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SPECIAL REPORT

“Maximum Energy, Minimum Emissions”

How is ADNOC Embracing the Energy Transition?



Reshaping the Future of Energy with Partnerships and Technologies

Executive Summary

**Source: Gulf Intelligence produced this report through interviews, market insights and available published material.*

Four cornerstones shape ADNOC's vision of the future: pro-growth, pro-sustainability, pro-prosperity, and pro-climate. The globe is seeking solutions to the biggest energy crisis since the 1970s, underpinned by a trilemma: the need to simultaneously meet rising energy demand, support the climate agenda, and deliver continued economic growth and development. At a time when questions far exceed answers, we believe the energy industry's centuries of experience in overcoming complex situations can help unite a divided planet.

This is not the first time the UAE has created a world-leading energy ecosystem. The leadership's vision in the mid-1950s to leverage the hydrocarbons lying beneath the sand dunes has helped create one of the globe's most dynamic trading posts today. Almost two decades ago Abu Dhabi created Masdar, now one of the largest renewable energy firms in the world, which can produce 20 gigawatts of clean power and wants to raise that to 100 gigawatts internationally by the end of the decade. That's roughly double the renewable capacity of the UK today. Now, ADNOC is at the forefront of Abu Dhabi's new and even more ambitious chapter of sustainability – one characterized by innovation, partnerships, and technology. This message of positivity and proactivity in the global energy transition will be reinforced when COP28, the world's biggest annual climate gathering, opens its doors in Dubai this November.

The benefits the UAE is now reaping after consistently embracing its first mover advantage – when other hydrocarbon producers shied away – are abundantly clear. For one, the blinding reflections of some of the country's market-leading

solar power generation projects are visible from the International Space Station, more than 400km away. This seems especially apt as the UAE space agency launched its first Mars mission in 2020, less than a decade after it was created, becoming only the second space agency worldwide to succeed on the first attempt. Therein lies a deeply meaningful nod to the "there is no finish line" ethos of this 50-year old nation. Against this backdrop, ADNOC has demonstrated a real determination to be a genuine change agent, taking meaningful action to embrace the energy transition.

DUAL ADVANTAGE

The UAE has a head start when it comes to low carbon oil and gas; a leadership that has always put

environmental protection first and the country's unique geology gives it some of the least carbon-intensive oil worldwide. Accordingly, ADNOC has always seen the energy transition as an opportunity to diversify and develop the nation's economy, already the second wealthiest in the Middle East.

Huge strides are being made. For one, ADNOC's signature crude, Murban, has half the carbon intensity of the industry average. ADNOC is also using advanced technologies and renewable solar and nuclear energy to reduce the carbon intensity of its oil and gas by a further 25% before the end of the decade, while putting in place the building blocks for a hydrogen value chain, and expanding clean grid power, and the use of carbon

Vital Hearts and Minds

The energy giant believes in a balanced transition: we cannot unplug the current hydrocarbon system before building a new one, which will take decades. This is why creating tailored, real-world solutions is paramount – and energy leaders are some of the best-placed to do so. For the energy transition to succeed, the energy industry needs to be a central part of the dialogue. Today's hydrocarbon industry is a foundation of modern civilization, built up from the ground, literally, into one of the globe's most influential commodity markets. The hearts and minds that created this ecosystem are invaluable to helping create the next, greener chapter of energy.

"Under the directives of the UAE's wise leadership and the ADNOC Board of Directors, ADNOC continues to take significant steps to make today's energy cleaner while investing in the clean energies and new technologies of tomorrow. Now, more than ever, the world needs a practical and responsible approach to the energy transition that is both pro-growth and pro-climate, ADNOC is delivering tangible actions in support of both these goals."

His Excellency Dr. Sultan Ahmed Al Jaber, the Minister of Industry and Advanced Technology, Managing Director and Group CEO of ADNOC, and the Chairman of Masdar

capture, utilization, and storage (CCUS) (see page 7). The company is also tripling the capacity of its liquified natural gas (LNG) to more than 15mn tons per year, supported by a 9.6mn tons per year of LNG production and a shipping terminal in the Emirate of Fujairah.

Each target is a tall order, with vast amounts of ingenuity, hard work, and calculated risk behind the scenes. As we tackle both the greatest challenge and opportunity of our time, ADNOC believes that unity equals strength. This was best encapsulated by

His Excellency Dr. Sultan Ahmed Al Jaber. "I believe that the future is forged by those who make the first move. So today, I extend an open invitation to all our partners and friends around the world. Let's make that move together and forge that future."

30%

rise in global energy demand by 2050 will be propelled by a growing global population, climbing from today's 8bn people to 9.8bn by 2050.

2.6bn

people worldwide do not have access to clean cooking and heating fuels, while 800mn people across the planet lack access to electricity. Combined, this represents 42% of the global population. Clearly, widespread energy security is a vital aspect of the transition.

x2

ADNOC is proactively pursuing two tracks. It is expanding its production capacity of the globe's least carbon intensive oil to more than 5mn b/d by 2027 – three years sooner than the initial goal of 2030 – while growing its renewable portfolio through its shareholding in Masdar, which aims to reach 100GW of renewable energy production by 2030.

Source: ADNOC

6th

The UAE is the custodian of the world's sixth-largest oil reserves and the seventh-largest gas reserves.

\$15bn

is being invested by ADNOC in landmark decarbonization projects by 2030, including carbon capture, electrification, and enhanced investments in hydrogen and renewables.

