Australian National University

HYDROGEN HEADSTART CONSULTATION

Submission by ANU Hydrogen Fuels Project, part of the Zero Carbon Energy for the Asia Pacific research initiative.

Associate Professor Fiona J. Beck, Dr Lee White, Dr Lorrae McArthur, Dr Wenting Cheng, Mr Brad Riley, and Associate Professor Emma Aisbett

QUESTION 2.1: PLEASE PROVIDE ANY FEEDBACK ON THE PROPOSED ELIGIBILITY REQUIREMENTS. ARE THERE ANY OTHER ELIGIBILITY REQUIREMENTS THE PROGRAM SHOULD CONSIDER?

i) Consider additionality issues in renewable electricity provision for hydrogen production

The requirement for projects to use 100% renewable electricity is good, however the emissions implications of using grid connected renewable energy to generate hydrogen need to be properly accounted for.

The concept of 'additionality' is useful here: unless hydrogen is powered exclusively by behind the meter renewable electricity, diverting other renewable electricity resources on the grid to generating hydrogen could increase overall grid emissions.

If the renewable electricity that is nominally used to power electrolysers (purchased by PPA or LGC) is not generated at the time of hydrogen production, and/or cannot feasibly reach the electrolyser due to grid congestion, and/or comes from renewable generation that was not constructed additional to existing capacity on the grid, then there is a risk that the additional demand on the grid from running electrolysers would increase emissions intensity of the grid. For example, if electrolysers are run at periods of low renewables generation, additional natural gas generation will need to be brought online to balance supply and demand on the grid while the electrolyser was running.

An electricity guarantee of origin alone, like a PPA or an LGC, does not provide any insights on the degree to which this displacement of renewable electricity use may occur in grids, and as such will not provide sufficient information for accounting of true embedded emissions in a kilogram of hydrogen from electrolysis fed by the grid. **Proponents of grid connected projects should be required to demonstrate that the emissions intensity of hydrogen is sufficiently time-resolved to reflect the true emissions intensity of grid connected hydrogen.** The new REGOs being developed by DCCEEW can support this as they require records of the hour within which generation occurs, but the LGCs currently in use do not have the necessary level of timescale resolution.

At the same time, requiring that the renewable electricity is new build and/or behind the meter may increase the overall cost of renewable hydrogen[1]. Additionally, there may be benefits for the grid in having grid connected hydrogen generation that can act as flexible demand to help balance grids with increasing proportions of variable renewable energy – as highlighted by ARENA[2].

Grid connected hydrogen projects will be very valuable test cases to understand the challenges of verifying the true, time-resolved, emissions intensity of grid connected hydrogen, particularly to inform further development of the GO Scheme. To enable this, **an additional requirement and/or criteria could be designed to require/look favourably on projects that partner with research institutions to study the resulting time resolved hydrogen emissions intensity. Alternatively, proponents could be required/encouraged to make time resolved generation data and marginal emissions on the relevant state grid available to the public service and research community.** In this way, Headstart could benefit future embedded emissions accounting systems under development by the Commonwealth. Additionally, the research community will be able to generate improved emissions estimates associated with hydrogen production from state grids based on real facility data as opposed to projections.

A potential cap on projects relying on LGCs could also be considered to avoid an overbuild of potentially emissions-intensive hydrogen capacity. Alternatively, grid-connected projects could be required to modify their electricity procurement plan if the resulting hydrogen is of higher emissions intensity than expected during the project – this latter option is dependent upon these grid-connected facilities having reporting in place sufficient to determine the true, time resolved, emissions intensity of the electricity used in hydrogen production.

ii) Consider requirement to provide community benefits / local economic benefits

Tying government funding for industry scale up to the provision of local benefits for communities can be important to secure social license to operate for the industry in question. This is particularly crucial in the context of the energy transition, which will involve large disruptions to those working in fossil-fuel based industries. While local job creation, and development of social infrastructure is already captured in Merit Criterion A, it could be beneficial to require proponents to develop a plan to ensure local economic or community benefit, to build social license to operate for the emerging industry. Additionally, this would ensure that the large-scale commercial hydrogen projects funded through the HeadStart program provide benefit for the wider Australian community.

Local benefits in this context include 1) benefits to local businesses (inclusion of regional contractors and labour force), 2) developing relevant training programs for local workers, 3) stimulating productive research partnerships, 4) growing business footprints to bring income to local communities, and 5) building local capacity to make informed investments and decisions regarding renewable energy development. This flexible range of options including training programs is in line with best practice for delivering local benefits.

