

Scream if you want to go faster

If you thought this week was busy, just wait for after Halloween. The ECB went big with its rate rise, so what will the Fed and the Bank of England do? What we're predicting from the BoE might surprise you. Global gas worries have eased but food producers are struggling; we've got you covered. And talking of energy, what role can hydrogen play in the power mix?

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Fed may be nearing a pivot, but inflation pressures remain strong

The Fed's favoured measure of inflation is heading higher, rather than lower while employment costs continue to rise at double the rate experienced over the past 15 years. The market is probably right to expect the Fed to slow the pace of rate hikes from December, but this is by no means guaranteed



5.1% Annual rate of core inflation

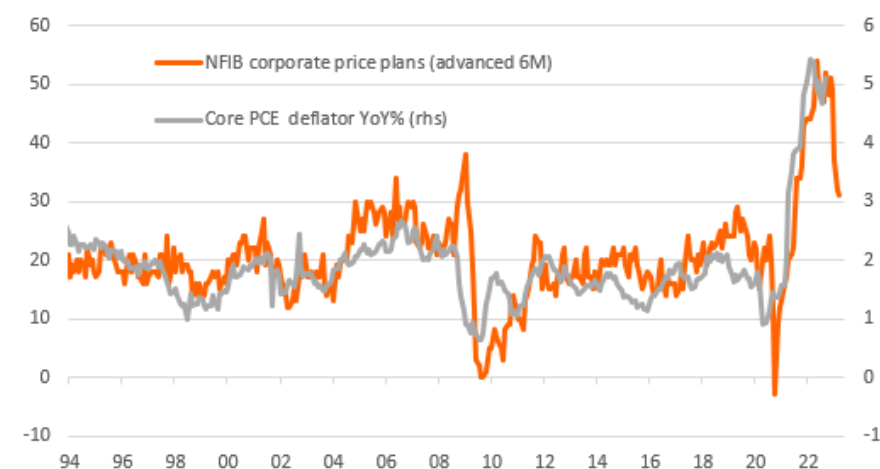
Underlying inflation still heading higher

US market interest rate hike expectations have been scaled back in recent days as caution on the economic and market outlook have heightened expectations that the Fed would follow other central banks and rein in their aggressiveness. Yet, while we may well get a “step down” in the pace of tightening from December onwards it is clear that inflation is far from defeated and the risks are that rate hikes could continue for longer.

That view has been backed up by today's data which show the Fed's favoured measure of inflation rose 0.5% month-on-month in September, the same as in August (although it was revised downwards from 0.6%). This leaves the year-on-year up at 5.1% versus 4.9% previously. Remember that to get the annual rate of inflation trending back down to the 2% target we need to see MoM figures closer to 0.2%, so there is little sign of us heading in that direction yet.

Nonetheless we are hopeful that it will slow next year. The chart below shows the relationship between the National Federation for Independent Business' data series on price plans – the proportion of companies looking to raise their prices in the next three month and the core PCE deflator. It hints that weakening demand, the deteriorating economic outlook and rising inventory levels are making businesses more cautious and suggests pricing power is waning. If so this indicates inflation could slow rapidly through the first half of the year.

Core PCE deflator and the NFIB survey of corporate price plans



Source: Macrobond, ING

Labour costs still running hot

That said, the Fed appears focused on the here and now with another of their favourite indicators highlighting the strength in near-term inflation pressures. The Employment Cost Index showed that labour market inflation pressures remain strong, rising 1.2% quarter-on-quarter in the third quarter after a 1.3% increase in the second quarter. This is double the 0.6% QoQ average over the past 15 years, indicating that this is still going to be an issue for the Fed given its increase prominence in how the central bank is assessing the risks. Wages rose 1.3% while benefits increased 1% with government labour cost increases outstripping private sector costs for the first time in several years – government wages rose 2.1% QoQ versus 1.2% in private industry.

Better spending momentum, but GDP growth is still likely to slow in the fourth quarter

Meanwhile, the personal spending numbers have seen some quite big revisions so that after a contraction in real consumer spending in July we got some pretty firm figures for August and September with 0.3% MoM growth. As such this positive momentum heading into the fourth quarter makes us a little more optimistic on fourth quarter GDP than we had been. But even so the intensifying headwinds from the downturn in the housing market, high borrowing costs and the

strong dollar mean that we think it will slow to something around the 1.5% mark.

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The next Bank of England rate hike may be smaller than you're expecting

Markets and most economists are expecting a 75 basis-point rate hike from the Bank of England on 3 November. But we think a 50bp increase is narrowly more likely. More importantly, we think the Bank Rate is unlikely to go above 4% next year. And that suggests that markets are overestimating the amount of tightening still to come



Shift in UK leadership reduces pressure on the Bank of England

[Watch video](#)

Investors have pared back rate hike expectations, but perhaps not far enough

It's been a wild ride for Bank of England (BoE) expectations since September's fateful 'mini budget'. The resulting chaos in financial markets had prompted investors to, at one point, price in more than 150bp worth of tightening by the time of the November meeting. BoE chief economist Huw Pill spoke of the need for a 'significant' response.

Since then, UK markets have calmed, buoyed by the appointment of Rishi Sunak as prime minister and the steadier backdrop for public finances that is perceived to have ushered in. Markets have

drastically scaled back expectations for November's rate hike and are now pricing less than 75bp.

Having previously been among those looking for a 75bp hike, we now think 50bp has become narrowly more likely – though either way the committee is likely to be heavily divided. Consensus expects a 75bp move.

50bp

ING's BoE rate hike forecast

(vs. 75bp priced)

The Bank of England is becoming more vocal about excessive hike expectations

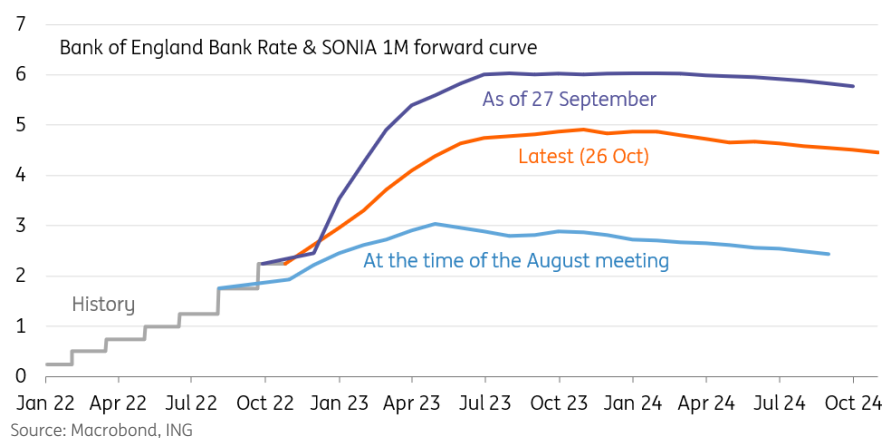
It's becoming increasingly clear that the Bank of England is uncomfortable with the amount of tightening markets are pricing. Investors still expect Bank Rate to peak around 5% next year. [In a recent speech](#), BoE deputy governor Ben Broadbent suggested that GDP would take a near-5% hit over coming years if the Bank were to deliver that sort of tightening.

The Bank's August forecasts – which themselves already pointed to a five-quarter recession – were based on a much lower terminal rate of roughly 3%. Citing a simple model, Broadbent suggests recent fiscal announcements warrant 'only' an extra 75bp of tightening on top of that.

It's important not to take this too literally, but it's nevertheless compatible with our long-standing view that Bank Rate is unlikely to go above 4%. Even Catherine Mann, one of the most hawkish committee members, was quoted saying recently that markets are "too aggressively priced".

That frames the messaging we can expect from Thursday's meeting. The new set of forecasts due, which crucially are based on market interest rate expectations, are likely to be dismal – showing both a deep recession and inflation falling below target in the medium-term. That should be read as a not-so-subtle hint that market pricing is inconsistent with achieving its inflation goal.

Markets still expect Bank Rate to peak close to 5% next year



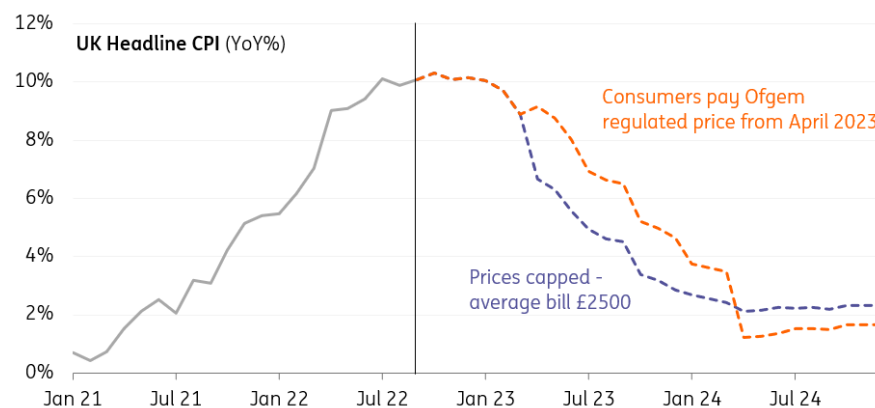
Sky-high mortgage rates likely to outweigh concerns about a weaker pound

The obvious counter-point here is that the Bank's forecasts have been sending this signal for much of this year – and the Bank hasn't made much of an effort to otherwise talk down market expectations. Partly that's been because of mounting concerns about a weaker pound, and partly because of growing caution about the accuracy of forecasts as inflation has consistently outpaced expectations.

