



HEAVY INDUSTRY
LOW-CARBON
TRANSITION
COOPERATIVE
RESEARCH
CENTRE

DE-RISKING DECARBONISATION FOR HEAVY INDUSTRY

HILT ANNUAL CONFERENCE

Overview Presentation

October, 2025



Australian Government
Department of Industry,
Science and Resources

Cooperative Research
Centres Program

OVER 65 PARTNERS AND GROWING



Cooperative Research
Centres Program



With our partners, we are developing and demonstrating low-carbon technologies that will help de-risk and accelerate the decarbonisation of the steel, iron, alumina and cement industries and grow Australia's economy.

CORE PARTNERS



KEY PARTNERS



AFFILIATE PARTNERS



ASSOCIATE PARTNERS



OUR COLLABORATIVE ECOSYSTEM



Kick off Meeting, Burnie



Hongwei Wu, Curtin University, explains project RP1.018 to the Prime Minister, 2025



AlumiNEXT face-to-face meeting, Adelaide, 2025

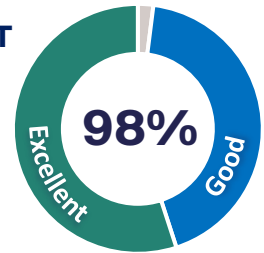
65+ Partners

↑ **50%** Increase since launch

🌐 **25+%** International

98% performance rating

We are confident that HILT CRC is delivering on its strategic outcome of a collaborative ecosystem:



The growth of HILT members is testament to the positive collaborative environment being created.

Alumina sector industry partner



2024 HILT CRC Conference in Adelaide



2025 Project Leaders day, Adelaide

UPSKILLING THE WORKFORCE



AlumiNEXT Hazard Identification (HAZID) workshop, September 2025



Low-carbon Alumina Short Course, Perth, 2025

- 29 Active postgraduate students
- 10 Coursework grants awarded (5 programs completed)
- 4 Green metals short courses held (2 x steel; 1 x alumina; >150 attendees)
- 3 Industry internships completed
- 5 Undergraduate scholarships awarded
- Safety Working Group Established



2025 Student Retreat, WA



HILT's HDR students – Oct 2025

“The PhD student internship program has been highly successful, providing invaluable information while fostering talent development opportunity.” –
Industry partner

A TRUSTED VOICE



9 Government submissions including:
Green metals: Unlocking Australia's green iron, steel, alumina & aluminium opportunity

DISR Green Metals Advisory Panel

CSIRO and HILT CRC launch \$10M network to drive Australia's green metals industry

By Kate B. - June 24, 2025

Aust Manufacturing article

I like the direction that HILT has taken in listening to the industry voices about what the requirements are to decarbonise, including the renewed energy and focus on P3. *Iron/steel sector industry Partner*