\$150bn

five-year business plan and capital expenditure (CAPEX) for ADNOC from 2023-2027 has been approved to enable its accelerated growth strategy.

2030

is when ADNOC aims to have reduced its greenhouse gas (GHG) emissions by 25%, as per its 2030 Sustainability Strategy.

1st

The UAE was the first nation in the Middle East and North Africa (MENA) to declare Net Zero, choosing 2050 at a time when other large economies opted for later dates.

\$163bn

is being invested by the UAE in clean and renewable energy up to 2050.

16yrs

is how long the UAE has invested in renewable energy markets, spurring the nation's globally competitive advantage in green energy today.

40

is the number of nations worldwide that the UAE has significant renewable energy projects in.

3

of the globe's largest and lowest cost solar power plants are located in the UAE.

Driving a Diverse Future

The world needs all the solutions it can get. It is not gas and oil or solar, not wind or nuclear, or hydrogen. It is gas, oil, and solar, and wind, and nuclear, and hydrogen – all are imperative to meet global energy demand. Accordingly, ADNOC is seeking innovative, varied, and competitive solutions amidst the rapidly changing energy landscape.

ADNOC is taking bold steps in decarbonizing today's energy while investing in the clean energies of tomorrow. In December 2022, a new Masdar was born. This clean energy powerhouse will spearhead the UAE's Net Zero by 2050 strategic initiative while cementing the UAE's role as a global leader in the green hydrogen economy. Masdar is now one of the largest clean energy companies of its kind and is well-positioned to lead the industry on a global scale.

ADNOC is already a producer of over 300,000 tons of hydrogen per year, used largely for industrial purposes in its downstream facilities. The company is also exploring opportunities in hydrogen to leverage the UAE's expansive gas reserves, abundant renewable energy, and global infrastructure and partnerships. Hydrogen and its carrier fuels, such as ammonia, will be critical enablers to decarbonize hard-to-abate industrial and transport sectors. Accordingly, ADNOC is exploring the production of 'blue' hydrogen, enabled by the scaling of its CCUS capabilities, and plan to explore green hydrogen opportunities through its fast-evolving partnership with Masdar.

The company's vast scale, technological and operational capabilities, and global partnerships positions mean it can support customers, suppliers, and partners with their energy transition journey far faster than most other energy

"The Masdar clean energy powerhouse will unlock a new chapter of growth, development, and opportunity for renewable energy and green hydrogen projects – both in the UAE and worldwide. This is an important pillar in ADNOC's strategy to expand clean energy production and drive decarbonization."

His Excellency Dr. Sultan Ahmed Al Jaber, the Minister of Industry and Advanced Technology, Managing Director and Group CEO of ADNOC, and the Chairman of Masdar

entities. This synergy is magnified by the UAE Hydrogen Leadership Roadmap, which sees the Middle Eastern nation providing up to 25% of Germany's clean hydrogen imports.

The positive power of ADNOC's world-leading diversification also forms the bedrock of the company's new Low Carbon Solutions and International Growth vertical. This move reflects ADNOC's appreciation that multiple, simultaneous approaches are the only way to make the innovative progress at the speed required, as per the UAE's

ambition to be Net Zero by 2050.

ADNOC's early effort in sustainability means it now greatly benefits from being an old hand in this space, relatively speaking for the oil and gas industry. As part of its ever-evolving decarbonization roadmap, ADNOC was the first hydrocarbon company to source 100% of its grid energy from clean nuclear and solar power, from January 2022. It is also expanding its use of clean grid power offshore, by building a \$3.6bn, first-of-its-kind, sub-sea transmission network in MENA. Once completed, it will connect

