

Bridging the Gap



The challenge of utilizing low-rank coal in a carbon constrained world

Ashley Moore | March 27 2012 | CleanTech Forum

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What you'll get from this presentation

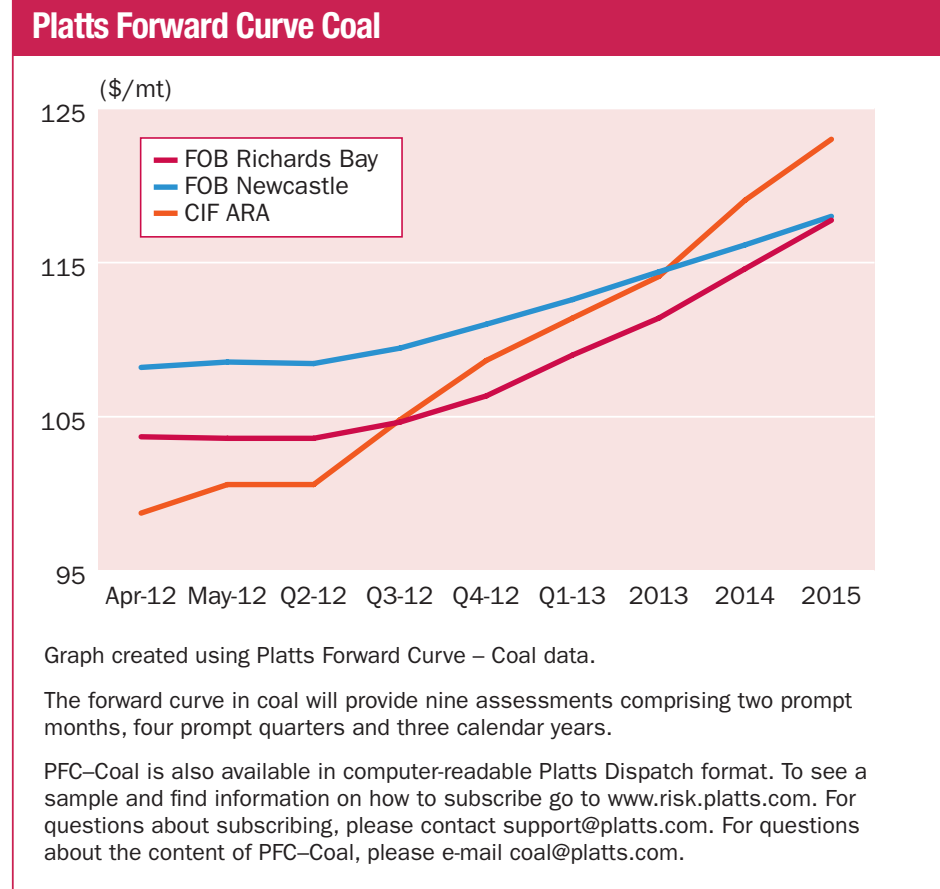
- A snapshot of the gap facing the transition to a renewable energy future
- An introduction to the unique Coldry & Matmor technologies:
 - How they enable lower CO₂ utilization of low-rank coals, and generate value while doing so
- Insight into our technology leveraged energy-resource project in Victoria's Latrobe Valley and its role as a stepping stone to the Asian market
- See how power station/mine owners can unlock new profits and boost their balance sheet through upward valuation of mine assets
- Hear why ECT can be a compelling investment

The Gap to 2035

Demand

- Coal demand to increase by 1 billion tonnes per year
- China and India to account for 60% of coal-fired capacity additions
- 50% of 2035 CO₂ emissions from power sector are already locked in by existing capital stock
- Price pressure makes low-rank coal attractive; it WILL be used
- Low rank coal requires economic drying to substitute bituminous coal
- Our Coldry technology can help mitigate locked-in CO₂ emissions and bridge the gap

Pricing – Premium thermal coals



Technology Portfolio

Coldry

Unique Coal Drying and Water Recovery Technology

- An economic method for **dewatering** lignite and sub-bituminous coals
- Exportable **Black Coal Equivalent**
- Low cost CO₂ **abatement** solution
- Enhances energy security
- Mitigates CO₂ emissions



