The war in Ukraine and its impact on the energy transition – which way will it go?

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Key takeaways

- Russia's invasion of Ukraine coincides with a crucial period in the fight against climate change. The **latest IPCC report warns that emissions must peak within 3 years as we are almost out of time to prevent heating greater than 1.5°C**. Only a radical step up in decarbonisation actions by governments and businesses can alter this fate. Will the war in Ukraine hasten the transition?
- Russia is the second largest gas producer after the US, providing 17% of global output, and 70% of its gas exports go to Europe. Sanction-driven **price increases and supply disruptions to fossil fuels will encourage some substitution away from Russian fossil fuels and towards alternative energy sources such as low carbon renewables and nuclear energy.**
- **However, amidst the cost of living crisis, government decision making is primarily being driven by priorities to secure energy supply at more affordable prices.** This could mean replacing Russian fossil fuels with fossil fuels from alternative countries with little impact on reducing carbon emission.
- When it comes to decarbonisation a highly politicised debate is raging. **In some countries where strong, bipartisan climate commitments already exist the crisis is seen as an opportunity to accelerate investment in clean energy deployment** and energy efficiency improvements. This entails a double benefit of closing the gap to the Paris goals and strengthening energy security.
- Gaining fossil fuel independence from Russia is now critical for Europe, which sources 40% of its gas from Russia. **The EU has responded with a strong message by introducing the REPowerEU proposal, which aims to reduce its reliance on Russian gas by two thirds in 2022 and fully by 2030**. Elsewhere, though, decarbonisation is mostly being viewed as subsidiary to energy security and lowering fuel prices, with some countries greenlighting investment in new fossil fuel capacity.
- The EU is responsible for only 10% of the world's emissions – and falling. **The response of the world's largest emitters – the US, China and India – will be more important in determining if the war has a significant impact on the global energy transition**. There, we are getting mixed messages. China and India are both seeking to increase their energy ties with Russia, while there are few signs that US policy is set to become more climate friendly.
- **There is little evidence yet of countries increasing their official decarbonisation commitments ahead of the COP27 climate conference in November**. Even in Europe, despite its ambitious announcements to reduce its reliance on Russian fossil fuels by 2030, there has been no move yet to tighten the carbon budget in the trading scheme that heavily shapes its emissions.
- The war has not altered our long-term view that **the world is still most likely to overshoot the Paris agreement temperature targets**. But there is a lot of uncertainty about the outlook and what proportion of Russian fossil fuels will be 'stranded' and substituted with low carbon sources. We are therefore watching policy signals closely for signs of more fundamental, credible change.

What this means for investors

Current climate policy is insufficient. Investors and businesses who have committed to supporting net-zero 2050 targets will struggle to achieve these long-term goals unless policies are strengthened. Regardless of the ultimate impact on carbon emissions, **the war in Ukraine will affect the energy mix in different countries and sectors**. This will impact investment risks and opportunities. For example, the place of natural gas in Europe's energy mix is potentially in jeopardy with stranded asset risk increasing. On the other hand, the outlook for nuclear energy is brighter. Certain regions may also extend their usage of coal to secure energy supply. **New investment opportunities** may be emerging as there will also be a greater emphasis on new technologies that enhance energy efficiency and storage capacity. The war has highlighted **the extreme uncertainty surrounding the energy transition**. It's important for investors to **carry out robust climate scenario analysis** on their portfolios and understand their sensitivity to a range of possible energy transition outcomes.

Implications of the war

Background

Russia's decision to invade Ukraine in late February has had three clear consequences:

1. An international economic, financial, and political order, founded on co-operation, multilateralism and ever-deepening integration – which was already fragmenting – is now unravelling even more quickly.
2. The energy supply arrangements of net fossil fuel importing economies, which were predicated on the maintenance of this order, have been revealed to be fundamentally inadequate – particularly when reliant on imports from potentially hostile, autocratic political regimes.
3. A cost of living crisis, which was already extreme before the war disrupted fossil fuel and broader commodity exports from Russia, has become even more extreme, weighing on economic growth and dominating domestic political debates and likely, election outcomes.

A fourth – the potential implications for national and global decarbonisation pathways – and thus the energy transition – is a more open question. And it is that we focus on in this note, while acknowledging the inter-dependencies with the other three consequences above.

