ENVIRONMENTAL CLEAN TECHNOLOGIES LIMITED

Corporate Presentation

November 2016

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

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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.

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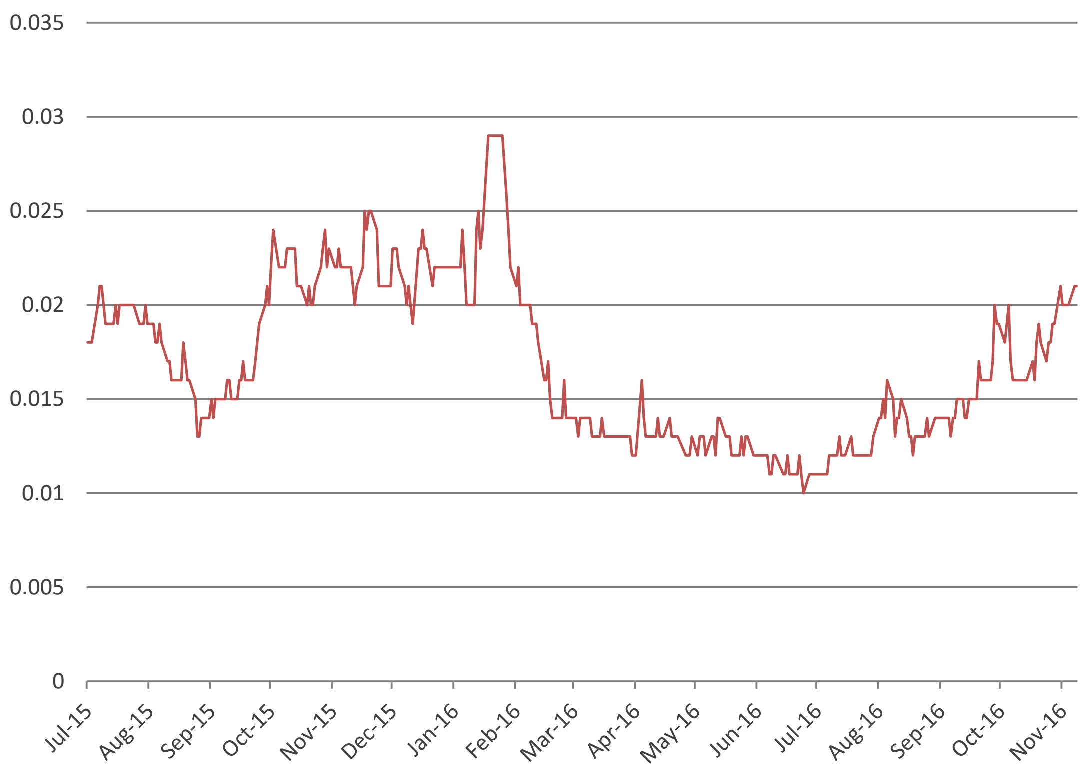
Corporate Overview

ENVIRONMENTAL CLEAN TECHNOLOGIES LIMITED

Share price chart (A¢ per share)



Issued Capital (as at 30 June 2016)	
ASX Code	ESI
Shares (pre-issue)	2,738 M
Options ESIOA	1,211 M
Options ESIOB	858 M
Market Capitalisation	~$54 M
Share Price	2.0¢
2015-16 Trading Range	1.0¢ - 3.5¢

Cash & Debt (as at 30 June, 2016)	
Cash (as at 31 August 2016)	$684 k
Current Assets (total incl cash)	$2.38 M
Short term Debt	$1.00 M
Current Liabilities (total incl debt)	$1.58 M
Liquidity Ratio	1.51

Shareholders (as at 9 Nov, 2016)	
Total shareholders	4,015
Top 20	~30%
Top 40	~40%
Top 100	~52%

Board and Management

ENVIRONMENTAL CLEAN TECHNOLOGIES LIMITED

Director	Fozard	Moore	Smith	Richards
Exec	•	•		
Non-Exec			•	•
Audit & Risk		•	•	
HR & Gov	•			•
Finance	•			
Engineering		•		•
Legal			•	
Industrial Plant Ops		•		•

Glenn Fozard

Executive Chairman

Glenn has a strong commercial background and over 16 years experience in finance and capital markets at both board and executive level. With a deep understanding of tailored financial solutions for SMEs in the R&D, Cleantech and Agricultural sectors, he supports the company with valuable guidance in the technology development, risk management and capital raising areas. Glenn has worked with ECT for over seven years and continues to support the business in the executive role of Business Development and Corporate Finance.

Ashley Moore

Managing Director

Ashley is a Chartered Professional Engineer, with extensive experience in all facets of manufacturing, plant operations, supply chain management, sales and marketing and major project delivery from 30 years in industry. Ashley joined the company in October 2009 as Business Manager, Coldry. Ashley was appointed to the role of Chief Operating Officer of the company in August 2011, and then to Managing Director in 2013.

Non-Executive & Independent

David Smith

Non-executive Director - Chair of Audit and Risk Committee

David has a strong legal and commercial background, having practiced commercial law for over 25 years including nearly 18 years as a partner in national firms. He is currently a partner in the intellectual property and technology group at Gadens Lawyers. He has assisted many companies with protecting their intellectual property, IP commercialisation agreements, collaborative research agreements and international negotiations. This year David was recognised as a 'Best Lawyer - Intellectual Property' for the third year running.

Barry Richards

Non-executive Director – Chair of HR & Governance Committee

Barry has a strong industry and commercial background of over 30 years including his role as Managing Director of Mecrus Pty Ltd since its formation over 16 years ago, contract and business development roles with Siemens / Silcar, and operations and maintenance management experience with the State Electricity Commission of Victoria (SECV). He provides extensive experience in business management, major project development and delivery, coal plant operations and maintenance and has a broad understanding of technology and process development.

Board & Management cont.

Adam Giles

Corporate Communications & Company Secretary

Adam has over 25 years business and management experience across both private and public sectors. His long-term involvement with the development of the Coldry and Matmor technologies and as a founding shareholder of the Company provides valuable background, helping inform strategic direction. Key responsibility areas include Corporate Communications and Governance.

James Blackburn

Chief Operating Officer

James has a strong executive background as a corporate development practitioner with over 18 years experience in governance, operational, and technical roles across research, investment and corporate services disciplines. James has core responsibility for ECT Corporate Services and plays a key role in the company's commercialisation programs.

Keith Henley-Smith

Chief Scientist – Metallurgy

Keith is a chemical engineer, metallurgist and inventor with over 40 years experience. Mr Henley-Smith leads the fundamental research and development efforts for Matmor.

Warrick Boyle

Chief Engineer – Coldry

Warrick is a Manufacturing and Chemical Engineer with 20 years experience across diverse manufacturing roles in medical, chemical, industrial, pharmaceutical and consumer goods. Warrick's core responsibility is the fundamental process development of the Coldry technology and the operations of the High Volume Test Facility.

Lachlan Bartsch

Chief Engineer – Matmor

Lachlan is a project manager with strong operational background and engineering design experience with a focus on metallurgical applications and design consulting. Lachlan's experience with the multidisciplinary management of feasibility and prefeasibility studies as a Project Engineer and Area Manager, combined with his metallurgical, operational and commissioning experience provides an ideal skillset to drive the Matmor development and commercialisation program.

Corporate Structure

ENVIRONMENTAL CLEAN TECHNOLOGIES LIMITED

Key Responsibility Areas
- Strategy & Planning
- Audit & Risk Committee
- HR & Governance Committee
- Company Secretariat
- Expert support and oversight to operations

Board of Directors

Executive | Non-Executive

Chair | MD

Company Secretary

Functional Structure

MD

Corporate Services

- R&D administration
- Finance
- Sales/Marketing
- Communications
- Risk Management
- IT
- Legal / Accounting
- HRM

Projects and Business Development

- Project Pipeline
- Project Management
- Capital Management
- Detailed Design
- OEM / EPC / O&M Vendor Development
- Domestic commercial contracts

Engineering & Technology

- R&D program implementation & management
- Data collection
- IP development
- Plant operations & maintenance

Corporate Strategy

ENVIRONMENTAL CLEAN TECHNOLOGIES LIMITED

Purpose

We bridge the gap between today's use of resources and tomorrow's zero-emissions future

Mission

The company commercialises innovative technologies to increase the economic and environmental benefits derived from low grade, low rank and waste resources (Targeted Resources)

Vision

We are recognised as a leader in the commercialisation of innovative technologies, providing increased economic and environmental benefits from the utilisation of Targeted Resources

Corporate Values

ENVIRONMENTAL CLEAN TECHNOLOGIES LIMITED

ECT has developed a set of corporate values which are as important as the technologies to our company.

These values are at the heart of how we conduct our business.

Bridging the Gap:
We are focused on technology as an enabler to a zero-emissions future

Frugal Innovation:
We strive to deliver innovative outcomes, through reducing complexity, cost conscious execution and fit-for-purpose engineering

Collaboration:
We work collaboratively to yield the best possible outcomes

Integrity:
When we say we will do something, we do it – and we do it responsibly

Sustainability:
We consider the safety, quality and environmental outcomes of our decisions

Business Model

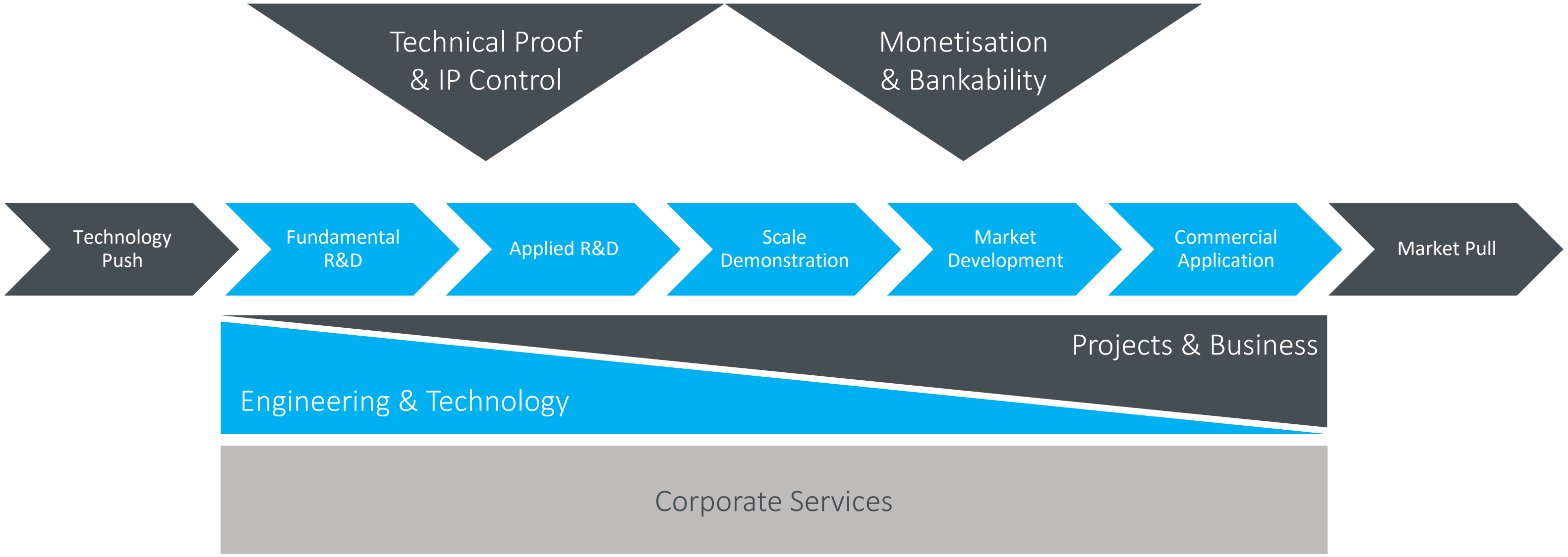
ECT takes technologies, consistent with our Purpose, through the entire commercialisation process and into industrialisation.

Each stage is supported by our three departments which specialise across the commercialisation chain:

> Engineering & Technology

> Projects and Business Development

> Corporate Services



Solving Problems

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The world is transitioning from a heavy industrialisation phase, where access to lower cost inputs was the priority, toward a technology driven paradigm that aims to reduce the impact of that industrialisation in the continued pursuit of economic growth.

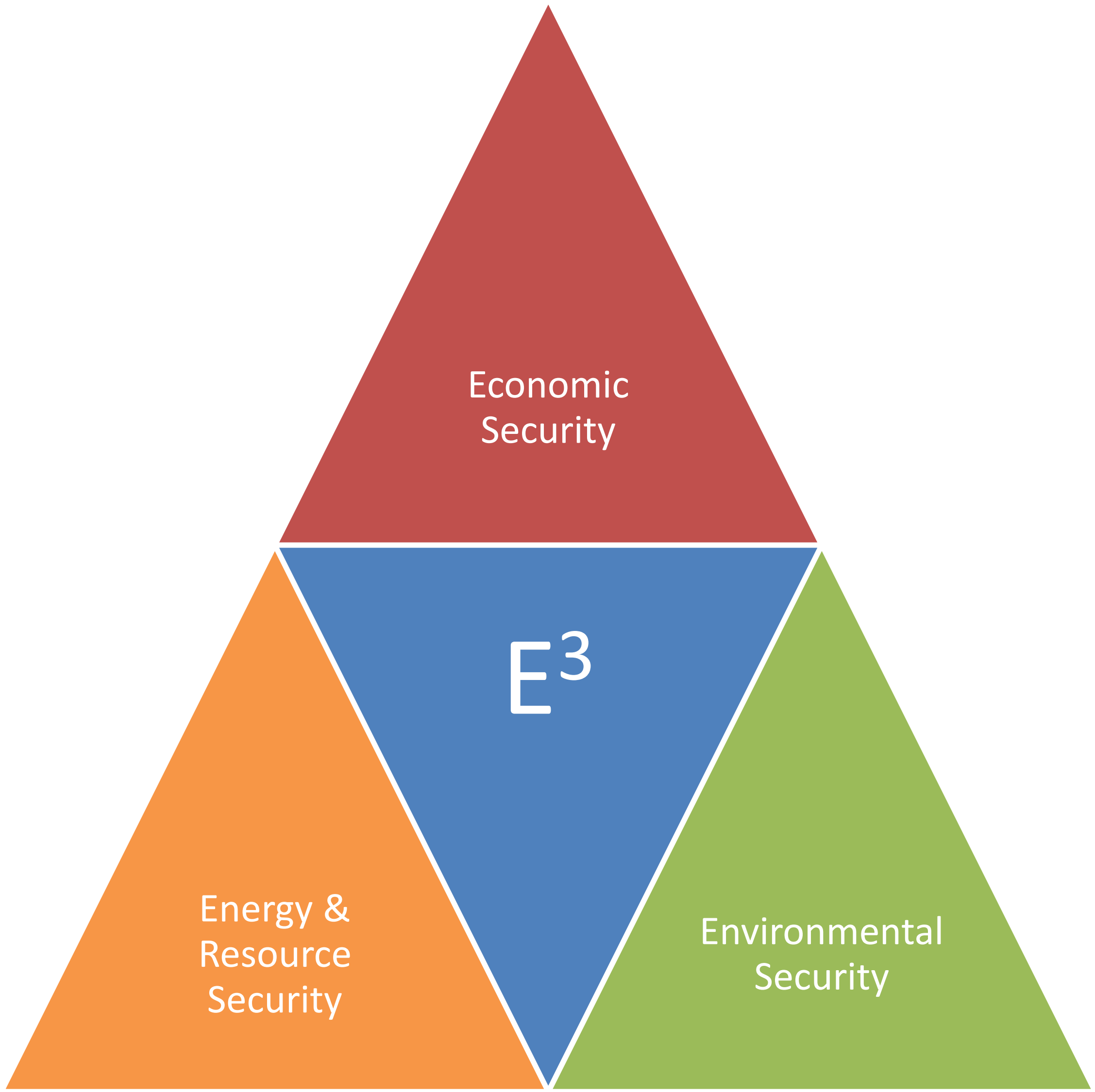
This transition creates great tension between the old and the new, with the principles of the debate often overshadowing practical solutions.

CO_2 emissions are progressively being priced and access to valuable inputs is becoming a strategic, commercial and political imperative.

Utilisation of lower cost resources and the mitigation of CO_2 intensive processes represent an abundance of opportunity.