But this calculation is now changing. Not only does it look like inflation is close to peaking, but the risk of overdoing it with rate hikes is growing. Two-year mortgage rates hit 6.5% this month, and despite a fall in swap rates since the abolition of the 'mini budget', we suspect they'll stay pretty high. Especially for high loan-to-value, lenders will either keep mortgage products off the market or build in more of a premium given the mounting risk of a house price correction. On a similar note, the Bank of England's financial policy arm has also warned that small and medium-sized businesses are vulnerable given their heavier reliance on floating-rate borrowing.

Given the choice of hiking aggressively and baking in – or even pushing up – these borrowing costs, or tightening more cautiously and risking a weaker pound, we suspect most policymakers will lean towards the latter.

Inflation is close to a peak, though could stay 2-3pp higher from April 2023 if energy support becomes less generous



Source: Macrobond, ING

Five reasons for a 50bp rate hike

Admittedly none of what we've said so far necessarily precludes the central bank from hiking by 75bp on Thursday. Policymakers may feel the bank needs to reassert its authority after a chaotic few weeks. **But here are five reasons why we think the committee will lean towards a smaller move:**

First, the fact that we're essentially back to square one on the mini-budget also reduces the pressure for a jumbo hike.

Admittedly the Bank finds itself in the awkward position of not knowing the full details of PM

Sunak's rewrite of the Medium-term Fiscal Plan. But the most consequential government action for the economic outlook has always been the Energy Price Guarantee, the cap the government has placed on consumer and business energy costs.

This had already been announced well before the Bank of England's September meeting, where the committee resisted pressure to hike by 75bp. Indeed, we have since learned that the government has committed to making its energy support less generous (albeit we don't yet know how this will work).

In short, and with the notable exception of the cut in National Insurance, the expected boost from fiscal policy is similar to what was expected before September's meeting.

Second, the economic dataflow doesn't provide a clear enough justification for more aggressive tightening. It's certainly true that the Bank's own surveys continue to point to chronic staff shortages and wage pressures, and this remains a key concern for the BoE. But the most recent inflation data was mostly as expected, while activity data has clearly deteriorated.

Third, trade-weighted sterling is actually now stronger than it was at the time of the September meeting. Concerns about depreciation we'd been seeing through the summer will have been a factor in the decision of three committee members to vote for 75bp at the last meeting. The latest market moves should alleviate some of these concerns at the margin.

Fourth, the Bank will be acutely aware that hiking by 75bp sets a precedent – it risks becoming viewed as the default move by investors, having only hiked in 50bp increments until now. At a time when the Bank is trying to talk down market rate expectations, that's not ideal. With economic risks growing, the BoE will want to retain some optionality for future meetings.

Policymakers have also shown on more than one occasion now that they don't feel pressured into a big move by what other central banks are doing. We'd therefore caution against assuming the BoE will hike by 75bp, just because that's what the Fed and more recently the ECB have opted to do.

Finally, the committee is divided. While three members voted for a 75bp hike in September, one rate-setter – Swati Dhingra – voted for just 25bp. We think other committee members will remain reluctant to step up the pace of rate rises this late into its hiking cycle. That potentially heralds another three-way-vote-split on the committee on Thursday.

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ECB hikes rates and isn't done yet

The press conference after the rate hike announcement showed that the European Central Bank (ECB) is determined to continue hiking interest rates. However, while today's jumbo hike was a no-brainer, we expect much more controversial discussions in December and an end to the hiking cycle in February next year



ECB President Christine Lagarde at today's press conference

The ECB [has hiked interest rates by 75bp](#), bringing the deposit facility interest rate to 1.5% and the main refinancing rate to 2%. Contrary to the rate hike decisions in July and September, the size of today's rate hike seems to have been uncontested and broadly supported by all ECB members. Alongside the expected rate hike, the ECB also announced changes to the current Targeted-Long-Term-Refinancing Operations (TLTRO), in terms of the applied interest rate and earlier repayment dates. The central bank also decided to set the remuneration of minimum reserves at the ECB's deposit facility rate.

Regarding the changed TLTRO terms, from 23 November 2022 onwards, the interest rate on all remaining TLTRO III operations will be indexed to the average applicable key ECB interest rates. There will also be three additional moments for earlier repayments. According to the ECB, "it is necessary to adapt certain parameters of TLTRO III to reinforce the transmission of our policy rates to bank lending conditions so that TLTRO III contributes to the transmission of the monetary policy stance", which is a bit strange as the latest Bank Lending Survey had already signalled a tightening of lending conditions.

As regards the decision to set the remuneration of minimum reserves at the ECB's deposit rate and no longer at the refi rate, this should hardly have an impact as minimum reserves are currently only a fraction of overall excess liquidity. The ECB did not announce any reverse tiering.

The sharpest and biggest rate hike cycle ever

The ECB has now hiked interest rates by a total of 200bp over a period of slightly more than three months. It's the sharpest and most aggressive hiking cycle ever. In the previous two hiking cycles since the start of the monetary union, it took the ECB at least 18 months to hike rates by a total of 200bp.

Today's rate hike provides further evidence of the extreme paradigm change at the ECB. A year ago, ECB president Christine Lagarde said at a press conference that "the lady is not tapering". Now, the ECB has conducted the most aggressive rate hikes in its history, despite a war in Europe, little signs of an overheating economy but rather indications of a looming recession, and record high inflation, which is mainly driven by high energy and commodity prices. A couple of years ago, the same ECB but different main characters might have decided differently. The current ECB, however, has woken up very late to the fact that even if inflation is driven by supply-side factors, too high inflation for too long can damage a central bank's credibility and plant the seeds for unwarranted second-round effects.

At the current juncture of a looming recession and high uncertainty, normalising monetary policy is one thing but moving into restrictive territory is another. With today's rate hike, the ECB has come very close to the point at which normal could become restrictive. However, during the press conference, Lagarde said that the ECB might still have to hike rates at several more meetings as the job to bring inflation back to target is not done yet.

First opening for a dovish pivot in December

Looking ahead, the ECB seems determined to continue hiking interest rates, though no longer at the current jumbo size of 75bp. Lagarde tried to give the impression that there will be more than one more rate hike. However, her comments about the fact that the ECB no longer believes in any estimates of a neutral interest rate, after previous comments that the central bank no longer believed in its inflation projections, make it hard to identify the ECB's precise reaction function. This reaction function can probably be summarised as 'whatever, whenever'. Lagarde also mentioned the word "recession" and stressed that incoming data and the next staff projections at the December meeting would be important. A first opening for a dovish pivot at the December meeting

We think that the debate at the December meeting will already be much more controversial than today, delivering another 50bp rate hike. However, as the ECB's inflation outlook for 2024 was already at 2.3% in September and will very likely be at 2% for 2025 at the December meeting, it is hard to see how the ECB can deliver more than an additional 75bp rate hikes. For us, the terminal rate remains at 2.25% for the deposit rate. The ECB has been too late and too slow with normalising monetary policy. It shouldn't try to make up for it by being too high for too long.

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Natural gas supply concerns ease – but only for this winter

Day ahead European natural gas prices have fallen by as much as 82% this month. Milder weather and the continued filling up of storage have eased immediate supply concerns. However, 2023 will be a tougher year for European gas markets, particularly over the 2023/24 winter



Milder weather in Europe is easing immediate supply concerns

Prompt natural gas prices collapse

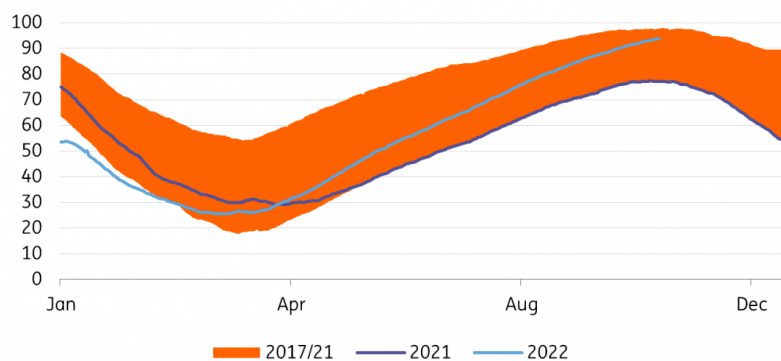
European gas prices are collapsing as we head into the winter season. TTF day-ahead prices have fallen as much as 91% from their peak in August, trading to their lowest levels since June 2021. TTF next-hour prices fell briefly into negative territory recently, reflecting a very well-supplied spot market. Weaker prices will come as a relief to consumers and politicians in the EU.

Milder than usual weather for this time of year has meant that heating demand has been lower, whilst also allowing EU gas storage to continue to fill up. According to data from Gas Infrastructure Europe, EU gas storage is now more than 94% full. Not only is this above the five-year average, but it is also well above the EU's initial target of having storage at 80% full by 1 November this year. Meanwhile, German storage is almost 98% full.

While the weakness in prices provides some relief to consumers, a concern is whether lower prices will stimulate demand once again. European fertiliser producers have already started to bring back curtailed capacity, following the recent weakness in prices. If we see this happening on a larger scale, clearly Europe's efforts to refill storage next year will be more difficult.

There are still concerns for Europe over the longer term, particularly through 2023 and into 2024. The front end of the TTF forward curve is in significant contango with Feb-23 TTF futures trading in excess of EUR140/MWh (vs. day-ahead at between EUR40-45/MWh). The forward curve through 2023 until early 2024 remains fairly flat at these elevated levels.