A similar community benefit component was successfully included in the review process for ACT's reverse auction feed-in tariff. Localisation of economic benefits made up 20% of the review criteria for proponents bidding on the first several auctions, and contributed to the ACT maintaining social licence while also working towards environmental goals[3, 4].

iii) Consider requirement for best practice engagement with First Nations' communities and Native Title holders

The proposed development of a large-scale green hydrogen industry in Australia will occur on land belonging to First Nations' peoples [5]. First Nations' communities hold legal interests to greater than 57% of Australia's land mass under various Commonwealth legislation [6]. The emergence of a large-scale green hydrogen industry presents both opportunities and challenges for First Nations' people, their organizations and enterprises, with respect to recognizing their legal rights and interests in these significant projects and based on past experiences with extractive industries operating on their respective Countries [7, 8].

Aboriginal and Torres Strait Islander people must have a defined and systematic role in decision-making proportional to the potential impacts or opportunities of Australia's hydrogen industry. International human rights law requires that Indigenous People provide their free, prior and informed consent to development (https://www.ihrb.org/explainers/what-is-free-prior-and-informed-consent-fpic/). DCCEEW is a unique position to advocate for this as a stated object of any relevant legislation. Nationwide there are currently a number of legal and regulatory changes in various stages of planning and implementation, aimed at facilitating the states' economic diversification and activation to enable net zero by 2050. Examples include the *Land and Public Works Legislation Amendment Bill 2022* (WA) which introduces the potential for diversification leases on Crown land under the *Land Administration Act 1997* (WA) in Western Australia; the *Electricity Infrastructure Investment Act 2020* (NSW) in New South Wales; the *Hydrogen and Renewable Energy Act* (SA) in South Australia, (among others).

These changes introduce risks of social-economic, cultural and environmental impacts as well as potentially presenting opportunities for relevant native title holders to participate more effectively in the transition to a clean energy economy. The Department has a crucial role to play in ensuring the cumulative impacts of these changes legislate for the fair distribution of risk and gain. With appropriate partners, DCCEEW could proactively undertake cross-jurisdictional comparative analyses of the extent to which these changes adequately resource, ensure respect for and give preference or 'first option' to First Nations landholders with respect to obtaining tenure under relevant changes (provided they meet baseline criteria). This could be done for the purpose of informing both the Department and First Nations landholders.

The Headstart program has the opportunity to support the emergence of a hydrogen projects that 'place First Nations people and their communities at the center of the development, design, implementation and benefit-sharing of medium to large-scale clean energy projects' by **requiring that proponents adopt the Aboriginal and Torres Strait Islander Best Practice Principles for Clean Energy Projects developed by the First Nations Clean Energy Network.**[9]

In addition, the Headstart program could have an important role in encouraging the industry to **normalise transparency of agreements with First Nations' communities, with the goal of sharing knowledge of what works, and building in accountability.**

iv) Consider requirement that projects are independent of inland water extraction from natural resources, both surface and groundwater systems.

Water requirements for large-scale hydrogen production will be large. For example, a 50 MW electrolyser operating at 60% capacity factor will require around 700 ML per year (based on a requirement of 60 L/kgH2, including operational requirements, taken from GHD analysis https://www.ghd.com/en/perspectives/water-for-hydrogen.aspx). Large-scale industry should not be reliant on natural water resources extracted from inland waters or ground water systems as this will put additional strain on communities and fragile ecosystems.

QUESTION 2.5: OTHER INTERNATIONAL SCHEMES HAVE SOUGHT TO IMPLEMENT ADDITIONAL REQUIREMENTS OF THE RENEWABLE ENERGY USED IN HYDROGEN PROJECTS SUCH AS NEW-BUILD OR TIME MATCHED RENEWABLE ENERGY. PLEASE PROVIDE YOUR VIEWS ON ANY ADDITIONAL REQUIREMENTS THE GOVERNMENT SHOULD CONSIDER FOR THE PROGRAM IN RELATION TO RENEWABLE ENERGY?

See answer to 2.1 (i) above. Additional requirements for new-build and time-matched renewable generation were implemented in the EU to ensure that hydrogen generation did not lead to large increases in electricity emissions on the grid. In the absence of these types of requirements there is a risk that grid connected projects will have large emissions associated with them. To avoid this, maximum eligible emissions intensities could be defined under the HeadStart program, and the time-resolved embedded emissions of hydrogen produced by grid connected projects could be carefully monitored and verified to ensure that it meets expectations.