Economic security is the primary policy objective of nations.

Energy and resource security underpins economic security allowing nations to afford the cost of environmentally cleaner pathways.



Core Technology Solution

ENVIRONMENTAL CLEAN TECHNOLOGIES LIMITED

Innovative resource upgrading and conversion technologies

Minerals processing technologies focused on transforming low-value resource streams into higher grade, valuable products delivering positive economic, energy, resource and environmental security outcomes.

H_2O

Unique low rank coal drying technology - Coldry

- IP owned 100% by ECT and protected in all major markets
- World's most efficient pre-drying process for high moisture content coals
- Enables low-rank coal use in downstream conversion process for high value products and applications
- Outstanding environmental credentials including a zero net CO_2 footprint from the process
- Construction-ready designs for first commercial scale plant ready to go

Fe

Primary iron processing technology – Matmor

- Intellectual property owned 100% by ECT
- Integrates with Coldry which acts as the feedstock preparation stage
- Reduces manufacturing costs by ~65% through use of low cost, abundant raw materials
- Reduces energy costs through innovative thermo-chemical pathway (impact embedded in manufacturing costs above)
- CO_2 emissions reduction helps deliver lower emissions intensity

Emerging Technology Solutions

“Frugality drives innovation, just like other constraints do. One of the only ways to get out of a tight box is to invent your way out.”

Jeff Bezos.

ECT’s pursuit of the “why” and “how” of our core technology has led the company to make new discoveries which promise to open up new markets and turn waste into value.

H_2

Hydrogen

- ECT is developing world leading know-how of hydrogen chemistry in low grade coals
- Targeting the lowest cost means of extracting hydrogen from low rank coals
- Potential applications of this know-how include purpose built hydrogen production

Ni

High-value metal products

- ECT is expanding the Matmor footprint to include alloys and high value upgraded materials, e.g.
  - Fe Mn Alloys
  - Fe Ni Alloys
  - Synthetic Rutile

Zero CO_2

Carbon-neutral steel plants

- Lower capital cost plant and lower CO_2 emissions results in cleaner iron and steel making
- Savings on plant cost can be used to purchase CO_2 credits, offsetting the remaining process emissions

Current Company Projects

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Bacchus Marsh High Volume Test Facility (HVTF)

- Facility to support continuous improvement, further R&D, with capacity targeting up to 25,000 tpa Coldry pellet output for enhanced R&D program data collection at large pilot scale
- Output may find a market consistent with R&D Tax Incentive feedstock rules

India integrated Demonstration Plant

- Large Government of India owned partners, NMDC and NLC for up to 25,000 tpa (metal) integrated Coldry & Matmor plant
- Completion of Techno-Economic Feasibility study June 2016 triggers advance to commercial discussions
- Draft Project Framework Agreement under negotiation (Oct 2016)

India Industrial Plant

- Partnerships with NLC and NMDC for a 500,000 tpa billet steel plant utilising Coldry & Matmor technologies
- Flow on from completion of the integrated Coldry+Matmor demonstration-pilot plant
- In-principle agreement on pathway to commercialisation

Future Company Projects

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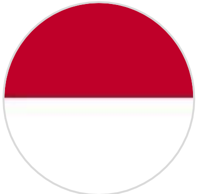
Australian Plant Opportunities

- Scoping study to start FY2017 for Australian based plants which may include:
  - Vic and SA Integrated Demonstration Plant
  - Vic Coldry plant integrated with pyrolysis or gasification



Indonesia Integrated Industrial Plant

- Large lignite reserves and demand for steel
- Economic plant construction and operations
- Completion of Techno-Economic Feasibility study FY2019

European Integrated Industrial Plant

- Large lignite reserves and demand for steel
- Economic plant construction and operations
- Completion of Techno-Economic Feasibility study FY2020

Corporate Milestones

ENVIRONMENTAL CLEAN TECHNOLOGIES LIMITED

2006
ASX Listing

2007
Coldry Pilot plant Ver. 1
Continuous Production

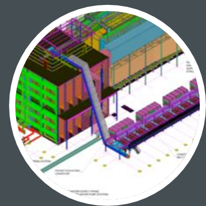
2007
Matmor Test Plant
Semi-continuous Production

2009
Coldry Pilot plant Ver. 2
Water recovery

2013
Coldry Pilot plant Ver. 3
Detailed commercial-scale design

2014
Matmor acquisition

2014
Coldry Commercial-Demo scale design completed



2015
Matmor test plant upgrade commenced

2016

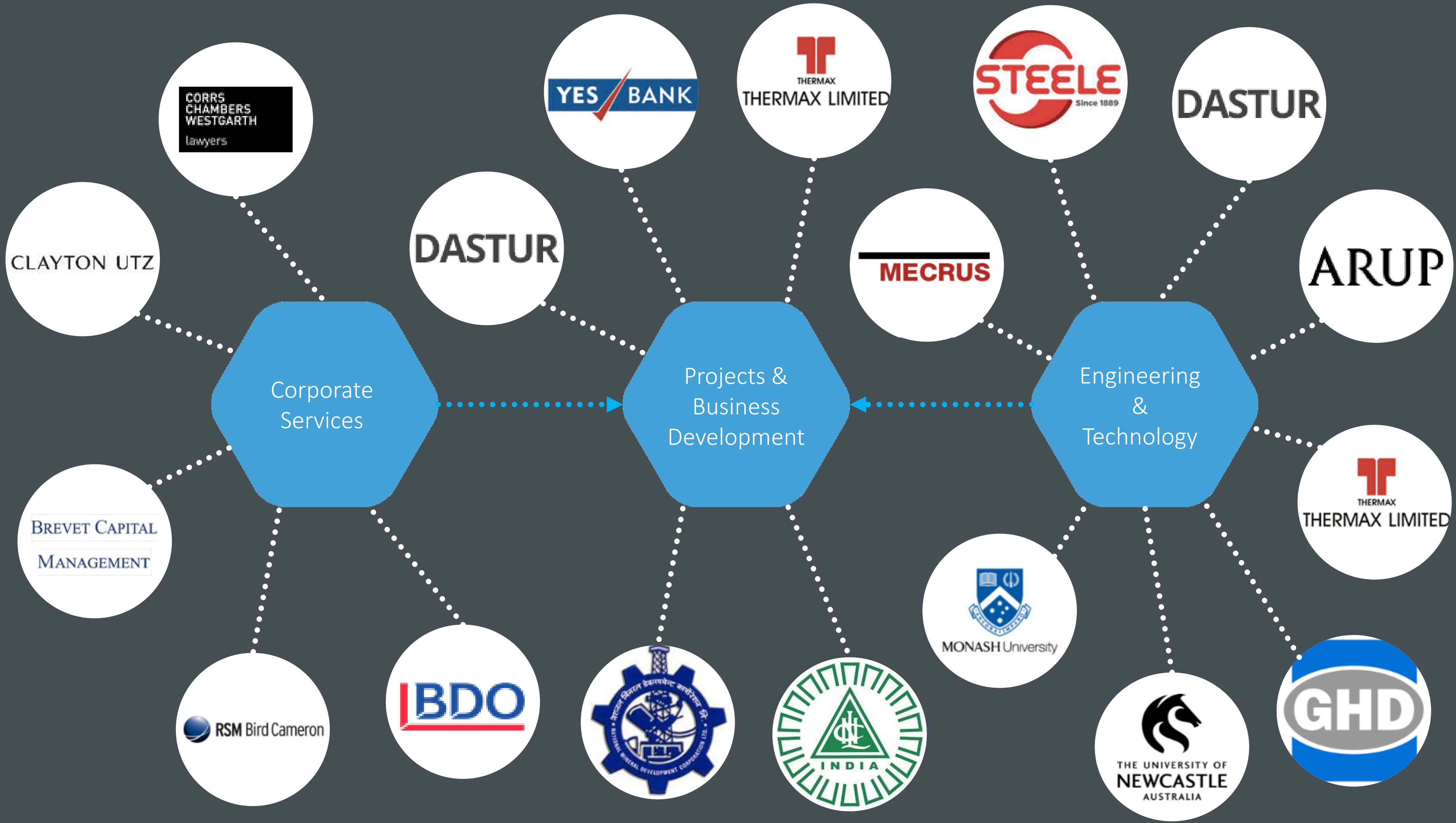
- Tri-partite India Agreement
- Project Agreements
- Coldry (HVTF)

2017
Demo Plant Construction

2018
Demo Plant Operation & evaluation

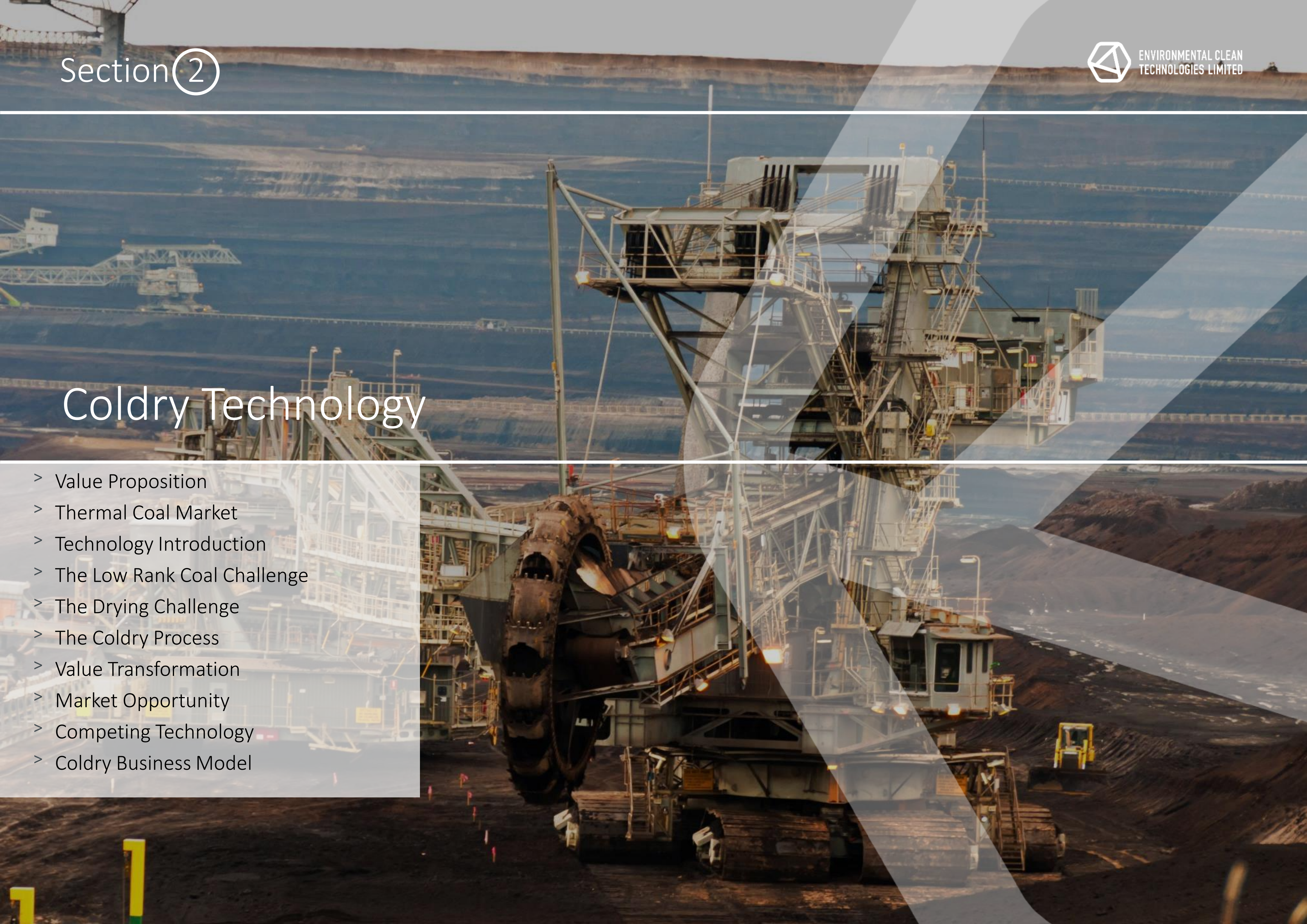
2019
Industrial Plant Project Start

Our Partners



Section 2

Coldry Technology



Coldry Value Proposition

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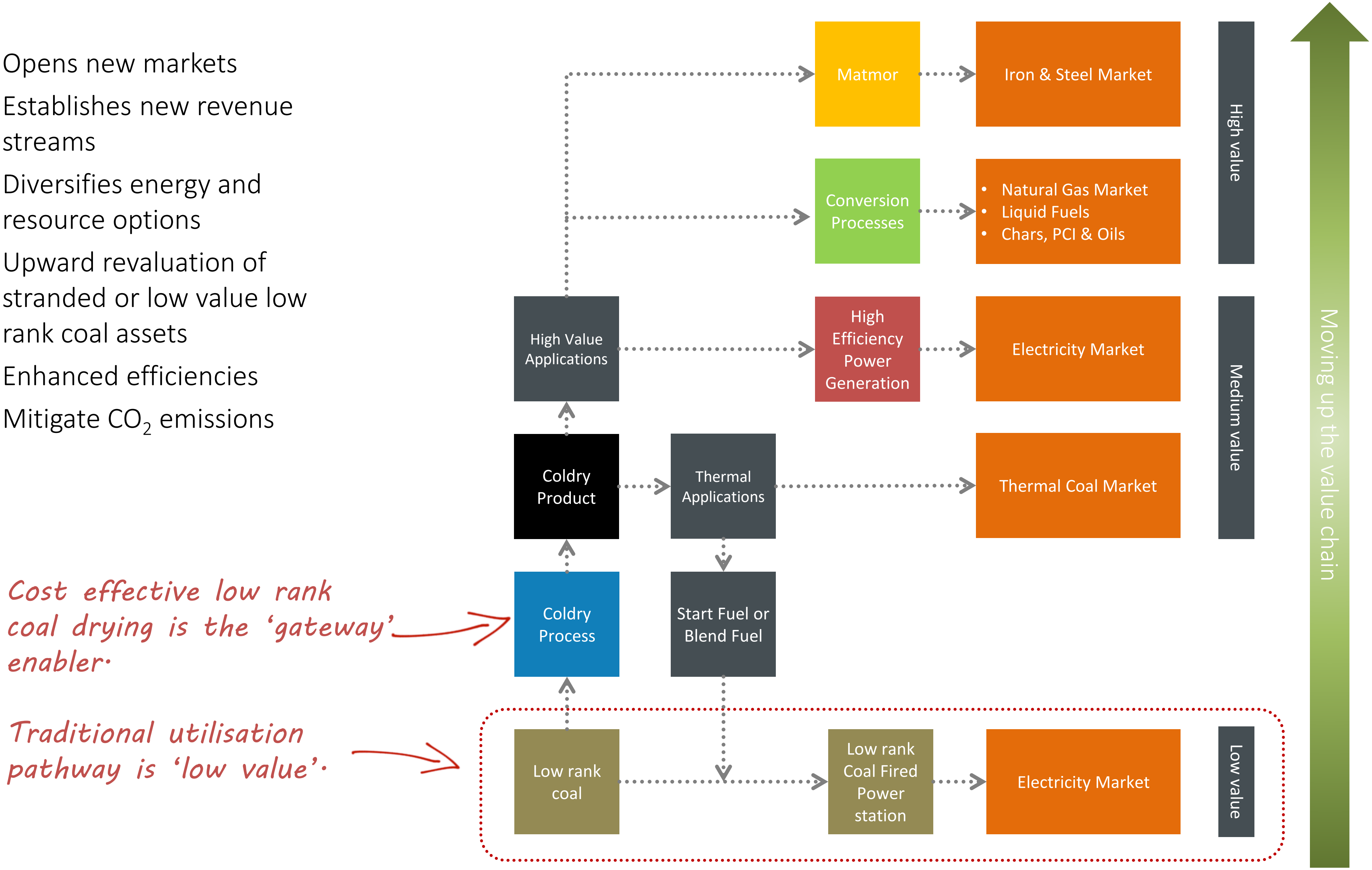
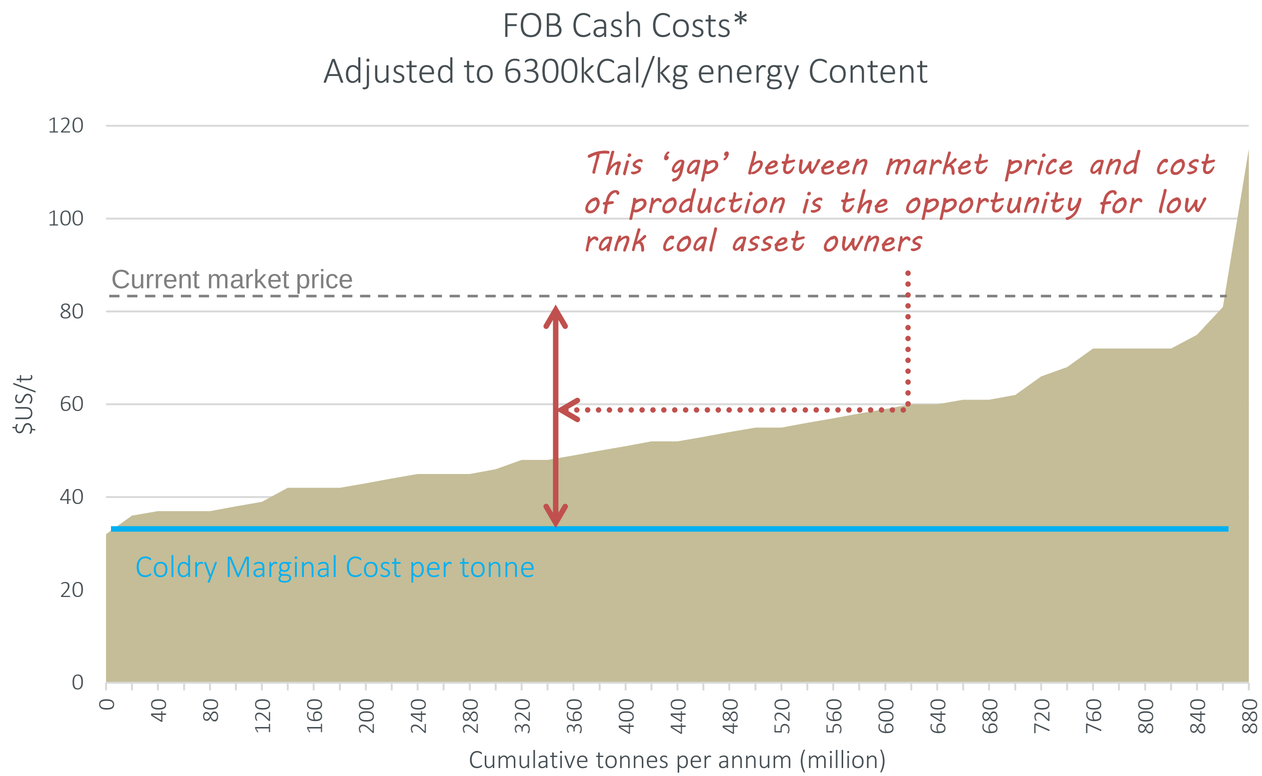
- Opens new markets
- Establishes new revenue streams
- Diversifies energy and resource options
- Upward revaluation of stranded or low value low rank coal assets
- Enhanced efficiencies
- Mitigate CO_2 emissions



