

EXCLUSIVE INSIGHTS /// ACTIONABLE INTELLIGENCE /// EXCLUSIVE SURVEY ANALYSIS

ENERGY TRANSITION DIALOGUES

INTELLIGENCE BRIEFING

ISSUE 32, MONDAY, NOVEMBER 29th

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SCROLL DOWN!

DIGITALIZED TRANSITION

H2 SNAPSHOT

H2 IN A NET ZERO FUTURE?

THIS WEEK'S EVENTS

“A Successful Energy Transition Means a Digitalized One”

Widad Haddad

Vice President & General Manager – UAE, Oman, Yemen, and Lebanon

Emerson Automation Solutions

With a large portfolio of digital solutions, it is crucial to have scalable ways to address digitalization. We must recognize that industry actors are at different stages of their digital journey and seek an array of purposes. Solutions must enable scalable applications and have different outcomes for different end-users to achieve their business objectives.

Walk the talk

Energy companies are being very vocal about sustainability and holding themselves accountable with targets. This positive step makes their position much more credible than it was before. At this point, it is very critical that oil majors stick to their plans – i.e., they must walk the talk – as the years go by. Eyes will be on them. The transition will take time. It is best to start with fixing the fundamental existing issue and creating a roadmap for the next steps. One of the most important pieces of the puzzle is to communicate along that journey and have the cadence to show that everyone is genuinely making changes in their operations at different scales and maturity levels – but ultimately all towards the same goal.



FULL INTERVIEW HERE

TOP 5 NEWS STORIES OF THE WEEK

Oman's H2 Production Capacity Projected at 30GW by 2040

UAE, Jordan, Israel to Develop Solar PV, Desalination Plants

EU Carbon Price Hits Record Above \$79.79

Omani Biodiesel Fuels PDO's 1st Gas Wellpad

Green H2 Shaping the Future of Oil Majors?

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HYDROGEN SNAPSHOT

UAE'S NOVEMBER ANNOUNCEMENTS

Platts Launches Middle East Hydrogen Prices

November 22nd, 2021

S&P Global Platts has launched low carbon hydrogen assessments in the Middle East. Initial prices showed the Middle East amongst the cheapest producers of renewable hydrogen in the world, second only to Australia in markets assessed by Platts. The assessments track three production pathways in Oman, Saudi Arabia, Qatar, and the UAE. The daily Middle East production values account for local feedstock costs, including electricity and natural gas, and fixed costs for either proton exchange membrane (PEM) electrolysis, alkaline electrolysis, or steam methane reforming with carbon capture and sequestration (CCS) pathways. Announced projects in Saudi Arabia, the UAE, and Oman are set to produce 3mn mt/year of hydrogen in the 2030s. Oman's 14-GW Al Wusta and Saudi's 4-GW NEOM projects among the world's most ambitious to date.

Source: S&P Global Platts

Middle East hydrogen prices (incl capex) Nov. 22		
Description	Price (\$/kg)	Symbol
Hydrogen Oman SMR with CCS	5.55	HYSBL00
Hydrogen Oman PEM Electrolysis	4.66	HYSBP00
Hydrogen Oman Alkaline Electrolysis	3.58	HYSBT00
Hydrogen Qatar SMR with CCS	5.47	HYSAN00
Hydrogen Qatar PEM Electrolysis	3.56	HYSAR00
Hydrogen Qatar Alkaline Electrolysis	2.63	HYSAV00
Hydrogen Saudi Arabia SMR with CCS	5.51	HYSAB00
Hydrogen Saudi Arabia PEM Electrolysis	4.26	HYSAF00
Hydrogen Saudi Arabia Alkaline Electrolysis	3.24	HYSAJ00

ADNOC, Taqa Form Global Renewables & Hydrogen Venture

November 17th, 2021

ADNOC and Taqa have teamed up on a global renewable energy and green hydrogen venture that will have a generating capacity of 30GW by 2030. The companies will partner on domestic and international renewable energy and waste-to-energy projects, as well as the production, processing and storage of green hydrogen. The venture will tap into ADNOC's energy and hydrogen capabilities and Taqa's expertise in renewable development. The partnership follows the UAE's announcement to be net zero by 2050.

Source: The National

UAE, Russia Explore Hydrogen Opportunities

November 17th, 2021

The UAE's Ministry of Industry and Advanced Technology has signed an agreement with Russia's Ministry of Industry and Trade to collaborate in hydrogen fuel technology. They will focus on developing technologies to achieve a carbon neutral industrial sector and find ways to support the production, storage, and transportation of hydrogen. The agreement follows the signing of a joint task force between the UAE and Russia to collaborate in the energy sector – particularly in renewables. The UAE has pledged to invest \$163bn in clean energy over the next three decades.

