

04 December - 2024

CEO Roundtable

A Year of Change:
Reflections on 2024
and Priorities for 2025



The Al-Attiyah Foundation is proudly supported by:



AGENDA

Wednesday, 04th
December 2024

10:00 AM Coffee and Networking

10:30 AM Special Speakers

10:40 AM Moderated Discussion

12:15 PM Closing Comments

12:35 PM Lunch



CEO Roundtable Series

His Excellency Abdullah Bin Hamad Al-Attiyah, Chairman of the Al-Attiyah Foundation, launched the CEO Roundtable Series and Dialogues to provide a platform for knowledge exchange and support for the global community in the quest towards a sustainable energy future. All guests have the opportunity to share their opinions and insights in what is always a lively and thought-provoking discussion.

**The meeting takes place under the Chatham House Rule whereby participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed.*

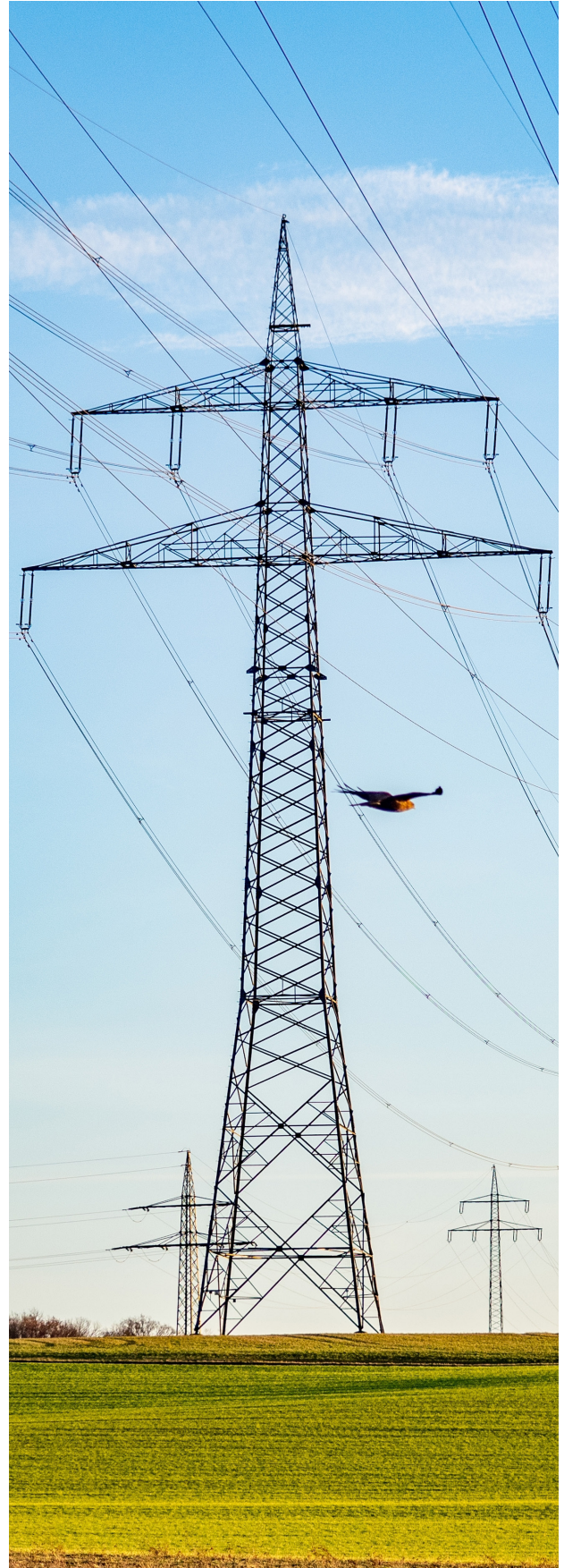


EVENT OUTLINE

The Al-Attiyah Foundation will conclude its 2024 activities with its fourth and final CEO Roundtable of the year on December 4. At the event, captains of industry and global experts will convene to reflect on the key events of the passing year and postulate on what might be significant in the months to come.

"A Year of Change: Reflections on 2024 and Priorities for 2025" is an appropriate encapsulation of the current tumultuous economic and sustainability world order characterised by changing geopolitics and adverse impacts of climate change. The foundation has chosen this theme for the final CEO Roundtable to set the platform for a robust debate and sharing of insights on the priorities for an exciting year ahead.