Question 2.6: Some international schemes have limitations on proposed end uses of hydrogen such as the UK scheme which specifically excludes gas blending. Should any limitations be placed on the end uses eligible for the Program?

The merit criteria already give preference for projects that:

- are cost competitive and efficient
- lead to further decarbonisation, manufacturing or value add opportunities in Australia or international export opportunities
- provide low cost of emissions abatement

These criteria would tend to favour end uses that most efficiently utilise renewable energy to abate emissions and produce value added commodities.

There is a growing national and international consensus that domestic heating and cooling should be electrified, and that blending hydrogen in gas distribution networks for domestic use is not efficient and has poor health outcomes. Under these circumstances, excluding this use case is valid. Alternatively, an additional criterion could be defined to require alignment of the use case with national and state level decarbonisation strategies.

QUESTION 2.7: OTHER INTERNATIONAL SCHEMES CONSIDER BOTH EXPORT AND DOMESTIC USE OF HYDROGEN AS ELIGIBLE WHILE OTHERS SPECIFICALLY EXCLUDE EXPORT PROJECTS. HOW SHOULD THE PROGRAM CONSIDER PROJECTS WITH PROPOSED EXPORT OFFTAKE AND THE EXTENT TO WHICH THIS EXPORT OFFTAKE MAY SUPPORT THE DEVELOPMENT OF AN AUSTRALIAN HYDROGEN INDUSTRY OR OTHER ADDITIONAL BENEFITS TO AUSTRALIA?

Both imports and exports build Australian capacity and contribute to emissions mitigation goals. Australia is intending to develop a hydrogen export industry – projects that build capacity and learning in line with this are beneficial and should not be excluded. At the same time, projects that build domestic demand through industry use of hydrogen for heat and feedstock (i.e. use in mining, metal refining, and fertilizer for agriculture) could be beneficial to drive domestic decarbonisation while also supporting the emergence of a hydrogen production industry.

If export-oriented projects are to be included, advice needs to be sought from Government solicitors about potential trade-law implications. In particular, the WTO Subsidies Agreement and anti-dumping provisions in the GATT.

QUESTION 2.8: THE PROPOSED GO SCHEME WILL BE USED TO SUPPORT THE VERIFICATION OF HYDROGEN PRODUCTION. ARE THERE PROJECTS WHERE THIS WOULD NOT BE SUITABLE? SHOULD THE PROGRAM APPLY A MAXIMUM EMISSIONS INTENSITY FOR HYDROGEN PRODUCTION ON A PROJECT LIFECYCLE BASIS?

The GO scheme provides a very good mechanism for defining the carbon accounting boundaries and methods for hydrogen emissions intensity. It should be noted that the GO scheme employs a well-to-gate boundary, in line with other certifications schemes including CertifHy and the GHG Protocol Product Life Cycle Accounting and Reporting Standard (Note that this is not the same as a standard life cycle assessment, which includes all emissions associated with the production, use, and disposal of a product/project). Any maximum emissions intensity threshold should be defined in alignment to the GO carbon accounting boundaries, and could be based on the definition of renewable hydrogen from other jurisdictions, e.g. under Certifhy or the US IRA.

QUESTION 4.1: PLEASE PROVIDE ANY FEEDBACK ON THE PROPOSED FUNDING MECHANISM.

Information revelation about true costs of production is one of the key benefits of Green Industrial Policies such as the proposed HPC. To that end it is to be applauded that applicants will be asked to nominate their required HPC level and will be ranked partly on this basis. This helps to ensure true cost revelation.

QUESTION 4.3: HOW SHOULD THE PROGRAM TREAT ADDITIONAL COMMONWEALTH OR STATE GOVERNMENT FUNDING OR OTHER SUPPORT FOR THE SAME PROJECT?

This should be treated in the same way as upside sales price variation and lead to proportional decreases in the HPC.

QUESTION 4.4: HOW SHOULD THE PROGRAM TREAT A PROJECT THAT HAS BEEN ABLE TO ATTRACT INTERNATIONAL GOVERNMENT INVESTMENT SUCH AS THAT UNDER H2GLOBAL? HOW CAN THE PROGRAM BEST LEVERAGE THIS SUPPORT?

This does not seem to be a grounds for differential treatment. If anything, subsidies or benefits from foreign sources should be treated as an upside as per the recommendation for domestic state subsidies above.

QUESTIONS 4.5: HOW SHOULD THE HPC CONSIDER INFLATION?

Cost revelation through the design of the program (as discussed above) should provide indication of any necessary adjustments.

