powering possibility

The return of energy security

How geopolitics and a more volatile world are reinforcing the case for the energy transition

Foreword

At the time of writing, events in the Middle East continue to dominate global headlines. Our thoughts are with all those experiencing loss and hardship as a result of the ongoing conflicts.

Our role as investors and advisers is to understand the ramifications of global events and help clients allocate capital in an informed way. The COVID-19 pandemic and Russia's invasion of Ukraine each served as a stark awakening – exposing the extent to which many countries had come to depend on imported energy. The current conflict in the Middle East looks set to reinforce that lesson further, pushing energy security back to the top of the agenda for governments and policymakers worldwide.

The effects, however, will not be uniform. In heavily import-dependent economies, geopolitical disruption can create both physical supply concerns and sharp price shocks. In more self-sufficient systems – the US being the clearest example – the immediate risk is less likely to be outright shortage than exposure to elevated global oil and gas prices, which can still feed through into domestic costs, inflation and capital allocation decisions. At the corporate level, the calculus is shifting too. Hyper-scalers and other large power users facing significant future energy demand are no longer focused on availability alone. Resilience of supply, price stability, and the degree to which grid-connected facilities remain exposed to global fuel-price volatility are becoming material factors in both procurement strategies and location decisions.

In this paper, we examine the historical context and policy response to prior energy crises and look at how policymakers might respond this time around given the backdrop of internationally agreed decarbonisation targets and a structural resurgence in global electricity demand. Together, these three powerful forces – energy security, decarbonisation and demand growth – provide a rich backdrop for asset owners considering the long-term investment opportunities and the economy of the future.

If you have any questions about the content of this report or how to access energy transition opportunities, please contact a member of the team.

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Executive summary

Energy systems built on imported fossil fuels are structurally exposed to geopolitical risk. The pandemic, Ukraine and the current Middle East conflict have each demonstrated this and each time the policy response has pointed in the same direction: accelerate the transition, reduce import dependence, build domestic resilience.

The three forces driving the energy transition

- The energy transition is driven by three reinforcing forces: decarbonisation, energy security, and growth in aggregate electricity demand.
- All three have been operative for several years, but the current geopolitical environment has shifted the balance decisively – in our view energy security is now the dominant near-term driver.

Geopolitical shocks, energy markets, and the economy

- Russia's invasion of Ukraine showed how quickly gas dependence becomes a systemic vulnerability – prices reached multi-decade highs within months and transmitted directly into household bills, industrial costs and inflation.
- The ongoing Middle East conflict has caused oil and gas prices to rise considerably from pre-conflict levels, and where fossil fuels remain the marginal price-setter in power markets, geopolitical volatility will continue to negatively impact the real economy in terms of inflation and growth.

Energy dependency is not necessarily poor energy security

- Fossil-fuel dependence does not automatically mean poor energy security. A country with substantial domestic reserves is arguably more resilient from a supply perspective than one that imports the same volume from distant or unstable sources.
- Countries vary significantly in their resilience – and those with weaker energy security will likely face the strongest political pressure to mitigate energy security concerns.

What governments are likely to do next

- In the near term, expect affordability interventions, strategic reserve deployment and heightened political commitment to energy independence – with clean power, storage and grids being considered akin to national security assets.
- Over the medium term, the post-2022 playbook will be reinforced: accelerated investment in domestic low-carbon capacity, renewed support for LNG diversification, and reassessment of domestic fossil fuel reserves as a bridging measure.

What this means for investors

- Reducing reliance on imported fossil fuels and building domestic low-carbon capacity is likely to increase capital requirements across the energy system.
- A possible investment strategy approach considers not only low carbon power generation, but also the enabling infrastructure – networks, storage, grid flexibility and demand-side assets.
- Taking a whole-of-system approach, may help investors consider the full opportunity set that the energy transition affords – including not only the assets themselves but also the supply chain that sustains them.

