

HAZER PROCESS – PROGRESS UPDATE

- Further scale up demonstrated with over 1kg graphite produced at rate of 1.5kg/day
- Significantly increased raw graphite purity to 95% (up from 86%wt)
- Positive outcomes from initial techno-economic analysis

PERTH, AUSTRALIA; 26th October 2016: Hazer Group Ltd (“Hazer” or “the Company”) (ASX:HZR, HZRO) is pleased to announce significant progress in the ongoing scale up and development work within our laboratory, based at the University of Sydney. The Company is also excited to share initial techno-economic modelling analysis for commercial hydrogen and graphite production using the Hazer Process.

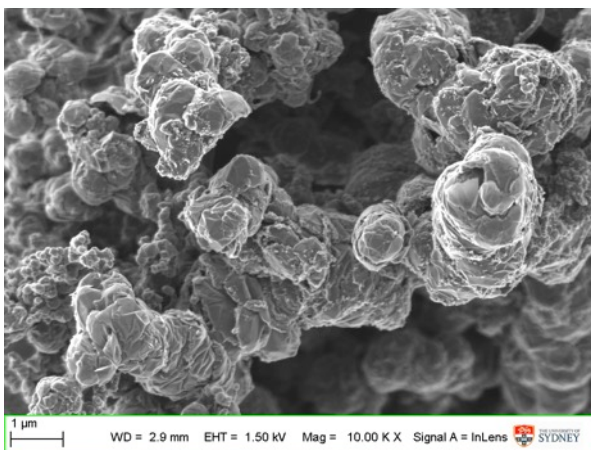
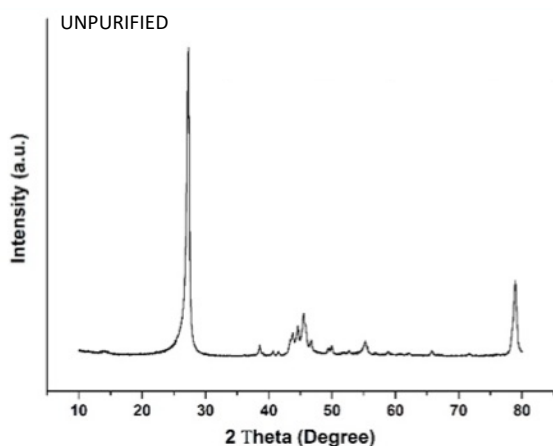
MILESTONE SCALE UP DEMONSTRATED: 1KG OF GRAPHITE PRODUCED

Hazer has successfully increased the operating scale of the Hazer Process, and has successfully produced over 1kg of synthetic graphite in a single batch using the Fluidised Bed Reactor, with most recent operations operating at an effective graphite production rate of 1.5kg / day. This further demonstrates the scalability of the process, having successfully increased in capacity by 3,400x in 8 months.



IMPROVED GRAPHITE PURITY

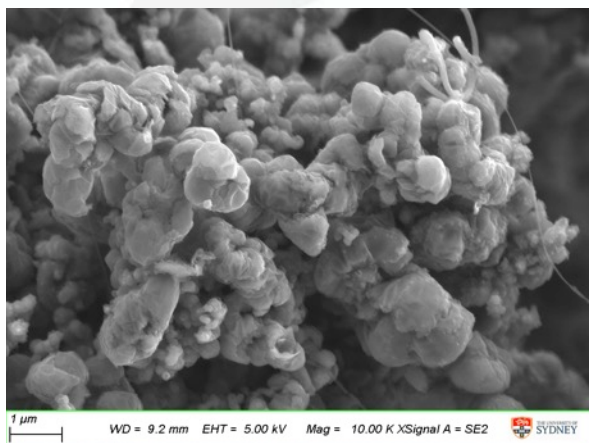
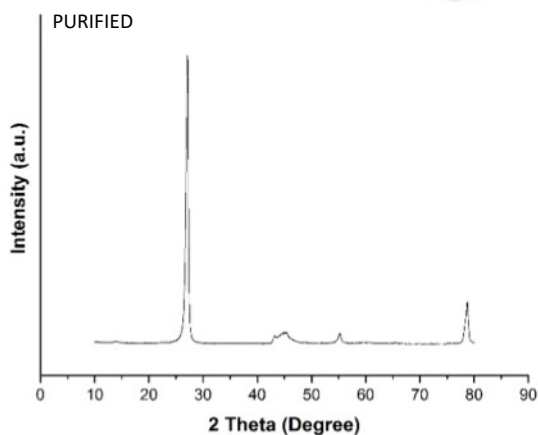
Hazer has further demonstrated substantial improvements in raw (unpurified) graphite purity, with consistent graphite production using the large-scale static bed reactor now generating graphite with raw purity of 95% (up from 86%wt). This graphite purity is directly comparable to graphite content of commercial graphite concentrates, and Hazer is exploring opportunities for this to be a replacement product for graphite concentrates that are currently traded. Spectroscopic analysis and electron microscopy images (see below) confirm that Hazer's graphite product is highly crystalline and globular in shape.



FURTHER PROCESS IMPROVEMENTS

Improvements to the existing reactor design have allowed better control of the gas distribution and more effective catalyst fluidization. These improvements to the system have led to the higher yields and a greater reaction longevity shown above. This fluidization, in conjunction with parameter studies, enables more optimized reaction conditions with greater control of graphite structures/properties and more efficient natural gas conversion; potentially offering improvements in the Hazer Process' cost profile.