QUESTION 5.1: OTHER INTERNATIONAL SCHEMES HAVE VARYING UPSIDE SHARING ARRANGEMENTS SUCH AS THE UK SCHEME WHICH REQUIRES PROJECTS TO SHARE 90% OF UPSIDE BACK TO THE GOVERNMENT. PLEASE PROVIDE YOUR VIEWS ON THE PROPOSED UPSIDE SHARING ARRANGEMENTS FOR THE PROGRAM, INCLUDING WITH REFERENCE TO THE METHODOLOGY FOR SHARING UPSIDE (A REDUCTION IN THE HPC).

Upside sharing ratios should be differentiated on the basis of changes in sales price and production cost. Upside sales price changes should be passed through to the Government at 100%. Sales prices are a result of global market movements and are largely outside the control of individual producers. However, in order to maintain incentives for cost-reduction, upside cost-saving should be passed through at 50% or less.

Upside sharing should recognise land tenure with respect to native title and Aboriginal land rights and therefore equitable sharing arrangements under land use agreements.

QUESTION 5.2: PLEASE PROVIDE ANY ADDITIONAL FEEDBACK ON THE PROPOSAL FOR RECIPIENTS TO REPAY GOVERNMENT SUPPORT IN THE EVENT THE MARKET PRICE INCREASES MATERIALLY DURING THE 10-YEAR PERIOD.

Yes, this is good policy design. It essentially amounts to a revenue contingent loan (in the same way HECS is an income-contingent loan for education). ANU have extensive expertise in design of contingent loans and would be happy to provide input on questions of detailed design.

First Nation-led (>50% partnership) Projects should be exempt from repaying Government support with respect to the Federal Government's commitment to the National Agreement for Closing the Gap.

QUESTION 9.1: PLEASE PROVIDE ANY FEEDBACK ON THE PROPOSED MERIT CRITERIA.

Given the complexity of the energy transition, and the role of hydrogen within it, there is benefit in sharing knowledge more broadly than just within industry. The Program's Knowledge Sharing Plan should include the provision for data sharing with the public service and the research community, particularly in the case of emissions intensity for grid connected projects.

However, one of the objectives for this project is to develop intellectual property (essentially patents and trade secrets) for a domestic hydrogen industry. It should be noted that the knowledge sharing and intellectual property may not easily coexist with each other. In order to retain technology competitiveness, private sectors tend to patent their technology, and hydrogen industry is no exception. Therefore, in order to achieve knowledge sharing so that the entire domestic hydrogen industry can develop, dedicated patent policies surrounding knowledge sharing need to be incorporated in the first place. For instance, as this is a federally funded project, expansive march-in right can be prescribed in the funding rules so that the funder under these funding agreements can require the fund receivers to grant non-exclusive license to other

entities in the industry with reasonable remuneration. For another instance, rules encouraging knowledge spill-over essentially in the practice of pharmaceutical industry, such as crown (government use), and compulsory licensing can also be prescribed as part of the terms and conditions in the funding rules.

QUESTION 9.2: HOW SHOULD MERIT CRITERIA BE STRUCTURED OR WEIGHTED TO ENSURE THE SUCCESS OF DELIVERY OF HYDROGEN FROM PROJECTS?

For example, by adding weighting to criteria that deal with:

- the capability and capacity of a project proponent to deliver its proposal
- the credibility and level of conditionality of the offtake agreement
- the extent to which the project has already undergone project planning processes including feasibility/FEED studies
- the identification of sustainable water sources
- other environmental aspects and community engagement, and/or
- the unique attributes of the project.

Stronger merit criteria and more stringent requirements are needed to ensure that government funding is being directed towards projects that follow best practice in terms of community engagement (including with Indigenous communities), First Nations' Native Title Rights, and environmental impacts (including water usage). This is particularly important for large scale hydrogen projects targeted in this scheme due to their large footprints. Failure to do so could lead to loss of public support for large-scale renewable projects in Australia; development of an industry that provides limited benefits and/or that is detrimental for Australians due to damage to fragile ecosystems and Aboriginal cultural heritage and sites of significance, increasing water scarcity and environmental degradation.

