



# Hydrogen Headstart Information Webinar

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October 2023

Australian Renewable Energy Agency



# Agenda

- 1. Background**
2. Overview of consultation process & feedback
3. Overview of Guidelines
4. Overview of Australian Government Hydrogen Initiatives
5. Q&A
6. Next steps

## INVESTED BY ARENA

**\$2.31B**



## PROJECTS

**672**



## TOTAL PROJECT VALUE

**\$9.93B**



## INVESTMENT LEVERAGE

**\$1:\$3.29**



## INVESTMENT BY TECHNOLOGY

BIOENERGY



**\$131M**

GEOTHERMAL



**\$42M**

GRID INTEGRATION

**\$404M**



HYBRID

**\$109M**



HYDROGEN

**\$273M**



OCEAN

**\$44M**



SOLAR PV

**\$827M**



SOLAR THERMAL

**\$252M**



STORAGE - BATTERIES/PHEVS

**\$230M**

## INVESTMENT BY STATE

**NT** PROJECTS  
8  
INVESTED  
\$36M  
VALUE  
\$79M

**WA** PROJECTS  
43  
INVESTED  
\$253M  
VALUE  
\$1.97B

**SA** PROJECTS  
58  
INVESTED  
\$214M  
VALUE  
\$844M

**TAS** PROJECTS  
21  
INVESTED  
\$40M  
VALUE  
\$99M

**VIC** PROJECTS  
122  
INVESTED  
\$279M  
VALUE  
\$657M

**QLD** PROJECTS  
71  
INVESTED  
\$338M  
VALUE  
\$2.33B

**NSW** PROJECTS  
275  
INVESTED  
\$1.07B\*  
VALUE  
\$3.71B

**ACT** PROJECTS  
74  
INVESTED  
\$81M  
VALUE  
\$233M

## INVESTMENT LEVERAGE ALONG THE INNOVATION CHAIN

STUDY

**\$1:\$2.07**



R&D

**\$1:\$1.77**



DEMONSTRATION

**\$1:\$1.87**



DEPLOYMENT

**\$1:\$5.56**



\* Includes \$567 million contributed to projects inherited by ARENA in 2012.

# Investment Priorities



**OPTIMISE THE  
TRANSITION TO  
RENEWABLE  
ELECTRICITY**



**COMMERCIALISE  
RENEWABLE  
HYDROGEN**



**SUPPORT THE  
TRANSITION TO  
LOW EMISSIONS  
METALS**



**DECARBONISE  
TRANSPORT**

# ARENA's Hydrogen Journey

46 projects, \$308m

- 16 R&D Projects
- 14 Studies
- 11 Demonstration Projects
- 5 Large Deployment Projects
- *a full pipeline of new project applications.*



## Background to Hydrogen Headstart

In May 2023, the Australian Government announced it would **invest up to \$2 billion in the new Hydrogen Headstart Program** to fund **large-scale hydrogen production** projects to accelerate development of Australia's hydrogen industry, catalyse clean energy industries and help Australia connect to new global hydrogen supply chains to take advantage of hydrogen's immense jobs and investment potential.

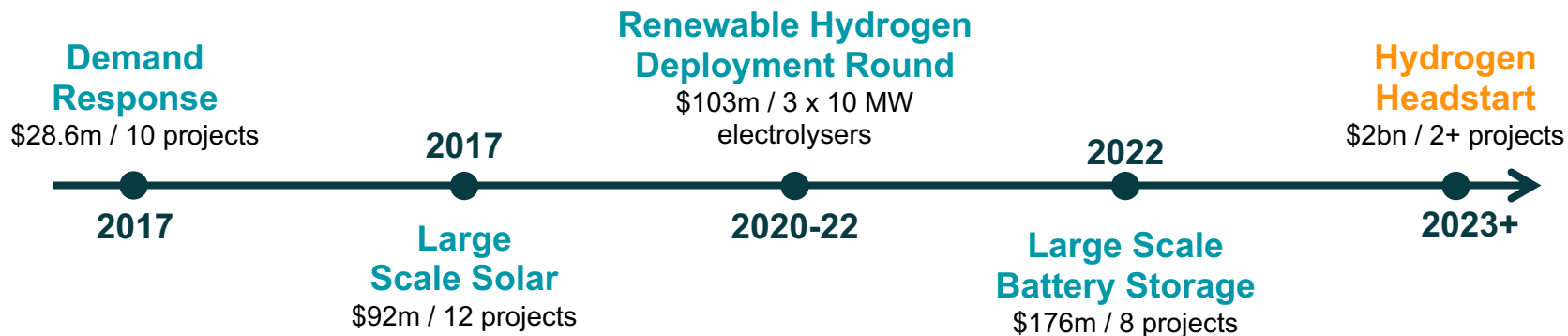
DCCEEW and ARENA undertook a **design and consultation process for the Program** in July 2023. It considered feedback from a wide range of stakeholders, including industry.

