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Australia – Korea Decarbonisation and H2 Supply Chain

: Green Cement Project and
LH2 Logistics National Research

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Driving future energy



Presenting Today



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Welcome to Elecseed

We are living in a significant time as nations and companies decarbonise their assets to meet aligned global targets and provide for a cleaner future.

Elecseed is a progressive Renewable Energy Developer and Consultancy providing innovation, technical eminence, funding, and multifaceted solutions to deal with the paradigm shift in how we generate, manage, and consume energy.

With offices in Seoul Korea and Brisbane Australia, Elecseed identifies and leads specific market needs, not only to propel our drive to a greener future but also satisfy the immediate economic needs and demands.

We have experience across the Asia Pacific in bringing the right partners to develop solutions across renewables including Photovoltaics, Wind, Hydrogen and Battery Storage technology, leveraging off strategic financial and engineering expertise.

Join us in our tenacious journey to a more sustainable and responsible world, driving the future of renewable energy solutions.



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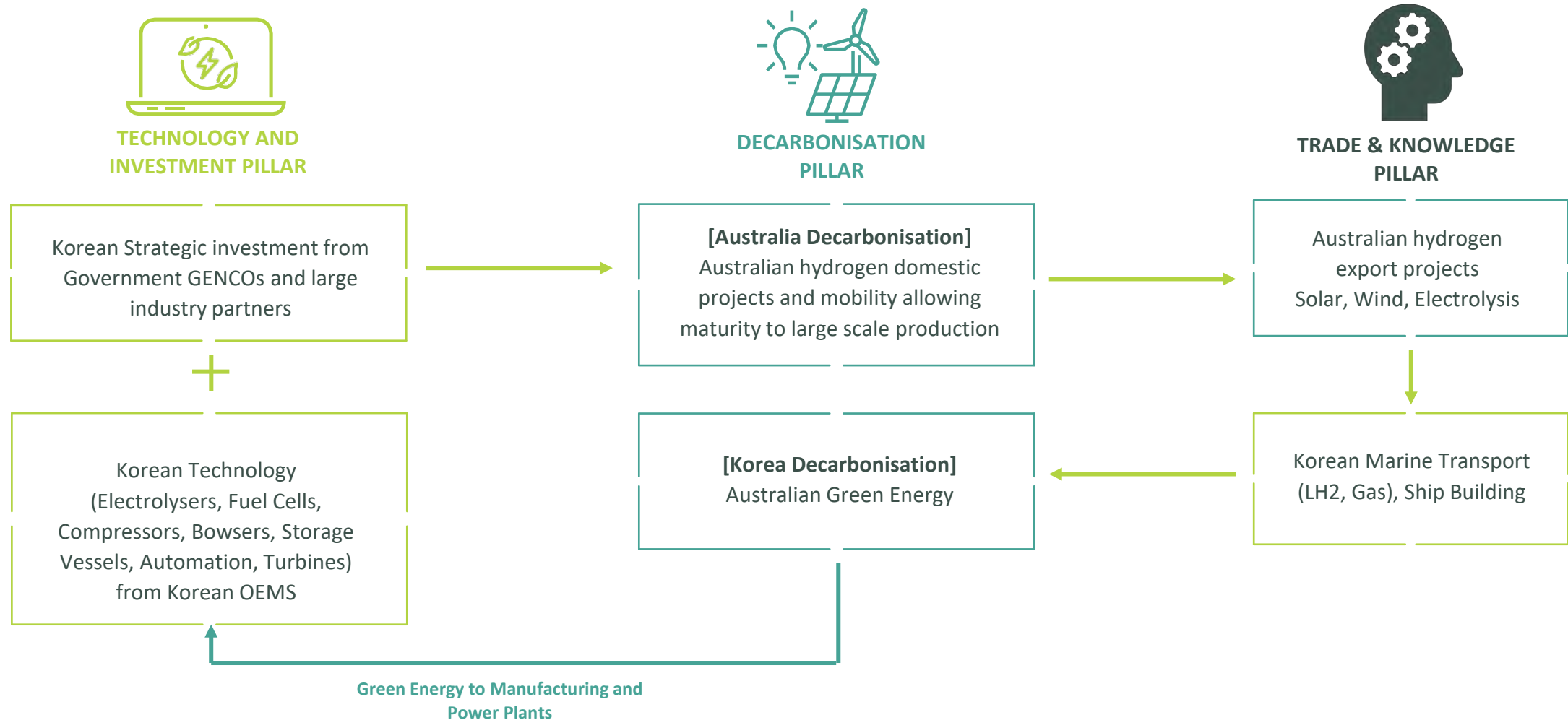
KOREA AUSTRALIA CLOSED LOOP AND ELECSEED

