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Under The Patronage of H.H Sheikh Mohamed Bin Zayed Al Nahyan, President Of The United Arab Emirates

ADIPEC أديبك

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Middle East Energy Club

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ADIPEC 2022 LEADERSHIP ROUNDTABLE SUMMARY

New Business models of NOCs and IOCs: driving a low carbon world

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Foreword

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Over the last few years, both National Oil Companies (NOCs) and International Oil Companies (IOCs) have worked to clarify the role they wish to play during and after the energy transition.

Decarbonisation is undeniably reshaping the global economy, opening new markets and imperilling others, which creates an added challenge for players across the value chain in terms of defining future business models that would be fit for purpose while also being able to generate value for stakeholders.

In addition, geopolitical and macroeconomic events in 2022 have come to refute many hypotheses about the ability to transition quickly and smoothly from fossil fuels to renewable energy sources over the next decade or two. What is clear is that the energy transition is here to stay.

Players need to find the right balance between having access to an optimal portfolio of traditional and green energy sources, investing in the development of next-generation technologies and pleasing investors and stakeholders across multiple dimensions, from financial to environmental and societal.

The ADIPEC Leadership Roundtable discussions are held under Chatham House Rule.

New business models of NOCs and IOCs: driving a low carbon world

MODERATED BY

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Leadership Roundtable Review

A&M moderated the Leadership Roundtable at ADIPEC 2022 where discussions centred around how the business models and priorities of NOCs, IOCs and service providers have evolved to accommodate social, regulatory and operating changes driven by the energy transition to low- and zero-carbon fuels.

The key points covered during the invitation-only roundtable at ADIPEC included the following:

- The impact of geopolitical and macroeconomic changes on the outlook for oil and gas producers and society's awareness of the importance of the sector in day-to-day life
- The different approaches to sustainable investments taken by oil and gas players depending on their maturity levels and, in the case of NOCs, the importance of the industry to countries' economic development plans
- The need for increased collaboration and partnering between all stakeholders across the value chain to maintain the momentum and achieve net-zero targets

Disruptions to global energy markets are pushing players to continuously revisit their strategies

Across the industry, businesses are engaged in a fundamental transformation of their business models to, firstly, decarbonise their legacy businesses; secondly, to adjust their business portfolios to position for success in a new energy system; thirdly, to build green businesses to penetrate markets that their current models cannot serve; and fourthly, to differentiate in existing markets with green products and value propositions like green liquified natural gas (LNG), hydrogen and carbon capture solutions.

The energy transition has been accelerated by several factors, from regulatory, to environmental and societal to the maturity of technologies such as batteries, hydrogen and power management. However, the emergence of new end-user demand for cleaner energy is a key driver for the long-term disruptions felt by players and stakeholders across the energy value chain.

NOCs and IOCs have had to make asset portfolio choices and evolve their understanding of a business model capable of generating value for stakeholders. It is fair to say no industry business model template exists. Some focus on producing low-cost, low-emission hydrocarbons, leveraging new technology and digital technology to reduce costs and manage carbon and emissions. Others are doing all the above and transforming themselves to cover low-carbon solutions and a new electrification agenda.

The impact of these changes and trends had convinced the energy ecosystem of the possibility of reaching net-zero sooner rather than later, forcing some players to accelerate their pivot towards greener technologies and increasing proportions of their CapEx budgets towards renewable projects.