EU gas storage % full



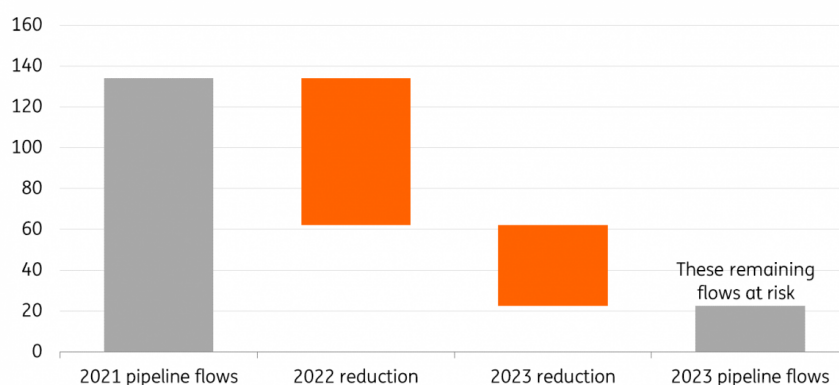
Source: GIE, ING Research

Russian annual gas flows will be significantly lower in 2023

A significant increase in liquefied natural gas (LNG) flows and demand destruction (due to the high price environment) has ensured that the EU has built inventories at a good pace this year and also allowed the region to exceed initial targets. This has come at a time when Russian pipeline gas flows have fallen significantly. The latest data shows that year-to-date pipeline flows from Russia to Europe have fallen by around 50% year-to-year to roughly 58bcm. And, obviously, these flows have declined progressively as we have moved through the year with reduced flows via Ukraine and Nord Stream. Daily Russian gas flows to the EU are down around 80% YoY at the moment.

So, if we assume no change in Russian volumes from the current environment (via Ukraine and TurkStream only), annual Russian pipeline gas to the EU could fall by a further 60% YoY to around 23bcm in 2023. And clearly, there is a very real risk that the remaining flows via Ukraine and TurkStream are halted.

Russian pipeline flows to the EU (bcm)



Source: ENTSO-G, European Commission, ING Research

Not enough LNG to fill the shortfall

The LNG market has helped Europe significantly this year. LNG imports in August made up 41% of total EU imports, a significant increase from 19% in August last year.

However, there are constraints to how much more LNG Europe can import. There are reports that LNG carriers are queuing waiting for spots at regasification units. This highlights the lack of regas capacity in Europe at the moment. Although this queue of LNG carriers could also be partly due to market players wanting to take advantage of the significant contango in the front end of the TTF curve.

The EU has seen the start-up of a fair amount of regasification capacity in the form of floating storage regasification units (FSRUs) over 2H22. The Netherlands, Germany, Finland/Estonia have or are in the process of starting up operations at these FSRUs with a combined capacity in the region of 23-27bcm. Whilst Germany is expected to bring a further 15bcm of regas capacity online early next year. This will help with some of the infrastructure constraints Europe is facing, but the issue is also around global LNG supply and the limited capacity which is expected to start up next year.

Global LNG export capacity was set to grow by around 19bcm in 2023, driven by the US, Russia and Mauritania. However, following Russia's invasion of Ukraine and the sanctions which have followed, it is likely that the start-up of Russian capacity will likely be delayed. The Russian capacity makes up for 46% of the total new capacity expected next year. Therefore, we could see just 10.5bcm of new supply capacity.

The other issue for the EU is competition for LNG. This year, weak Chinese LNG demand has been a blessing for Europe. LNG imports from the world's largest buyer were down 21% YoY over the first nine months of the year. This would have been due to the higher price environment as well as the demand impact from Covid-related lockdowns throughout the year. However, if we see a recovery in Chinese demand next year, Europe will have to compete more aggressively for supply.

2023 will be tight for Europe

The pace of inventory builds during the 2023 injection season will be much more modest compared to what we have seen this year, given the reductions in Russian supply. The ability of the EU to turn completely to other sources is just not possible. Therefore, Europe is likely to go into the

2023/24 winter with tight storage, which will leave the region vulnerable next winter.

In order to get through the 2023/24 winter comfortably, we will have to see continued demand destruction. This will have to be either a result of market forces (prices needing to trade higher to reduce demand) or EU-mandated demand cuts (the 15% voluntary demand cut at the moment ends in March 2023). While Europe should be able to scrape through the 2023/24 winter if current Russian gas flows continue, it is much more challenging if remaining Russian gas flows come to a full stop.

Therefore, we believe that there is an upside to current 2023 forward values, particularly those towards the end of 2023. Although much will depend on how much storage the EU drawdowns this winter, which obviously will depend on heating demand through the peak of winter.

What could see prices trade lower over 2023?

Firstly, if the mild weather we are currently seeing across large parts of Europe continues further into this winter, it would take some pressure off the market for next year. This could see Europe starting the injection season with already seasonally high storage.

Secondly, a pick-up in Russian gas flows. However, in the current climate it is difficult to see this. Even if there was a will amongst parties to restore flows, operationally this would be difficult at least through Nord Stream, given the damage following the sabotage.

Finally, government intervention is a risk. Although, in a market which is in structurally short supply, intervention will have limited success, in the absence of mandated demand cuts. Gas price caps which continue to be discussed will do little to help resolve the tightness in the European market, if anything they could add further tightness.

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High energy prices are another test for the resilience of food producers

Surging energy prices create uncertainty for EU food producers, although national energy support measures reduce the impact and shield production. Nonetheless, food producers need to reassess their energy strategies because mandatory cuts in energy use can't be ruled out this winter and concerns about longer-term gas supply continue to linger



A considerable increase in energy costs for food and beverage manufacturers

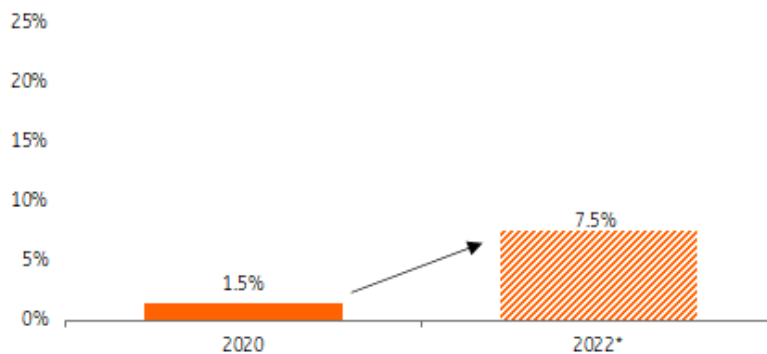
Back in 2019 when energy markets were still calm, energy had a 2% share in the total costs of food manufacturers in the EU. Given the sharp increase in energy prices, we estimate that the share currently ranges between 7.5-10% (without price caps or compensation). There are also many signals that some food manufacturers have seen their energy bills rise to up to 30% of their total costs. In food processing, activities such as flour milling, baking and fruit/vegetable/potato processing are relatively energy intensive.

At this stage, there are large differences between what companies are paying for energy because some still have longer-term fixed contracts, while others had to renew their contracts at much

higher rates. Companies that locked in energy prices before 2021 and companies that use other energy sources than gas for generating heat are certainly in a more favourable position. However, differences will become less pronounced in the months ahead as older, lower-priced contracts and lucrative hedges expire and government support measures level out some variances.

The Netherlands is an example of how energy costs have become a burden for food producers

1. Energy costs as a share of total costs in food and beverage manufacturing



Source: CBS, *estimate ING Research

Food manufacturers feel the pinch from second-round effects

Besides the direct impact on costs, there is also a pass-through of higher energy prices towards food and beverage makers as they procure many inputs from agriculture and because they need transportation. Agriculture is generally quite energy intensive (see this [previous article](#)), and this is especially the case for horticulture under glass and mushroom growing. Energy represented 25% of total costs in Dutch horticulture in 2021 and, based on energy prices in 2022, that share has gone up to more than 60%. When prices of agricultural products go up due to higher energy costs, the food industry has to deal with this as well. This article looks specifically at energy but it's good to keep in mind that cost increases for packaging materials, agricultural inputs and labour all add to the cost pressure.

Energy support measures also help to sustain food production

Do we see any signs of a reduction in food production in the EU because of high energy prices? Thus far, food manufacturing output has proven to be quite resilient, aided by the ability to pass on (some of) the higher costs to customers and consumers. This pass-through is illustrated by current double-digit levels for food inflation in the EU (read more [in this article](#)). Still, food production data up until August show that production volumes in the food and beverage industry in the EU are higher this year compared to 2021. The long-term trend shows that output volumes are generally not very susceptible to external shocks, apart from a considerable drop at the start of the Covid-19 pandemic.

Currently, we see two mechanisms that help to safeguard EU food production. First, international trade and substitution allow food processors to keep facilities running in case European agricultural supplies fall short. High energy prices haven't led to such a situation yet, but earlier this year

trade helped to keep up production of spreads and frozen potatoes amid shortages of Ukrainian sunflower oil. Second, food producers also benefit from government support measures aimed at cushioning the impact of high energy prices on companies and consumers. Examples of recent measures that benefit companies include the reduced VAT rate for electricity and gas in Belgium and the Compensation Energy Costs (TEK) in the Netherlands. Meanwhile, measures aimed at consumers are beneficial because they prevent drastic cuts in expenditure on basic needs such as food.