1) Historical lessons drive future responses

Recent weeks have brought fresh spikes in oil and gas prices and signs of market dislocation as fears around disruptions to global energy flows have intensified. As we saw in the 1970s oil crises, during the global pandemic, and in the aftermath of the Ukraine conflict, geopolitical events can directly trigger volatility in energy markets with rapid and material knock-on effects for real economic activity and prices.

To understand what government policy responses might look like this time, it is important first to understand what history has taught us, and to frame the future response with reference to current dynamics and constraints.

Where history repeated itself

In both the 1970s oil shocks and the post-2022 gas crisis, governments rapidly re-elevated energy from a background economic input to a core national security concern. In each case, this led to coordinated emergency action, an acceptance that markets alone could not guarantee supply reliability under geopolitical stress, and the use of demand reduction as a legitimate security tool.

Strategic reserves, international coordination through the IEA, and diversification away from over-reliance on single suppliers were central features of both responses – reflecting a durable lesson that system resilience matters just as much as short-term cost minimisation during a crisis, if not more.

Where things changed

The post-2022 response operated in a fundamentally different policy environment than the one present in the 1970s. Energy security is now deeply entwined with climate policy rather than treated as a separate and potentially competing objective. This is especially true in Europe, where crisis measures were embedded within longer-term decarbonisation frameworks rather than suspended in their favour.

The response was also notably more supranational and faster in execution: the EU acted as a central crisis manager, intervening at scale on gas storage, purchasing, state aid and market design within months rather than years. And for the first time, gas – rather than oil – became the systemically critical fuel.

Clearly, as we saw in both the 1970s, and fifty years later in the 2020s, Governments have demonstrated a clear capacity to respond globally to energy crises. In our view, the pace of that response appears to be increasing with each successive shock.

> **Key takeaway:** When energy security is threatened, governments act. What is different today is that resilience, affordability and decarbonisation are more closely aligned than in past crises, meaning energy-security shocks are more likely to reinforce the case for cleaner, more secure domestic energy systems than to displace it.

2) How dependent on fossil fuels are we in power generation?

Most major economies experience fossil-fuel dependency in power generation, and that dependency is what links geopolitical events directly to domestic energy prices. The composition varies, but the aggregate picture of reliance is consistent. The six major economies examined below illustrate the range of fossil-fuel exposure across power systems – from the deeply dependent to the structurally insulated – and the differing degrees to which each remains vulnerable to geopolitical shocks in electricity prices and system resilience.

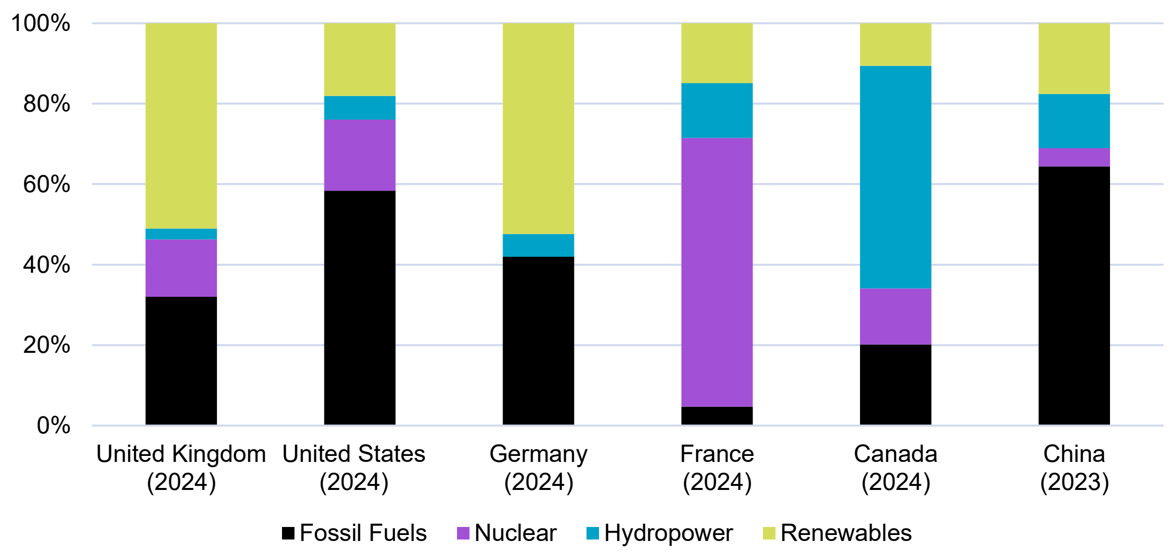
Two countries stand apart, for different reasons:

