أديبك
ADIPEC

Host
أدنوك
ADNOC

Energy markets and geopolitics

ENERGY AS THE FOUNDATION OF GLOBAL GROWTH: GEOPOLITICS, AI AND THE GLOBAL ENERGY RESET

As global energy markets face increased geopolitical uncertainty and volatility, the need for a secure, stable and resilient energy future has never been more important. ADIPEC has launched this **Energy markets and geopolitics** series to provide market insights into the impact of the ongoing conflict on global energy markets and the way forward for the industry.

The series provides decision-makers with informed analysis, helping the industry navigate disruption, assess risk, and identify pathways to resilience in an increasingly complex energy landscape.

Rethinking the role of energy in global growth

Simon Flowers, Chairman and Chief Analyst, Wood Mackenzie

The global energy landscape has entered an era of unprecedented complexity, moving from a simplistic transition narrative toward a pragmatic framework defined by energy security, infrastructure resilience, and energy addition. In this interview, Simon Flowers, Chairman and Chief Analyst at Wood Mackenzie, breaks down the shifting dynamics of global energy and explains how long-term structural demand and the economic empowerment of the Global South will redefine energy as the foundational layer of global macroeconomic stability.

The global energy architecture is undergoing a profound structural shift. What are your thoughts on the role of energy as the central engine of global economic growth, and how do you see the prospects for the industry?

The fundamental reality is that economic progress is impossible without energy expansion. Many developing economies sit on substantial untapped potential resources, and it is entirely equitable that they should be permitted to develop these resources to drive their own industrial development and economic growth. It is not just a matter of commercial opportunity; it is a fundamental question of global equity. The world has come to realise that it is inherently unfair to deny developing nations the very pathway to industrialisation that the developed world has enjoyed for the last century and a half.

> "While oil and gas and LNG are crucial for the journey ahead, the future is about diversification and scaling all viable energy sources to meet compounding global demand."

Simon Flowers, Chairman and Chief Analyst, Wood Mackenzie

All nations can become a part of an energy addition strategy — scaling up their local resource bases to secure baseload stability while gradually integrating cleaner alternatives as infrastructure matures.

How do you see the Global South driving the future of energy, both in terms of demand and production?

Virtually all structural demand growth across the entire energy spectrum is emerging from developing economies. India, in particular, represents a massive share of this trajectory — accounting for roughly 30% of all global energy demand growth through to 2050. It is a critical anchor. Beyond India, we must look at the broader Global South. Countries seeking to elevate their GDP, alleviate energy poverty, and bring tangible prosperity to their populations are often sitting on significant hydrocarbon reserves. As we see pragmatism return to global capital markets, the focus must be on financing pathways that deliver both carbon mitigation and the energy security necessary to deliver a secure and sustainable future for all.

As the industry transitions from efficiency to resilience, what technologies do you see playing a crucial role in this journey ahead?

"All of the above" has become a famous phrase along with energy addition, and we at Wood Mackenzie are big believers in that. While oil and gas and LNG are crucial for the journey ahead, the future is about diversification and scaling all viable energy sources to meet compounding global demand. If we look at the technological roadmap required to support this architecture, a few key pillars stand out:

- Nuclear small modular reactors (SMRs): nuclear, including conventional gigawatt-scale plants and SMRs, will be an essential low-carbon anchor. While large-scale deployment for some of these next-generation technologies may be a decade or more away, they are critical for long-term baseload stability.
- The hydrogen value chain: the investment momentum for hydrogen has hit a temporary plateau because early developers discovered just how expensive it is to execute. But highly strategic regions like the Middle East, blessed with abundant, ultra-low-cost power, hold a distinct competitive advantage. The missing link for hydrogen remains the completion of the full value chain. We need to bridge the gap between developers who can produce it and clear demand centres, like Japan and Europe, who are leading on industrial decarbonisation.
- Cost-competitive power: in the immediate term, solar has become cheap and scalable. Offshore wind, while capital-intensive, offers exceptional load factors if the supply chain and pricing can be stabilised. ■

Energy as the foundation of global growth: geopolitics, AI and the global energy reset

Executive summary

The global economy is entering a structural transition in which energy is no longer a supporting input to growth, but one of its central principles. For decades, economic expansion was shaped by labour efficiency, trade integration, low-cost energy, capital mobility and increasingly globalised supply chains. Today, that model is under pressure as geopolitical fragmentation, infrastructure vulnerability, sanctions, and maritime disruption expose a deeper reality: economic stability, industrial competitiveness, technological leadership, and national security increasingly depend on the ability of states to secure resilient energy systems.