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What Elecseed work towards

The “Closed Loop” between our nations – A Unique Mutual Opportunity



THE MASTERPLAN

Step 1 - Australia Decarbonisation (Local Application)

Step 2 - Korea Decarbonisation (H2 Supply Chain)

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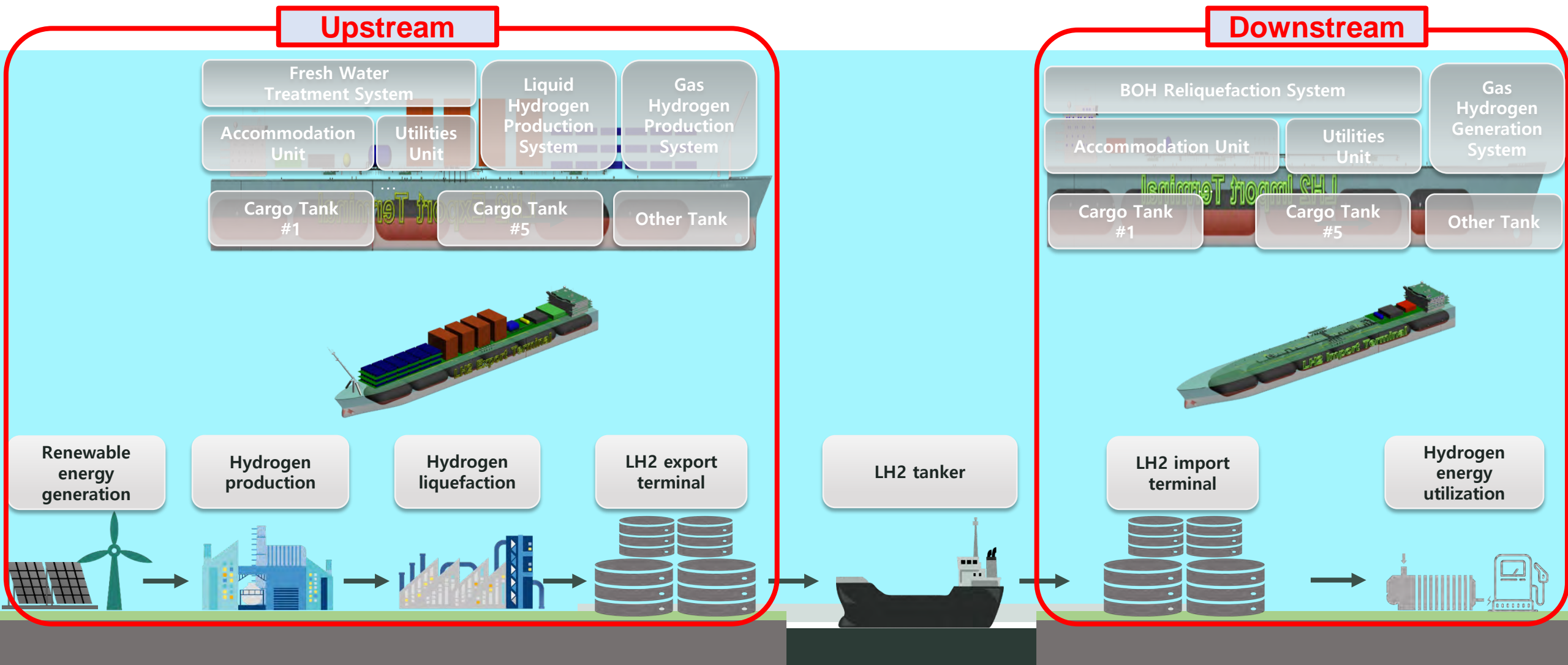
Masterplan Step 1 - Australia Decarbonisation