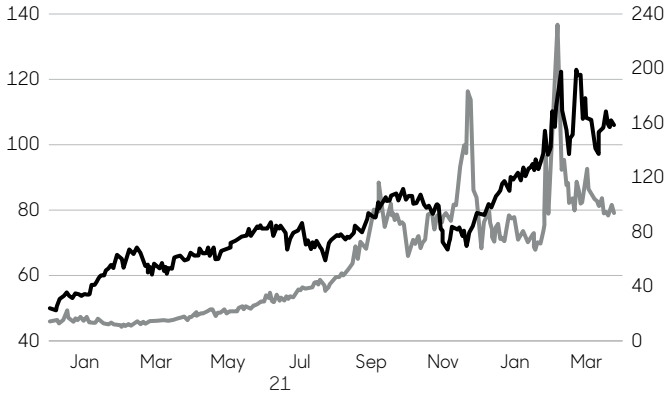
The economics of decarbonisation

Economic theory and empirical evidence are very clear – when the relative price of one good increases, demand for it falls while the demand for its substitutes increases.

Since the beginning of the war in Ukraine (see Figure 1):

- Brent oil prices have increased from $97 to $106/b, though prices reached as high as $128/b on March 8, and the price was just $69/b at the start of December.
- European natural gas prices have increased from €78 to €95/MWh, also with great volatility, and had been just €20/MWh at the start of January 2021.
- Global coal prices have increased from $181 to $260 per metric tonne, though much of the increase reflects increasing demand thanks to current and expected natural gas shortages.

Figure 1: Energy prices down from peaks but higher than pre-war levels



Source: Moscow Exchange, Intercontinental Exchange / Haver Analytics. April 2022.

It is hard to forecast how long these fossil fuel prices will remain elevated. Nevertheless, generally prices are more sensitive to supply and demand shocks in the short-term as substitution and renewed investment takes time to have an effect.

In terms of the energy transition then, there will likely be some positive effects, to the extent that a portion of the price increases are sustained, and some Russian supply never comes back to the market.

But what is likely to be more important is the extent to which policy actions act to reinforce these price signals by increasing their climate ambitions through tighter regulations, or seek to offset them by facilitating greater investment in new fossil fuel production and distribution capacity.

Moreover, because gas is less fossil fuel intensive than coal, substitution in its favour could actually serve to slow the transition in some economies.

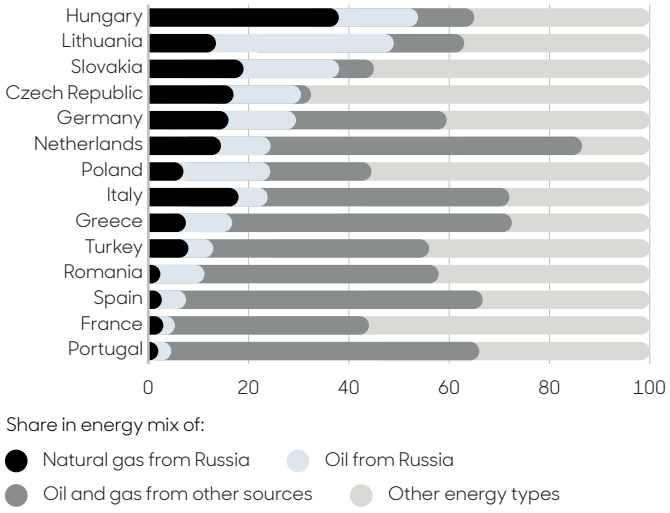
Which countries are most reliant on Russian fossil fuels?

Unsurprisingly given its geographic proximity and limited domestic fossil fuel production capacity, Europe is the region most dependent on imports from Russia (see Figure 2). This reliance has also been reinforced by earlier policy decisions in countries like Germany to simultaneously phase out coal and nuclear power generation, leaving them even more dependent on Russian gas imports.

Europe imports 40% of its gas, 27% of its oil and 46% of its coal from Russia. Russia is the second largest gas producer after the US (17% of the global gas output) and the world's third largest oil producer after the US and Saudi Arabia (12% of global output). Around 70% of its gas exports and 50% of oil exports go to Europe.

