

HAZER CONFERENCE PRESENTATIONS

PERTH, AUSTRALIA; 25 October 2023: Hazer Group Ltd ("Hazer" or the "Company", ASX: HZR) advises of its participation at the 12th Annual Australian Microcap Investment Conference and the Asia-Pacific Hydrogen Summit & Exhibition 2023 – H2 Tech Series Conference being held this week in Melbourne and Sydney, in Australia.

Attached is the presentation that Mr Corrie will be speaking to at the conferences.

This announcement was authorised for release by the Board of the Company.

[ENDS]

ABOUT HAZER GROUP LTD

Hazer Group Limited ("Hazer" or "The Company") is an ASX-listed technology development company undertaking the commercialisation of the Hazer Process, a low-emission hydrogen and graphitic carbon production process. The Hazer Process enables the effective conversion of natural gas and similar methane feedstocks, into hydrogen and high-quality advanced carbon materials, using iron ore as a process catalyst.

Forward-looking Statements

This announcement may contain certain "forward-looking statements" which may not have been based solely on historical facts but are based on the Company's current expectations about future events and results.

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Hazer Group Ltd

*Clean and affordable Hydrogen
available today*

Wednesday, 25 October 2023





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Important information This presentation has been prepared by Hazer Group Limited (“Hazer” or “the Company”)

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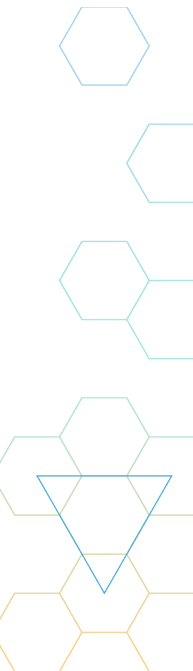
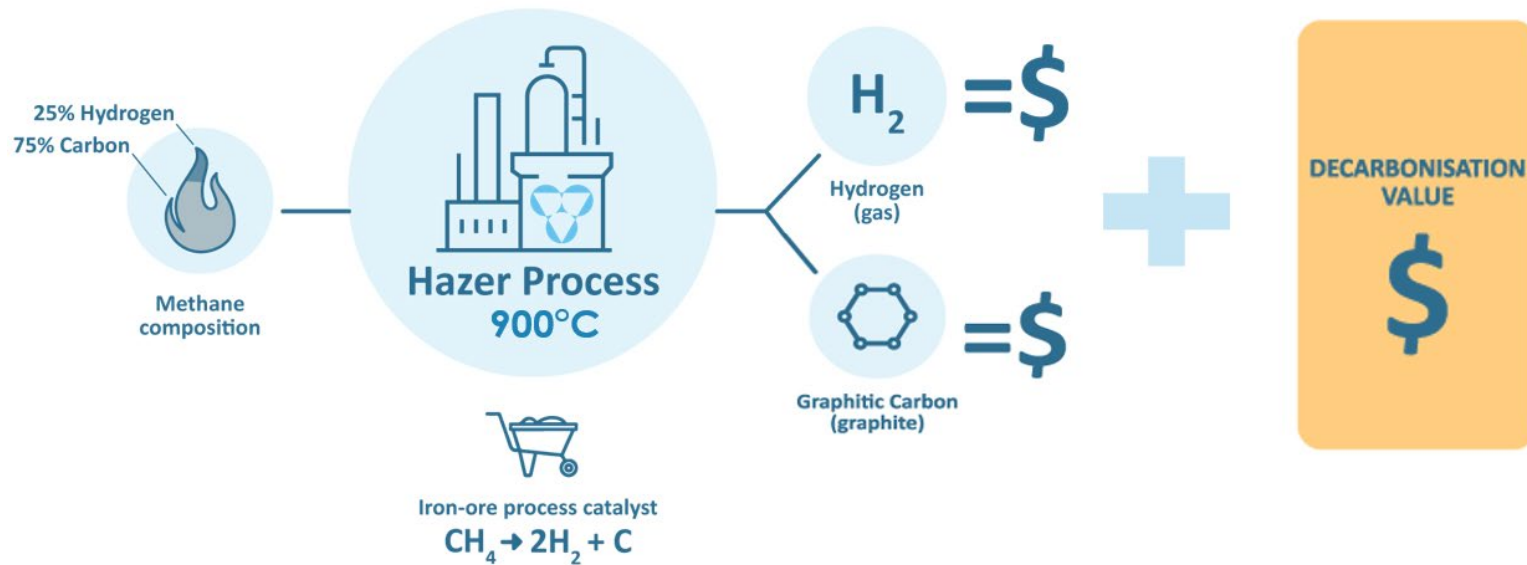
Corporate Overview