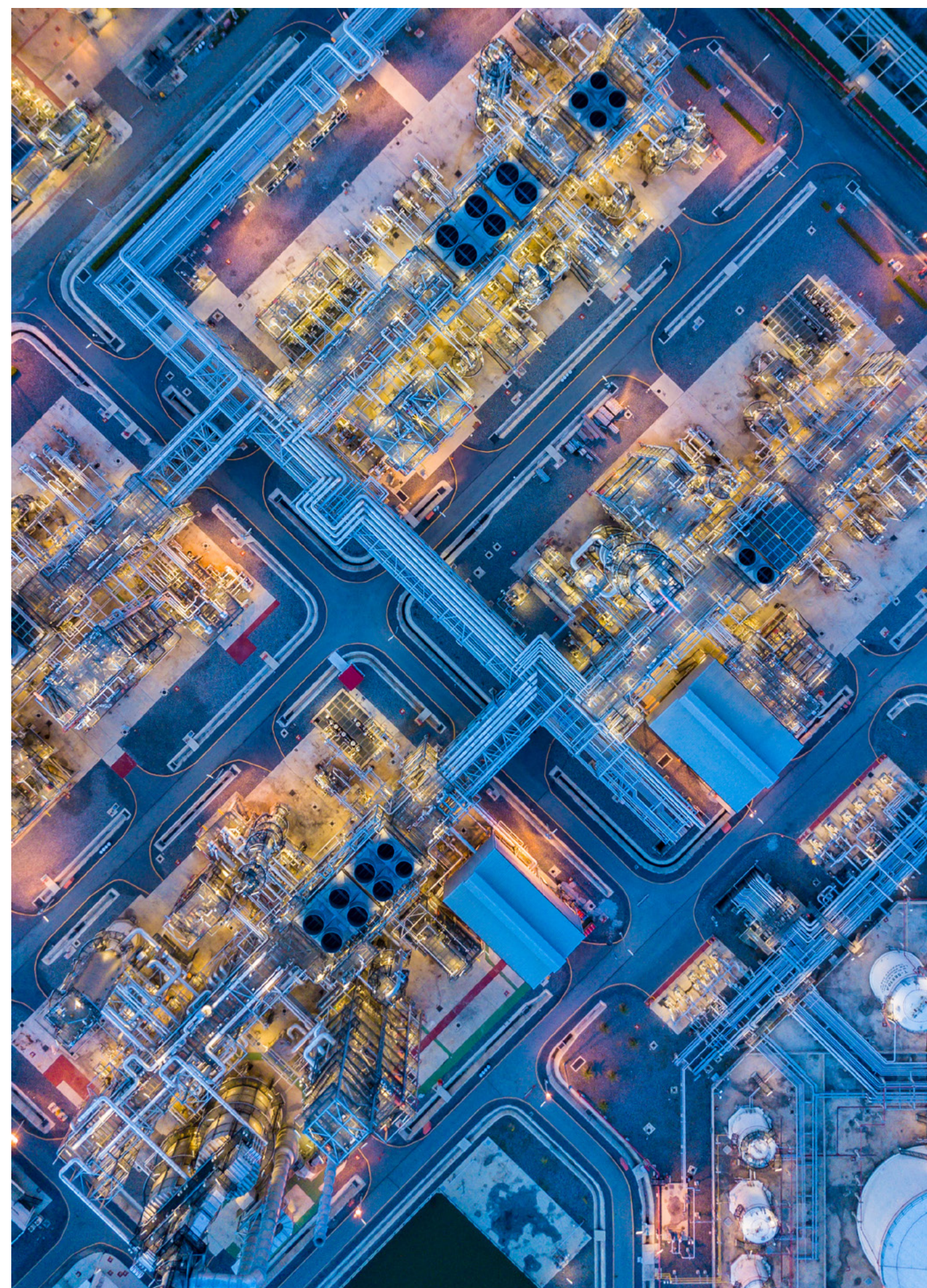
#1

ADNOC was the first hydrocarbon company to source 100% of its grid energy from clean nuclear and solar power.

\$3.5bn

is being spent to expand ADNOC's use of clean grid power offshore, with a cutting-edge sub-sea transmission network – the first in MENA.

Source: ADNOC





Digital Pioneering Spirit

At a time when many energy companies are still testing the waters of digitalization, ADNOC surged ahead. For one, technology upgrades to the company's drilling business, the largest in the region, have driven efficiency gains of more than 35%. This has resulted in substantial cost savings and positive reputational value. These efficiencies have been sought out across the company's value chain, from upstream to downstream. In step with its broader digital transformation, ADNOC has also established an integrated energy monitoring system in its Panorama Digital Command Center and detailed modelling of subsurface reservoirs in the Thamama Center. Through an interactive platform and dashboard, the company can analyze its energy performance, enabling it to identify optimization across the value chain in real-time, thus boosting output while reducing its carbon footprint.

"We are committed to finding innovative ways to improve the efficiency and sustainability of our operations. The Waste Heat Recovery project will revolutionize power and water generation at our plant in Ruwais and is vital to the ongoing expansion of Ruwais, as part of ADNOC's 2030 smart growth strategy."

Abdulla Ateya Al Messabi
CEO, ADNOC Refining

"The value generated by Thamama highlights how ADNOC is harnessing advanced technologies, digitalization, and big data, as well as deep engineering expertise to maintain its position as a leading low cost and low carbon player in our industry. Thamama is also helping us nurture the UAE's next generation of engineers and data scientists."

Yaser Saeed Al Mazrouei, Upstream Executive Director, ADNOC

ADNOC's offshore operations to the UAE's electricity grid, supplying power from nuclear and solar energy to replace existing gas turbine generators and reduce ADNOC's offshore GHG emissions by up to 50% upon completion.

Plus, ADNOC Refining, a joint venture company between ADNOC, Eni, and OMV, is set to complete the first phase of its innovative Waste Heat Recovery project at the General Utilities Plant in Ruwais. Started in 2018, the \$600mn project will recycle waste heat generated from the plant to produce up to an additional 230MW of electricity per day – enough to power hundreds of thousands of homes. It will also produce 62,400 cubic meters of distilled water per day for use in the plant; important efficiency in a region facing one of the world's greatest threats of water scarcity. Overall, the project will increase power production and thermal efficiency at the plant by 30% – critically, with no additional CO₂ emissions.

ADNOC's investments in the early 1980s to gather and process flared gas have also been instrumental in mitigating the negative

environmental impacts associated with flaring in today's context. Proactive steps to implement a variety of energy efficiency projects to target both energy supply and demand are also paying off, such as the installation of more energy efficient equipment, electrification, optimized operational solutions, and improved combustion efficiencies. This is just the beginning of ADNOC's exploration into achieving more with less, for efficiency will increasingly lie at the core of all sustainable energy practices, be they in hydrocarbons or renewables.

ADNOC has also created 'ADNOC Gas', a new world-scale gas processing and marketing company, effective 1 January 2023. The company is committed to playing a leading role in supporting global gas demand, as its set to climb by 140bn cubic meters between 2021-2025, according to the International Energy Agency (IEA). The Asia-Pacific region – a core customer base for the UAE – will account for half of that anticipated growth up to 2025. Plus, the Russia-Ukraine war means Middle Eastern suppliers are seeing

increased demand from Europe and other importers, as well as the need to support domestic demand; oil and gas account for 95% of the MENA's electricity production, the agency said.