Coldry Value Proposition:

Spotlight on the thermal coal market

- Incremental income from sales of upgraded product enabled by low marginal upgrade cost
- Competition – Seaborne Thermal coal trade
- To gain competitive space, you must be able to displace others on the supply curve
- With current pricing, less than half of supply generates profitable sales for traditional suppliers (horizontal dashed line). Via Coldry (blue line), ample margin is available even at lower pricing levels.



Energy Transition Advisors stated:

"… Current spot prices to be below the "cash costs" of production for nearly one-half of total capacity and to be below the "breakeven coal price" (which includes capital costs and economic returns) for two-thirds of total capacity. Over half of China's coal producers have cash costs in excess of domestic Chinese spot prices…."

October 2014

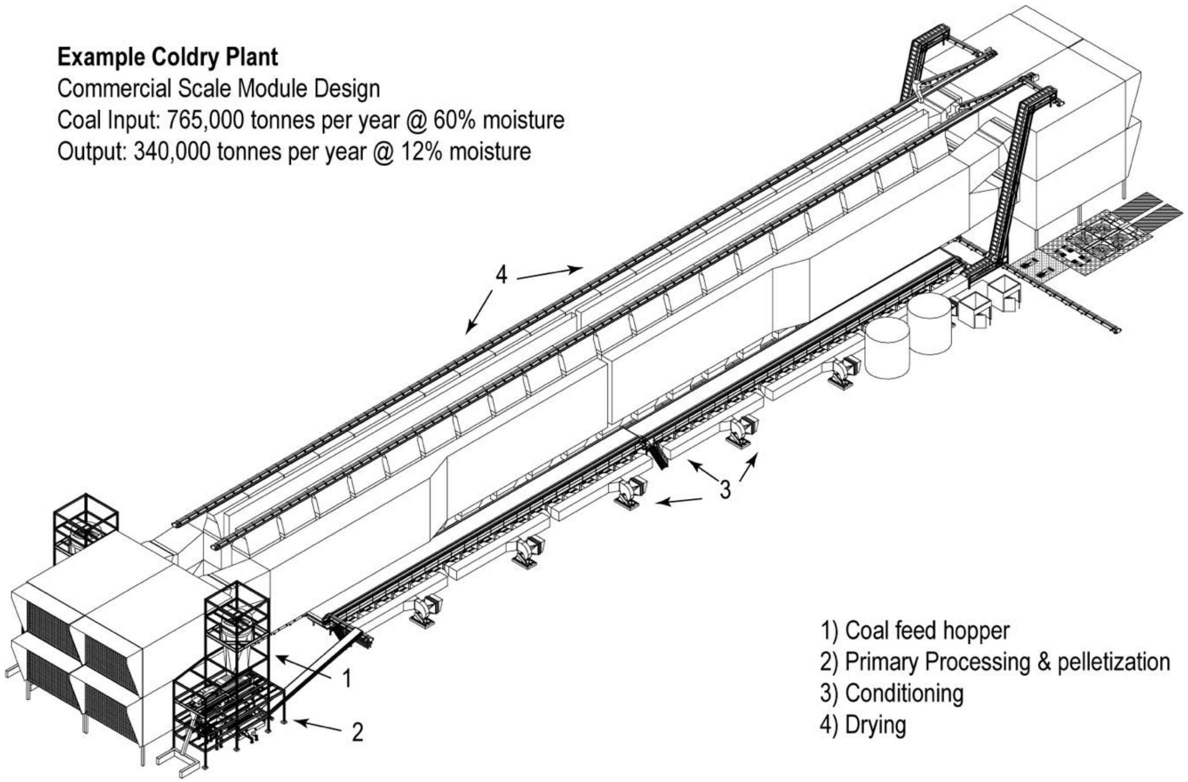
*Source: Metalytics – Thermal Coal Cost curve 2015

Coldry technology introduction

Low-rank coal drying

- Enhanced efficiency
- Greater energy security
- High value applications
- Low emissions

Process Features	Benefits
Low temperature, low pressure	Lower opex cost per tonne
Simple, patented mechanical design	Lower capital intensity, robust, reliable, lower operating & maintenance cost
Unique 'Densification' & waste heat utilisation approach	Enables low temperature, low pressure removal of moisture resulting in net energy uplift, low opex and zero CO_2
Modular	Scalable, cost effective



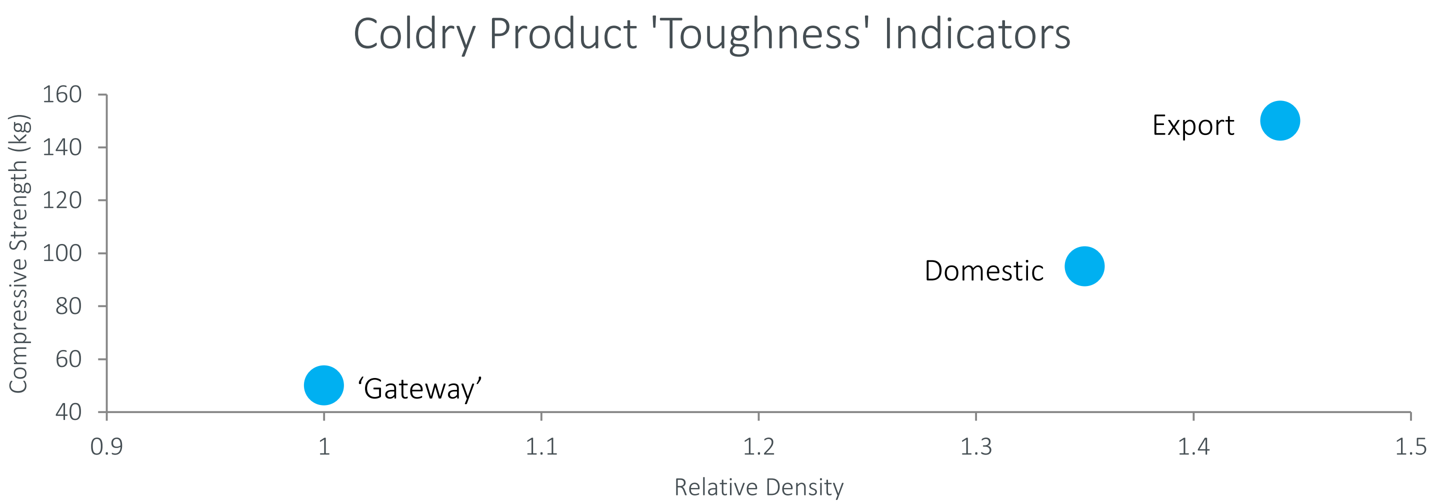
Coldry technology introduction

Gateway

Domestic

Export

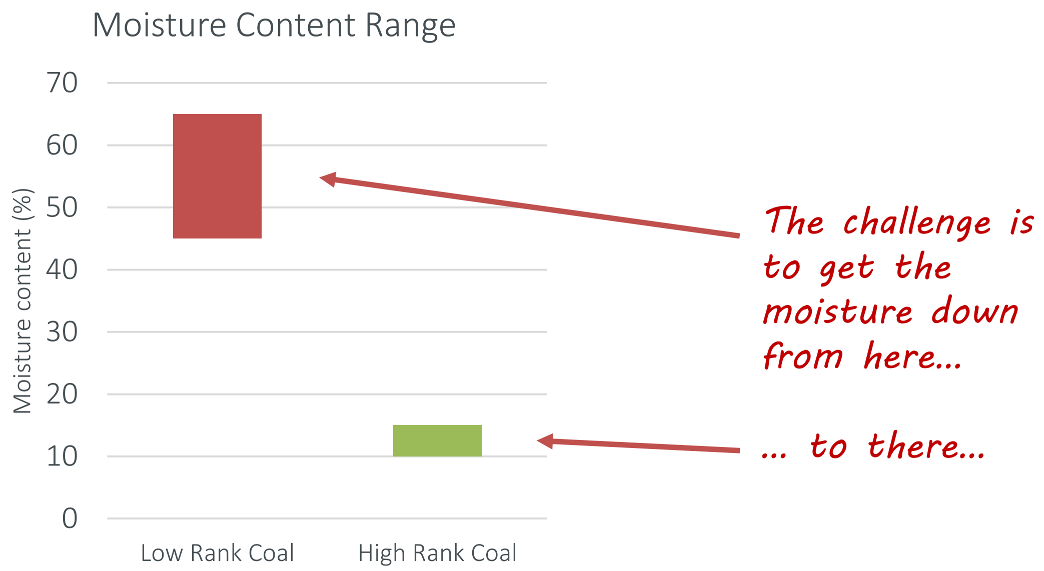
Product Features	Benefits
Low moisture, high energy value	Higher price, broader market applications
Stable	Won't permanently reabsorb moisture, low spontaneous combusting risk, storable, transportable
Retained volatile matter	Ideal for coal conversion technologies, yielding more gas and oil than black coal
Variable product output (pictured left)	Fit for purpose product format tailors hardness to customer needs: > 'Gateway' is ECT's 'fast dry' product, producing a lower cost but more friable product, ideal as a cost-effective front end feedstock for conversion processes. > 'Domestic' grade is the 'standard' Coldry product, robust enough to withstand handling and transport in local markets with minimal fines generation. > 'Export' grade is designed to withstand the rigours of multiple bulk handing points over long distances with minimal fines generation.

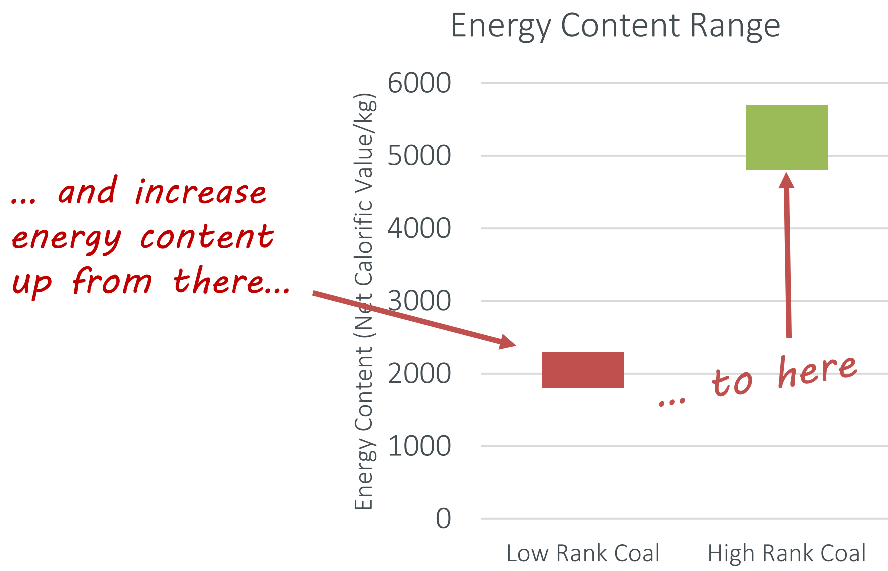


The low rank coal challenge

To enable low rank coal use in higher value applications, it needs to be dried.

- High moisture content
  - Low energy content
  - Not suitable for use in black coal applications or further upgrading
  - CO_2 intensive power generation
- Significant risk of spontaneous combustion compared to bituminous coal
  - Limits storage volume and duration
  - Increased transport cost
- Inefficient transportation cost due to carting mostly water





The Drying Challenge

Drying is easy.

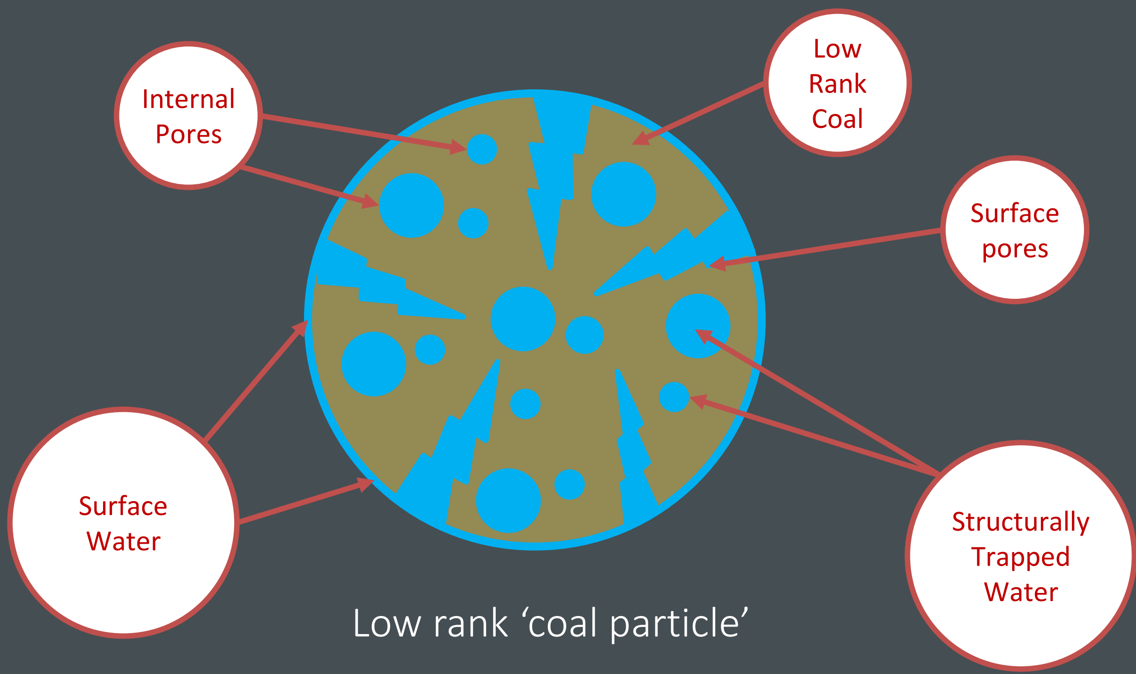
Drying efficiently and cost-effectively is the challenge.

