ENVIRONMENTAL CLEAN TECHNOLOGIES LIMITED

Coldry Upgrade Project – Update

21 June 2021: Environmental Clean Technologies Limited (ASX: ECT) ("**ECT**" or "**Company**") is pleased to provide the following update on the progress of its Coldry Upgrade Project ("**Project**"), located at Bacchus Marsh, Victoria.

Overview:

- Phase 1 of the Coldry Upgrade Project scheduled for completion Q1, FY22
- Phase 2 scheduled for completion in 2H, FY22
- Overview of Project activity completed over April to June 2021

Status Update – Coldry Small-Scale Commercial Demonstration

In its 23 March 2021 ASX announcement[1], the Company provided an update on the progress of its Project, aimed at delivering the small-scale commercial demonstration of its unique, low-cost, zero-emission Coldry lignite drying technology in Victoria, Australia.

The successful completion of this small-scale commercial demonstration plant is part of the Company's broader commercialisation strategy, which involves the further potential scale-up of our Coldry process in Victoria's Latrobe Valley, supporting the higher value, lower emission utilisation of lignite via a range of downstream applications, including solid fuel, liquid fuel, specialty chemicals and hydrogen production.

[1] ASX Announcement – 23 March 2021 – Shareholder Update – Local Activity

As previously reported, the Project has been impacted by COVID19, initially through lockdown last year and more recently through delays across the international supply chain for various components, driven by persistent COVID19-related manufacturing and shipping delays across Asia.

Offsetting some of these impacts was the recently announced acquisition of a locally sourced char kiln[2], the key component of Phase 2 of the Project. The ability to source this component locally has resulted in an approximate $500k saving and a four-month reduction in the time to complete Phase 2 of the Project.

ECT's Executive Chairman, Glenn Fozard comments:

> *"The ongoing supply chain uncertainty resulting from COVID-19 has led to an adjustment to the timeline reported in March to complete Phase 1 of the Project. However, with the delivery of the rotary kiln in the coming weeks, we anticipate recent Phase 1 delays will be offset during Phase 2, bringing the completed Project online during the second half of FY22."*

Photo: the 4–tonne hammer mill being lifted into position.

In relation to Phase 1 of the Project, the scale-up of the Coldry process, Chief Engineer Mr Ashley Moore added:

> *"We have now received our final shipment of plant and equipment from international suppliers.*
>
> *"Despite the delay of this final shipment of plant and equipment for Phase 1, we have successfully installed some of the most difficult elements of our primary processing train, namely the hammer mill and raw coal hopper (see photo, above right).*
>
> *"In addition, we have completed the majority of the local fabrication works, with installation for local and imported equipment continuing."*

Project – Status Overview

Since the 23 March 2021 Shareholder Update[3], the Company has completed:

- ✓ Installation of the hammer mill, surge hopper and supporting structures
- ✓ Genset installation to power the workshop and laboratory
- ✓ Assembly of the Packed Bed Dryer panel box
- ✓ Fabrication of the Conditioning Box & system componentry
- ✓ Installation of Motor Control Centre 01

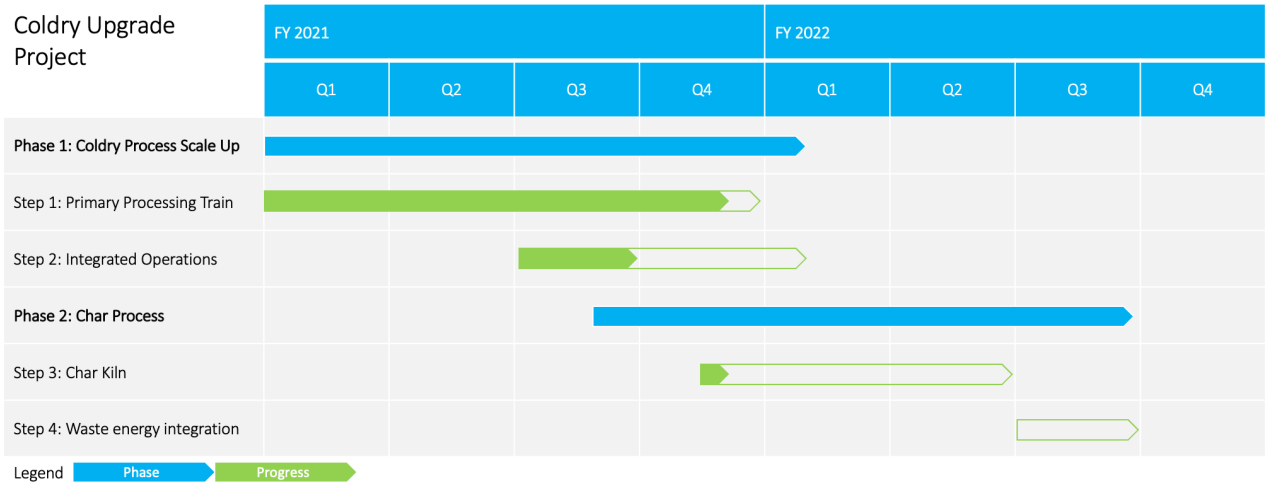
[2] ASX Announcement – 4 June 2021 – Kiln Acquisition Fast Tracks Phase 2 of Coldry Project
[3] ASX Announcement – 23 March 2021 – Shareholder Update – Local Activity

The following table outlines the status of the main stages relating to Phase 1 of the Project.