A perfect “Hydrogen Hub and Spoke”



Masterplan Step 2 – Scale up and Export : Korea Decarbonisation

Supply Chain Study : 2021 - 2024



Supply Chain Study : 2021 - 2024

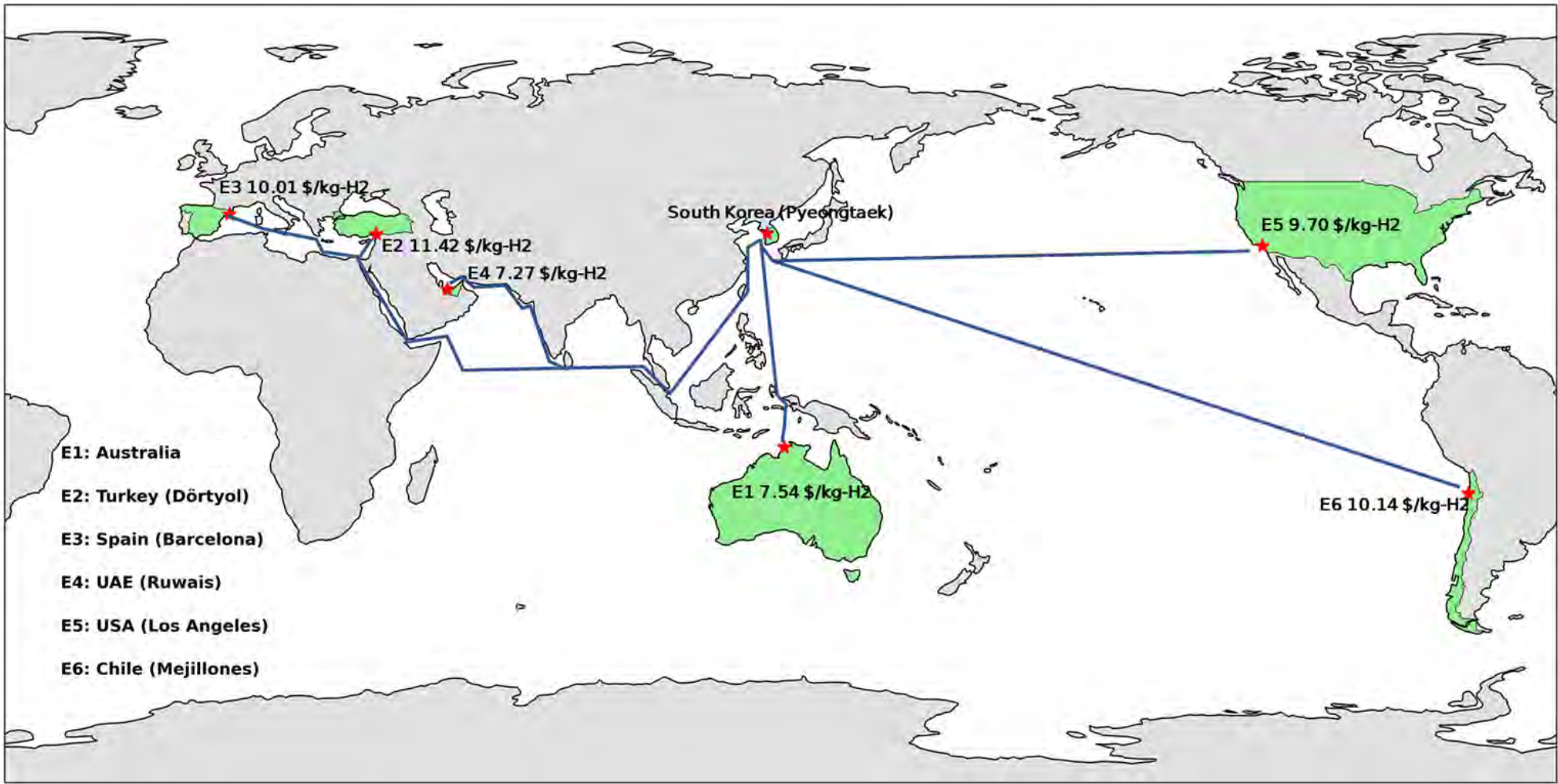
The chart displays the LCOH (\$/kg-H2) for various components, categorized by CAPEX (blue) and OPEX (green). The components are E-FWPS, E-GHPS, E-LHPS, E-CCS, E-Hull, Carrier, I-Topside, I-CCS, I-Hull, and Total. The total LCOH is 7.54 \$/kg-H2, with CAPEX contributing 34.3% and OPEX contributing 65.7%.

