THIRTY TO NET ZERO

ISSUE NO. 17 VOL 2 | 2022

DATE: 16 DEC 2022

INTERVIEWS

Mezzan Holding's CFO Nabil Ben Ayed

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T2NZ is published by:
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Editor's Note

Dear Reader,

Who better to talk about protecting the oceans and championing sustainability than an ex-national diving champion? Nabil isn't your typical CFO. He is a charmer and a man who thoroughly enjoys life. The diver who learned to swim before he could walk in his home country Tunisia, knows the criticality of staying sustainable even when feeding 3.5 hungry football fans and thousands of athletes from around the world with specific nutrition needs.

On his careful watch, the Meezan group delivered on its promise to FIFA Qatar of a healthy and successful World Cup. The story is insightful.

Furthermore, we look at the low carbon future of the O&G industry in the Middle East, through various articles that probe into the most critical aspects of the industry. We hope to champion more thoughts around the industry in 2023.

Best Regards

Pallavi Shevade
Editor-in-Chief
Thirty to Net Zero


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IN CONVERSATION WITH NABIL BEN AYED

As the host of the ongoing FIFA World Cup 2022, Qatar is currently one of the most talked about destinations. The Gulf's leading supplier of food and beverages, the Mezzan group is providing large-scale catering to football stadiums located across Qatar. To meet the demand sustainably, the group is turning to carefully curated global suppliers to deliver tonnes of fresh and sustainably sourced food.

Group CFO Nabil Ben Ayed, in an exclusive interview with Thirty To Net Zero Magazine, said an average visitor attending for seven hours is expected to consume, "one shawarma and at least drink one coke. Just multiply that by 3.5 million people.

"That's pretty much how we figure out our order book since it's based on the mass. I'll say that six competitions went well in South Africa, Russia, and Brazil. So, we know how to handle such big events, and now it's the Middle East's turn. This is the first time that the habits have changed a little, but not that much. So, since it's more humid here than in Russia or South Africa, we have to pay more attention to water supply," he added further.

He went on to say that the FIFA World Cup 2022 is an enormous event that would teach not only Qatar but the entire region a lot. After this, Qatar will be putting in a lot of effort to get ready for the Asian Games 2023, so that the lessons learned here may be incorporated into the next big event.

Prioritising The Health Quotient In The Food Delivered To FIFA Fans

Beginning in the 1960s, the Mezzan Group established a food production division. Known now as "Khazan," the company constructed the first facility in the GCC for mincing, mixing, and producing sharia-compliant meat products. In the years that followed, Group bought out KITCO, an early player in the region's potato chip industry, for the vast majority of its shares. Almost immediately, KITCO proved to be an important part of the portfolio, inspiring the growth of Mezzan's operations in accordance with a sustainable business model. Global powerhouses including Johnson & Johnson, Kimberly Clark, Reckitt Benckiser, General Mills, and GlaxoSmithKline have shown interest in this strategy.

One-fourth of all global greenhouse gas emissions come from the production of food, making this a particularly important issue for the food and beverage (F&B) industry. This percentage is expected to rise if current trends continue because of the effects of a larger population and a more prosperous middle class; the affluent tend to consume more expensive, meat-based diets. By 2050, the World Economic Forum predicts, food demand would be 60 percent higher than it is today. Former national-level Tunisian diver, Ben Ayed hopes to see the demand being met sustainably.

"Almost four years have passed since I have been part of this food processing industry and I have spent nearly two years planning this event."

"Since the supplier's impact on the environment is crucial to our business, we require numerous things, including ISO certification for the environment, before adding them to our supplier file."

"If you're going to feed us something, we'll need proof that it's naturally fast, fruitful, and non-industrial."

"A smaller and more manageable amount of plastic is used in packaging. We choose the package since it is reusable and recyclable in a typical setting. That is how we operate here. It's innate to who we are."

Even with ample resources, F&B behemoths may prefer to focus on what they do best rather than scrambling to meet sustainability goals. By relying on third-party suppliers for dependable energy supply, management of multi-technical projects, and stringent control of operating expenses, food producers can improve their economic performance through outsourcing energy management services.

Most significantly, energy management companies have access to specialist analytical tools that can pinpoint problem areas, examine consumption trends, offer guidance on energy, electricity, and gas purchases, and boost operational efficiency.

Nabil Ben Ayed further elaborated on Qatar's plans to expedite green energy.

“The Middle East also saw the world's hottest temperature a year ago. This is the message that nature is trying to send us, and we would do well to heed it."

“We'll have to face that reality, unfortunately. So as we move to green energy ever, we modify our ideals, our culture, and our lifestyle. I'm not suggesting we should abandon modern comforts in favour of life in the Middle East's nomadic tribes, but I do think we need to strike a better balance between our needs and those of the natural world."

“We really are targeting by 2050 that the effective percent output of power would come from solar energy. In Qatar, we plan to double the green output of solar energy for the next coming two years,” he said.

Sustainability is a team sport, so it's important to involve people all along the supply chain. The food and beverage sector, in addition to focusing on production process optimization, needs to consider decarbonising its entire value chain by switching to renewable energy sources. Reducing carbon emissions can be a primary goal in the pursuit of securing reliable power sources including solar thermal solutions, on-site generation, and others. Businesses that use renewable energy sources get a financial boost of between 0.3 to more than 7 percentage points compared to their competitors, according to a recent study.

Nabil Ben Ayed CFO From Mezzan Group

Technology In The Mix

Custom high-tech solution to lowering one's carbon footprint is one example of the kind of service that can be outsourced. In this model, the energy services provider pays for the CAPEX while clients pay solely for the energy they consume. The EPC and energy performance risks are shifted to the service provider.

Such trends have gained much traction in recent years. Technology not only helps cut down on operational costs and time to market, but it also improves product quality.
Explaining further on this line, Nabil said, “Technology is fascinating to me, and I agree that this is where green is heading in the near and distant future. If you don't have the necessary tools, you can't make improvements.

“To illustrate, we are switching from plastic bottles to recyclable and biodegradable bottles in the packaging industry. We need the help of every scientist to think outside the box and develop environmentally friendly food packaging materials that can be used all over the world."

