



3 August 2023

Submission in response to the Hydrogen Headstart Consultation Paper

The Clean Energy Council ('the CEC') welcomes the opportunity to respond to the Australian Government's consultation paper on the new Hydrogen Headstart program.

The CEC is the peak body for the renewable energy industry in Australia. We represent and work with more than 1,000 businesses operating in Australia across solar, wind and hydro power, energy storage and renewable hydrogen.

We welcome the Australian Government's \$2 billion funding commitment to Hydrogen Headstart in the Federal Budget. The program is a critical step in scaling up Australia's green hydrogen sector and signalling our intentions to become a significant producer in this emerging global market over the longer-term. With the real prospect of a number of other regions stealing a march on Australia in activating their domestic green hydrogen sectors, speed will now be key for remaining a credible contender in the clean energy investment race.

We appreciate the recognition by the Government that the program represents a 'downpayment' on Australia's investment in its green hydrogen sector. It will be important for the Government to swiftly follow with details of the longer-term support program/mechanisms which can assist us to bring more projects to market and support the development of green industrial precincts.

The CEC's overarching comments are that the Department of Climate Change, Energy, Environment and Water ('the Department') and ARENA have put forward a balanced and pragmatic design for the hydrogen production credit within the funding constraints, setting an appropriate framework for the scheme without burdening an emerging sector with unnecessary constraints or obligations.

The main points of our submission are summarised below, and further detailed in the appendix:

1. As a principle, the development of Australia's green hydrogen sector must be aligned with establishing a net zero emissions energy mix for the domestic and global economy, and as such, we are pleased to see the Government focus the funding program on renewable hydrogen only.
2. We broadly support the current eligibility requirements, and make the following additional observations:
 - While we anticipated a higher minimum threshold for project size (currently 50 MW electrolyser capacity), we are comfortable that this is a reasonable starting point that could and should be increased over time through additional government funding rounds/policies.
 - Noting, as mentioned earlier, the need for speed, and the limited number of projects that Hydrogen Headstart will be able to support from a large field of potential candidates, we would be supportive of the Australian Government providing more explicit guidance in relation to its expectations of project readiness/maturity to ensure that proponents can more easily determine whether they should invest the time to take part in this resource-intensive process.

3. We note and welcome the fact that the paper has avoided placing a range of blanket constraints on projects, for example in requiring time-matching or additionality, which we believe are matters for projects to assess and determine themselves based on the needs of their intended end markets/customers.
4. We are pleased to see that the program allows for participation by projects with export offtakes (as well as domestic use cases), noting that international markets represent a highly prospective source of demand, which Australia should leverage to accelerate the development of a domestic green hydrogen production base.
5. An important feature of the scheme is the proposed 10-year funding term. We note that in the context of long-life infrastructure assets (20+ years), which will be subject to long-term debt and financing agreements, a 10-year revenue stream is on the low end of workable timeframes. Payments over a longer timeframe (eg. 15 years) would likely assist projects to access more favourable lending terms.
6. Regarding the proposed 50/50 upside sharing, while we consider it fair and reasonable that the government would expect to share in/claw back 'super' profits, we note that the downside risks associated with project costs and offtake prices will rest solely with the proponent. The Government should therefore accept that proponents will need to account for this downside risk when nominating their hydrogen production credit values, in order to enable them to protect the financial sustainability of their projects. The long-term financial health of projects will be vital to the success of the Headstart projects and the Australia's fledgling green hydrogen sector more broadly.
7. Finally, we note that the hydrogen production credit received by proponents should be treated as a non-tax assessable payment, in order to avoid the need for proponents to ultimately return a portion of the funds received to Government itself.

Overall, the CEC considers that the Headstart program represents an important first step in getting Australia's green hydrogen industry moving. We encourage the Government to progress it as efficiently as possible, and quickly provide further detail of the proposed longer-term policy and support mechanisms for those projects which are either not ready to participate in the coming months, or which are unsuccessful in securing Headstart funding in the year ahead.

Please find responses to the consultation paper questions in the appendix that follows.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Anna Freeman', written in a cursive style.