Component	CAPEX (\$/kg-H2)	OPEX (\$/kg-H2)	Total LCOH (\$/kg-H2)	CAPEX %	OPEX %
E-FWPS	0.08	0.00	0.08	43.2%	56.8%
E-GHPS	0.68	3.28	3.96	14.9%	85.1%
E-LHPS	0.44	0.97	1.41	30.8%	69.2%
E-CCS	0.38	0.00	0.38	87.6%	12.4%
E-Hull	0.25	0.00	0.25	84.9%	15.1%
Carrier	0.52	0.00	0.52	68.5%	31.5%
I-Topside	0.40	0.00	0.40	40.6%	59.4%
I-CCS	0.38	0.00	0.38	87.6%	12.4%
I-Hull	0.16	0.00	0.16	84.0%	16.0%
Total	2.61	4.93	7.54	34.3%	65.7%

World 1st CAPEX & OPEX National Research for whole Supply Chain of Green Hydrogen

Masterplan Step 2 – Scale up and Export : Korea Decarbonisation

Supply Chain Study : 2021 - 2024



*Unit = US Dollar

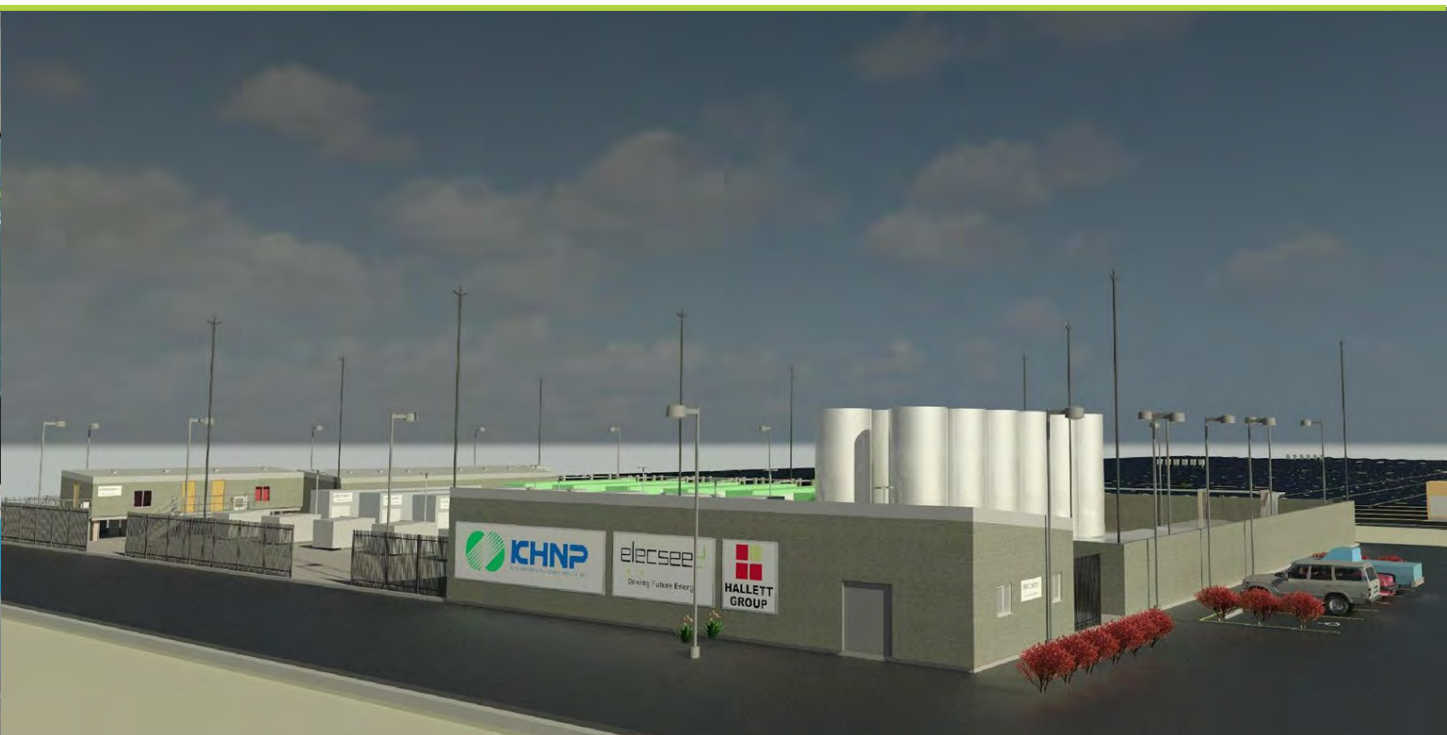
National Research funded by KETEP based on Aus-Kor bilateral commitments since 2021

