



COLDry opportunities supported by Directors

Key points:

- Broker Presentation – Leveraging Japan’s multi-billion-dollar clean hydrogen investment represents an opportunity for ECT in Victoria
 - Directors choose share compensation in lieu of cash as show of support for increasing opportunities for ECT’s technologies
 - Australian Carbon Innovation (ACI) membership
 - Positive interim gasification test results confirm COLDry suitability for gasification-based hydrogen projects
 - Video: overview of the COLDry demonstration plant at Bacchus Marsh
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6 April 2023: Environmental Clean Technologies Limited (ASX: ECT) (“ECT” or “Company”) is pleased to provide the following update on emerging market opportunities and recent activities.

Leveraging Japan’s multi-billion-dollar clean hydrogen investment in Victoria

The Company today released a broker presentation outlining the opportunity created by the recent announcement that Japan’s \$21.7 billion Green Investment Fund will invest \$2.35 billion toward a project that will produce clean hydrogen from Victoria’s vast, world-class lignite resource.

For over a decade, ECT has advocated transitioning from the low-value, high-emission use of lignite to higher-value, low and zero-emission applications. Over this time, the Company has faced major headwinds of opinion that “brown coal is dead” amidst cries of “leave it in the ground”.

This recent announcement by Japan validates the Company’s view that the future of brown coal lies in the refined chemistry of lignite via its conversion into clean fuel like hydrogen, soil health products and advanced carbons like battery-quality graphitic carbon. The technology is available to establish a multi-trillion-dollar industry in Victoria with low to net zero emissions and transform Victoria into a hydrogen powerhouse, supporting the energy transition.

The Company continues to prepare its COLDry demonstration facility for any vendor selection process for relevant projects, including HESC. We continue to develop our Viridian Hydrogen project at Bacchus Marsh and the early commissioning of the COLDry process now also provides us with a working demonstration to allow for independent engineering reviews and to showcase COLDry at scale.

Directors taking shares in lieu of cash

The investment markets over the last 12 months have been volatile and very difficult for small-cap companies like ECT. The board has considered a number of initiatives to support market confidence in a fiscally responsible manner. To this end, the board is pleased to announce that all directors will be taking shares in lieu of cash for at least the next six months.

All Non-Executive Directors will receive 70% of their monthly fee as shares to be calculated on a 30-day VWAP price on the prior month's trading period.

The Managing Director will be taking 50% of his monthly remuneration as shares to be calculated on the same basis as outlined above.

All shares issued to directors will be subject to shareholder approval at the next available General Meeting.

The Company has also reached agreement with our executive, some contractors and some service providers, to also receive shares partly in lieu of cash payment. All other shares, not subject to shareholder approval, will be transferred from the current shares on issue, taken from those shares held in custody from shares relinquished under a previous Equity Lending Facility (ELF).

Managing Director Glenn Fozard stated:

"The board felt that the market was not valuing the worth of the Company commensurate with our stage of development. To this end, taking shares in lieu of cash reinforces the internal view of value, and we are pleased to receive support for this initiative from staff, contractors and service providers alike."

Australia Carbon Innovation (ACI) full membership

The Company is pleased to announce it has taken up full membership at ACI.

ACI is a not-for-profit private company initially established by the Victorian government with a mandate to co-invest with stakeholders in carbon innovation, hydrogen utilisation and emissions reduction technologies.

This membership¹ not only places us in esteemed company with other stakeholders (shown below) in the future of brown coal but also provides access to ongoing research resources and support that assist the continued development of our technologies and collaboration with relevant partners in the industry.



¹ Website: <https://www.acinnovation.com.au/membership>

Gasification evaluation programs and results

ECT is currently undertaking a program of gasification studies in collaboration with ACI & Monash University and separately with the University of Newcastle in support of evaluating and validating the performance potential of the COLDry process and product when associated with a gasification plant – a process that can produce hydrogen and one being adopted by the HESC project.

Integration evaluation:

A comprehensive process model of a gasification plant consuming lignite and producing hydrogen has been developed by Monash University and ACI. ECT has initiated a work program with ACI to modify the process model to replace the initial drying method (a steam-fluidised bed process) with the COLDry process. The purpose of this study is to define the overall impact of energy efficiency improvements, as well as the project water balance improvements. A gasification unit operates at high temperatures and is exothermic (produces excess energy). This excess energy can be captured and utilised (e.g. to generate steam and/or electricity). However, as the 'grade' of energy reduces (lower temperatures), the economics of capture and utilisation shifts, resulting in the need to provide cooling to shed that excess energy, usually done via cooling towers that consume water.

The COLDry process shifts this balance considerably in two ways:

- i) through consumption of gasification process waste energy, avoiding the need for additional water-consuming cooling systems (capital saving, as well as improved site water balance), and;
- ii) avoiding the need to consume high-grade or primary energy to generate the steam required to dry the incoming lignite (reduced CO₂ emissions requiring offset, reduced OPEX, etc).

