

#### **2019 AGM**

#### **Chairman's Address and Company Presentation**

Welcome Fellow Shareholders,

2019 has been a very a challenging year for ECT, requiring board & management to make deep and dynamic changes to our commercialisation, revenue and resource strategies.

We started the year cautiously optimistic of delivering our Indian project and by June 2019, it was evident that one of our partners, NMDC, had unexpectedly decided not to proceed. This had a major disruptive effect on most facets of the business given delivering the Indian project was our highest priority, a commitment we made to our shareholders many times over. Notwithstanding the continued developments being made with our technology suite during this time, the company had become single point dependant on achieving a project in India this year and when we weren't able to deliver, expectations and strategy had to shift fast.

We had always prepared for the "what next" in our strategy once the India project was consummated, which was why we had been developing a steam & boiler market for our Coldry fuel as well as the key reason behind the CDP acquisition to support feasibility for the proposed Coldry project in Latrobe Valley. However, a key part of the successful delivery of these downstream components was the expected confidence generated through evidencing progress of our Matmor (now HydroMOR) technology in India and the effect that this would have on further financing the ongoing costs of the strategy through repayment of the Equity Lending Facility. Without this, the company implemented a re-set of the strategy that was less about changing the tactics and more about changing the emphasis. Originally we were driving outcomes to drive confidence in blue-sky potential of our technologies to ultimately drive share price however, this has now been replaced with driving outcomes that generate operational earnings.

Over the year, we have continued to refine and develop our technology suite. We have made significant advancements in Matmor which has led us to our HydroMOR patent pending. Coldry advancements continue with efficiency improvements to the packed bed dryer, conditioning process and other design improvements which will be tested in the upcoming upgrades project at Bacchus Marsh. We have also purchased outright technology called CDP-W2E, to convert waste into diesel products, which aims to use Coldry pellets as a feedstock stabiliser. Finally, COHGen has shown continued improvements coming from our work with universities and we expect to review the prospects for lodging a patent application in the new year.

All of our technologies are "best of class" for emissions profiles with Coldry still remaining the world's most efficient, zero-net emissions, means of drying low grade coals. HydroMOR remains the only technology capable of using low-cost lignite and low-grade iron ore to produce primary iron. CDP was reviewed by UQ as being the most efficient and lowest emissions profile technology for converting waste to diesel. COHGen is a potential pathway to eliminating carbon capture and storage when extracting hydrogen from brown coal.

Prior to June his year, our strategy was clear. Start the construction of the India project and then move quickly to upgrade Bacchus Marsh to support the techno-economic feasibility of a Latrobe Valley project as

well as serving as an ongoing test facility for the Matmor India project and further technology development of CDP and COHGen.

As we know, the India project didn't proceed and as at 4th of September, the company released an update to its corporate strategy of targeting operational earnings, underpinned by three tiers: 1) organic growth, 2) acquisitions and 3) corporate restructuring. The basic premise of this re-set strategy is to monetise the technology and equipment that this company has developed to date to use operational earnings to prove the commercial strength of our technology suite. Our greatest physical asset we have is the Bacchus Marsh High Volume Test Facility and when confronted with the value proposition of spending ~\$4-\$5m to produce \$3m in earnings, represents a strong economic driver for proceeding with the development. Unfortunately, as we all know, there was a fire in late October which rendered the plant inoperable. Whilst this was a force majeure event which meant we could no longer supply our steam contract or produce further Coldry, the insurance coverage was further testament to the facility risk management of the executive in protecting this asset's value.

The India project, along with COHGen and CDP development, will also be kept active except they now won't be the recipients of our priority focus and resources and will rather be driven by clear market signals for deploying further resources.

If the international and other markets aren't pulling us towards them, then we will keep pushing operational earnings here in Australia.