EU countries opt for a range of measures to reduce the burden on companies

Selection of government support measures in several countries

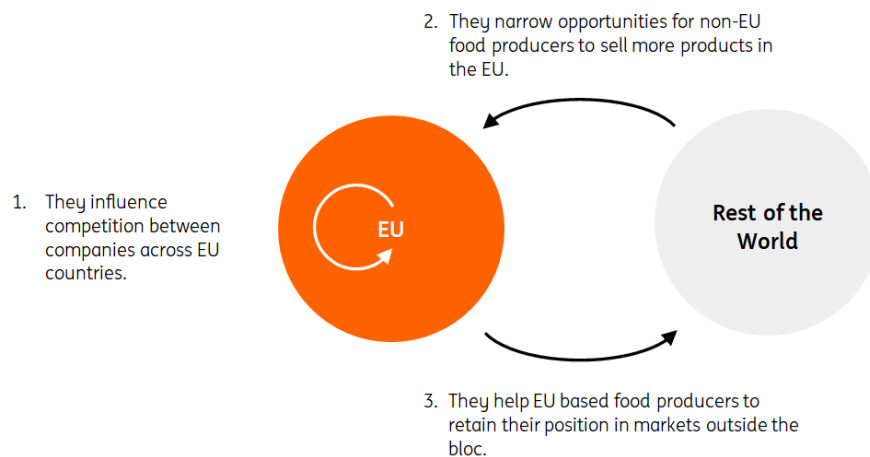
Country	Examples of measures affecting food & agribusinesses
Belgium	<ul style="list-style-type: none"> • Agrofood sector is classified as essential in case of energy shortages • Reduced VAT rate on electricity and gas (open-ended) • Reduction of excise duties on gas and electricity for companies in November and December 2022 • Energy intensive companies and companies that have seen their energy bill double can make use of furlough schemes for employees
France	<ul style="list-style-type: none"> • Agriculture would be given priority in case of power supply disruptions • Cap on electricity and gas prices for households and companies in 2022 • Reduction of electricity tax for households and companies in 2022 • Extension of the energy price cap for households and small businesses in 2023 <p>Current measures</p> <ul style="list-style-type: none"> • Permanent abolishment of sustainable energy surcharge on electricity prices • State guarantees and loans for companies impacted by increase in energy costs
Germany	<p>Proposed measures</p> <ul style="list-style-type: none"> • One-off payment worth one month's gas bill in December 2022 for households and small companies • Price cap for households and SME companies from March 2023 to April 2024 for 80% of their gas consumption • Price cap for 25,000 gas intensive companies from January 2023 for 70% of their gas consumption
The Netherlands	<ul style="list-style-type: none"> • Reduced VAT rate on electricity and gas from July until December 2022 • Compensation of up to €160,000 euro for energy bills of energy intensive SMEs and farmers from November 2022 until end of 2023 • Tax holidays for companies that struggle to pay their bills

Source: Bruegel, VRT, FAZ, NOS, ING Research

Not all support measures are created equal

The introduction of all sorts of national energy support measures for companies will temporarily distort competition in multiple ways. This is very relevant as food and beverage is a major export category accounting for almost 270bn euros or 8% of all intra-EU trade. Hence, calls from food industry associations to maintain a level playing field have become louder over the last couple of months. However, differences between countries are likely to grow as some countries have more fiscal room than others. The longer the energy crisis and subsequent support measures last, the greater the chance that they will determine to some extent which companies will weather this storm best.

How support measures distort competition in several ways



Source: ING Research

Energy costs add additional pressure to EU commodities exports

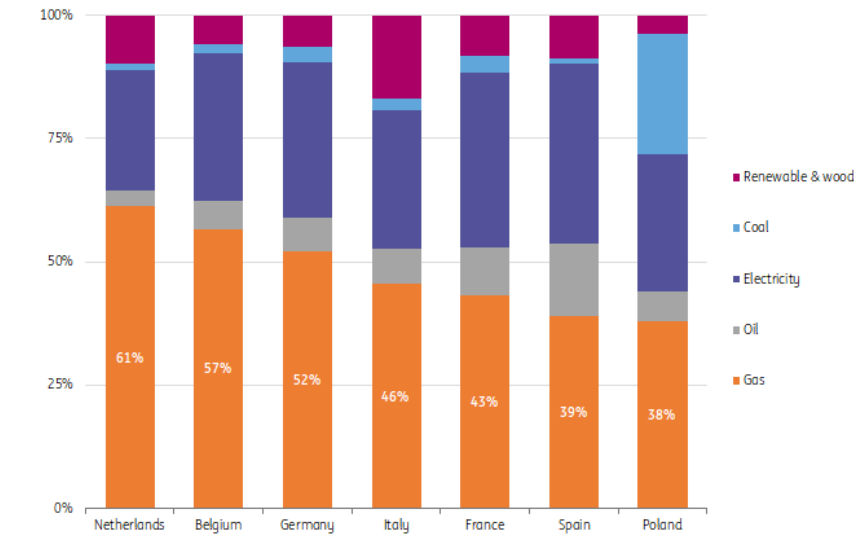
In our base case scenario, energy prices in Europe will stay at relatively high levels for several years. Assuming energy support measures to be temporary means that the competitiveness of European food products in global markets will deteriorate to some extent. Still, global demand for calories is strong due to population and welfare growth, although affordability is a growing issue. Our expectation is that the general competitiveness of more premium products such as infant formula, beer or frozen fries will be impacted less. But for staple products such as milk powder, olive oil and pig meat, the EU Commission's Agricultural Outlook has already signalled a decline in 2022 export volumes. This is attributed to a variety of reasons including high energy, feed and fertiliser costs, plus drought and animal diseases. So while higher energy prices are a factor impacting extra EU exports, it's not the only factor. On the other hand, the strengthening of the dollar is a driver in the opposite direction and is currently supportive of EU exports.

Chance of mandatory gas and electricity rationing poses a major risk

Out of seven major EU food-producing countries, the importance of gas as a source of energy is highest in Benelux (Belgium, the Netherlands, and Luxembourg) and lowest in Spain and Poland. On top of that, a large part of the electricity supply in the Benelux comes from gas-fired power plants. Although concerns about gas supplies during this winter have eased somewhat, the possibility of gas rationing is a serious downward risk for companies that use gas for generating heat in their production processes, especially if they have limited options for fuel switching. Food processing plants that use other energy sources, such as coal, oil or woodchips, are currently better positioned and often run at full capacity even though their energy inputs are generally less sustainable. Another risk is that EU member states are supposed to reduce electricity demand during peak hours between 1 December 2022 and 31 March 2023. This could force companies to shift more production toward night or weekend shifts or reduce output in case this is not possible.

Food and beverage makers in the Netherlands and Belgium are most dependent on gas

Used energy sources in terajoule in the food, beverage and tobacco industry, 2019



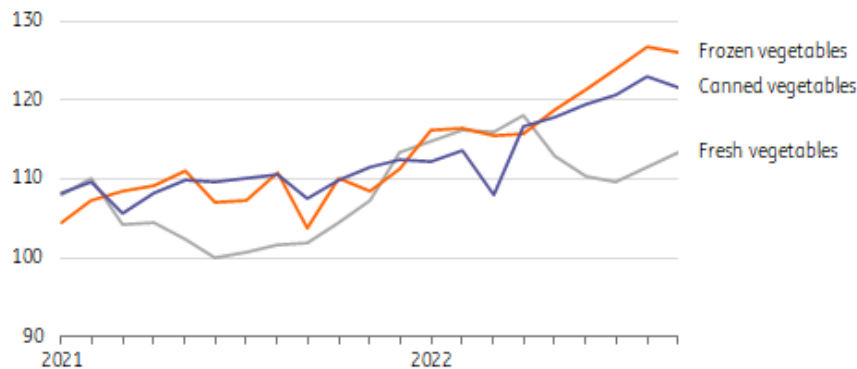
Source: Eurostat, ING Research

High energy costs will lead to some substitutions on our plate

Elevated energy prices add to food inflation and the current level of food inflation leads to various shifts in food consumption. Such shifts range from an increase in shopping at discounters and higher market shares for private label products to a rebalancing between portion sizes of expensive protein and less expensive carbohydrates in restaurants. The impact of high energy prices might be best visible in the fruit and vegetable section in supermarkets. Here there will be all sorts of substitution effects on display this winter. Due to more energy-intensive processing, conserved and frozen vegetables are becoming less competitive compared to fresh vegetables. On top of that, growing tomatoes, cucumbers and peppers has become a lot less attractive this winter for many horticulture growers in northwestern Europe. If they leave their greenhouses empty, retailers are likely to source more vegetables from growers in Spain, Italy, Morocco and Turkey. These products need less energy to grow, but still require more expensive diesel to transport. In turn that could mean that some consumers will revert to other types of vegetables that provide more value for money.

Prices for processed vegetables have increased more than for fresh vegetables

Dutch consumer price index 2015 = 100, monthly data



Source: CBS, ING Research

The situation creates a need for companies to reassess energy procurement and related investments

Contingency planning is likely to be a major talking point in strategy discussions for 2023 and beyond.

For food manufacturers, reducing their output on short notice is often not easy. This is especially true for companies that have contracted a certain volume of agricultural inputs or for cooperatives that are obliged to purchase milk, animals or crops from members. On top of that, if they reduce output they risk losing contracts and customers which is an even bigger threat to business continuity. While EU farmers are considered to have more flexibility in deciding to reduce production, they generally have high fixed costs meaning that even in unfavourable market conditions they will often decide to 'plough on'.

Follow-up actions that food manufacturers take to cope with high energy prices:

- Optimise energy use and energy costs: this can be done with additional measures to save energy or by shifting some production to facilities with the lowest energy costs. The latter only works for larger companies with multiple sites that have spare capacity, and only if transport costs allow it.
- Adapt contracts to reduce energy price risks: price escalation clauses can be a way to pass on energy price increases to customers, but often only work when customers are very dependent on a certain supplier or are working with strategic partnerships focused on long-term continuity.
- Fuel switching in production processes to reduce dependency on gas: increase of own energy production. For example, with investments in solar panels or biogas installations.
- Increase electrification efforts: for example, through the installation of electric boilers or heat pumps. In some cases, companies have plans in place but are faced with local capacity constraints on electrical grids.