ELECSEED PROJECT HELIOS

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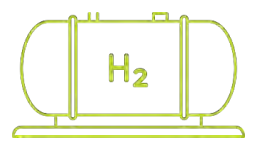
Collaboration - Port Augusta South Australia



Green Hydrogen Project



Cement Drying Process



Green Hydrogen made on site



Korean Technology and Strategic Investment



Global First

Project Helios

Some Context

- **In 2021**, world-wide emissions from making cement produced about **2.9 Billion metric tonnes of CO₂**. For perspective, if the cement industry was a country, it would be **the fourth largest national emitter in the world**, behind China, the US and India (Source : CSIRO)
- Demand for concrete and cement is predicted to grow 12 to 23 % above today's levels by 2050 (Source : Scientific America)
- **Coal Fired Power Stations are being closed** around the World and leaving layers of flyash, used as a **feedstock for supplementary cementitious materials (SCM)**
- **Australia currently consumes around 12 million tons per annum** of cement with around half of this imported in the form of finished (powdered) cement or cement clinker.
- The project will use existing and proven technology to manufacture supplementary cementitious materials (SCMs) that can **replace greater than 50% of traditional high CO₂ emitting** clinker-based cement.
- **15 million tonnes of cement** replaced completely with SCM **can reduce CO₂ emissions by 1,000,000 tonnes** becoming a strong contributor to State and National emissions reductions targets.

Green hydrogen production project overview

Site

Coal-fire Power Station (Retired)

Solar Farm and Hydrogen Plant

Green Cement Production

Flyash (20 Million Tonnes)

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Port Augusta isn't waiting decades for ...