This fourth roundtable of 2024 will again, bring together the members of the Foundation and other high-level invited guests look back on 2024 and peep into 2025 and beyond. The energy and sustainability topics expected to be covered during the roundtable discussion will include affordability; oil and gas prices; costs of renewable energy; renewable energy costs; battery storage prices; electricity prices; regional differences; geopolitical risks and supply chain issues; energy sustainability; and energy security.



AFFORDABILITY



The cost of energy would continue to be influenced by a range of factors, including global economic conditions, technological advancements, geopolitical developments, and the ongoing transition to renewable energy sources. Some key observed trends in 2024 are summarised below:

Oil and Natural Gas Prices and volatility – Oil prices have seen volatility due to geopolitical tensions, particularly the ongoing Russia-Ukraine conflict, which affects European and global markets. Disruptions in supply from Russia, as well as OPEC+ production cuts, can create upward pressure on prices. But OPEC+ production increase will also cause volatility. In the longer term, factors such as slower economic growth in major economies like China and efforts to diversify energy sources in Europe and the U.S. can reduce demand, potentially stabilizing or even lowering prices. As of 2024, oil prices fluctuated between \$70 and \$90 per barrel, with short-term spikes possible if new conflicts or supply issues arise.

Many gas prices, particularly LNG, are linked to oil prices. After significant price increases in 2022 and 2023 due to European demand shifts and reduced Russian supply, natural gas prices stabilised in 2024. This was due to Europe's increased imports of liquefied natural gas (LNG) from the U.S. and other sources, as well as investments in renewable energy. The construction of new LNG facilities in the U.S. and other regions helped balance supply and demand, potentially lowering prices over time. However, LNG markets remain sensitive to weather patterns (e.g., cold winters) and geopolitical changes.

Renewable Energy Costs – The costs of solar and wind power have continued to decline over the past decade, making them increasingly competitive with fossil fuels in many regions. Advances in technology, economies of scale, and lower financing costs have driven this trend. Solar PV costs are projected to continue falling, although the pace may slow due to supply chain challenges (e.g., critical minerals like silicon and lithium).

The International Renewable Energy Agency (IRENA) estimates that utility-scale solar could see price declines of 5-10% per year through 2030. Offshore wind, while still more expensive than onshore options, is expected to become more cost competitive as turbine technology improves and larger projects achieve economies of scale.

Battery Storage Prices – Energy storage is crucial for stabilizing the intermittency of renewables. The cost of lithium-ion batteries has dropped significantly, though recent price increases for critical minerals like lithium and cobalt have slowed this decline. Analysts expect continued innovation and potential diversification into other battery technologies (such as sodium-ion or solid-state batteries) to help bring down costs over the next few years. This could make renewable energy with storage more economically viable compared to fossil fuel usage,

Electricity Prices – However the use of renewable comes at a cost, particularly in developed economies. As countries invest in grid modernization and renewable energy integration, the initial capital costs are contributing to higher electricity prices in the short term. These investments are critical for integrating new power sources, but they can lead to short-term price increases for consumers.

Regional Differences – The cost of electricity varies significantly by region due to differences in energy mix, policy, and infrastructure. In the U.S., for instance, states with high renewable capacity like Texas and California may experience more stable prices, while those dependent on fossil fuels could see more volatility. In emerging markets,

electricity prices may rise due to investment in new infrastructure and the need to expand access. However, renewables can provide long-term cost savings, especially in regions with abundant solar and wind resources.

Geopolitical Risks and Supply Chain Issues – The supply chain for critical minerals like lithium, cobalt, and rare earths is concentrated in a few countries (e.g., China, Chile, Democratic Republic of the Congo). Any disruptions or geopolitical conflicts affecting these supply chains can increase the costs of producing renewable energy technologies like batteries and electric vehicles. Efforts to diversify supply sources, improve recycling, and innovate with alternative materials will probably mitigate these risks over time, helping to stabilize costs.

Outlook for the Future – in the short-term, energy costs in 2025 will likely remain elevated compared to pre-2020 levels, particularly for fossil fuels, due to geopolitical uncertainties and ongoing adjustments in the energy markets. However, renewable energy investments and increased LNG capacity will eventually provide some relief. In the medium to long-term, as renewable energy technology continues to mature and storage solutions improve, the cost of renewable energy is expected to decline further, contributing to more stable electricity prices. Policy measures that support energy transition and improvements in energy efficiency will also play a role in reducing overall costs for consumers.