Why it's wise to prepare for another difficult winter in 2023/24

This year, the EU has been able to fill gas storage to the current levels partly because there has still been Russian gas available. Futures markets now seem to be concerned about next winter and Europe's ability to build stocks without the Russian gas supply. In the event of an ongoing supply squeeze, it can be a burden for food manufacturers with many newer or retrofitted food production plants having been catered to run on gas over the past decade. Such concerns provide a clear incentive for food companies to rethink their longer-term energy strategies, including aspects such as contracting energy supply, the optimal energy mix and related investments.

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Hydrogen trade: a prerequisite for net zero in the Netherlands and US

Hydrogen trade is at a nascent stage but could see huge growth this decade. Hydrogen trade will be crucial for net importers like the Netherlands to reach net-zero targets, and for net exporters like the US to maximise benefits from clean energy deployment. More infrastructure and offtake agreements are needed to establish a global hydrogen market faster



Hydrogen trade is still in its infancy but is likely to ramp up this decade

Hydrogen will play a key role in decarbonising the global economy. It is estimated that hydrogen will contribute to 6% of the emissions reduction that is needed to get the world to net-zero emissions by 2050. Global demand for hydrogen is set to substantially increase, although today, hydrogen is a very local business. According to the International Energy Agency (IEA), about 85% of hydrogen gas is produced and consumed on-site within a facility rather than bought and sold on a market.

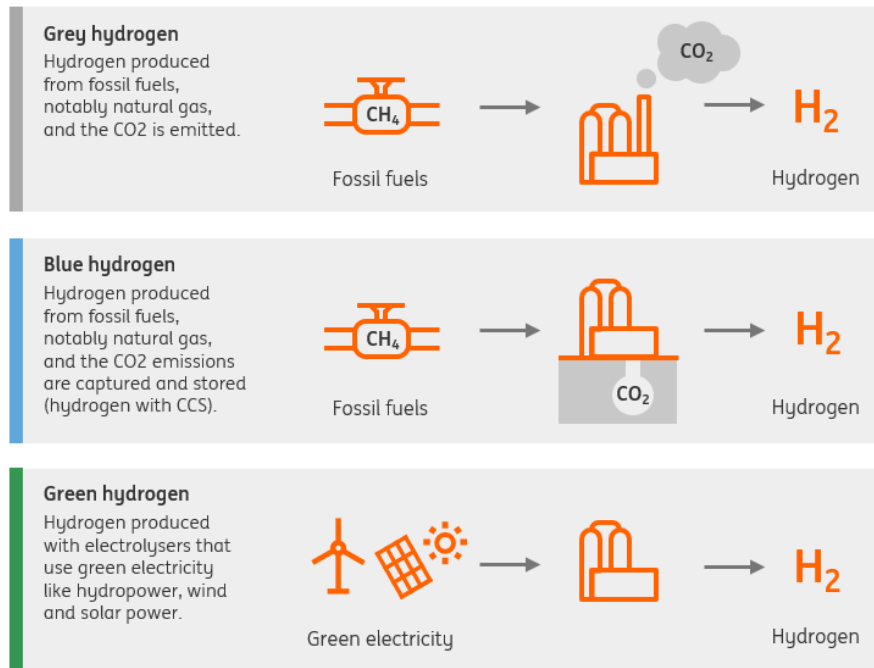
In the long term, however, hydrogen is likely to become an internationally traded commodity to help countries meet their hydrogen demand in a more economical way. For blue hydrogen (see chart below for definition), countries with more advanced carbon capture and storage technologies will have a comparative advantage for production and exports. Similarly, green hydrogen will be most economically produced in locations that have an optimal combination of abundant renewable resources, available land, access to water, and the ability to transport and export energy to large demand centres.

The International Renewable Energy Agency (IRENA) estimates that by 2050, green hydrogen can

be produced cheapest in Australia and Africa at \$0.60-\$1.0/kg, followed by Latin America and the southeast region of the US at \$0.6-\$1.5/kg. Production costs in the northwest European region are expected to be considerably higher at \$1.5-\$2.5/kg and the region has more spatial challenges to produce large volumes of green hydrogen. Over time, it is expected that these differences make up for the transportation costs of hydrogen and its trading derivatives such as ammonia and methanol.

A colourful bouquet of hydrogen production techniques

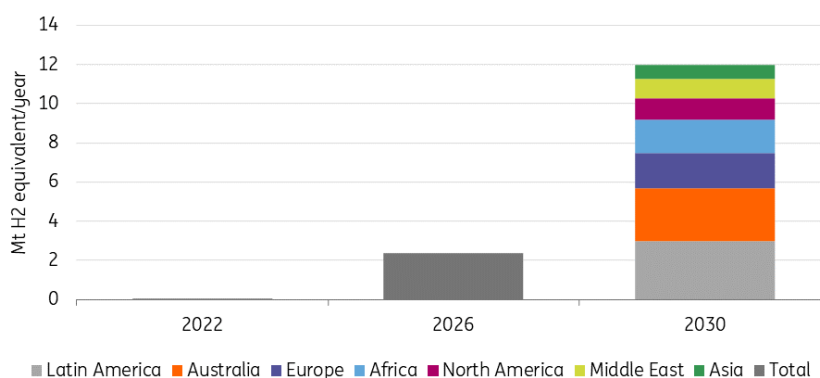
Hydrogen production techniques



Source: ING Research

Countries and companies are starting to lay out hydrogen export plans. The IEA estimates that by 2030, more than 12 million tonnes (Mt) of low-emission hydrogen will be exported per year – a huge jump from little to no hydrogen exports today. The planned export projects are located across different regions. Of the 12 Mt, 3 Mt will come from Latin America, followed by 2.7 Mt from Australia, 1.8 Mt from Europe (most of which will be intra-continental), 1.7 Mt from Africa, 1.1 Mt from North America, and 0.7 Mt from Asia.

Planned low-emission hydrogen exports



Source: International Energy Agency, ING Research

In this article, we will illustrate the importance of future hydrogen trade through the analysis of two countries: the Netherlands, which is set to become a hydrogen net importer, and the US, which is likely to be close to self-sufficiency but is expected to be a key exporter. We will also look at how hydrogen trade is a crucial component in implementing the two countries' national hydrogen strategies and realising climate targets.

Netherlands: Ambitious plans to build hydrogen infrastructure – but don't forget about hydrogen demand

Currently, the Netherlands [produces](#) around 175 petajoules (PJ) of hydrogen. In terms of volume, around seven billion cubic metres are produced in processes where hydrogen is the main product, for example in the production of ammonia (fertilisers) and methanol (chemical industry). In other processes, around nine billion cubic metres of hydrogen is produced as an inevitable byproduct, for example in gasoline production (naphtha crackers) and steelmaking (coke oven gas). In Europe, the Netherlands is the second-largest user of hydrogen after Germany. Almost all hydrogen is produced from natural gas (grey hydrogen), without capturing and storing the carbon emissions (blue hydrogen). Natural gas in Europe soared to 350 euro/MWh during the summer, driving the [cost of hydrogen production](#) up tenfold. Prices have come down to 100 euro/MWh recently, but that still makes hydrogen three times more expensive compared to pre-energy crisis levels.

The Netherlands, like many other European countries, has high ambitions for hydrogen. Scenarios from Dutch grid operator TenneT for a net zero economy by 2050 point to Dutch hydrogen use of 200 to 900 PJ per annum. But hydrogen production must transition away from grey hydrogen created from natural gas towards green hydrogen production based on electrolysis with solar and wind power. Blue hydrogen can be a transitory solution to lower emissions from natural gas-based hydrogen production, as it captures and stores most of the emissions (CCS).

While 2050 provides a dot on the horizon for hydrogen demand, businesses and policymakers need guidance for the nearer term. That's why the Dutch government has set five important hydrogen targets for 2030:

1. Development of **hydrogen infrastructure** between the main industrial clusters and neighbouring countries by [HyNetwork Services](#), a subsidiary of Gasunie, the Dutch

transmission system operator of the gas infrastructure. The infrastructure will be developed in three phases:

- The first phase runs to 2026 and comprises pipelines in the western part of the country to connect the industrial cluster at the coastline (Zeeland, Rotterdam, Amsterdam, Den Helder, Noord).
 - The second phase runs to 2028 and comprises eastern pipelines running from Eemshaven in the north (Noord) to the Chemelot industrial cluster in the south (Limburg) and connecting the hydrogen infrastructure in the Netherlands with Germany.
 - By 2030, these western and eastern routes will be connected to a southern route that also taps into the Belgium hydrogen infrastructure (third phase near Sas van Gent and Dilsen).
2. **Investment** in the Dutch hydrogen infrastructure is expected to total €1.5bn of which the government will provide €750m.
 3. Three to four underground **hydrogen storage facilities** will be built in the north and northeast parts of the Netherlands using empty salt caverns.
 4. In order to make the transition from grey to green hydrogen, the government aims for a 500-megawatt **electrolyser capacity** by 2025 and a 3-to-4-gigawatt capacity by 2030.
 5. To power the electrolyzers with **renewable energy**, the government aims for 21 gigawatts of offshore wind capacity by 2030 and 35 terawatt hours of onshore renewable power generation, mostly from solar panels and onshore wind turbines. The Dutch government, for example, is developing coordinated tenders for offshore wind and hydrogen and has provided a subsidy for [the world's first pilot](#) with offshore hydrogen production from seawater. Nevertheless, current estimates indicate that the offshore wind target is very ambitious while the onshore target is likely to be met well before 2030.