**The Program guidelines have been developed based on the consultation, industry feedback and alignment to the policy objectives.**

These Guidelines detail the **competitive process that will be used by ARENA to select large Australian-based projects** producing either hydrogen or derivative products made from hydrogen produced from renewable energy



# ARENA's proven process



## Consultation overview

DCCEEW and ARENA worked collaboratively on the consultation and design of the Hydrogen Headstart program:



*Timeline not to scale*



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## Key consultation feedback (1/2)

Industry have welcomed the Program and indicated they are broadly happy with the proposed design. Several useful recommendations were made and have been reflected in the final Guidelines. Key findings included:

<b>Project scale</b>	Some suggested minimum scale be increased from 50MW to 100MW, but others noted 50MW (single site) is significant scale-up from today.
<b>Additionality of renewables</b>	Many agreed new-build or time-matched renewables would be too burdensome for early projects. Some noted the EU has relaxed their similar requirements.
<b>Eligible end uses</b>	General agreement that all domestic & export end uses should remain eligible, particularly as projects may look to diversify offtake. Many noted export focus projects should be able to demonstrate value for money and value add for Australia through merit criteria.
<b>Upside sharing</b>	50:50 proposed sharing largely agreed with, in recognition of significant investment made by Government. Key concern related to when mechanism would be triggered, considering market volatility & debt repayment requirements
<b>Volume risk support</b>	Majority viewed as not necessary, given requirements for strong offtake agreements.

## Key consultation feedback (2/2)

Industry have welcomed the Program and indicated they are broadly happy with the proposed design. Several useful recommendations were made and have been reflected in the final Guidelines. Key findings included:

### Payments

Key feedback noted flexibility on commissioning dates would be required to not disadvantage later stage projects. Generally quarterly payments agreed with, with some noting payments should be made on expected production with annual reconciliation to allow for seasonal variation and reduce reporting burden.

### Merit criteria

Key feedback noted criteria should ensure sufficient focus on deliverability, credibility and risk to ensure projects are actually seen through to completion. Many also agreed criteria on First Nations Engagement should be strengthened to emphasis meaningful engagement with First Nations Communities.

### Timeline

Most suggested EOI should be a short, efficient process, with small number invited to Full Application, while a window of six months would be preferable to the proposed 12 weeks

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## Disclaimer

The following slides are intended to provide an overview of the Hydrogen Headstart Guidelines for information purposes only.

Applicants should refer to the detailed Guidelines available on the Program website for full details regarding the Program. Accessible via: <https://arena.gov.au/funding/hydrogen-headstart>

In the event of any inconsistency between this presentation and the Guidelines, the Guidelines will prevail.

## Program Objectives



Produce **renewable hydrogen at scale in Australia**, facilitating an **accelerated pathway to the technical and commercial viability** of renewable hydrogen production and use.



Support **domestic decarbonisation, build industry capability** and provide for **new economic opportunities** in our manufacturing and export industries.



Provide **price discovery and transparency** in relation to the current and projected economics for renewable hydrogen (and its derivative products) technologies.



**Reduce barriers for future deployments** through developing construction expertise, skilled labour, intellectual property, and attracting key equipment manufacturers and private sector capital (debt, equity and offtake).



Facilitate **knowledge sharing** throughout industry to assist with maturing the Australian hydrogen industry.

