ECT

ENVIRONMENTAL CLEAN TECHNOLOGIES LIMITED

Technology that enables the stable transition to net zero.

Investor Presentation

Disclaimer

Environmental Clean Technologies Limited (“ECT” or “the Company”) has taken all reasonable care in compiling and producing the information contained in this presentation. The Company will not be responsible for any loss or damage arising from the use of the information contained in this presentation. The information provided should not be used as a substitute for seeking independent professional advice in making an investment decision involving Environmental Clean Technologies Limited. Environmental Clean Technologies Limited makes no representation or warranty, express or implied, as to the accuracy, reliability, or completeness of the information provided. Environmental Clean Technologies Limited and its respective directors, employees, agents and consultants shall have no liability (including liability to any person by reason of negligence or negligent misstatement) for any statements, opinions, information, or matters, express or implied arising out of, contained in or derived from, or any omissions from this presentation.

This presentation contains "forward looking statements" which involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of ECT, industry results or general economic conditions, to be materially different from any future results, performance or achievements expressed or implied by such forward looking statements. In particular, certain forward looking statements contained in this material reflect the current expectations of management of the Company regarding among other things: (i) our future growth, results of operations, performance and business prospects and opportunities; (ii) expectations regarding the size of the market and installed capacity of our project plants; (iii) expectations regarding market prices and costs; and (iv) expectations regarding market trends in relation to certain relevant commodities, including benchmark thermal coal and metallurgical coal prices and foreign currency exchange rates.

Forward looking statements are only predictions and are not guarantees of performance. Wherever possible, words such as "may," "would," "could," "will," "anticipate," "believe," "plan," "expect," "intend," "estimate," "aim," "endeavour" and similar expressions have been used to identify these forward looking statements. These statements reflect the Corporation's current expectations regarding future events and operating performance, and speak only as of the date of this material. Forward looking statements involve significant known and unknown risks, uncertainties, assumptions and other factors that could cause our actual results, performance or achievements to be materially different from any future trends, results, performance or achievements that may be expressed or implied by the forward looking statements, including, without limitation, changes in commodity prices and costs of materials, changes in interest and currency exchange rates, inaccurate geological and coal quality assumptions (including with respect to size, physical and chemical characteristics, and recoverability of reserves and resources), unanticipated operational difficulties (including failure of plant, equipment or processes to operate in accordance with specifications or expectations, cost escalation, unavailability of materials and equipment, delays in the receipt of government and other required approvals, and environmental matters), political risk and social unrest, and changes in general economic conditions or conditions in the financial markets or the world coal, iron and steel industries.

The materiality of these risks and uncertainties may increase correspondingly as a forward looking statement speaks to expectations further in time. Although the forward looking statements contained in this material are based upon what the Company believes to be reasonable assumptions, the Company cannot assure investors that actual results will be consistent with these forward looking statements. These forward looking statements are made as of the date of this material and are expressly qualified in their entirety by this cautionary statement. We do not intend, and do not assume any obligation, to update or revise these forward looking statements, unless otherwise required by law. Prospective purchasers are cautioned not to place undue reliance on forward looking statements. This presentation is for information purposes only and does not constitute an offer to sell or a solicitation to buy the securities referred to herein.

The Problem

Households, businesses and governments around the world are consuming energy at unprecedented levels while demanding reliability and affordability

This current high emissions reality is challenged by the global commitment to reach net zero emissions by 2050

