

HYDROGEN PRODUCTION TAX INCENTIVE – CONSULTATION PAPER - RESPONSE

- 1 Please provide any feedback on the impact this incentive may have on your community, facility or industry.

KEPCO is pursuing its green hydrogen ammonia business in Australia with the primary goal of supplying green hydrogen ammonia that aligns with South Korea's decarbonisation policies (incl. NDC 40% reduction by 2030). Securing a competitive ammonia production price (LCOA) is a critical pathway to the project and on top of it, there is a renewable energy, a main feedstock for green hydrogen/ammonia production. The cost of renewable energy significantly impacts the ammonia production price. Currently, it seems that the green ammonia price is not competitive because the level of renewable energy costs is so high compared to that of other countries. In this regard, the hydrogen production tax incentive (HPTI) is surely welcome to make those green hydrogen ammonia projects in Australia much more attractive and viable.

- 2 Please provide any feedback on the proposed eligibility criteria.

The eligibility criteria for entities, facilities, and minimum capacity are deemed reasonable and fair. However, in terms of nurturing the green hydrogen/ammonia industry, it is important to note that the industry trend is moving towards electrolyzers with 100 MW or more to enhance business competitiveness through economies of scale. In the global trend, projects with electrolyser capacities below 100 MW are typically considered pilot projects. Therefore, specifying the minimum capacity as 100 MW of electrolyser capacity or more would be more effective in fostering the green hydrogen industry within Australia.

- 3 What key factors would need to be accounted for in a definition of an eligible facility for the purposes of the HPTI?

HPTI budget is limited to \$6.7 billion. Under the current eligibility criteria, incentives are also provided for hydrogen produced from existing facilities. Considering the objective of expanding hydrogen production facilities in Australia, it would be more proposed to restrict the incentives to new facilities. This approach would better support the expansion of new hydrogen production facilities in the country.

- 4 What key factors would need to be accounted for in a definition of Final Investment Decision (FID) for the purposes of the HPTI?

For a definition of Final Investment Decision (FID), it is necessary to complete FEED (Front-End Engineering Design) and to obtain an approval in board of directors meeting (BOD).

- 5 How long do you expect it will take for projects to reach first production following FID?

In case of Newcastle Green Ammonia Project, it is estimated that approximately four (4) years will be required from FID to COD.

- 6 For foreign investors, do you currently encounter any impediments to investment in projects that would be eligible?

The biggest challenge is ensuring economic viability, which HPTI and Hydrogen Headstart Program (HHP) are expected to contribute to improving economic viability. Another challenge is how to secure large scale renewable energy capacity needed for green hydrogen production with a right time. For large-scale hydrogen production, larger capacity renewable energy generation facilities and an expanded grid to supply that power will be necessary.

- 7 Please provide any feedback on the proposed emissions intensity threshold of 0.6kg of carbon dioxide equivalent up to the production gate.

KEPCO Group companies (i.e. KEPCO and Generation companies under KEPCO governance) are participating in the project consortium and expect to comply with the carbon emission threshold suggested by Korean Government, Mar. 2024 as an importing/consuming country of the Green NH3. Carbon emission scope is Well to Gate, below 4kgCO₂e/kgH₂ (provided that overseas transportation is excluded until the technology is matured), and their clean hydrogen certification thresholds are classified as below:

Grade	Tier 1	Tier 2	Tier 3	Tier 4
Carbon Intensity (kgCO ₂ e/kgH ₂)	0.00 ~ 0.10	0.11 ~ 1.00	1.01 ~ 2.00	2.01 ~ 4.00

In Korean CHPS (Clean Hydrogen Portfolio Standard) auction, the above certification classes apply. In this regard, we suggest that emission intensity threshold of 0.6 kg of carbon dioxide equivalent be higher up to 1.00kg in terms of green NH₃.

- 8 Other than electrolysis, what production processes would meet this emissions intensity threshold now or before 2030?

When we see the current technology at commercial stage, there will be no equivalent technology other than electrolysis to meet carbon emission on or before 2030.

- 9 Please provide feedback on the proposed minimum capacity requirement (equivalent to 10 MW electrolyser)?