Description	Status
Equipment procurement (tender, fabrication, shipping, delivery)	90% complete
New motor control centre & control room (system automation & diagnostics)	65% complete
Preparation of the process building ahead of the installation of new equipment	95% complete
Conditioning system design, fabrication, installation and testing	60% complete
Electrical and process control, instrumentation and cabling (design & selection, fabrication & installation, field wiring & terminations)	60% complete
Commissioning of mixer, mill and extruder	Scheduled for July
Completion of workshop & laboratory facilities	90% complete
Structure & platforms – fabrication	Complete
Structure & platforms – installation	50% complete
Packed bed dryer – upgrade; removal works, reconfiguration of internal designs	65% complete
Heat system upgrades	50% complete
Commissioning preparation, dry runs & first operations	Planning underway

Project Timeline

The below Gantt chart shows the Project's current status, updated to reflect COVID-19 impacts on procurement of plant components.



Recent Activity - Coldry Upgrade Project

Detailed Project activity conducted over April through to June 2021 is outlined in Appendix 1 below.

This announcement has been approved for release by the Board.

For further information, contact:

Glenn Fozard – Chairman *info@ectltd.com.au*

Appendix 1

Coldry Upgrade Project Activity: April – June 2021

Installation of hammer mill & coal hopper

Current Status: 90% Complete

Overview:

Following the completion of the support structure activity, the surge hopper and hammer mill were recently lifted into position and assembled during a 15-hour operation.

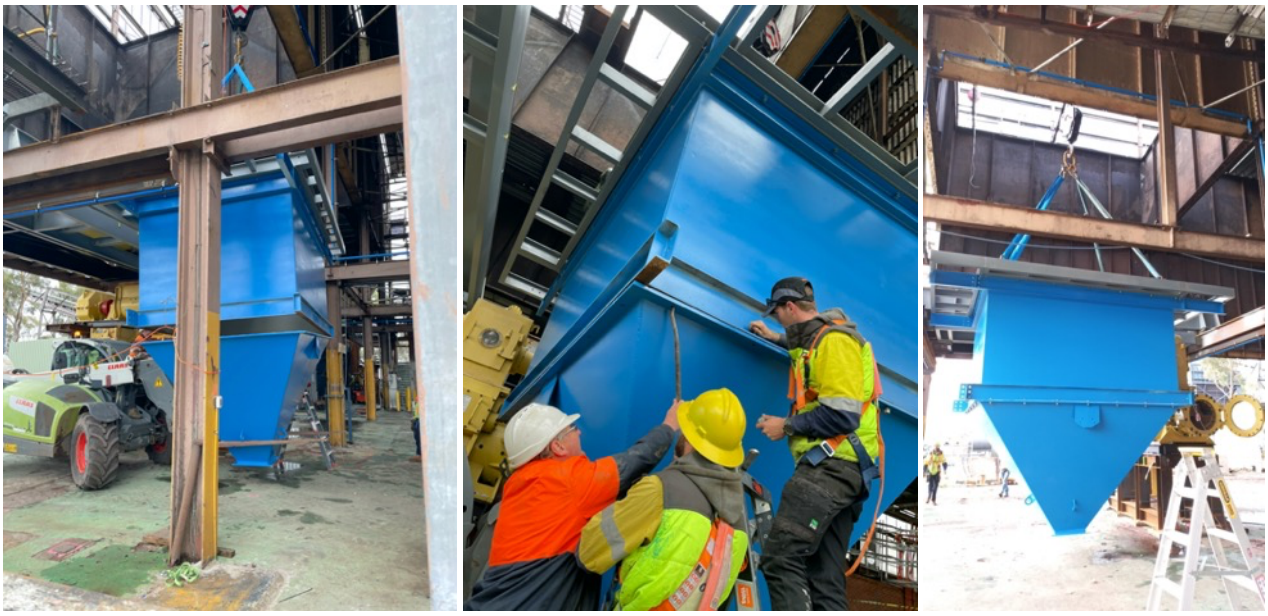
The coal hopper consists of 3 sections; platform (below, left), upper hopper section (below, centre) and lower hopper section (below, right), weighing a collective 18 tonnes. Sitting on top of this is a 4-tonne hammer mill (shown further down).