“Therefore, we will employ the appropriate technologies at our disposal. Additionally, the government will eventually have to force everyone to make the switch to green energy, providing everyone with a chance to adopt an eco-friendlier lifestyle. That brings us to the present. And it is my sincere wish that you will make steady progress over the duration of the course."

“A few years ago, we began discussing the possibility of using nanotechnology to build an emission-reducing production facility capable of offsetting 50% of our total emissions. By increasing the amount of transportation and decreasing the number of journeys, we are making efficient use of our transportation resources."

“Currently, Thirty percent of the energy that the solar business generates at first is stored in some of our warehouses. So, this is what we gain from technological advancements, and the company's commitment to environmental sustainability.”

Traceability has become a major trend in the food sector as the origins of our food come under closer examination. The capacity to track a food item and its constituents as they travel up and down the supply chain is known as "traceability." Consumers can now scan a QR code to see where their food has been from "farm to fork" thanks to the emergence of blockchain as a reliable and efficient tracking system.

Apps like TooGoodToGo, Phenix, and Karma have emerged in response to the growing need to reduce food waste by connecting users with discounted, surplus food from nearby restaurants, bakeries, and supermarkets.

Intensifying climate change discourse has resulted in a rise in calls to cut back on fossil fuel use, water usage, and carbon dioxide emissions. It would be difficult for even the most well-known companies in the food industry to implement a consistent decarbonization plan while still meeting their primary goals.

Companies that provide energy services, may help close this gap by demonstrating a consistent ability to cut clients' energy consumption at substantially reduced rates.

The Way Forward

The Middle East region has adopted a number of measures in line with global sustainability targets to address the threats posed by climate change to food systems. Before the next United Nations Climate Change Conference, the United Arab Emirates was the first in the area to make a net-zero pledge. Along with the United States, the United Arab Emirates launched the Agriculture Innovation Mission (AIM) for Climate to increase funding for research and development of agricultural technologies that account for climate change.

Saudi Arabia and Bahrain have both recently announced plans to eliminate all greenhouse gas emissions by the year 2060.

Reduced energy and water use are a direct result of retrofitting. Manufacturers may save costs and accelerate decarbonization by incorporating energy efficiency into factories, warehouses, and processing facilities.

Because of the critical nature of the situation, the area is promoting sustainable production and consumption practices and implementing agricultural methods that are both environmentally friendly and adaptable to changing climates.

Almost half of all shoppers around the world take environmental impact into account when selecting food and drink, according to surveys.

Data analysis tools can be used to define and track against the metrics that are in line with the objectives of food manufacturing companies. Possessing such knowledge permits greater efficiency in the use of available assets.

Organizations will have a more solid grasp on their budgets, be better able to assess supply-side modifications, demand-side actions, and project performance, and be able to report on their progress toward their objectives.

Stadium 974 is a prime example of sustainability and the promotion of upcycling. The 974 refers to the total number of individual containers that were slated for the scrap yard around the world, with the number playing homage to the site's industrial history and the international dialing code for Qatar (+974).

Some of the containers housed stadium amenities such as bathrooms and concessions. The entire structure is to be dismantled and designed to be reassembled elsewhere; it was the first temporary venue in FIFA World Cup history, starting a new chapter in the 92-year history of the game.

All Photos are Provided By Nabil Ben Ayed From Mezzan Group

People who see challenges differently, see the world differently.

A world where healthcare workers are better equipped to treat patients. Where energy is more sustainable and can power more lives. And where faraway places feel closer with flight that's more fuel-efficient. Because seeing a smarter, healthier, cleaner world isn't something that's far in the future. **It's the world we're building now.**

Building a world that works

MIDDLE EAST AMBITIONS AS CARBON CAPTURE AND STORAGE (CCS) HUB FOR HYDROGEN ECONOMY

The 2016 Paris Agreement and following analyses by the International Energy Association (IEA) have established in the last decade that 14% of cumulative emission reductions must be obtained from CCS technology in order to limit global temperature increases to 2˚C by 2060.

Since 1972, CCS has been used, and by the end of 2021, 29 CCS facilities throughout the world have reached full operational capacity, collecting an estimated 40 MMtpa. Compared to the end of 2015, when just 15 large-scale CCS projects were active, this is an increase of 12 MMtpa. In all, all facilities in various stages of the development cycle contribute to a project pipeline capture capacity of about 150 MMtpa. This seems optimistic, yet this potential was predicted back in 2011 when capacity was expected to fall every year until 2017.
As the founder and chief executive officer of Vanda Insights, Vandana Hari made the following statement: "I see only one way out — oil and gas companies need to double down on investment in R&D for carbon capture, utilisation, and storage technology, accelerate pilot projects that can become role models, and pull out all the stops in educating the public about this mitigation technique."

Currently, carbon capture and storage is the only hope for countries who want to keep producing oil and gas. "Unfortunately, others perceive it as nothing more than a cover for continued production and use of harmful fossil fuels," Hari said, "so it's pricey and also gets a poor name." As countries begin to recover from the Covid-19 slowdown, according to Klein, emissions will increase globally at a faster rate in 2022. After a little decline in 2022, Middle Eastern emissions from oil used in industry are projected to climb annually until at least 2040.

The Gulf Collaboration Council (GCC) countries may either improve regional governance and cooperation, or they could team up with world leaders in CCUS to jointly fund CCUS research and development (such as some of the recent initiatives by ADNOC). The expansion of CCUS will be aided in no small part by the widespread dispersal and sharing of relevant information and the development of relevant skillsets. Plans should prioritise regional legal and regulatory issues such as long-term liability for storage, transportation regulation, the treatment of stored carbon under emissions trading regimes, issues of property ownership (including intellectual property rights), and public perception and engagement.

Because of the importance of reducing emissions for any climate change plan to be effective on a global scale, CCUS regulatory regimes normally function on two levels: the international, multilateral level, and the national, subnational one. Governments, who do not want national carbon reduction pledges to penalise their own local industries, also desire a level playing field for investors in CCUS projects. The United Nations Framework Convention on Climate Change (UNFCCC; the Paris Agreement) and its annexed Kyoto Protocol are the current international accords addressing climate change. The UNFCCC defined objectives, while the Protocol established industrialised members' legally obligatory emission reduction targets. Because of their higher initial cost compared to more established alternatives, low-carbon technologies necessitate a broad social mandate in order to be widely adopted. Reduce global warming temperatures is the ultimate goal. National goals may include, but are not limited to, being a good "global citizen," ensuring a reliable supply of energy, and decreasing pollution and other adverse environmental impacts. One or more of these may be national goals in some or all of the GCC states.