Gasification performance:

A gasification performance study has been initiated with the University of Newcastle. While the study is yet to be completed, the Company is pleased to advise that the interim results confirm COLDry achieved virtually complete conversion under a range of conditions and is, therefore, an ideal feedstock for downstream gasification processes like the one intended for the HESC project.

These results allow us to affirm COLDry as a relevant drying process for downstream gasification.

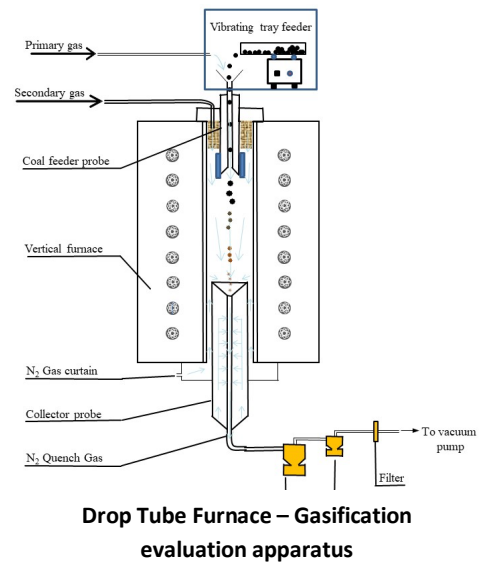
Ashley Moore, ECT's Group Engineer, commented:

"The early results from this study indicate almost 100% gasification of incoming materials, indicating the highly reactive nature of COLDry processed lignite."

"The impact of ECT's process delivers huge reactive surface area to a gasifier across the range of particle sizes investigated (212µm and 500µm)."

"This fact then allows the gasification feedstock preparation system to consider less aggressive crushing systems, reducing energy consumption while achieving high reaction rates and full conversion."

"The balance of the evaluations will focus on expanding the particle sizes under consideration and incorporating biomass blends within the pellets."



Video: an overview of the COLDry demonstration plant at Bacchus Marsh

The Company has released a short video of its COLDry demonstration plant in operation.

This video builds on a similar video released in June 2022 and is updated to include vision from the commissioned plant.

Located northwest of Melbourne, the COLDry demonstration plant has been instrumental in confirming the scalability of this unique, zero-emission drying process, providing a tangible validation point supporting the Company's intent to bid for the drying component of lignite projects in Australia.

In addition, the COLDry demonstration plant forms the basis of the Company's own Viridian Hydrogen demonstration², currently under development.

The video is available on the Company's website: <https://ectltd.com.au/video-coldry-demonstration-plant/>

This announcement is authorised for release to the ASX by the Board.

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² See 2022 AGM Company Presentation 18 Nov 2022

About ECT

ECT has been developing net-zero emission and hydrogen technologies for over 15 years.

Our solutions aim to transition today's use of resources to tomorrow's zero-emission future, delivering immediate financial and environmental benefits.

We are focused on advancing a portfolio of technologies that have significant market potential globally.

ECT's business plan is currently focusing on three major projects and opportunities:

- 1) Small Viridian Hydrogen Project & COLDry Commercial Demonstration at Bacchus Marsh, Victoria, Australia
- 2) Large Viridian Hydrogen Project at Yallourn, Victoria, Australia
- 3) HESC and other projects whereby COLDry could be selected as the drying process

About our Technology Suite

COLDry

COLDry is the gateway enabler of higher-value applications for waste biomass and lignite.

These streams are a rich source of valuable hydrocarbons. However, they suffer from high moisture content that must be reduced to enable higher-value upgrading and conversion to solid fuels, liquid or gaseous hydrocarbons.

Drying is easy. However, drying efficiently, cost-effectively, and with a low emission footprint has been the challenge. COLDry meets this challenge through a combination of 'substrate densification' and waste heat utilisation, delivering the world's first low temperature, low pressure, low cost, zero CO₂ emissions drying process.

HydroMOR

The HydroMOR process has the potential to revolutionise primary iron making.

HydroMOR is a simple, low-cost, low-emission, hydrogen-driven technology that enables 'low value' feedstocks to produce primary iron. HydroMOR is the transition solution to a "green steel" future.

COHgen

The COHgen process has the potential to deliver a lower cost, lower emission method for hydrogen production from lignite and other waste biomass streams.

COHgen is currently advancing through fundamental laboratory development intended to form the basis for a patent application ahead of scale-up and commercialisation.

COHgen aims to decouple hydrogen production from CCS, accelerating the race towards <\$2kg production costs with little to no emissions.

CDP-WTE

The catalytic depolymerisation-based waste-to-energy process converts low-value resources into higher-value diesel and other valuable by-products.

CDP-WTE can be deployed as a standalone solution or integrated with the COLDry process to deliver higher-value, lower-emission energy solutions to lignite resource owners.

Forward-Looking Statements

Statements contained in this release, particularly those regarding possible or assumed future performance, revenue, costs, dividends, production levels or rates, prices or potential growth of ECT, are or may be forward-looking statements. Such statements relate to future events and expectations and, as such, involve known and unknown risks and uncertainties. Therefore, actual results and developments may differ materially from those expressed or implied by these forward-looking statements depending on a variety of factors.