- France, with nuclear providing two-thirds of its generation, has a power sector that is structurally insulated from fossil-fuel price volatility in a way its European neighbours are not – a distinction the post-2022 gas crisis made tangible.
- Canada's combination of hydropower-dominated electricity generation and substantial domestic oil and gas production makes it among the least import-exposed of any major economy – though its deep integration into North American energy markets means it is not fully insulated from price movements driven by events elsewhere.

Both illustrate the same underlying point: it is the source of inputs to the generation process that determines a country's real exposure to geopolitical price shocks, not its headline renewables share.

Conversely, Germany presents the sharpest transition challenge in this comparison. Having exited nuclear entirely, it now relies on coal and gas for over 40% of its generation. That is not simply an emissions problem, but a structural security vulnerability, and it makes Germany's renewables-led targets more ambitious in practice than they appear on paper. Delivering on them will require not just more generation capacity, but substantial investment in the storage, grid infrastructure and flexibility mechanisms that can replace the baseload capacity it has chosen to forgo. Whilst China has been making great progress in the renewables space, they still have a huge need for fossil fuels to power the system.

Chart 1: Current power generation mix by country[1]



Source: IEA. Year of data shown below each country name.

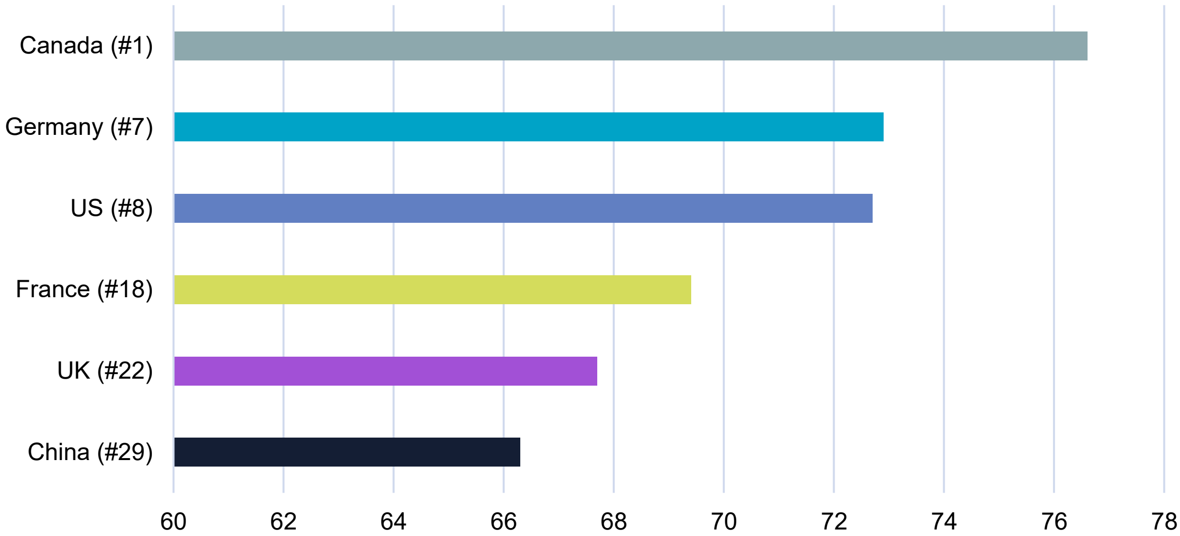
Key takeaway: Based on current energy mixes, we expect governments to be actively examining policy measures to reduce their vulnerability – and to do so with renewed urgency.