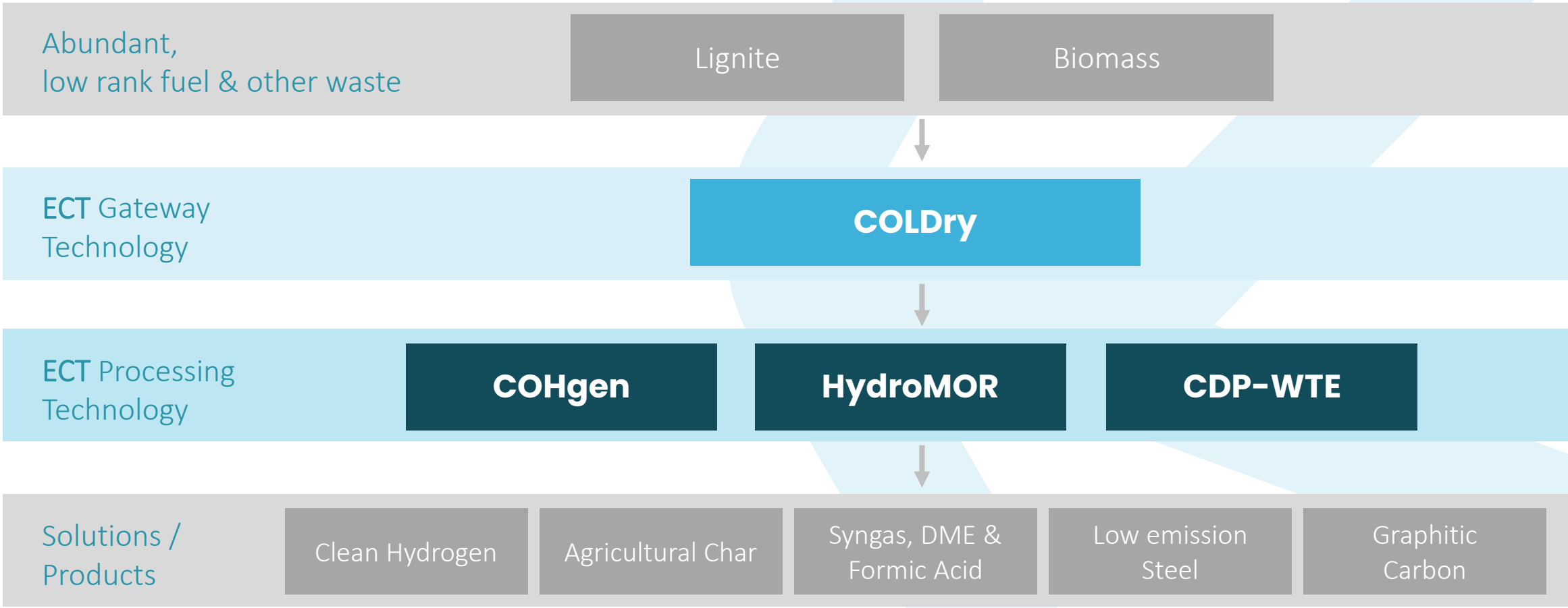
The Solution

ECT bridges the gap between the current high emission reality and the zero-emission world of the future

ECT's technology aims to play a key role in the transitional pathway to net zero by utilising abundant low rank and waste fuel sources in a new, clean way

ECT's technology suite creates clean and reliable applications and products for the energy, agricultural and industrial sectors