Saudi Aramco Petroleum refineries company / upstreamonline


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GLOBAL PLEDE TO REDUCE METHANE EMISSIONS AND IMPACT ON THE MIDDLE EAST

Reducing anthropogenic methane emissions by at least 30 percent by 2030 from 2020 levels as part of the Global Methane Pledge (GMP) is the most effective short-term strategy for limiting warming to 1.5 degrees Celsius. There will be huge benefits in areas like energy security, food security, health, and development if this is accomplished.

The Global Methane Pledge has created unprecedented momentum for methane action in the year after its launch at COP26. Over the past year, the number of countries endorsing the GMP has doubled, from 100 to 150; more than 50 countries have developed national methane action plans or are in the process of doing so; significant new financial resources are being directed to methane action; and partners have launched "pathways" of policies and initiatives to drive methane reductions in key methane-emitting sectors, such as the GMP Energy Pathway launched at the June 2022 Major Economies Forum on Energy and Climate.

Methane is an extremely powerful greenhouse gas, contributing to global warming by an order of magnitude more than carbon dioxide. With an atmospheric half-life of around a decade, this climate pollutant is quickly depleted. Human-caused methane emissions make up more than half of all methane emissions, hence lowering these emissions is one of the most effective strategies to counteract climate change, as shown by studies from the Intergovernmental Panel on Climate Change (IPCC). For global warming to remain below the threshold agreed upon by world leaders, the Climate and Clean Air Coalition (CCAC) and the United Nations Environment Programme (UNEP) recently launched the Global Methane Assessment, which found that reducing human-caused methane by 45 per cent this decade would be sufficient. By itself, this would prevent almost 0.3˚C of warming by the 2040s. It would save a global total of 26 million tonnes of crops annually and avert 255,000 premature deaths, 775,000 hospital visits due to asthma, 73 billion hours of lost labour due to high heat, and 73 billion hours of lost labour.

Human-caused methane emissions can be broken down into the following three categories: agricultural (40%), fossil fuels (35%), and waste (20 per cent). Methane emissions from livestock farms are among the highest in the agricultural industry. Approximately 23% of emissions come from the oil and gas industry, while just 12% come from the coal industry. It is conceivable to cut methane emissions by 75% in the oil and gas industry using already available technology, with 50% of that reduction coming at no net cost.

According to UNEP's Executive Director Inger Andersen, "cutting methane emissions is the best approach to halt climate change over the next 25 years."

There is considerable potential for the Global Methane Pledge to raise countries' ambition and strengthen their collaboration. Through the International Methane Emissions Observatory (IMEO) and the Climate and Clean Air Coalition, UNEP will aid in translating pledges into actionable plans to reduce emissions.

The United Nations Environment Programme (UNEP) is making greater efforts to draw attention to and reduce methane emissions in the oil and gas sector through initiatives like IMEO, which is data-driven and action-focused in order to battle methane. To achieve this goal, it collects, integrates, and reconciles data from all available sources and makes this information publicly available together with supporting scientific evidence, studies, and policy recommendations for reducing methane emissions from fossil fuels.

Oil & Gas Methane Partnership 2.0

UNEP and the Climate and Clean Air Coalition have announced a new multi-stakeholder effort called the Oil & Gas Methane Partnership 2.0 (OGMP 2.0). When it comes to reporting methane emissions, the OGMP 2.0 is the only all-encompassing, measurement-based framework available to the oil and gas industry.

The Partnership now includes over 80 enterprises spread across all five continents, accounting for a sizeable chunk of global oil and gas output. Operators of natural gas transmission and distribution pipelines, gas storage capacity, and LNG terminals are also part of OGMP 2.0.

In order to solve the methane data challenge, the International Methane Emissions Observatory (IMEO) relies heavily on data from the OGMP 2.0. To create a public dataset of methane emissions levels and sources, IMEO collects, integrates, and reconciles methane data from a variety of sources. In order to provide a solid scientific foundation for methane emissions estimations, IMEO will be a crucial implementation vehicle for the Global Methane Pledge.

The United Nations has unveiled a cutting-edge, satellite-based methane monitoring system for the entire planet

The United Nations (UN) recently revealed a new satellite-based system to monitor emissions of the climate warming gas methane and allow governments and businesses to respond, as part of global efforts to limit climate change by combating methane.

As part of the UNEP International Methane Emissions Observatory's (IMEO) strategy to get policy-relevant data into the right hands for emissions mitigation, the United Nations Environment Programme (UNEP) launched the Methane Alert and Response System (MARS) at the 27th United Nations Climate Change Conference as a data-to-action platform.

UN announces high-tech, satellite-based global methane detection system / unep

Other UNEP IMEO initiatives are also being supported by the Global Methane Hub and the Bezos Earth Fund. To better quantify agricultural methane emissions, researchers are integrating multi-scale ground measurements with growing satellite capacity.

It is imperative that we address methane emissions if we are to reduce the global temperature rise to within 1.5 degrees. For brief periods of time, these emissions tend to spike in certain locations; for instance, in the energy sector due to leaks, venting, and flaring. It's possible to respond more quickly if these peaks are identified early on, according to Frans Timmermans, the European Commission's executive vice president. The Methane Alert and Response System is designed for this same purpose. The method will allow every country to take swift action to cut methane emissions because of financing and free satellite data from Copernicus, the European Union's Earth Observation initiative.

With initial support from the European Commission, the United States Government, Global Methane Hub, and the Bezos Earth Fund, MARS was developed as part of the Global Methane Pledge Energy Pathway to help UNEP verify company-reported emissions and describe trends over time. Partners such as the International Energy Agency and the Climate and Clean Air Coalition hosted by UNEP will help put MARS into action.