Hazer's competitive technology advantage







Innovative low emission, low-cost methane pyrolysis technology producing clean hydrogen and graphite

- Hazer Group Limited is a technology development company undertaking the commercialisation of the Hazer Process
- The Hazer Process enables low temperature conversion of natural gas and similar methane feedstocks, into hydrogen and high-quality graphite, using iron ore as a process catalyst





Key Activities

	CY2023		CY2024
	H1	H2	H1
Commercial Demonstration Plant (100 tpa)	Procurement, Fabrication, Engineering & Installation		
		Ready for Start-up	
		Today	Targeted Production & Testing Program
Hazer-Fortis 2,500 tpa Canada Plant	FEED Studies in Canada and Targeted FID 		
New Potential Projects in Target Markets	  Identify New Commercial Projects Japan France		
	Japan & France Project Development Plans		
Mitsui & Graphite Market Development	Developing Market for Hazer Graphite		Offtake Agreement
Corporate Updates	 ARENA Grants	 R&D Rebates	 Corporate Access Events
			ARENA Grants




Hazer Investment Highlights





Investment highlights

Low cost, low emissions H₂ production technology company positioned to play a leading role in global decarbonisation

1 

Low-cost, Low-emissions, Proprietary Technology

2 

Compelling Economics & Returns

3 

Global Tier-1 Partnerships Across Strategic Markets

4 

Advanced Technology Readiness & Proven Scale-up

5 

Clear Commercial Pathway & Capex-lite

6 

Graphite Production Diversifies Earnings

7 

Rapidly Growing H₂ Demand

8 

Government & Policy Support





1 Low cost & low emissions hydrogen

Hazer well positioned as a low-cost, low-emissions hydrogen technology

Existing Technologies

Steam Methane Reforming (SMR)

Significant CO₂ emissions

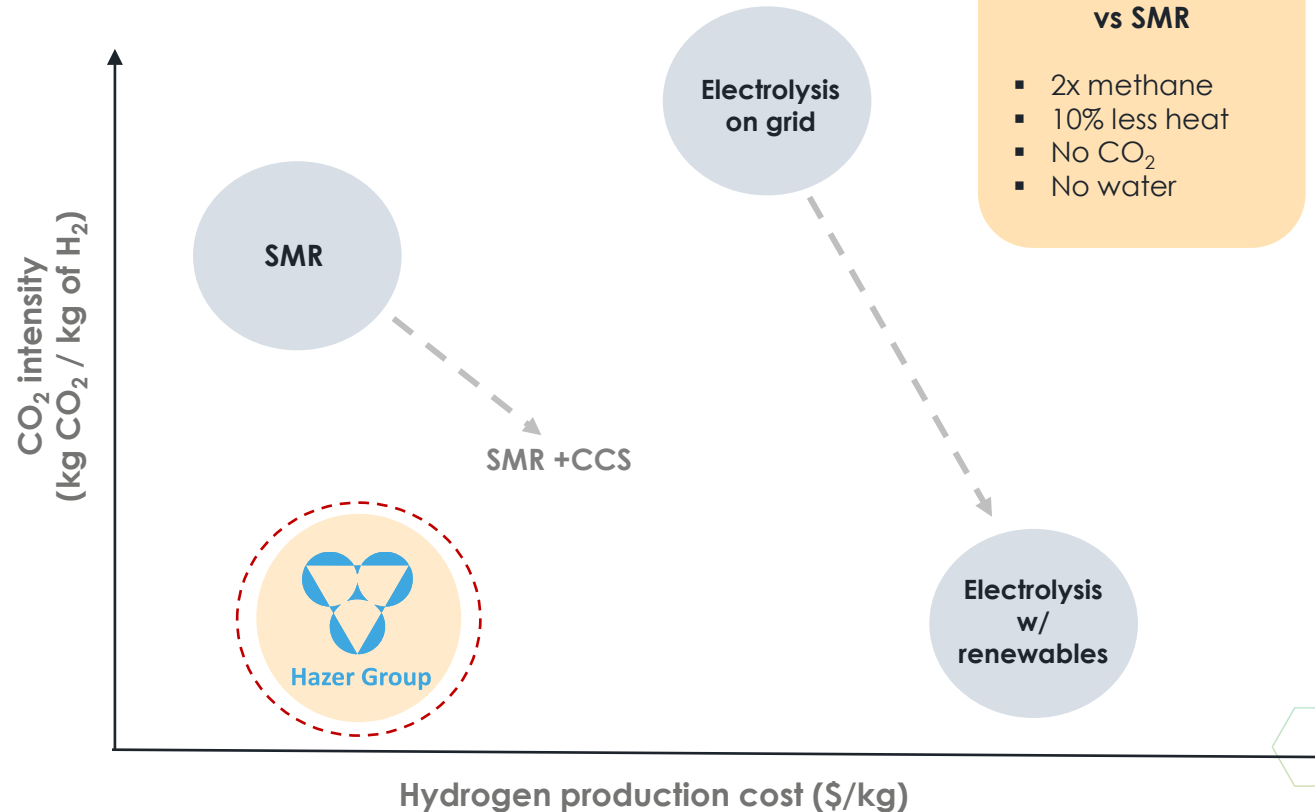
- Most widely used process for H₂ generation (~95%)
- High CO₂ emissions
- Requires CCS* to address emissions



