Media Release

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WOODSIDE'S H2PERTH TO MAKE WESTERN AUSTRALIA A HYDROGEN POWERHOUSE

Leading Australian energy producer Woodside, with the support of the State Government of Western Australia, has unveiled plans to establish a world-scale hydrogen and ammonia production facility at a site in southern metropolitan Perth.

The proposed project, named H2Perth, would be built on approximately 130 hectares of vacant industrial land to be leased from the State in the Kwinana Strategic Industrial Area and Rockingham Industry Zone.

The H2Perth project aims to:

- produce low cost, low carbon hydrogen-based energy for customers;
- stimulate and enable increased renewable power generation in Western Australia; and
- support State Government priorities for strategic industry creation and local manufacturing.

H2Perth is a phased development that, at full potential, would be one of the largest facilities of its kind in the world. It would produce up to 1500 tonnes per day (tpd) of hydrogen for export in the form of ammonia and liquid hydrogen.

As well as meeting a shared goal of hydrogen export from Western Australia in the second half of the decade, Woodside aims to support State initiatives to stimulate local hydrogen demand, particularly in the transport sector and among local heavy industry. Local refuelling stations can be built independently of the export project timelines and could operate as early as 2023, subject to approvals and customer demand.

Woodside CEO Meg O'Neill said H2Perth would be a landmark project, both for Woodside and for the State of Western Australia.

"Woodside has a proud track record as an Australian oil and gas producer and our LNG exports will continue helping Asia to reliably meet its energy needs while reducing greenhouse gas emissions for decades to come. Now, we intend to use our skills and financial strength to add new energy products and lower-carbon technologies and services to our portfolio, which can be scaled to meet customer demand," she said.

"The land being leased from the State Government in the Kwinana and Rockingham areas is ideally located close to existing gas, power, water and port infrastructure, as well as a skilled local residential workforce.

"These advantages will make a huge difference to cost of supply and schedule and help H2Perth deliver competitively priced hydrogen to customers.

"Building in this location is not just about hydrogen. H2Perth will also facilitate substantial growth of renewables in Western Australia by providing to the grid a flexible and stabilising load that benefits uptake of intermittent renewable electricity by households and local industry. We will also be supporting local manufacturing jobs and opportunities.

"H2Perth is designed to be net-zero emissions for both Woodside and its customers, supporting Woodside's corporate emissions reduction targets and the Paris Agreement goals of customers in the region.

“We look forward to H2Perth establishing Western Australia as a global hydrogen leader, building on our state’s existing resources and capabilities and helping lead us to into a lower-carbon future – something everyone can be proud of,” she said.

Woodside will now begin community engagement on the H2Perth project along with detailed progress with customers. Subject to necessary commercial and regulatory approvals, and a final investment decision, construction is estimated to start in 2024.

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Additional background on H2Perth

H2Perth is a proposed domestic and export-scale hydrogen and ammonia production facility to be built in the Kwinana Strategic Industrial Area and Rockingham Industrial Zone in the southern metropolitan region of Perth, Western Australia.

Plans for the new facility were unveiled on site by Woodside CEO Meg O’Neill, Western Australian Premier Mark McGowan, Minister for State Development Roger Cook, Minister for Hydrogen Industry Alannah MacTiernan and Minister for Lands Tony Buti.

Hydrogen and ammonia production

Hydrogen produces zero carbon emissions when it is used as fuel and is emerging as a critical component in the world’s transition to a cleaner future. Ammonia is currently the most established means of safely transporting hydrogen over long distances.

Hydrogen and ammonia from H2Perth would be produced using both electrolysis technologies and natural gas reforming, with 100% of carbon emissions abated or offset. The electrolysis component of H2Perth's production will have an initial capacity of 250 megawatts, with potential to scale to more than 3 gigawatts (GW) alongside both customer demand and renewable energy growth. The initial phase of the steam methane reformer will consume 40 terajoules per day of natural gas.

Initially, H2Perth will target 300 tpd of hydrogen production, or 20% of expected total capacity, which can be converted into 600,000 tonnes per annum (tpa) of ammonia or 110,000 tpa of liquid hydrogen.

Grid stabilisation

H2Perth is anticipated to eventually operate electrolysers with a total capacity of more than 3GW. The current registered power generation capacity of Western Australia’s entire South West Interconnected System is 5.8GW. Kwinana is a vital node in the Western Australian electricity network. The hydrogen electrolysers can help stabilise this network because they can be operated flexibly (by being switched on and off quickly). This can help the network support more intermittent renewable power, such as residential rooftop PV and large-scale renewable generation, as the State transitions to greener electricity.

H2Perth joins Woodside’s other publicly announced new energy opportunities, including its proposed renewable hydrogen project in northern Tasmania and the collaboration with Heliogen on breakthrough solar technology.

H2Perth: Conceptual image