The Netherlands will need to import green hydrogen if it wants to meet EU targets

The Netherlands is one of the countries that will likely rely on large amounts of hydrogen imports to achieve its clean energy targets. The European Commission, as part of the [Fit-for-55](#) package, has proposed a target for member states to ensure that 50% of all hydrogen used in manufacturing will come from green hydrogen production.

This target is very ambitious and, according to [CEDelft](#), the impact on the Netherlands will be larger than on most other EU member states due to the large concentration of industries that use hydrogen, such as the chemical industry and refineries. CEDelft analyses three hydrogen demand scenarios for the Netherlands and investigates if the 50% green hydrogen target can be fully met with domestic production or to what extent green hydrogen must be imported. The study concludes that:

- The low-demand scenario requires 80 PJ of green hydrogen production by 2030 to meet the 50% target.
- This low-demand scenario requires an additional five gigawatts of offshore wind energy on top of the existing plans to grow the current capacity from two gigawatts to 21 gigawatts in 2030.
- Most of the available renewable power will be needed to produce green hydrogen, leaving no green power for the electrification of buildings, transportation, and agriculture.

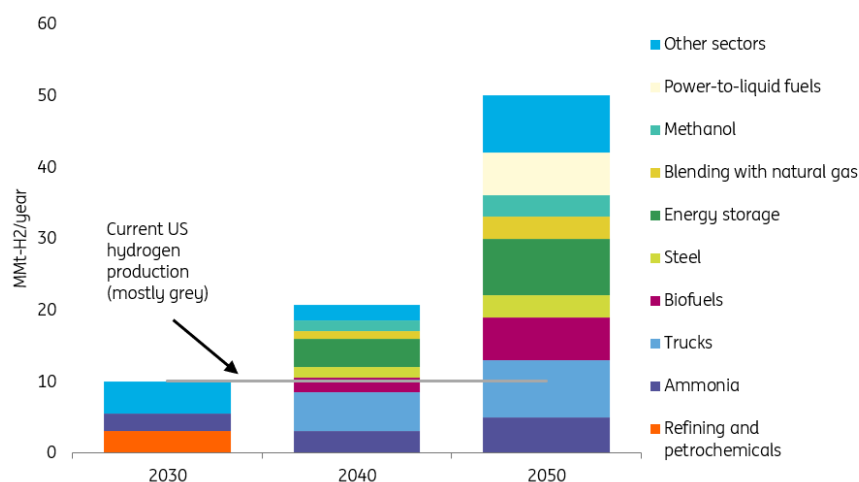
Given the fact that the targeted 21 gigawatts of offshore wind capacity are already highly ambitious and the fact that every sector wants green power too in order to become more sustainable, it is unrealistic that the Netherlands can meet the 50% green hydrogen target without importing large volumes of it. The need to import green hydrogen is even higher in the mid and high-hydrogen demand scenarios, if one considers the fact that Dutch harbours could also import hydrogen for Germany and Belgium. Dutch hydrogen imports could range from 48 to 120 petajoule by 2030, according to CEDelft.

As a result, the Netherlands is partnering with countries all over the world to set up hydrogen trade relations. In 2020, the US and the Netherlands signed a [statement of intent](#) to collaborate on hydrogen. That should be viewed as the foundational work for a future hydrogen economy. The existing Memoranda of Understanding between the Port of Rotterdam and the ports of Houston and Corpus Christi to facilitate trade only add to that process.

US: Ramping up hydrogen efforts with new legislation and roadmap

The US is the second-largest consumer and producer of hydrogen behind China. The US produces roughly 10 Mt of hydrogen per year, accounting for 11% of production globally. However, more than 95% of the hydrogen is grey. In its National Clean Hydrogen Strategy and Roadmap published in September, the Department of Energy (DoE) has set up a target to produce 10 Mt of clean hydrogen per year by 2030, before ramping up to 20 Mt annually by 2040 and 50 Mt annually by 2050.

Clean hydrogen production estimates from the DoE's roadmap



Source: Bloomberg New Energy Finance

A number of hydrogen projects have been announced and are being developed. One driver for this is the Infrastructure Investment and Jobs Act passed last year, which aims to dedicate \$9.5bn to clean hydrogen development. Of this, \$8bn is allocated to establishing regional clean hydrogen hubs (H2Hubs) across the country in the industrial sector and beyond, \$1bn is set to advance the Hydrogen Electrolysis Program and lower the cost of electrolysis and hence hydrogen production, and \$0.5bn is targeted at promoting hydrogen manufacturing and strengthening domestic supply

chains.

In June, the DoE announced details of the selection criteria for the \$8bn H2Hubs programme over the next five years. The DoE intends to grant funding to at least four H2Hubs and there are already several states aiming to apply as a coalition or individually. The DoE plans to select hubs that would together form a diverse hydrogen portfolio in terms of feedstock, end-use, and geography. The DoE will choose at least one hub that produces hydrogen from fossil fuels (with CCS technologies), one from renewables, and one from nuclear energy; it will also grant at least one hub in the power, industrial, heating, and transportation sectors.

Additionally, the [Inflation Reduction Act](#) signed into law in August has introduced production tax credits (PTCs) between \$0.6/kg and \$3/kg for clean hydrogen development in the country if certain wage and labour requirements are met. Projects that have lifecycle emissions of less than 4kg of CO₂ equivalent per kg of produced hydrogen (kgCO₂e/kgH₂) can start receiving tax credits – this is aligned with the DoE's newly proposed clean hydrogen production standard. To receive the highest credits, a project needs to emit lower than 0.45 kgCO₂e/kgH₂. Despite the strict qualification provision, the hydrogen PTCs would largely lower the cost of hydrogen production. Bloomberg New Energy Finance estimates that at this PTC level, clean hydrogen production could already be cost-competitive with grey hydrogen production. The infrastructure bill and the Inflation Reduction Act will together attract more new hydrogen projects in the US over the next few years.

US: Hydrogen hub and port buildout sets the scene for exports

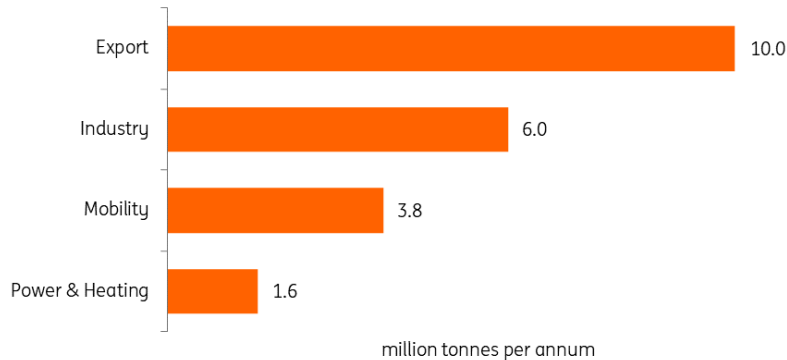
The US does not have a specific target for hydrogen trade, but the DoE's draft National Clean Hydrogen Strategy and Roadmap sets a long-term goal to establish US leadership in the global energy transition through exporting clean hydrogen. The US is well situated for hydrogen exports through hydrogen hubs and ports in coastal states.

For example, Texas is a region with significant advantages for the deployment of hydrogen – not only green hydrogen that is produced using wind and solar power but also blue hydrogen from cheaper-than-national-average natural gas using carbon capture and storage technologies. Texas already has the advantage of existing facilities that produce ammonia (a hydrogen carrier for transportation). While the initial exports are looking to be blue because of the abundant access to natural gas in Texas, more exports of green hydrogen will follow suit in the longer term. McKinsey forecasts that Texas will likely be able to export around 10 million tonnes per annum (MTPA) of hydrogen by 2050, provided that its share of global hydrogen remains at today's level of 4%, or that future exports align with the state's current 8% share of global liquefied natural gas (LNG) export.

Several hydrogen hubs and projects are being developed in the state, including Hydrogen City, Clear Fork, H2 HoustonHub, and Port of Corpus Christi Hydrogen Hub. In 2021, the Port of Rotterdam and the Port of Corpus Christi signed a memorandum of understanding (MOU) to collectively develop new technologies such as hydrogen. This will facilitate the trade of the fuel in the future.

Demand for clean hydrogen in Texas could reach 21 MTPA, with exports contributing most to demand

Hydrogen use in Texas by 2050 in million tonnes per annum



Source: McKinsey

Hydrogen exports can help the US maximise the benefits of deploying clean energy projects and further take advantage of the clustering effects of infrastructure and resources, which can then fast-track the country's pursuit of a net-zero economy.

Building the international hydrogen trade market

Although an estimated 12 Mt of clean hydrogen is forecast to be exported per year by 2030, only a sixth of it is already under an offtake agreement or has a potential buyer in the consortium of the project. It is therefore important for governments to develop programmes and advance partnerships to facilitate hydrogen trade. The Netherlands has one of the highest planned import volumes of hydrogen; the country has also identified ten criteria for the development of an international hydrogen market, including reliable certification for hydrogen, and the development of trade channels with standardised contracts, among others.

From a global perspective, a prerequisite for the international trade of hydrogen is trade infrastructure. First, pipelines will be needed for the in-land transport of hydrogen. A hydrogen pipeline network can come from repurposing natural gas networks or injecting hydrogen into a natural gas stream using the existing infrastructure, both of which will require substantial reconfiguration and adaptation. Hydrogen can also be transported via specialised intermodal (truck and train) tanks, but this kind of infrastructure, which remains limited currently, will also require substantial expansion. Additionally, ships will be needed for overseas trade. Hydrogen will need to be transported either via a carrier (such as ammonia) or in liquified/compressed forms. There have also been discussions about repurposing LNG infrastructure to transport hydrogen, in a scenario where a more rapid transition away from natural gas is facilitated.