ENERGY VALUE CHAIN

	KEY NEW MARKET TRENDS	
UPSTREAM GENERATION	**Cleaner Fossil Fuels**	Shift to cleaner fossil fuels has accelerated over the last few years with LNG playing a more important role in the short-term Investments in lower emission technologies will continue to rise Environmental considerations will gain in importance in CAPEX and investment allocation
	Rise of Renewables	Driven by government incentives and decreasing cost of technology, investment in renewables is likely to continue on an upward trend whether in power generation, transportation or other high energy consumption processes Short-term Supply limitations remain a key question
MID/DOWNSTREAM T&D	**Efficient Generation**	The transition to cleaner and more efficient fuels and generation assets will only accelerate, with nuclear, gas and renewable being the main sources Investments in process and yield improvement will likely continue to reduce feedstock and availability related constraints
	Interconnectivity and Flexibility	Interconnectivity between markets (e.g. UK/Europe power interconnections, Gas Pipelines, LNG Terminals) are likely to become key investment topics At regional and local level, smart metering and grid flex increasingly important to ensure balance in supply and demand
MARKETING AND RETAIL END USERS	**Emergence of Microgrids**	As generation and storage technologies become more reliable and affordable, the adoption of microgrids in end-user communities will continue to increase Connectivity to the wider network, metering and servicing would gain in importance
	Efficient End-use	Investment in energy efficiency across the buildings, transport and industry sectors is likely to regain priority for end-users, in particular as energy prices increase Investment in process improvement and new technology development is also likely to increase
	Power Management	Energy consumption measurement, management and optimisation will gain more importance as end-users look to reduce costs Investment in automation and analytics skills to better leverage data gathered from smart devices (meters, machinery)

Figure 1- Key Market Trends Across the Energy Value Chain, A&M analysis

[1]As per the IEA World Energy Investment 2022 report, for a selected peer group that includes the majors, ADNOC, CNPC, CNOOC, Equinor, Gazprom, Kuwait Petroleum Corporation, Lukoil, Petrobras, Repsol, Rosneft, Saudi Aramco, Sinopec and Sonatrach. The estimated clean Capex in 2022 is based on investment spending announced to 31 March 2022 and assumes that this pace of investment is maintained throughout the year. IEA calculations based on BNEF (2022); Clean Energy Pipeline (2022); company reports and websites.

However, events in recent months, including global supply and demand imbalances, price volatility and supply chain disruptions, have challenged the belief that the world can complete the transition from fossil fuels over the next twenty years. This was highlighted by the lack of consensus on energy outlooks developed by various entities and diverging perspectives on how fast global oil demand will shrink to put the world on a pathway to net-zero emissions by 2050.

Under existing technical constraints, renewable energy will not be able to provide security of supply, and there is a clear need for diversifying sources of energy supplies and suppliers. As a result, investment will be required across all fuels and energy sources, but in a manner that allows their production and consumption to be more sustainable.

Development of a new global energy ecosystem will require partnerships within the value chain

Despite the uncertainty, regulatory, employee, societal and market pressures have driven growth in clean technology investments, which only constitute c.5% of the total industry CapEx spend in 2022[1].