The United Nations Environment Programme's Executive Director, Inger Andersen, stated that the world is "far off track" in its attempts to limit global warming to 1.5˚C, as shown by the organization's Emissions Gap Report released prior to the climate summit. Since methane escapes the atmosphere far more quickly than carbon dioxide, reducing emissions can have a significant and immediate impact. To help governments and businesses accomplish this urgent climate goal, the Methane Alert and Response System represents a major advance.

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Aiming for Zero Methane Emissions has many backers

There are currently 15 signatories to the effort, with an additional 17 companies showing their support by signing on as supporters. Major players in the energy technology sector including Baker Hughes, the engineering firm Worley (with offices in both the United States and Australia), and the IPIECA (an industry group) are all on board to help the oil and gas sector reach its objective of nearly zero methane emissions. Emissions monitors and detectors like GHGSat are also on board.

OG Tech, Flare 2 Value, and Pipeline 360; Energy, Seek Ops, Clarke Valve, Highwood Emissions Management, and Maze Environmental, among others, who are creating new equipment and technologies to prevent leaks and utilise methane; consultancies like Wood Mackenzie Carbon Limits and ERM; and NGOs like Equitable Origin, who are advocating for change. OGCI, or the Oil and Gas Climate Initiative, is also on board.

About 22% of the world's anthropogenic methane emissions in 2021 came from oil and gas extraction. Despite the fact that energy use increased by around 5% last year, IEA figures reveal that methane emissions from the energy sector increased by roughly 5%.

COP27 in Sharm El Sheikh / PPouyanne

The industry's methane emissions can and should be reduced to zero, as acknowledged by the Aiming for Zero Methane Emissions Initiative. Members of the OGCI, a CEO-led group working to expedite business action on climate change, created it.

With Aiming for Zero, members have a detailed plan for achieving quick emission reductions. But they can't stop the gas leak by themselves. Because of this, companies like Baker Hughes and Worley are encouraged to join the effort and contribute to its goal of reducing its methane emissions.

Important multi-stakeholder projects like the Methane Guiding Principles, Oil and Gas Methane Partnership 2.0, and the Global Methane Alliance are complemented by this new effort.


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CHALLENGES FACING THE OIL AND GAS SECTOR DURING TIMES OF ENERGY CHANGE

As the global community moves toward renewable energy sources, oil and gas industries face a serious problem. Companies' near-term profits are driven by fossil fuels, but their long-term social acceptability and profitability could be jeopardised if they don't respond to rising calls to cut greenhouse gas emissions.

What clean energy changes mean for the oil and gas business, and what the industry can do to hasten those transitions, need to be made crystal apparent.

The pressure on all industries to find answers to climate change will only increase regardless of the course the world takes to limit the rise in global temperatures. The recently released report by the IEA, Oil and Gas Industry in Energy Transitions, argues that while some oil and gas companies have taken steps to support efforts to combat climate change, the industry as a whole could play a much more significant role thanks to its engineering capabilities, financial resources, and project-management expertise.

According to Dr. Fatih Birol, Executive Director of, the International Energy Agency, "no energy industry will be impacted by clean energy transformations." "It's important for everyone in the sector to think about what to do in response. There is no room for inaction.

Because of the unique challenges faced by each oil and gas company, there is no one best strategy for navigating the market.

Dr. Birol has stated that the first order of business for the industry as a whole is to work toward a smaller ecological impact. The extraction and distribution of oil and gas account for about 15% of worldwide energy-related greenhouse gas emissions at present. These emissions can be reduced substantially by simple and fast measures.

The single most significant and cost-effective option for the sector to reduce these emissions is to reduce methane leakage to the atmosphere. However, there are also more options to reduce the emissions intensity of delivered oil and gas by doing things like putting an end to routine flaring and incorporating renewables and low-carbon energy into new upstream and LNG facilities.

Dr. Birol elaborated, "Oil and gas companies, with their extensive knowledge and deep pockets, can play a crucial role in accelerating deployment of key renewable options such as offshore wind, while also enabling some key capital-intensive clean energy technologies, such as carbon capture, utilisation, and storage, and hydrogen, to reach maturity." The industry's participation is crucial if these technologies are to reach the critical mass necessary to make a dent in emissions.

There are several oil and gas firms that are branching out into renewables and other low-carbon energy sources. The highest outlays have gone to solar PV and wind, but so far, non-core area investment by oil and gas corporations has averaged roughly 1% of overall capital spending. In addition to increasing their investment in R&D, some oil and gas firms have diversified by acquiring existing non-core businesses, such as those involved in electricity distribution, electric-vehicle charging, and batteries. Nonetheless, there are few indications of the widespread reallocation of capital that is essential to put the globe on a more sustainable course.

Increasing funding for energy sources like hydrogen, biomethane, and advanced biofuels that can replace oil and gas in the energy sector while producing fewer greenhouse gas emissions is a crucial step. If the world is to get back on track to combat climate change, low-carbon fuels would need to account for about 15% of overall expenditure in fuel supply within the next decade. Transitions are made far more difficult and expensive without access to low-carbon fuels.

Dr. Birol argued that in order to tackle the magnitude of the climate crisis, a wide coalition of governments, investors, enterprises, and anybody else who is serious about cutting emissions would be necessary. The oil and gas sector must be fully invested in this initiative, the report says.

With no question, low-carbon electricity will become the dominant force in the global energy mix of the future. Even in rapid transitions to sustainable energy sources, investment in oil and gas projects will be necessary. Stopping all new investment in existing oil and gas fields would result in an annual drop of about 8% in production. This is more than could be explained by a decrease in worldwide demand, therefore new and current fields will continue to get investment.

For as long as oil and gas are in demand and yield satisfactory returns on investment, some business owners may prefer to maintain a focus on these commodities. Companies in this sector will also need to deliberate on how to best respond strategically to emerging threats. National oil corporations have the responsibility of caring for their country's hydrocarbon resources, and their government owners and host societies depend largely on the revenue from oil sales.

More than half of world oil production and an even bigger portion of reserves are controlled by national oil companies. While some function admirably, many are ill-prepared to deal with the new realities of the world's energy markets. Shifts to development models are inevitable in many major resource holders, and these changes have led a number of countries to recommit to reform and diversify their economies. As long as they are running efficiently and keeping an eye out for potential threats and possibilities, national oil firms can be a pillar of economic stability during this transition.

