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Submission via email to: HydrogenProductionTaxIncentive@treasury.gov.au

FEEDBACK ON HYDROGEN PRODUCTION TAX INCENTIVE CONSULTATION PAPER

Woodside Energy ('Woodside') welcomes the opportunity to comment on the Australian Government's Hydrogen Production Tax Incentive Consultation Paper ('the Paper').

We note that the Department is seeking advice to inform the final design and administration arrangements, and the drafting of legislation to implement the Hydrogen Production Tax Incentive ahead of its proposed 1 July 2027 commencement.

Our recommendations for consideration are set out in detail in Attachment A, and are summarised as follows:

(1) Incentives should be technology agnostic and applied to the hydrogen production process with a focus on carbon intensity, rather than specifying a particular method.
(2) Incentives should be aligned to international market directions in relation to carbon intensity, technology and application of renewable matching requirements. Aligning to target market standards allows Australian hydrogen to be as cost competitive as other markets without unduly penalising to an unnecessary higher standard or to an insufficient standard to allow export.
(3) Reduce the minimum capacity requirement to 1MW to enable support for small-scale production including domestic transport.

In our view, the approach summarised above and explored in further detail in Attachment A will better enable Australia to contribute to the development and availability of hydrogen in global markets to meet economic needs, energy requirements and climate goals.

Overall, for Australian projects hydrogen produced via electrolysis, our view it that the A$2/kg incentive and 0.6 kg CO2/kg emissions intensity threshold eligibility criteria will be insufficient to make such projects competitive or enable export.

For context, Woodside's climate strategy is integrated throughout our company strategy and has two key elements: reducing our net equity Scope 1 and 2 greenhouse gas emissions and investing in products and services for the energy transition.

In 2018, Woodside established a business unit to develop a portfolio of new energy products, including hydrogen, in support of our climate targets and aspirations. There are a number of new energy opportunities currently in our portfolio, including our proposed H2Perth and Hydrogen Refueller @H2Perth projects in Australia.

Woodside supports continued engagement on the design and implementation of the Hydrogen Production Tax Incentive, and acknowledges the initiatives undertaken by the Federal Government to support Australia's emerging hydrogen industry more broadly. We look forward to working towards shared decarbonisation goals and helping Australia become a world leader in the production of hydrogen.

Yours sincerely

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Attached: Feedback on the Hydrogen Production Tax Incentive Consultation Paper

Attachment A – Feedback on the Hydrogen Production Tax Incentive Consultation Paper

Item	Feedback/Recommendation	Context
7. Please provide any feedback on the proposed emissions intensity threshold of 0.6kg of carbon dioxide equivalent up to the production gate.	Woodside recommends an increase to the proposed carbon intensity threshold of 0.6kg of carbon dioxide equivalent up to the production gate.	Woodside recommends an increase to the proposed carbon intensity threshold of 0.6kg of carbon dioxide equivalent up to the production gate. The currently proposed carbon intensity threshold is inconsistent with international practice and places Australian hydrogen projects at a competitive disadvantage when compared to international producers. For instance, the current threshold is well below the emissions intensity target in the United States Department of Energy's Clean Hydrogen Production Standard, which establishes a well-to-gate lifecycle greenhouse gas emissions target of 4.0 kg CO_2e/kg H_2 for projects to receive funding government subsidies. Likewise, South Korea has set a lifecycle emissions limit of 4.0 kg of CO_2e/kg H_2, while Japan has set a carbon intensity target of 3.4 kg CO_2e/kg H_2 from well to production gate. Meeting the prohibitively low threshold would likely exclude most projects utilising natural gas reforming with CCS to produce hydrogen, which are currently far more cost competitive than electrolysis-based projects, albeit still more expensive than unabated fossil fuels and requiring policy support. Likewise, electrolysis-based projects would likely be required to utilise close to 100% renewable electricity to meet the current threshold. Woodside recommends that the Australian Government sets an emissions intensity requirement that aligns to the emissions intensity requirements of key trading partners and potential competitors, which could be reduced in line with international standards over time. This would be a pragmatic approach to set us on an emissions reduction pathway while still bringing forward project development in the near-term. Woodside also notes that the boundary definition terminology of production gate is inconsistent with the Guarantee of Origin (GO) scheme (which states a well to delivery gate). Consistent boundary definitions are important to ensure the right value chain emissions are included or excluded in the carbon emissions methodology. Higher production costs for Australian hydrogen projects will result in higher cost of delivered hydrogen to off-takers, reducing the likelihood of domestic users transitioning to hydrogen as a lower carbon energy source and impacting international export competitiveness.
8. Other than electrolysis, what production processes would meet this emissions intensity threshold now or before 2030?	Woodside recommends that the Hydrogen Production Tax Incentive is technology agnostic with a focus on carbon intensity. Natural gas reforming with Carbon Capture and Storage (CCS) should be included as a production process.	Hydrogen can be produced through a variety of different methods. For instance, hydrogen can be produced using electrolysis, where electricity is used to separate hydrogen (H_2) from water (H_2O), or through natural gas reforming, where methane (CH_4) is converted to hydrogen (H_2). Carbon dioxide (CO_2) is also produced as part of the natural gas reforming process, however technologies such as Carbon Capture and Storage, where the carbon dioxide is captured and transported underground for permanent storage, can assist in managing this. Both electrolysis and natural gas reforming lead to an identical hydrogen product and are each expected to play a role in the future energy mix. For instance, Woodside notes that according to the IEA, getting on track with the NZE Scenario would require a rapid scale-up of low-emission hydrogen, with around 50 Mt of hydrogen production based on electrolysis and more than 30 Mt produced from fossil fuels with CCUS by 2030. Accordingly, policy settings should be technology agnostic with an ultimate focus on carbon intensity, as opposed to prioritising a particular production method. The proposed Australian Hydrogen GO certification scheme for instance encompasses various hydrogen production pathways, including Steam Methane Reforming, Coal Gasification and Electrolysis. The Safeguard Mechanism also applies a technology agonistic approach which is focused on emissions intensity.