RP3.008 workshop, Canberra, 2025



COP29, Baku, Azerbaijan, 2024

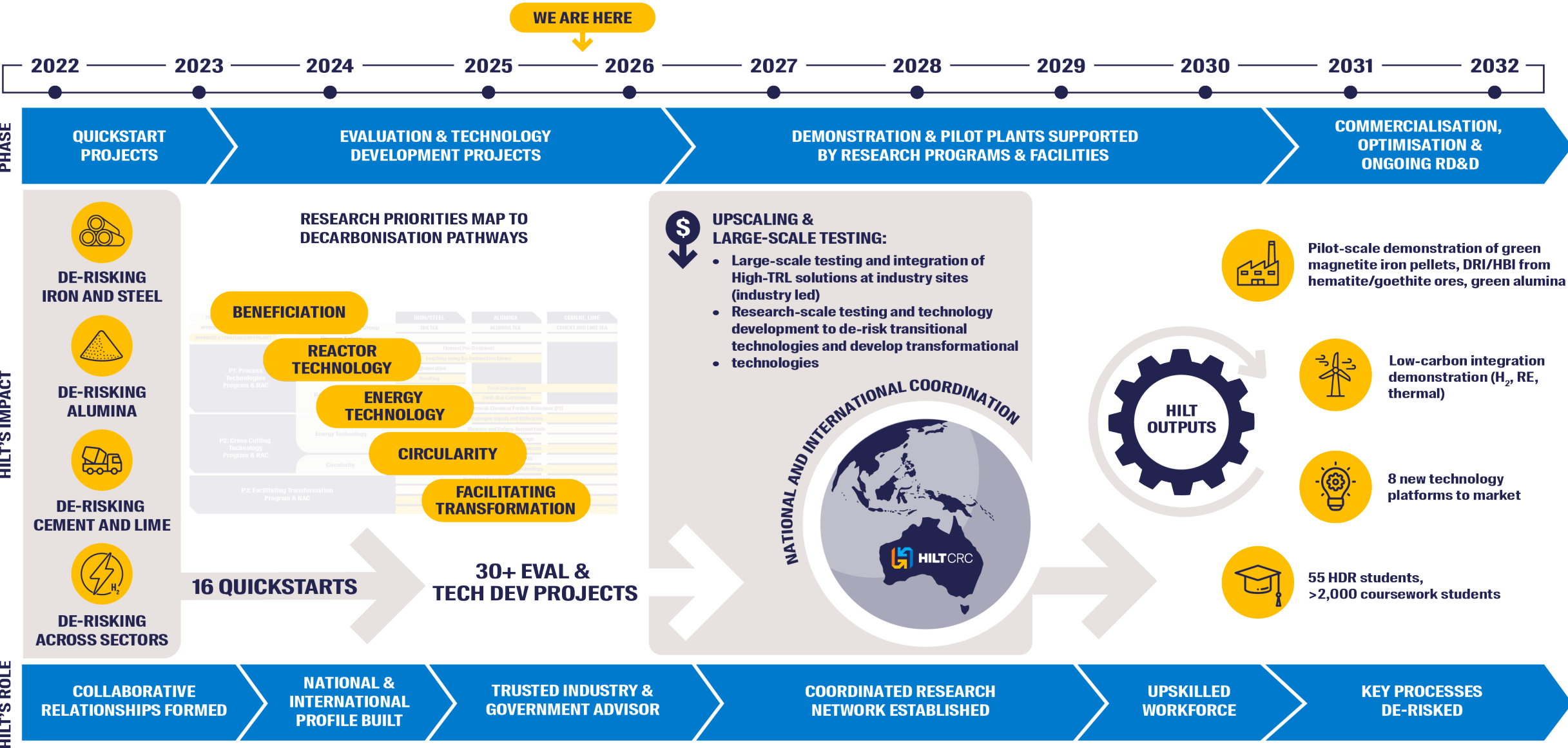


State of Energy Research Conference 2025



EABER expert Aust - China Dialogue

HILT'S 10-YEAR PLAN



RESEARCH WITH IMPACT



28 Projects completed

- **\$13.2M** Cash and in-kind
- **35** Partners involved

20 Active projects

- **\$54.4M** Cash and in-kind
- **39** Partners involved

2 ARENA grants worth \$6.2M

16 Journal publications

Full project information:

<https://hiltcrc.com.au/projects/>

Processing Technology:

Low-carbon technology and methods for mineral processing



Cross Cutting Technology:

Reducing the cost, increasing the scale and integrating clean energy

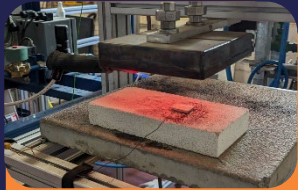


Facilitating Transformation:

Supporting markets and driving demand for low-carbon products



PROJECTS SUPPORTING IRON AND STEEL



RP1.016
Thermal
beneficiation



RP1.011-ARENA
Upgrading iron ore
using leaching



RP1.014
De-risking electric
smelting furnace



RP1.017
Biomass for green
steel production



RP1.018
Green steel from
magnetite

IRON ORE

BENEFICIATION

REDUCTION

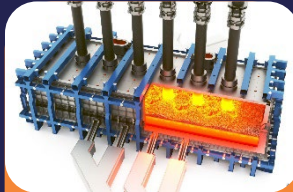
EDF/SMELTER-BOF

**GREEN STEEL
PRODUCTS**

Program 1:



RP1.010
Hydrogen and
plasma iron ore
reduction



RP1.012 -ARENA
Prevention of
sticking in H₂DRI
production



RP1.015
Hydrogen direct
flash reduction

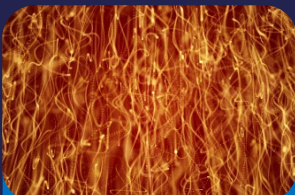


OFP 001 & 002
Metallurgical
processing of
Australian iron ores

PROJECTS SUPPORTING IRON AND STEEL



RP2.007
Hydrogen burners
for cement and
iron



RP2.012
Bioenergy
opportunities in
heavy industry



RP2.013
Mineral
carbonation for
CCUS



RP2.014
Low-cost reliable
green electricity
supply



RP2.018
Syngas from
Biomass



RP2.016
Thermophysical
properties of ores



RP2.015
Hydrogen impact
on materials and
infrastructure



RP2.017
Thermal energy
storage

IRON ORE

BENEFICIATION

REDUCTION

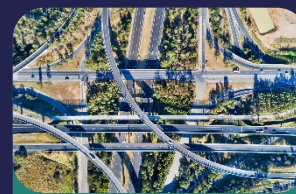
EAF/SMELTER-BOF

GREEN STEEL
PRODUCTS

Programs 2&3



RP3.009
Green iron and
steel export
analysis



RP3.005
Green iron and
steel market &
cost factors



RP3.006
Green certification



RP3.007
Energy
infrastructure
investment



RP3.008
Policy roadmap

PROJECTS SUPPORTING ALUMINA



Program 1:



RP1.016
Thermal
beneficiation



RP1.013
Alumina
Refineries' Next
Generation
(AlumiNEXT™)



RP3.006
Green certification

BAUXITE

BENEFICIATION

DIGESTION

CALCINATION

GREEN
ALUMINA
PRODUCTS



RP2.010
Utilisation of
refuse-derived
fuels



RP2.011
High-temperature
heat pumps



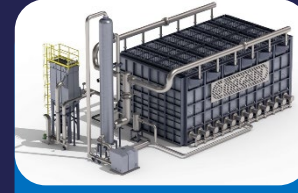
RP2.013
Mineral
carbonation for
CCUS



RP2.014
Low-cost reliable
green electricity
supply



RP2.016
Thermophysical
properties of ores



RP2.017
Thermal energy
storage



RP3.007
Energy
infrastructure
investment

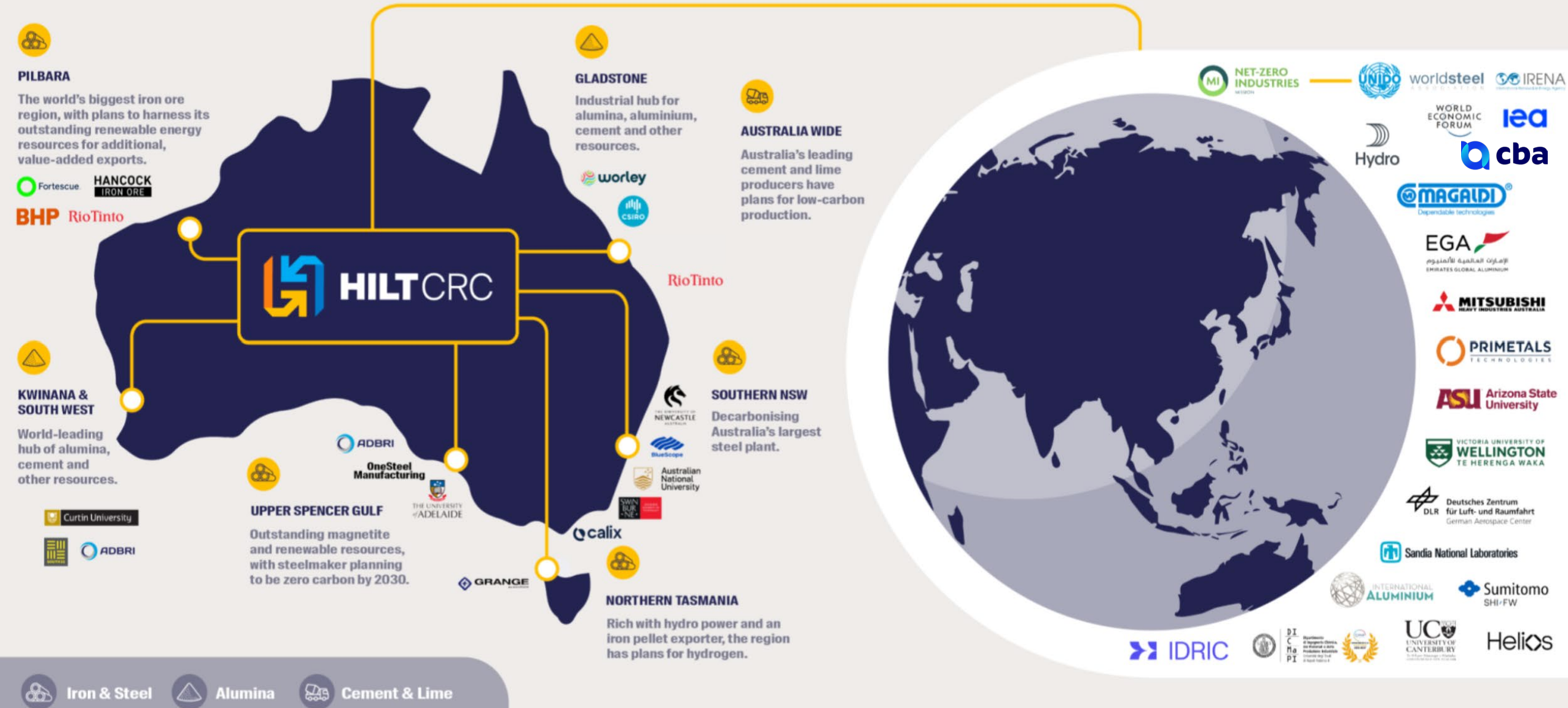


RP3.008
Policy roadmap

Program 2:

Program 3:

LINKING GOVT, RESEARCH AND INDUSTRY





**DE-RISKING
DECARBONISATION
FOR HEAVY INDUSTRY**

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