## Eligibility criteria (1/2)

<b>A</b> <b>Eligible applicant</b>	<ul style="list-style-type: none"> <li>• Hold an ABN</li> <li>• State or Territory of Aus (incl. State/Territory non-corporate entities/statutory authorities), OR</li> <li>• Be either:             <ul style="list-style-type: none"> <li>• Australian entity incorporated under the Corporations Act 2001 (Cth); or</li> <li>• Australian State or Territory owned corporation, or a subsidiary of an Australian State or Territory owned corporation.</li> </ul> </li> </ul>
<b>B</b> <b>Eligible project</b>	<ul style="list-style-type: none"> <li>• <i>See over page</i></li> </ul>
<b>C</b> <b>Take place in Aus</b>	<ul style="list-style-type: none"> <li>• Demonstrate H2 production will take place in Australia</li> </ul>
<b>D</b> <b>Intellectual property</b>	<ul style="list-style-type: none"> <li>• Warrant ownership of, access to, or beneficial use of IP, incl. moral rights needed to carry out Project</li> </ul>
<b>E</b> <b>Workplace gender equality</b>	<ul style="list-style-type: none"> <li>• Not be named as organisation that has not complied with <i>Workplace Gender Equality Act</i></li> </ul>
<b>F</b> <b>Modern Slavery</b>	<ul style="list-style-type: none"> <li>• Agree to take reasonable steps to identify, assess and address risks of modern slavery practices in its operations and supply chains used to deliver the Project</li> <li>• Comply with &amp; assist ARENA to comply with, required obligations under <i>Modern Slavery Act</i></li> </ul>
<b>G</b> <b>Knowledge sharing</b>	<ul style="list-style-type: none"> <li>• Agree to publicly share sufficient knowledge &amp; info about, &amp; resulting from, the Project</li> </ul>
<b>H</b> <b>Other requirements</b>	<ul style="list-style-type: none"> <li>• <i>See Guidelines for details</i></li> </ul>



## Eligibility criteria (2/2): **B** Eligible project

### Facility

- New deployment of H2 production facility producing H2 from electrolysis
- May utilise existing energy generation or downstream infrastructure
- May include H2 storage, transport & conversion which may be at same or different location

### Facility size

- 50MW minimum single site deployment, measured as nameplate capacity of electrolysis deployment
- Distributed production across multiple geographically diverse sites (e.g., 5 x 10MW production facilities along a refuelling highway) are not eligible.

### Renewable energy

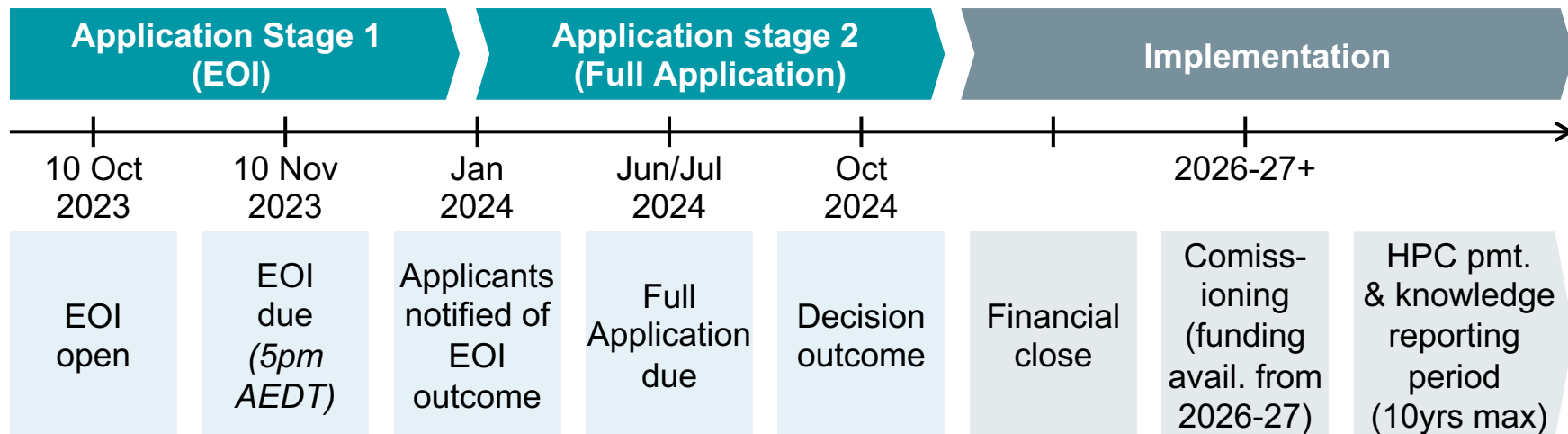
- Electrolysis powered by 100% renewable energy
- Electricity must be matched with surrender of eligible RECs, or input directly from behind the meter renewable generation for which no RECs were created
  - Eligible RECs include LGCs or other units accepted in GO Scheme, created within 12 months of H2 production. Can be sourced through PPAs or other arrangements
- H2 produced using coal gasification or SMR with CCS will not be eligible
- Compliance with proposed GO Scheme to verify & ensure alignment to the above

### End use

- All end use of H2 and H2 derivative products eligible, including where exported.

