

Hydrogen Strategy: New South Wales, Australia - A case study










Malini Dutt
Acting Trade & Investment Commissioner (India)

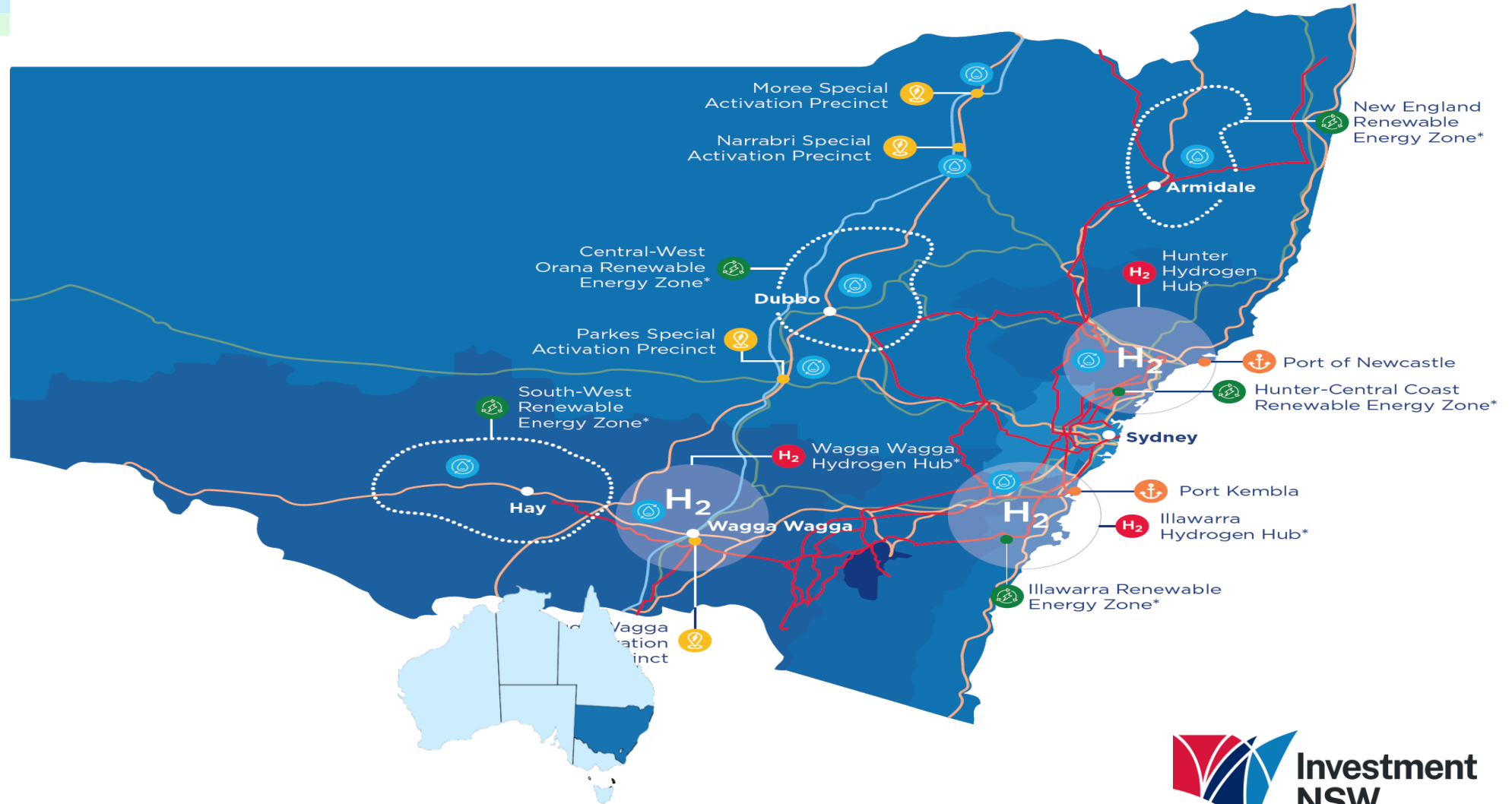