ECT's technology suite is the bridge to net zero emissions

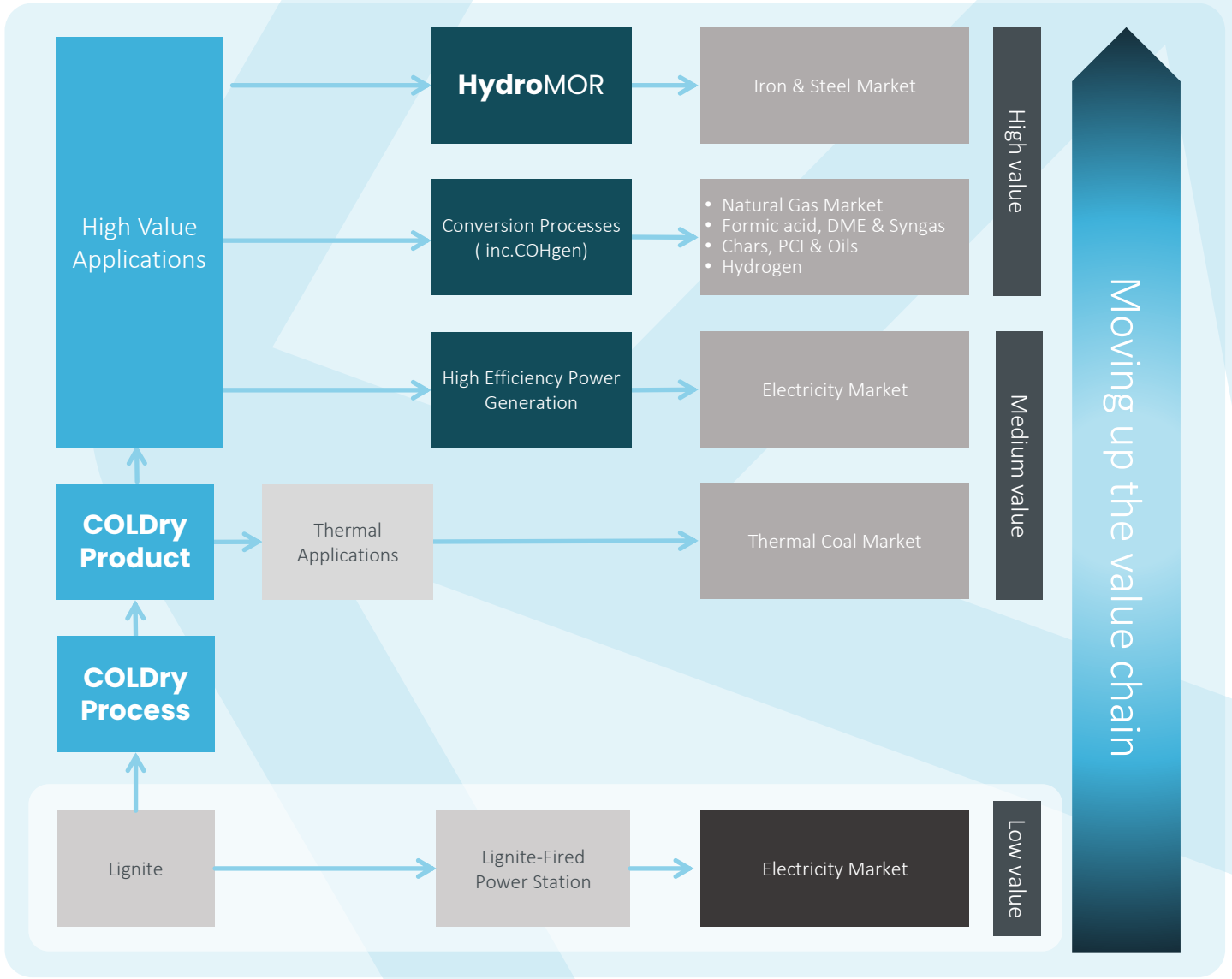


ECT Technology

ECT's technology suite enables the adoption of net zero emission targets by decarbonising conventional resources to create net zero emissions energy, industrial and agricultural products

Cost effective lignite drying & waste stream blending is the 'gateway' enabler to higher value applications

Traditional utilisation pathway is 'low value'



The world's most efficient drying process for high moisture content feedstocks

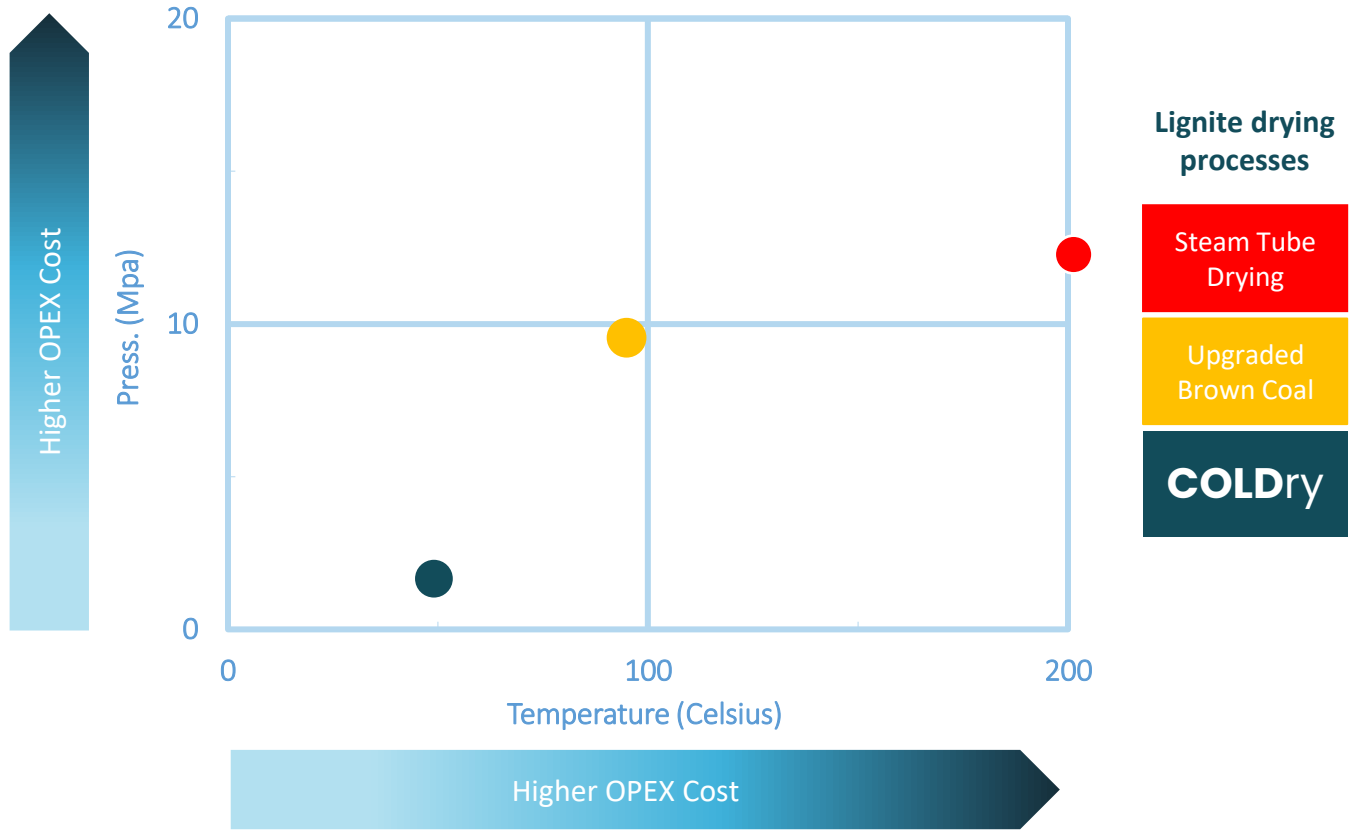
- ✓ Low temperature
- ✓ Low pressure
- ✓ Reduces +50% moisture to <15%
- ✓ ~200% increase in calorific value
- ✓ Zero emissions
- ✓ Option to harvest evaporated water
- ✓ Thermally stable pellet = storable & transportable
- ✓ Feedstock for higher value applications including iron & steel, hydrogen, fertiliser and other fuels
- ✓ Flexible process for waste stream blending and pelletising