Coldry meets the challenge.

Achieving a net energy uplift and zero CO_2 emissions at the lowest possible marginal cost, is the goal.

"It is difficult to dry low rank coal with high efficiency. For hard coals, the majority of the moisture is present on the surface of coal particles. Energy required to remove free moisture is simply the latent heat of evaporation (~2.27MJ/kg). In contrast a considerable portion of the moisture is held by hydrogen bonds in the capillary pores or interstices of low rank coal particles. Hydrogen bonding increases the strength of moisture holding and more energy is needed to remove a certain amount of moisture from low rank coal. Another severe problem with drying low rank coal is the ease of reabsorption of moisture. To achieve deep drying of low rank coal, the number of hydrogen bonds has to be reduced by destroying them either using thermal or mechanical methods, which is the key to any effective drying process."

Dr Nigel S Dong, IEA Clean Coal Centre



Low rank 'coal particle'

Coldry Process

“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

1 Screening & feed control

2 Shear & attrition

3 Extrude

4 Conditioning

5 Continuous Packed Pad Drying

6 Water recovery (optional)

7 Coldry Pellets

Coldry Value Transformation

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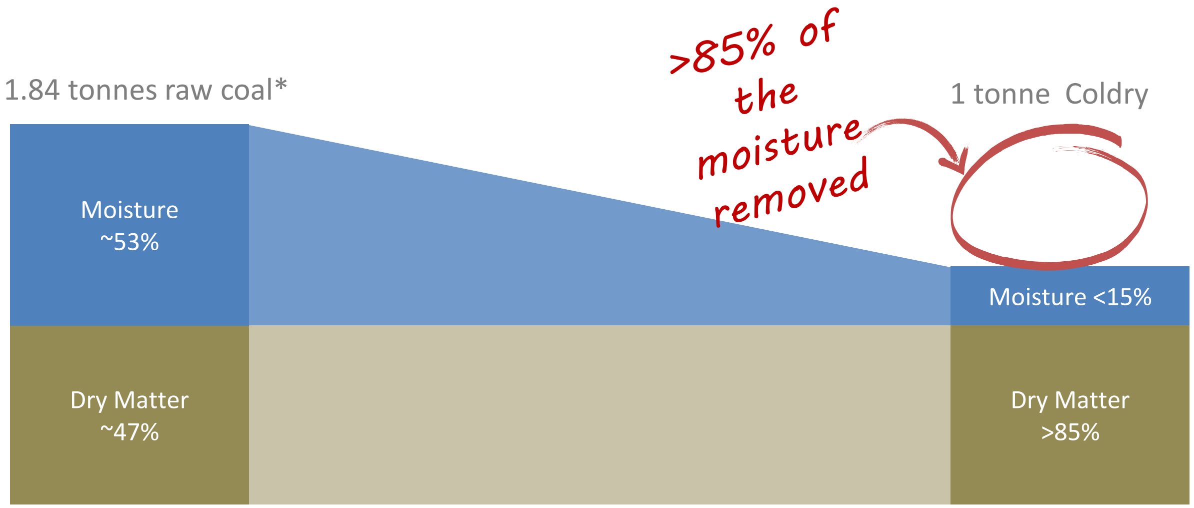
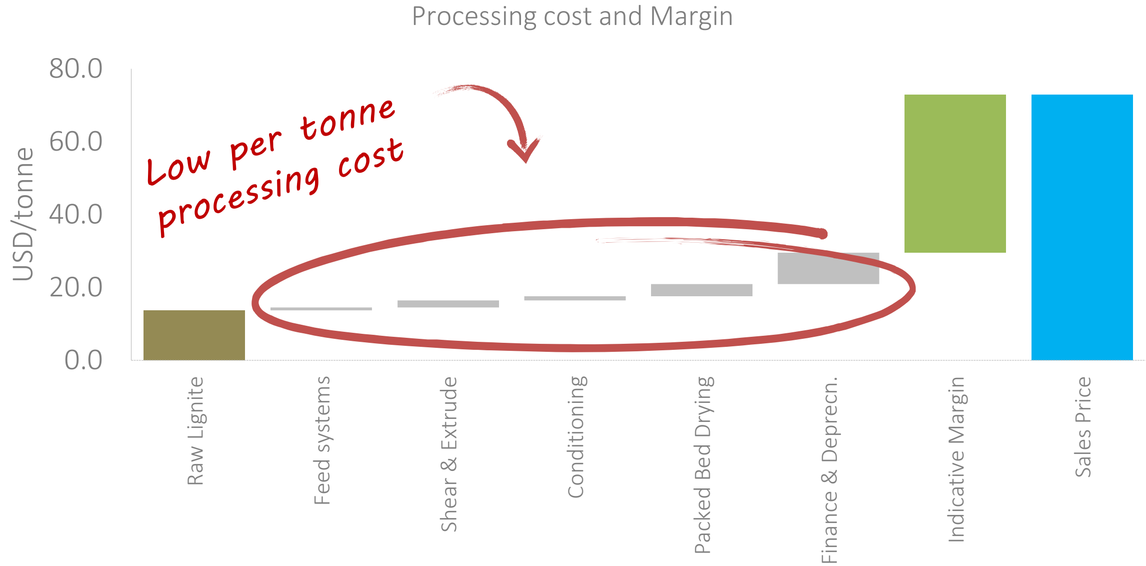
"Given India's large demand-supply mismatch of thermal coal, the Coldry technology offers an efficient and cost-effective solution to utilize the 43 BT (est.) lignite reserves of India efficiently to bolster the energy security of the country while mitigating any adverse impact on the climate."

YES Bank Ltd, India

The marginal upgrading cost supports substantial value add through allowing low-rank coal to service higher value coal markets, with significant margin.





* 55% moisture content lignite via 'gateway' product used as an example

Market Opportunity

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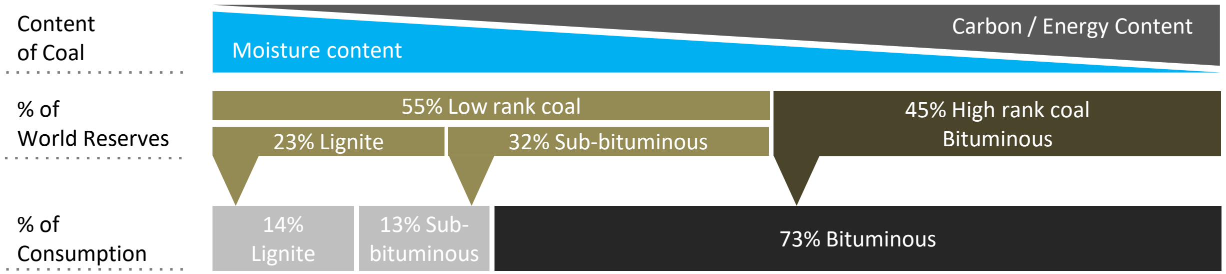
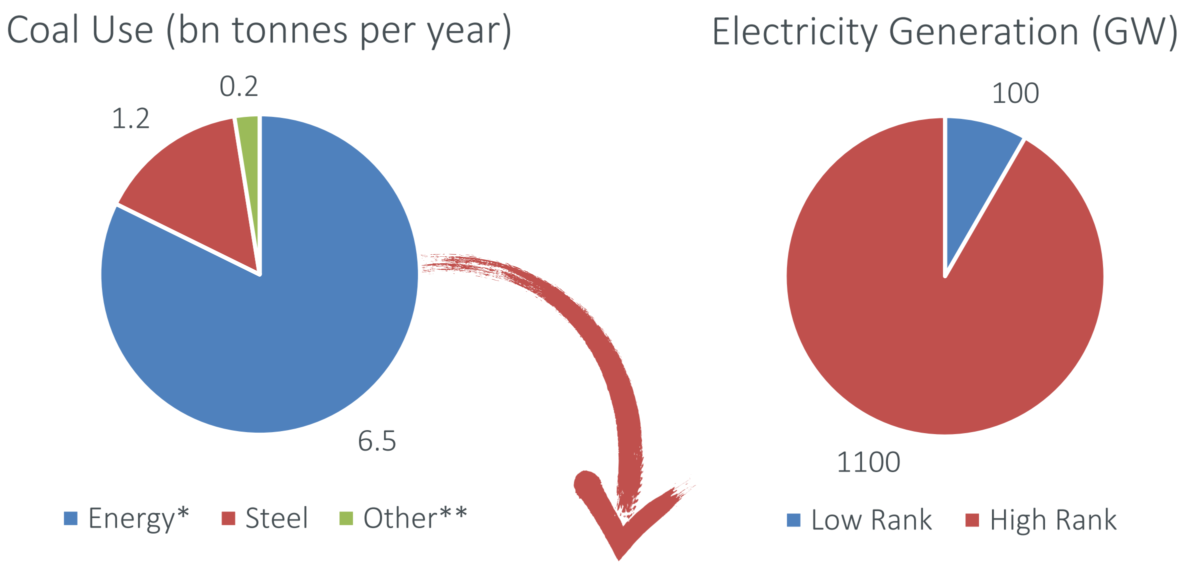
Coldry enables enhanced utilisation of low-rank coal resources by allowing them to service higher-rank coal applications

The market for coal currently exceeds 7 billion tonnes per year, with the majority of consumption for energy generation and steel production.

Electricity generation is dominated by high rank coal. Upgrading via the Coldry process allows low rank coal to access this market.

World Recoverable Coal Reserves & consumption





0.1 Bn tonnes market penetration = 250 Modules of capacity similar to India project

*Energy; electricity, steam and conversion to gas and liquid fuels
**Including cement manufacture, fertiliser
Source: World Energy Energy Council

Market Opportunity - Global Application

Major low rank coal reserves

Australia

China

Indonesia

India & Pakistan

Turkey

Thailand

Germany

Czech / Serbia / Poland …

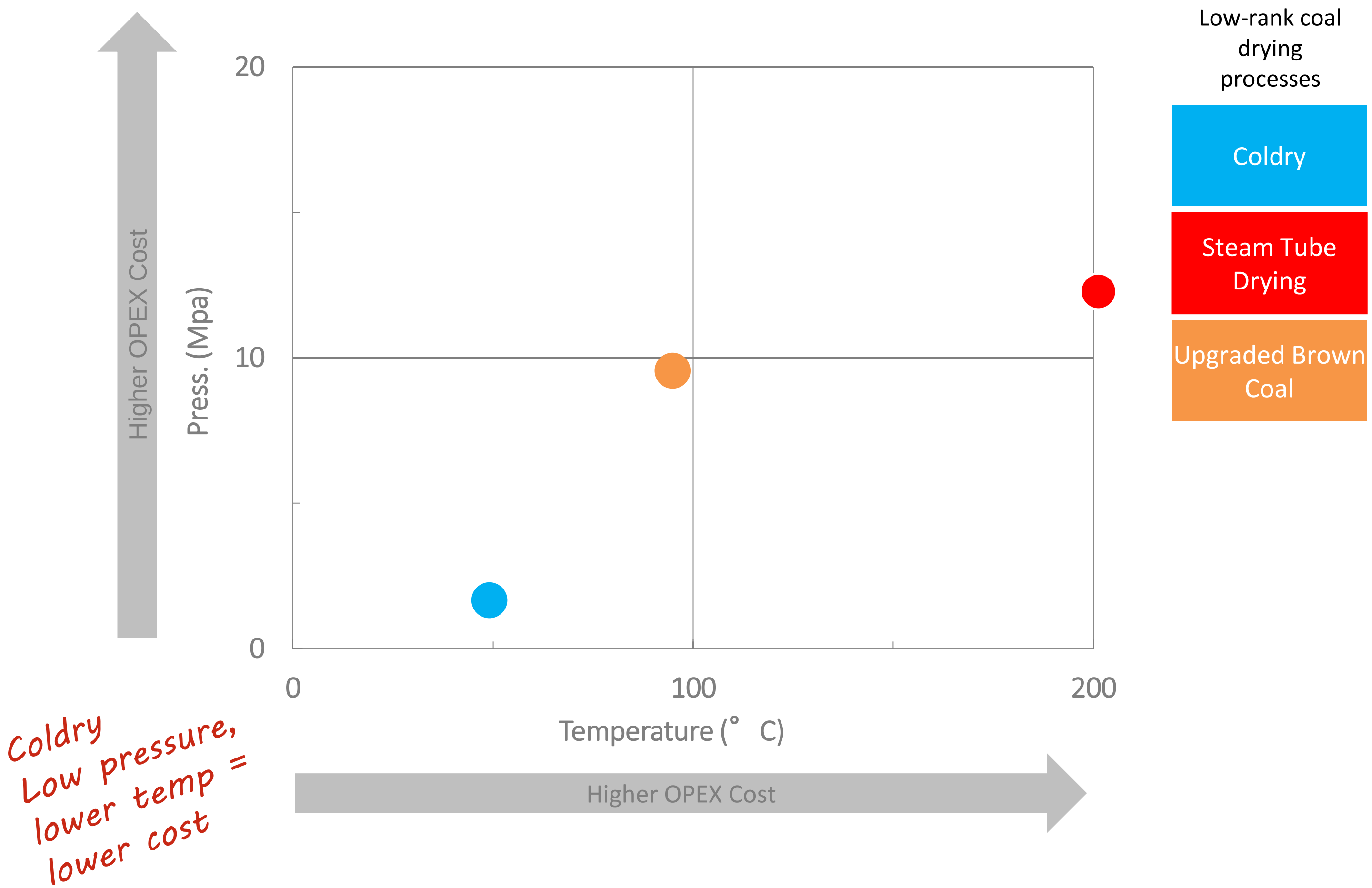
North America

Fast Fact – Capacity represents significantly more than 500 years of consumption at current rates, i.e. ample space for growth if achieved with improved sustainability.

Coldry Competitors

- This graph is a proxy for process energy efficiency.
- High temperature and pressure requires energy input.
- Energy needs to be generated, either from gas or coal, adding cost to a process.
- ECT have 'cracked the code' of efficient low rank coal drying.

Coldry is the world's first low temperature, low pressure drying method capable of producing a black coal equivalent product via a low cost, zero CO_2 process.