Anna Freeman
Policy Director – Decarbonisation

Appendix – Response to Hydrogen Headstart consultation questions

Q	Question	CEC response
Eligibility requirements		
2.1	<i>Please provide any feedback on the proposed eligibility requirements. Are there any other eligibility requirements the Program should consider?</i>	<p>The CEC supports the proposed eligibility criteria as being broad, balanced and pragmatic. We support the Government's exclusion of non-renewable hydrogen projects.</p> <p>Noting that there are tens of projects under development in Australia today, the CEC would be supportive of the Australian Government placing more explicit guidance in relation to its expectations of project readiness/maturity to ensure that proponents can more easily determine whether they are likely to meet the Government's preferences in relation to operating timeframes, and whether they should therefore invest the time to take part in this resource-intensive process.</p>
2.2	<i>Is a minimum deployment size of 50MW appropriate for the Program?</i>	<p>Hydrogen Headstart should be targeted at supporting large-scale green hydrogen projects. While the CEC anticipated a higher minimum threshold for project size than the proposed 50 MW electrolyser capacity, we are comfortable that this threshold is a reasonable starting point that can and should be increased over time in the delivery of additional government funding rounds/mechanisms.</p>
2.3	<i>Are there benefits to considering a suite of project sizes, with both large and smaller scale projects (for example less than 50MW) being eligible?</i>	<p>The CEC favours the Hydrogen Headstart program remaining focused on the objective of moving Australian green hydrogen production rapidly down the cost curve to ensure that we can become globally competitive. This necessitates scale. If the Government wishes to provide support to smaller scale projects, this could be considered as a distinct and separate program.</p>
2.4	<i>Are there benefits to considering projects that may only have scale if aggregated across multiple, but related sites?</i>	<p>The commercial model described in this question is unlikely to achieve the cost efficiencies required to compete with single, large-scale projects, and therefore are not just misaligned with the objective of this program, but are also less likely to be competitive in the tendering process.</p>

Q	Question	CEC response
2.5	<p><i>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.</i></p>	<p>The CEC does not support the Australian Government placing additionality and time-matching requirements on the green hydrogen sector at this early stage of its development. These requirements can add considerable cost and complexity to projects, and we consider that it should be a matter for proponents to assess whether they need or wish to adhere to these standards based on the requirements of their intended customer markets. For project credibility purposes however, we do consider it to be important that the renewable energy generation source is located on the same grid as that of the electrolyser.</p>
2.6	<p><i>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?</i></p>	<p>The Headstart program should favour those use cases for which direct electrification or other more energy efficient processes aren't readily available. This would therefore exclude hydrogen blending for residential and light commercial uses on gas distribution networks, but would not exclude blending for high-temperature industrial heat applications.</p>
2.7	<p><i>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 offtake may support the development of an Australian hydrogen industry or other additional benefits to Australia?</i></p>	<p>In this early stage of industry development in which sources of domestic demand are scarce, and the planning of green industrial zones and infrastructure is in its infancy, Australia should not exclude green hydrogen exports from receiving government support.</p>
2.8	<p><i>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?</i></p>	<p>The CEC considers it appropriate that projects participating in Headstart are subject to requirements for emissions intensity reporting.</p> <p>We do not deem that an emissions intensity <i>threshold</i> is necessary for the program, however, the program should take the forecast emissions intensity into account as part of its merit criteria.</p>