*"One distinct advantage of **COLDry** is the relative low heat requirements in the drying process, allowing for the opportunity to make use of waste heat from an industrial facility or power plant."*

Dr Victor Der - Former Assistant Secretary for Fossil Energy, US Dept. of Energy & General Manager, North America, Global CCS Institute

The world's most efficient drying process for high moisture content feedstocks

- High pressure and high temperature = high energy cost
- Steam tube drying is the conventional lignite drying method over the past century
- Upgraded Brown Coal (UBC) is a recently developed high temperature, high pressure method
- **COLDry** is the world's first low temperature (35-45°C), low pressure drying method capable of producing a higher value product via a low cost, zero CO_2 process



COHgen

Low cost, low emission hydrogen production from lignite

- ✓ Low temperature, more efficient = lower cost capex and opex
- ✓ Lower CO_2 emissions than the coal gasification steam reforming process
- ✓ >50% hydrogen concentration in the gas stream
- ✓ Low-cost feedstock = lignite
- ✓ Replace expensive, emission intensive natural gas
- ✓ Alternative lower CO_2 use to rotary kiln
- ✓ Scalable
- ✓ Affordable, abundant, reusable catalyst
- ✓ Majority of the carbon captured in solid form

HydroMOR

World's first lignite-based iron making technology

- ✓ Utilising hydrogen extracted from lignite to decrease costs & emissions
- ✓ **Hydro**MOR is the only lignite-based iron making process
- ✓ Economic at a smaller scale than conventional processes
- ✓ Operates at lower temperatures = Lower emissions
- ✓ Able to recover iron from waste streams such as iron ore fines, millscale and nickel tailings

The global movement to embrace net zero emission policies and projects that mitigate the effects of climate change **present significant commercial and investment opportunities for ECT's technologies**

ECT has the Solution

Adoption of ECT's technology suite delivers targeted solutions for the use of lignite and waste resources in a new, clean way across the energy, agricultural and industrial sectors and creates the opportunity to pivot away from low-value, high-emission electricity production to higher-value, low and zero-emission applications

FUEL
Clean Hydrogen

RENEWABLES
Critical Minerals

FOOD
Soil Health

Commercial Opportunities
Hydrogen Market

Problem

The transition to renewables is jeopardising grid stability and energy reliability

Proposals for a green hydrogen future are currently expensive, inefficient and require large amounts of water and renewable power

There are also significant transportation and storage challenges

Solution

ECT's technology suite uses cheap and abundant lignite and waste feedstocks for reliable net zero emission hydrogen & associated products

So What

ECT can open cost effective, near-term, reliable net-zero emission hydrogen production using abundant, existing fuel sources and infrastructure without the need for expensive carbon capture and storage (CCS)