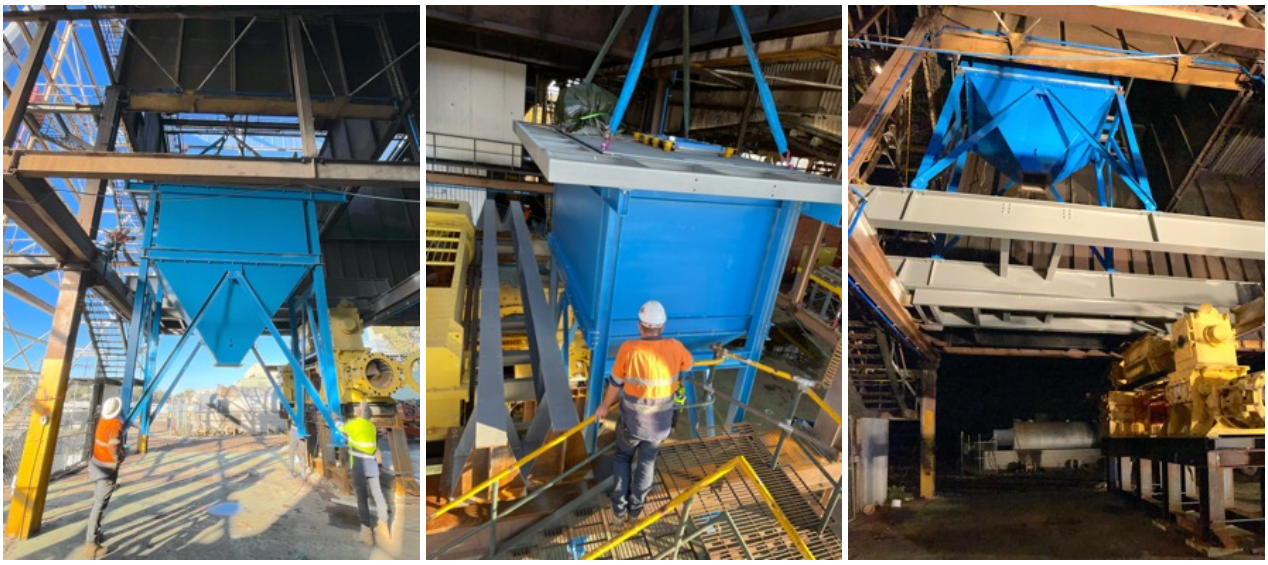

Due to the size and weight of the components, the height of the building and the relatively confined installation area, the team opted for a ground-up approach to installation, assembling the platform and upper hopper, then using a 20-tonne Franna crane to position it for handoff to the 100-tonne slewing crane.

The 100t crane then raised the upper section, allowing the lower hopper section to be brought in for sealing and assembly.



Above: (left) the lower hopper section being manoeuvred into position, (centre) sealing and fastening, (right) assembled, ready to attach legs.

Following the attachment of the legs to the hopper, the assembly was lifted into place above the previously installed mixer, mill and extruder, in an operation that required precision manoeuvring with less than 5cm clearance at specific points.



Above: (left) legs attached, (centre) lifting the assembled coal hopper from ground to level 1 of the plant, (right) support beams moved into place and fastened, with coal hopper assembly mounted and fastened on top.

The final element was the placement of the hammer mill via the roof.

The next steps to finish installation include the addition of access platforms and guard rails, and electrical cabling.

Installation of mixer, mill & extruder

Current Status: 95% Complete

Overview:

Following the installation of the mixer, mill and extruder, cabling work has progressed, along with installing the raw coal hopper and hammer mill activity outlined above.


Above: Chief Engineer Ashley Moore supervising cabling activity.

The next steps required to complete the installation of the mixer, mill and extruder include the addition of access platforms, guard rails and electrical connection.

Packed bed dryer upgrade

Current status: 65% complete

Overview:

- Removal of internal walls and preparation for new installations (complete)
- Installation of the revised wall, inlet & floor design, aimed at further improving drying efficiency

The upgrade of the packed bed dryer involves the replacement of the internal walls with an improved design, building upon learnings from the previous pilot plant.

Aimed at further improved drying efficiency, the updated design is expected to deliver increased throughput and decreased cost of production, supporting the higher capacity of the new primary processing train.


Above: assembly of the updated design for the internal walls of the packed bed dryer.

The next steps to complete the Packed Bed Dryer and system construction include the lift of the above pictured internal walls into the existing structure, securing in place, installing monitoring equipment, and installing access platforms.

Structure and platforms - installation

Current status: fabrication complete; installation 40% complete

Overview:

With fabrication completed, preparation of the support structures, involving sandblasting, priming and painting, proceeded in line with the Project timetable.