Q	Question	CEC response
Proposed funding mechanism		
4.1	<i>Please provide any feedback on the proposed funding mechanism.</i>	<p>Deloitte found in its 2023 analysis¹ of a range of policy support mechanisms that production credits were more efficient at incentivising additional hydrogen production than capital grants or investment tax credits.</p> <p>They also offer the advantage to governments that proponents are only paid upon delivery of the product.</p> <p>It must be recognised however that the proposed model does carry greater commercial risk for proponents in requiring them to specify a specific credit value per kilogram before offtake contracts or equipment orders have been signed, and within an inflationary environment in which projects are finding it challenging to obtain firm pricing estimates. In a drawn out tendering process, these risks are exacerbated.</p> <p>A strategy for assisting proponents to manage these financial risks through the EOI process could be to allow them to put forward a funding range with the indicative credit value range and production volumes. This could be further refined in the full application stage, and ultimately settled on at the financial commitment stage.</p> <p>An important feature of the scheme is the proposed 10-year funding term. We note that in the context of long-life infrastructure assets (20+ years), which will be subject to long-term debt and financing agreements, a 10-year revenue stream is on the low end of workable timeframes. Payments over a longer timeframe (eg. 15 years) would likely assist projects to access more favourable lending terms.</p> <p>Regarding the proposed 50/50 upside sharing, while we consider it fair and reasonable that the government would expect to share in/claw back 'super' profits (which are beyond the requirements for the healthy profitability of a project), we note that the downside risks associated with project costs and offtake prices will rest solely with the proponent. The Government should therefore be prepared for proponents to account for this downside risk when nominating their hydrogen production credit values, in order to enable them to protect the financial sustainability of their projects.</p>

¹ [Australia's Hydrogen Tipping Point | Deloitte Australia](#)

Q	Question	CEC response
4.3	<i>How should the Program treat additional Commonwealth or State Government funding or other support for the same project?</i>	Renewable hydrogen projects are currently uneconomic, and it is therefore highly likely that some of the projects that would be at a sufficiently advanced stage to compete in the Hydrogen Headstart program may have already received some support (this could be in the form of funding for Front-end Engineering and Design studies, ARENA capital grants, funding commitments through the Federal Government's Hydrogen Hubs program, or state/territory funding). This upfront support is complementary to the operational credit that successful Headstart projects will attract, and those who have received additional support should not be penalised for it.
4.4	<i>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?</i>	Support from the Hydrogen Headstart program is likely to give Australian projects a greater chance of success in international programs such as H2Global, and may also enable the Australian Government to get more bang for its buck through its own schemes. As such, we would encourage the Government to allow proponents to stack funding support from domestic and international sources.
4.5	<i>How should the HPC consider inflation?</i>	High inflation presents a significant risk to project cost estimates, and for this reason, the CEC suggests that the Government considers allowing projects to submit bids which reflect a credible funding range, which could be refined over the course of the tender period. We also recommend that the hydrogen production credit reflects real, rather than nominal monetary values, noting that electricity power purchase agreements and debt costs will often be linked to inflation.
Proposed upside sharing		
5.1	<i>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 (50/50, above a materiality threshold) for the Program, including with reference to</i>	On the basis that most projects will need to enter into long-term offtake contracts for a premium, high-priced commodity, it is difficult to imagine scenarios in which super profits may be realised by proponents. However, where such circumstances arise, it is appropriate that there is a 50/50 upside sharing mechanism in place. This equal profit sharing (as opposed to the unbalanced strategy by the UK) gives the proponent equal incentive to negotiate a higher sales

	<i>the methodology for sharing upside (a reduction in the HPC).</i>	<p>price or reduce operating costs where these opportunities exist.</p> <p>While we consider it reasonable that the government would expect to share in/claw back 'super' profits (which are beyond the requirements for the healthy profitability of a project), we note that the downside risks associated with project costs and offtake prices will rest solely with the proponent. The Government should therefore be prepared for proponents to account for this downside risk when nominating their hydrogen production credit values, in order to enable them to protect the financial sustainability of their projects, and the materiality threshold must be set at a reasonable level which does not preclude reasonable upside gains. The long-term financial health of projects will be vital to the success of the Headstart projects and the Australia's fledgling green hydrogen sector more broadly.</p>
Volume risk support		
6.1	<i>Do you think the Program should include volume risk support? If so, why?</i>	<p>The CEC supports the proposal for volume risk sharing, noting that the hydrogen production credit payments are tied to production/offtake volumes.</p> <p>It would be prudent to develop further detail regarding the circumstances in which this support would be triggered (ie. where offtake customers reduce their demand) and where it may be excluded.</p>
Payment frequency		
7.1	<i>Please provide any feedback on the proposed payment frequency and term.</i>	<p>The CEC supports the proposal for payments to be made quarterly in arrears, commencing on an agreed start date linked to the commercial operations date.</p> <p>Our members have overwhelmingly indicated however, that a 10-year term is insufficient to underpin the bankability of these long-life, capital-intensive production plants, and the CEC recommends that the Government extends the term to 15-years.</p> <p>Were the Government to maintain this 10-year term, then this would necessitate higher production credit values over a shorter timeframe in order to balance the risk.</p>

