

Abu Dhabi Symposium Report

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Plenary Session 1

The Future of Hydrocarbons: Changing Demand and Subsequent Impacts

Chairperson

Marianne Kah: Advisory Board Member and Adjust Senior Research Scholar at Columbia University on Global Energy Policy

Speakers

Ed Rawle: Chief Economist in Economic and Competitive Intelligence, Abu Dhabi National Oil Company

Masakazu Toyoda: Chairman and CEO of The Institute of Energy Economics, Japan; Adjust Professor, National Graduate Institute of Policy Studies

Ken Medlock: Senior Director of the Center of Energy Studies, Baker Institute

Bashir Dabbousi: Director of Technology Strategy and Planning, Saudi Aramco

The discussion centered around the extent to which hydrocarbons had staying power in a low-carbon future, the pace of which would be informed by the interaction of variables such as:

- the de-capitalization of international oil and gas companies;
- controlling methane emissions from gas;
- falling costs of battery storage for renewable energy;
- the uptake of electric and hydrogen fuel cell vehicles;
- the consumption pattern of millennials;
- the increasing efficiency of internal combustion engines; and
- the legacy and scale of hydrocarbon-based energy infrastructure.

The speakers noted that although growth in future oil demand is expected to be low, the absolute volume of oil demand will still be high. When peak oil demand will actually occur is less important than being prepared for all scenarios.

Some countries will find it easier to have 100% renewable energy by 2050, particularly those in northern Europe thanks to wind and hydropower resources. 100% renewable energy is unlikely in Asia due to space constraints, population density, the low cost of coal, and the absence of a common electricity grid to facilitate cross-border trade and system stability unlike in Europe.

Of particular relevance to Abu Dhabi and the Gulf states was the discussion about the response of national oil companies to climate concerns. These included the use of carbon capture technologies, reducing methane emissions, reducing the water

intensity of the oil extraction process, using artificial intelligence, sensors, and drones to detect and repair leaks to minimize operational downtime, and ensuring the stability of global oil markets and prices.

Plenary Session 2

Shaping the Future Energy Landscape: The Role of Climate Concerns and Technology Innovation

Chairperson

Yukari Niwa Yamashita: Board Member and Director of the Institute of Energy Economics, Japan

Speakers

Robin Mills: CEO, Qamar Energy

Alan Nelson: Chief Technology Officer, Abu Dhabi National Oil Company

Aqil Jamal: Chief Technologist, Carbon Management Research Division, Saudi Aramco

Damien Sage: Acting Senior Vice President Business Development for Hydrogen within Engie Middle East, South Central Asia, and Turkey

This session addressed the significance of climate change and its impact on the Middle East's significant natural resource endowments. The speakers were keen to emphasize that sustainability was good for the energy business, good for innovation, and good for the climate.

Robin Mills explained that major energy companies around the world were aware of the need to be seen to be sustainable in view of their social license and concerns about the bottom line. National oil companies in the Middle East were no exception. To make the most of their comparative advantage in low-cost hydrocarbons, they have been promoting carbon capture technologies as a decarbonizing solution and have supported the use of renewable energy to free up hydrocarbons for export.

Alan Nelson, Aqil Jamal, and Damien Sage provided updates of how their companies were contributing to the sustainability agenda, namely:

- the use of advanced analytics and AI technologies at ADNOC;
- a holistic approach to reducing carbon footprint at ARAMCO based on the circular carbon economy; and
- large-scale green hydrogen solutions at Engie for local and global clients aimed at decarbonizing the planet.

Whether or not more climate-related policies were required to push the sustainability agenda in the Middle East was debatable. On the one hand,

consumer choices and preferences are an important driver of change. On the other hand, demand-side management policies to reduce energy and water subsidies as well as improve energy efficiency have been successful in the Middle East.

Plenary session 3

Energy diversification: Renewable and nuclear energy in the Middle East

Chairperson

Adnan Shihab-Eldin: Director General, Kuwait Foundation for the Advancement of Sciences

Speakers

Michel Berthélemy: Senior Economist, Organization for Economic Cooperation and Development

Fatima AlFoora AlShamsi: Assistant Undersecretary for Electricity, Water and Future Energy Affairs, UAE Ministry of Energy and Industry

Maher Alodan: Chief Atomic Energy Officer, King Abdullah City for Atomic and Renewable Energy

Yousif Al Ali: Executive Director, Masdar Clean Energy

The session explored the potential of nuclear (conventional and small modular versions), renewable, and hydrogen energies to complement current hydrocarbon-based energy sources in the Middle East.

The speakers suggested the following advantages of these new forms of energy:

- They have minimal or zero carbon footprint;
- Nuclear reactors can be ramped up and down more easily these days and hence contribute to grid stability;
- Nuclear and hydrogen are energy dense;
- Renewable sources are more sustainable and socially acceptable than hydrocarbons. Wind-with-battery storage or concentrated solar power would reduce the variability in electricity generation of these renewable sources;
- Renewable energies can supplement high peak demand during the summer and avoid the opportunity and environmental cost of burning oil or diesel; and
- Hydrogen can ride on the existing hydrocarbon production and distribution network.

The UAE was cited as an example of a country in the Middle East with a diversified energy mix that included fossil fuels, renewables, and nuclear energy. According to its 50@50 energy strategy, 50% of electricity generating capacity by 2050 will come from low-carbon energy sources.

Small modular reactors were acknowledged to be an exciting field of development for countries with small grids, for desalination purposes, and even for the petrochemical industry. However, SMR adoption will require massive investment in time, money, and testing – especially for international licensing – before they are deployed commercially.

Plenary Session 4

Geopolitics: Issues Facing the Region Today and Tomorrow

Chairperson

Adam Sieminski: President, King Abdullah Petroleum Studies and Research Center

Speakers

Majid Al-Moneef: Secretary General, Higher Committee for Hydrocarbon Affairs, Saudi Arabia

Bassam Fattouh: Director, Oxford Institute for Energy Studies; Professor, the School of Oriental and African Studies, University of London

Amena Bakr: Deputy Dubai Bureau Chief, Energy Intelligence

Adnan Amin: Senior Fellow Harvard University, Kennedy School of Government

The speakers presented what they felt to be the key geopolitical opportunities or constraints on energy markets.

Majid Al Moneef acknowledged the risks governments and people face in an uncertain geopolitical environment that affects energy markets and reliability of supplies. He noted that Gulf governments were not panicking about stranded assets since oil demand will still be high in the future. Referring to the ARAMCO IPO, he suggested it was meant to finance projects without burdening the treasury and was not a sign of divestment due to a lack of faith in the future of oil.

According to Bassam Fattouh, the following energy trends were especially significant in their geopolitical impact:

Political leaders in the Middle East continued to be drivers of the energy transition. Unfortunately, their failure to sometimes meet people's basic needs imperiled the energy transition;

The U.S. has become a source of instability in the global oil market due to shale oil, imposition of sanctions on energy exporters, and trade wars;

Closer Gulf-Asia energy ties go beyond trade to include investments in the energy sector; and

The dynamics within OPEC+ are fundamentally changing; members cooperate but also directly compete with each other in many energy markets.

Amena Bakr shared her insights on the impact of U.S. sanctions on Iranian oil exports and the global oil market, pointing out that Iranian oil was still being exported despite sanctions.

Adnan Amin cautioned against overly optimistic views of the future of hydrocarbons for the following reasons:

Social movements will put pressure on major energy companies and their focus on hydrocarbons, as well as on state responses to climate change;

Energy systems will increasingly be decarbonized, decentralized, and digitalized; and

Peak oil demand will happen sooner rather than later.

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