This shift reflects the erosion of assumptions that underpinned globalisation. Predictable maritime routes, cheap hydrocarbons, lean inventories, and just-in-time logistics once enabled highly efficient production systems. Yet roughly 80% of global trade by volume still moves by sea, making maritime chokepoints structurally central to economic continuity. In a more fragmented geopolitical environment, these routes are increasingly treated not as neutral trade arteries but as strategic vulnerabilities. Energy shocks, therefore, operate not as isolated price events but as systemic macroeconomic disruptions. Industrial production, heavy manufacturing, logistics systems, and digital infrastructure, but also services including health, all depend on stable access to energy. When disrupted, the transfer of the shock is rapid: from fuel prices into inflation, from inflation into monetary tightening, and from tightening into industrial slowdown. The 1970s oil shocks reshaped global inflation regimes and industrial competitiveness. The 2022 European gas crisis similarly exposed how energy insecurity can weaken manufacturing output, raise fiscal burdens, and force structural policy change. Across both cases, the underlying lesson was consistent: energy is increasingly becoming the binding constraint on growth.

> “The next phase of energy security is increasingly defined by control over corridors rather than solely access to resources.”

From commodity markets to strategic infrastructure

Energy is no longer primarily governed by commercial logic. Governments are increasingly redefining pipelines, LNG terminals, electricity grids, storage systems, high-voltage transmission networks, data infrastructure, and critical mineral supply chains as strategic national assets rather than market infrastructure. This represents a deeper institutional shift in which energy security is migrating from economic ministries into national security councils and defence planning frameworks. The logic of energy systems is also changing fundamentally, moving away from efficiency optimisation toward resilience optimisation. For decades, the global energy system prioritised cost minimisation through shortest shipping routes, lowest-cost suppliers, and lean inventories supported by just-in-time delivery. That system is now being replaced by one that prioritises redundancy, diversification, and survivability under geopolitical stress. Strategic reserves are expanding, supply chains are being duplicated, LNG infrastructure is being diversified, and overland energy corridors are gaining importance alongside maritime routes.
The result is a structural transformation in how energy infrastructure is designed: not only to minimise cost, but to ensure continuity under disruption.

20 mbpd

Of global oil flows through the Strait of Hormuz

> “The result is a structural transformation in how energy infrastructure is designed: not only to minimise cost, but to ensure continuity under disruption.”

The Strait of Hormuz as a systemic stress test

The Strait of Hormuz provides one of the clearest demonstrations of this shift. As one of the most important energy chokepoints globally, it connects Gulf producers to global markets and carries approximately 20 million barrels per day (mbpd) of oil, or roughly one-fifth of global oil flows. Its strategic importance lies not only in volume, but in the concentration of global dependency it represents.

When geopolitical tensions escalated and shipping risks increased, the effects extended far beyond the region. Tankers were rerouted through longer maritime corridors, including detours around Africa, increasing transit times and transport costs. Insurance premiums rose sharply, freight rates increased, and supply chain scheduling became more uncertain. These disruptions fed directly into global pricing dynamics.

Brent crude rose from approximately US$80–85 per barrel at the onset of escalation to around US$105–115 per barrel at peak disruption, an increase of roughly US$20–35 per barrel or between 25% and 40%. The significance of this movement is not simply price volatility, but the speed and scale of transmission across global markets.

The Hormuz disruption, therefore, functions as a systemic stress test, revealing that even diversified energy systems remain exposed to concentrated geopolitical and infrastructural risk. Energy security is no longer defined only by access to resources, but by the ability to reroute flows, substitute supply, and absorb disruption across interconnected systems.

25-40%

The increase in Brent crude prices from the onset of the conflict to peak disruption

A global hierarchy of energy security

Geopolitical fragmentation is revealing a differentiated hierarchy of energy security in which states experience volatility in structurally different ways depending on their system design, infrastructure depth, and geopolitical positioning.

At the top are energy system shapers, including the United States, China, Russia, and major Gulf producers. These countries possess the scale, infrastructure, financial capacity, and geopolitical leverage to influence energy flows, pricing, or supply routes. China, in particular, treats energy security as a systems-engineering problem. Its dual-energy architecture combines coal-based baseload stability, rapidly expanding renewables, nuclear development, and large-scale grid investment with diversified import corridors, including overland pipelines linked to Russia and Central Asia. This system is designed not only for supply security but for industrial resilience under rising electricity demand driven by electrification, digital infrastructure, and AI.

A second tier consists of energy resilience builders, primarily advanced import-dependent economies that cannot shape global energy markets but can absorb shocks through institutional capacity and infrastructure redundancy.