Thursday, 6th July 2023
New Delhi



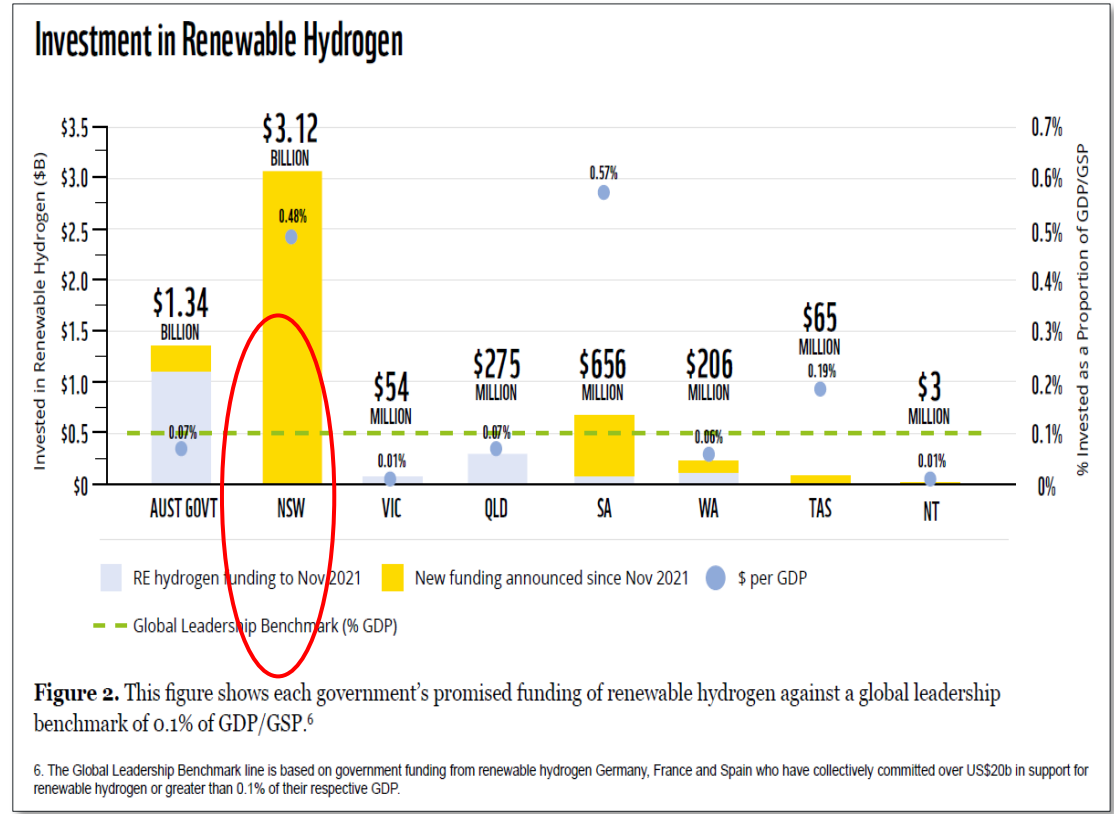
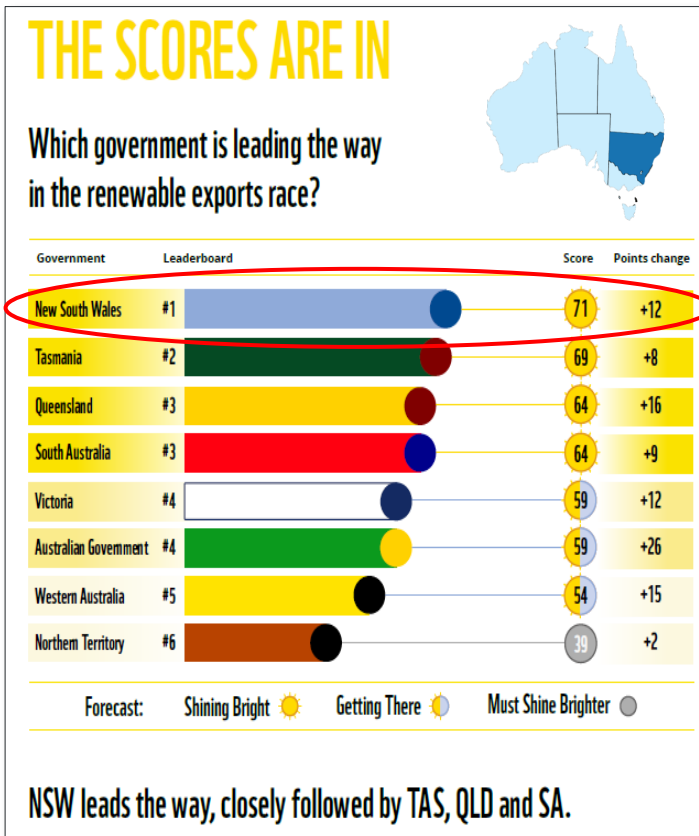
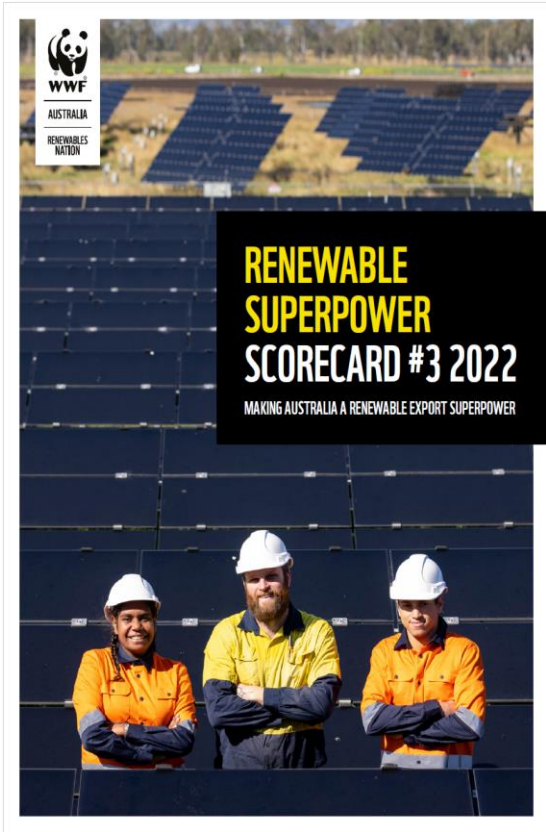
NSW at a glance