Electrolysis

Energy intensive process

- 7x more energy intensive than SMR
- Only low emission if 100% renewable energy
- Requires significant water and renewable energy



*CCS = Carbon Capture & Storage. Requires geological formations for CO₂ sequestration

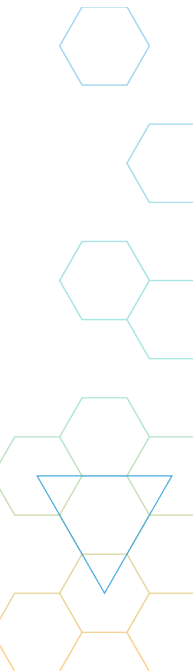
1 “Plug-in” technology using existing infrastructure

End-use deployment and application of the Hazer Technology eliminates H₂ transport risk and reduces cost



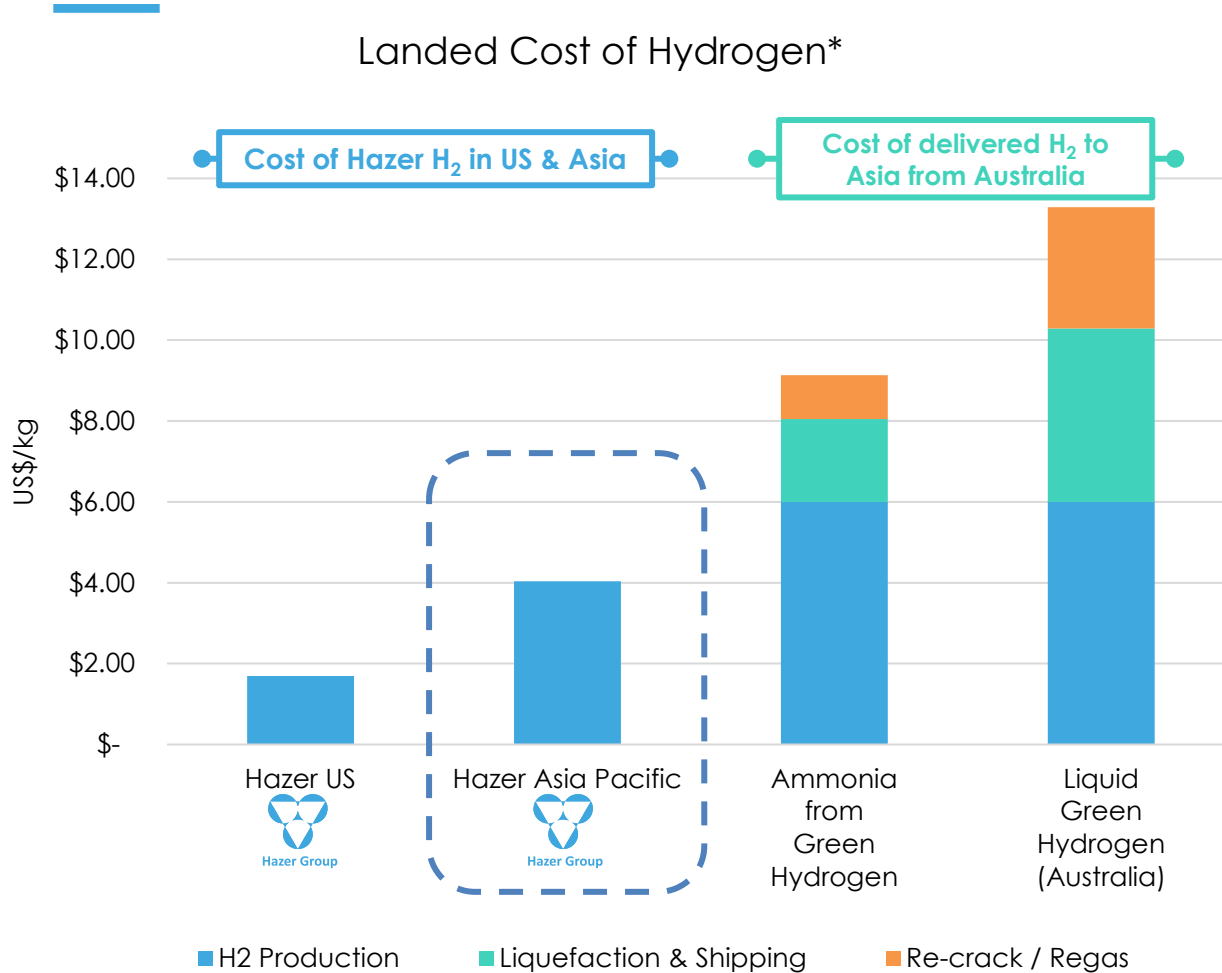
Conceptual design of Hazer facility co-located with 3rd party refinery
(Source: stock image not Hazer infrastructure)