China is an important trading partner and receives around 30% of Russian oil exports. It will source more of its oil and natural gas from Russia over time as its partnership deepens at a time when most developed economies are taking the opposite stance due to the Ukraine war. India is another large fossil fuel importer who has sought to increase imports from Russia and has studiously avoided signing on to the sanctions imposed by the West.

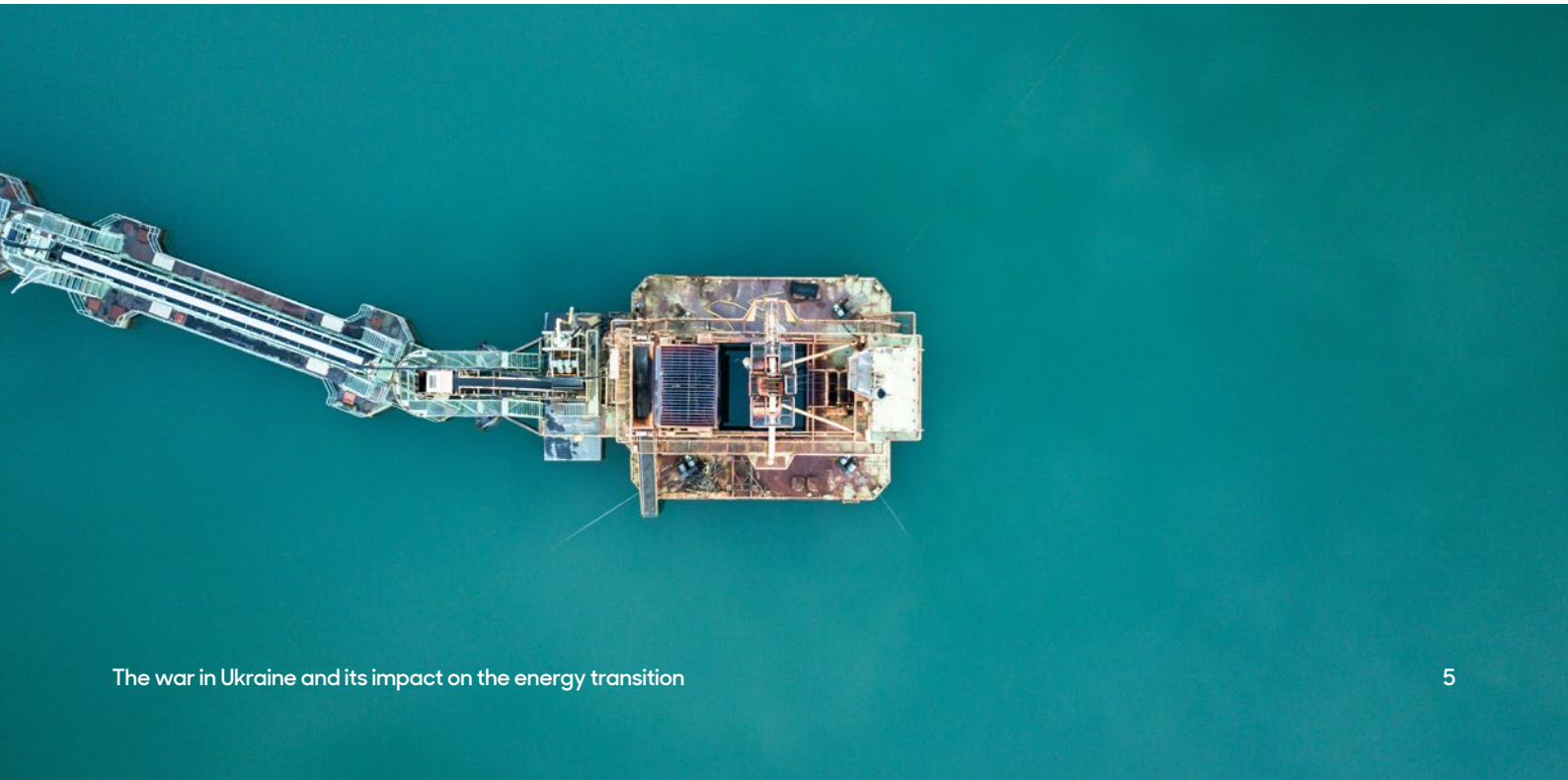
Figure 2: European countries' reliance on Russian oil and gas exports, % of total needs



Source: Eurostat, DW, BNP Paribas. April 2022.