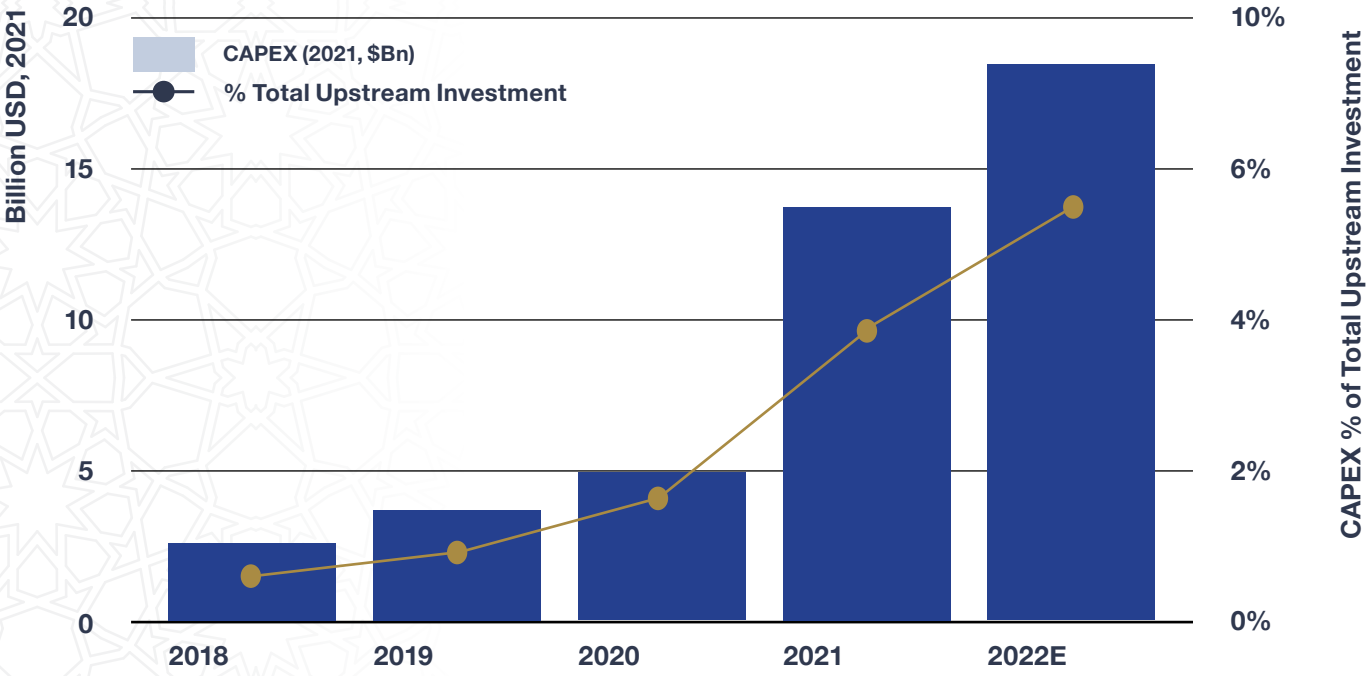

Figure 2- Capex by Selected Oil & Gas Companies on Clean Energy Technologies (Source: IEA)

THE VALUATION CHALLENGE BASED ON A&M ANALYSIS DONE IN OCTOBER 2022

- The equity value of publicly listed energy companies will continue to fall so long as capital is reallocated from traditional E&P projects with an anticipated c10%+ return to renewable projects with a c.5% return and very long payback periods. At the heart of the challenge is that to be competitive in renewables one has to be both efficient and have a competitive cost of capital.
- Energy Companies with a WACC of c.7% are competing for investment opportunities against renewable funds, for example who have a WACC of c.4%. While a 5% return project will be value creative for a fund, it will be value destructive for an Energy Company.
- Key to resolving this challenge is for Energy Companies to structure themselves so that they can access low-cost equity for their renewable investments while at the same time retaining ownership so that they can decarbonise their businesses.

The majority of this spend has been typically focused on relatively proven technologies like offshore wind, solar PV, biofuels, and increasingly hydrogen and CCUS. However, significant investments are still being made in various disruptive growth areas capable of making a difference should the right technologies and enablers be made available.

Roundtable participants agreed that a rethink of the entire energy ecosystem is required to achieve the sustainable transition to clean technologies and that success can only be achieved through enhanced partnership within the direct value chain. To this end, regulators, investors and consumers need to set realistic, achievable expectations that reflect the varying needs of energy producers and consumers around the world.

It was acknowledged that many of the more established players are already adapting their business models in response to the net-zero agenda by investing in renewables and biofuels. Some are extending these efforts into alternative technologies, such as hydrogen and carbon capture and storage, in light of compelling economic and tax incentives being introduced by governments.

Participants agreed that a crucial success driver will be technology and, most importantly, know-how transfer from IOCs to NOCs to enable them to catch up with and accelerate the energy transition.

Further down the value chain, partnerships between energy producers, service providers and suppliers have delivered several successes, in particular as many of these players, having already pivoted their businesses towards supporting the energy transition, have started building the critical infrastructure needed for the development and establishment of new green technologies.