Q	Question	CEC response
Merit criteria		
9.1	<i>Please provide any feedback on the proposed merit criteria.</i>	<p>The CEC is broadly comfortable with the proposed merit criteria.</p> <p>There is likely to be a range of project use cases and commercial models put forward, which create benefits in different ways.</p> <p>It is therefore important that the merit criteria assess the benefits of the project on a holistic basis, and we are pleased to see that the proposed criteria asks proponents to demonstrate the breadth, depth and quality of their project plans, while avoiding stipulating stringent standards/constraints in any single area.</p> <p>We do note however that the proponents who will be in a position to nominate a production credit/credit range with a degree of confidence will need to be at an advanced stage of project planning.</p> <p>If a primary objective of the scheme is to get large-scale projects away at speed, then it should make objectives for project readiness/maturity explicit in either the merit or eligibility criteria.</p>
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.)	<p>The weighting criteria should reflect the Government's priorities for the program, to support at least two large-scale renewable hydrogen projects to get to market as soon as possible, establishing the foundations of a green hydrogen sector in Australia.</p> <p>It will be vital that proponents demonstrate the necessary technical capability, financial capacity and a commitment to the responsible development and operation of the plant (social, environmental and economic) within their local communities.</p>

Q	Question	CEC response
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?	<p>It is difficult to see how a project will nominate a production credit value/range with confidence without being at an advanced stage of offtake discussions/negotiations.</p> <p>As per our earlier comments, should an advanced degree of project readiness be expected, this should be made explicit within the eligibility or merit criteria, in order to avoid proponents with longer lead times from investing substantial time and resources in participating in this Headstart round.</p>
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.)	<p>The CEC considers that the proposed Merit Criterion C is broadly appropriate, and enables proponents to demonstrate the breadth, depth and quality of their project planning across a range of economic, social and environmental sustainability criteria.</p> <p>Knowledge sharing (Merit Criterion E) is a vital aspect of this program, and the CEC would like to see commitments to knowledge sharing in a timely fashion following major project milestones, so that subsequent projects can swiftly benefit from the learnings of pioneering projects.</p>
9.5	What other aspects of an export-oriented proposal should be assessed to ensure the Program funds demonstrate tangible benefits to Australians?	<p>The CEC considers that the current criteria (which include employment opportunities, use of local supply chains, contribution to skills and training, contribution to social infrastructure and inclusion of First Nations) are broad enough for export-oriented programs to demonstrate their local project benefits.</p>
9.6	How should emissions abatement calculations consider the different end uses of hydrogen and greenfield vs brownfield facilities?	<p>We note that Merit Criterion A intends to ask proponents to stipulate the implied cost per tonne of CO₂ abated.</p> <p>While we agree that provision of such information would be useful in demonstrating the relative emissions reduction benefits of the project, it may be practically difficult to implement in some cases.</p> <p>For example, a proponent who aims to sell green ammonia as a clean maritime fuel, would be required to have access to data regarding the emissions intensity of the fuel/technology that is being displaced. This information may not be readily available to the proponent.</p>

Q	Question	CEC response
Proposed timetable		
15.1	Does the timing proposed for the Program outlined below appear appropriate? If not, please note in your view an appropriate alternative.	<p>The CEC recommends that Hydrogen Headstart should aim to get at least two large-scale green hydrogen projects up and running as soon as possible, as a way of demonstrating that Australia means business, and accelerating our learning rate and cost reductions.</p> <p>On that basis, we suggest that the Government is explicit within the eligibility or merit criteria that projects should be at an advanced stage of project development, and that the EOI and Full Application timelines are accelerated to the extent that is possible.</p> <p>Such a strategy however, must be matched with early confirmation by the Government as to the proposed longer-term policies/support mechanisms for those projects which are either not ready to participate in the coming six months, or which are unsuccessful in securing Headstart funding in the year ahead.</p>