Along with a significant shift in strategy, also came necessary internal changes. With a priority shift away from continued technology development and into operational earnings, also comes a shift in necessary skillsets across our staff, support systems and infrastructure. Much thought and effort has gone into this right-sizing initiative which has seen executive wage and day to day expenditure significantly reduced. Our corporate centric skillsets will be replaced with a greater emphasis on in-field and production environment experience and we have seen this with recent staff changes, most significant of those being Jim Blackburn's resignation as head of operations. Jim's departure from the executive makes way for a senior production manager to take on the responsibilities of Bacchus Marsh through the construction and commissioning phase and into 24/7 operations. Jim's contribution to ECT as an executive was significant, with his work ethic and commitment to hours, over and beyond, on display daily. He had an unwavering resilience to obstacles and was never afraid to take on all problems as they presented themselves. It would have been a tough decision for Jim to make to leave at this stage, but thankfully, Jim will still be supporting ECT as a non-executive director, which ensures that the company does not lose valuable legacy knowledge from prior service. Furthermore, we retain the valuable service of Ashley Moore and Martin Hill as the remaining executive roles, along with myself.

In the interim, I will be acting Head of Operations for the foreseeable future and our corporate structure has been simplified to better reflect the sharp focus we now have on the Bacchus Marsh upgrades project.

Accordingly, we have started the recruitment process for our next key appointment of Production Manager. This role is currently being advertised and will continue through to end of January as we take our time to seek the right candidate. Initially, this role will be in support of the Project Manager for the construction and commissioning phases of the upgrades at Bacchus Marsh after which, the successful candidate will be responsible for continuous production of the plant as it produces valuable energy products like char, syngas and boiler fuel.

Looking forward over the next 12 months, we set our sights on a number of key targets and achievements. In the next 8 weeks we expect to receive the final insurance payout figure, finalise the R&D lending capacity for the plant and complete our current capital raising. These three initiatives will close off our major capital

raising initiative for the year and allow us to direct our efforts towards core business activities. The current non-renounceable entitlement issue prospectus replaced the prior renounceable rights issue prospectus for which we received applications and commitments for ~\$1.8m. As explained in prior ASX announcements, the decision to terminate the prior prospectus was driven, in part, by material changes in assumptions around insurance and R&D lending, which has ultimately led to the minimum subscription coming down from \$2.7m to \$1.4m.

From February onwards, our targets will be geared towards the upgrades project, specifically delivery of full design, procurement, construction and commissioning stages with September 2020 being the target date for completion of construction. Additionally, we also expect to see further developments over the next 12 months with the India project, Matmor overseas ruling, COHGen patent progress, offtake agreements and expansion of our diversified fuels steam and boiler packages.

On behalf of the company and the board of directors, I thank all shareholders for their patience and commitment to our vision over the last 12 months and longer. We expect next year to be more stable with clearer outcomes and success factors that are easier to measure and the board and management look forward to the challenge of driving share price higher on the back of a successful Bacchus Marsh upgrades project.

#### For further information, contact:

Glenn Fozard – Chairman info@ectltd.com.au

#### **About ECT**

ECT is in the business of commercialising leading-edge energy and resource technologies, which are capable of delivering financial and environmental benefits.

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

ECT's business plan is to pragmatically commercialise these technologies and secure sustainable, profitable income streams through licensing and other commercial mechanisms.

#### **About Coldry**

When applied to lignite and some sub-bituminous coals, the Coldry beneficiation process produces a black coal equivalent (BCE) in the form of pellets. Coldry pellets have equal or superior energy value to many black coals and produce lower  $CO_2$  emissions than raw lignite.

#### **About HydroMOR**

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

HydroMOR is a simple, low cost, low emission, hydrogen-driven technology which enables the use of 'low value' feedstocks to produce primary iron.

#### **About COHgen**

The COHgen process has the potential to deliver a lower cost, lower emission method for hydrogen production from brown coal.

COHgen is currently advancing through fundamental laboratory development to inform its patent application ahead of scale up and commercialisation.