Coldry Business Model

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Value Propositions	Revenue Streams	Customer Segments

> Cost effective low rank coal drying
> Open new markets
> Establish new revenue streams
> Diversify energy and resource options
> Revalue assets
> Enhance efficiency
> Mitigate CO_2 emissions
	> License fees – plant sales
	> Royalty fees – plant capacity deployed
	> Maintenance and servicing fees
		> Process integration
		> Mine & power station owners
		> Conversion process owners:
		  > Product consumption
		  > Power stations
		  > Conversion processes
		  > Matmor

Matmor Technology

- Value Proposition
- Technology Introduction
- Opportunity
- Steel Intensity
- Process Overview
- Inputs
- Commercialisation Pathway
- Technical Comparisons
- Business Model

Matmor Value Proposition

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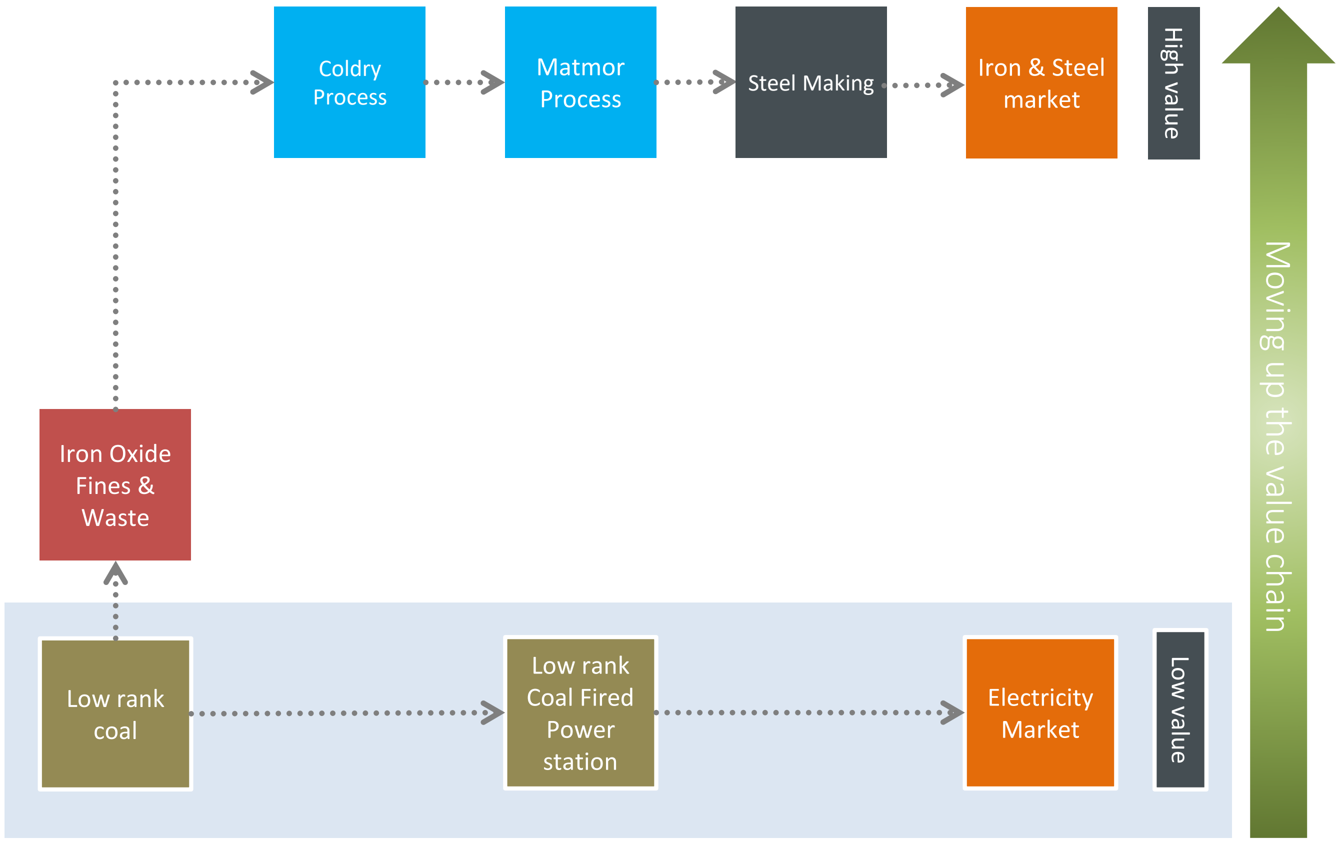
- Lower cost raw materials
- Lower capital cost plant
- Lower emissions
- Higher value products
- Resource diversity & security
- Waste remediation solution
- Coldry provides essential feed preparation step

Business-as-usual use of lignite is relatively low value.
Matmor allows lignite to be used to produce high value metal products.



Matmor technology introduction

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Process Features	Benefits
Uses low-rank coal and alternative iron ore materials	> Low rank coal replaces coking coal > Wide range of iron oxide sources > Ability to use lower grades of iron ore > Lower raw material cost > Diversified supply chain > Decoupling from coking coal and high grade iron ore improves energy and resource security > Waste remediation solution improves environmental outcomes > Economic advantages: Import replacement, monetise waste streams and add value to lower grade coal and iron oxide resources
Lower operating temperature, <1,000°C	> Lower capital cost plant > High quality metal product > Increased energy efficiency
Uses Coldry as the feed preparation process	> Low cost, zero CO_2 drying and pelletising > Eliminates coking ovens and sinter plants
High Fe yield	> High level of Fe extracted from low value resources > Suitable for existing steelmaking processes

ECT Matmor Test Plant Melbourne, Australia

Matmor technology introduction

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DRI pellet

Hot liquid metal

Solid iron

Product Features	Benefits
High Fe content	> Quality primary iron product suitable for existing steel making processes > Low impurities resulting in high quality primary iron
Flexible output: > DRI pellet > Hot Liquid metal > Solid Iron	> Flexible applications > Integrate seamlessly with existing steelmaking operations > Feed Induction or Electric Arc furnaces > Export

Input flexibility: Matmor has successfully processed iron oxide inputs ranging from 45% to 65% Fe

Output: in a finished product form Matmor delivers a high quality product in line with desired market specifications.

The 'alternative raw material' opportunity

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There exists a vast, 'above ground ore body' in the form of iron ore mine fines and slimes, and industrial wastes such as millscale and nickel refinery tailings.

Current processes can't utilise fines and wastes without expensive pre-processing.

Matmor liberates this resource in an efficient, cost-effective manner.

Matmor enables a lower cost primary iron production pathway by leveraging two unique features:

1. **Decoupling iron making from coking coal**
   By utilising the rich organic chemistry within low rank coal, the Matmor process utilises a different chemical pathway to deliver a high quality product without the need for high quality coking coal, resulting in decreased raw material cost and diversified supply options.

2. **Exploiting the 'above ground ore body'**
   By harnessing the vast 'above ground ore body' that exists as mine tailings, fines and slimes and from industrial wastes such as millscale and nickel refinery tailings, Matmor is able to leverage sunk mining and processing costs by providing a waste remediation solution that turns a contingent liability into a revenue stream.

   Tailings storage locks up significant swathes of valuable land. Matmor minimises waste, releasing land for productive use.

The 'steel intensity' challenge

India is positioned to substantially increase its steel demand, yet is heavily reliant on imports of coking coal and iron ore.

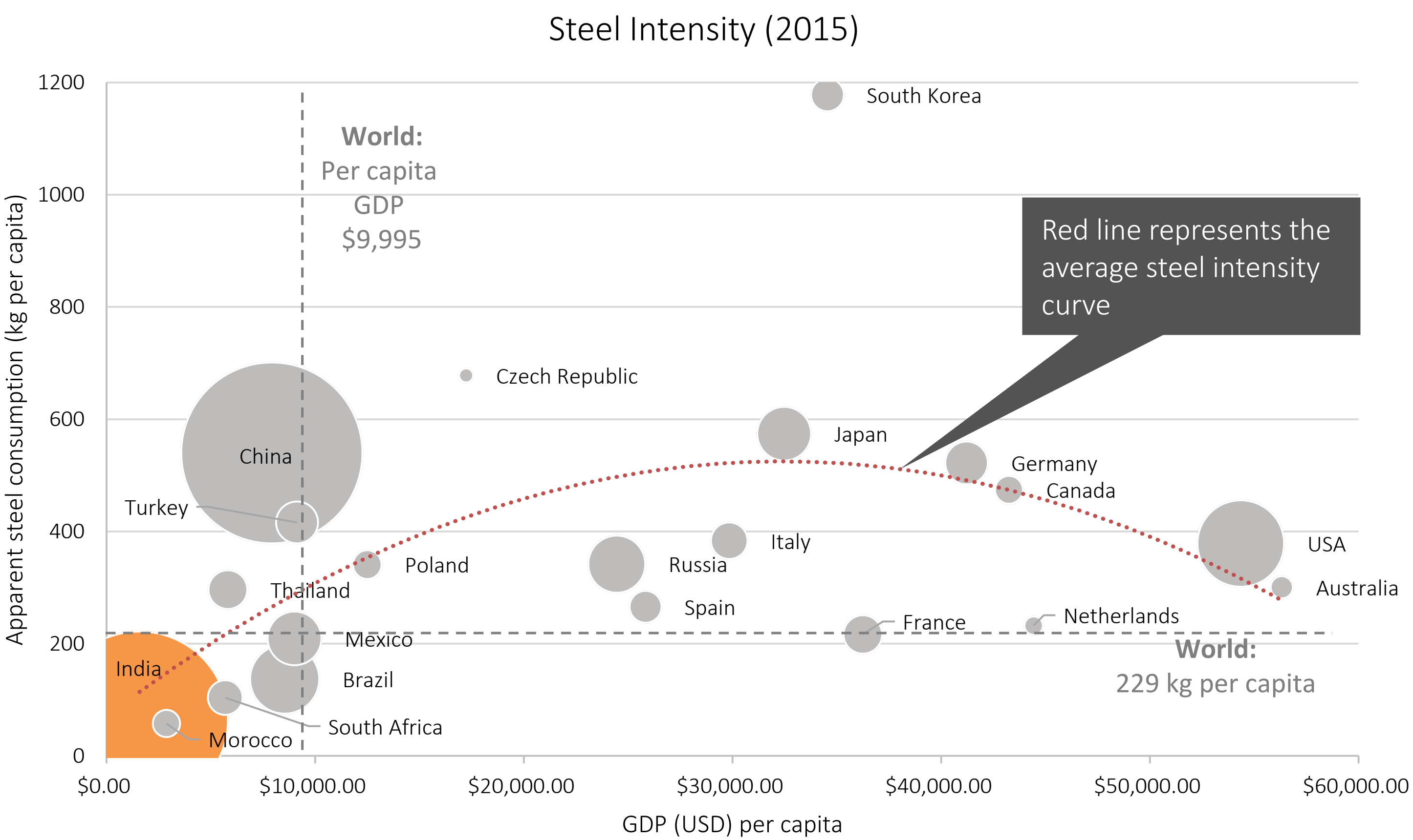
India has signaled its intent to double steel intensity from 64kg to 120kg per capita per year.

Matmor opens up new domestic raw material supply options in support of growth in emerging nations.

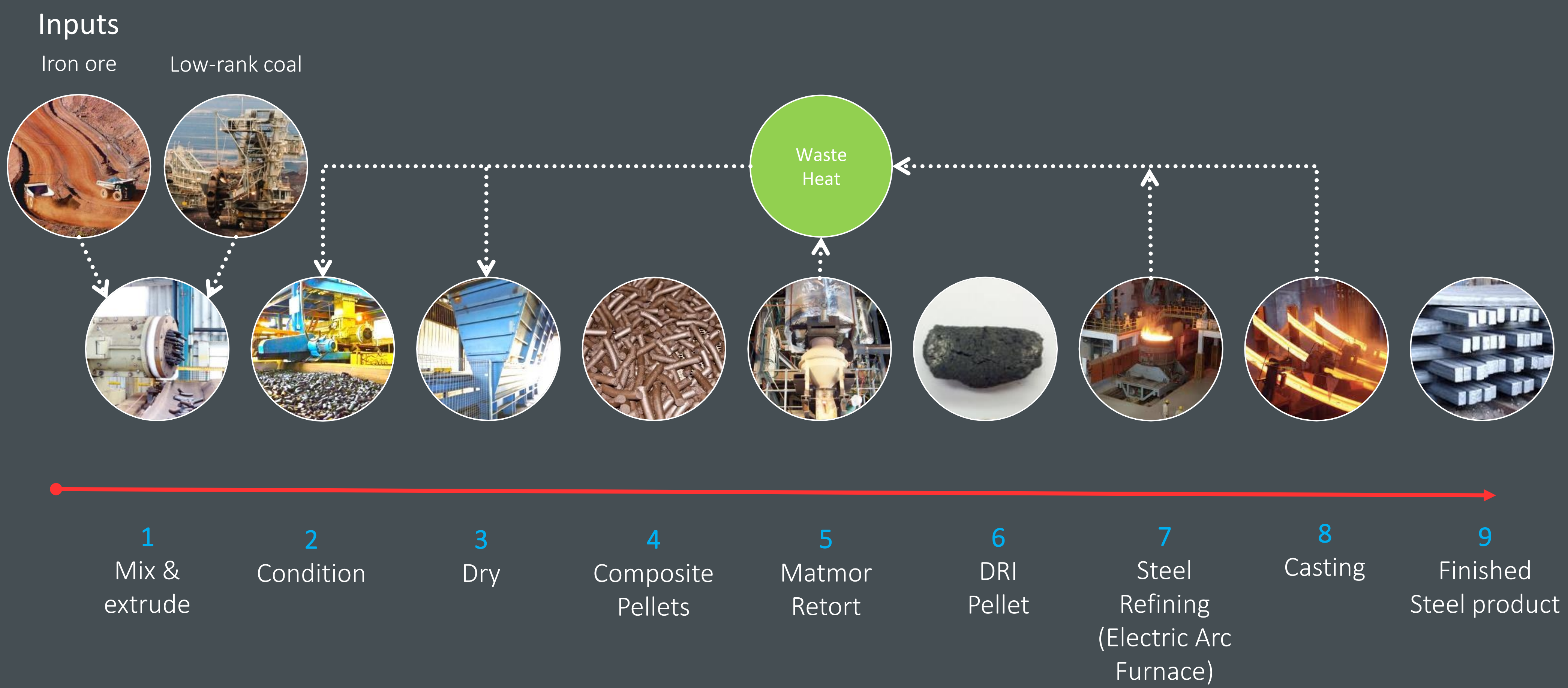
In countries with mature steel intensity curves, Matmor is an ideal waste remediation solution.

Data: World Steel Association, World Bank
Bubble size represents population

The most powerful forces driving steel demand are aligned. As economies develop and modernise, steel consumption per capita grows, reflecting a wide range of growing applications – basic infrastructure, water treatment plants, food processing distribution centres, roads, bridges – and, as the middle class emerges, durable goods such as appliances and cars.



Matmor Process

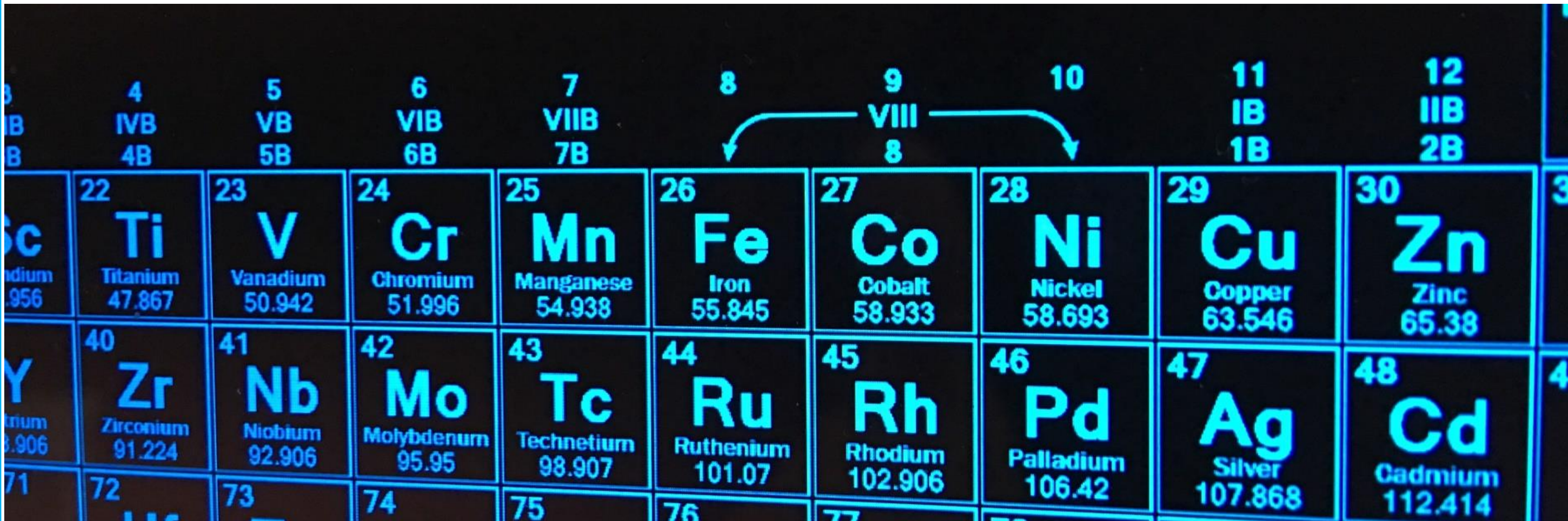


Matmor employs a different chemical pathway, making it the world's first and only low temperature, low rank coal-based iron making process.