3) Dependency is not always 'poor' security

Being dependent on fossils fuels is not always a threat to energy security. If your fossil fuels are extracted and refined domestically you are in a far more secure position than a country who relies on imports from sources that are affected by geopolitical instability.

The World Energy Council's Energy Trilemma Index provides a useful framework for assessing this more precisely. Its energy security dimension measures a nation's capacity to meet current and future energy demand reliably, withstand system shocks and recover swiftly with minimal supply disruption – encompassing the effectiveness with which countries manage both domestic and external energy sources, and the resilience of the infrastructure that underpins them. It is, in other words, a measure not just of what a country produces, but of how vulnerable it is when things go wrong.

Chart 2: Energy security ratings and world rankings by country[2]



Source: World Energy Trilemma Tool's Energy Performance 2023 table. World rankings shown beside each country are calculated from the published energy security scores.

Analysing the same countries, Canada ranks first globally among the countries examined, while the UK ranks 22nd, trailing Canada, Germany, the US and France. This does not mean the UK is weak in absolute terms, but it does suggest a particularly strong strategic rationale for accelerating the build-out of a more resilient domestic energy system – especially one anchored by clean power, networks, storage and flexibility.

France provides an instructive contrast: while not insulated from global energy market movements, its higher nuclear baseload meaningfully differentiates it from more gas-dependent peers. Canada presents the opposite contrast: despite heavy reliance on oil and gas across its economy as a whole, its electricity system is strongly anchored by hydropower and nuclear generation. China, however, is heavily reliant on fossil fuels and according to the World Energy Trilemma Tool, scores poorly for its ability to meet demand for oil and gas, considering infrastructure capabilities including storage and refining capacity.

Key takeaway: Where energy systems suffer from lower levels of energy security, the strategic rationale, and potentially the long-term relevance for investors, for transition-enabling assets may be correspondingly stronger, to help mitigate future shocks.

4) What is already baked into the cake

Most countries have established multi-decade energy policy frameworks, and the direction of travel has become broadly consistent: more low-carbon generation, more electrification, more enabling infrastructure. A defining feature of the 2020s has been the convergence of decarbonisation and energy security as mutually reinforcing imperatives – where the two were once treated as separate or competing objectives, crisis has made them the same policy.

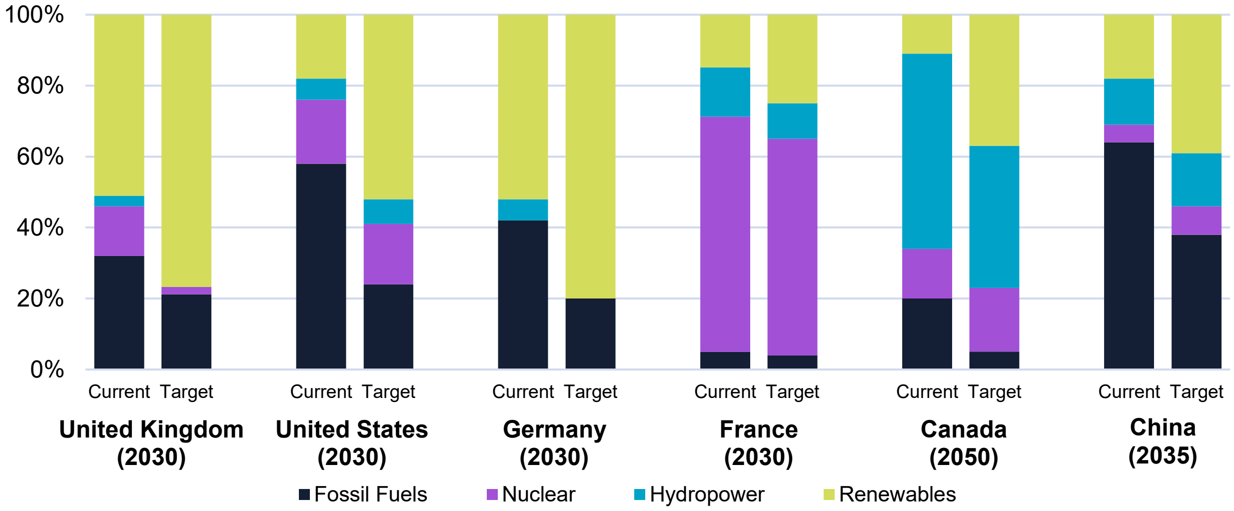
What is striking about forward power-sector targets is not the shared direction, that much is settled, but the magnitude of structural change those targets require. Relative to today's generation mixes, several major economies are not planning incremental adjustments; they are planning wholesale compositional shifts.