#### **About 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.

#### Areas covered in this announcement:

(ASX:ECT) Finance ECT India Projects R&D HVTF Develop. Sales	ECT (ASX:ECT)	ECT Finance	ECT India	Aust. Projects	R&D	HVTF	Business Develop.	Sales
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# Annual General Meeting

December 2019

"Bridging the gap between today's use of resources and tomorrow's zero-emissions future"



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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 Coldry and HydroMOR 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.



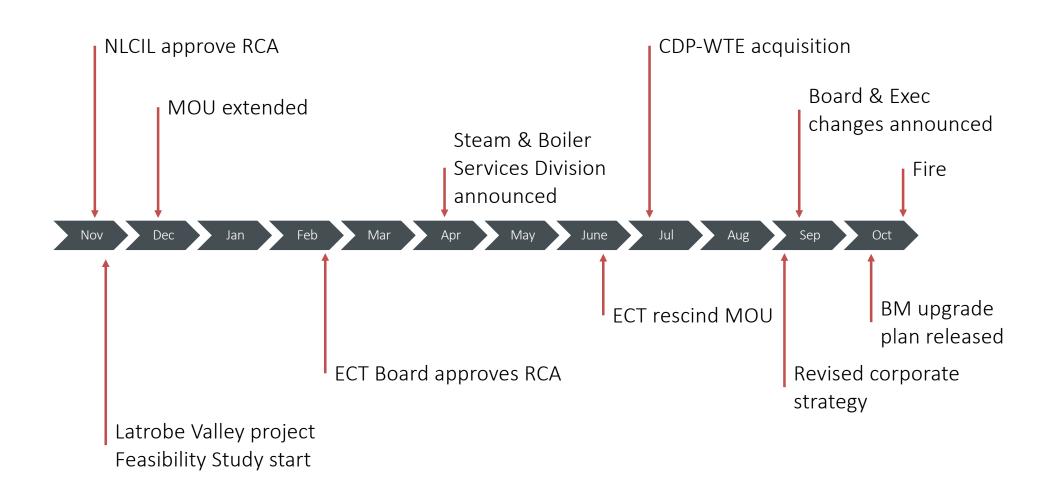
# Chairman's Address

December 2019

"Bridging the gap between today's use of resources and tomorrow's zero-emissions future"