ENERGY SUSTAINABILITY



In its recent progress report, the IEA 2024 highlights the pace of the progress on renewables and related initiatives for tackling climate change. The rate of renewables growth in transport, industry and buildings would double to 2030 compared with the rate from 2017 to 2023. For transport, renewable electricity would account for half of this growth, led by adoption of electric vehicles and followed by biofuels, with small contributions from biogases, hydrogen and e-fuels. Nevertheless, the renewables' share in transport would only amount to an increase of two percentage points to 6% in 2030. For heat, renewables consumption expands more than 50%, driven by renewable electricity use for heat in non-energy intensive industries and buildings, followed by bioenergy. However, global heat demand outpaces renewables expansion, leading to increasing use of fossil fuels and a 5% increase in annual carbon dioxide (CO₂) emissions from the sector from 2024 to 2030.

Renewable fuels are essential to energy transitions, but growth is lagging behind. The share of renewable fuels in total energy demand remains below 6% in 2030 despite accelerating growth. Demand is poised to expand in all regions, but it is concentrated in Brazil, China, Europe, India and the United States, which collectively support two-thirds of the growth due to dedicated policies to support the uptake of several – and in some cases, all – renewable fuels.

Bioenergy accounts for almost all renewable fuel growth through 2030. Bioenergy use expands the most in industry, followed by transport and then buildings. Modern bioenergy is less expensive than hydrogen and e-fuels, and strong policy support is already in place in many regions. For instance, more than 60 countries have liquid biofuel policies, whereas only the European Union and the United Kingdom have e-fuel requirements.

Road biofuels remain dominant, but aviation and maritime consumption is accelerating. New policies for aviation and maritime biofuels spur over 30% of new demand in the transport sector overall. Biofuels in the aviation sector are forecast to climb to near 2% of total aviation supply by 2030, up from near zero in 2023, supported by mandates in the European Union and the United Kingdom and incentives in the United States. In the maritime sector, EU legislation drives growth, bringing biofuels to nearly 0.5% of international shipping demand.

The adoption of renewable energy sources like solar, wind, and hydropower is expected to accelerate. Technological improvements and cost reductions have made these sources more viable, leading to a shift away from fossil fuels. Energy storage technologies, such as advanced batteries and hydrogen, may play a critical role in managing intermittent renewable sources. Improved storage solutions will enhance energy reliability and enable better integration into power grids.

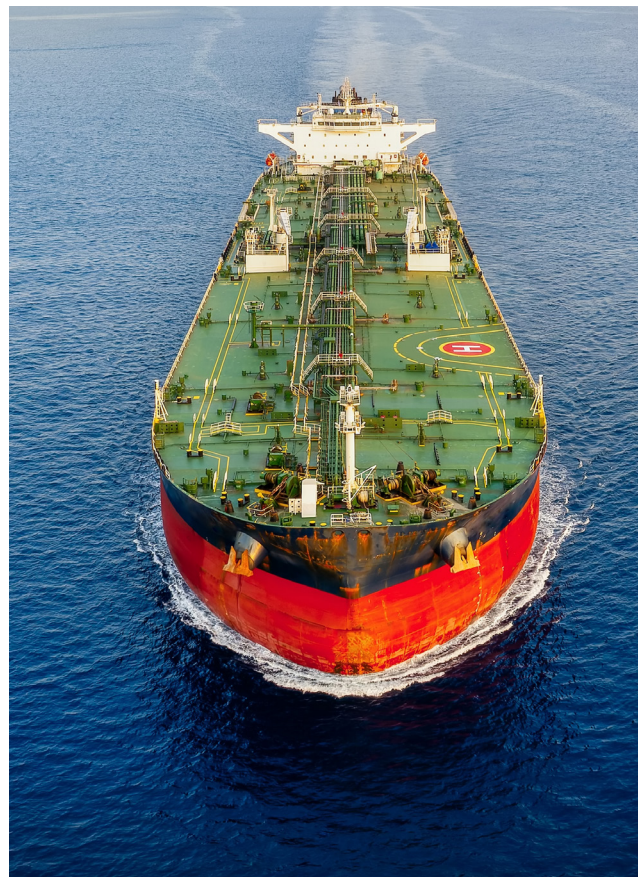
As renewable energy becomes a larger share of the energy mix, modernizing grids for better efficiency and reliability will be crucial in developed economies. This involves investments in smart grid technologies and energy management systems.