In terms of nurturing green hydrogen ammonia business, main trend is to develop the green hydrogen business with larger than 100MW electrolyser to maximise scale of economics. It seems that typical pilot projects adopt smaller than 100MW electrolyser therefore we propose 100MW electrolyser should be a minimum capacity as a threshold to foster the green hydrogen industry.

- 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?

The capacity designation "10MW electrolyser" is based on the rated power consumption of the electrolyser. For a more comprehensive capacity standard including production facilities other than the electrolyser, it would be appropriate to use the hourly hydrogen production capacity (kg-H₂/h) as the criterion.

- 11 Should grid connected electrolyser projects be required to match their hydrogen production with electricity generated by the same electricity grid? Please provide feedback on this proposal.

The requirement for renewable energy sources to be connected to the same power grid as the hydrogen production facility is also included in South Korea's clean hydrogen certification system and appears to be appropriate.

- 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.

KEPCO suggests that it excludes the current requirements for additionality and hourly time-matching with hydrogen production in the HPTI system. Given the constraint of renewable energy projects development and

the challenges of their intermittency, KEPCO proposes that it has to defer the application of these standards until the time the renewable energy takes a certain level of overall grid power source (i.e. 90% of total grid capacity)

13 Please provide any feedback on the proposed administrative approach.

When considering alignment with Future Made in Australia Act legislation, KEPCO currently agrees to the proposed administrative approach.

14 The proposed GO scheme will be used to support the registration and verification of hydrogen production. Are there any additional factors that would need to be accounted for in the proposed design of that scheme?

The Korean green certificate scheme is designed referring to European green certification regulations. However, it is somewhat looser than European standards. In Korean green certificate, monthly basis - Temporal correlation applies for the hydrogen project that starts production before 2030, while geographic correlation rule is same as that of European standards. The Additionality rule is not yet regulated in the Korean scheme and the current Korean scheme will be valid until the end of 2029. It seems that a revised standard may be applied to the projects starting production after 2030, depending on market conditions.

If Australia's GO scheme is designed to reflect the current global trends of temporal correlation, geographic correlation, additionality, etc., in European and/or Korean standards, it will be much helpful for us to comply with Korean certificates for hydrogen produced in Australia. Furthermore, it can lead to set up a mutual recognition agreement(MRA) between Australia and Korea.

15 The Government may legislate the administrative arrangements in subordinate legislation. Please provide any feedback on this proposed approach.

Like most energy projects, our project will be project-financed, and the main lending criterion for our lenders is the project's bankability, which hinges on the reliability and predictability of its cash flow. In this context, it is important for us to show our lenders that the eligibility requirements, verification processes and other important rules of the program will be stable and not prone to frequent changes. So while we recognize that subordinated legislation may be necessary here and may provide efficiency and flexibility in government programs, we strongly advocate for the inclusion of key eligibility criteria, verification standards and other critical rules in the primary legislation.

16 What obligations should be imposed on potential recipients of the HPTI to ensure the community benefit principles are met?

Potential recipients should submit their clear plans to contribute to the local community, First Nation, gender equality and etc., aligning with the community benefit principles. The five Community Benefit Principles that the Australian Government set out on 3 July 2024 are as below:

- Promote safe and secure jobs that are well paid and have good conditions;
- Develop more skilled and inclusive workforces, including by investing in training and skills development and broadening opportunities for workforce participation;
- Engage collaboratively with and achieve positive outcomes for local communities, such as First Nations communities and communities directly affected by the transition to net zero;
- Strengthen domestic industrial capabilities including through stronger local supply chains; and
- Demonstrate transparency and compliance in relation to the management of tax affairs, including benefits received under Future Made in Australia supports.

Recipients have to establish a clear and feasible plan for their project, and that project must necessarily benefit the community. The administrative institution should review whether the recipient's plan aligns with those principles, and judge the appropriateness of the plan. It would be beneficial if there is a session where the

administrative institution can advise on direction or opinions on the plan during the process. After being selected as a project for HPTI support, the recipient must implement and comply with the submitted plan, and report on its progress. The supervising institution should monitor the recipient's compliance and impose corrections or penalties in case of non-compliance.