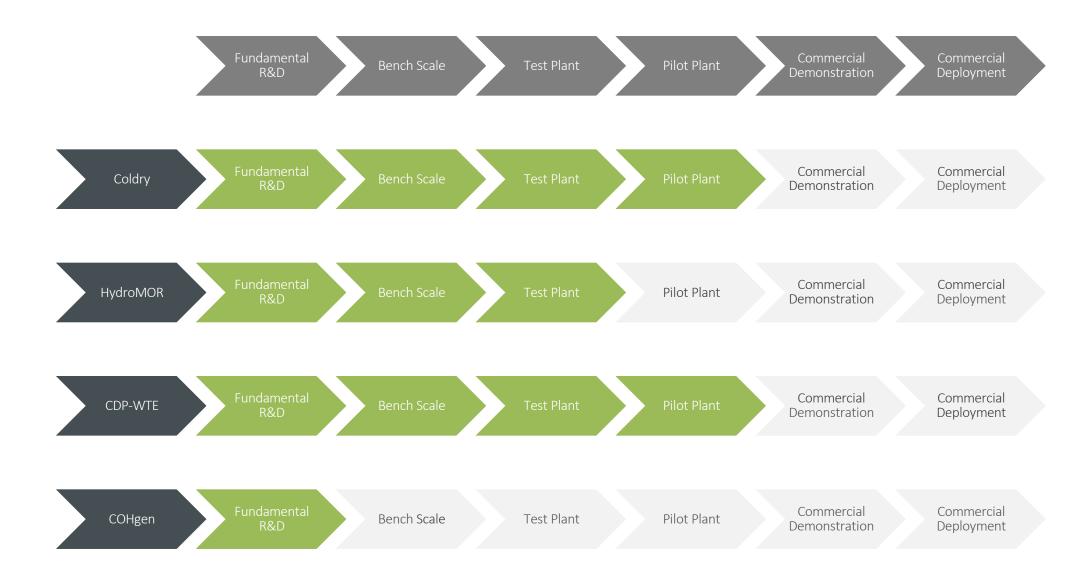






## **Technology Suite**





#### Three-Tier Strategy



- PAST: relied on equity and debt capital raisings, together with Government R&D rebate funding. Continue to pursue project opportunities in India with NLC and other strategic partners, timelines have stretched, change in strategy to focus on cashflows.
- PRESENT: Strategy aimed at accelerating developing near-term operational cash-flows in parallel to proposed projects in India, the Latrobe Valley and other regions.
- FUTURE: positive cashflows sufficient to continue the broader research, development and commercialisation objectives over and above basic operating expenses, the Company is adopting the following three-tiered approach.

Tier	Description	Targeted Outcome	Targeted Benefit	Timeframe
Organic Growth	Bacchus Marsh plant; char, syngas and steam fuel production	\$3M EBITDA	Finance basic operational costs	<12 mths
Acquisition	Proposed acquisition targets where ECT technology can be leveraged for better value	\$3M+ EBITDA	Finance ongoing project and technology development	12 mths +
Structural	Corporate restructuring to improve market rating	>20x earnings multiples	Drive return to shareholders	Ongoing

#### Commercialisation Pathway



Technology Push

Fundamental R&D

Applied R&D

Scale Demonstration

Market Development

Commercial Application

Market Pull

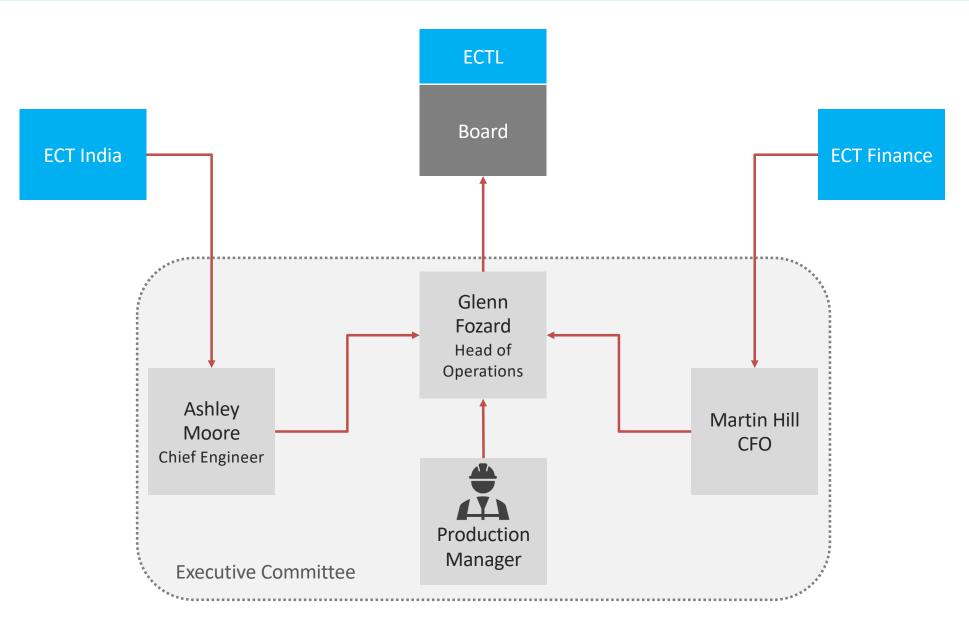
## ECT's commercialisation strategy is a core part of its business model. Revenue is the goal.