# Timeline

*Timeline not to scale*



## Merit criteria

Applications will be assessed for overall value for money and risk against the following Merit Criteria, which are equally weighted:

### Merit Criterion A

Contribution to the Program Objectives

### Merit Criterion B

Applicant Capability & Capacity

### Merit Criterion C

Project Design & Methodology

### Merit Criterion D

Financial Viability & Co-Funding Commitment

### Merit Criterion E

Knowledge Sharing

## Merit Criterion A: Contribution to Program Objectives

**Assessment of this Merit Criterion includes consideration of the following:**

- The extent of the Project's **contribution to one or more of the Program Objectives**.
- In addition to the Project's contribution to the Program Objectives above, the following will also be considered:
  - the potential for the Project to provide **benefit to the broader economy and community beyond the economic return to the Project**, including employment opportunities, business for local suppliers and First Nations employment opportunities.
  - the potential for the Project and its application to be **replicated and/or provide a clear path for further cost reduction** of renewable hydrogen production over a specified timeframe and production volumes.
  - the potential of the Project to **lead to further decarbonisation, manufacturing or value add opportunities** in Australia or international export opportunities.

## Merit Criterion B: Applicant Capability and Capacity

**Assessment of this Merit Criterion includes consideration of the following:**

- the demonstrated level of **experience and expertise** of the Applicant and/or Applicant's consortium, including experience in delivering projects of a similar nature, scale or value.
- the appropriateness of the proposed **allocation of roles and responsibilities** between the Applicant, the Applicant's consortium, and Project Partners.
- what and how proposed resources will be made available for the duration of the Project to **ensure the proposed Project is delivered on time and within budget.**
- the **quality and completeness of Project documentation and agreements** provided, as well as the extent to which these provide evidence of the Applicant and its consortium's **capability and readiness to implement the Project.**
- the alignment of the Project with the **Applicant's broader hydrogen strategy.**
- the alignment with and ambition of the **Applicant's broader decarbonisation plans.**

## Merit Criterion C: Project Design and Methodology

**Assessment of this Merit Criterion includes consideration of the following:**

- a **well-articulated Project plan** for the Project, including how well designed and planned the Project is.
- the **relative status of key Project workstreams and readiness of the Project to be delivered.**
- the **extent to which First Nations communities have been, and will continue to be, engaged or involved** with the negotiations, decision making and benefit sharing of the Project.
- the credibility of the plan to **move the key Project workstreams through to Project completion** within the proposed Project timeline.
- **project risk** in terms of the likely success of the Project and the achievement of intended outcomes that align with the Program Objectives.
- **compliance with any other requirements** outlined in Part 8 and Part 9 of the Guidelines.

## Merit Criterion D: Financial Viability and Co-funding Commitment

**Assessment of this Merit Criterion includes consideration of the following:**

- the **amount of the proposed Production Credit**, expressed in the format outlined in Appendix A.
- the **total funding request** for a Project, and the **justification** for the amount of funding requested.
- the **cost competitiveness and efficiency** of the Project with reference to the metrics outlined in the Guidelines.
- **deliverability of the financing plan.**
- **level of conditionality of the funding commitments** for equity and debt, including assessment of the bankability of major Project contracts.
- **level of conditionality of the electricity supply arrangements.**
- **level of conditionality and bankability of EPC and OEM** arrangements.
- **creditworthiness of proposed hydrogen offtaker/s** and level of conditionality of agreements.
- the **risk of cost overruns.**
- the **financial strength and capability of the Applicant and/or Applicant's consortium** to deliver a large-scale hydrogen project, including the ability to manage cost overruns.
- the **quality of the financial model and assumptions** for the Project.