How are countries responding to the war in Ukraine?

The common theme in Europe and other (developed) nations such as the US is to reduce reliance on Russian imports as quickly as possible. But how exactly are they proposing to achieve this?



Key developed markets

Despite aggressive rhetoric, the US directly sources little of its energy from Russia already. Effects are therefore more likely to be through the price channel outlined above. The broader climate change debate will continue to be shaped by domestic political considerations.

President Biden has been unable to pass his Build Back Better bill and its climate provisions because of intra-party opposition. Generally, Republicans – who are likely to control Congress after the mid-terms – are opposed to accelerated action and many want to increase investment in fossil fuel production capacity.

Europe remains the region most committed to rapid decarbonisation. And given its proximity to Russia, and the greater effect of the price and supply disruptions, has naturally seen the greatest policy reactions so far.

The European Commission announced in early March that it would cut its reliance on Russian gas by two thirds before the end of 2022 as part of a plan to become independent from all Russian fossil fuels well before 2030. The plan to achieving this, while ensuring affordable, secure low carbon energy is captured in the REPowerEU proposal and incorporates the following key measures:

- Increasing energy efficiency measures and accelerating as well as scaling up the rollout of renewable energy;
- Diversifying Europe's gas supply to meet demand in the short term (for example by looking at alternative suppliers and fuels with a key focus on LNG and hydrogen); and
- Ensuring depleted gas storage facilities are filled up to at least 90% by November (despite high prices) in order to cope with potential supply disruptions during the next winter.

Prior to the war the EU was aiming to reduce GHG emission by 55% before the end of the decade as part of its 'Fit for 55' strategy and to reduce its total gas consumption by 30% by 2030. Therefore confidence is higher that finding alternatives to Russian fossil fuels will carefully consider the impact on meeting these targets.

However, so far there have been no formal moves to scale up this commitment. Indeed, for the war in Ukraine to have a substantive effect on Europe's emissions trajectory in covered sectors (power, parts of industry and transport) – and thus the speed of the overall energy transition – Europe must commit to reduce the carbon budget in the EU Emission Trading Scheme (EU ETS). Without that, it will be permit prices, and the energy mix within the budget that changes, rather than emissions.

National policies have also been evolving, albeit in contrasting ways. Germany for example suspended approval of the new Nord Stream 2 pipeline, designed to deliver Russian gas to Germany. Belgium postponed their nuclear power phase out by 10 years and Italy is considering the revival and extension of their coal plants. Gas importing countries have also been negotiating importing contracts with other countries like the US and Qatar.

The UK, for its part, announced a phase out of Russian oil imports by the end of 2022. Proposed measures to achieve this are similar to EU plans – boosting clean energy while at the same time considering alternative fossil fuel sources. However, there are also suggestions that new fossil fuel projects will be greenlit, with little regard for net zero plans.

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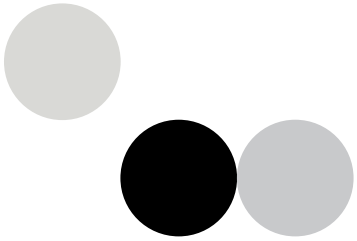
Key emerging markets



Given future economic growth and energy requirements, the battle to limit climate change will be won and lost in the emerging world.

It is important to note that the two largest EM emitters, and two largest fossil fuel importers, China and India – have abstained from UN resolutions against Russia and avoided mimicking western sanctions, including on energy imports. In addition to their seeing the politics of the conflict differently, this also relates to the greater complexity of prioritising sanctions over growth in living standards.

China's future energy relationship with Russia is perhaps the most important to the future of the energy transition. In contrast to Europe and the US, the authorities have sought to increase cooperation with Russia to meet the ambitions of its recently published 5-year energy plan to boost annual output of natural gas by 12% by 2025 vs 2021. Shortly before the invasion, the two countries also agreed on a new oil and gas deal worth an estimated $117.5bn (£86.6bn), including a 30-year gas contract that would boost Russia's gas supply to China by a quarter.

