



2026

September

Securing Tomorrow's Energy: Building Resilience in an Uncertain World



Webinar White Paper

The Al-Attiyah Foundation



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The old energy playbook is dead. Today's wildcards, from geopolitical friction and hackers to extreme weather and power-hungry AI, mean energy security is no longer just about stockpiling oil and gas. It's about building a power system that is clean, affordable, and near-bulletproof all at the same time. Against this backdrop, the Al-Attiyah Foundation's third webinar of the year, "Securing Tomorrow's Energy: Building Resilience in an Uncertain World," held in partnership with the London Stock Exchange Group (LSEG) on 8 September, brought together leading industry experts to explore how diversified supplies, stronger electricity networks, energy storage and regional cooperation could help countries withstand disruption while accommodating rapid growth of renewables and artificial intelligence infrastructure.

WEBINAR WHITE PAPER

The late H.E. Abdullah bin Hamad Al-Attiyah founded the Foundation as a platform for knowledge exchange and to support the global community in the pursuit of a sustainable energy future.

The Webinar Series is a crucial networking and learning opportunity in the calendar of industry CEOs, members, and Foundation partners.





With global electricity demand growing twice as fast as overall energy demand in 2025, power infrastructure has become the bedrock of national security and economic survival. This is causing a profound paradigm shift: resilient supply has overtaken renewable expansion as the top policy priority for policymakers worldwide, according to a late-2025 Siemens survey.

Perhaps no region better exemplifies the evolving energy security landscape than the Middle East, which holds about 48% of global oil and 40% of natural gas reserves.

The region's governments are rapidly pivoting toward flexible electricity systems and infrastructure upgrades, an urgency amplified by recent geopolitical disruptions to shipping routes.

GCC countries have committed over \$42.5 billion to renewable projects to deliver 62 GW of capacity, but only 19 GW had been connected to the grid by mid-2025. This integration gap shows that transmission and network expansion are the region's next major hurdles.

True resilience requires aggressive diversification: combining renewables, nuclear, gas, hydro, and batteries so when one source drops, the others catch it. As these technologies rely heavily on new material supply chains, securing critical minerals like lithium, cobalt, and copper has become an imperative.

Grid defence has also taken on a dual meaning. Digitally, the integration of AI and smart monitoring has turned power networks into high-value targets, making cybersecurity as urgent as safeguarding actual hardware.

Physically, climate-proofing is the new standard, with infrastructure being engineered to absorb the worst effects of heatwaves, wildfires and floods, and recover swiftly.

Energy independence remains a myth. Modern economies require cross-border power grids, shared technical standards and tight trade alliances to function.

Investment requirements are substantial. Europe faces an annual €660 billion bill to 2040 to update its electricity networks, while the GCC must deploy about \$60 billion to meet its 2030 target to have 165 GW of renewable capacity operational.

With energy security topping government and industry agendas, panellists debated the practical steps needed to strengthen energy grids without stalling the transition.

WEBINAR SPEAKERS

Moderator:



Nawied Jabarkhyl,
Senior Director – Head
of International Media
Relations APCO

Speaker



Christopher Young,
Partner, Energy Strategy
and Operations Team,
KPMG

Speaker



Elsa Kiener,
Principal Analyst, Power
and Renewables, S&P
Global Commodity
Insights

Speaker



Petter Hansen,
Director, Power Research
Commodities &
Corporates, LSEG

Speaker



Norela Constantinescu,
Deputy Director,
IRENA Innovation and
Technology Center



Geopolitical conflict, ageing power grids and surging electricity demand are reshaping the meaning of energy security, pushing governments to balance resilience and affordability with the transition to lower-carbon energy.

The webinar explored how diversified supplies, stronger electricity networks, energy storage and regional cooperation could help countries withstand disruption while accommodating rapid growth in renewables and artificial intelligence infrastructure.

The discussion opened with the geopolitical pressures currently placing energy systems under strain.

"We're in a period in which there have been profound geopolitical shifts and conflicts," said Christopher Young, a Partner at KPMG's energy strategy and operations team.

Such turmoil has impacted hydrocarbon

supplies in much of the world, particularly from the Middle East due to the Iran war, but also from Russia because of the Ukraine conflict, he explained.