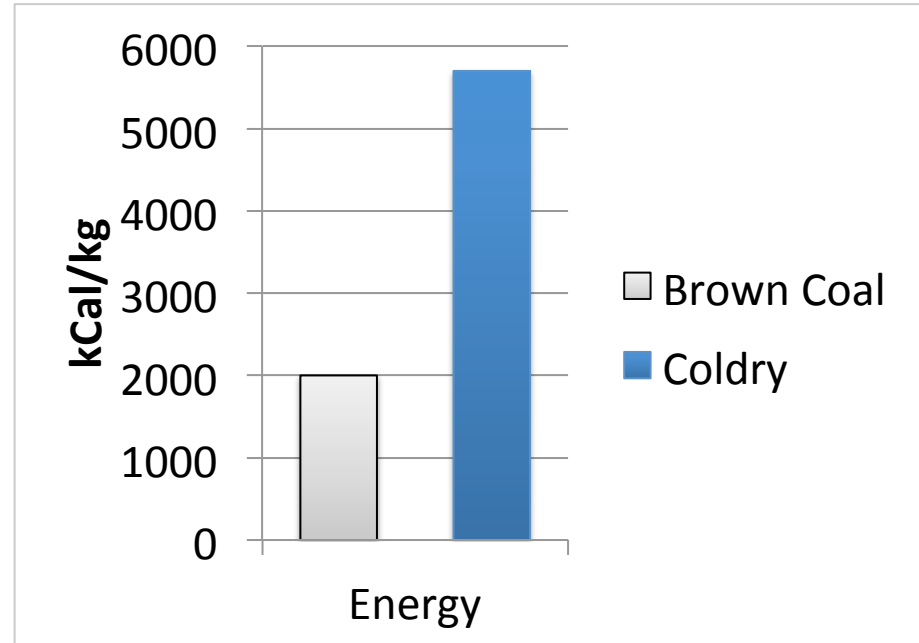
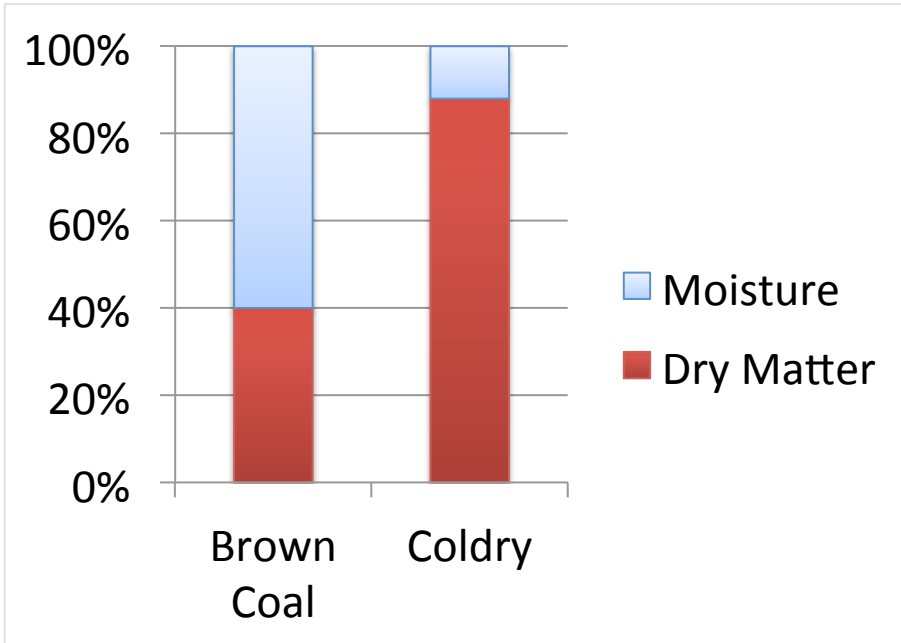
Matmor