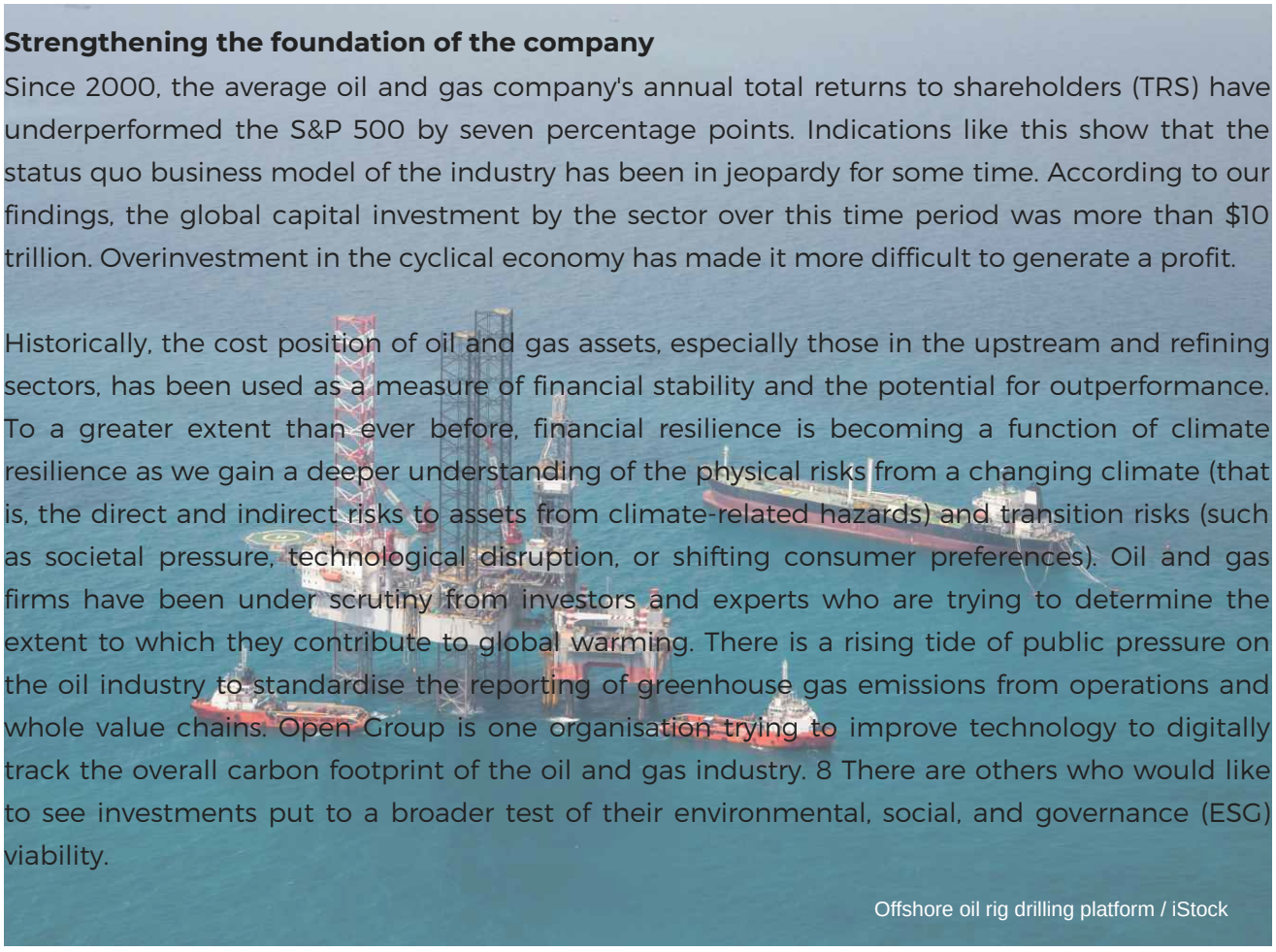
Oil and gas's major options for coping with the energy transition

Most recently, climate change has emerged as one of the most significant systemic hazards to the global economy. A move away from a hydrocarbon-heavy energy system and toward one dominated by low-carbon sources was already underway long before COVID-19. The recent occurrences have "sharpened investors' interest in sustainable and resilient assets, particularly renewables," according to a research published by the International Renewable Energy Agency. More and more investors are looking for bets that lower their sensitivity to climate change and the danger of stranded assets. Wall Street Journal research indicates that oil and gas firms in North America and Europe wrote down asset values totaling $145 billion, or approximately 10% of their market value, in the first three quarters of 2020. Collectively, the signatories to the Climate Action 100+ programme oversee more than $50 trillion in assets, and their number continues to grow.Environmentally responsible spending is also a cornerstone of many governments' efforts to stimulate the economy. And in a move that is unparalleled anywhere in the world, Denmark has decided to halt all future licencing rounds for the North Sea in preparation for the region's eventual decommissioning of oil and gas production by 2050. Oil and gas firms need to make strategic decisions in light of these dynamics, both to strengthen their financial and public image and to choose if and how to reposition themselves to take advantage of the increasing low-carbon winds of change.

Strengthening the foundation of the company

Since 2000, the average oil and gas company's annual total returns to shareholders (TRS) have underperformed the S&P 500 by seven percentage points. Indications like this show that the status quo business model of the industry has been in jeopardy for some time. According to our findings, the global capital investment by the sector over this time period was more than $10 trillion. Overinvestment in the cyclical economy has made it more difficult to generate a profit.

Historically, the cost position of oil and gas assets, especially those in the upstream and refining sectors, has been used as a measure of financial stability and the potential for outperformance. To a greater extent than ever before, financial resilience is becoming a function of climate resilience as we gain a deeper understanding of the physical risks from a changing climate (that is, the direct and indirect risks to assets from climate-related hazards) and transition risks (such as societal pressure, technological disruption, or shifting consumer preferences). Oil and gas firms have been under scrutiny from investors and experts who are trying to determine the extent to which they contribute to global warming. There is a rising tide of public pressure on the oil industry to standardise the reporting of greenhouse gas emissions from operations and whole value chains. Open Group is one organisation trying to improve technology to digitally track the overall carbon footprint of the oil and gas industry. 8 There are others who would like to see investments put to a broader test of their environmental, social, and governance (ESG) viability.