Energy security concerns have caused the price spikes witnessed in oil and gas prices this year, Mr Young explained.

More broadly, policymakers face a trilemma of balancing energy security, affordability and decarbonisation. Currently, the focus is on energy security "because it's having an enormous impact on wellbeing, (hydrocarbon) pricing will feed into food supplies across the globe, a whole series of different areas," said Mr Young.

In a first poll, the webinar audience was asked what the biggest threat to energy security was today. Among respondents, 75 percent said geopolitical conflict and supply chain disruptions, while 25 percent said cyberattacks on critical infrastructure.

Against this backdrop, the panellists considered how diversification could strengthen national energy resilience.

Every country should operate a diversified energy system, said Petter Hansen, director of power research for commodities and corporates at LSEG. Greater domestic renewable capacity reduces reliance on fuel imports and lowers marginal generation costs, but also increases dependence on flexibility, storage, interconnection and demand response, he explained.

"You don't rely on one fuel (or) one technology. You also need to have a solid grid," Mr Hansen explained.

Energy independence is often touted as a means of eliminating a country's vulnerability to energy market volatility, but that can be a myopic way of thinking.

"If energy independence was the only goal, then the answer would be coal because most countries have abundant supplies of coal domestically and yet that would have potentially catastrophic (environmental) impacts," said Mr Young.

Panellists agreed that renewables would be an increasingly important part of a diversified energy mix. Renewables accounted for about 90 percent of new power capacity last year, according to Norela Constantinescu, deputy director of the IRENA Innovation and Technology Centre.

In the Middle East, energy-exporting nations were initially slow to consider renewables because their reserves of low-cost oil and gas provided both energy independence and security of supply, explained Elsa Kiener, a principal analyst for power and renewables at S&P Global Commodity Insights.

The first challenge to building renewables capacity was to create an optimal procurement

model. The UAE achieved this relatively quickly, although Saudi Arabia took about two years to get such a framework in place, Ms Kiener explained.

Once a suitable procurement model was established, the momentum propelling renewables build-out accelerated despite policymakers facing other obstacles, such as making the grid upgrades and expansions needed to successfully integrate renewables into a national electricity system.

The Middle East's renewables capacity has increased about 3,000 percent over the past decade, although non-fossil-fuel power generation still represents a relatively small portion of the region's total electricity production, according to KPMG.

Yet expanding renewable generation is only one part of the challenge, so the discussion then turned to the infrastructure needed to integrate that capacity effectively.

"For instance, you might have renewable sources being developed in one part of the country far away from the load centre," said Ms Kiener, pointing to Oman as an example of that. In the sultanate, renewable electricity infrastructure is in the south whereas the population is concentrated in the north. This has required the construction of interconnectors between the two regions, she explained.

Mr Young agreed that such factors were often overlooked. For example, the United Kingdom has struggled for about 10 years to connect renewable energy facilities to the national grid. China, in contrast, accounts for about half of renewable capacity added last year, an achievement due in part to the country rebuilding its national electricity grid about a decade earlier, he explained.

"That enabling investment has allowed so much of the other investments to work and function effectively," said Mr Young. "To that end, the Middle East has an enormous supply chain problem. The number of qualified firms that can deliver improvements to infrastructure is extremely limited. Resolving that supply chain problem is going to be fundamental to delivering increases in renewable capacity – we're seeing countries all over the world hitting buffers on it right now."

Audience members broadly concurred. A second poll question asked which one investment governments should prioritise. Among respondents, 50 percent chose investing in energy storage and grid flexibility, 25 percent said expanding transmission and grid infrastructure, and 25 percent opted for building more renewables capacity.

Storage-backed hybrid projects were highlighted as one way to improve the reliability of renewable generation.

"What we see more and more, is the emergence of the hybrid projects – PV (photovoltaic solar) plus storage or wind plus storage," said Ms Constantinescu.

The financial viability of such hybrid projects is largely due to the precipitous decline in battery prices, which have fallen about 93 percent over the past 15 years, she explained.

At IRENA, Ms Constantinescu and her colleagues are assessing how such hybrid projects could achieve a competitive levelised cost of electricity and a reliability of at least 86 percent – the same level as that provided by fossil fuel power plants.

Although the focus has been on expanding renewables generation capacity, greater

importance should be placed on grid integration to optimise costs, said Ms Constantinescu.