Unique Iron Making Technology

- Primary iron production
- Unique lignite-based process **eliminates** need for coking coal and coke ovens
- Recover iron from **waste streams** such as iron ore mine tailings and nickel tailings

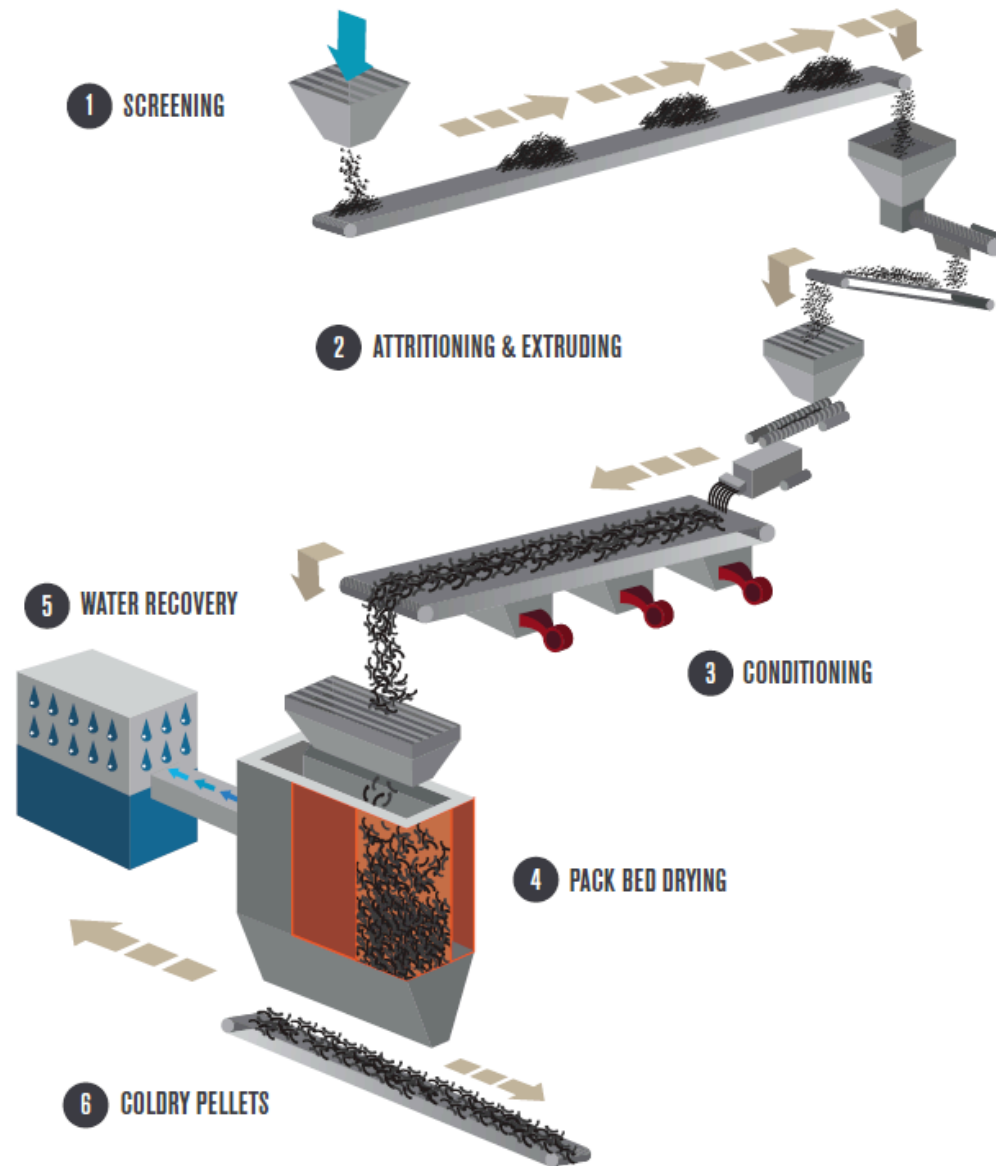


Coldry Product



Coldry Process

- Coldry Technology is a simple, mechanical process based on brown coal **densification**
- Processing collapses coal pore structure, expelling **physically** trapped water
- Reaction polymerizes active sites in the coal compounds, expelling **chemically** bound water
- Ejected water migrates to the surface of coal pellets
- Utilising low temperature **waste heat** from host power station, the surface moisture on the Coldry pellet is evaporated