Offshore oil rig drilling platform / iStock

Oil-refinery-and-boat / Jupiterimages

Oil and gas firms' first line of defence against falling commodity prices and rising carbon prices should be a well-diversified investment portfolio. Beyond the no-regrets decarbonization of their operations and supply chain, CEOs may enhance their positions by taking two crucial measures.

Quality Assets Targeting Promising Hydrocarbon Markets

Future investments should be focused on "advantaged" resources, which provide the optimal mix of low break-even pricing and low emissions intensity in order to make a portfolio more financially and climatically resilient. We studied how the global portfolio of upstream oil-focused investment projects fares in terms of competitiveness at varying carbon and commodity prices . Scope 1 and Scope 2 emission estimations from Stanford University's Oil Production Greenhouse gas Emissions Estimator are used in the model. The model takes into account all producing fields and takes the investment choice out of the equation. This dataset provides some straightforward findings, despite the abundance of estimates for emissions and the large variation between them.

·The expected break-even price for 90% of all designated oil-focused projects is $60 per barrel or less if there is no carbon pricing. This percentage falls to 80% with a carbon price of $100/tonne CO2e.

·At a carbon price of zero, just 25% of worldwide projects are profitable. At $100 per tonne of CO2 equivalent, that number drops below 20%.

·With a carbon price of $100/tonne CO2e, only 25-35% of conventional onshore and shallow water projects are economically viable. These two regions are expected to account for about two-thirds of world petroleum output in 2030. This percentage falls to below 5% when deepwater, ultradeepwater, and unconventional resources are considered. These resource-wide trends in performance obscure disparities in resource output that are typically larger within a given basin than they are between basins. The gap between the highest and lowest carbon intensity deciles in the Permian, for example, is eight times larger than the global average.

·Only 3% of global oil projects break even at $200/tonne CO2e, based on current economic estimates at $30 per barrel.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NOVEL NOC AND IOC ECONOMIC STRUCTURES TO CREATE A LOW-CARBON GLOBAL ECONOMY

Several firms in the Middle East have committed to achieving climate neutrality by achieving 100% reductions in CO2 emissions by a certain date. Scientists have warned that the worst effects of climate change can only be avoided if human civilisation achieves a net zero carbon footprint by the middle of this century. In turn, this necessitates conformity on the part of commercial enterprises. In spite of this, not all proposals for achieving net-zero emissions are created equal.

Since cement production accounts approximately 8 percent of global carbon emissions, skyscraper developments cannot be made carbon neutral by just planting trees during construction. The oil and gas sector is also closely linked to pollution. There is a consequent need to inquire as to what strategies these sectors have in place to prevent CO2 from entering the atmosphere.

Dr. Akram Awad, a partner at the Boston Consulting Group, notes that "countries of the region remain among the highest emission producers per capita, with the limited short-term aim that falls beyond the 1.5C Paris Agreement Target" (BCG).

As a side effect of the conflict in Ukraine and the subsequent ban on oil and natural gas from Russia, a fight to conserve energy has been sparked, with the urgency of climate action becoming a casualty.

Fearing a shortage of natural gas, Germany has resumed burning coal at its power facilities. Due to rising energy prices caused by conflict, more nations are turning to fossil fuels than expected, putting pressure on their ability to meet emission reduction goals. What happens to the fossil fuel industry's lofty net-zero ambitions if production is ramped up to fulfil the demand sparked by the conflict in Ukraine?
Greenwashing can increase a company's stock price by the use of empty but symbolic gestures like advertising campaigns, publishing emission targets, and establishing advisory boards. But are the businesses really making a difference by taking real climate action? Are they, and if so, what evidence do they have?

There is still a long way to go before all Middle Eastern sectors are on pace to meet national net-zero targets, but significant actors in the energy and industrial sectors have made progress in incorporating climate action into their agendas, as noted by Awad.

Do businesses in the Middle East have plans, strategies, structures, and tools necessary to put such plans into action? And, most crucially, who is responsible for tracking how close local firms are to meeting their goals as a result of these plans?

Here's where NQA comes in to make sure sustainability isn't just lip service. The group, which operates in 90 countries, defines carbon neutrality as when a business removes more carbon from the atmosphere than it releases. It suggests that a full rethinking of business models may be necessary in order to take use of energy-saving technology, move to low-carbon energy sources, and run on renewable power.

Carbon neutrality certification by NQA is based on a two-stage audit procedure that is consistent with the hundreds of ISO standards that are used to help businesses reach net-zero emissions. It also notes that while businesses are making strides to reduce their carbon footprint, the science behind absorbing CO2 is still in its infancy. Carbon capture and storage technologies, along with related equipment like carbon dioxide scrubbers, are not yet economically viable.

The aviation industry has been singled out by a global accreditation body as one that is reevaluating its methods and tools.

Little people making a big difference in climate change?

While aviation is responsible for only 2.5% of global carbon emissions, significant steps have been taken to save the environment. Airlines in the Middle East are increasing their climate action by using biofuels and increasing passengers' knowledge of turbulence, both of which reduce aircraft energy use.

The logo of Aramco is seen as security personnel walk before the start of a press conference by Aramco
REUTERS / Hamad I Mohammed

A7-BCM Qatar Airways Boeing 787-8 Dreamliner by / planespotters.in

Qatar Airways has joined the IATA's turbulence awareness campaign and implemented 70 fuel-saving measures since 2015. As part of this initiative, airlines all over the world share information regarding weather conditions to aid one another in navigating the skies more efficiently and with less energy use. In addition, it has promised to help achieve the World Economic Forum's target of having 10% of jet fuel come from sustainable sources by 2050.

With its goal of reaching carbon neutrality by 2050, Qatar Airways has also made history by being the first airline to complete a transaction on the International Air Transport Association's (IATA) Aviation Carbon Exchange (ACE) platform. This market allows airlines to buy and sell emission units in order to fulfil carbon reduction targets.