The country profiles are distinct, and the implications for capital allocation differ accordingly:

- **Canada's** system is anchored by hydro, providing a stable, low-carbon baseload that few others can replicate.
- **France** is the most nuclear-intensive, with its generation mix already among the least fossil-dependent of any major economy.
- **Germany** is the most renewables-led, implying substantial displacement of fossil-based firm capacity and a correspondingly acute need for storage and grid investment to manage variability.
- **China** presents the largest system-level challenge: the world's biggest power market must absorb rapid clean-power build-out while meeting continued demand growth that still requires firm capacity – a balancing act with few historical parallels.

For investors, the significance is not which country is furthest along, but that in each case, meeting future demand more affordably is likely to depend not only on adding clean generation, but on building the infrastructure – networks, storage, flexibility – that allows that generation to be used efficiently and reliably.

Chart 3: Illustrative future power mix aligned to stated national net zero targets



Source: See Endnotes 3-8. Target year shown below each country name reflects the stated national net zero target referenced for that country. In some cases, including the US, the mix is illustrative and based on official scenario analysis rather than an explicit official national target.

Key takeaway: Plans to further decarbonize energy systems have been put in motion already, many based on international commitments and enshrined into law domestically in some instances.

5) Current crisis ramifications

The events of the last five years have taught policymakers a valuable lesson: continued dependence on fossil fuels carries geopolitical risk for importers and price volatility risk for virtually everyone. We expect many governments to double down on the post-2022 'security through transition' playbook. We expect to see an acceleration of previously articulated plans and with the advent of rising demand, driven in part by data centres and AI, governments will likely have to consider additional reforms to the system to cope with both risking demand, and a renewed need for energy security.

In the near term

- **Strategic reserve deployment** – governments will signal heightened readiness to mobilise reserves, where possible, and coordinate demand measures if physical supply risks materialise.
- **Affordability will remain a central political concern** – Governments have made explicit commitments to shield consumers from energy price shocks driven by geopolitical events. For example, the UK government made clear in its 2023 paper, 'Powering Up Britain'[9], British families should "never be held hostage again by someone like Putin who uses energy as a tool of aggression". Expect a range of price intervention mechanisms – from windfall taxes on producers to consumer relief schemes – as governments manage the political consequences of elevated prices.
- **Planning and permitting reform** – streamlined approval processes for renewables and grid projects to remove barriers and accelerate deployment.
- **Reframing of clean power, storage and grid investment as national security assets** – shifting the political language from climate obligation to strategic necessity.

Over the medium term

The dominant policy narrative will continue to be energy security, but the response will not be uniform. We therefore expect the results will be a broader, more varied policy mix:

- **Clean power reframed as a security asset** – in markets where renewables offer the clearest path to reducing import dependence, a reinforced policy commitment to electrification, storage and grid investment to anchor energy systems domestically.
- **Industrial policy responses** – deploying subsidy, tax incentives and domestic requirements to anchor transition supply chains onshore, reducing dependence on imported clean-energy components as well as imported fuels.
- **Gas and LNG diversification** – renewed political and financial support for alternative supply routes.
- **A reassessment of domestic oil and gas reserves** – with the potential for reinvigorated investment to bring domestic sources on stream, likely displacing imported sources rather than creating a net increase in hydrocarbon consumption.
- **Accelerated electrification in transport and heat** – targeted measures to bring forward timelines, reducing both oil and gas demand and the supply-side exposure that comes with it.