ENERGY SECURITY

Energy security in 2025 and beyond would be shaped by several major trends, including the global transition to renewable energy, geopolitical tensions, technological advancements, and policy shifts. Here are some key considerations:

- Tensions in key energy-producing regions, such as the Middle East, the Russia-Ukraine conflict, and disputes in the South China Sea, can disrupt global oil and gas supply chains. These tensions emphasize the importance of diversifying energy sources.
- Countries are striving for greater energy independence to reduce their vulnerability to global supply disruptions. The U.S., Europe, and others have increased investments in domestic renewable energy production, LNG terminals, and critical minerals essential for energy technologies.
- Many countries have committed to reaching net-zero carbon emissions by mid-century, pushing a shift towards low-carbon energy sources. This has led to increased investment in green technologies like carbon capture and storage (CCS) and clean hydrogen. Low carbon sources are more diverse in their locations and so they increase energy security of supply.
- Carbon pricing mechanisms, such as the EU's Emissions Trading System, are evolving to incentivize lower carbon emissions. These policies are driving both businesses and countries to adopt cleaner energy practices. Many emerging economies are focusing on expanding energy access while maintaining affordability.
- Small modular reactors (SMRs) and next-generation nuclear technology are being explored as part of a diversified energy mix. These innovations offer potential for reliable, low-carbon baseload power, although they face regulatory and cost hurdles.
- Critical minerals like lithium, cobalt, and rare earth elements are essential for clean energy technologies (e.g., batteries, wind turbines). Countries like China currently dominate these supply chains, leading to strategic competition.
- Countries are making efforts to reduce their dependency on limited specific countries, through commitment to develop alternative sources, recycling programs, and innovative materials that can replace traditional critical minerals.



MODERATOR & SPEAKERS

Moderator:



Axel Threlfall,
Mr Axel Threlfall is Editor-
at-Large for Reuters

Speaker



Bill Farren-Price,
Senior Research Fellow and
Head of Gas Research at the
Oxford Institute for Energy
Studies

Speaker



Gulmira Rzayeva,
Senior Visiting Research
Fellow at the Oxford
Institute for Energy
Studies (OIES)

Speaker



Mr. Alan Gelder,
VP, Chemicals and
Oil Markets at Wood
Mackenzie

Speaker



David Hart,
Partner at ERM and a
Visiting Professor at
Imperial College London

Speaker



Marissa Lee,
Associate Director at
Global Council

OVERALL OBJECTIVES OF THE ROUNDTABLE

- To understand the key events that determined the supply, demand, and prices during 2024.
- To discuss what will set the trends and be the key determinants of energy supply and demand in 2025 and beyond.
- To discuss the of the highlights from the UN climate change conference (COP29) that just concluded in Baku, Azerbaijan.
- To consider the key decisions that were taken at COP29 and their implications for the global energy landscape.
- To discuss areas where the energy sector could continue to engage effectively in the energy transitions necessary to mitigate the global climate effects.
- To share some insights on the approach of the new Trump administration and what it would mean to world energy landscape and global efforts on climate change.

DISCUSSION POINTS

- 01) What determined the supply and demand for all energy fuels in 2024?
- 02) Are prices becoming more volatile? If so, will that persist in 2025 and what is causing this volatility?
- 03) What would be the impact of the anticipated policies of the Trump Administration on the global energy outlook in 2024 and beyond?
- 04) In the "Fuel Trilema" of Energy Sustainability, Energy Affordability and Energy Security, did the balance shift in 2024 and will it shift further in 2025?
- 05) Are the views of the Trilema different between the "rich" and the "poor countries"? Is climate change only a "rich man's game"?
- 06) Is weather variability affecting climate change debates and the need to transition to less fossil fuel intense supplies? Are recent extreme weather events shifting public perception on climate change?
- 07) What are the significant outcomes that emerged from COP29?
- 08) What major energy related issues will continue to dominate the global climate change debate in 2025 and leading to COP30?
- 09) How is the balance between abatement and mitigation being resolved and how will either strategy be financed in the poorer countries?
- 10) Is "greenwashing" becoming more prevalent amongst the major fossil fuel producers and how is this impacting the future energy landscape? Is carbon Capture turning into a "greenwashing" issue or does it offer a genuine technical pathway for tackling climate change?
- 11) Will hydrogen become a significant fuel source in the coming years? If so, will it be blue, or green and how will it be transported?
- 12) Is there a danger of "stranded assets" both above and below the ground in the fossil fuel producing countries?



KEY QUESTIONS

01) Has the Trump election changed anything yet?

02) Will there ever be a premium for a "green" or "blue" fuel?

03) Can any premium for climate friendly fuels be achieved without government intervention?

04) Why has the production of coal not stopped yet?

05) What are some of the practical and effective approaches that the energy sector could use for mitigating climate change.

06) What were the key events of 2024 and main uncertainties the global gas and LNG industry is facing in 2025

07) Gas and LNG prices – will the current volatility spill into the next year?