Map legend

-  Hydrogen Hub
-  Renewable Energy Zone
-  Port
-  Special Activation Precinct
-  Licensed waste water treatment
-  Strategic road freight corridors for hydrogen refuelling network
-  Key rail freight routes
-  Inland Rail
-  High voltage transmission network



NSW, leading Australia to Net Zero



NSW Hydrogen Strategy – Overview



60 actions

\$3 billion total incentives

Over \$4 per kilo cost reduction

Levelised cost of hydrogen under \$2.80/kg

Overcoming the key barrier to investment - COST

NSW offers \$3 billion in incentives to reduce green hydrogen production to below \$2.80 per kilo.



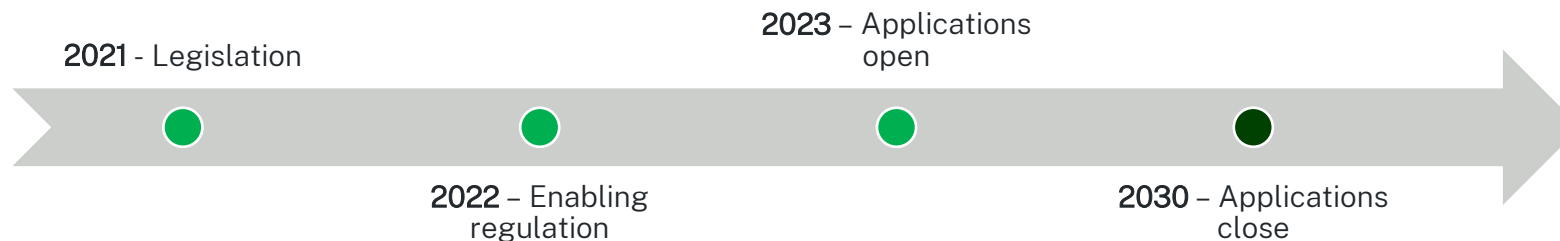
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Action 8 – Exemptions to network and scheme charges

Australian first – over \$2/kg reduction to cost of hydrogen through exemptions to network and scheme charges