Emirates, a major airline headquartered in Dubai, has taken a more practical tack, calling on the aviation industry to maintain reasonable goals. At the IATA World Air Transport Summit in late 2021, President Tim Clark criticised the industry's lofty goals of reducing emissions by 40% in a decade. In terms of concrete measures, Emirates has collaborated with navigation service providers to chart the most efficient routes and minimise headwinds in order to lower fuel consumption each flight. Using fuel monitoring technology and data analytics, the airline has also decreased fuel uplift at the pilot's discretion.

Under our environmental sustainability framework, reducing emissions is a top concern for Emirates. According to Shannon Scott, Emirates' senior manager for Environment Affairs, "this comprises a strategy of maintaining a young and fuel-efficient fleet, a continuing comprehensive operational fuel efficiency programme, and support for the UAE and international programmes on sustainable aviation fuel."

Besides taking use of tailwinds, shutting down some engines during approach, and avoiding engine reverse thrust during landing, Emirates also employs a few other basic measures to save fuel consumption. The airline utilises artificial intelligence to forecast the rise of drinkable water in each trip as part of regulating the weight of each aircraft to boost energy efficiency.

"Carbon Offsetting and Reduction Scheme for International Aviation, which Emirates has pledged to implement (CORSIA). To stabilise global emissions at 2019 levels over the medium term and to offer extra incentives for adopting sustainable and low carbon fuels, ICAO established CORSIA, which is being implemented by ICAO member nations including the UAE," stated Scott.

Emitters at full strength to confine carbon

The oil and gas industry is responsible for 42% of all emissions, or over 2 billion tonnes per year, due to both industrial processes and consumer use of fossil fuels. Thus, the global energy sector must completely revamp its business model and adjust to the emergence of unconventional energy sources if it is to fulfil its commitment to lowering its carbon footprint. With sanctions on Russia, demand for oil and gas from the Gulf has surged, and Saudi Arabia and the United Arab Emirates are the world's biggest oil producers in the Middle East.

NOC and IOC Group / Wikimedia

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MIDDLE EAST EMBRACES RENEWABLE ENERGY WHILE CONTINUING TO EXPORT OIL

As Egypt and the United Arab Emirates (UAE) get set to host the next two major world summits on climate change, the attention of the global green community is shifting to the Middle East. Starting on November 6th 2022, COP27 was organized in Egyptian resort of Sharm El-Sheikh, and in 2023, COP28 will be held in the United Arab Emirates' oil capital, Abu Dhabi. During the COP27, A historic agreement was made by countries to create and begin using a loss and damage fund, with the intention of helping the poorest and most climate-vulnerable nations. Early Sunday morning, after two weeks of deliberations at the United Nations Climate Conference, leaders reached an accord. There is still much work to be done, but the goal of the fund is to help developing nations that are more susceptible to climate change's negative effects recover from disasters like droughts, floods, and rising seas. Despite the fact that the negotiated language acknowledged, the need for financial support from a number of sources, no decisions have been taken regarding who should pay into the fund, where this money will come from, or which countries will benefit. At the negotiation table, this has been one of the most controversial issues.

UN Climate Change released a report this week stating that 26 countries have revised their climate targets to reflect commitments made at COP26 in Glasgow, UK, in 2017. Egypt has committed to continue reducing greenhouse-gas emissions from the electricity, transportation, and oil and gas sectors, however this only compares to previously anticipated levels and is subject on securing foreign financial help. The United Arab Emirates has increased its prior pledge to reduce emissions by 23.5% by reducing emissions by 31% by 2030.

According to the UN research, countries' pledges over the previous year will result in lower anticipated increases in emissions beyond 2010 levels by 2030 (10.6% compared to 13.7% in a comparable analysis done last year).

But they fall far short of what is required to keep global warming below 1.5 ˚C by the century's conclusion. The Egyptian foreign minister and COP27 president, Sameh Shoukry, has called the findings worrisome and said they require "a radical reaction at COP27."

According to Carlos Duarte, a marine scientist at the King Abdullah University of Science and Technology in Jeddah, Saudi Arabia, the next two COP meetings will be a "important moment" for the Middle East. This is a major shift from previous practise. Dr. Michael Oppenheimer, a geoscientist and climate-policy expert at Princeton University in New Jersey, claims that Saudi Arabia continuously prevented action on climate change in the 1990s, despite efforts to halt such action by other oil-rich nations, notably the United States. Ben Santer, an atmospheric scientist at the Lawrence Livermore National Laboratory in Livermore, California, and one of the lead authors of the second IPCC assessment report in 1995, which confirmed that human activities were warming the planet, claims that representatives from Saudi Arabia on the IPCC doubted the scientific consensus on global warming.

In contrast, the area has embraced renewable technologies and environmental concerns during the past decade. "not fighting the fact of the science," Oppenheimer said of Saudi Arabia and other large oil-producing countries today.

According to Mia Moisio, a researcher in climate policy at the New Climate Institute think tank in Berlin, this shift is about diversifying the economies of oil-dependent states in anticipation of a future drop in demand, as well as using renewables to provide for growing domestic populations while saving fossil fuels for export. She also notes that climate change vulnerability is a factor. This region is seeing these unprecedented heat waves. This has also served as a wake-up call, I'm sure.

Masdar, Abu Dhabi's centrepiece project to construct a sustainable city, was opened in 2015, establishing the United Arab Emirates as a leader in environmental protection. Managing Director of Abu Dhabi's Environmental Regulator Razan Al Mubarak was chosen president of the prominent International Union for Conservation of Nature in Gland, Switzerland in September. The United Arab Emirates (UAE) made history in October when it pledged to become the first Arab country to achieve zero domestic emissions by the year 2050.

Other Middle Eastern countries' efforts have also increased. The world's largest oil exporter, Saudi Arabia, and its neighbour, Bahrain, have both committed to reaching net-zero emissions by the year 2060. Gas-rich Meanwhile, Qatar has established the world's first ministry dedicated to combating climate change and has pledged to reduce its emissions by 25% by 2030. Israel and Turkey have both committed to going completely off the grid by the middle of the next century.

More generally, Saudi Arabia led the Middle East Green Initiative last year, which has established an aim of reducing carbon emissions from the region's oil and gas industry by 60%, with no specified timeframe. One of the world's major producers of methane, this sector is also one of its largest consumers.