The flagship company will combine the operations, maintenance, and marketing of ADNOC Gas Processing and ADNOC LNG – the first LNG production company in the Arabian Gulf, established in 1973 – into one consolidated entity. ADNOC will proceed with an initial public offering (IPO) of a minority stake in the new company on the Abu Dhabi Securities Exchange (ADX) in 2023, subject to applicable regulatory approvals.

The formation of ADNOC Gas builds on ADNOC's more than 40 years' experience as a leading gas producer and will create one of the world's largest gas processing entities. This includes a processing capacity of around 10bn standard cubic feet per day (scfd) of gas across eight sites, both onshore and offshore, and a pipeline network of over 3,250 kilometers, roughly equivalent to the distance from Abu Dhabi to Istanbul.

\$1.1bn

of value has been generated by ADNOC's Thamama Center via advanced technology and digitalization since its inception in 2017. ADNOC's Panorama Digital Command Center has also generated more than \$1bn in value.

15

digitalization projects within Thamama alone, which offer the potential to deliver approximately \$500mn in additional value per year, are currently being worked on by ADNOC.

\$2bn

in cost savings has been achieved by ADNOC from 2016-2021 by leveraging advanced technologies and digitalization to optimize drilling operations.

10mn

mangroves seedlings will be planted by 2030 to reduce CO₂ and GHG emissions, showing how ADNOC is exploring diverse solutions to remove CO₂ and enhance local biodiversity and the broader environment.

Source: ADNOC

Leveraging the Reality of Carbon Capture

The equation is simple: to get the energy transition right, we must get CCUS right. This technology was a gamechanger when it was introduced to the Middle East five years ago with the first and largest industrial-scale CCUS facility – ADNOC’s Al Reyadah project. The project can currently capture up to 800k tons of CO₂ per year, but there are ambitious plans to ramp up the company’s CO₂ capture capacity by more than 500%, to approximately 5mn tons per year by 2030. ADNOC plans to achieve this by harnessing additional CO₂ from its gas processing plants and other sources of CO₂ emissions.

In preparation for these targets, ADNOC is ready to partner with others within and outside the energy industry to enable wider CCUS adoption, from industry partners to academia, and others. The importance of reaching global climate goals by using CCUS goes beyond the oil and gas industry, so ADNOC and others can benefit from extensive collaboration for other hard-to-decarbonize areas, such as heavy industry manufacturing and chemicals.

Worldwide, CCUS facilities currently capture almost 45 million tons of CO₂, but this needs to increase, said the IEA. There are approximately 35 commercial facilities applying CCUS to industrial processes, fuel transformation, and power generation. With a total annual capture capacity of almost 45 million tons of CO₂. While CCUS deployment has been



behind expectations in the past, momentum is now building.

Today, approximately 300 projects are in various stages of development across the CCUS value chain. Project developers have announced ambitions for over 200 new capture facilities to be operating by 2030, capturing over 220 million tons of CO₂ per year, yet only ten commercial capture projects under development have

taken financial investment decisions as of June 2022 – all of which is not sufficient to helping meet Net Zero by 2050. Clearly, any steps that ADNOC and others in the energy and broader industry can take are urgently needed to speed up progress. ADNOC believes that CCUS still holds boundless potential and is determined to keep pursuing first-of-its-kind achievements in this essential field.

1st

ADNOC’s Al Reyadah project is the region’s first commercial-scale CCUS facility, established in 2016.

Source: ADNOC

800,000

tons per year is Al Reyadah’s current CO₂ capture capacity.

5mn

tons per year of CO₂ capture capacity is what ADNOC is aiming for by 2030 – more than a 500% increase on current levels. This is equivalent to the annual carbon capture capacity of 5mn acres of forest.



HYDROGEN: Delivering on Dynamic Potential

It is hard to overstate the excitement surrounding the development of low carbon hydrogen, commonly known as blue and green hydrogen. This close to zero-carbon fuel shows great promise and could be produced at scale as part of ADNOC's existing hydrocarbon value chain, with the development of blue hydrogen likely leading the way as the budding market for green hydrogen becomes more established. Scale is a pertinent point; more than 95% of hydrogen production across the globe today is not considered low carbon as it is based on hydrocarbons, according to the World Bank. Therefore, the road to creating a sizeable blue and green hydrogen market by 2030 – the date by which the UAE wants to have 25% of the global market share – will be a very demanding and busy one. Again, however, ADNOC has gotten a head start, which will significantly sharpen the energy major's competitive edge in coming years.