- Eliminates requirement for hydrogen transportation cost and risk
- Co-located with end-user infrastructure – such as LNG facilities, refineries etc.
- Ability for shared services and lower operating cost model





2 Delivered cost of H₂ – Hazer competitive advantage



- Hazer co-located at existing infrastructure eliminating requirement for shipping
- Ammonia is transportable however reconversion technology immature and potentially expensive
- Liquefied H₂ technology (-253 °C) not available today and economic viability challenged
- Hazer in North America significantly cheaper with low-cost gas and power

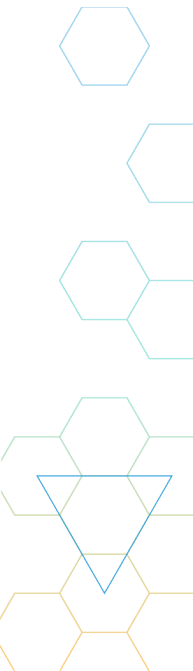
* Company aspirations should not be read as forward-looking statements. Hazer does not yet have reasonable grounds to believe the aspirational portfolio will be achieved. See disclaimer - slide 2 and assumptions & notes – slide 23.





3 Global partners & projects

Tier-1 partners developing commercial projects in North America, Europe and Asia-Pacific





4 Advanced technology readiness

Rapid development since company founding and advancing Tech Readiness Level (TRL)

(<1g* batch)



2007–2013

Bench scale testing

- University of Western Australia
- Concept evaluation

(<100g* batch)



2016–present

Scaled up bench test

- University of Sydney
- Catalyst kinetics and process research

(~1Kg* batch)



2017

Bench scale fluid bed

- University of Sydney
- Conceptual testing of fluidised bed concept

(~<2 kg/hr* semi-continuous)



2017–2021

Pilot Plant

- Sydney and Perth
- Fluidised bed with optimized conditions and catalyst injection

(< 60kg/hr* continuous**)



2022-2023

Commercial Demonstration Plant (CDP)

- Perth, Australia
- End-to-end continuous plant with biogas feed
- Start up planned 2023

Project Development Pipeline

- FORTIS BC
- CHIYODA CORPORATION
- CHUBU Electric Power
- ENGIE

2025+

Key Projects

- Canada
- Chubu, Japan
- Montoir-de-Bretagne, France

Strategic Focus

hazergroup.com.au

*Combined product scale **CDP planned start up 2023

4

Commercial demonstration plant confirming scalability

The first fully-integrated demonstration plant of the Hazer Process



CDP Site, Perth, Australia

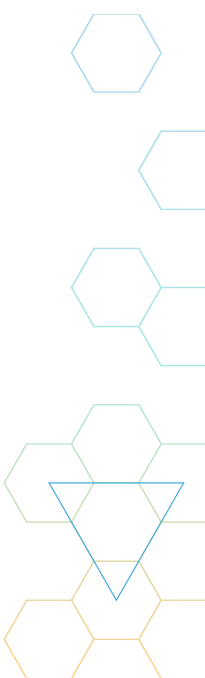
Project Summary

- 100 tpa H₂ and ~380 tpa graphitic carbon
- Carbon negative process with biogas feedstock
- Construction & Phase 1 commissioning completed June 2022
- Ready for startup on-track for 2023.
- Fully funded with ~\$9.4 million grant funding awarded by Australian Renewable Energy Agency (ARENA)