## Merit Criterion E: Knowledge Sharing

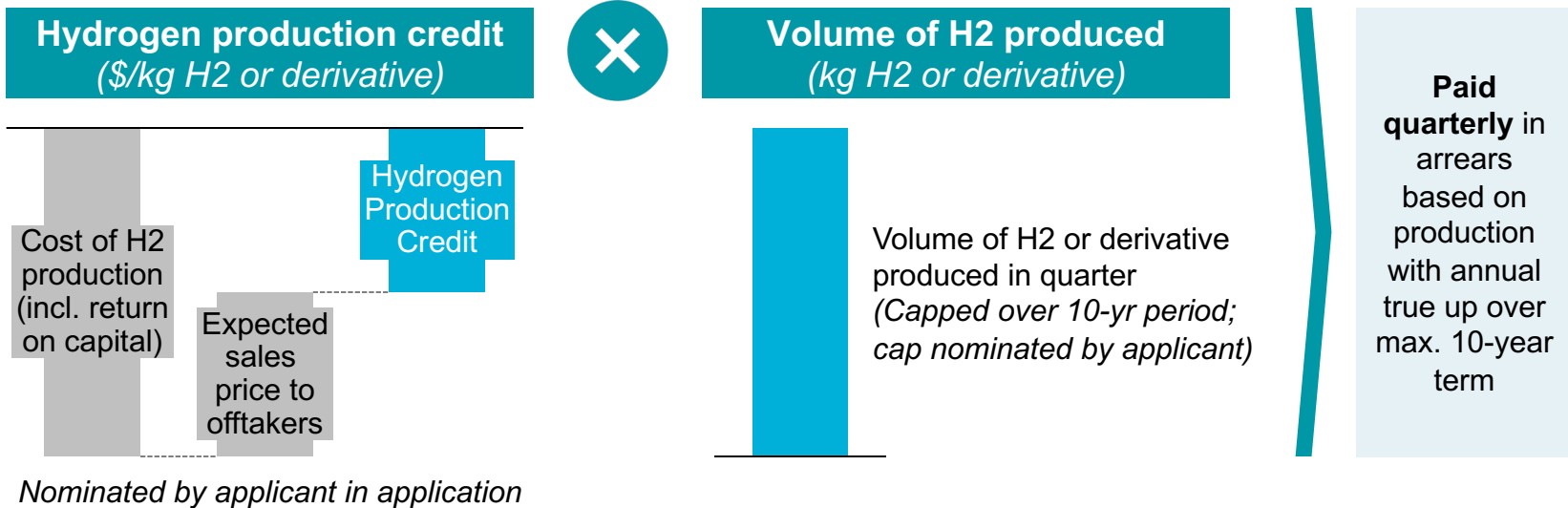
**Assessment of this Merit Criterion includes consideration of the following:**

- the extent to which the **proposed Knowledge Sharing Plan for the Project demonstrates** the following:
  - how well the knowledge generated will **contribute to the objectives of the Program.**
  - the extent to which the Applicant is **willing to publicly share the deliverables** in the plan.
  - the extent to which **additional valuable knowledge may be generated and shared** from the Project.
  - the extent to which the knowledge generated **supports the development of new markets and supply chains.**

**ARENA expects Applicants to have reviewed the Knowledge Sharing Plan template**, which is available on ARENA's webpage.

Note, it is not necessary to provide a response to the Knowledge Sharing Plan template at the EOI stage, however, Applicants may wish to provide detail on the value of knowledge and information created by the Project and how that knowledge and information will be shared.

## Production credit structure & calculation



## Upside sharing & recoupment

### Upside sharing

- As part of the annual reconciliation, recipients will also be required to **report on information around the achieved production cost and offtakes price(s) in the year**
- To the extent material upside has occurred, **subsequent quarterly payments will be reduced until 50% of the upside has been shared**

### Recoupment

- If a **'windfall gain' event** is experienced, recipients **may be required to pay back an amount of the Production Credit** received in previous years
- Amount repaid will be determined at the time between the Recipient and ARENA, considering difference between expected and realised returns, and any previous upside shared.

# Expression of Interest (EOI): Key Requirements

**Ensure application is submitted by 5pm AEDT, Friday 10 November.**

**Key requirements are outlined in Appendix B including but not limited to:**

- Project Plan (limited to 30 pages)
- Supporting evidence and attachments to include:
  - MOU or term sheets with third party for offtake or hydrogen use.
  - MOU or term sheets for renewable energy supply including pricing, term and key conditions
  - MOU or term sheets for EPC and OEM arrangements including delivery timelines.
  - Evidence of Project development work undertaken to date. At the EOI stage this is expected to include a completed Feasibility study to support AACE Class 4 cost estimates.
  - Financial model meeting the specifications below.
  - Completed Project Budget and Sources and Uses spreadsheet, in the form of the template provided by ARENA (available on the Program webpage). This should include (to the extent available) details of proposed financiers.