But China's 5-year energy plan also emphasises carbon neutrality as an important goal and highlights the country's intended collaboration with the US and EU on clean energy. China is likely to be mindful of potential sanctions and implications on its relationships with the US and EU, if it were to get too close to Russia during this crisis situation. How this will evolve remains to be seen.

Overall our view is that the crisis will do little to lead China to deviate from its current strategy to achieve peak emissions by 2030 and then seek to achieve next zero emissions by 2060. However, question marks remain over the credibility of that strategy and its reliance on carbon capture and storage and other negative emissions technologies.

How is the private sector responding?

Businesses and Investors are taking similar steps and distancing themselves from involvement and investment in Russia. abrdn has done the same and made it clear that it wants to minimise its investment in Russia going forward where possible. Large oil majors such Shell and BP for example sold their stakes in Russian-owned assets, and this may present an opportunity for energy companies to demonstrate that they are serious about net zero and will invest the cash generated from the sale into technologies to accelerate the low carbon transition.

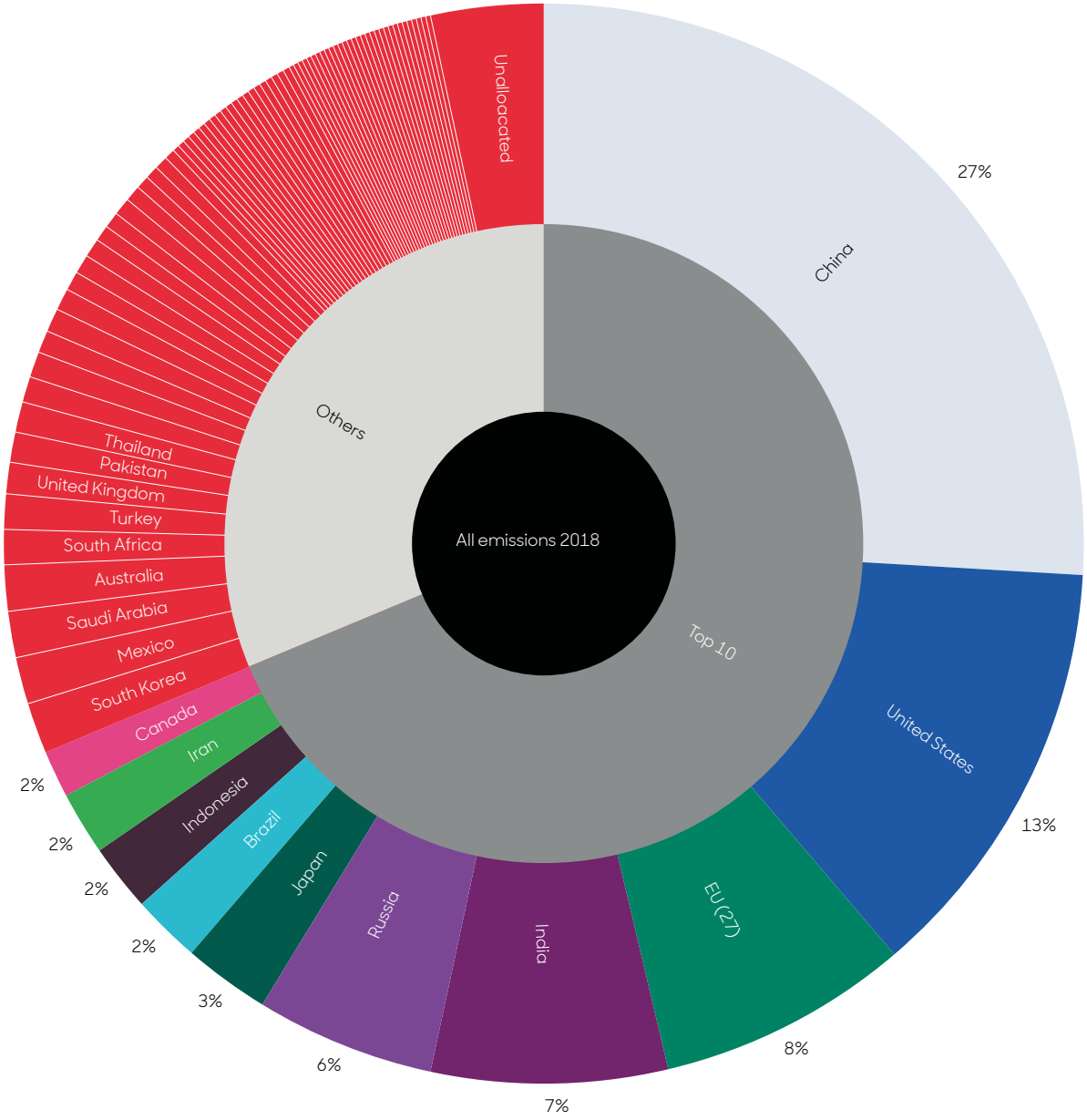
Businesses and investors will of course respond to policy and price changes as outlined at the start of this note. If prices for fossil fuels stay high, it will encourage investment in alternative technologies. In addition, stronger policy incentives can lead to increases in capex and R&D investments to support proposals for diversifying away from Russia. It is critical to understand how these market and policy effects have impacted investment plans for carbon intensive corporates that may provide an additional boost for the transition.