Australian Government
Australian Renewable
Energy Agency

ARENA



4 CDP on track for start-up in 2023

Key Milestones to Ready for Start-up (RFSU)

- ✓ Phase 1 plant construction
- ✓ Phase 1 commissioning, testing & debugging
- ✓ Heat exchanger materials delivery
- ✓ Mark-1 reactor forging & heat treatment
- ✓ Hot construction planning and contracts
- ✓ Start-up approvals and permits

On-track

- ✓ Hot equipment fabrication and installation
- ✓ Commissioning, RFSU and production

✓ Completed ✓ On-track

Latest Updates

- ✓ Heat exchanger successfully installed
- ✓ Reactor fabrication nearing completion
- ✓ CDP start-up on-schedule



Reactor successfully heat-treated and preparing for final machining and assembly

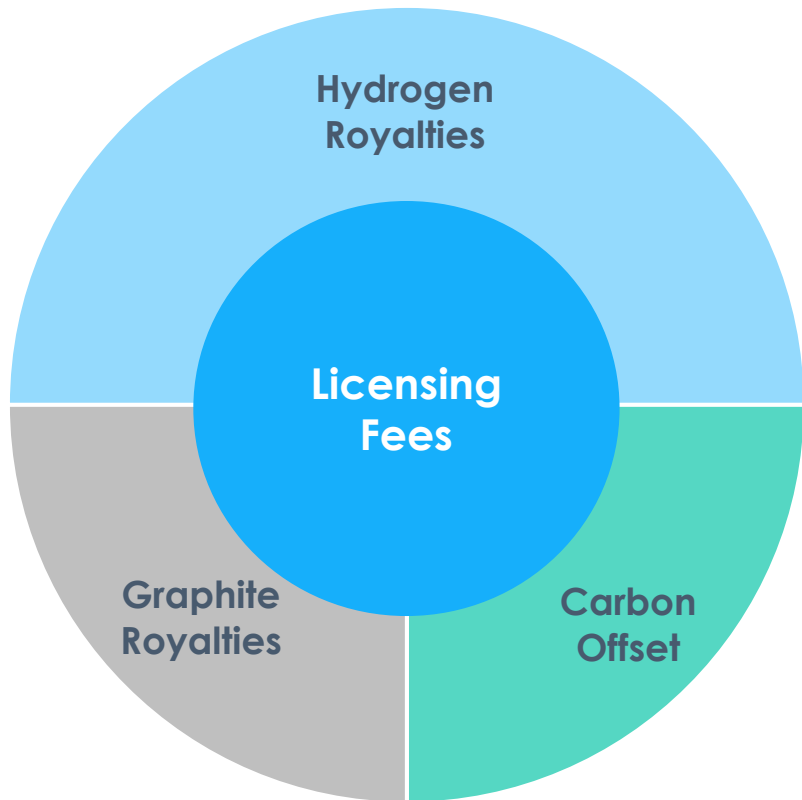




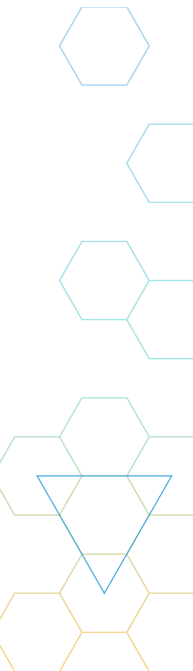
5

“Capex-lite” business model enables early free-cashflow

Hazer business plan premised on licensing and royalty revenues avoiding large-scale capex exposure



- One technology, two valuable markets
- Flexible combination of license fees and royalties
 - Fixed annual license fees commensurate with plant size
 - Royalties a percentage of H₂ and graphitic carbon revenues
- “Capex-lite” approach