## Full Application stage

**Following the EOI assessment phase, shortlisted applicants will receive an invitation to the Full Application stage that includes further details on:**

- Confirmation of Information Requirements at the Full Application stage
- Confirmation on how ARENA will work with Applicants at the Full Application stage
- Feedback to address at the Full Application stage
- Further information on the Application Development Cost Rebate
- Draft ARENA Funding Agreement Term Sheet

## Development Cost Rebate & Bid Bonds

### Application Development Cost Rebate

- Applicants invited to Full Application that are **unsuccessful** in receiving an offer of funding **may be eligible to claim up to 50% of external development costs** incurred during Full Application period from ARENA, subject to eligibility
- Designed to provide:
  - **Incentive for Projects to develop materials** during period between invitation to Full Application stage & Full Application decision outcome
  - A range of **advanced development Projects**

### Bid Bonds

- Successful Recipients **required to provide ARENA with a bid bond** when Offer to Negotiate is issued
- Offer to Negotiate will provide that ARENA may make a demand under the Bid Bonds if:
  - Applicant withdraws from negotiations in respect of the Funding Agreement
  - Applicant fails to meet Financial Close on or before the date for satisfaction of conditions precedent under the Funding Agreement
- Bid Bond amount will be confirmed by ARENA in Offer to Negotiate

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# Australian government hydrogen initiatives

## Other initiatives to develop Australia's hydrogen industry include:

- Review of the National Hydrogen Strategy
- Guarantee of Origin scheme
- Regional Hydrogen Hubs program
- Reviewing Australia's regulatory frameworks



## Overview of GO consultation

### **The Guarantee of Origin scheme will enable:**

- Consumers to substantiate emissions claims associated with the products and energy they use
- Producers to have the low-emissions attribute of their outputs valued by markets
- Australian producers to access international markets for low-emissions products

## Background to the GO scheme

- A voluntary, government-led certification of emissions to support trade in clean products by issuing
  - **Product GOs** – a certificate issued using an international-aligned emissions accounting framework for products
  - **REGOs** – a certificate for renewable electricity generated in Australia building on the Renewable Energy Target framework
- A public register of product emissions information
- Starts with hydrogen and its derivatives such as ammonia, expands to other clean products i.e. green metals, biofuels



## Guarantee of Origin consultation package

- ❏ **Australia's Guarantee of Origin Scheme Design Paper** – what participants can expect from the GO Scheme. **Submissions close 24 October**
- ❏ **Renewable Electricity GO Approach Paper** – updates on the development of the REGO scheme. **Submissions close 24 October**
- ❏ **Emissions Accounting Approach Paper** – how emissions will be estimated for Product GO Certificates **Submissions close 14 November**
- ❏ **Product expansion and prioritisation survey.** **Submissions close 14 November**

# Guarantee of Origin consultation – The Scheme Design paper

- **Scheme enrolment and registration**
  - Enrolment of participants - Prospective participants provide identifying information + fit and proper person check.
  - Profile registration - including production, post-production, consumption (upfront reporting).
  - Assessment process
- **GO Certificate Lifecycle**
  - Certificate creations
  - Certificate consumption – process of claiming the attributes of a product
  - Annual reconciliation checks and error corrections
- **Data sharing provisions**
- **Scheme expansion**

# Guarantee of Origin consultation – Emissions Accounting Approach

- **Emissions accounting scope** – defining the system boundary - the processes and emissions that are covered by the scheme
- **Emissions intensity** – how emissions intensity is calculated in the scheme, including losses
- **Estimating emissions** from various sources, how emissions are allocated to co-products, accounting for CCS, accounting for transport and storage emissions
- **Measurement methods and data sources**

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## Slido Q&A



### Any questions?

*Please submit via the 'Q&A' section on Slido*



**Go to:** [slido.com](https://slido.com)

**Event code:** h2headstart





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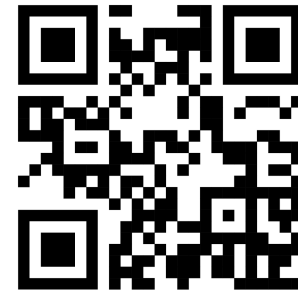
## Next steps



Review **Guidelines** for application information requirements, and review **FAQ document**  
Both accessible at: <https://arena.gov.au/funding/hydrogen-headstart/>

Send **queries** to: [hydrogenheadstart@arena.gov.au](mailto:hydrogenheadstart@arena.gov.au)

**Submit EOI by 10 November 5pm AEDT** on ARENANet  
Accessible at: <https://arena.gov.au/funding/hydrogen-headstart/>



**Further information:**

<https://arena.gov.au/funding/hydrogen-headstart/>