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INTERVIEW: Big oil bets big on green hydrogen as Shell to operate Oman project

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HIGHLIGHTS
Shell joins Green Energy Oman as operator
14-GW of electrolysis backed by 25 GW of renewables
IOCs bring large project expertise to hydrogen

International oil companies are adding large-scale renewable hydrogen projects to their portfolios as they seek to diversify and capitalize on the energy transition, with Shell the latest to make a move into a megaproject in Oman.

Shell has joined the Green Energy Oman consortium as lead operating partner taking a 35% stake in the renewable hydrogen project, bringing the oil major's scale, financial clout and local expertise to the group, developer InterContinental Energy's Middle East head Tony Nieman told S&P Global Commodity Insights in an interview Jan. 18.

"The deep experience and expertise that Shell provides is a major step towards bringing our 25-GW megaproject to the next phase," Nieman said.

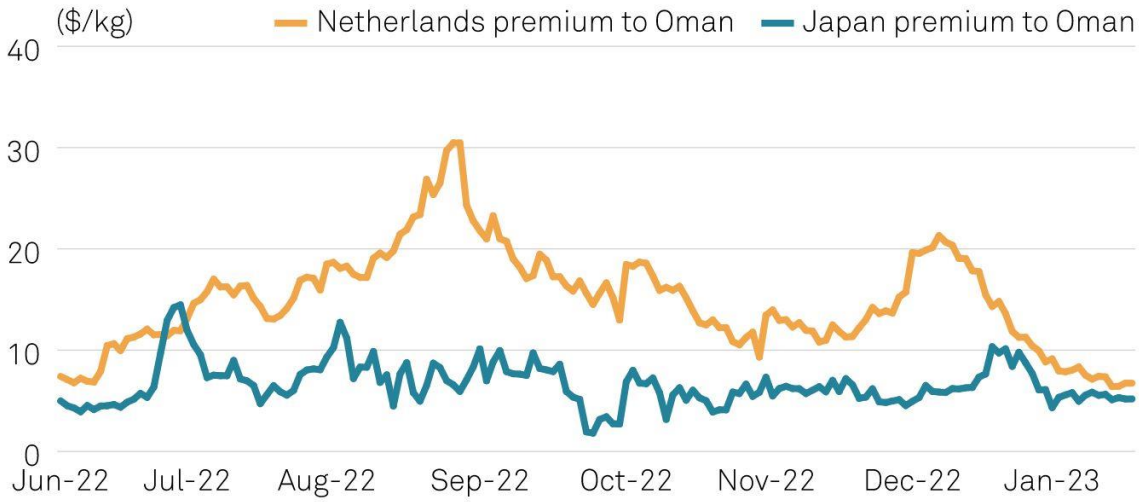
The project's 14 GW of electrolyzers will be backed by 25 GW of solar and wind power across the Al Wusta governate in Oman to produce 1.8 million mt/year of hydrogen.

Nieman joined InterContinental Energy (ICE) in April 2022 following a long career in the oil and gas sector in the Middle East, including with Shell.

ICE is conducting discussions with potential offtakers across the group's global portfolio, which also includes projects in Australia and Saudi Arabia, Nieman said.

Nieman said ICE was focused on ammonia production from its hydrogen plants as an export opportunity, and saw "clear interest" in the future green ammonia market, particularly in Asia and Europe.

Hydrogen production costs



Notes: Grid power alkaline electrolysis, including capex
Source: S&P Global Commodity Insights

Platts, part of S&P Global, assessed green ammonia delivered to Europe from the Middle East at $747.31/mt on Jan. 16, well below conventional "gray" ammonia prices of $965/mt, CFR Northwest Europe.

Nieman said Shell brought experience in developing green energy projects in wind, solar and hydrogen, as well as its decades-long experience of operating in Oman. Large international oil companies also brought experience on large-scale project execution and vast resources to such projects, he added.

"Many international oil companies have expressed their ambition to be part of the energy transition," Nieman said.

Oman's energy company, OQ, and Kuwait government-backed clean energy investor and developer EnerTech are also partners in the GEO consortium.

Megaproject model

The company's model focuses on regions with high wind and solar resources in sparsely-populated areas, providing a strong renewable power profile to feed large-scale electrolyzers at low cost.

Nieman said the Oman project would benefit from the economies of scale the model provided, and noted that large-scale green ammonia could be competitive with fossil-fuel derived production coupled with carbon capture and storage, given the exposure of gas-based production to volatile gas prices.

"We expect green ammonia across our portfolio to be competitive against blue ammonia over time, considering the scale and quality of the resource base whilst also offering price stability advantages," he said.

The Green Energy Oman project has already completed concept feasibility studies and energy yield assessments to confirm the solar and wind potential of the site, along with an environmental impact assessment.

The next stages will be moving to pre-front end engineering design (FEED), then FEED and finalizing offtake agreements, with the work to be advanced in 2023-24 before a targeted final investment decision in 2025, Nieman said.

The deal with Shell follows ICE's partnership with BP in 2022 on its 26 GW Australian Renewable Energy Hub -- formerly the Asian Renewable Energy Hub -- in Western Australia, under which BP took a 40.5% stake in the project and became an operator.

AREH plans to produce 1.6 million mt/year of hydrogen at full scale.

ICE is now the second-largest shareholder in AREH, to be situated in the Pilbara. The project also aims to supply renewable power to local customers in the mining belts and produce renewable hydrogen and ammonia for domestic and export markets.