

## COMMERCIAL DEMONSTRATION PROJECT INVESTOR PRESENTATION

**PERTH, AUSTRALIA**; **7 AUGUST 2020**: Hazer Group (ASX:HZR) is pleased to provide the following Hazer Commercial Demonstration Project Presentation to be used in investor presentations.

### [ENDS]

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### **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 graphite production process. The Hazer Process enables the effective conversion of natural gas and similar methane feedstocks, into hydrogen and high-quality graphite, using iron ore as a process catalyst.

For further information or investor enquiries, please contact:

### **Geoff Ward**

Email: contact@hazergroup.com.au

Phone: +61 8 9329 3358

For media enquiries, please contact:

### **WE Communications**

Email: WE-AUHazer@we-worldwide.com

Phone: +61 437 812 102

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## THE HAZER PROCESS

Low cost, low emissions process to create two high value, high demand products

- Hazer Process low emission path to create two high value products utilizing methane feedstock and iron ore catalyst
  - hydrogen; 99.99% + purity
  - synthetic graphite; 80 95% TGC
- **Strong market dynamics:** Hydrogen and graphite are both key products in a de-carbonising economy
- Clean and cost-effective: Carbon content of the natural gas feedstock is captured in the form of solid graphite - a saleable by-product - rather than being converted to CO<sup>2</sup>
- Clean Hydrogen: Hazer's emissions are lower than alternative technologies when operated with renewable biogas as feedstock
- Premium market for hydrogen from low-emission sources emerging

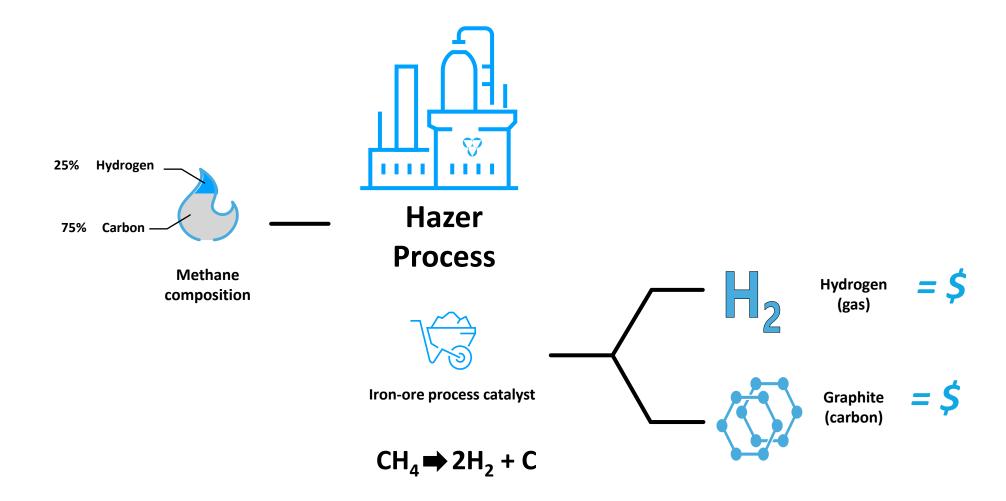
FULLY FUNDED TO DEVELOP THE \$17 M HAZER COMMERCIAL DEMONSTRATION PROJECT - FIRST LARGER SCALE FULLY INTEGRATED DEPLOYMENT OF THE HAZER PROCESS





## **THE HAZER PROCESS**

Producing two sustainable and valuable products without creating CO<sup>2</sup> in the process



<sup>\*</sup> CO<sub>2</sub> abatement potential: 100 - 150 t CO<sub>2</sub> (equiv) / t Hydrogen when utilising biogas feedstock



## HAZER DEVELOPMENT HISTORY

Advancing towards commercial production, backed by extensive research & pilot testing



Research commences at the University of Western Australia



### 2010 & 2015

Hazer Group established in 2010, lists on ASX in 2015, IP acquired from UWA





### 2015 - 2020

Research collaboration commenced with University of Sydney (Bench Testing)



### 2018 - 2020

Pilot Plant Test Program; St Mary's (NSW 2018) & Kwinana (WA 2019 - )

### May 2019

Signed MOU with Water Corporation for biogas supply and project collaboration





### **June 2019**

Primero appointed as engineering partner under ECI Contract





Practical Completion & Commencement of Operations

## **July 2020**

Project FID approved; Primero Group appointed as EPC Contractor



### **June 2020**

Capital Raising; Equity Placement (\$8.4 M) & Term Sheet for Senior Secured Loan Facility (\$6.0M)

### May 2020

Executed binding Gas Supply Agreement & Collaboration Deed with Water Corporation





### December 2019

Non-binding Term Sheet with BOC Limited for Hydrogen Offtake



### **March 2020**

Executed binding Funding Agreement with ARENA for up to \$9.41 million in grant funding.