Japan exemplifies this category. With more than 90% of its energy imports dependent on external supply chains, it remains structurally

> “Geopolitical fragmentation is revealing a differentiated hierarchy of energy security in which states experience volatility in structurally different ways.”

exposed to volatility in global energy routes. However, its resilience strategy increasingly relies on LNG diversification across the US, Qatar, and Australia, strategic reserves, regional coordination mechanisms such as cooperation with South Korea, and the gradual restart of nuclear capacity. Energy security in this context is defined less by self-sufficiency and more by shock absorption capacity.

At the most vulnerable end are energy price takers, typically emerging economies with limited infrastructure depth and high dependence on imported fuels. The Philippines illustrates this structural constraint. As domestic gas production declines and LNG imports rise, it faces growing exposure to global spot market volatility, shipping bottlenecks, and competition from larger importers such as China, Japan, and Europe. While spot market participation offers flexibility, it increases sensitivity to price spikes and supply disruptions. In such systems, energy volatility translates directly into fiscal stress, industrial fragility, and constrained development capacity.

90%+

The amount of Japan's energy imports dependent on external supply chains

> "The next phase of energy security is increasingly defined by control over corridors rather than solely access to resources."

Corridor resilience and infrastructure redundancy

A parallel transformation is occurring in the geography of energy flows. The next phase of energy security is increasingly defined by control over corridors rather than solely access to resources.

This has accelerated investment in infrastructure redundancy and route diversification. The UAE, for example, is expanding export infrastructure with two pipelines linked to Fujairah on the Gulf of Oman, enabling partial bypass of the Strait of Hormuz and reducing exposure to maritime chokepoints.

This reflects a broader strategic logic in which states design parallel export systems to preserve continuity under geopolitical stress.

Collectively, these shifts are fragmenting global energy trade into more politically mediated and route-diverse systems, where flows are increasingly shaped by three reinforcing forces: physical corridor redesign, market-based diversification under constraint, and policy-driven financial fragmentation, with geopolitical alignment increasingly as important as market efficiency.

Molecules, electrons, and the AI super-cycle

A deeper structural transformation is emerging from the intersection of energy systems and digital infrastructure. Global oil demand remains close to 100 mbpd, underscoring the continued centrality of hydrocarbons to industrial production, transport, and global trade. At the same time, LNG demand is projected to rise by roughly 50% by 2040, driven by industrial demand and energy substitution across Asia.

Alongside this molecular system, a parallel electrical system is rapidly expanding. AI, cloud computing, semiconductor manufacturing, and hyperscale data centres are driving unprecedented growth in electricity demand. By the early 2030s, global electricity consumption from AI and data infrastructure could exceed 1,000 terawatt-hours annually, with individual AI campuses increasingly requiring gigawatt-scale power inputs.

This creates a dual-energy architecture. Molecules (meaning oil, gas, and coal) remain essential for industrial stability, heavy transport, and system balancing. Electrons (meaning electricity) are becoming the foundation of digital economies, AI systems, and electrified industrial growth. Energy security is therefore no longer confined to hydrocarbons but extends to the ability to deliver stable, scalable, and reliable electricity at an industrial scale.

This convergence is redefining technological competition. The strategic frontier is no longer only oil fields and maritime routes, but also power grids, transmission systems, critical minerals, cooling infrastructure, and semiconductor supply chains. Energy is increasingly becoming a core determinant of technological sovereignty.

50%

The projected rise in global demand for LNG by 2040

> "Energy is increasingly becoming a core determinant of technological sovereignty."

The new architecture of global growth and energy security

The global energy system is undergoing a structural reorganisation in which energy is no longer primarily a commodity but a foundational layer of economic and geopolitical power. The Strait of Hormuz disruption illustrates how concentrated infrastructure and geopolitical chokepoints continue to shape global volatility, even in diversified systems.

Market outlook

At the same time, rising electricity demand from AI and digital infrastructure is expanding the meaning of energy security beyond hydrocarbons into grids, generation capacity, and computational power systems. As a result, the global system is shifting from efficiency optimisation toward resilience optimisation.

The emerging hierarchy of power will increasingly favour states that can diversify supply chains, secure alternative corridors, build redundancy into infrastructure, and integrate both molecular and electrical energy systems. The reinforcing chain is increasingly clear: energy security underpins economic security, economic security determines technological capability, and technological capability is becoming central to national security. In this emerging structure, the next phase of global growth will be determined not only by access to energy resources, but also by the ability to construct resilient, adaptive, and strategically integrated energy architectures. ■

1,000 TWh

The predicted annual global electricity consumption from AI and data infrastructure by 2030s

> "As a result, the global system is shifting from efficiency optimisation toward resilience optimisation."

Sources and acknowledgments:

IEA, EIA, UNCTAD, World Nuclear Association, oilprice.com,

Reuters, Bloomberg

* All data and information in this report is valid as of 1 June 2026.

Series powered by

Energy Connects