Project Helios

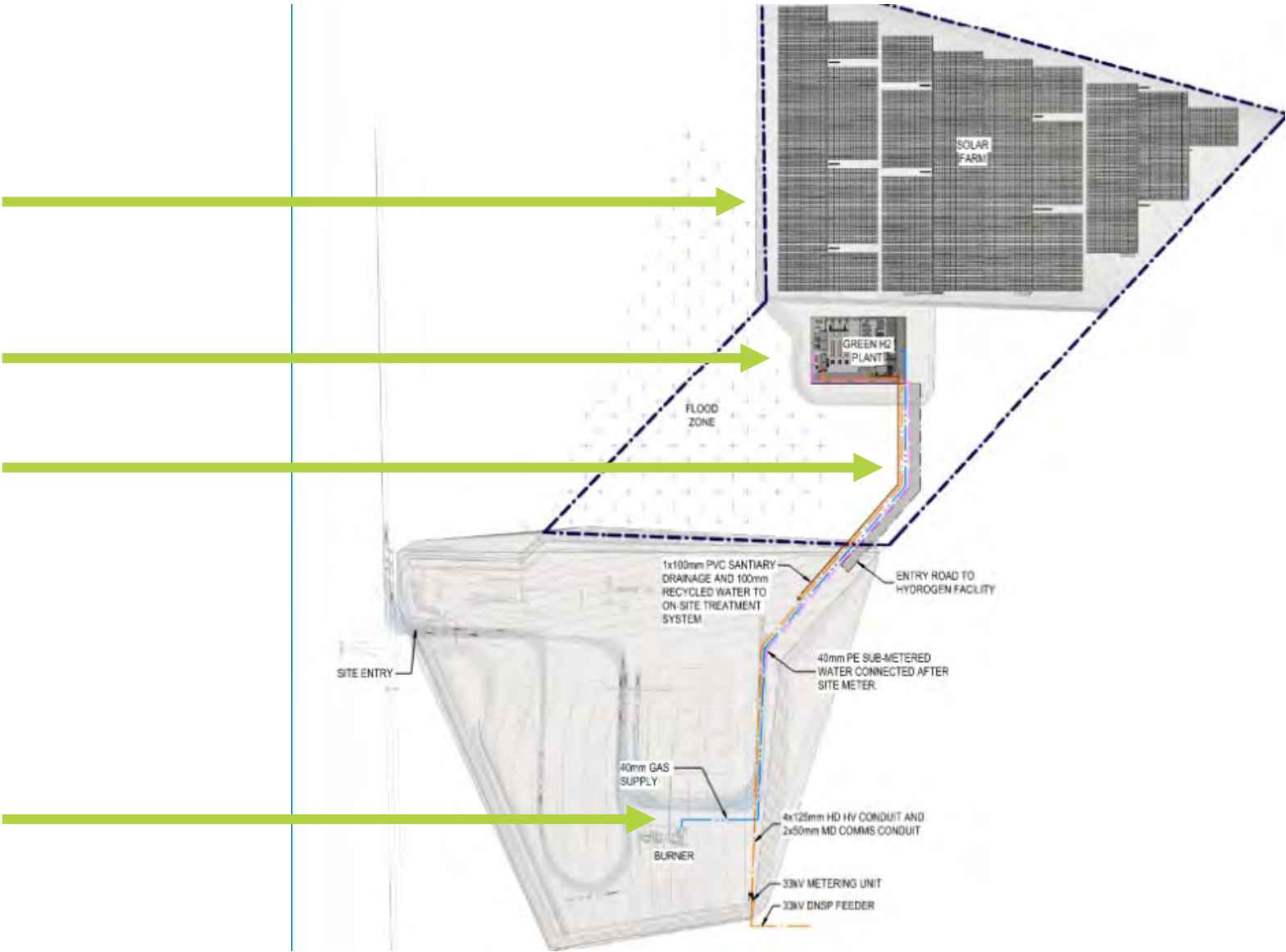
Technical – Initial Solution

Solar Farm

Hydrogen Plant