		With this in mind, consideration should be given to the Hydrogen Production Tax Incentive including projects regardless of production method.
9. Please provide feedback on the proposed minimum capacity requirement (equivalent to 10 MW electrolyser)?	Woodside recommends that the proposed minimum capacity requirement be lowered to 1 MW to ensure smaller-scale projects, such as those targeting hydrogen supply to domestic transport, are eligible under the Hydrogen Production Tax Incentive.	Woodside notes that one of the expected uses of hydrogen includes heavy duty road transportation, where hydrogen can substitute diesel and offers operational benefits compared to battery electric trucks. Woodside also notes that the Federal Government's National Hydrogen Strategy identifies the use of hydrogen for long-distance heavy duty transport and development of associated refuelling infrastructure as an additional action that could support the scale up of the hydrogen industry. This is in addition to various state initiatives, such as the Western Australia Government's Hydrogen Fuelled Transport Program which aims to accelerate uptake of hydrogen trucks, buses and other commercial vehicles, and to boost the rollout of hydrogen refuelling infrastructure. The currently proposed minimum capacity requirement (equivalent to 10 MW electrolyser) would exclude most, if not all, hydrogen refuelling stations targeting domestic transport. Woodside notes that none of the current or planned hydrogen refuelling stations included on the CSIRO's HyResource website meet the proposed 10 MW electrolyser requirement. Accordingly, the currently proposed minimum proposed capacity requirement may potentially impact the development of Australia's network of hydrogen refuelling stations and the uptake of hydrogen vehicles nationally and therefore fails to align to various Federal and State initiatives.
10. For renewable production processes other than electrolysis, is using the minimum capacity requirement of "equivalent to a 10MW electrolyser" appropriate? Is another definition of capacity required to deal with other production pathways?	Woodside recommends that a definition of capacity tied to nameplate production capacity be adopted. This approach would be inclusive of production processes other than electrolysis.	As above, the design of the Hydrogen Production Tax Incentive should include projects regardless of production method, provided they meet other eligibility criteria. In line with this principle, the minimum capacity requirement should be defined from a technology agnostic standpoint (e.g., nameplate production capacity), as opposed to linking it to a particular electrolyser capacity.
12. Please provide feedback on the proposal to not include additional requirements on renewable energy generation for access to the incentive, such as additionality and hourly time-matching with hydrogen production.	Woodside commends the decision not to include additional requirements on renewable energy generation for access to the incentive, such as additionality and hourly time-matching with hydrogen production.	Switching from annual matching to hourly matching requires reconfiguring many aspects of how a hydrogen production facility operates, in turn negatively impacting the efficiency and cost of production. For example, switching to hourly matching would require the procurement of the type of electrolyser that can ramp up and down in response to intermittent renewable electricity. These issues are likely to increase costs, resulting in an increased LCOH in an already challenging macroeconomic environment. Higher production costs are likely to result in higher cost of delivered hydrogen to off-takers, reducing the likelihood of users transitioning to hydrogen as a lower carbon energy source. Transitioning to hourly matching too quickly is likely to reduce production quantities and increase the cost. This may make hydrogen too expensive in the near term, regardless of the environmental benefit. We support a phased approach of implementing temporal matching requirements over time.