Applications

- Currently open at www.energy.nsw.gov.au



90%
Discount on network use of system (NUOS) charges

Available for the first
750MW
installed by 2030

For a period of
12 years

90-100%
Electricity scheme exemptions

\$150M Hydrogen Hubs Initiative

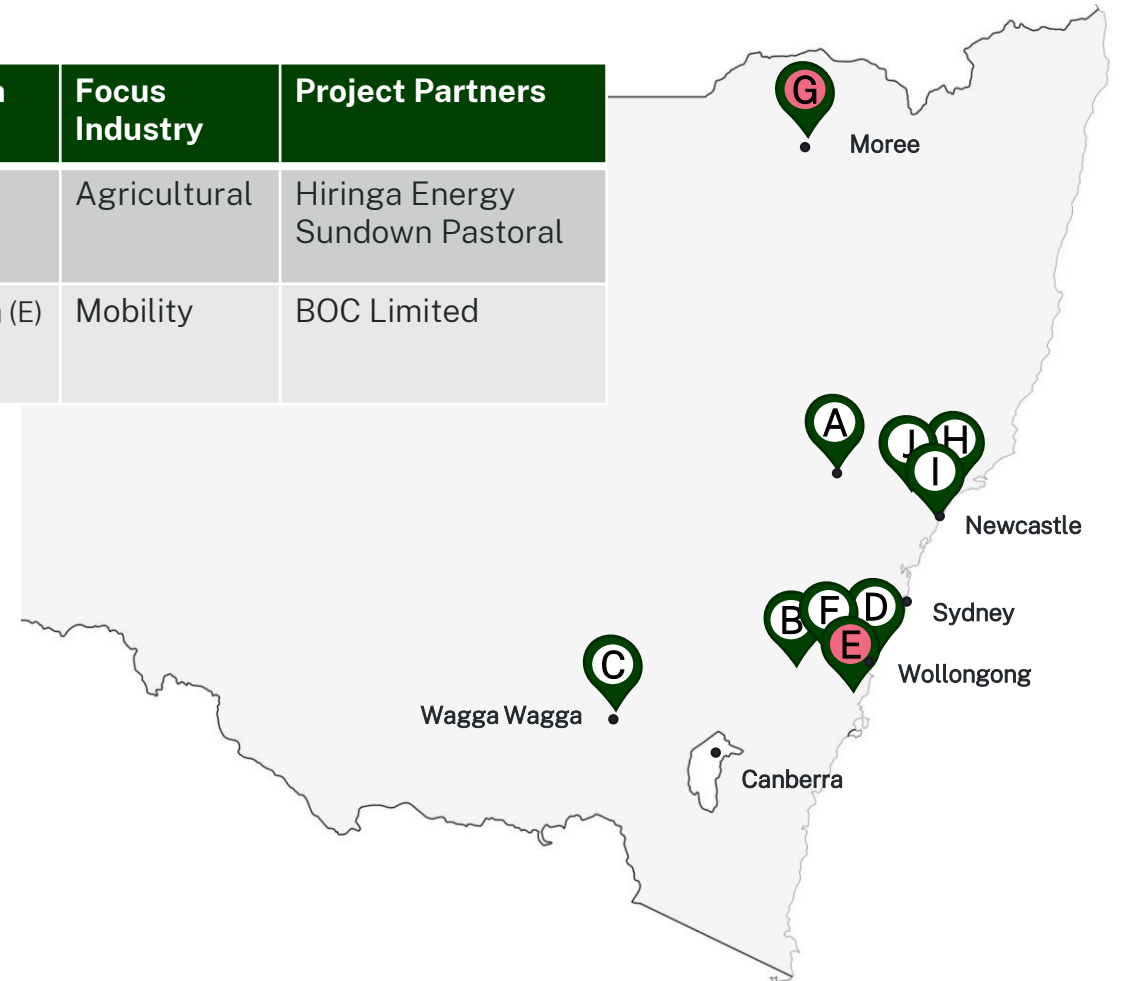
10
Applicants shortlisted

First 2
Hydrogen Hubs awarded

22 MW
Electrolyser capacity by 2025

760 MW
Combined potential electrolyser capacity by 2030

Location	Focus Industry	Project Partners
Moree (G)	Agricultural	Hiringa Energy Sundown Pastoral
Illawarra (E)	Mobility	BOC Limited



Oct 21
EOI open

Apr 22
Shortlist

Aug 22
Applications close

2023
Grant awards

2023 - 24
Project FID

Action 30 – Hume Hydrogen Highway

The Hume Highway, Australia's most trafficked freight route, will establish the beginning of the east coast hydrogen refuelling network.

- \$40 million in grant funding, co-delivered by NSW/Victorian and Commonwealth governments
- At least 4 hydrogen refuelling stations
- At least 25 hydrogen-powered linehaul trucks
- Projects must use renewable hydrogen



Action 1 - Hydrogen Infrastructure Masterplan

Scaling our energy system to manage GW scale green hydrogen production

- Determining optimal supply chain and infrastructure configurations to meet hydrogen demand growth
- Guidance to NSW government and industry on planning and investment decisions
- Building on National Hydrogen Infrastructure Assessment



Production



Storage



Distribution



Action 7 – Renewable Fuel Scheme



Targets

Year	GJ	Tonnes*	MW *
2024	90,000	750	5
2025	360,000	3,000	21
2026	890,000	7,417	53
2027	1,780,000	14,833	106
2028	3,200,000	26,667	190
2029	5,330,000	44,417	317
2030–44	8,000,000	66,667	476

*indicative only

To be finalised in regulation and rule:

- Scheme penalty rate
- Exemptions framework
- Certificate creation – intersections with Guarantee of Origin Scheme

Implementation schedule

2021 – Scheme legislated – Part 3 of Schedule 4A of the *Electricity Supply Act 1995*

2022 – Regulations and rule development

Q4 2023 – Regulations and rule gazetted

Q1 2024 – Scheme commences



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Action 3 – \$195 million for Climate Technology Innovation

Clean technology research and development (CTRD) grants (\$40 million)

- Supports the development of commercially viable technologies and services
- Under round 1, 4 projects have received a combined \$6.3 million in funding

Research, development and commercialisation infrastructure grants (\$45 million)

- Funds clean technology research, development and commercialisation infrastructure in NSW

Commercialisation and pilots

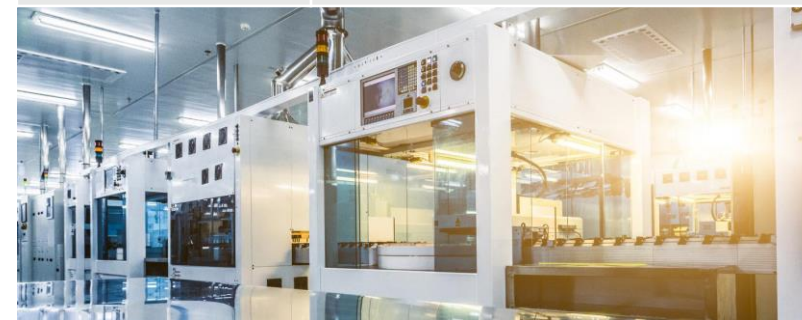
1. Clean technology commercialisation grants (\$40 million)
2. Clean technology ecosystems grants (\$10 million)

Climate technology venture capital fund (\$40 million)

- Invests in early-stage climate technology start-ups

4 projects awarded CTRD grants

Organisation	Project title
Sundrive Solar	Development of copper-based solar modules for ultra low-cost utility scale deployment
Hysata	Energy efficient water electrolyser for low-cost green hydrogen
Southern Green Gas	Solar powered e-kerosene production module for Sustainable Aviation Fuel (SAF)
Quickstep Technologies	Intelligent composite hydrogen storage system



Other relevant actions & initiatives

- \$250 million Renewable Manufacturing Fund
- \$305 million for High Emitting Industries grant
- \$300 million Low Carbon Product Manufacturing Fund
- \$110 million Regional Investment Activation Fund
 - Grants from \$1,000,000 to \$10,000,000 for eligible projects in regional NSW
- **Action 3** – \$195 million for Climate Technology Innovation
- **Action 13** – Electricity Infrastructure Roadmap
- **Action 1** – Hydrogen Infrastructure Masterplan
- **Action 52** – Port infrastructure assessment
- **Action 5** – Precinct decarbonisation roadmaps
- **Action 21** – Planning and regulatory guidance material

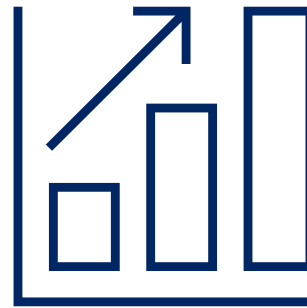


Key takeaways for net zero in NSW



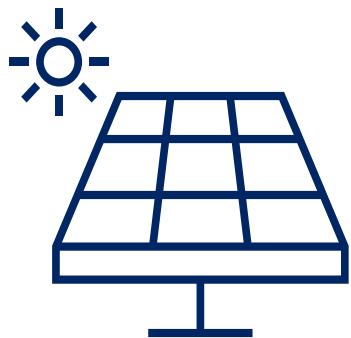
LCOH* below \$2.80/kg

World-leading incentives,
reducing green hydrogen
cost by over \$4 per kilo



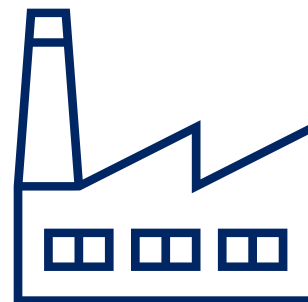
Domestic hydrogen market of 1 Mt by 2050

Hydrogen Hubs, Highways,
green ammonia as a base for
investment & export



Abundant cheap, clean energy

Five REZs & extensive
transmission infrastructure



Existing industry infrastructure

Export terminals, heavy
industry workforce & current
H₂ production

*LCOH = Levelised cost of hydrogen

Come exchange ideas, explore innovations & forge alliances



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Thank you



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