The discussion also considered whether more decentralised models could strengthen resilience. Such systems have proved valuable in countries or regions where the centralised grid is inadequate – perhaps because of war or long-term underinvestment.

Distributed thermal power networks are common in Iraq and Lebanon, for example, but they usually depend on diesel generators and so are expensive, polluting and inefficient.

In Europe, industrial companies are increasingly interested in decentralised generation to power their factories more cheaply, whereas in the Middle East electricity prices are regulated so there is little financial benefit, said Ms Kiener.

The discussion then turned to the effect of artificial intelligence (AI) on power demand.

The massive, global buildout of energy-intensive data centres to support AI is shifting the nature of power demand, said Mr Young. He said he was more pessimistic than many with regard to AI's likely impact on the energy sector, fearing it would increase demand and so slow the energy transition. Energy demand is expanding faster than the addition of renewables capacity, he said.

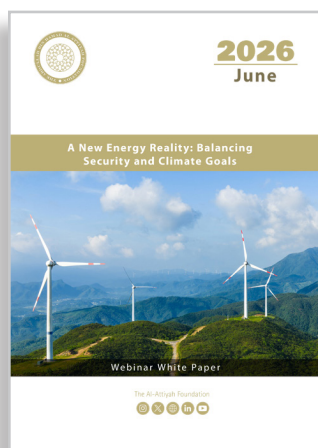
A third poll asked what the concept of energy security should encompass in 2026 given ongoing geopolitical uncertainty. Among audience members, 50 percent said diverse energy sources that reduce dependence on any one fuel, and 50 percent said strong regional cooperation and cross-border energy systems.



The webinar highlighted how energy security should no longer be understood simply as access to sufficient fuel supplies. As geopolitical shocks and AI-driven demand place mounting pressure on power systems, resilience will depend increasingly on a diversified generation mix, modernised and optimised grids, storage and cross-border cooperation.

The challenge for policymakers will be to make these enabling investments quickly enough to maintain affordability and reliability without slowing the transition to lower-carbon energy.

Have you missed a previous issue? All past issues of the Al-Attiyah Foundation's Research Series, both Energy and Sustainability Development, and Whitepapers can be found on the Foundation's website at <https://www.abhafoundation.org/reports-wp>



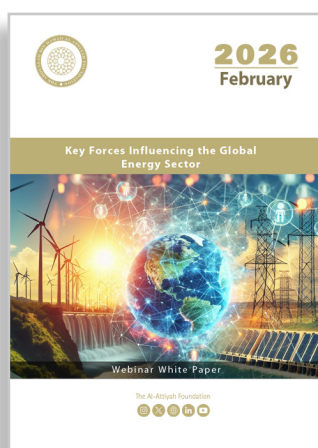
June – 2026

A New Energy Reality: Balancing Security and Climate Goals

As geopolitical tensions reshape global energy markets and force policymakers to reassess long-held assumptions, energy security has once again moved to the forefront of the international agenda.



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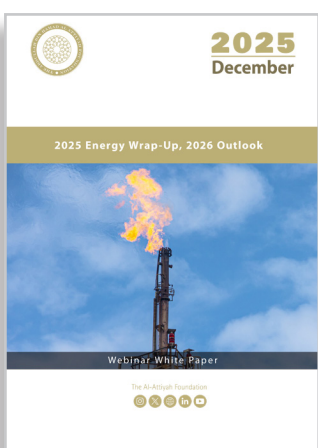
February – 2026

Key Forces Influencing the Global Energy Sector

The Al-Attiyah Foundation's first webinar of the year, "Key Forces Influencing the Global Energy Sector", held in partnership with the London Stock Exchange Group (LSEG), took place on 17 February. The event brought together leading experts from industry, research and policy to examine the forces reshaping energy markets, corporate strategy and long-term planning.



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December – 2025

2025 Energy Wrap-Up, 2026 Outlook

The Al-Attiyah Foundation's fourth webinar of the year, "2025 Energy Wrap-Up, 2026 Outlook", was held in partnership with the London Stock Exchange Group (LSEG) on 2 December.



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Our partners collaborate with The Al-Attiyah Foundation on various projects and research within the themes of energy and sustainable development.





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