Further results have also shown that Hazer's current single stage purification process (capable of taking raw product of ~86% purity to over 99%) does not deteriorate the graphite crystallinity and morphology, as shown in the XRD graph and SEM image below.



POSITIVE OUTCOMES FROM TECHNO-ECONOMIC ANALYSIS

Hazer has completed initial mass balance and techno-economic modelling of the expected performance and cost of the Hazer Process based on initial unoptimised laboratory results, to assess various scenarios that would be experienced in commercial plants operating the Hazer Process.

These preliminary results were highly encouraging and suggest Hazer has the potential to offer very low cost hydrogen and graphite products under a range of feedstock costs and secondary product revenues. In addition, the process would be expected to emit less than 50% of the CO₂ emitted by current fossil fuel based methods to produce an equivalent amount of hydrogen.

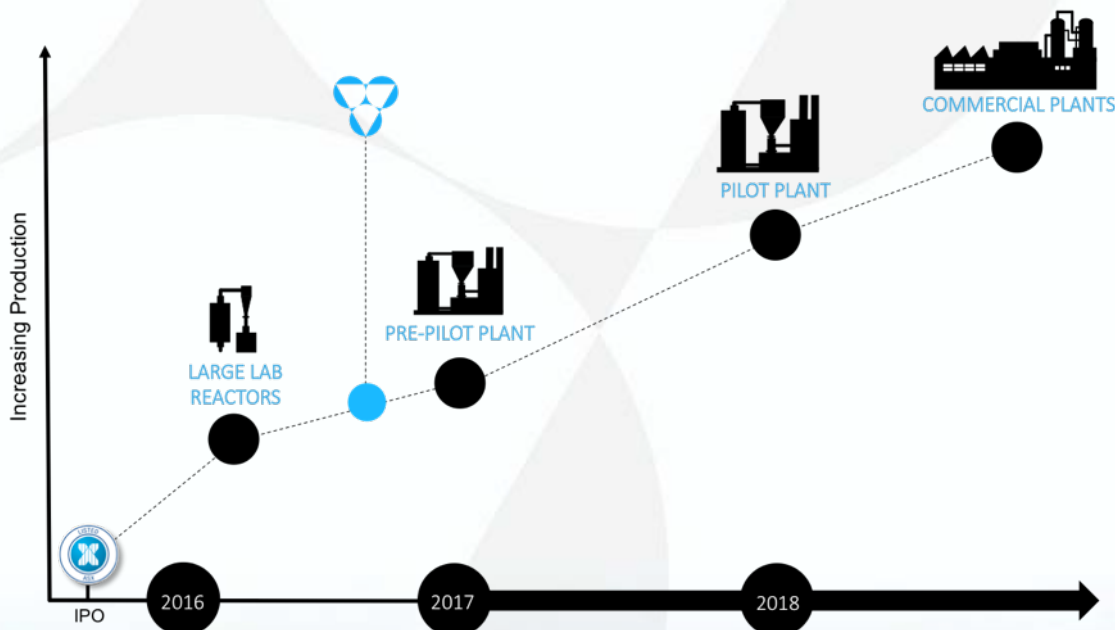
Lowering the CO₂ emissions associated with hydrogen production is a key aspect of new hydrogen opportunities in the energy industry, including applications for hydrogen in fuel-cell powered vehicles, clean electricity generation and synthetic fuels.

Kemplant, Hazer's strategic chemical engineering partner, verified the modelling scenarios and outputs. The modelling scenario resulting in a reduction of CO₂ emissions by 50% was not optimised for minimised CO₂ emissions, and additional analysis by Kemplant has confirmed that the CO₂ emissions of the Hazer Process can be significantly further reduced with additional process optimisation or modification, including the use of a portion of the hydrogen generated to provide the process heat requirement.

"The CO₂ emissions could be significantly reduced through further process design and optimisation. Furthermore, it is probable that with the use of renewable/bioenergy to supply both the energy and methane requirements of the process, the net CO₂ emissions can be further reduced resulting in a 'carbon neutral' or near 'carbon neutral' plant" - Director, Kemplant Pty Ltd.

ONGOING SCALE UP DEVELOPMENT WORK

In conjunction with making key advances in the underlying scale up process using large lab reactors, the Company is now working towards the design and construction of a 'pre-pilot plant' facility, which is expected to be commissioned in early 2017. This plant is a key precursor to the ongoing design of Hazer's pilot plant, that is targeting production levels of over 100 kilograms of combined hydrogen and graphite products per day.



The ongoing scale up development work depends upon a number of factors including continued technical and development success of the Hazer Process in a cost efficient manner as a pre-pilot plant, a pilot plant and any commercial plants are commissioned as well as securing funding (whether equity or debt) for these stages of development and such funding being available on acceptable terms.

Hazer Managing Director Geoff Pocock said:

"We are delighted to have made significant progress in scaling and optimising the Hazer Process, and generating high purity graphite concentrates as direct reaction products. These results show the clear and compelling benefits that are available to both graphite and hydrogen users through the Hazer process over other production processes. These results indicate that Hazer has an opportunity to target three major global markets by offering a low cost product for the global graphite and hydrogen industries as well as offering a low emission hydrogen-based energy solution".

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

ABOUT KEMPLANT

Established in 1984, Kemplant Pty Ltd is a private chemical engineering company providing engineering, design, supply, project management, commissioning, process scale-up, plant operation & optimisation and similar service to the process industries for over 30 years. They have extensive "in-house" expertise for supplying equipment and turnkey plants to large cross-section of the industries including, chemical, mining, energy and fine chemical clients.

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