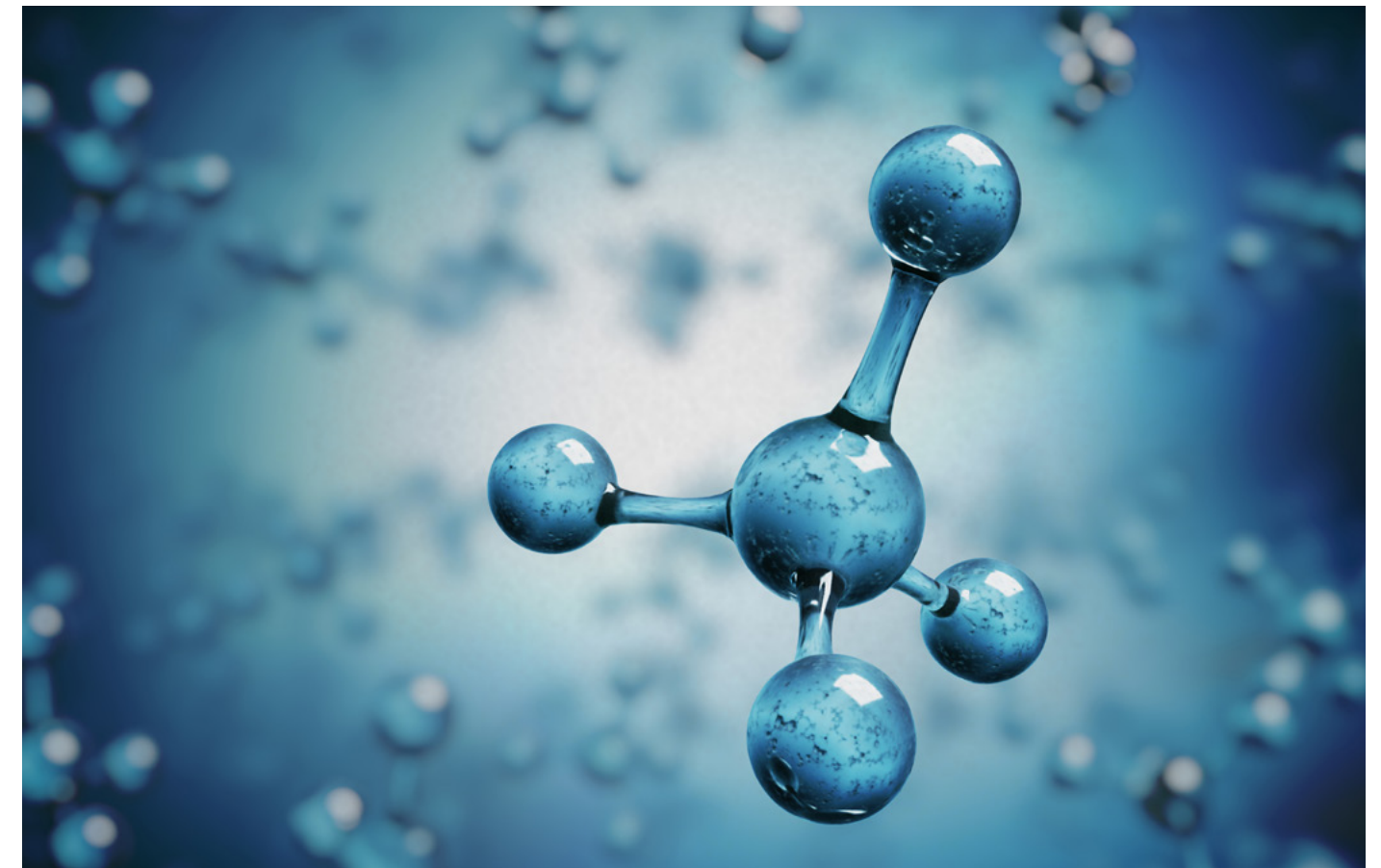
The company's first shipment of low carbon ammonia to Europe left the UAE for Hamburg, Germany in September last year. The cargo follows a number of similar low carbon ammonia sales that have been made to customers in Asia. The demonstration cargo of low carbon ammonia, the most promising at-scale hydrogen carrier so far, was delivered to Aurubis, a leading global provider of non-ferrous metals and one of the largest copper recyclers

worldwide. This first-of-its-kind deal builds on ADNOC's agreements with Germany in 2021, aimed at accelerating and deepening collaboration in clean hydrogen – a deeply relevant alliance.

As part of its ambitious decarbonization drive, the German government's National Hydrogen Strategy expects clean hydrogen demand of up to 3mn tons per year by 2030 – of which around 60% is expected to be imported – with demand potentially exceeding 11mn tons per year by 2050. ADNOC is

in prime position to help Europe's biggest economy meet that need.

To the east, ADNOC is also keen to support the fast-growing clean hydrogen export markets of Asia, the destination of its very first ammonia exports, notably Japan and South Korea. ADNOC and Fertiglabe, a strategic partnership between OCI and ADNOC which is listed on the Abu Dhabi Securities Exchange (ADX), have already sold multiple low carbon ammonia pilot cargos for potential use in a wide range of industrial



applications. Looking ahead, ADNOC is committed to building on its renowned track record of successfully working with partners, customers, and governments to

propel innovative energy solutions in the fast-growing sphere of clean hydrogen. The company is dedicated to working with like-minded partners across the public

and private sectors to enable this burgeoning market to thrive as quickly as possible – pivotal for both the energy transition and the climate agenda.

ADNOC'S AGREEMENTS IN GERMANY – 2021

- Individual agreements with German companies Aurubis, RWE, GETEC, and STEAG to explore opportunities for collaboration in low carbon and renewable hydrogen derivatives.
- Fertiglabe is a key strategic partner for ADNOC in ammonia and ADNOC will provide low carbon ammonia to its partners in Germany, which was produced by Fertiglabe at its Fertil plant in the Ruwais Industrial Complex in Abu Dhabi. The sales represent a further milestone in the planned scale-up of blue ammonia production capabilities in Abu Dhabi.
- ADNOC entered a joint service agreement with Uniper and Hydrogenious of Germany and JERA to explore hydrogen transportation between the UAE and Germany using Hydrogenious' Liquid Organic Hydrogen Carrier (LOHC) technology. The parties will explore the opportunity to scale up existing LOHC technology to help meet growing global demand for the transportation of hydrogen.