# HAZER COMMERCIAL DEMONSTRATION PROJECT

First fully integrated larger scale demonstration of the Hazer Process

- Capacity 100 tonne p.a fuel cell grade hydrogen capable of being used as a low emission transport fuel, for power generation or clean industrial applications
- Feedstock Biogas methane produced in the waste-water treatment process
- Strong collaboration with Water Corporation: Biogas Supply Agreement and Project Collaboration Agreement provides security of feedstock supply and access to the project site
- Will deliver significant CO<sup>2</sup> emissions reductions to the Woodman Point water treatment facility and demonstrate potential long-term use for waste biogas produced from water treatment operations
- Primero Group appointed as EPC contractor. Primero team already working at full capacity with Hazer following completion of detailed design and procurement works under our Early Contractor Involvement strategy









## Project Summary

Location

Woodman Point WWTP (WA)

• Feedstock Type Biogas

• Feedstock Vol. ~2 million Nm³/year

• **Hydrogen** 100 tpa (99.99% purity)

• **Graphite** ~380 tpa (90 - 95% TGC)

• **Site Area** ~4000 m<sup>2</sup>

• Reactor Design Pressurised Fluidised Bed

Heating Electrical Heating



## **ARENA GRANT FUNDING OF \$9.41M**

Australian Government support for commercial development of a novel Australian technology

- Australian Renewable Energy Agency (ARENA) is a Federal Government agency established to drive the competitiveness and adoption of renewable energy
- Hazer has executed a binding Funding Agreement for up to \$9.41 million in grant funding to support construction and operation of the Hazer CDP
- Up to \$7.9 million can be applied to support construction costs; funding will be drawn down in tranches during the project execution phase subject to meeting project milestones
- A further \$1.5M available to be called down in three annual tranches during operational phase
- All Conditions Precedent to the ARENA Funding Agreement have now been met or waived; first funding tranche expected to be drawn down in 3Q 2020
- The Condition Precedent relating to securing a binding hydrogen offtake agreement has been waived by ARENA. Hazer will continue discussions with BOC regarding potential short-term customer requirements but will move to selfconsume the hydrogen for power generation as the base case for operations



## **FUNDING PACKAGE OVERVIEW**

Project fully funded and on target to commence hydrogen production mid 2021

- CAPEX budget \$17M fully funded by a combination of Hazer cash resources, ARENA grant funding and Senior Secured Loan Facility
- CAPEX estimate includes a hydrogen fuel cell power generation system allowing Hazer to self-consume part of the hydrogen produced by the CDP to generate renewable power offsetting power purchased from utility providers and reducing project operating costs
- Binding documentation for a \$6M Senior Secured Loan Facility executed with specialty debt fund Mitchell Asset Management

## Equity raise \$8.4M

 Completed June 2020
 Oversubscribed; Initial target of \$6.0M

## ARENA grant \$9.41M

- Funding Agreement conditions precedent now met
- Requirement for Hydrogen
  Offtake agreement waived
- Hazer to self consume
  Hydrogen via a stationary
  hydrogen fuel cell power
  generation system

Cash runway supports business development activities and ongoing corporate costs until June 2022.

## Loan facility \$6M

- Senior Secured Loan Facility
  - 5 Year Term
- Drawdown in 3 x tranches of \$2.0M during construction phase; first drawdown anticipated 3Q2020
- Repayments from future R&D Tax incentive receipts



## **HAZER CDP - SCHEDULE AND MILESTONE**



Q1 FY21

Q2 FY21

Q3 FY21

Q4 FY21

July 20

Project FID announced

July 20

Appointment of Primero Group as engineering, construction and installation contractor

October 20

Complete Detailed Design & Award of Contract Packages

**November 20** 

Secure Environmental and Heritage Approvals

**December 20** 

Civil Works and Site Preparation

January 21

Commence Onsite Installation

**May 21** 

Commence Pre – Commissioning

Mid CY 2021

**Practical Completion** 

## **SUMMARY**

Completion of the CDP is the major step to demonstrate the scaleup of the Hazer technology for commercial applications

- First larger-scale, fully integrated, continuous application of the Hazer Process; builds on two years of successful pilot programs in NSW & WA
- Binding agreements in place with Water Corporation for Biogas supply and access to and use of project site
- Project is fully funded with completion of equity placement in June 2020, execution of binding agreements for Senior Secured Loan facility, and notification that all Conditions Precedent to the ARENA Funding Agreement have been met.
- Primero Group appointed as EPC contractor; Primero has been working closely with Hazer team since June 2019 on detailed design and procurement activities.
- Target commencement of hydrogen production mid-2021
- Strong international and domestic interest in the Hazer Process; the Hazer CDP provides a strong reference site for future commercial plants demonstrating both the technology and unique competitive niche