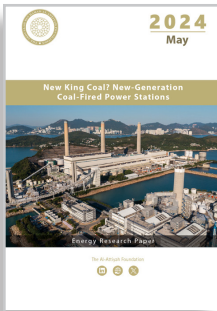
08) Global LNG supply – what are the implications of events in 2024 on the global FID momentum and supply growth?

09) What are the Gas demand dynamics in key LNG importing regions?

REFERENCE:

Film: A Quantum of Solace https://en.wikipedia.org/wiki/Quantum_of_Solace

ENERGY PAPERS



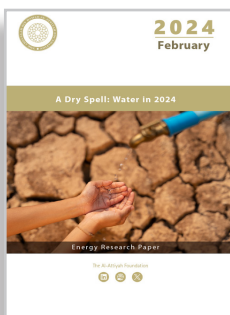
May – 2024

New King Coal? New-Generation Coal-Fired Power Stations

The prevailing belief is that the use of coal must cease to achieve net-zero emissions. However, new coal power plants, equipped with advanced ultra-supercritical, fuel cells, small supercritical, co-combustion, combined heat and power, and carbon capture, use and storage (CCUS) technologies offer enhanced thermal efficiency, reduced emissions, and increased flexibility in power generation.



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February – 2024

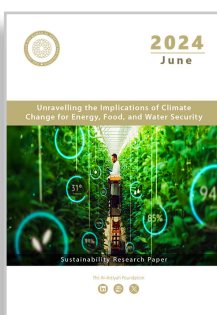
A Dry Spell: Water in 2024

Over 1.4 billion people, including 450 million children, inhabit regions grappling with high or extremely high-water vulnerability. This number is projected to increase in 2024, underscoring the urgency of optimising water use and identifying new and dependable water sources. Rapid industrialisation and urbanisation in some of the globe's fastest-growing economies have further strained already-stressed water resources.



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SUSTAINABILITY PAPERS



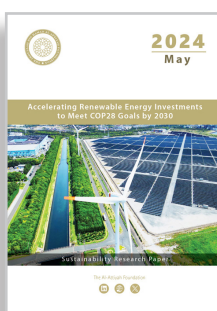
June – 2024

Unravelling the Implications of Climate Change for Energy, Food, and Water Security

Global climate change is becoming more severe, as evidenced by the global mean temperature reaching a record high of 1.45 ± 0.12 °C above the pre-industrial levels in 2023.01 Ocean temperatures and sea levels are also at record highs: average global sea surface temperature for February 2024 over 60°S–60°N was 21.06°C, the highest record for any month in the dataset.



(QRCO.DE)



May – 2024

Accelerating Renewable Energy Investments to Meet COP28 Goals by 2030

At COP28, over 130 countries committed to tripling global installed renewable energy (RE) capacity from around 3,400 gigawatts (GW) in 2022 to 11,000 GW in 2030 or 60% of global power generation capacity.1,2 Thus, more than 1,000 GW of new installed RE capacity will have to be added on average every year.



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ABOUT THE FOUNDATION

The Abdullah Bin Hamad Al-Attiyah International Foundation for Energy and Sustainable Development is a non-profit think tank inaugurated by His Highness the Father Emir, Sheikh Hamad Bin Khalifa Al Thani in 2015. The Foundation works closely with its members, academia, and a wide network of international experts, to provide independent insights, in-depth-research and informed debate on critical energy and sustainable development topics.

Mission: To provide robust and practical knowledge and insights on global energy and sustainable development topics and communicate these for the benefit of the Foundation's members and the community.

Vision: To be an internationally respected independent think tank that is a thought leader focused on global energy and sustainable development topics.

Research Reports & Publications

- Daily News Flash
- Weekly Energy Market Review
- Monthly Energy Research Paper
- Monthly Sustainability Research Paper
- Monthly News Articles
- Special Industry Reports
- Webinar Whitepapers
- CEO Roundtable Whitepapers
- Annual Sustainable Development Book




Podcasts, Webinars & Videos

- Bi-monthly Podcast Interviews
- Monthly Energy Educational Video
- Monthly Sustainability Educational Video
- Monthly Webinars
- Annual High-Profile Webinar

Events & Activities

- The Al-Attiyah International Energy Awards
- Quarterly Energy Dialogues
- Qatar Sustainability Week
- The ICP Bosphorus Summit

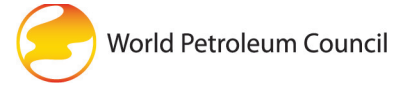
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OUR PARTNERS

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





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