At the same time, as western, listed, public firms take these steps to decouple from the Russian energy complex, there is a risk that exposures simply shift to the private and state-owned spheres, especially in emerging economies.

So which way is it going to go?

The most recent IPCC report on decarbonisation sends a clear message: It is now or never. This is the decade when global emissions must be halved to be on track for achieving net zero 2050 goals and limit warming to 1.5C. But emissions are still rising (6% in 2021, with further increases likely in 2022) and we are far off track to achieving the scale and pace of decarbonisation required for net zero 2050.

Figure 3: The top 10 GHG emitters contribute over two-thirds of global emissions



Source: Preliminary global greenhouse gas emissions 2018 excluding land use change and forestry (LUCF) from Climate Watch. The EU 27 is considered a country.

On a five-year timescale, price effects will encourage greater use of oil and gas alternatives, while reduced Russian supply on global markets will also weigh on emissions. However, we think that much needed policy reinforcement is less likely as governments focus on energy security and the cost of living crisis as a priority. There is also a danger that coal usage will increase.

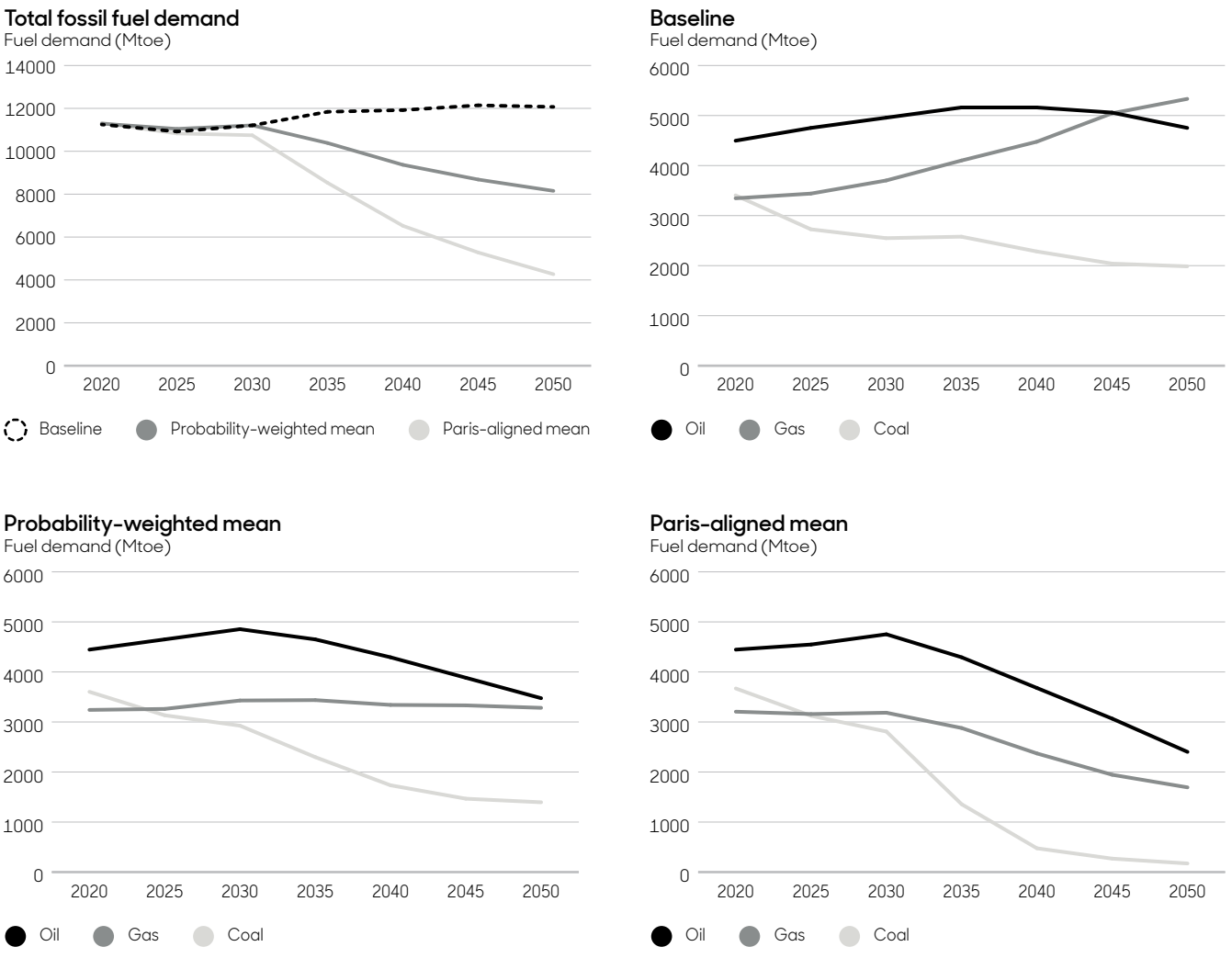
Meanwhile, the nuclear industry may prove to be one of the largest beneficiaries of the shock – especially in Europe.