- Commercialisation is the process that converts ideas, research, or prototypes into viable products and production systems.
- Commercialisation relies on the creation of effective manufacturing, supply chain and implementation strategies.
- Research, development and commercialisation require significant investment before revenue is realised.
- Our commercialisation strategy also includes marketing and sales systems, which will seek to drive the transition from research investment to revenue generation.



## Organisational Re-structure (GF DRAFT)





## Timetable – Capital Raise



ltem	Time
<ul> <li>ECT announces the Entitlement Offer and gives a completed Appendix 3B to ASX.</li> <li>ECT lodges the Prospectus with ASIC and gives a copy to ASX.</li> </ul>	9 December 2019
• Ex-date – Shares trade ex-Entitlement (Ex-Date)	11 December 2019
Record date to identify eligible shareholders	12 December 2019
<ul> <li>Dispatch the Prospectus and personalised entitlement and acceptance forms</li> <li>Announcement of dispatch</li> <li>Offer Opening Date</li> </ul>	17 December 2019
Last day to extend the offer closing date	24 January 2020
Offer closes at 5 pm (AEDT)	30 January 2020
<ul> <li>If agreed by ASX, +securities quoted on a +deferred settlement basis* from market open.</li> </ul>	31 January 2020
Announcement of results of issue	4 February 2020
<ul> <li>Last day to issue the Shares and Options taken up in the Offer</li> <li>The Company to lodge an Appendix 2A with ASX applying for quotation of the Shares and Options</li> </ul>	6 February 2020

<sup>\*</sup>These dated are indicative only and are subject to change. ECT reserves the right, subject to the Corporations Act and the ASX Listing Rules, to amend this indicative timetable in consultation with advisers. In particular, ECT reserves the right to close the Offer early, extend the Closing Date or withdraw the Offer without prior notice.



# Bacchus Marsh Upgrade Program

December 2019

"Bridging the gap between today's use of resources and tomorrow's zero-emissions future"



## Char Project and Coldry Capacity Improvements



- Earnings target: \$2-3 million p.a. EBITDA
- Cashflow target timeframe: 12 months
- Consistent with tier-1 of the corporate strategy, the Company recently announced (9 October 2019) the proposed upgrades to its Coldry HVTF targeted at:
  - Generating earnings of up to AU\$2-3M pa from the facility
  - Underpinning the market feasibility of a larger, more efficient and economical Coldry plant
  - Further developing commercial aspects of the facility
- The Prospectus seeks to raise funds, along with insurance proceeds and R&D finance, for the implementation of the upgrades, estimated up to AU\$5M.

Market	Description	Volume (Tonnes per annum)	Revenue Target (\$)
Steam & boiler systems	Support existing marketing & operations	~5,000	1,000,000
Char products	Vertical integration with char process	~10,000 char	5,000,000 — 6,000,000
Syngas	Derived from the char process	~10,000 (equivalent)	TBC
Total		~25,000	~6,000,000+

#### Char Market



- ECT has assessed a range of markets for potential Coldry sales, with the char market emerging as the most attractive due to a diversity of applications including:
  - Char feedstock to BBQ briquettes
  - Carburiser for the steel industry
  - Soil conditioner for the agricultural sector
- ECT will initially focus off-take marketing efforts on the BBQ briquette market and is in active discussion with off-take parties.
- The upgrade works aim to deliver the following commercial capability:
  - Char and syngas production, utilising Coldry pellets via vertical integration with upgrading plant
  - Cost reduction via surplus energy utilisation and improved process assembly
  - Scalability via the upgrade of site infrastructure and utilities providing scope for future commercial activities.