"For the first time, we're seeing a number of nations that used to be, or are still substantially dependent on their hydrocarbon industry, come out with these net-zero commitments," says Moisio, who also works on the Climate Action Tracker, which ranks countries according to their climate pledges and activities.

Growth of Renewable Energy Sources

Not much is known about the governments' plans to reach these climate targets. However, the United Arab Emirates and Saudi Arabia are supporting their goals with large expenditures, such as the development or expansion of carbon-neutral towns. By 2050, the UAE plans to have invested 600 billion dirhams (about US$163 billion) on renewable and sustainable energy. The Saudi government projects that its Saudi Green Initiative will attract investments totaling 700 billion Saudi Arabian riyal (about US$186 billion).

Bloomberg New Energy Finance, a New York City-based energy consulting firm, reports that renewable energy investment in the Middle East will have increased from $960 million in 2011 to $6.9 billion in 2021, a sevenfold increase. In 2018, Saudi Arabia invested around $1.5 billion in solar energy, while the United Arab Emirates invested nearly $9 billion in the sector between 2017 and 2018. Chemical engineer and energy systems researcher Mercedes Maroto-Valer from Edinburgh-based Heriot-Watt University, which also has a campus in Dubai, observes, "There is rather significant change we're seeing in the region in terms of investment." However, as of 2020, IRENA data shows that less than 4% of the region's electricity is produced from renewable sources, compared to a global average of 28%.

According to Maroto-Valer, Champion and Director UK Industrial Decarbonisation Research and Innovation Centre (IDRIC), the countries in the region plan to rely heavily on solar, wind, and hydropower in the near future to achieve their climate goals. According to Awaidha Al Marar, head of the Abu Dhabi Department of Energy, renewable technologies and nuclear power accounted for 13% of Abu Dhabi's energy mix in 2021 and are predicted to reach more than 54% by 2025. One of the largest solar plants in the world is located in Egypt, with a capacity of 1,650 megawatts; before the end of the year, Qatar expects to open a solar site with a capacity of 800 megawatts.

The Gulf states have an inherent advantage due to their high amounts of solar radiation, and the price of renewable energy in the Middle East has decreased to as little as 1 US cent per kilowatt hour (compared with a world average in 2021 of around 5 cents for solar projects and 3 cents for onshore wind). According to Francesco La Camera, director-general of IRENA, this is a "tremendously competitive pricing."

Green hydrogen, a fuel produced by splitting water into hydrogen and oxygen using renewable electricity, relies on this low cost to advance in Saudi Arabia and the United Arab Emirates. A lofty goal for Saudi Arabia is to become the world's leading producer and exporter of hydrogen by 2030. It intends to do so by means of a plant currently under development in a futuristic zero-carbon metropolis dubbed Neom, which is being created in the country's northwest.

Long-term, Middle Eastern countries are interested in carbon capture strategies, either via hydrocarbon plants or indirectly by increasing atmospheric carbon sinks. For instance, the Middle East Green Initiative plans to combat desertification and repair an area equal to 200 million hectares of damaged land by planting 50 billion trees, which is said to be the world's largest afforestation project. According to Duarte, habitat loss is responsible for about 38% of global carbon output in the past. He estimates that reversing that would be responsible for around a third of climate solutions.

Emissions will be offset in Saudi Arabia and the United Arab Emirates through carbon capture and storage, as well as through the production of carbon-based goods like plastics and cosmetics. However, not everyone agrees that this strategy works. According to its 2050 energy plan, the UAE plans to generate 12% of its electricity from 'clean coal,' whose emissions are contained. This is a "red signal" in Moisio's eyes because the technology is costly and has not been proven commercially feasible. She argues that it should be used primarily in cement and steel, two industries that will have a hard time reducing carbon emissions.

The Oil Age Will Never End

The fact that Middle Eastern nations are also maintaining their financial commitments to oil and gas development is the proverbial elephant in the room. As is the case with the vast majority of countries, net-zero goals do not factor in emissions that are exported. The oil dependence of Middle Eastern economy has decreased significantly during the past decade. In 2010, the Middle East and North Africa region's GDP was 22.1% of the world's total due to oil income (measured by oil rents). By the year 2020, this figure had decreased to 11.7 percent of GDP, which was still much higher than the global average of less than 1 percent.

However, the escalation in energy costs may also be traced back to Russia's invasion of Ukraine and the accompanying sanctions put on Russia by Western countries. Aramco, the state oil company of Saudi Arabia, reported record earnings of US$48.4 billion in the second quarter of 2022, up 90% from the second quarter of 2021. The Western nations have been pressuring OPEC members to increase oil supply to offset the loss of Russian oil output. Although OPEC producers had previously agreed to a modest increase, that decision was controversially reversed at a meeting between OPEC members and a few affiliated states (including Russia) at the beginning of October. Tensions between Saudi Arabia and the United States have escalated as a result of the rise in oil prices brought on the supply limitations imposed in advance of COP27.

According to reports, Saudi Arabia was one of the countries at COP26 in Glasgow that watered down a recommendation on phasing out fossil-fuel subsidies.

According to Moisio, "there is still push back," and this is "understandable" given the continued reliance of their economy on hydrocarbons. But publicly there has been a clear shift and they don’t want to be viewed as “climate-change laggards”, she says.

She goes on to say that it would send "an important signal," if efforts to find new fossil fuels were halted. The International Energy Agency’s pathway towards net zero by 2050 — which will need to be followed if global warming is to be confined to 1.5 °C — involves no new investment in oil and gas extraction.

Aerial-view-of-windfarm-in-mountains / JupiterImages

However, according to Maroto-Valer, countries who do not have the infrastructure to produce renewable sources of energy will still need fossil fuels for some time, and a fair transition process entails not penalising nations that export to such countries. She goes on to say, "I think we should be seeking to minimise [oil] exports," but that the onus shouldn't fall only on the country that produces the oil.

After reviewing Saudi Arabia's environmental policy, Duarte concludes that it was inadequate. There's a lot of ground to make up on other countries, but "growth is pretty steady" and "the plan is extremely smart," he says. Moreover, he says, billions of dollars have recently been invested in projects to address other environmental concerns in the region, such as the conservation of coral reefs. The world needs to see what I see, and I pray they do so soon.

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