Source: The National

UAE Announces Hydrogen Leadership Roadmap

November 5th, 2021

The UAE, represented by the Ministry of Energy and Infrastructure (MOEI), has announced the Hydrogen Leadership Roadmap, a comprehensive national blueprint to support domestic, low carbon industries, contribute to the country's net zero ambition, and establish the country as a competitive exporter of hydrogen. Seven projects are already underway, which will target 25% market share in the key export markets, including Japan, South Korea, Germany, and India initially, plus high-potential markets in Europe and East Asia.

Source: WAM

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PODCAST THIS WEEK

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COP26: HYDROGEN'S ROLE IN A NET ZERO FUTURE?



Jessica Obeid

Non-Resident Scholar, Middle East Institute and Senior Global Advisor, Azure Strategy

FULL PODCAST HERE

The Gulf states' experience as petroleum producing economies means they already have experience in logistics, transport, and storage – all relevant to building a hydrogen economy.

They also have the advantage of vast land and very low-cost renewable energy. Deployment – more assets. We must remember that achieving decarbonized economies means looking at many low carbon technologies and energy markets along the value chain, not just hydrogen.

They also recognize that for green technology to succeed, there is still much work to do – a lot of work actually. For examples, the costs of green hydrogen and carbon capture and storage (CCS) need to be reduced [to support net zero goals]. Such technologies are still far from being financially viable in many cases. Now we must look at ways to stimulate the application of these technologies worldwide in a more affordable manner. We are already seeing a lot of interaction between academia and industry to spur green innovation and stimulate the uptake of green technologies,

while governments are encouraging the deployment of seed capital and providing more regulations. Governments are also driving demand towards green technologies to encourage the private sector to invest.

Pan-Arab Hydrogen Strategy?

The Arab League is currently developing a Pan-Arab green hydrogen study – a very important development. This certainly highlights the need for regional collaboration. The Arab League is also working on plans for a regional, interconnected electricity market by 2038. While the target seems far away, connecting the electricity grid in the Arab States is vital. For one, it is an enabler for green technologies and can help tackle some of the intermittency issues in renewable energy. Currently, there are interconnection grids between several Middle Eastern and North African countries. However, most of them are inactive or not fulfilling capacity. For example, the Gulf's interconnection grid is operating at 5% of its capacity. Developing pricing mechanisms, governance structures, and electricity planning models is crucial for grid integration and in turn, more low carbon energy usage.

FULL PODCAST HERE

Antonio Della Pelle

Director of Advisory Consulting, Asia, KBR-Asia Pacific



The differentiating factor in a competitive hydrogen strategy is the timing – not the location. The first-mover advantage is the gamechanger.

Today, transportation costs affect land costs. But by mid-century, this will not make a difference. This means that if you import hydrogen from Chile, it will not make that much of a price difference compared to importing from Australia.

Pin down off-takers

Every country's hydrogen roadmap will be different, because their needs are different. But all need to keep in mind the off-takers and the prioritized sectors that can be decarbonized by clean hydrogen. Identifying your off-takers upfront allows you to map the way forward. Hydrogen is leading the news at the moment, but the ecosystem has still not developed on the ground. Building this value chain – from the supply, transportation, to end-users, and much more – will take time.

\$2.63/KG

is the cost of low carbon hydrogen production in Qatar – making it the world's lowest cost producer.

S&P Global Platts

3MN MT/YEAR

of hydrogen is planned to be produced in the Middle East in the 2030s.

S&P Global Platts

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UPCOMING EVENTS

ENERGY TRANSITION DIALOGUES Consultancy Intelligence Publishing

TWO MINUTE WARNING INTERVIEW SERIES

Tuesday /// Nov. 30th /// 12:00 (UAE)

David Rosenberg
CEO
Aerofarms



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HYDROGEN FULL COURT PRESS

Dr. Abdullah Al Abri
National Hydrogen Economy Project Manager
Petroleum Development Oman (PDO)

Wednesday /// Dec. 1st /// 11:00 (UAE)



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ENERGY TRANSITION DIALOGUES Consultancy Intelligence Publishing

PODCAST WEDNESDAY /// DEC 1st /// 13:00 (UAE)

Towards Net Zero: Mainstreaming Sustainable Finance



Anish De
Global Sector Head - Power & Utilities
India's Energy & Natural Resources Leader
KPMG



Oliver Phillips
Associate Director, Sustainable Finance - Africa & Middle East
Standard Chartered Bank



Dyala Sabbagh
Partner
Gulf Intelligence

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