Coldry Commercial Scale Solution

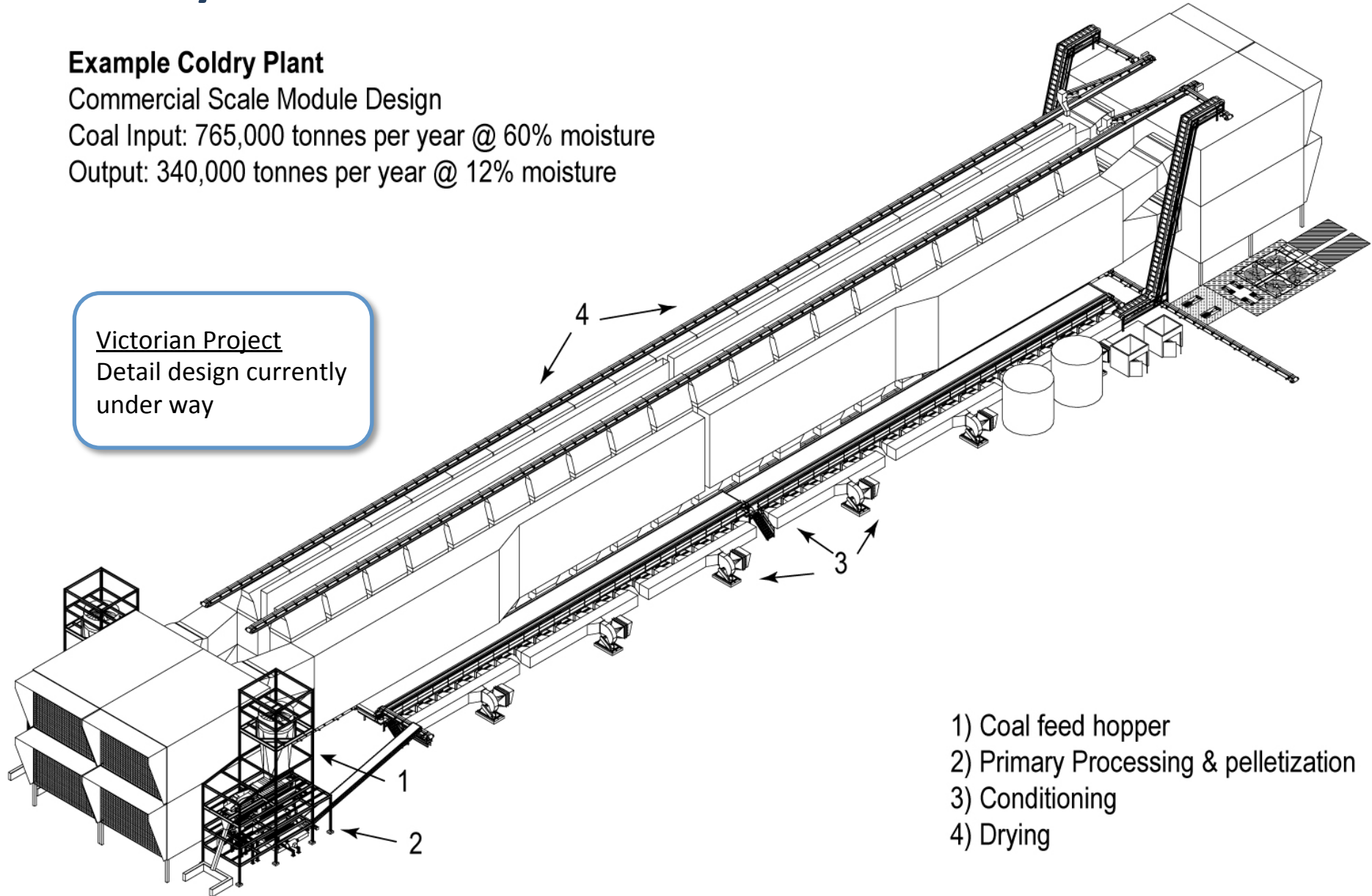
Example Coldry Plant