Commercial Opportunities
Agricultural Market

Problem

Our soils are in crisis and our capacity to feed the world's growing population in the midst of climate change & deforestation is a significant challenge

Solution

The addition of char, an abundant downstream by-product of the **COLD**ry process, helps soils regain their rich biodiversity which in turn facilitates the sequestration of atmospheric carbon

So What

Until now, the cost and availability of agricultural char has been prohibitive on a large scale, however **ECT's** low-cost, high-volume char product has the potential to commoditise and unlock the agricultural char market leading to healthy soils on a large scale

Commercial Opportunities:
Graphitic Carbon Market

Problem

The demand for electric vehicle (EV) & grid storage batteries is growing, driving demand for the critical minerals needed to make the batteries.

Graphite is one of those minerals, with a global forecast deficit of 80,000t by the end of 2022, and demand expected to rise 30% annually through to 2030*

Solution

ECT's technology suite enables the cost-effective, net-zero emission downstream production of valuable carbon-based products, including graphitic carbon.

So What

With the opportunity to deliver a scalable, affordable, reliable source of graphitic carbon, ECT is positioned to become a key supplier to battery makers, supporting EV and grid storage markets.

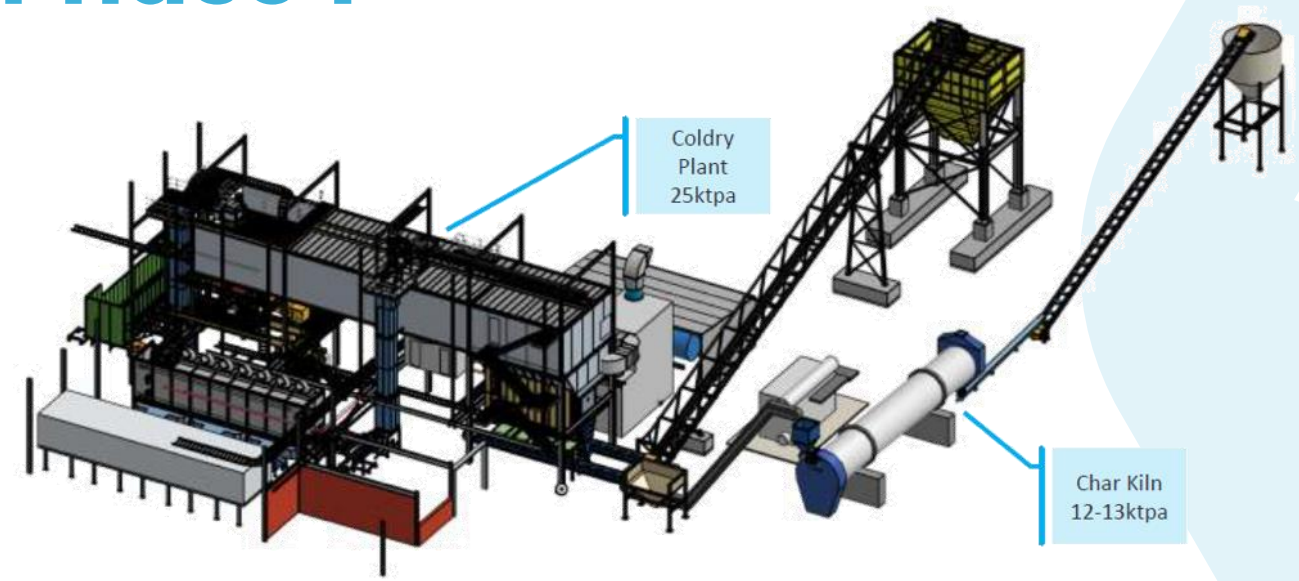
*Benchmark Mineral Intelligence report, December 2021

March 2022

Project Updates

Bacchus Marsh COLDry Demonstration Project

Phase 1



Phase 1 of the **COLDry** Project is nearing completion, located in Bacchus Marsh, Victoria.

This will deliver a working demonstration of COLDry at commercial scale.