Conclusion

- Hydrogen trade holds a promise in the global energy transition process.
- Governments have started to take the first steps in the development of future hydrogen trade.

- This is a prerequisite to put their economies on a pathway to net zero emissions.
- But we are still a long way from an international hydrogen market. And it is too early to tell whether the energy crisis in many parts of the world will speed up (green) hydrogen production as governments and corporates look for ways to become less dependent on fossil fuels, or delay the process as high energy costs drive up hydrogen production costs too.

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The US mid-term elections: What you need to know

President Joe Biden is not on the ballot at the 8 November mid-term elections, but the outcome will determine how much he can achieve in the second half of his presidential term and how the government can respond to growing recession risks. It will also be an important barometer for the Republican Party and whether Donald Trump will run against Biden in 2024



The US mid-term elections will be held on 8 November

? What Is happening?

- All 435 members in the House of Representatives are up for election (currently 220 Democrat, 212 Republican, three vacant). This is a two-year term.
- The Senate is comprised of 100 members. Each Senator has a six-year term with approximately a third up for election every two years; 34 [Class 3](#) Senate seats + one seat due to vacancy is up for election on 8 November. Of these 35 Senate seats 21 are currently held by Republicans and 14 are Democrat.
- The Senate membership is currently 50 Republicans, 48 Democrats, and two independents who vote with the Democrats. Vice President Kamala Harris (Democrat) gets the deciding vote in a tied ballot. Republicans need to win one seat (net) from the Democrats to control the Senate.
- Should the Democrats lose control of either the House or the Senate (or both) then President

- Biden's ability to pass legislation will be severely curtailed. He would likely be limited to using executive powers – a heavily restricted form of lawmaking without tax-changing powers. It will therefore be important in defining what support can be offered to the economy in a likely recession – will the onus be on fiscal policy or monetary policy?
- The presidency is not up for election until 2024, but the outcome of the mid-terms could determine whether President Biden stands again and whether former President Trump will seek the Republican nomination to run.
 - The mid-term elections will also have implications for Biden's climate agenda. Partial or full Republican control of Congress will add difficulties to the execution of clean energy tax incentives and funding under the Inflation Reduction Act, as well as other climate measures the administration intends to establish before the next presidential election. In all the scenarios of the election outcome, we can expect more measures coming from federal government agencies to regulate emissions.
 - 36 states and three territories also hold gubernatorial elections – a vote to elect a governor to a four-year term, except for New Hampshire and Vermont where the governor serves a two-year term. Of the 36 states up for election, 20 currently have a Republican governor and 16 have a Democrat. Guam (Dem), US Virgin Islands (Dem) and the Northern Mariana Islands (Rep) are the territories holding elections.
 - Numerous state elections for Attorney General, Secretary of State, Treasurer and state legislative elections are also occurring. This could have major implications in a contested election in 2024. There are also various local referendums, including abortion legislation referendums in six states.

What are the key issues?

- President Biden's approval rating, while low by historical standards, has increased following recent legislative "wins" surrounding green policies, infrastructure and technology. The Democrat Party's stance following the Supreme Court's vote to eliminate the constitutional right to obtain an abortion has also helped lift approval ratings.
- Nonetheless, the most important issue according to pollsters is the state of the economy with the rising cost of living, higher interest rates and falling asset prices all causing concern for the electorate.

Percentage of Americans mentioning economic issues as the nation's most important problem



Source: Gallup

The perception of poor performance in government is the second most cited negative factor. In the immediate aftermath of the Supreme Court's vote on abortion, this issue did become the top issue for 8% of respondents, having been at 1% the previous month. It has since slipped back to 4%.

Other issues respondents cite as the top concern for the election

Other issues	%
The government/poor leadership	22
Immigration	6
Race relations/racism	5
Unifying the country	4
Abortion	4
Crime	4
Election reform	4

Source: Gallup

The state of play

- Mid-term elections are typically seen as a referendum on the effectiveness of a president and their party during the first two years of their term. The omens are not good so far, with President Biden's approval at this stage in his presidency very low by historical standards, matching Bill Clinton and Ronald Reagan and just ahead of Donald Trump. All three took heavy losses in their first mid-term election. High levels of partisanship, the high (and rising) cost of living, a weakening economy and falling asset prices are all hurting President Biden and the Democrats.

Presidential approval ratings six weeks before mid-term elections

President	% Approve	Date
George HW Bush	73	Sep-90
George W Bush	67	Sep-02
Dwight Eisenhower	66	Sep-54
John Kennedy	63	Sep-62
Richard Nixon	54	Sep-70
Barack Obama	45	Sep-10
Jimmy Carter	45	Sep-78
Ronald Reagan	42	Sep-82
Bill Clinton	42	Sep-94
Joe Biden	42	Sep-22
Donald Trump	40	Sep-18

Source: Gallup

- The election of House members tends to reflect generic Republican-Democrat polling. [FiveThirtyEight](#) collates opinion polls which suggest that Democrats and Republicans are tied on 45% each, with 10% of the population undecided.
- Turnout is therefore key for the Democrats if they are to retain a winning margin in the House. People who want political change tend to vote in greater numbers than those who are content with the status quo.
- Mid-term election turnout tends to be far lower than for presidential election years.

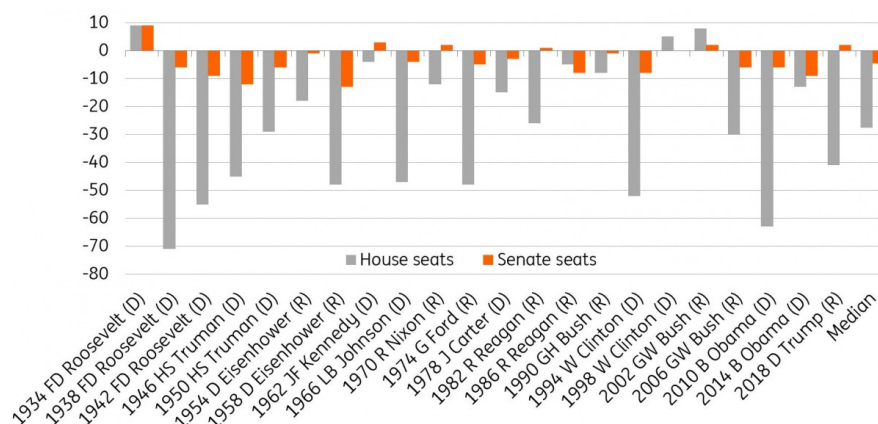
Typically, presidential election years see a turnout of 50-60% with 2020 seeing 67% turnout. Mid-term elections typically see a turnout of around 40% although 2018 saw a 53% turnout. Hence, the consensus amongst political forecasters is that the Republicans will win a narrow victory thanks to their more motivated base.

- The Senate and Gubernatorial elections are different to the House elections in that senators and governors tend to be better known and individual personalities play a greater role in the decision-making process for the electorate. One way of looking at it is that California only has one governor and two senators, but 52 house seats. Consequently, the Senate races are less driven by national issues that impact generic Democrat-Republican voting patterns in the House.
- Most polls show the majority of Senate seats up for election are solid Democrat or solid Republican. There are perhaps only four Senate seats out of the 35 up for contention where there is genuine uncertainty on the outcome. The Cook Political Report lists one Democrat seat in Georgia and one in Nevada as a "toss-up" while one Republican Senate seat in Pennsylvania and one in Wisconsin are listed similarly. Hence the Senate is a closer call than the House.

What history tells us

- Only three out of the last 22 mid-term elections (going back to Franklin D Roosevelt's presidency in 1934) have seen the incumbent president's party make gains in the House of Representatives (nine seats for Roosevelt in 1934, five seats for Clinton in 1998 and eight seats for George W Bush in 2002).
- The six-seat gain that the Republicans need to win control of the House has been achieved on 17 occasions since 1934 and in each of the last four mid-terms. The median loss of House seats for an incumbent's party since 1934 has been 28.
- In the Senate, the incumbent president's party has gained seats on six occasions and lost seats 15 times with one no-change outcome since 1934. The median change in the past 21 occasions has been a loss of five seats. The Republicans need to pick up just one seat to control the Senate.

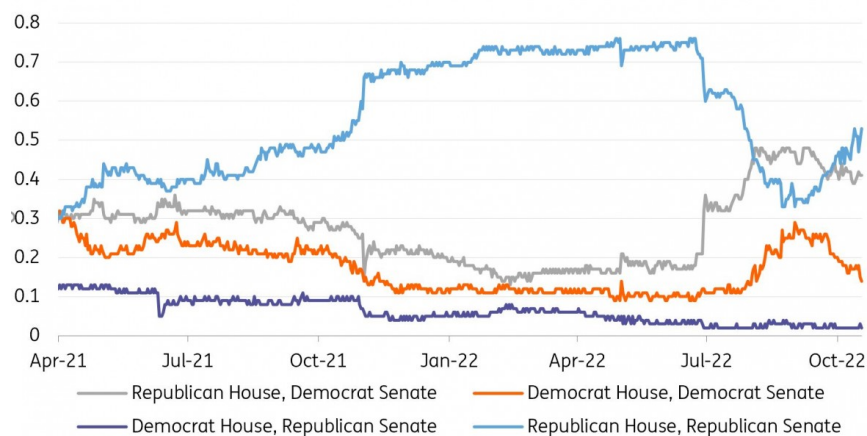
House and Senate gains/losses for incumbent presidents at mid-term elections



Source: Wikipedia, ING

- While the backdrop supports the view that the Republicans have a chance to win control of the Senate, individual Republican candidates have run into difficulties. For example, Herschel Walker in Georgia has lost ground following an abortion scandal, while there are independent voter concerns regarding inexperience and extremism in other candidates.
- Most political forecasts have the Democrats maintaining control of the Senate, but it is a close call. Betting markets narrowly show a majority expecting the Republicans to win control of both the House and the Senate.