Build of raw coal storage, workshop and laboratory

Current status: 90% complete, awaiting fit-out of lab

Overview:

- Relocation of existing work shelter and construction of new, double-stacked enclosed raw coal storage
- Customised 40ft containers to act as a new undercover workshop and clean laboratory
- Electrical installation of lighting, power points complete
- Power supply installed

Above: (left) laboratory and workshop, (right) the generator is a more cost-effective option to power the workshop and lab compared to running new lines from mains power.

Preparation of the process building ahead of the installation of new equipment

Current status: 95% complete

Still to be completed:

- Sub-floor bracing for new loads
- Roof reinstatement (pending installation of packed bed dryer upgrades)
- Building cladding reinstatement (pending completion of construction activities)

Heat system upgrades

Current status: In progress, not critical path

Overview:

Significant upgrades have been planned for the existing hot water system to optimise operation—upgrades target reliability, capacity and control system integration.

Holding tanks, fuel centrifuge, and other equipment (pictured, right) have been completed and await plumbing and electricals to complete installation.

The heating system simulates ‘waste’ heat for demonstration purposes initially, facilitating the commissioning of the Coldry process train, which will then transition to a backup role following the installation of the syngas-fired boiler system included as part of the Phase 2 char process train.

New electrical & process control room (system automation & diagnostics)

Current status: 60% complete

Overview: Designs and specifications complete, including main circuit breakers, power management and individual drive control systems. The motor control centre (MCC) is being fabricated, and the building which will house the equipment is also in the process of fabrication and installation. Once the MCC panels are ready, installation is then “bolt in”, followed by a period of cabling and termination works.

Above: (left) cable trays in place, ready to commence MCC construction, (centre & right) MCC floor construction.

Above: (left) MCC floor installed and painted, (centre) installation of mounting wall for motor variable speed drives, (right) pull through of cables from mains to MCC.

Above: arrival and installation of MCC (motor control centre) cabinets, which will house the electrical controls for the various functions of the plant.

Conditioning system fabrication, installation and testing

Current status: 60% complete

Overview: Design, sourcing and selection of the belting system - a vital component of the conditioning system. Following shipping delays, all components are now on-site, and the local fabrication of the conditioning unit is complete, with assembly due to commence shortly.

Photos:

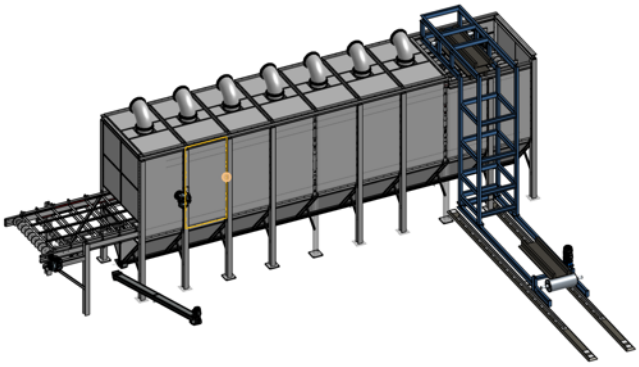
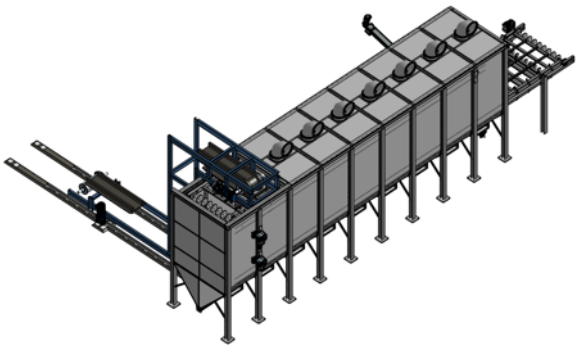

Above: the conditioning belt, an integral component of the proprietary conditioning system, has been fabricated and shipped. Arrival on site was early January 2021.

The remaining components of the conditioning system have been fabricated since the last update, ready for assembly.

Above: warm air inflow manifolds.


Above: air outlets (left) & conditioning system lower structural assembly (right).


Above: vertical structural supports (left) & conditioning belt horizontal structural supports (right).

Above: Conditioning system, designed to surface-dry the extruded lignite pellets prior to delivery to the packed bed dryer

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

Coldry is the gateway enabler of higher-value applications for low-rank coals.

Low-rank coals are a rich source of valuable hydrocarbons. Still, 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 and cost-effectively has been the challenge. Coldry meets this challenge through a combination of 'brown coal densification' and waste heat utilisation, delivering the world's first low temperature, low pressure, low cost, zero CO_2 emissions drying process.

About 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.

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 intended to form the basis for a 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.