Phase 2

Phase 2 aims to demonstrate a net zero emission hydrogen and ag char process, including:

- Char and syngas production
- Formic acid production
- Dimethyl Ether production
- Hydrogen production
- Electricity production (hydrogen fuel cells & gas turbine)

As well as establishing an ongoing R&D facility for:

- Hydrogen use in transport & electricity markets
- Fertility improvements to agricultural char
- Fertiliser & soil health feedstock

ECT is progressing partner selection for Phase 2

Yallourn Net-Zero Emission Hydrogen Refinery

Site acquired adjacent to the existing Yallourn mine and power station complex

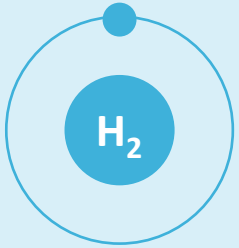
1. Yallourn power station
2. COLDry plant
3. Downstream processes
4. Lignite terminals

Yallourn Net-Zero Emission Hydrogen Refinery

- Front ended by a **COLD**ry plant, feeding dried **COLD**ry pellets to char kilns (syngas and char product streams)
- Syngas processed and reformed to provide hydrogen and CO_2 as major components
- Hydrogen and CO_2 sent to formic acid and dimethyl ether plants
- Balance of syngas stream can be used in power generation step for either internal power needs or under power purchase agreement (PPA) with *EnergyAustralia*
- Char product streams have multiple uses. Main volume line is agricultural soil additive:
  - Ag Char replenishing soil carbon, enhancing soil productivity and biology, increasing atmospheric CO_2 absorption
  - Fuel char BBQ briquettes, carburiser (iron & steelmaking), specialty metal reductant and carbon additive
- Process delivers net negative CO_2 status
- Enhanced CO_2 absorption of soils via ag-char raises the prospect of significant production of Australian Carbon Credit Units (ACCU's)
- Future **COH**gen line increases hydrogen output, and further improves net negative CO_2 status and increased ACCUs
- Expansion to source increased biomass feedstock lines and increased **COLD**ry capacity to serve further downstream products, increased H_2 consumption and greater export capability

Yallourn Net-Zero Emission Hydrogen Refinery

Clean Hydrogen



- Net zero hydrogen production from lignite & waste biomass
- Stretch target of $2/kg by 2030
- No CCS required, making it immediately deployable
- Economic at small scale, supporting earlier market activation
- Scalable, modular design allows ramp up of hydrogen and hydrogen carrier products to match demand

Critical Minerals

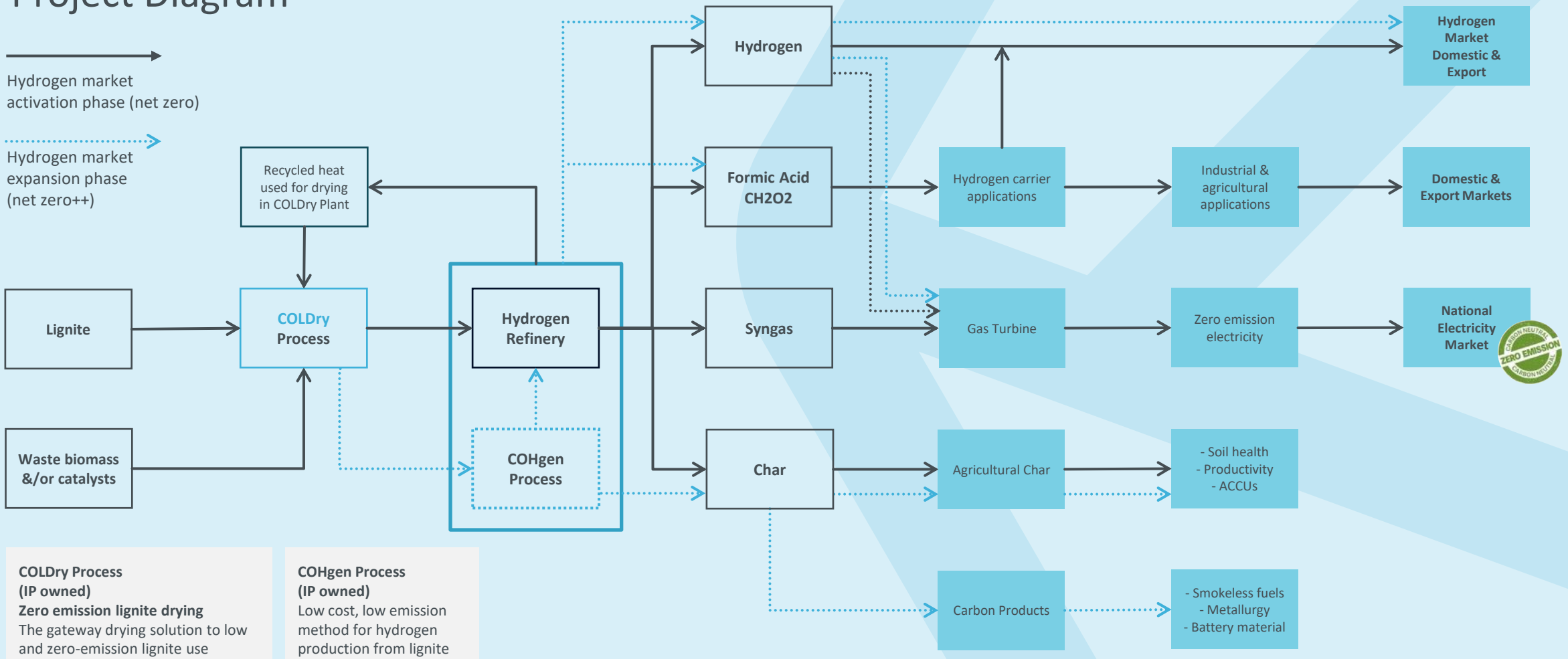
- Production of graphitic anode material for lithium-ion batteries, supporting future surge in battery demand
- Lower environmental impact than lithium or rare-earth mining ensures social license for continued lignite extraction, in support of the energy transition