Commercial Scale Module Design

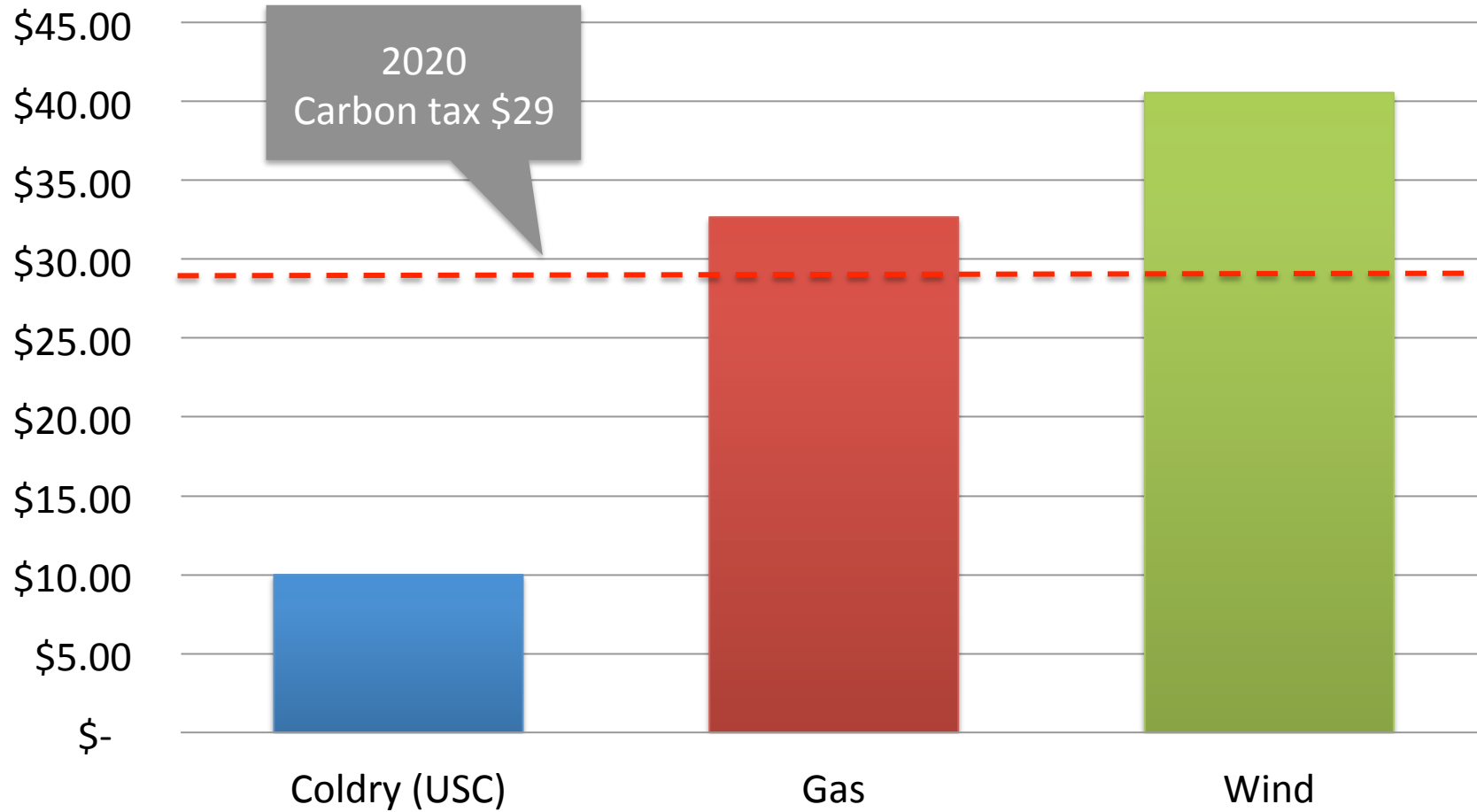
Coal Input: 765,000 tonnes per year @ 60% moisture