1mn

tons per annum is the capacity at ADNOC's development of a new world-scale low carbon ammonia plant at TA'ZIZ, the chemicals, industrial services, and logistics hub in the Ruwais Industrial Complex in Abu Dhabi.¹

7

years is how long until Masdar plans to have up to 1mn tons of green hydrogen production.

25%

The UAE has identified Germany as a key export market with a target of providing up to a quarter of the imported clean hydrogen demand for Europe's biggest economy.²

18%

of the world's energy demand could be met with lower carbon hydrogen by 2050.³

680

large-scale hydrogen projects have been announced globally, as of September 2022, reflecting investments of \$240bn until 2030 – up by 50% since November 2021.⁴

25%

reduction in the cost of hydrogen supply could be achieved with an established trade market, equivalent to \$6trn of investments from now until 2050.⁵

\$200bn

in annual revenues could be generated from green hydrogen alone for countries in the Gulf Cooperation Council (GCC) by 2050.⁶

Sources: 1 ADNOC; 2 ADNOC; 3 Hydrogen Council; 4 Hydrogen Council; 5 Hydrogen Council, McKinsey & Company; 6 Dii Desert Energy and Roland Berger.

METHANE:

Tackling the “Hidden” Threat

Methane is a powerful GHG which is increasingly facing a critical global spotlight. While CO₂ is more abundant and longer-lived, methane – the main component of natural gas – is far more effective at trapping heat while it lasts. This makes it vastly more environmentally damaging than CO₂, even though the effects of CO₂ are more commonly known, understood, and addressed. Accordingly, collective action is urgently needed to tackle the negative implications of this hidden threat.

ADNOC has reinforced its status as a leader in the responsible production of lower carbon energy by setting an ambitious upstream methane intensity target of 0.15% by 2025 – the lowest in the Middle East. This means ADNOC will be ranked in the Gold Standard category by the Oil and Gas Methane Partnership 2.0 (OGMP 2.0), a multi-stakeholder initiative launched by the United Nations Environment Program (UNEP) and the Climate and Clean Air Coalition. It is the only comprehensive, measurement-based reporting framework for the global oil and gas industry that improves the accuracy and

transparency of methane emissions reporting.

ADNOC plans to keep reducing its methane emissions through the use of flare gas recovery systems, regular leak detection, and repair programs. Hand-held infrared cameras are also used to detect

small leaks of fugitive emissions and to prioritize the company’s repair program. Plus, ADNOC is exploring pilot technologies, like satellite monitoring and deployment of drone-mounted sensors, to enhance the monitoring of methane emissions.

“ADNOC has achieved OGMP 2.0 Gold Standard status for having submitted high quality data and a clear and robust plan to achieve its methane emissions target. Reducing emissions of this powerful greenhouse gas is an essential short-term action if we are to meet the climate goals of the Paris Agreement.”

Mark Radka, Chief, Energy and Climate Branch at UNEP

2023

will see ADNOC test and deploy the latest in emissions detection and quantification technologies, enabling improved and continuous measurements at source-level.¹

20yrs

Methane has more than 80 times the warming power of CO₂ over the first two decades after it reaches the atmosphere.²

25%

of today’s global warming is driven by methane from human actions.³

60%

of the methane in the atmosphere worldwide comes from industrial sources, so ADNOC is an early mover in what must be an urgent industry-wide response.⁴

100+

countries pledged a 30% cut in global methane emissions by 2030, versus 2020, during COP26 in Glasgow, Scotland.⁵

Sources: 1 ADNOC; 2 Environmental Defense Fund (EDF); 3 Environmental Defense Fund (EDF); 4 Reuters; 5 United Nations (UN).

“Our aim is to reduce the methane intensity from our operated oil and gas assets, at the same time as we meet the forecast growth in energy demand for decades to come. We will do this by making significant investments in new technologies to improve our environmental performance, strengthening our commitment to responsible production, and demonstrating our support for the UAE’s Global Methane Pledge.”

Abdulmunim Saif Al Kindy

Executive Director, People, Technology & Corporate Support Directorate, ADNOC



JOIN US: Unity Equals Strength

The pace of global change means the best route to thrive is by embracing a collaborative spirit – perhaps more than ever before. Collective action lies at the crux of ADNOC's track record as a world-leading energy player, the value of which will certainly come to the fore as the energy transition gains speed. While energy majors have always had an eye on international assets and ventures, the value of increasing local investments is now also climbing. Amid this diverse outlook, ADNOC is committed to seeking solutions and identifying new opportunities, via both established and new partnerships.

For one, ADNOC, TAQA, and Mubadala recently completed a landmark transaction for stakes in Masdar Clean Energy. Masdar is targeting at least 100GW of renewable energy capacity, with aspirations to grow its renewable energy portfolio to more than 200GW. This new era for Masdar is built on extremely strong foundations. Established in 2006, Masdar is now active in more than 40 countries across six continents and has developed and invested in worldwide projects with a combined value of more than \$20bn. Masdar's new green hydrogen business – which ADNOC has a 43% stake in – will rapidly scale up and target an annual green hydrogen production capacity of up to 1mn tons by 2030. This is equivalent to saving more than 6mn tons of CO₂ emissions. Again, therein lies the prosperity of proactivity.

Today, building resilient supply



chains requires companies to increasingly focus production regionally, nearer local markets, so they may better withstand disruptions from events such

as pandemics, earthquakes, tsunamis, and cyber-attacks on information and data networks. The more immediate impact of the war in Ukraine and the consequent increase in gas prices, as well as the global recovery from the COVID-19 pandemic, are also major influences. As the matrix of threats grows, energy majors must continually uplift their ability to hedge risk and exploit potential – which includes more partnerships.