17 What obligations are potential recipients of the HPTI currently subject to that might support the community benefit objectives (noting these will be finalised under the Future Made in Australia Act)?

The KA-Consortium is currently developing the Newcastle Green Hydrogen and Ammonia Project (the "Newcastle Project" or the "Project"), and the below will be an example for current potential recipients' plans for community benefit objectives.

- Acceleration of Australia's Clean Energy Transition:

The KA-Consortium plans to procure approximately 1.5GW per annum of electricity through CPPAs with renewable energy providers to produce about 600,000 tons of green ammonia annually. Through this process, the Project will serve as a reliable off-taker for renewable energy providers, contributing to the Australian government's decarbonisation efforts. This involvement can also accelerate other initiatives developed by the Australian government, such as REZ projects and battery projects aimed at boosting renewable energy supply. Additionally, by facilitating the transformation of the PoN from a coal export terminal to a clean energy terminal, the Project will contribute to the Australian Government and AEMO's plans to achieve net zero CO2 emissions by 2050.

- Enhancing Collaboration with Australian Firms:

From November 2023 to May 2024, the KA-Consortium engaged Australian consulting firms to conduct a feasibility study for a green hydrogen and ammonia production plant in the CEP at the Port of Newcastle. Also, the KA-Consortium plans to hire local environmental and approval consultants and engage local companies for various project aspects. This development enhances the expertise of the KA-Consortium and Australian companies in the clean energy sector through collaboration.

- Job Creation in Australia:

We expect that local workers in various disciplines will be employed during the construction phase, creating job opportunities in the local community and contributing to the local economy. Furthermore, the KA-Consortium plans to utilize experienced local personnel for operating the ammonia plant. This not only contributes to job creation in Australia but also ensures stable employment of First Peoples.

- Boosting the Australian Manufacturing and Related Industries:

In addition to key equipment, such as electrolyser and ammonia synthesis facilities, the Project plans to localize various equipment, promoting the Australian manufacturing sector. Moreover, the project will stimulate industries essential for operation of the plant, such as water and electric utilities, thereby enhancing the overall industrial ecosystem.

18 Are there any additional objectives that you consider important? What obligations might support these?

Currently we don't see it is necessary.

19 Recipients of the HPTI may be subject to additional transparency and disclosure requirements in order to be eligible. What kind of requirements are appropriate? What are the key practical considerations to take into account when setting the requirements?

In addition to the transparency and disclosure reporting requirements, and for recipients to demonstrate compliance with any relevant tax obligations, since the establishment of that transparency and disclosure requirements have the main purpose to promote Community Benefit Principles as described in the Consultation Paper, an adequate monitoring mechanism should be in place for recipients to share their knowledge and experiences in implementing and operating HPTI recipients' renewable hydrogen facilities in addition to the

compliance with any tax obligations.

The following aspects may serve as key consideration for setting requirements:

- Challenges and lessons learned in the design phases of the project, particularly related to selecting technology solutions and suppliers, and what innovations were developed to optimise the project;
- Experiences with power supply design and approvals, whether grid-connected or off-grid;
- Challenges and lessons learned about the integration of the various systems and technologies at this commercial scale;
- Challenges and lessons learned from establishing commercial scale facilities in the chosen location;
- The capabilities, depth and maturity of the various supply chains required to deliver this project in the chosen location;
- What commercial, regulatory and social barriers the project encounters, and how they are effectively addressed;
- How social license and genuine support for the project is established and maintained with relevant communities, particularly the traditional owners of the lands involved in the project;
- Actual capital expenditure and operating expense for such projects, including pathways for cost reductions particularly around risk premiums applied by suppliers as they build experience and confidence in these types of projects;
- How the actual operation of the completed project compares to the design forecasts, and how this could be optimised for future such projects;
- Lessons learned from the process of certifying the product(s) from the project as low-carbon, including reasons for choosing a particular scheme, and its effectiveness in the desired markets;
- Challenges and experiences related to the transport of the end product to customers; and
- The commercial performance of the end product in terms of customer demand, price premiums etc.

