naturgy, Nederlandse Gasunie, Orsted, Red Electrica, REN, RTE, RWE, Snam, SSE, Stedin, Suez, TenneT, Terna, Vattenfall, Veolia, Viergas.

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