Output: 340,000 tonnes per year @ 12% moisture

Victorian Project
Detail design currently
under way



Coldry: Least cost CO₂ abatement for Australia



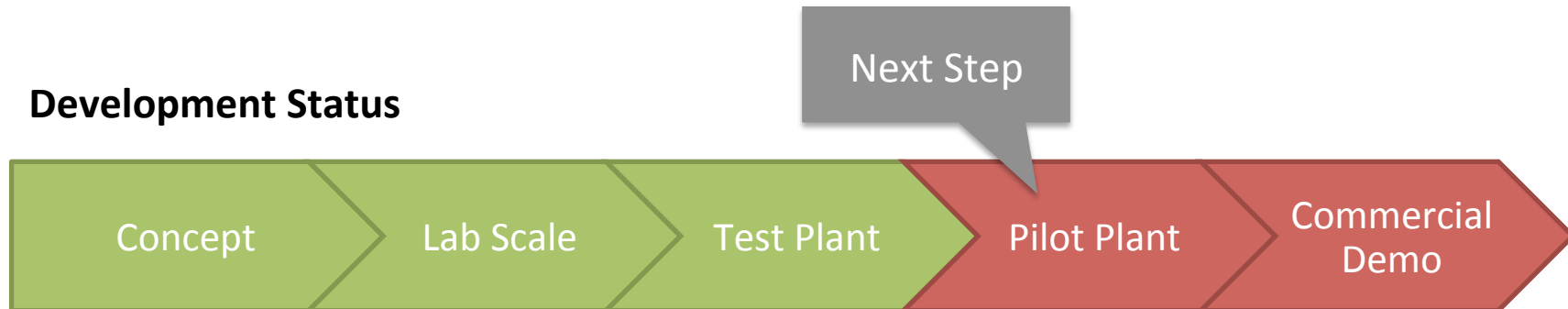
Cost per metric tonne of CO₂ saved – 20% reduction on current emissions by 2020

MATMOR Technology

- Unique iron making technology – replaces metallurgical coal with cheap, abundant brown coal
- Uses Coldry process to combine iron oxide media, brown coal and flux prior to reduction via patented MATMOR furnace
- Produces iron billets for secondary steel making
- Lower CO₂ intensity vs. business as usual



Development Status



ECT – A Compelling Investment

- Coldry Technology can generate EBITDA margins on processed coal of up to 50% (before royalties)
 - Infrastructure type investments related to energy generation with simple payback periods around 5 yrs or less
- ECT will develop projects, and participate in both Equity as well as Licensing arrangements
 - Invest in ECT at the company level to participate in Licensing royalty streams
 - Invest in Projects to participate in EBIT margins

- ECT is listed on the ASX: Shares ESI; Options ESIO

| | | | | |
|---------------------|------|---------------|---------------|-------|
| • Capital Structure | ESI | 1,501,243,917 | Last (23 Mar) | 0.016 |
| | ESIO | 792,054,581 | | 0.009 |

Proforma expected end April

| | |
|------|---------------|
| ESI | 1,801,243,917 |
| ESIO | 1,092,054,581 |

Summary

- The Company
 - Global Markets: Australia based, Asia focused
 - Leading-edge Innovations
 - Game-changing potential
 - Resource & Energy Focus
- Coldry Technology – Supporting CO₂ mitigation & energy security
 - Lignite Dewatering
 - Cost effective CO₂ abatement solution
 - Exportable black coal equivalent
- Coldry Commercial Deployment
 - Victoria – Demo expanding to 2 mtpa; starting 2014
 - India – Tamil Nadu, Gujarat & Rajasthan; demonstration discussions under way
 - China – Inner Mongolia; demonstration discussions under way
- MATMOR
 - Partnership search, India focus

Thank you

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