As suggested in response to Question 2.1, additional eligibility requirements could be included to address these issues. Alternatively, criteria should explicitly state that proponents should, at a minimum, demonstrate that:

- environmental impact assessments have/will be undertaken relevant to the Environmental Protection and Biodiversity Conservation Act and relevant jurisdiction Heritage Act, specific to the protection of Aboriginal sacred sites and areas of significance.
- Have undertaken due process regarding the status of land tenure on which the Project will be developed.
- Have free, prior and informed consent (FPIC) of native title holders relevant to the Federal Government's commitment to UNDRIP, including any means to enter into Indigenous Land Use Agreements.
- Have taken reasonable steps to ensure social licence to operate, relevant to having gained broader community support for the Project within the region.
- Have other means to secure water sources that do not rely on inland waters, including ground water systems, for example desalination or processing of waste water.
- Have already undergone project planning processes including feasibility/FEED studies in consultation with First Nations native title holders.

QUESTION 9.3: SHOULD AN APPLICANT BE REQUIRED TO HAVE AT LEAST A CONDITIONAL OFFTAKE ARRANGEMENT IN PLACE BEFORE APPLYING TO THE PROGRAM? WHAT STANDARD SHOULD BE APPLIED TO DETERMINE THE RELIABILITY OF SUCH AN ARRANGEMENT?

Such a requirement seems like an unnecessary administrative complication. Without an offtake agreement, no one is likely to get financing or risk their own equity to develop a project, therefore there is very little risk of subsidy flowing to hydrogen that no one wants to buy.

QUESTION 9.4: WHAT ADDITIONAL OUTCOMES SHOULD BE INCORPORATED INTO THE FORMAL MERIT CRITERIA FOR THE PROGRAM IN ORDER TO DELIVER BROADER BENEFITS?

For example:

- level of private investment leveraged
- number of jobs created
- number of apprentices supported; level/value of common user infrastructure supported
- level/value of social infrastructure supported
- level/value of local suppliers
- use of hydrogen towards existing or new manufacturing industries
- level of knowledge shared with the broader industry.

DCCEEW has a role to play in prioritizing government funding for projects that ensure benefits are maximised for native title holders in each area: cultural, social, economic and sequentially through time.

Separately, several examples of Indigenous Engagement Strategy requirements exist that may provide useful referents, including the framework provided in the *Electricity Infrastructure Investment Act 2020* (NSW) No. 44 under s. 4; and that of Northern Australia Infrastructure Facility Guideline, Number 5, whereby;

'A satisfactory Indigenous Engagement Strategy is one that provides appropriate opportunities for participation, procurement and employment which reflect the regional Indigenous community, commensurate with the nature, scope and location of the project, and the capacity and any existing operations of the proponent. The NAIF IES provides practical advice to proponents in the development of a satisfactory IES including how NAIF assesses the IES; the ongoing, reporting requirements; communications opportunities and details on the IES clause – providing incentives for performance.

Preference should be given to projects that:

- Involve significant First Nation partnerships.
- Show benefit to local communities and the region including jobs and training, and offsets to environmental and community benefit packages.
- Include procurement strategies that include First Nations people's employment, including for apprenticeships
- Have Indigenous Engagement Strategies, including Cultural Awareness strategies, such as training.
- Use local Aboriginal cultural advisors to mitigate industry risks impacting on environmental, social or cultural values.
- Partner with Australian research organisations, community groups, or NGOs to leverage learnings from project to help guide a just energy transition in Australia, and/or build capacity within communities to engage with renewable energy industries.

QUESTION 9.5: WHAT OTHER ASPECTS OF AN EXPORT-ORIENTED PROPOSAL SHOULD BE ASSESSED TO ENSURE THE PROGRAM FUNDS DEMONSTRATE TANGIBLE BENEFITS TO AUSTRALIANS?

Again legal advice should be sought on the implications of differential treatment of export and domestic-oriented projects.

Any differentiation should be based on clear understanding of what the program is trying to subsidize and why. For example export-oriented projects will generate just as many jobs in the hydrogen industry, and generate just as much "learning by doing". So neither of these "market failures" would justify different treatment of export-oriented projects.

QUESTION 9.6: HOW SHOULD EMISSIONS ABATEMENT CALCULATIONS CONSIDER THE DIFFERENT END USES OF HYDROGEN AND GREENFIELD VS BROWNFIELD FACILITIES?

Emissions abatement calculation has no clear relevance here. The GO scheme considers the absolute emissions associated with the production of the hydrogen. There is no counter-factual involved.

QUESTION 18: IS THERE ANY ADDITIONAL FEEDBACK YOU WOULD LIKE TO PROVIDE THAT HAS NOT BEEN COVERED IN THE ABOVE QUESTIONS?

i) Ensuring best practice

As written, there are no requirement for hydrogen project proponents to follow best practice principles for clean energy projects, as developed by the First Nations Clean Energy Network [9]. Additionally, there is no incentive for project proponents to seek to partner with native title holders or Aboriginal landowners under the Headstart program. Encouraging partnerships and best practice agreement making would align to the Federal Government's commitment to the National Agreement of Closing the Gap and is a missed opportunity.