Inputs

Creating higher value product opportunities

- The Matmor process combines metal oxide bearing media, low rank coal and a flux via the Coldry process to produce a composite pellet
- Feedstock flexibility: Matmor can reduce the following metal oxides to metal:
  - Iron Ore:
    - Hematite: Fe_2O_3 (Lump, fines and slimes)
    - Magnetite: Fe_3O_4 – without the need for sintering
  - Waste streams:
    - Mill scale
    - Blue Dust
  - Fe within Nickel ores (Limonite) and Nickel refinery tailings:
    - Also recovers Ni within the alloy
    - Has also recovered Cr content within these same materials
  - Positive test results on both Ilmenite (Ti source) & Mn ores with further development required



Matmor Commercialisation Pathway

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Current stage of development

Bench Scale	Test Scale	Pilot Scale	Commercial Scale Demo	Commercial Scale Expansion
		~1 to 2 tph capacity	~125,000 tpa capacity	~500,000 tpa capacity

Bench Test Unit
- 10kg output
- Batch Process
- Complete and in active service

Test Plant
- 1 tonne per day
- Single tube
- Semi-continuous process
- No pellet making integration
- Stage 1 complete
- Stage 2 due to commence H2 2016, now underway

Pilot Plant
- 1-2 tonne per hour
- Full automation
- Integrated pelletisation
- Multiple retort tubes
- Testing & validation

Commercial Demo
- Single furnace
- Multi-retort tube scale up
- Testing & validation
- Completion of R&D objectives

Commercial Expansion
- Modular deployment
- Commercial operations

Matmor Process vs. Blast Furnace

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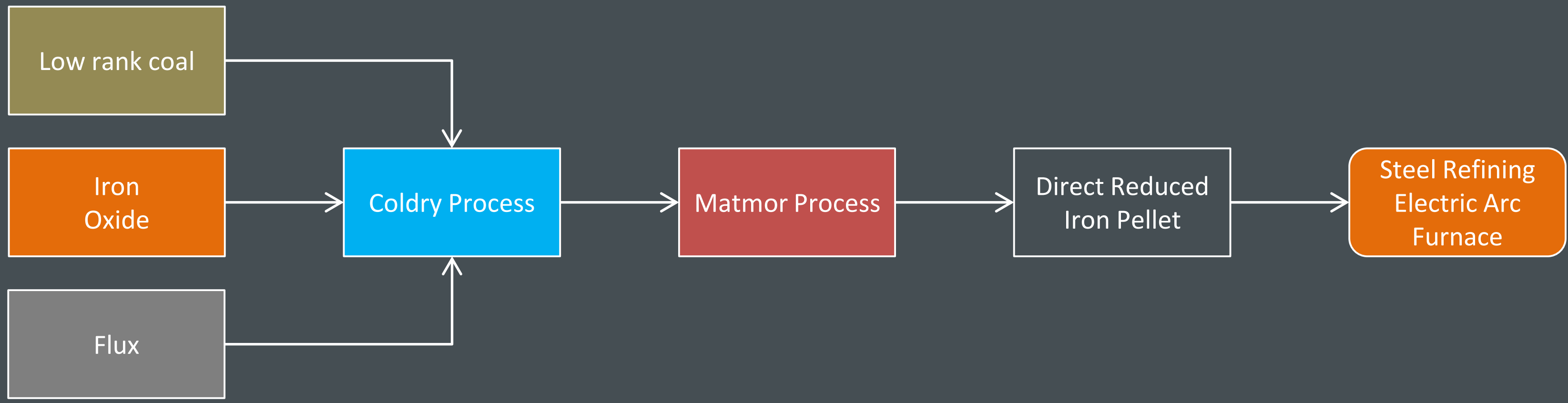
Matmor Process

- Lower Cost
- Simpler
- More flexible
- Less CO_2



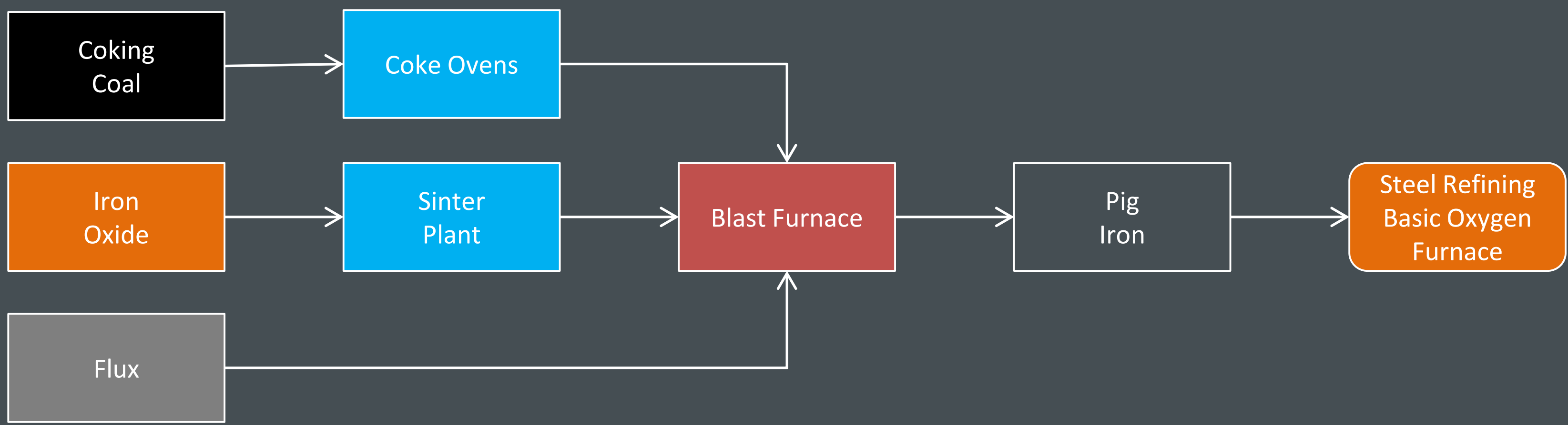
- **Lower cost** inputs
- Utilise domestic raw materials
- Utilise waste grade ore

Environmental Improvement
Eliminates:
- Sinter plant
- Coke ovens
- Associated CO_2 emissions

Efficient
Lower temperature than Blast Furnace:
- **Lower** capex
- **Lower** maintenance cost
- Economic at smaller scale

Product:
Tailored to the same specification as traditional processes delivering the desired grades of iron and steel for various applications.

Blast Furnace



Benefits vs Blast Furnace

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Decoupling from traditional raw materials strengthens a business' resistance to inherent price volatility

> Critical Raw material prices have moved between early and late 2016; mainly Coking coal
> Compared below is F2015/16 average (left) vs. mid October Spot (right)

	Traditional	ECT
	BF - BOF	C/M - EAF
	Blast Furnace - Basic Oxygen Furnace	Coldry / Matmor - EAF + Power Generation
Case / Scenario	Base Case	Mid Case
	Crore ₹	Crore ₹
CAPEX	2,522	1,607
OPEX	969	1,002
SALES	1,264	1,307
Gross Profit	295	305
IRR (ungeared)	9.1%	17.2%
IRR (geared 30%)	7.7%	18.4%

Inherent strength – Lower Capex, plus ability to use lower cost raw materials

> Coking coal (above $US 85 FOB)
> Fe Ore fines

	Traditional	ECT
	BF - BOF	C/M - EAF
	Blast Furnace - Basic Oxygen Furnace	Coldry / Matmor - EAF + Power Generation
Case / Scenario	Base Case	Mid Case
	Crore ₹	Crore ₹
CAPEX	2,522	1,607
OPEX	1,485	1,022
SALES	1,330	1,376
Gross Profit	-155	354
IRR (ungeared)	negative	20.0%
IRR (geared 30%)	negative	22.1%

2016 mid October spot price:

> Coking coal - $US 245 FOB
> Also, escalation of Ore & Steel (less significant)

Currency: Indian Rupees

Benefits vs other methods

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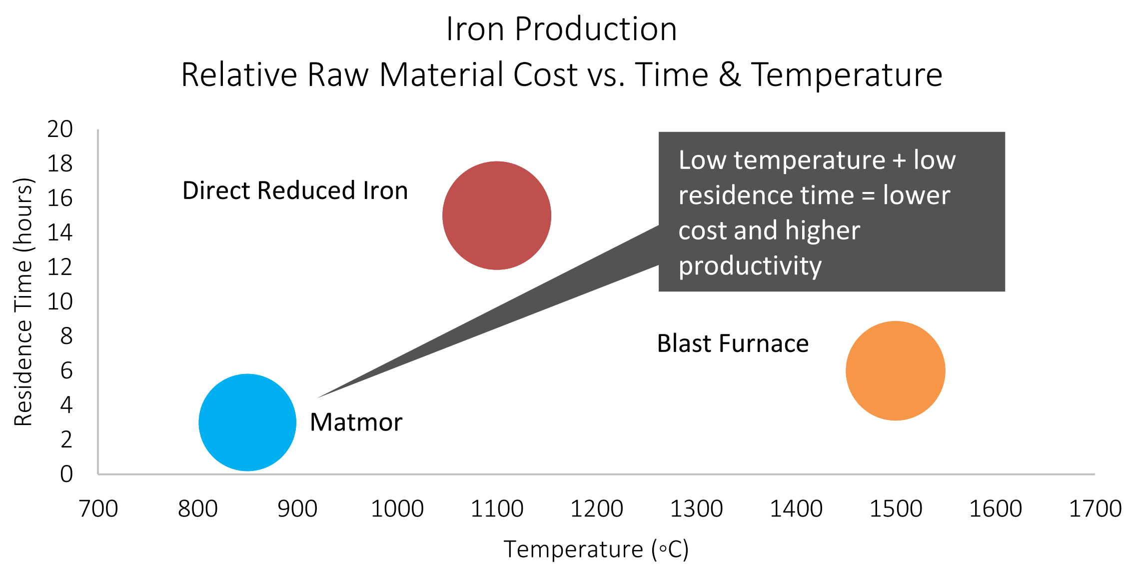
- Lower Temperature
- Lower residence time, higher productivity
- Lower Cost



- Residence time is a proxy for asset productivity
- Temperature is a proxy for asset capital intensity
- Bubble size represents 'Relative Raw Material Cost'

Primary Iron Making Process	 Blast Furnace	 DRI	 Matmor
Temperature (degrees C)	1300-1500	1000-1100	800-900
Residence Time (hours)	6	12-18	1.5-3

Matmor Business Model

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Value Propositions	Revenue Streams	Customer Segments
> Cost effective primary iron production > Waste remediation solution > Open new markets > Establish new revenue streams > Diversify energy and resource options > Revalue assets > Enhance efficiency > Mitigate CO_2 emissions	> Technology IP - Royalty fees from plant capacity deployed > Detailed Design and OEM – vending of third party services > Project Management fees – plant design through to commissioning > EPC – Commission on contract value managed > Maintenance and servicing – Commission on contract value managed > Direct plant ownership / operation	Process integration > Integrated steel plants > Stand alone plant Product consumption > Integrated steel plants > Electric Arc Furnace > Induction Furnace

Commercialisation Strategy

- Commercialisation Pathway
- Revenue Model
- Commercialisation – next steps
- Value Proposition for low rank coal owners

Commercialisation Pathway

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.

Revenue Model

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Technology IP Royalties:
IP royalties represent a primary income stream to ECT in the future. Current model for India is based on industry benchmark pricing for replacement product equivalents and the installed plant capacity

Original Equipment Manufacturing
ECT will develop and secure a global agreement / s (and ongoing income from) the manufacturing of specific Coldry and Matmor equipment to be supplied to future projects.

Detailed Design (project specific):
Through engaging with specialist external partners, ECT will vend design services including detailed plant design, CAPEX estimates and OPEX estimates for each project.

Engineering, Procurement & Construction:
EPC providers will be contracted to each project either directly by the project entity itself or indirectly through ECT where appropriate.

Operations & Maintenance:
Similarly to the EPC services, O&M providers will be contracted to each project either directly by the project entity itself or indirectly through ECT where appropriate.

Commercialisation – Next Steps

- **Transition to Revenue:**
  The initial project in India will represent a transition from an 'investment model' to a 'revenue model' due to its 'Demonstration and Integrated' nature, with opportunities to optimise economics following successful operational proving.
- **Target revenue streams include:**
  - Technology IP License – royalties based $/tonne Coldry and Matmor Capacity
  - Detailed Design Services – delivered as part of the IP & project Management agreements
  - OEM Services – delivered as part of Project management services
- **Bespoke & adaptive:**
  Revenue modelling for future projects will necessarily incorporate tailored aspects of the business model and revenue streams, reflecting project specific criteria, with an average earnings indicator being derived from installed capacity data.
- **Timing:**
  Initial revenues targeted to be realised during commercial demonstration (design, OEM and EPC)
- **Assessment:**
  Engaging market analysts to provide regular valuation views based on active and pipeline projects to provide guidance to the market.

Market Pull - Value Proposition for Low rank coal asset owners

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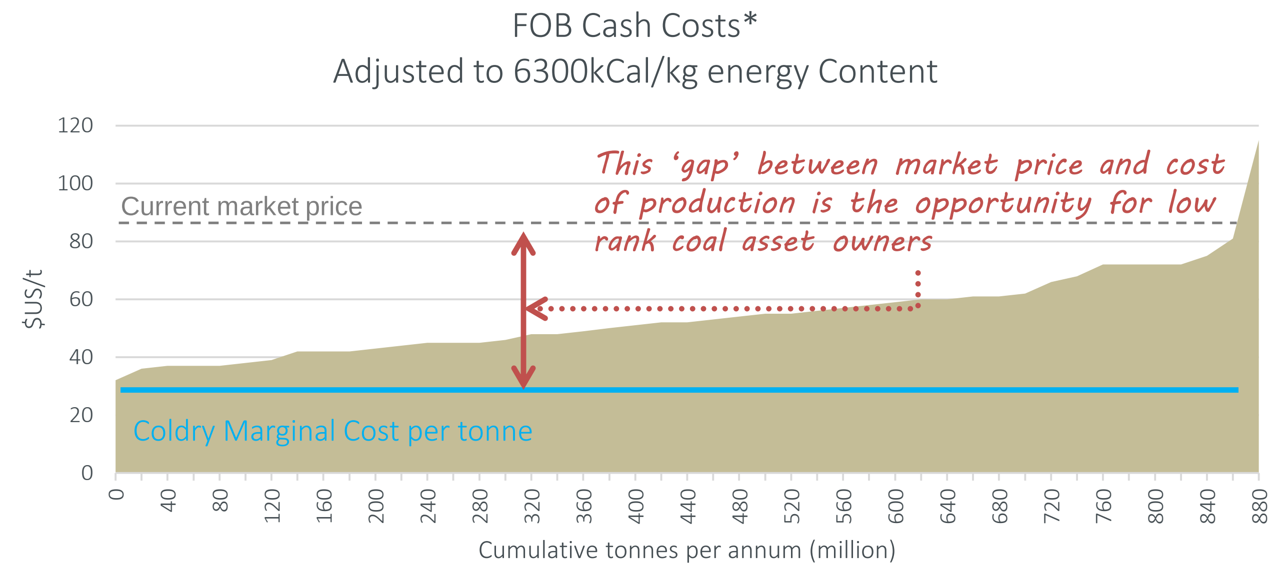
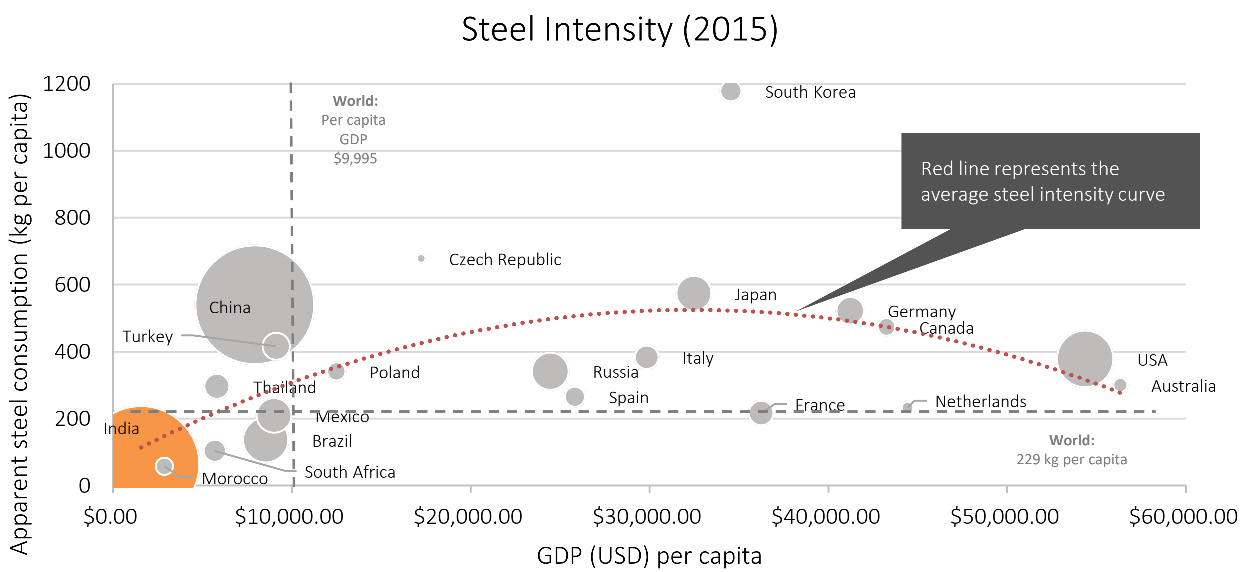
Incremental sales from existing low rank coal assets into higher value markets:

> **Coldry**
> Participate in thermal coal markets on a competitive marginal cost basis against thermal coal miners

> **Matmor**
> Participate in the iron and steel markets with a fundamental raw material and operational cost advantage against incumbent processes.