6

Graphite production diversifies earnings

A synthetic, low emissions product with differentiated morphology and properties

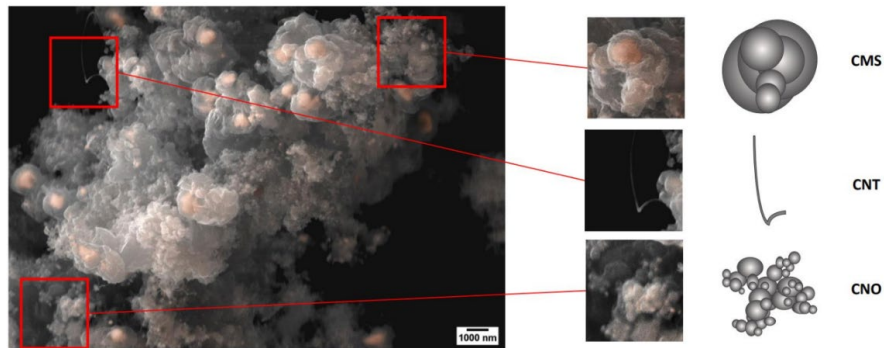
- Highly structured vs amorphous carbon black
- Iron inclusions produce magnetic graphite
- Low production emissions
- Up to 95% graphite purity
- High thermal & electrical conductivity
- Low sulphur & low ash content

Mitsui MOU

- A leading international trading and investment group based in Japan
- MOU signed to jointly investigate the market for Hazer graphite
- Exploring possible customers & applications in Asia-Pac, Northern America, Europe and Middle East



MITSUI & CO.





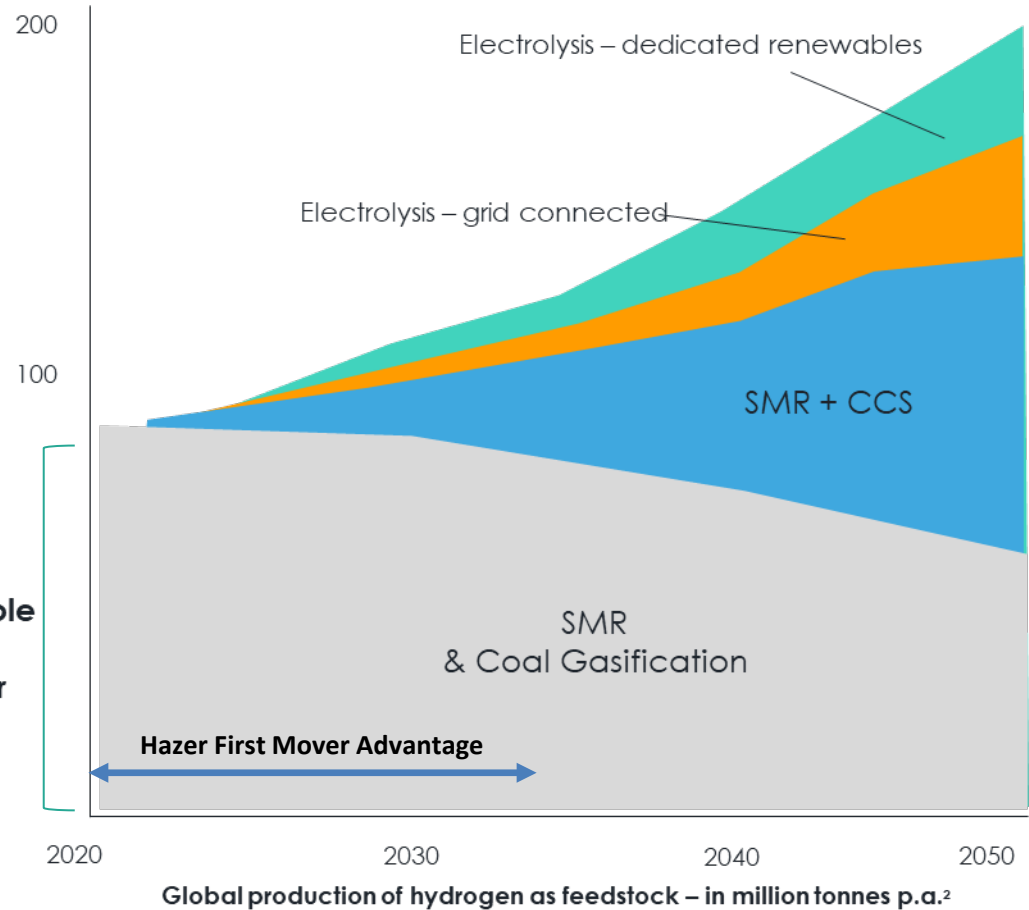
7 Building leading position in a rapidly growing market

Hydrogen will play a key role in the decarbonisation of hard-to-abate sectors

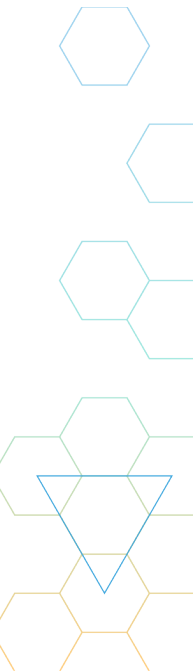


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Today's Addressable Market for Hazer