Key takeaway: Policy response to the events in the Middle East will not be uniform. For some countries, that means accelerating clean power, storage, grids and electrification; for others, it will also mean renewed support for domestic gas, LNG infrastructure or strategic reserves. The common thread is greater resilience and reduced exposure to external shocks.

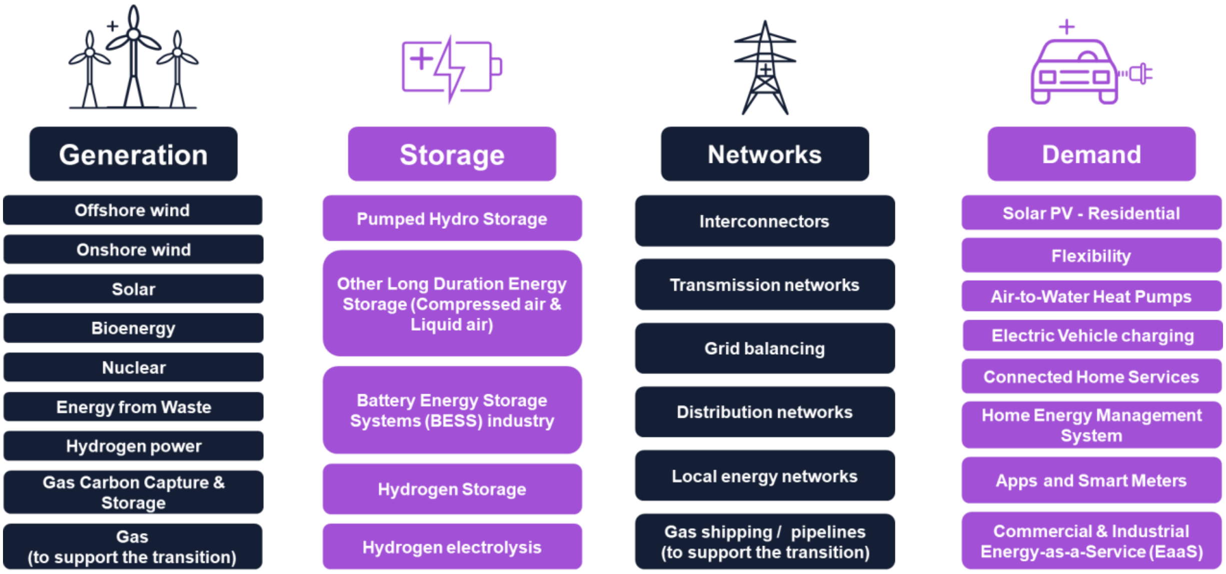
6) What this means for asset owners

Geopolitical events continue to expose the vulnerabilities of fossil-fuel dependence. We believe the natural policy response will be to intensify efforts and, in some cases, bring forward planned measures. For asset owners with existing or prospective energy transition exposure, we feel that the question is not whether the transition will continue, but how to access it most effectively.

From our energy transition work over many years, we are acutely aware that for any transition to succeed, a whole-of system approach should be taken. We believe that the opportunity set spans for key segments:

Segment	Strategic rationale
Generation	• Displaces imported fossil fuels as the marginal price-setter. • Wind and solar are the natural near-term choice – fast to deploy and increasingly cheap to build. • Nuclear plays a longer-term role; while investable opportunities remain limited today, we expect this to change materially as Small Modular Reactors come online through the 2030s.
Storage	• Manages the intermittency inherent in a renewables-heavy system, absorbing surplus generation when it isn't needed and releasing it when demand peaks. • Both short and long-duration solutions will be required, and the investable universe is expanding rapidly.
Networks	• Electricity grids face a triple pressure: higher aggregate demand as electrification grows, a spatial mismatch between where power is generated and where it is consumed, and the need for greater system flexibility. • Investment here underpins everything else – without adequate networks, generation and storage assets cannot perform. Opportunities exist in both investment into regulated assets themselves, or into the supply chain for those assets.
Demand-side	• Shifts consumption away from fossil fuels at the point of use, reducing both import dependence and system-wide emissions. • Demand flexibility – the ability to shift when power is consumed – is increasingly important as grids accommodate more variable generation.

Chart 4: LCP whole-of-system opportunity set



In our view, breadth of exposure is not a diversification nicety – it is a structural requirement. A successful energy transition requires a system change, and the returns from that change will not accrue evenly across the value chain. Generation assets capture the headline narrative; the enabling infrastructure around them – networks that carry the power, storage that captures it, demand-side assets that shape when and how it is consumed – are all critical components in their own right.

We believe a whole-of-system approach, investing across generation, storage, networks and demand, helps investors access the breadth of the energy transition. Implementation often requires specialist expertise, and in our experience the managers best positioned to capture this opportunity are typically sectoral specialists rather than generalists, are often focussed in a single region, and have deep technical expertise across the full value chain.

Key takeaway: Investors should take a whole-of-system approach to investing in the energy transition opportunity set and seek out managers globally who are energy specialists in their country or region.

Conclusion

Dependence on fossil fuels will not disappear overnight. The transition to cleaner, more domestically anchored energy sources must be pursued at a pace that does not materially undermine affordability, moving decisively but in ways that households, businesses and industrial stakeholders can absorb.

Over time, however, a lower reliance on imported fossil fuels should mean more stable domestic energy prices and materially less exposure to geopolitical risk. Renewables, electrification, flexibility and smarter networks can make energy systems more secure, more resilient and less exposed to fuel-price shocks. Security, affordability, and decarbonisation will be increasingly seen as complementary objectives rather than competing ones.

Key takeaway: The transition will take time, but the destination is, in our view, unambiguous – a system where security, affordability and decarbonisation reinforce rather than trade off against each other, and where the implications are as broad as the transformation itself.

Endnotes

[1] IEA, Countries and Regions https://www.iea.org/countries

[2] World Energy Council, Energy Trilemma Index https://trilemma.worldenergy.org/#!/energy-index

[3] IEA, Electricity generation mix by technology and scenario, 2020-2035 https:/www.iea.org/data-and-statistics/charts/electricity-generation-mix-by-technology-and-scenario-2020-2035

[4] The Federal Ministry for Economic Affairs and Climate Action, Overview of the Easter Package https://www.bundeswirtschaftsministerium.de/Redaktion/EN/Downloads/Energy/0406_ueberblickspapier_osterpaket_en.pdf?__blob=publicationFile&v=5

[5] Government of France, National Energy Climate Plan of France https://commission.europa.eu/publications/france-final-updated-necp-2021-2030-submitted-2024_en

[6] The Department for Energy Security and Net Zero, Clean Power 2030 Action Plan: A new era of clean electricity https://www.gov.uk/government/publications/clean-power-2030-action-plan

[7] National Renewable Energy Laboratory, Evaluating Impacts of the Inflation Reduction Act and Bipartisan Infrastructure Law on the US Power System, pg 9 https://www.nrel.gov/docs/fy23osti/85242.pdf

[8] Canada Energy Regulator, Canada's Energy Future 2023 https://www.cer-rec.gc.ca/en/data-analysis/canada-energy-future/2023/canada-energy-futures-2023.pdf

[9] Powering up Britain 2023 https://assets.publishing.service.gov.uk/media/642468ff2fa8480013ec0f39/powering-up-britain-joint-overview.pdf

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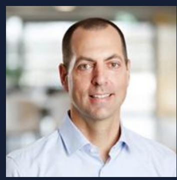

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