*Indicative estimate

Projects

- The India Project
- India: The place to be for Coldry
- India: The place to be for Matmor
- Project pathway
- Techno-Economic Feasibility Study
- Bacchus Marsh High Volume Test Facility

India Project

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Objective:

- Development of an integrated Coldry demonstration + Matmor pilot facility in India
- Launchpad for global commercial rollout

Partners:

- NLC India Limited is the custodian of India's lignite resources, the lead partner on Coldry and the project host
- NMDC Limited is India's largest Iron ore miner
- Both companies are PSUs (Public Sector Undertakings, i.e. Majority Government owned entities)
- Combined market capitalization in excess of A$10Bn

Location:

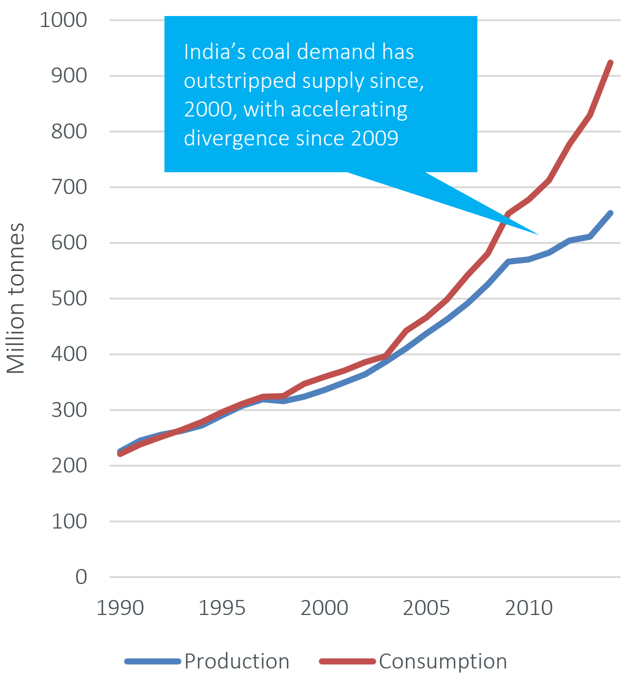
- Neyveli, Tamil Nadu
- ~2.8GW power station
- ~25m tpa mine output

India: The place to be for Coldry

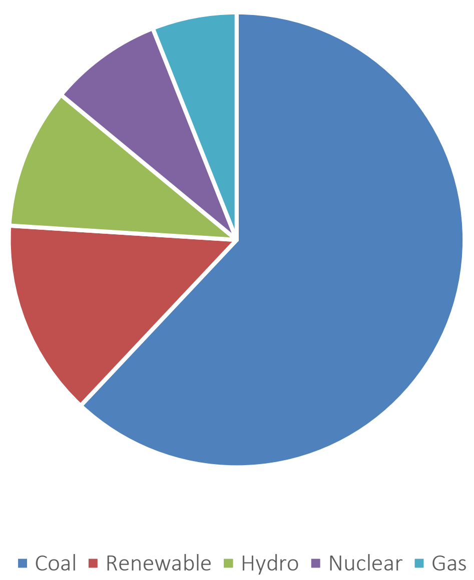
India is in a major growth phase:

- Energy demand increasing, outstripping domestic primary energy source growth
- With over 4.5 Bn tonnes of proved recoverable reserves in India, low rank coal is able to play a major supporting role via application of ECT technologies
- India will be the fastest growing major economy in 2016, with the IMF projecting GDP growth of 7.5 percent against China's 6.8 and a global rate of 3.8 percent.
- India's coal-based energy production is projected to double by 2030

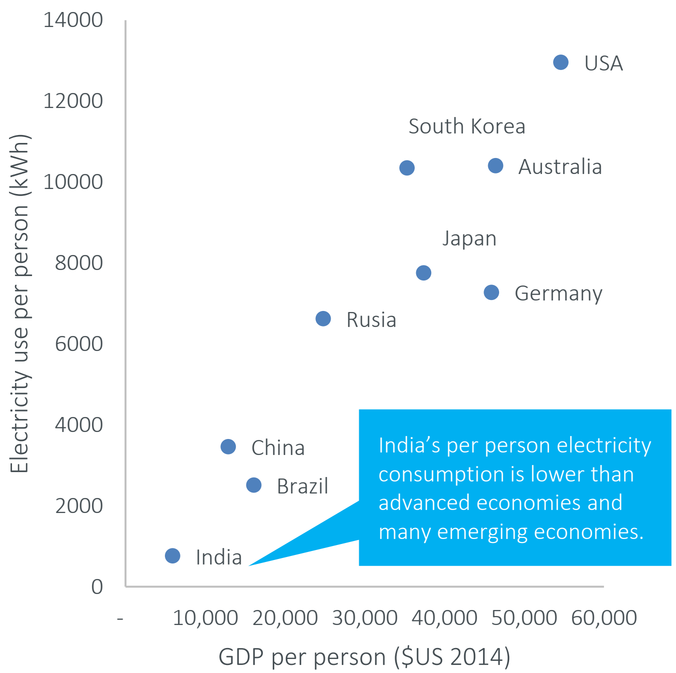
Coal Demand-Supply Gap widens



Estimated Energy Mix India 2030



Electricity Use

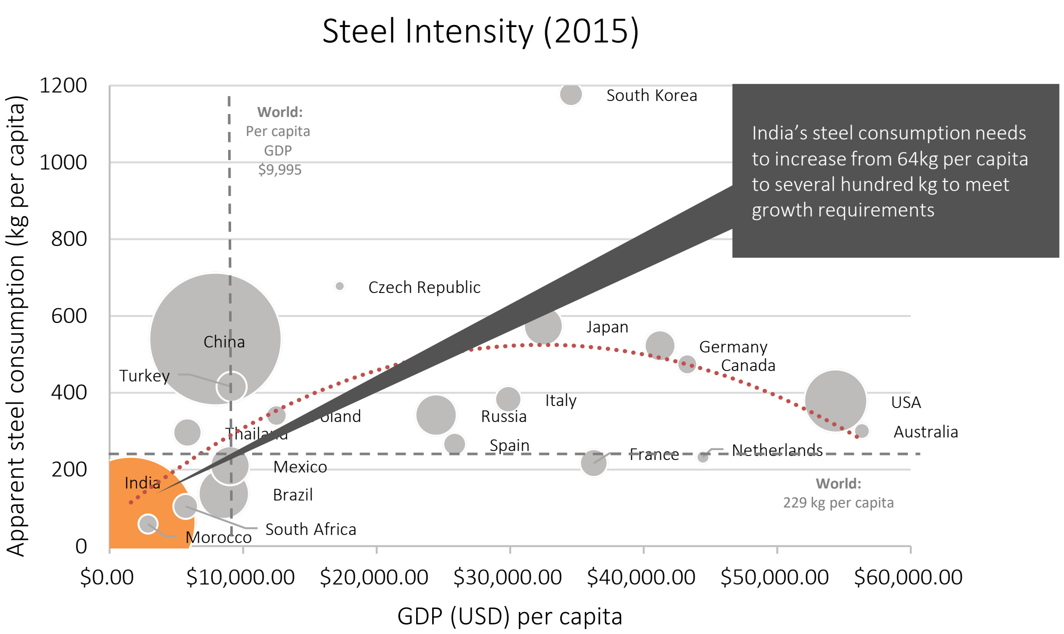


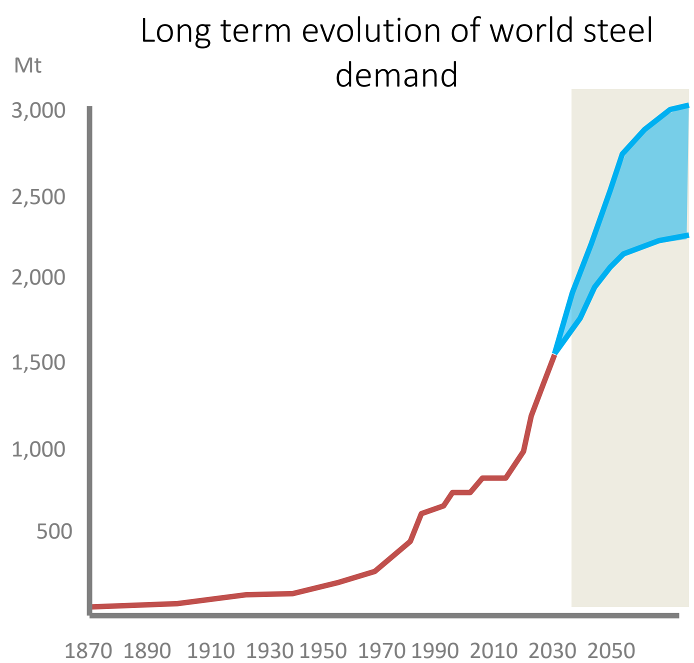
India: The place to be for Matmor

ENVIRONMENTAL CLEAN TECHNOLOGIES LIMITED

India is in a major growth phase:

- > Infrastructure development requiring substantial increases in iron & steel production
- > Domestic coking coal reserves effectively zero, heavily reliant on imports
- > Low value resources (low rank coal & iron ore fines & slimes) able to play a major role in bridging this gap via application of ECT technologies
- > World Steel Association projects India's steel consumption growth rate to remain the highest in the world at 7.3% pa for 2016
- > India is currently the words third largest producer of crude steel
- > Indian steel production sits at ~125m tpa, with a target of 300m tpa by 2025*
- > If ECT can capture just 5% of the growth via Matmor, this represents 7.25M tpa

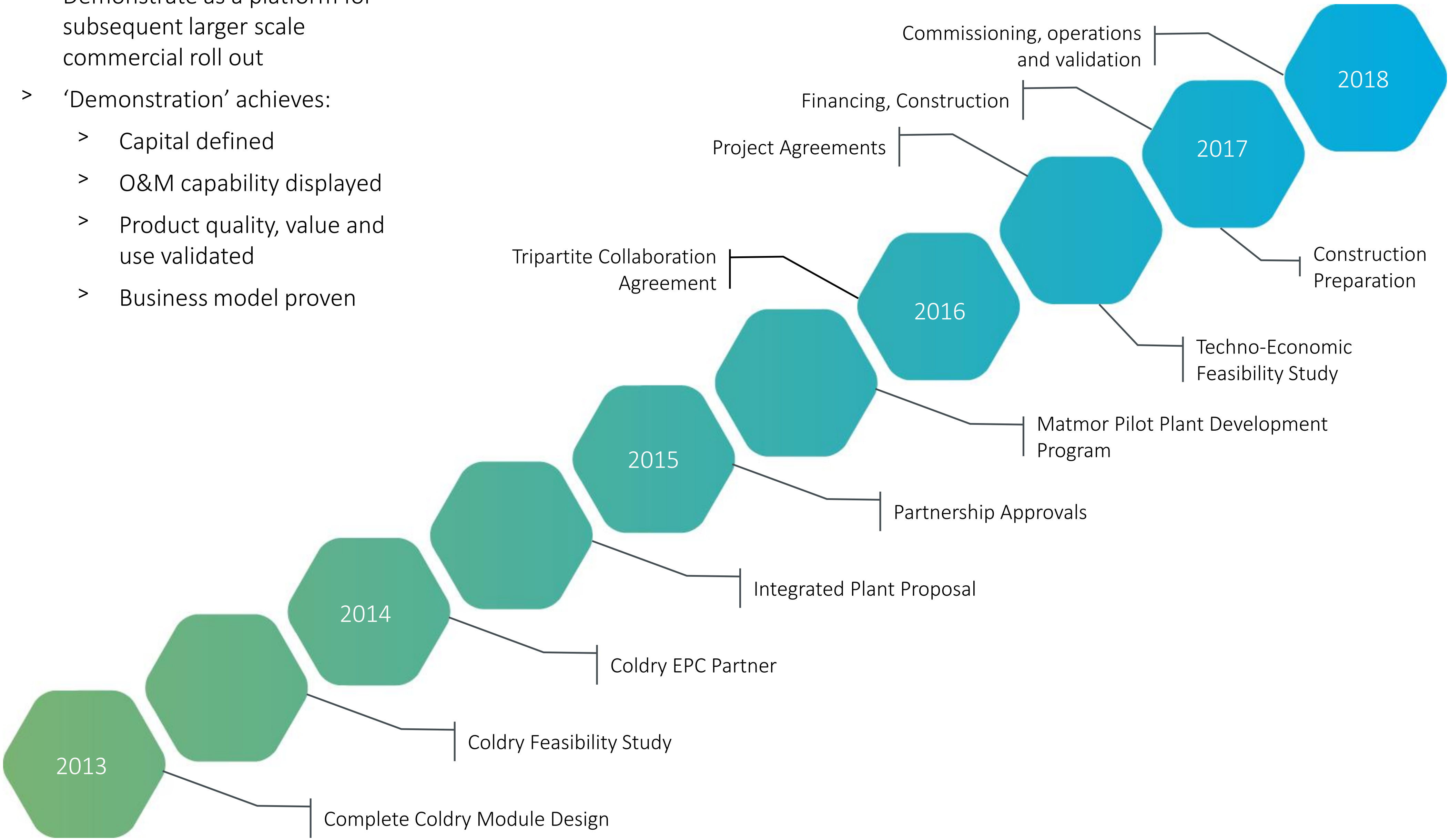




*Source: EY

India Project Pathway

- Demonstrate as a platform for subsequent larger scale commercial roll out
- 'Demonstration' achieves:
  - Capital defined
  - O&M capability displayed
  - Product quality, value and use validated
  - Business model proven



India: Techno-Economic Feasibility Study

ENVIRONMENTAL CLEAN TECHNOLOGIES LIMITED

Executive Summary

> Provides assessment of a proposed integrated Coldry / Matmor Plant, for the production of steel billet, at Neyveli, India

> Comparison against incumbent technologies of Blast Furnace (BF) and Coal-based Direct Reduced Iron (DRI)

> Led by MN Dastur, with significant support from Thermax and alongside Project Partners NLC and NMDC as part of the Tripartite working group

> Based on the significant economic potential detailed in this report, ECT intends to proceed with the detailed design program in preparation for the funding and construction of an interim stage combined Matmor Pilot and Coldry Demonstration plant

> Once complete, this interim stage plant will establish the conditions precedent to the ultimate objective of a full-scale commercial plant, proposed for construction in 2019

India: Techno-Economic Feasibility Study

ENVIRONMENTAL CLEAN TECHNOLOGIES LIMITED

Financial Analysis	BF – BOF	DRI - EAF	C/M - EAF	C/M - EAF
	Blast Furnace - Basic Oxygen Furnace & Power Gen	Coal Based DRI - Electric Arc Furnace & Power Gen	Coldry / Matmor - Electric Arc Furnace	Coldry / Matmor - EAF + Power Generation
Case / Scenario	Base Case	Base Case	Base Case	Mid Case
	Crore ₹	Crore ₹	Crore ₹	Crore ₹
CAPEX	2,522	2,257	1,400	1,607
OPEX	969	1,187	1,085	1,002
SALES	1,264	1,372	1307	1,307
Gross Profit	295	185	222	305
IRR (Ungeared)	9.1%	5.0%	14.1%	17.2%
IRR (Geared 30%)	7.7%	1.4%	14.3%	18.4%

Commentary

- An inherent strength of the Matmor technology vs. Incumbent steel production technologies is the lower Capital deployed for the same capacity, making it competitive at smaller scale – very important in high Capex industries
- Additionally, the diversification away from traditional raw materials provides additional competitive advantage, even in a high cost (with respect to raw materials) location such as India
- The TEF basis for raw material input cost data was a H2/2015-H1/2016 average. For Coking coal, that represented $US85 per tonne FOB. In the latter part of 2016, steel production inputs, particularly Coking coal, increased price substantially, more than doubling. That impact is material on the economics – see slide 42 for further analysis.