Soil Health

- Agricultural char production
- Soil health & productivity benefits
- Soil biome and carbon level improvements
- Stimulates increased atmospheric drawdown of CO_2
- Improved fertiliser utilization

Yallourn Net-Zero Emission Hydrogen Refinery

Project Diagram

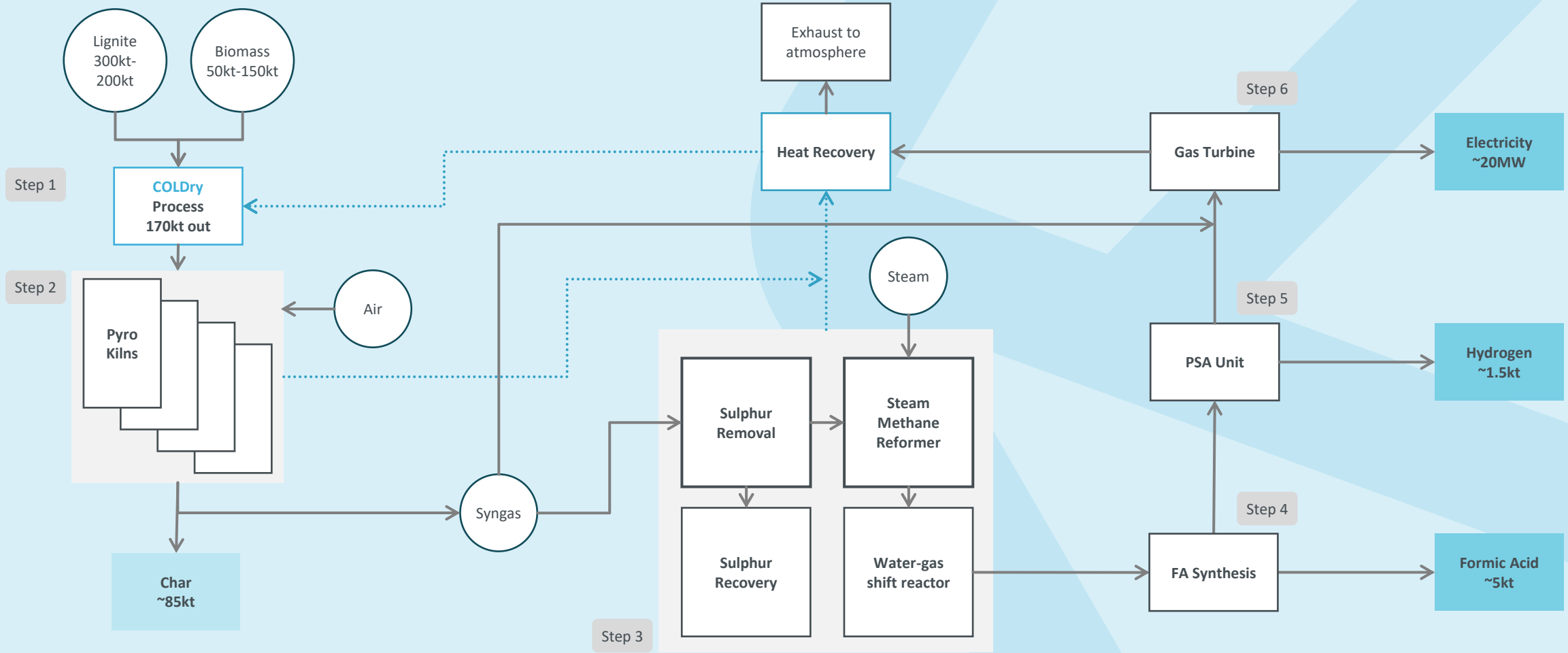


COLDry Process
(IP owned)
Zero emission lignite drying
The gateway drying solution to low and zero-emission lignite use