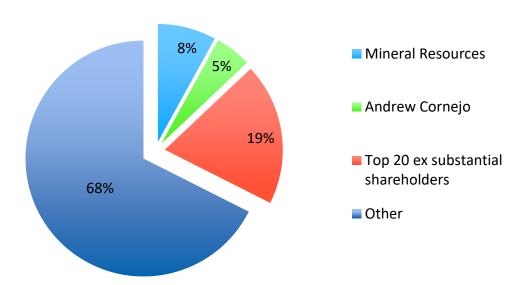


## **CORPORATE OVERVIEW**

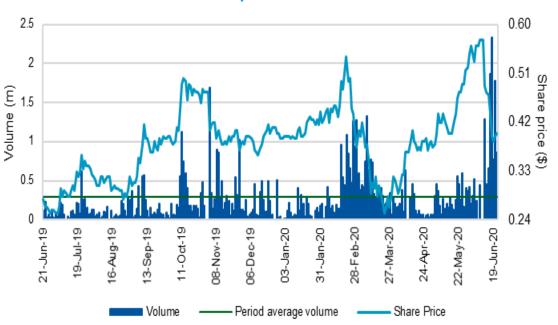
## **Capital Structure**

Shares on Issue	136.3m
Market Capitalisation @\$0.425	\$57.9m
Cash @ 30 June 2020	\$17.2m
Total Options (strike prices from \$0.40 to \$1.20)	25.6m

## **Share Register**



## **Share price & volume**





## STRONG MANAGEMENT TEAM WITH PROJECT EXP.

## Engineering, Technical, Marketing and Corporate expertise



**GEOFF WARD** 

Chief Executive Officer & Managing Director

- 25 years exp in senior executive roles within the energy sector, covering operations, commodity marketing, strategy and planning, development and execution of major capital projects.
- Experience in leading transactions in capital markets, financing, M&A and joint ventures.



**MARK EDWARDS** 

**Chief Operating Officer** 

- Mechanical engineer with 25 years exp in project management, site maintenance and operation.
- Former AUA Regional Director for Light Metals division at Hatch Pty Ltd.



**EMMA WALDON** 

### CFO & Company Secretary

- 20 years experience in finance and corporate advisory roles including ASX listed companies.
- Member of the AICA a Fellow of the FSIA and a Certificated Member of the Governance Institute of Australia.



**DR ANDREW CORNEJO** 

## Co-Founder & Chief Technical Officer

- PhD; inventor of the Hazer Process.
- Co-Founder of Hazer Group Limited.
- 15 years technical engineering experience in R&D, advisory and resource development roles.



**LUC KOX** 

### **Commercial Manager**

- 20 years' experience in engineering and clean tech industries, including energy recovery from biogas.
- Extensive experience in international business development, including project finance and contract development, in particular throughout Asia Pacific region.



## EXPERIENCED, INDEPENDENT BOARD

## Commercial, Technical, Contract and Regulatory expertise



**TIM GOLDSMITH** 

#### Chairman

- Over 20 years as Partner with global professional services group PwC.
- Leader of PwC's Mining Group, and National China Desk Practice.
- Over 30 years corporate and commercial experience across international mining and industrial business operations.



**DR ANDREW HARRIS** 

#### Non-Executive Director

- Lead Director of the Engineering Excellence Group, Laing O'Rourke.
- Professor of Chemical and Biomolecular Engineering at the University of Sydney.
- Previously the CTO of Zenogen, a hydrogen production technology company, and a co-founder of Oak Nano, a start-up commercialising novel carbon nanotube technology.



**DANIELLE LEE** 

#### Non-Executive Director

- Corporate lawyer with more than 23 years' experience shared between private law firms and the ASX.
- Main practice areas are corporate advisory, governance and equity capital markets; regularly advises on issues relating to the Corporations Act and ASX Listing Rules.



**GEOFF WARD** 

## Chief Executive Officer & Managing Director

- 25 years experience in senior executive roles within the energy sector, covering operations, commodity marketing, strategy and planning, development and execution of major capital projects.
- Experience in leading transactions in capital markets, financing, M&A and joint ventures.
- B.E Chem (Hons) and MBA.
  Member of the Australian
  Institute of Company Directors.



## INVESTOR RELATIONS ENQUIRIES:

contact@hazergroup.com.au

## MEDIA ENQUIRIES:

WE-AUHazer@we-worldwide.com

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