# High Emitting Industries Funding 2022–2024

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#### **Acknowledgement of Country**

We acknowledge that today we meet on many Aboriginal lands.

We acknowledge the traditional custodians of the lands and we show our respect for elders past, present and emerging through thoughtful and collaborative approaches to our work.



# Net Zero Industry and Innovation Program (NZIIP)





# NSW Industrial Emissions (2019-2020)



### NSW industrial emissions 48.4 Mt CO2-e



#### NSW emissions 132.4 Mt CO2-e

Targeted industrial facilities 40.0 Mt CO2-e
 Other industrial facilities 8.4 Mt CO2-e
 Rest of NSW 84.0 Mt CO2-e



# The problem we are solving



high emitting hard-to-abate industry needs innovative solutions and extensive collaboration to accelerate decarbonisation and reach Net-Zero CO2 emissions

> 7.6 Mt CO2e p.a abatement in 2030 28 Mt CO2e p.a abatement by 2030

image credit: Source: https://www.ebrd.com/news/2018/full-decarbonisation-of-hardtoabate-sectors-is-possible-says-new-report.html

# Net Zero Industry and Innovation Program (NZIIP )









Development of emerging clean technologies to overcome technical and commercial barriers for continued innovation



\$170M

• Electrification and energy

#### **Objectives**

systems

industries

hydrogen

• Land and primary

Power fuels including

#### **Opportunities**

- NSW Decarbonisation Innovation Hub (\$15M)
- Clean Technology R&D Grant (\$40M)
- Research, Development and Commercialisation
   Infrastructure Grant (\$45M)
- Clean Technology Commercialisation Grant (\$40M)
- Clean Technology Ecosystems Grant (\$10M)
- Climate Technology Venture Capital Fund (\$20M)



# Net Zero Industry and Innovation Investment Plan 2022-2024





# NSW's first

industrial emissions reduction plan



NSW Government to invest

\$360 million

to deliver this plan



**Reduction of** 

28 MtCO<sub>2</sub>e

by 2030

That's equivalent to taking 10 million cars off the road for a year.

## **Investment Priorities**



\$200 m





Priority 1: Deploy opportunities to reduce industrial emissions Priority 2: Accelerate strategic abatement opportunities Priority 3: Develop low carbon infrastructure and industrial precincts

# **HEI Program Priorities**









Priority 1: Deploy opportunities to reduce industrial emissions Priority 2: Accelerate strategic abatement opportunities Priority 3: Develop low carbon infrastructure and industrial precincts





## **NLCIF** Program Priorities

\$55 m

Priority 1: Deploy opportunities to reduce industrial emissions Priority 2: Accelerate strategic abatement opportunities Priority 3: Develop low carbon infrastructure and industrial precincts











Laying the foundations for new low emissions industries



\$55M (+ 300M)

#### **Objectives**

- Establish clean manufacturing precincts (<u>CMPs</u>)
- Deploy enabling, low carbon infrastructure
- Support NSW hydrogen strategy

#### Opportunities

- Decarbonisation roadmaps
- Low carbon supply chains
- Low carbon fuel hubs
- Precinct microgrids, energy storage
- Carbon management schemes



Photography: Drax Bioenergy Carbon Capture Storage (BECCS). Image from Zero Carbon Hubs

# HEI funding is now open (apply now)





# Funding Opportunity



<ul> <li>HEI supports M&amp;M facilities emitting more than 0.09 MtCO<sub>2</sub>e per year</li> <li>HEI funds up to 50% of eligible costs for pre-deployment projects</li> <li>HEI funds up to \$20/tCO<sub>2</sub>e for deployment projects</li> </ul>				<ol> <li>Scoping study</li> <li>Conceptual plan</li> <li>Pre-feasibilities study</li> </ol>	
Deployment Projects		Pre-deployment Projects	Q	4. Feasibility study	
Quick Wins	Mature Developments	Strategic Opportunities		5. Planning	
Projects ready to be deployed now. Commercial	Mature projects which require a long construction time. Commercial operation is expected in 2025-2028.Promising strate abatement projects require further strate	Promising strategic abatement projects which	۲Ô۶	6. Design and engineering	
operation is expected in 2024		require further studies. Commercial operation is	下 (以 () () () () () () () () () () () () ()	7. Commercial trial	
		expected in 2030.	Ê	8. Procurement	
<ul> <li>high TRL and CRI</li> <li>Commercial operation within 2 years</li> <li>lower risk.</li> </ul>	<ul> <li>high TRL and moderate CRI</li> <li>Commercial operation within 4–6 years</li> <li>moderate risk.</li> </ul>	<ul> <li>moderate TRL and lower CRI</li> <li>Commercial operation within 6–8 years</li> <li>higher risk.</li> </ul>		9. Deployment	Not supported by HEI funding
			• (\$) •	10. Commissioning	Deployment projects

# Tertiary catalyst abatement project – Orica Kooragang Island



#### Project highlights

- Tertiary N2O and NOx abatement systems (EnviNOx<sup>®</sup> Systems licensed by ThyssenKrupp Industrial Solutions AG, Germany) will be installed at three nitric acid plants
- Project to reduce 567,000 tCO<sub>2</sub>e per year
- This is 48% emissions from the three Kooragang Island plants
- Total project costs \$37 million
- NSW government grant of \$13.06 million
- Co-investment with Clean Energy Finance Corporation
- Project commissioning expected May 2023

#### Abatement reactor vessel being delivered to Kooragang Island.



Image supplied by Orica

# Examples of opportunities



#### Priority 1: Deployment Projects (Non-exhaustive list)

- low carbon cement, including geopolymer, high-blend cementitious material and magnesium-based cement
- pre or goaf gas drainage with power generation or flaring
- co-generation with bioenergy
- biogas for process heat
- bio-coke for steel production
- bioplastics
- electric vehicles for mining
- electrification of process heat
- high efficiency electric motors
- ventilation on demand
- renewable diesel for transport
- in-pit crushing and conveying.