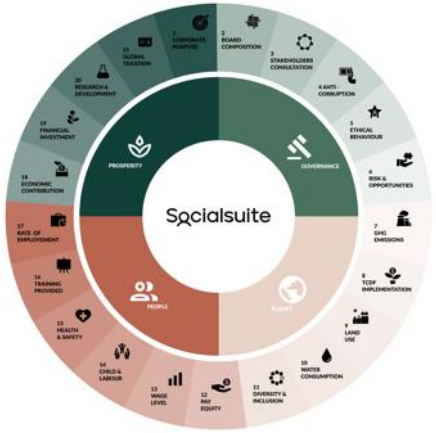
COHgen Process
(IP owned)
Low cost, low emission method for hydrogen production from lignite

Yallourn Net-Zero Emission Hydrogen Refinery

Process Flow Diagram



ESG Credentials



- Strong ESG history in areas of **Planet** and **Prosperity**
- Quarterly ASX reporting on ESG metrics - WEF Stakeholder Capitalism Framework adopted
- Demonstrated commitment to improving all areas, including **Governance** and **People**
- TCFD reporting for consideration in FY22 ECT Annual Report – best practice amongst peers. ESG risks embedded in ERM process.

GHG Net Zero Emissions Targets:

- Corporate – Scope 1&2 H2 CY22 (Report/Mitigate)
- Bacchus Marsh – Scope 1&2 CY23 (Report/Mitigate)
- Yallourn – Scope 1&2 modelled CY22/3+ – feasibility CP
- Total ECT – Scope 1, 2 & 3 reporting – < H1 CY23
- "Full" Scope 1&2 manages scope 3 for partners

TCFD –Core Elements of Climate-Related Financial Disclosures

Governance	• The organisation's governance around climate-related risks and opportunities
Strategy	• The actual and potential impacts of climate-related risks and opportunities on the organisation's business, strategy, and financial planning
Risk Management	• The processes used by the organisation to identify, assess, and manage climate-related risks
Metrics & Targets	• The metrics and targets used to assess and manage relevant climate-related risks and opportunities

Investment Highlights

- A true net zero emission solution to Victoria's abundant and low-cost lignite reserves
- World's most efficient drying process enables lignite use in downstream conversion for high value products
- **COLDry** IP owned 100% by **ECT** and protected in major markets
- Aligned with Federal Government's technology-led net zero emission targets
- Bacchus Marsh **COLDry** Demonstration Project nearing completion in regional Victoria likely fast track partner engagement
- Agricultural char by-product offers significant opportunities for soil sequestration and enhanced food security
- Site purchased and feasibility work launched on Yallourn Net Zero Emission Hydrogen Refinery project in Latrobe Valley
- Engaging with industry partners to drive commercial outcomes
- Opportunities exist to expand platform with new decarbonisation and waste remediation technologies

Corporate Snapshot
as at 1 March 2022

Market Capitalisation	Shares on Issue	Share Price
~$38.6m	1.544 bn	$0.025

Directors & Key Management	
Jason Marinko Non-Executive Chairman	Jason is an experienced public company CEO, Director and Chairman, with expertise in the technology and investment banking industries and a proven track record in leading technologies to commercialisation.
Glenn Fozard Managing Director	Glenn is an experienced commercial leader with over 16 years experience in finance and capital markets at both board and executive level with a particular focus on R&D, Cleantech and Agricultural sectors.
Tim Wise Non-Executive Director	Tim is an experienced entrepreneur and Company Director with particular expertise in the energy, industrial innovation and technology sectors has more than 20 years' experience in public companies and capital markets.
James Blackburn Non-Executive Director	James has a strong executive background as a corporate development practitioner with over 24 years experience in governance, operational, and technical roles across research, investment and corporate services disciplines.
Ashley Moore Chief Engineer	Ashley is a Chartered Professional Engineer, with extensive experience in all facets of manufacturing, plant operations, supply chain management, sales & marketing and major project delivery from 30+ years in industry.

ECT

ENVIRONMENTAL CLEAN TECHNOLOGIES LIMITED

ECT bridges the gap between today's high emissions use of resources and tomorrow's net zero emissions world.

ectltd.com.au