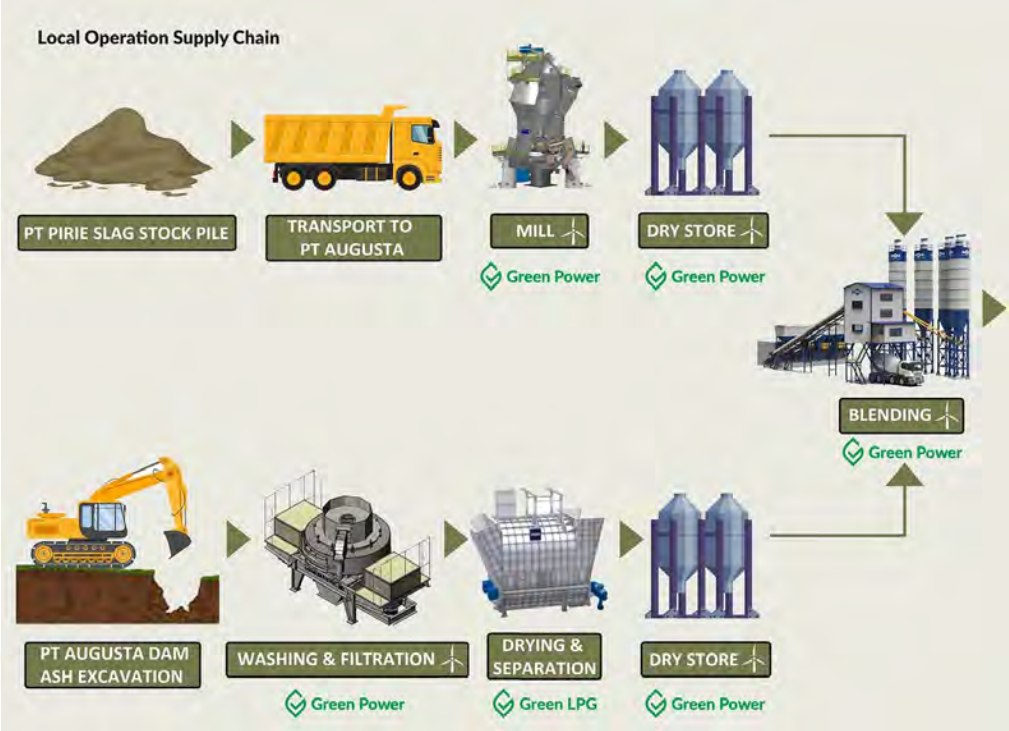
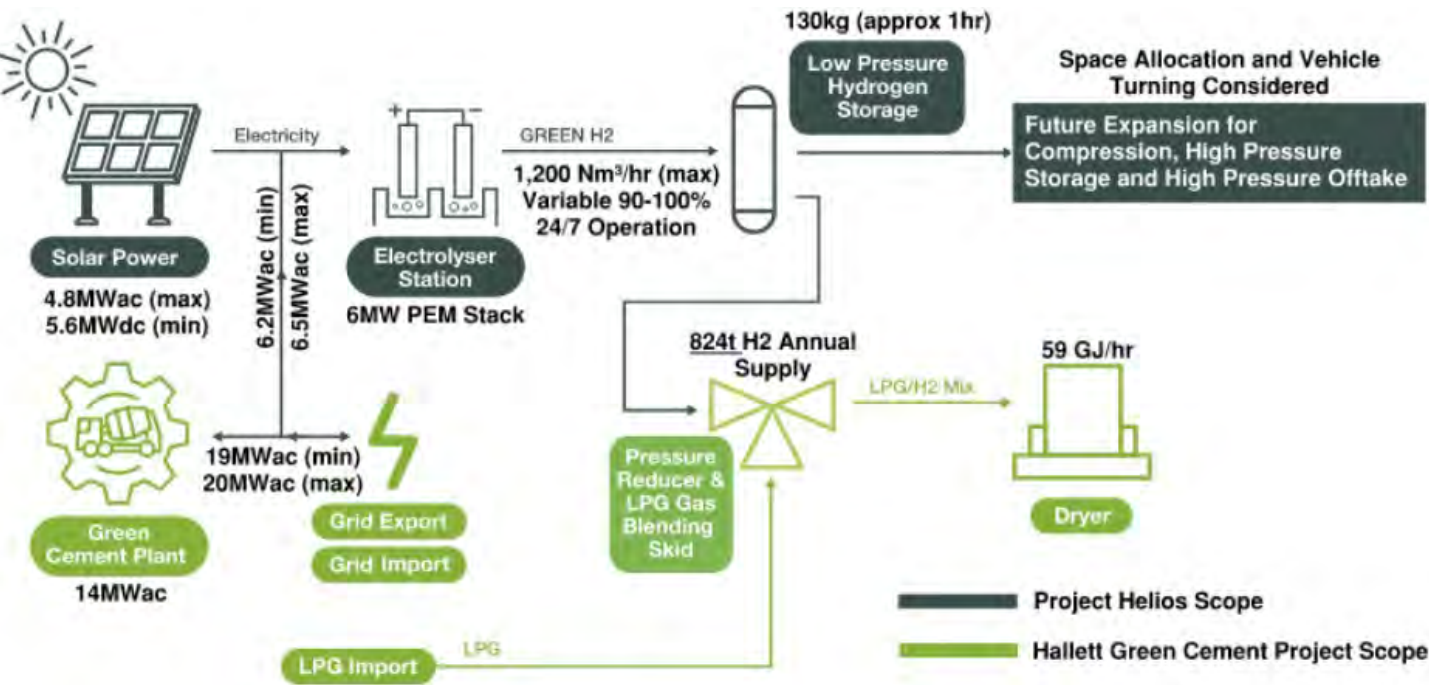
Pipeline to Plant