ARENA's Hydrogen Headstart Program ("HHP") requires a clear list of deliverables to be provided in terms of sharing of such knowledge (Knowledge Sharing Plan), and could be benchmarked as reference when setting the additional requirements

20 How should entities proposing to claim the HPTI be required to demonstrate compliance with tax obligations?

HPTI may adopt the US tax credit system including the investment tax credit (ITC) and the production tax credit (PTC). US tax credit system has been operated stably for a long time. Currently, US government provides PTC to renewable electricity including solar PV and wind, and clean hydrogen production.

For example, an entity who wants to claim the renewable electricity production credit has to file form 8835, and it needs to fill out the information of the facility and renewable electricity production. The entity needs to file the Schedule K-1 (Form 1065 or 1041) in order to declare the tax due from their income or earning which passes through directly to its stakeholders in a partnership or trust structure (generally partnership structure). The Schedule K-1 form is used for reporting a beneficiary's share of entity's income, credits, deductions and etc. The entity also must maintain their eligibility for their credit claiming period. Claimed credit can be recaptured if the entity fails to meet the eligibility. The entity needs to prepare the supporting documents explaining its eligibility and tax basis.

21 What information do you consider important for the community that should be reported publicly on the recipients of the HPTI such as the amount of credit received?

It is necessary to provide information important for the local community adjacent the project site. Hydrogen Headstart Program ("HHP") required the submission of plans such as Knowledge Sharing, Community Consultation, Gender Equality, First Nation Recruitment and Procurement and Engagement, in addition to a

Project Plan. However, given the plans shared to the local community, any disclosure of confidential information such as detailed contents and equipment specifications is to be avoided to be protected from intellectual property infringement.

22 Who should the reporting requirements be imposed on? For example, on the recipient entity, or central reporting through a regulator?

Each applicant may report it independently through its website, community institution or any other ways, however, central reporting through a regulator looks much easier to manage recipient entities for each of stakeholders. Recipient entities can report the requirements without building a separate system for reporting, and the regulator can check the compliance of each recipients. For other stakeholders like community members, it will be better to view information through the central reporting system rather than approaches it individually in terms of access to information.

23 Please provide feedback on the proposed treatment of the interactions between the HPTI and other forms of Commonwealth, State or foreign government support.

KEPCO suggests not to limit the support of the HPTI where other Commonwealth, State or foreign government support is provided.

24 How can the HPTI best leverage other types of support? Please provide examples relevant to your project if possible.

Hydrogen Headstart Program(HHP) is striving to lower the sale price by subsidizing the difference between the production cost and the selling price. HPTI is anticipated to effectively reduce the production cost through tax credit for each business. HHP and HPTI are synergistic systems that will make Australia's green hydrogen business more viable through their combined support. Especially for off-takers in Korea and Japan, the economic LCOA is crucial, so if its economics is met, Australia is expected to establish itself as a hub for green ammonia. Moreover, in Australia, there is a need to increase programs that offer discounts on the costly renewable power prices, and expansion of grant support for Pre-FEED and FEED stages, which are before FID, is necessary.

25 What are the key practical considerations with receiving support through the HPTI and the Hydrogen Headstart program simultaneously?

Hydrogen Headstart Program ("HHP") is designed to support the gap between the production cost and the sale price and leads to ultimately reducing down the sale price of green NH₃, and meanwhile, the HPTI will contribute to decrease the project's production cost. However, the credit from HHP could be reduced by 50% of profit increment due to the conditions of the upside sharing provision (upside portion is to be shared equally) in HHP. Therefore, if the HPTI is implemented without alteration, the effect from HHP can be cut by half. Since the renewable electricity costs in Australia is too high leading to more expensive renewable hydrogen (LCOA) compared to that of foreign countries, HHP alone is not surely enough to cover the commercial gap between production price and sales price of green hydrogen. Thus, the HPTI and the HHP need to be applied in duplicate.

26 Are there specific interactions with other support programs that should be considered?

ARENA is providing the fund for FEED (front end engineering design) of green hydrogen project under the title "the Advancing Renewables Program (ARP)". The NSW State Government is also providing partial discounting on TUOS (Transmission Use of System Charges) up to 750MW related to green hydrogen production. However, 750MW ceiling is so constraint when considering the development of large scale of green ammonia projects in the coming years.