KEY TAKEAWAYS:

- The role of NOCs and IOCs in decarbonisation has yet to be clearly defined. And while everyone would be responsible for contributing to the transition, approaches to solving this challenge would likely be different
- While the industry is already investing more than 5% of its Capex in green technologies, any acceleration will require the availability of higher returns and the sharing of technology and capabilities
- Developing a new global energy ecosystem will require partnerships across the value chain in order to develop and scale up new technologies. Governmental and regulatory support will remain necessary to attract investors and maintain the momentum for change

From a people and skills perspective, the new business models, as well as the improved awareness of the energy sector's contribution to day-to-day life, have made the sector appealing again, leading to improved employee engagement and enhanced attractiveness to young and qualified talent.

Finally, with many investors still wondering how a low-carbon business model will generate acceptable returns, regulators will still have a key role to play in maintaining their support for the energy transition through incentives, supporting legislation and continuous encouragement of ecosystem-wide collaboration.

How can IOCs, NOCs and stakeholders across the energy value chain define their next move?

A&M's analysis has shown that organisations across the energy value chain have launched a wide range of initiatives to identify the winning business mode.

ENERGY VALUE CHAIN	MEDIUM TO LONGER TERM INITIATIVES
Upstream E&P / Oil & Gas Majors	• Progressive wind-down/exit from traditional investments • Adoption of lower emission technology • Expansion into low-carbon businesses and change of operating model
Power Producers	• Optimisation of operational assets portfolio • Reduced operating hours as renewables to displace thermal • Pivot towards renewables manufacturing / development
OFSE & Midstream Services	• Setting of net-zero emissions targets and scaling down traditional investments • Expansion into low-carbon businesses • Adaptation to cleaner resources and energy storage
Downstream Refining	• Optimisation of operational assets portfolio • Improve yield / use more efficient materials • Repurposing of existing refineries and crackers and expansion into renewables
Chemicals	• Introduction of less carbon intensive energy sources, feedstock and product mix • Adoption of clean energy sources • Introduction of renewable feedstock
Fuel Retailers	• Introduction of EV charging points • Expansion of on-site value adding services • Change of business models to focus on new revenue streams/non-fuel retail
Steel Production	• Sourcing of a cleaner mix of energy (e.g. on-site renewables/PPAs) • Adoption of carbon reduction initiatives with explicit/implicit carbon pricing • Shift to a more circular economy and decarbonising ore-based production
Industrials and Manufacturers	• Sourcing of a cleaner mix of energy (e.g. on-site renewables/PPAs) • Adoption of carbon reduction initiatives • Pivot towards eco-friendly product mix and sourcing of a cleaner mix of energy
Other Large Energy Consumers	• Sourcing of a cleaner mix of energy (e.g. on-site renewables/PPAs) • Targeted carbon footprint reduction initiatives (e.g. electric, H2 or biofuel in logistics) • Adoption of more comprehensive carbon reduction initiatives

Figure 3- Initiatives undertaken by Energy Players as part of their pivot towards a cleaner future, A&M analysis

To succeed in the transition to a decarbonised world, we believe the imperatives for energy players over the next few years are:

1 **Clearly define the strategic imperatives and constraints,** whether it is energy security and national economic development or becoming an integrated energy provider, to identify the optimal positioning of the organisation

2 **Identify the future business model(s)** that would allow the organisation to smoothly transition from one state to the other as future fuel and technology scenarios become clear

3 **Optimise the assets and investments portfolio, adopt advanced investment structuring approaches, and define a robust equity story** to maximise returns for shareholders as well as to enable future investments in newer technology

4 **Streamline the cost base and remove stranded costs** resulting from what is likely to be successive acquisitions and disposal of assets to maximise cash conversion

5 **Invest in digital technologies** to enable operational improvement but also to improve engagement with suppliers, employees and end-customers

6 **Build a strong network of partnerships** with stakeholders across the value chain, from emerging technology providers to regulators, to create a cohesive and supportive ecosystem to reach net-zero objectives.

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For more information or to apply to participate in the Leadership Roundtables at ADIPEC 2023, please contact **adipecroundtables@dmgevents.com**

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