India: Techno-Economic Feasibility Study

Outcomes:

- Energy & Resource security;
  - Through the Coldry / Matmor innovation, lignite can be used instead of higher-cost coking coal. Soft iron ores, fines, and slimes can move up the value chain, as diversified sources of supply and displace the usage of higher-cost lump ore.
  - This diversification of supply via the upgrading of lower-value and stranded domestic resources increases self-reliance, assisting India to decouple from the risks of heavy reliance on international suppliers of coking coal, and enabling the use of a broader range of domestic iron ore sources.
- Sustainability;
  - Energy security underpins economic security, which in turn supports the cost of environmentally cleaner pathways.
  - At the broader national level, increased economic prosperity leads to better ability to invest in, and respond to key environmental outcomes.
  - The Coldry-Matmor process for steel making has lower emissions intensity than incumbent processes, helping mitigate environmental impact.

India: Techno-Economic Feasibility Study

ENVIRONMENTAL CLEAN TECHNOLOGIES LIMITED

Outcomes:

> Economic security; Underpinned by energy and resource security, economic security drives growth and improvement in the standard of living

> Enhancement of economic security can be accomplished through the application of technology to achieve diversification of suppliers and markets, reducing a nation's vulnerability to changes in supply, price, and foreign manipulation

> The Coldry and Matmor technologies act as economic levers, upgrading lignite to enable higher value applications that can broaden supply options across thermal coal, gas, oil and fertiliser markets, mitigating reliance on imports.

> Coldry increases the efficiency at which the lignite resource is used, extending its useful life or extracting greater value.

> Matmor's potential lies in its ability to take 'waste' iron ore, combine it with low-cost lignite and turn it into a high-value product. It opens the door to alternative iron ore sources, diversifying supply and mitigating imports, resulting in an improved balance of payments, increases in GDP and contributes to affordable iron and steel supply in support of infrastructure growth.

High Volume Test Facility (HVTF)

ENVIRONMENTAL CLEAN TECHNOLOGIES LIMITED

This project is at the heart of our core values of Frugal Innovation, where, in the process of innovating and conducting R&D, we monetise the outcomes alongside the accrual of improved knowledge

The HVTF will be a future enabler of greater O&M support for projects that apply our technology as well facilitating continual improvement and innovation "beyond the lab"

Summary of Project Drivers

- Enhanced R&D capability thanks to broader and more flexible operational parameters
- OHS&E improvements
- Automation enhancements
- Maintenance improvements
- Technology scale-up testing & de-risking and process parameter optimisations
- Enhanced drying temperature testing and simulation allows for improved application simulation
- Ability to produce larger test samples for R&D trials in end applications
- Enhanced feedstock supply capability to support Matmor Test Plant validation process

Future Use

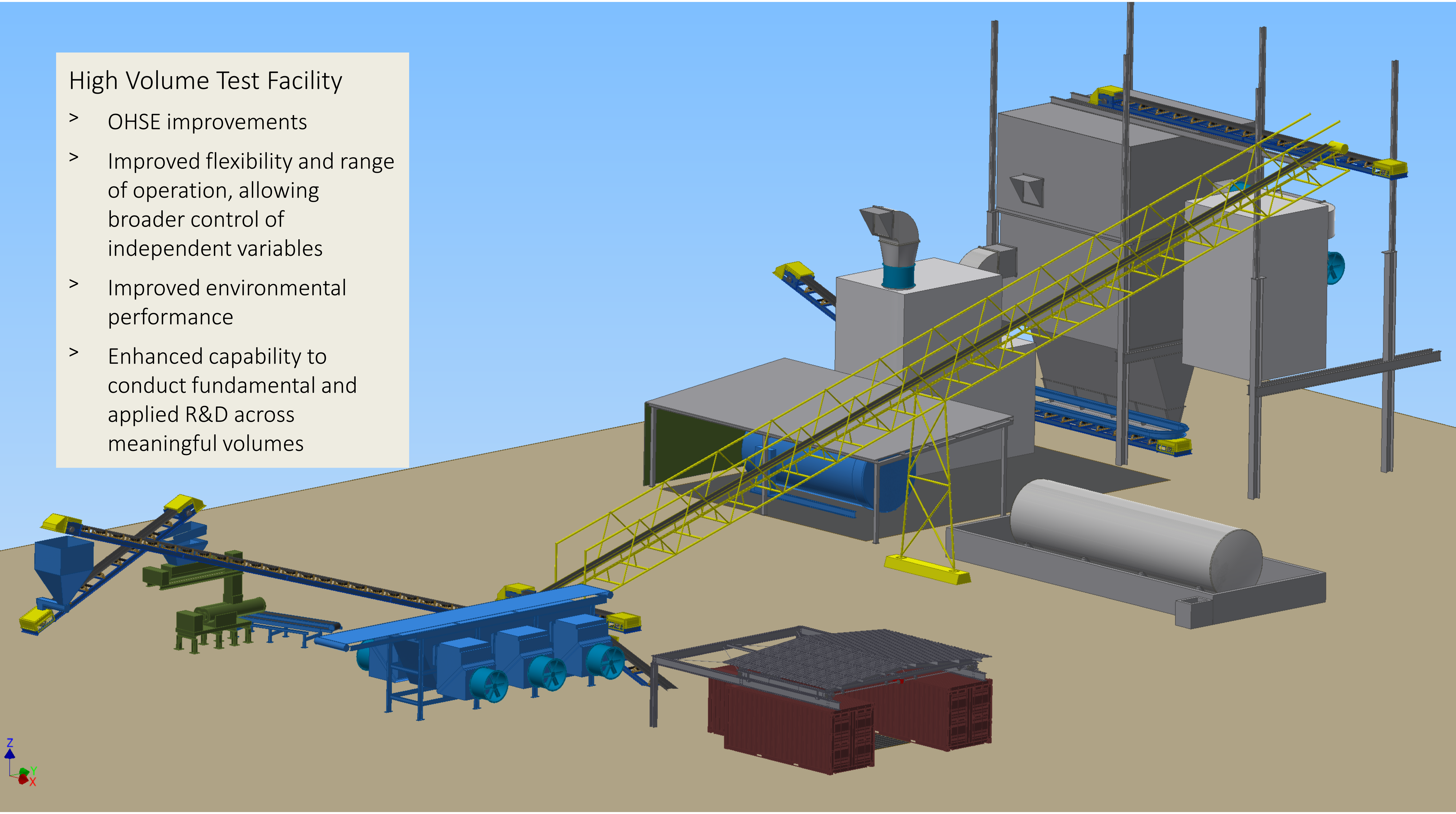
- Innovation collaboration facility – Industry/Universities/Government
- Knowledge centre for continuous improvement of Coldry and Matmor

Plant Throughput
- Stage 2 >300%
- Stage 3 >600%

Bacchus Marsh HVTF

High Volume Test Facility

- OHSE improvements
- Improved flexibility and range of operation, allowing broader control of independent variables
- Improved environmental performance
- Enhanced capability to conduct fundamental and applied R&D across meaningful volumes



Bacchus Marsh HVTF

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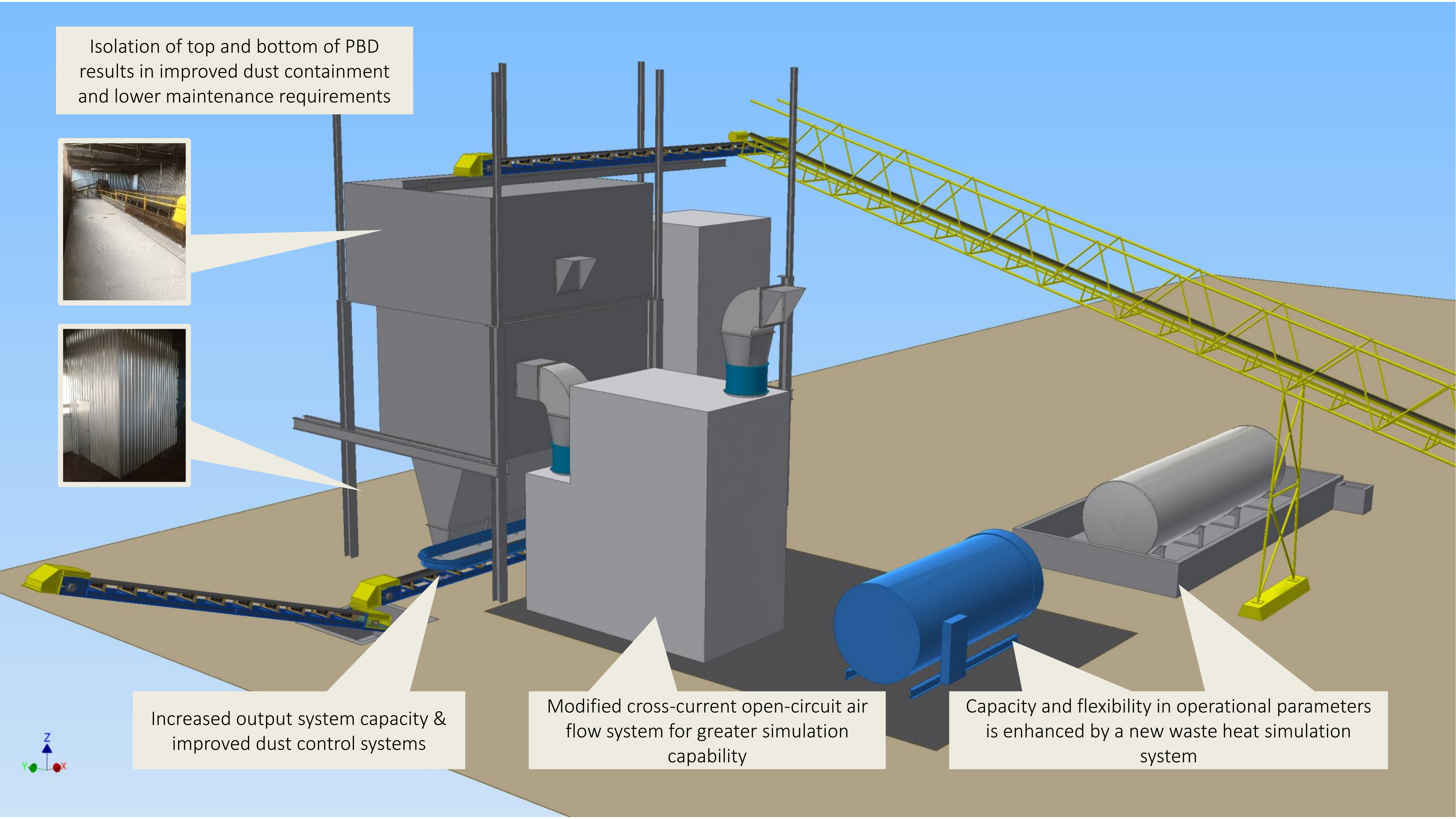
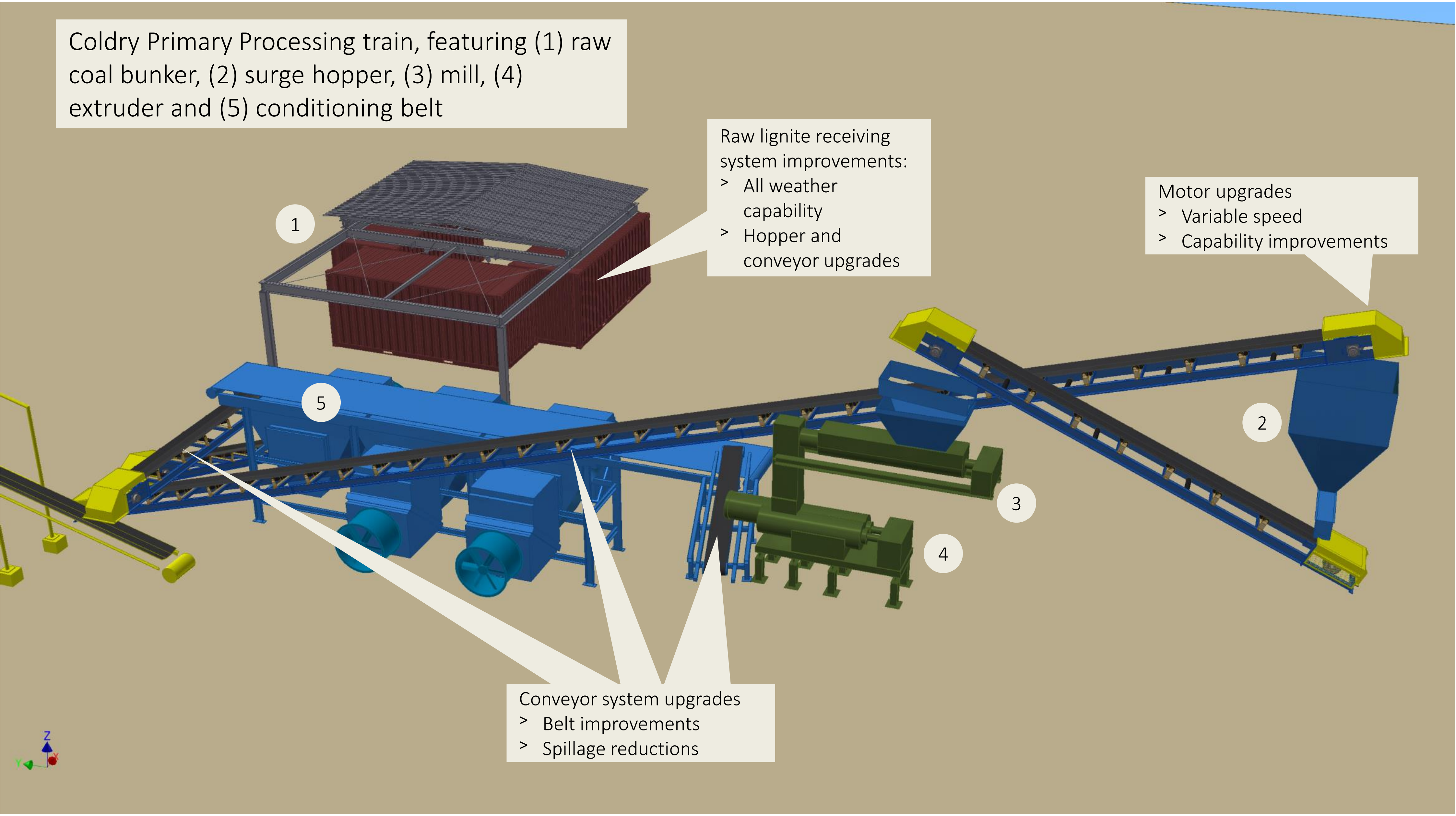


Bacchus Marsh HVTF



Summary

- Technologies with a disruptive edge
  - We commercialise innovative technologies to increase the economic and environmental benefits derived from low grade, low rank and waste resources
  - Low cost input with a high value output provides for a competitive edge for all adopters

- Emerging market focus: India as starting point
  - New technologies supporting economically sustainable growth and self sufficiency – import off-sets
  - ‘Make in India’ – Strong local engineering and project partners

- Commercialisation Strategy
  - Broad global application following demonstration in India – Poland, Turkey, Indonesia, Australia
  - Global roll-out underpinned by Indian manufacturing hub
  - Continual improvement of technology suite to maintain competitive edge.

Mr SK Acharya
Chairman & Managing Director
NLC India Limited

Mr Glenn Fozard
Executive Chairman
Environmental Clean Technologies Limited

ENVIRONMENTAL CLEAN TECHNOLOGIES LIMITED

Thank you.

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