## Lignite Handling System



- Cover raw lignite stockpile
- Moving Floor conveyor for feed
- Hammer mill size reduction for fibrous content



- Retractable canopy roof
- Feed to belt conveyor then into mill
- Floor speed controlled by pit level sensor

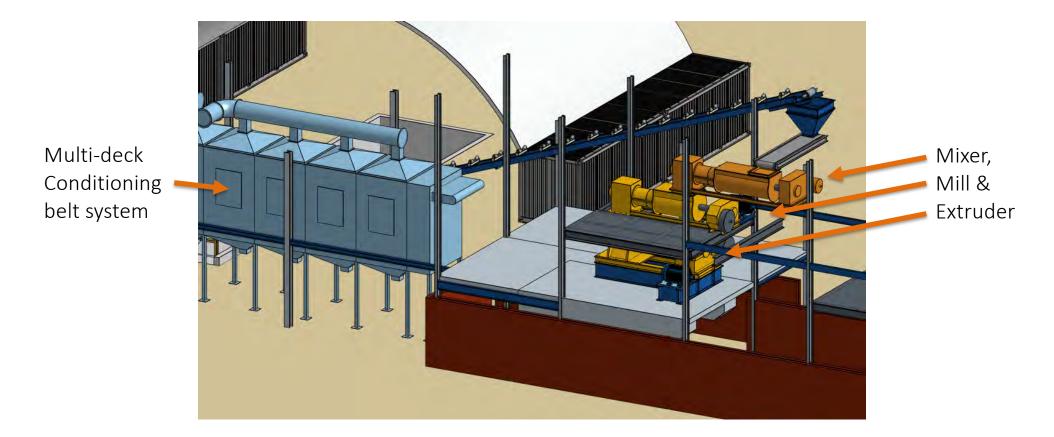
- High capacity hammer mill
- Mill fibrous components to -2mm
- ON/OFF operation



### Primary Processing System



- Extrusion System: Install larger capacity mixer, mill & extrusion system
- Conditioning System: Multi-deck, larger capacity Conditioning belt within same approximate footprint



### **Drying System**



#### Packed Bed Drying System upgrades:

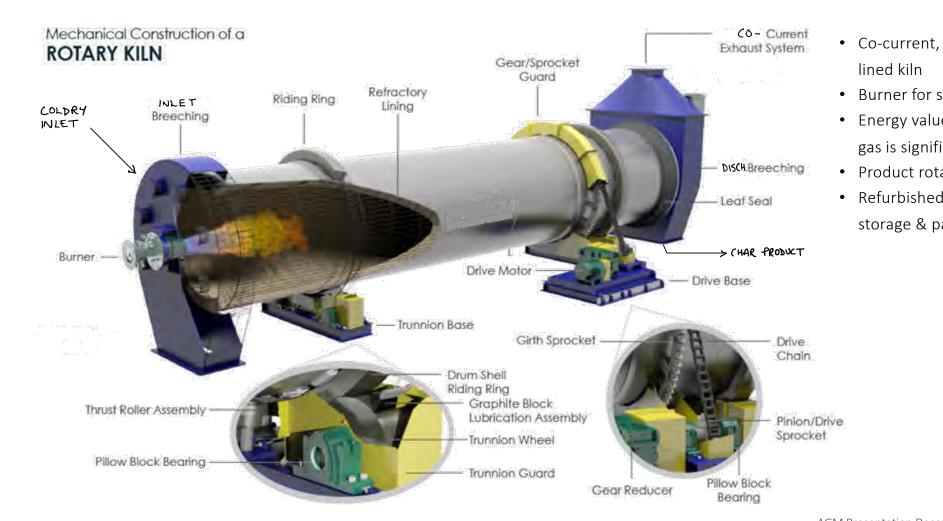
- New internal design to improve air flow and lower purchased energy costs
- Modified discharge mechanism to allow product discharge flexibility:
  - Coldry to storage, or
  - Pellets to Char, or
  - Both



## Char System



#### New Char kiln & systems



- Co-current, refractory
- Burner for start up
- Energy value in the off gas is significant
- Product rotary cooler
- Refurbished tank for storage & packing