With an eye on the future, ADNOC is focused on developing multiple partnerships across various industries at home and abroad, ever enhancing its reputation as a reliable, innovative, and accountable ally. In turn, existing and potential partners benefit from the UAE's fluid financial markets, reduced bureaucracy, diverse energy mix, strategic geographical location, world-class logistics infrastructure, access to key global

markets, and foreign ownership laws. This unique mix has already enabled many industries to thrive, including helping the emergence of flagship companies such as Borouge, the world's largest single-site polyolefin producer, and Emirates Global Aluminum, the world's largest premium aluminum producer.

All this momentum supports the UAE's 'Make It In the Emirates' program, an instrumental part of the country's strategy to double the contribution of the industrial sector to the UAE's GDP to \$81bn by 2031. The agreements set out the suppliers' intention to manufacture 100 products in the UAE, supporting the delivery of ADNOC's 2030 strategy as it cements its position as one

"Companies setting up in the UAE benefit from our truly unique value proposition. They have access to reliable, cost-effective, and sustainable energy supplies, including clean energy alternatives, like solar and hydrogen. They can also take advantage of our strategic geographical location, world-class logistics infrastructure, access to key global markets, and foreign ownership laws."

His Excellency Omar Ahmed Suwaina Al Suwaidi
Undersecretary of the Ministry of Industry and Advanced Technology

of the world's leading low-cost, lower carbon intensity energy producers. Among the products that could be manufactured in the UAE are pressure vessels, compressors, pipeline inspections gauges, specialist valves,

industrial pumps, and flame and gas detectors. The agreements include leading names like Siemens, Halliburton, Emerson, and Schneider Electric – reflecting ADNOC's muscle on the global energy and technology stage.

1st

The UAE has the most competitive industrial sector in the Arab world.

31st

is the UAE's global ranking in the Global Innovation Index 2022 – the highest ranking in the Middle East by a significant margin.

8

The UAE's 'Make It In the Emirates' program is a key part of the country's strategy to double the contribution of the industrial sector to its GDP to \$81bn by 2031 – just eight years away.

\$6.8bn

worth of agreements for local manufacturing opportunities were signed by ADNOC with the UAE and international companies in 2022 alone, as it delivers on its target to locally manufacture more than 100 products in its procurement pipeline worth \$19bn by 2030.

4yrs

ADNOC's hugely successful in-country value (ICV) program has driven \$38bn back into the UAE's economy since its launch in 2018 – with \$9.54bn in 2022 alone.

5yrs

ADNOC plans to drive \$48bn back into the UAE economy through its ICV program as part of its five-year business plan, from 2023-2027.

5,000

UAE Nationals have been employed in ADNOC's supply chain through the program since it was launched.

1,000+

people attended the recent Business Partnership Forum, where ADNOC showcased its ambitious growth plans and its continued support for developing the capacity and capability of its local supply chain.

\$65bn

has been generated by ADNOC in foreign investment from various joint ventures and financial initiatives since 2016.

1mn

data points on the flow of goods between countries worldwide in the inaugural DHL Trade Growth Atlas revealed that global trade bounced back post COVID-19, climbing 10% higher on pre-pandemic levels in May 2022.

Sources: ADNOC, Global Innovation Index 2022, DHL Trade Growth Atlas.

Valued Partnerships

ADNOC also signed agreements with 25 companies potentially worth \$10bn in November 2022, which will stimulate investment in local manufacturing of critical products in support of the diversification of the UAE's industrial and manufacturing infrastructure. This feeds into ADNOC's appetite to deepen the UAE's in-country capacity, compelling investors to use the country's infrastructure ecosystem as a production base. Setting up companies and supply chains in the UAE is also an increasingly attractive component as much of Europe's industrial powerhouse faces an unprecedented energy crisis.

A Passionate Advocate of New Energies & Decarbonization

Experienced industry leader pushing for a sustainable and realistic energy transition

Dr. Sultan Bin Ahmed Al Jaber, Minister of Industry and Advanced Technology of the UAE, the Managing Director and Chief Executive Officer of state-owned energy producer ADNOC Group, and the Chairman of the UAE's renewable energy company Masdar, is a pragmatic and experienced agent of positive change.

You can see where he developed his passion for energy solution technologies. In 2006, when only in his early thirties, Al Jaber was named Founding CEO of Masdar, which has a mission to develop utility-scale renewable energy projects around the world, advance innovation in clean energy technologies, and adopt a first-mover strategy in green hydrogen. Even though the UAE sits on the world's sixth-biggest oil reserves, it has wholeheartedly embraced the energy transition and is lining up billions of dollars of investments to develop renewable power, cut CO₂ emissions, and drive low-carbon fuels as a way of tapping emerging opportunities in the energy industry.

Masdar, which Al Jaber led for seven years, has invested more than \$20bn in renewable energy projects globally, developing gross capacity of over 15GW, either in operation or under development – displacing up to 19.5mn tons of CO₂ emissions per year.

But the world cannot live off renewable energy alone, not yet. As CEO of ADNOC, he has led a drive to decarbonize the company's hydrocarbon resources, while growing its new energies portfolio.

"We must not unplug the current energy system before we have built the new one," Al Jaber said at the sixth edition of the Atlantic Council Global Energy Forum at Expo 2020 Dubai in March last year. "Many around the world are now acknowledging the transition will take time and pivoting policies to ensure near-term energy security is not undermining long-term climate goals."