On a longer term timeframe, Europe is the one region where there is the greatest potential for an accelerated energy transition. However, we will need to see a tightening in the EU ETS carbon budget to make this a reality. The same is true of the UK.

Critically though, the EU contributes 10% to global emissions - and falling (see Figure 3) - so all eyes are on countries like China to observe how they will position their approach to importing fossil fuels from Russia throughout and beyond this crisis. At present there are little signs there of a change in climate strategy – nor in the US or India (the 2nd and 3rd largest country emitters) – as a result of the war.

The upshot is that the climate policy pathways that are embedded in our proprietary climate scenario tool remain broadly intact (see Figure 4), though we will be monitoring policy developments closely for signs of more meaningful change. Subsequent updates are more likely to focus on the mix of energy usage (less gas in Europe say) than on aggregate emissions and probabilities of Paris alignment.

Figure 4: Long-term fossil fuel usage in our climate scenarios



Source: abrdn, Planetrics, 2021.

So what? Implications for investors

Among the major emitters there have been no significant, credible and binding climate policy changes resulting from the crisis to date. Investors and businesses who have committed to supporting net zero 2050 goals will therefore still struggle to achieve their goals in the long run unless that changes. Announcements in the lead up to COP27 in November are the key waymark we are monitoring for signs that the ground is shifting more decisively.

Nevertheless, the war is clearly going to impact demand for different energy sources and commodities and hence investment risks and opportunities. Natural gas has long been considered an important transition fuel. But in Europe its place in the energy mix is now in more jeopardy. Conversely, the outlook for nuclear energy is looking brighter given its twin advantages of low lifecycle emissions and baseload generating capacity. There is likely to be a greater emphasis on technologies that enhance energy efficiency and energy storage capacity as means to reduce the amplitude and impact of energy price shocks. Investors should also consider the greater potential for stranded assets – not just in Russia – but also in other commodity exporting autocracies as energy importers and financers of foreign direct investment re-assess their risk profiles.

One thing is certain – the war in Ukraine has highlighted the extreme uncertainty surrounding the energy transition and the evolution of the energy mix over different timescales. It is therefore imperative for investors to understand the sensitivity of their portfolios to a range of possible outcomes by conducting robust climate scenario analysis. More on how we do this is provided in our climate scenario analysis papers: **Year-1 research**. **Year-2 research**.

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