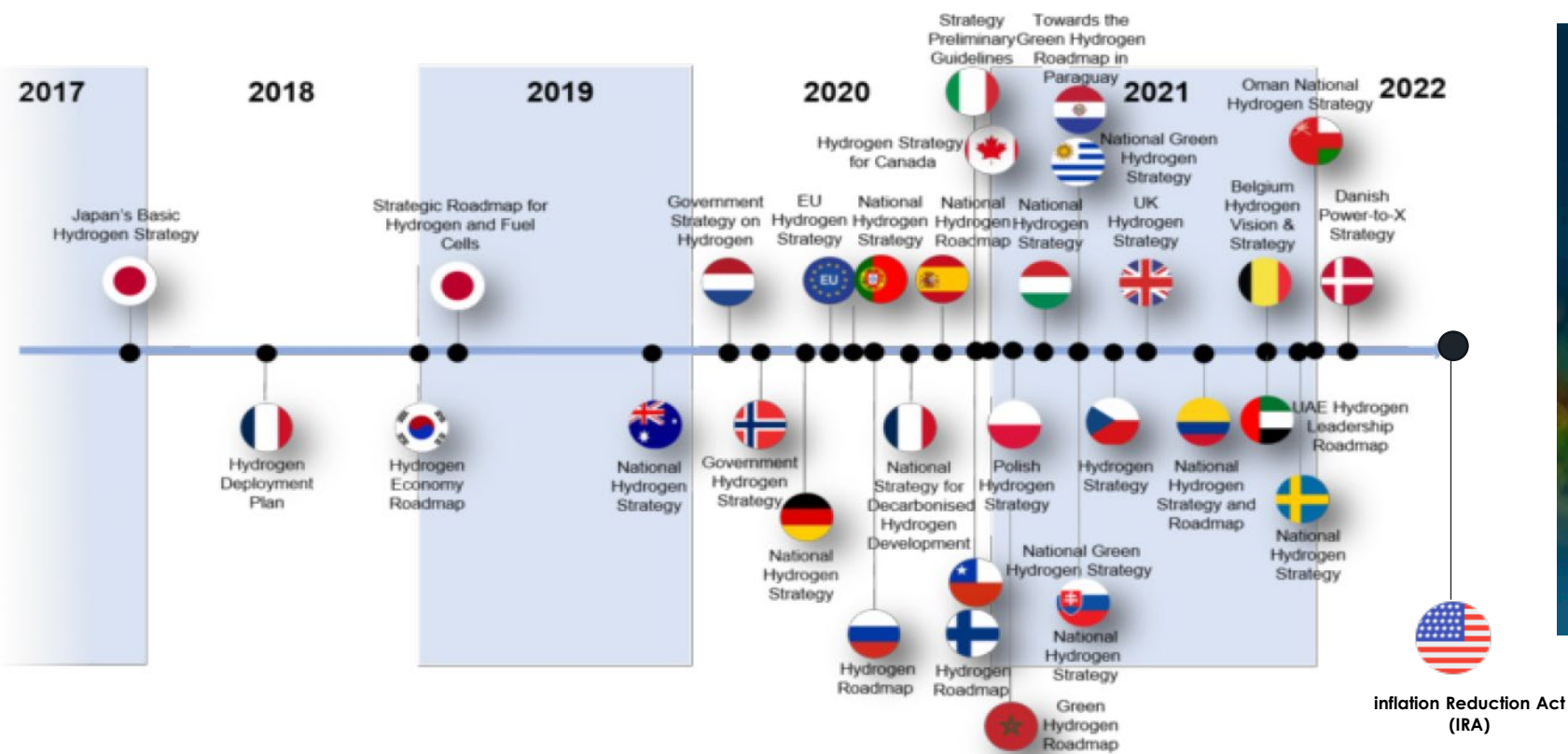


¹International Energy Agency (IEA) - The Future of Hydrogen, June 2019: <https://www.iea.org/reports/the-future-of-hydrogen>
²DNV (June 2022) – 'Hydrogen forecast to 2050': <https://www.dnv.com/news/hydrogen-at-risk-of-being-the-great-missed-opportunity-of-the-energy-transition-226628>



8 Global policy action gaining momentum

Hydrogen strategies expected in countries representing over 80% of global GDP by 2025



U.S. National Clean Hydrogen Strategy and Roadmap



Source: Various sources; data compiled by Goldman Sachs Global Investment Research