EVOLVING EXPERTISE

Al Jaber's life almost coincides with that of the UAE, which has transformed into a global trading hub since it was founded in 1971. This tourism and energy powerhouse is now also building strong sustainability credentials, as has Al Jaber. In 2009, he was appointed by United Nations Secretary General Ban Ki-Moon to his Advisory Group on Energy and Climate Change, which



published its final report in 2010. The recommendations from this report formed the basis of the Sustainable Energy for All initiative, which was launched in 2011.

In 2008, Al Jaber spearheaded the establishment of The Zayed Future Energy Prize, an annual \$4mn award funded by the UAE to recognize excellence in renewable energy and sustainability. In 2018, the award was renamed the Zayed Sustainability Prize.

In 2009, as CEO of Masdar, he helped bring the headquarters of the International Renewable Energy Agency (IRENA) to the UAE. During Al Jaber's tenure as Special Climate Envoy to the UN Framework Convention on Climate Change (UNFCCC) for the UAE, the organization chose the UAE to host the 28th session of the Conference of the Parties (COP28) in November this year.

Al Jaber earned a PhD in business and economics

from Coventry University in the United Kingdom and an MBA from the California State University at Los Angeles. Born in the UAE in August 1973, he also holds a BSc degree in chemical engineering from the University of Southern California in the US.

Over the past two decades, Al Jaber has been part of several organizations that are aiding the transformation of the UAE, now the second-biggest Arab economy after Saudi Arabia. He is Chairman of the Emirates Development Bank, a member of the Abu Dhabi Supreme Council for Financial and Economic Affairs, and he sits on the boards of First Abu Dhabi Bank PJSC, Emirates Global Aluminium PJSC, and the Emirates Investment Authority. Al Jaber was also the Chairman of the Board for the Abu Dhabi Ports Company PJSC from 2009-2019 and the UAE National Media Council from 2016-2020.

Many of these organizations have helped turn the UAE from a remote trading outpost in the 1970s to what we see today, home to some of the biggest deep-water ports, a thriving industrial sector, world-class airlines, and the region's biggest banking and financial services industry. Naturally, that journey has had its challenges, including a dramatic slump in property prices in the aftermath of the 2008 global financial crisis and a decline in crude prices in 2016-2017, leading the UAE to post rare budget deficits.

CRAFTING A NEW ERA

Since returning to ADNOC in 2016 as CEO, Al Jaber has scripted a transformation plan to manage its businesses more actively, unlock value, drive sustainability, and improve performance – all of which now forms a part of ADNOC's ambitious 2030 Strategy. This includes boosting crude oil output to 5mn b/d from 4mn b/d now, delivering self-sufficiency in gas and increasing petrochemicals production three-fold by 2025, from 4.5mn tons per year in 2016. He has also driven a reduction in ADNOC's carbon intensity, its expansion into hydrogen and renewable energies, and promoted a pioneering approach to carbon capture technologies.

This new business plan has generated some \$65bn in foreign investment from joint ventures and financial deals, with an emphasis on partnerships as a way of using capital more efficiently. Critically, this unlocks growth and improves returns.

Four ADNOC subsidiaries have successfully listed on the Abu Dhabi stock market, helping attract new capital and boost the Emirate's exchange. ADNOC Group of

companies have also sold bonds in foreign markets for the first time, tapping a new capital market segment which has generated long-term funding and capital structure. Plus, ADNOC is seeding a new industrial cluster further up the coast from Abu Dhabi, TA'ZIZ, which is luring new partners and millions of dollars in investments in chemicals manufacturing – promising to fire up the wider economy.

ADNOC's new joint ventures and deals have attracted some of the biggest names in the global financial services industry, such as BlackRock Inc., Apollo Global Management Inc., KKR & Co., Brookfield Asset Management Inc., and Singapore sovereign wealth fund GIC, to name a few.

This rapid evolutionary journey is only gathering pace. For one, Al Jaber has been the driving force behind ADNOC's ICV program, which aims to boost the purchase of locally made products by the company. Since its launch in 2018, some 140bn dirhams (\$38bn) of value has been created for the UAE economy, as well as the creation of 5,000 jobs for UAE citizens.

As Minister of Industry and Advanced Technology, Al Jaber has also been aggressively pushing the 'Make it in the Emirates' campaign, which is part of the UAE's 'Operation 300 billion' plan. Launched in 2021, this aims to raise industry's contribution to the country's GDP to 300bn dirhams (\$82bn) by 2031, from 133bn dirhams (\$36bn) in 2021.

ADNOC has become a leading contributor to the initiative, signing agreements with the UAE and international companies to locally manufacture 25bn dirhams (\$6.8bn) of products this year. By 2030, it has a target to have more than 100 products in its procurement pipeline worth 70bn dirhams (\$19bn) – all made in the UAE.

Another spoke in Al Jaber's current wheel is his role as the UAE's Climate Envoy (2010-2016 and 2020-present). Within this role, one of his recent actions is the brokering of the UAE-US Partnership for Accelerating Clean Energy (PACE) to catalyze \$100bn for 100GW of clean energy by 2035 globally. Plus, he is a recipient of multiple awards, including being honored by the UN's flagship 'Champion of the Earth' award in 2012.

As we look ahead towards a future brimming with questions, Al Jaber encapsulates the importance of always building forward momentum: "We have seen that all progress starts and ends with energy security. Let us hold back emissions, not progress." ■

• GI Special Report was produced with the cooperation of ADNOC



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