#### Priority 2: Pre-deployment Projects (Non-exhaustive list)

- aluminium using wetted cathode and inert anodes
- direct separation and carbon capture to support low emission lime and cement
- ventilation air methane
- direct reduction of iron and electrification of plant apparatus
- green hydrogen for ammonia production.

# <u>Applications</u>

- Non-competitive application and assessment process
- Assessed as received



 Short, high-level application outlining key elements of project

# Stage 2: Full application

 Detailed proposal addressing eligibility and merit criteria





# HEI Funding Grant Eligibility Criteria





## Eligibility Criteria 1: Eligible Applicant

Applications must meet all eligibility criteria





### Eligibility Criteria 2: Eligible Project

Applications must meet all eligibility criteria



Occurs in NSW at facility emitting more than 0.09 Mt CO2e pa	Pre-deployment projects to be completed before 30 June 2030	Deployment projects to be commissioned and operational before 30 June 2030
Co-investment of at least 50% of the eligible costs	Aligns with long term strategy for business operations at current capacity or above beyond 2030	Commitment from the organisation to be implemented (pre- deployment projects)
Aligns with published or credible decarbonisation roadmap	Results in a decrease in emissions intensity	Requires NSW Govt co- funding and delivers emissions reduction that exceeds any applicable legislative requirements.

# HEI Funding Grant Merit Criteria





# Merit Criterion 1: Emissions reduction to be achieved





#### Stage 2: Full application

Evidence of Emissions Listed in Stage 1

Total cumulative CO2-e emissions reduction to 2030 and 2030-2050

Emission Types and Scope 1 and Scope 2 Emissions

Sensitivity analysis on emissions reduction

Outline how the impacts of the project will be measured and verified

Reporting of emissions and emissions reduction must be completed by a qualified professional

Outline the emissions reduction attributed to each potential funding source

# Merit Criterion 2: Technical feasibility of the project



#### Stage 1: Fast-track assessment



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Description of the project

Information on technology to be commissioned 9

Details of technology deployed elsewhere

#### Stage 2: Full application

Detailed information of Project

Technology to be commissioned

Project design and methodology

Engineering documentation, i.e. any peer reviews.

Project deployment elsewhere

Effectiveness of the proposed technology

Compliance with local, state, and federal regulatory

# Merit criterion 3: Financial feasibility of the project and value for money



#### Stage 1: Fast-track assessment





Necessity of grant

for success of

project

Funding from other sources

#### Stage 2: Full application

Financial case and return on investment analysis

Capital and operating costs over lifetime

Cost of carbon abatement (\$/tCO<sub>2</sub>e)

Why co-funding from the NSW Government is essential

Timing and stages at which grant is required

Details of other funding

Proposed strategies for Australian Carbon Credit Unit (ACCU) generation, attribution and/or sales

# Merit Criterion 4: Project Delivery



#### Stage 1: Fast-track assessment



Capacity and capability of applicant and partners



project on time and budget



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support from supply chain and finance partners

#### Stage 2: Full application

Further details on submissions in Fast-track assessment

Procurement pathway for engineering and construction listing timelines, options, risks and mitigations

Risk register for financial, technical, environmental, compliance, regulatory, and delivery

How the project will meet approvals for grid, water access, FIRB, planning, etc.

# Merit criterion 5: Alignment to NSW Government strategic objectives and economic growth



#### Stage 1: Fast-track assessment





Alignment with existing NSW strategic objectives and priorities for regional development Impact on jobs and private investment

#### Stage 2: Full application

Alignment with NSW Govt strategic objectives and economic growth

Alignment with NSW priorities for regional development i.e., SAP, REZ, CMP

Project's impact on jobs in NSW.

Total project investment in NSW and local region.

Project's support for additional economic development in NSW

# Merit Criterion 6: Knowledge Sharing



#### Stage 1: Fast-track assessment



#### Brief Knowledge Sharing Plan

#### Stage 2: Full application

Detailed Knowledge Sharing Plan

What knowledge from the project would be shared

How and when the knowledge would be shared

What is the value of the knowledge

How the knowledge will reduce barriers to wider commercial adoption of the technology in NSW

## **Assessment Process**







Image courtesy of IStock.

# How to get involved



- Funding under the <u>HEI</u> focus area is <u>open</u>
- For more information about funding opportunities, please visit our website or get in touch with us

Contact us at: emissionsreduction@environment.nsw.gov.au



Image courtesy of istock.





# Questions and Answers

Contact us at: emissionsreduction@environment.nsw.gov.au