Project Pipeline

Partnerships and scale-up into target markets





Overview of key scale-up development projects







BC, Canada



Nagoya, Japan



Montoir, France

Description	<ul style="list-style-type: none"> Utilises existing fuel terminal site H₂ to be used in gas blending and other industrial applications 	<ul style="list-style-type: none"> Existing LNG import terminal or power station site H₂ as fuel for power generation, industry feedstock and mobility 	<ul style="list-style-type: none"> Existing LNG import terminal site identified H₂ as fuel for power generation, industry feedstock and mobility
Partners		 	
Expected H₂ Production • Phase 1 • Phase 2	<p>2,500 tpa 100,000+ tpa</p>	<p>2,500 - 10,000 tpa Up to 100,000 tpa</p>	<p>2,500+ tpa 50,000+ tpa</p>
Hazer Operating Model	Project partner & licensing	Licensing	Licensing
Targeted Start-up (phase 1)	2025	2027-2028	2027-2028





HazerGroup™

▼
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Abbreviations and units used

ARENA Australian Renewable Energy Agency

CCS Carbon Capture & Storage

CDP Commercial Demonstration Plan

FID Final Investment Decision

IRR Internal Rate of Return

KTPA thousands of tonne per annum

LNG Liquefied Natural Gas

MOU Memorandum of Understanding

MMBTU Million British Thermal Units (A thermal unit of measurement for Natural Gas)

MTPA millions on tonne per annum

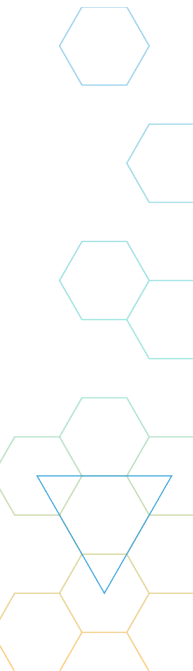
PDP Project Development Plan

PFS Pre-Feasibility Study

ROI Return on investment

SMR Steam Methane Reforming

TPA tonne per annum





Assumptions and notes

Slide 10 – Delivered Cost of H2 – Hazer Competitive Advantage

1. Hazer US and Asia Pacific costs of H2 - Company analysis and projections, modelling using an average feedstock gas price for North America of US\$2.20/MMBTU, and US\$12.80/MMBTU for Asia Pacific, ~US\$400/tonne graphitic carbon revenue [offset against operating expense]. Learning curve of 30%.
2. Assume a single pass configuration (no PSA) with value ascribed to unreacted methane (e.g power generation or gas blending use case)
3. Green ammonia cost - Source IRENA, 2020 NH3 costs of US\$720-\$1,400/tonne, mid-point being \$1,060/tonne. H2 equivalent is US\$6.00/kg:
<https://www.futurebridge.com/industry/perspectives-energy/green-ammonia-an-alternative-fuel/#:-:text=Cost%20of%20green%20ammonia&text=The%20current%20Price%20of%20green,%2C%20to%20%24%20310%20per%20tonne.>
3. Green hydrogen production cost - Source: IEA Global Hydrogen Review 2022, p.92. 2021 Wind Onshore and Solar PV average price of US\$6/kg.
4. Shipping of ammonia and liquid hydrogen – Source: IEA Global Hydrogen Review 2022 & Energy Technology Perspectives 2023. Costs of shipping ammonia expected at \$1.9-2.2/kgH2 (average \$2.05/kg), LH2 \$2.0-3.7/kgH2 (average \$2.85/kg): <https://www.hydrogeninsight.com/innovation/iea-ammonia-and-lohc-will-be-cheaper-options-for-shipping-hydrogen-than-liquefied-h2-even-with-reconversion-costs/2-1-1387346>
5. Ammonia re-crack to H2 - The cost of re-cracking ammonia to hydrogen is estimated to be € 1/kg / US\$1.08/kg: <https://pubs.rsc.org/en/content/articlehtml/2021/se/d1se00345c>
6. Green hydrogen production cost - Source: IEA Global Hydrogen Review 2022, p.92. 2021 Wind Onshore and Solar PV average price of US\$6/kg.
7. Green Hydrogen liquefaction - Unit costs of liquefaction system for hydrogen 1.44 \$/kg LH2: <https://www.sciencedirect.com/science/article/abs/pii/S0360319919311127>
8. Green Hydrogen Load-out & Receiving Facilities - ~US\$3/kg. Australian Hydrogen Market Study Sector Analysis Summary, May 2021, CEFC, p.84.