#### Boiler System with optional Co-gen capability:

- New combustor for kiln off-gas
- 8-10MW gas boiler
- Screw expander for electricity co-gen

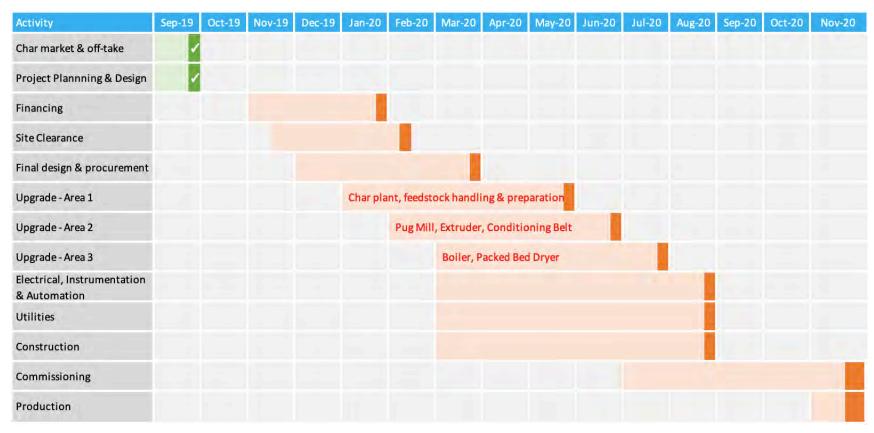




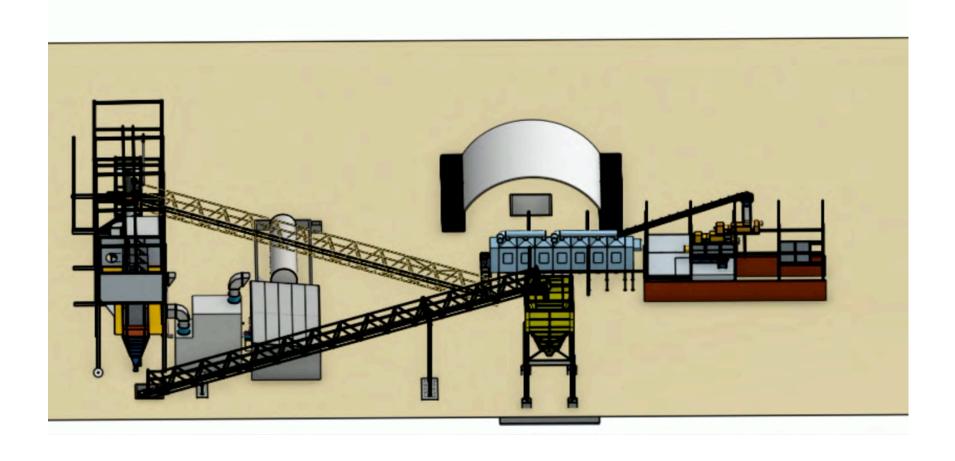
## Coldry – HVTF Upgrade Program



- The target timeline to reach full production, subject to funding and insurance outcomes, is November 2020:
- The upgrade program will also establish the final plant capacity which may exceed 35,000 tonnes per annum, thus giving potential upside to the economics of this plant as described above.









#### New & upgraded plant & equipment targeting:

- Increase Coldry Production capacity to 25kmt/yr
- 20kmt for Char, 5kmt for boiler fuel
- 55kmt raw lignite required
- TARGETING ~\$1M revenue pa & ~\$250k EBITDA pa

Produce char from Coldry pellets for BBQ briquettes, carburiser and agriculture char markets:

- 10kmt/yr, requiring ~20kmt/yr Coldry
- TARGETING ~\$4.5M revenue pa & ~\$2m-\$3M EBITDA pa







## Thank you.

Jim Blackburn Chief Operating Officer, Director

Ashley Moore Group Chief Engineer, Director

Glenn Fozard Executive Chairman