Flyash Drying Ovens



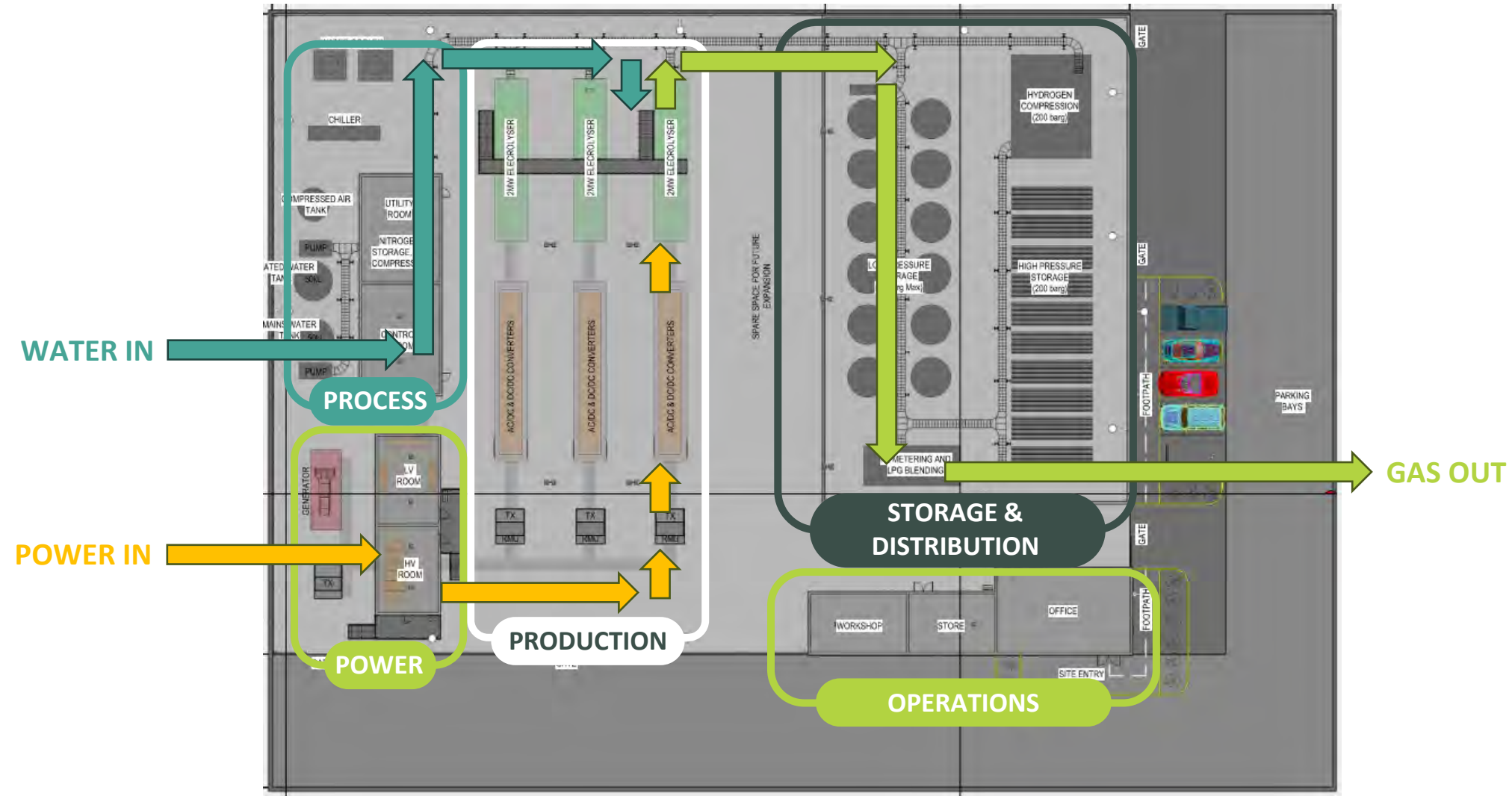
Project Helios

Schemetic – Initial Volumes



Project Helios

Technical Summary – Hydrogen Plant



Project Helios

Technical Summary – Hydrogen Plant



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Thank you
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International Offices

Elecseed have offices in both the Republic of Korea and Australia. We work closely together and bridge the two nations, connecting investment, technology, skills, common goals, research and overall collaboration. We work from central modern facilities and welcome you to contract or visit our offices in Brisbane and Seoul.

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**We are very open to collaborating
with your company to support
your decarbonisation journey in
the Upper Spencer Gulf.**

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