Under the Commonwealth's National Energy Transformation Partnership the Australian Government has committed $5.5 million to develop the First Nations Clean Energy Strategy together with the First Nations Clean Energy Network and the National Indigenous Australians Agency. **The Hydrogen Headstart program should be ambitiously aligned with priority reforms developed under the First Nations Clean Energy Strategy.**

First Nations peoples have legal interests to greater than 57% of the Australia's land mass and therefore present a significant opportunity for partnerships in Hydrogen Projects. The Headstart Program commitment of $2 million over 2 years for First Nations engagement is a very small fraction of the funding set aside to benefit industry. This is not sufficient investment to enable First Nations groups to properly engage and develop any interest in Hydrogen projects in their communities. Government has a role in supporting capacity building within First Nations' communities and their institutions to enable their engagement with the hydrogen industry. Additional, long term funding arrangements need to be considered.
Federal intergovernmental approaches are already being used to secure First Nations peoples self-determination through economic empowerment. For example, the National Indigenous Australians Agency (NIAA) and DCCEEW are working in partnership to improve First Nations peoples access to inland waters with respect to meeting Target 87 b of the Closing the Gap. As such, the Albanese Government, through these two portfolios have allocated funding to deliver water ownership for First Nations for their social, cultural and economic benefit.
https://minister.dcceew.gov.au/plibersek/media-releases/delivering-water-ownership-first-nations)

A similar arrangement between NIAA and DCCEEW in relation to the emerging Hydrogen industry could both support First Nations economic participation at the same time as ensuring the industry is socially and sustainably developed without negatively impacting the environment, First Nations cultural and heritage values and the interests of the broader community.

iii) Building Capacity

First Nations' communities and their Institutions would benefit from a body that could develop and disseminate high-level information to ensure FPIC when engaging with hydrogen industry proponents. This could include:

- Helping to develop a baseline understanding of green hydrogen for Indigenous Australians.
- identifying opportunities to engage and/or receive benefit for First Nations' communities and people at each point in hydrogen value chain, not just production,
- developing an outcomes-based understanding of advantages and disadvantages of different models of engagement,
- understanding the risk profile of the industry in general, and
- First Nations undertaking risk assessments of any industry impact on their social, cultural and environmental value systems.
- provide a space for traditional owners to employ their knowledge for the ethical development of a large-scale hydrogen industry.

There is room to think creatively about what engagement could look like within industry as well as communities. **Government should enable development of new ways to engage by supporting the development of research capacity in this space**. Transformative approaches to benefit sharing should have an emphasis on traditional owners taking on their own risks. First Nations' groups should be thought of as business/equity partners and innovators, with a range of expertise in bio-cultural issues and cultural heritage. This includes developing an understanding between communities and industry of possible engagement models for benefits sharing and agreement making.

iii) ESG Reporting as a mechanism for monitoring impact and benefits

Projects receiving government funding should be required to include monitoring and evaluation frameworks to measure and report on environmental, social, and cultural impacts and benefits. This includes ensuring no impact on the environment and cultural heritage values, requirements around water extraction, and quantifying the benefits of this industry on local and regional communities.

A starting point for these considerations is to encourage ESG (environmental, social and governance) reporting by Projects receiving funding from Headstart, combined with the requirement of the transparency principle. ESG reporting will capture many of the non-financial impacts and benefits of the Australian hydrogen industry, such as water usage, biodiversity impact, impacts and benefits for communities, including First Nations peoples'. Secondly, with international-aligned reporting standards such as ESG, Australia's hydrogen exports will be better positioned to compete in the international market, beyond economic competitiveness. Thirdly, the information disclosed in these ESG reporting will provide essential evidence to evaluate the impacts and benefits the Projects have had. Nonetheless, a more context-specific standards needs to be developed to reflect the unique ESG risks that Australian hydrogen industry are facing.

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Associate Professor Fiona J. Beck

Co-Lead of the Renewable Fuels Group

Convenor of the Hydrogen Fuels Project, part of ANU's Zero Carbon Energy for the Asia Pacific

ANU School of Engineering, College of Engineering, Computing and Cybernetics

fiona.beck@anu.edu.au

The Australian National University

Canberra ACT 2600 Australia

www.anu.edu.au

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