Implied probabilities of outcomes based on PredictIt betting odds – spreads mean numbers do not sum to 1



The scenarios and what might happen in the next two years

1. Republicans win the House and Democrats retain the Senate: Biden constrained. 50% probability

- President Biden struggled to pass legislation when he had a Democrat majority in both the House and the Senate. Without a majority in Congress, it is nigh on impossible. Intense partisanship with just two years to go until the next presidential elections means major legislation is unlikely to pass unless there is a national emergency.
- President Biden's legislative actions are therefore likely limited to the use of executive orders and actions to circumvent Congress, where allowed. This is a much more limited form of government. Executive orders can only be implemented in areas where the president has constitutional powers, such as trade negotiations. The president cannot use an executive order to change taxes because that power is held by Congress.
- Executive orders can be an effective way of implementing policy since legislation is often written in broad, general language. Legislation is often set out to achieve certain targets or aims without explicitly saying how this should be done. An executive order can allow the president to specify in more detail the route to achieve those aims. These orders only apply to Federal agencies.
- Consequently, Biden's focus may shift towards international relations and trade policy where the president is less constrained by Congress.
- Given that the fear of recession is rising, the president is going to have less scope to offer fiscal support given the requirement of having Republican legislators on board. This suggests that once inflation is under control the onus is going to be on the Federal Reserve to offer

- stimulus to the economy. This is our base case for aggressive interest rate cuts from the second half of 2023 onwards.
- A Senate controlled by the Democrats would still be able to approve the president's choices for key positions, such as judges.
 - With control of the House, Republicans gain congressional investigative powers, with some on the right already proposing looking into the president's son, Hunter Biden's, business dealings. They can also stall or disband other inquiries, including the committee investigation into the 6 January insurrection. Trump's enlarged power base in the House could also lead to investigations into the FBI search at Mar-a-Lago.
 - From a sustainability perspective, the landmark Inflation Reduction Act is unlikely to be repealed if the Republicans control either the House or the Senate because President Biden has the authority to veto the repeal, or any other passed legislation intended to replace the original law.
 - However, under a divided Congress, it could be tough to execute the planned clean energy spending under the Inflation Reduction Act. Republicans could make it harder for the tax credits and funding to be distributed through stricter procedure inspection. Under this scenario, Biden will also likely embark on more climate initiatives from the executive branch, such as issuing executive orders or directing agencies to roll out more aggressive carbon regulations, although the latter faces challenges from the Supreme Court.
 - A split Congress and President Biden left to focus on international issues such as trade could end up proving mildly positive for the dollar and bad for EMFX. The Biden Administration's stance on Chinese trade has not been as accommodative as many had expected back in 2020 and the recent tightening of restrictions in the semiconductor sector could lay the groundwork for a more hawkish trade path into 2024.

The market impact

FX: A split Congress and President Biden left to focus on international issues such as trade could end up proving mildly positive for the dollar. The Biden Administration's stance on Chinese trade has not been as accommodative as many had expected back in 2020 and the recent tightening of restrictions in the semiconductor sector could lay the groundwork for a more hawkish trade path into 2024.

Rates: Equity markets tend to prefer political malaise, as there tends to be less political meddling to fret about. Any material outperformance in the equity space can act to amplify the upside move in market rates in the month or so after the mid-term outcomes, while at the same time dampening the downside to market rates in the longer term, say looking through to the end of 2023. Market rates will still fall in 2023 (once the peak for the Funds rate is in), but not by as much if the Democrats were to hold both houses.

2. Republicans win the House and Senate: A springboard for Trump in 2024? 40% probability

- A bad performance for the Democrats will prompt questions as to whether Joe Biden is the best person to lead the Party into the next election. Senior Democrats could start jockeying for position with potential party infighting, further undermining the president's ability to deliver policy. However, the lack of a credible alternative still favours Biden standing again

- and defeating any Democrat challenger.
- The president's ability to pass any legislation is curtailed and limited to executive orders as outlined above.
 - A Republican Senate would be able to block Biden's picks for key positions in the judiciary and elsewhere.
 - The fact that candidates backed by Donald Trump, and importantly that backed him, have won seats in both the House and Senate strengthens his position as the likely Republican nominee to challenge President Biden in 2024.
 - The Republicans, buoyed by a convincing victory, are likely to open investigations into Hunter Biden and there could even be impeachment charges.
 - Republicans making sweeping gains in the House and the Senate would likely be mirrored by major gains for Republicans in state positions that have influence over election processes and the certification of results. This could make the 2024 election even more contentious.
 - As in the previous scenario, there will be little prospect of any meaningful fiscal support to counter the recession, putting the onus on the Federal Reserve to loosen monetary policy aggressively in the second half of 2023 onwards.
 - On sustainability, like the scenario of a split Congress, while the Inflation Reduction Act is here to stay, the implementation process would be a lot harder. Moreover, a fully Republican-controlled Congress would encourage the party to propose energy legislation that could advance their policy platform. For instance, there will likely be proposals to increase oil and gas activities to cement US energy dominance and seize profits from exports.
 - There might also be attempts to streamline the federal energy project permitting process, which can substantially shorten the permitting time for not only renewable projects but also oil and gas projects. Some clean energy areas that will likely see Republican support include carbon capture and storage (CCS, as it can be applied to hard-to-abate sectors such as oil and gas), clean manufacturing, and key domestic energy supply chain strengthening.
 - Congress would also likely support blue hydrogen produced from natural gas using CCS technologies over the short to medium term, as opposed to a more radical transition toward green hydrogen produced from renewables. Biden will likely be more aggressive (than scenario 1) in using his executive power to counter resistance from Congress on the climate issue.
 - Republican control of both branches of Congress could initially weigh on the dollar via a hamstrung Administration unable to deliver fiscal support in a downturn. Closer to 2024, however, the dollar could be making a comeback were Republicans holding gains on the polls – given the experience with Donald Trump's Tax Cuts and Jobs Act of 2017.

The market impact

FX: Republican control of both branches of Congress could initially weigh on the dollar via a hamstrung administration unable to deliver fiscal support in a downturn. Closer to 2024, however, the dollar could be making a comeback were Republicans to hold gains in the polls – given the experience with Donald Trump's Tax Cuts and Jobs Act of 2017.

Rates: For markets, this extreme version of political separation between the executive and congressional powers is one that will likely see politics lurch to petty squabbling, removing the risk for big macro-impactful outcomes. As a pre-emptive swing in the direction of a potential Trump administration, a pro-growth tint should result in higher bond yields than would otherwise be the case. Expect an amplification of the risk in yields to the upside, and

then a more dramatic fall in market rates to the downside as we progress through 2023.

3. Democrats retain House and Senate: Biden gets a second chance. 10% probability

- This would be a major surprise given the current state of polling, but it would reinvigorate the Democratic party and Biden's presidency.
- Legislation in support of abortion, same-sex marriage and voting rights would be high on the agenda.
- With recessionary fears intensifying, this outcome would be the one most likely to generate a fiscal response, presumably on spending support for impacted households, e.g. the reintroduction of a federal unemployment benefit. Looser fiscal policy may mean there is less pressure on the Fed to cut interest rates, especially if inflation proves to be stickier than we project.
- The Republican party's failure to pick up enough seats would likely weaken the chances of Donald Trump being selected as the Republican candidate to challenge President Biden in 2024. The party may look to put momentum behind alternatives such as Ron DeSantis, former vice-president Mike Pence and former UN Ambassador Nikki Haley.
- Climate and clean energy legislation could be expanded, building on the Inflation Reduction Act (if they gain a Senate seat and remove the need to get backing from Kyrsten Sinema or Joe Manchin). For instance, Congress might propose bills to change excessive emissions from the power sector—a provision that was originally part of the Democrats' legislative efforts but was removed by Manchin.
- Congress could even go a step further to pass a new law and give authorisation to the Environmental Protection Agency (EPA) to put caps on power plant emissions. The EPA's authority to do so was previously rescinded by a recent Supreme Court decision.
- Finally, the Biden administration could be expected to set up more regulation measures to curb emissions. These include tougher rules to reduce methane emissions, as well as new vehicle emissions and efficiency standards.
- Surprise retention by the Democrats of both the House and the Senate could be seen as a dollar positive for 2023. The administration would have more power to meet a recession with a fiscal response. This would potentially make more difficult the Fed's objective of bringing inflation back to 2%.

The market impact

FX: A surprise retention by the Democrats of both the House and the Senate could be seen as a dollar positive for 2023. The administration would have more power to meet a recession with a fiscal response. This would potentially make more difficult the Fed's objective of bringing inflation back to 2%.

Rates: Markets would perceive this as being the lower growth and heightened political meddling outcome, which would tend to present a downside risk for equity markets relative to the baseline. For bonds, one question is how inflation might be impacted, with risks that the elevation of climate-focused measures could result in higher inflation, at least in the short term. This could dominate the perception of a lower growth outlook, resulting in higher bond yields than otherwise would be the case (although they would still fall in 2023).

once the cycle has turned). That said, there is also a route for bigger spending from a Democratic controlled administration, bolstering growth, and supply of bonds. That could in turn ultimately skew the risk towards higher market rates on a more medium term outlook.

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