

# Monash Energy Project

**Carbon Sequestration Leadership Forum  
New Delhi, April 2006**

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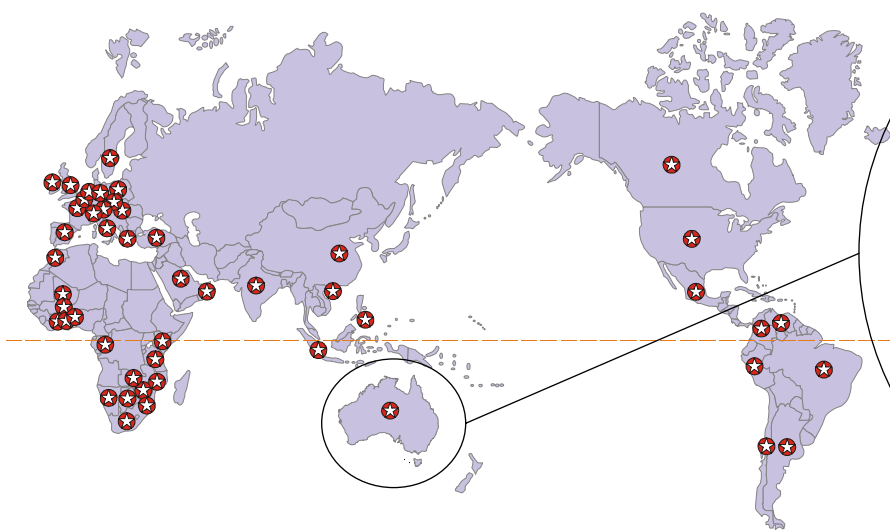




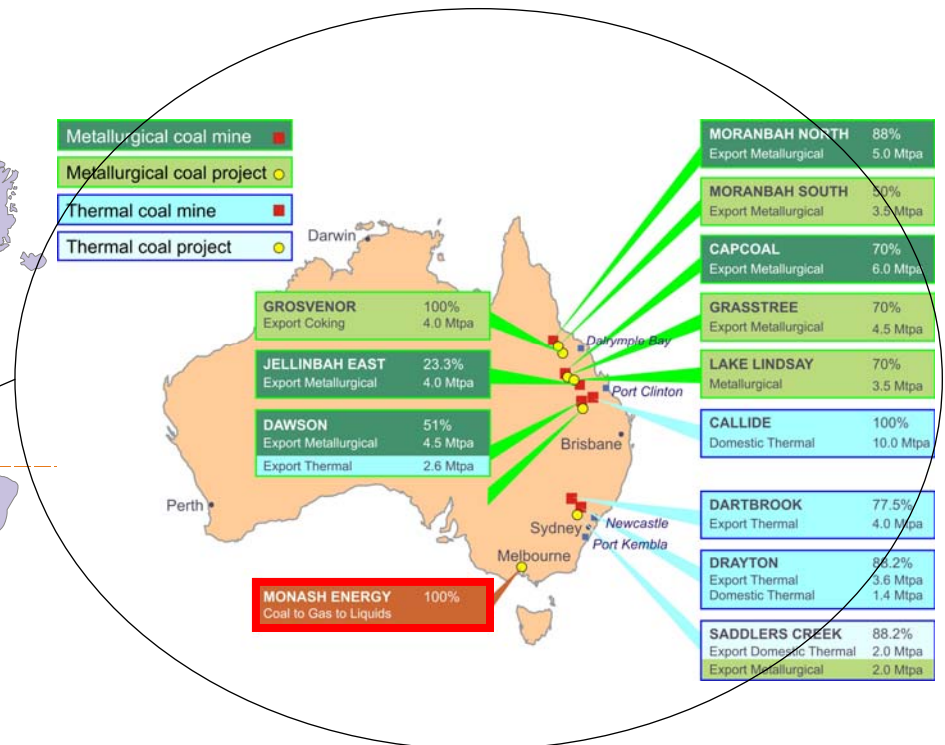
•Global leader in the mining and natural resource sectors



•Black Coal mining and export



*Global Leader in production of Gold, Platinum, Diamonds and Coal*



## Monash Energy Foundation - World Class Source-Sink Match

### Onshore

- World's thickest coal
- Australia's cheapest power
- Australia's largest CO2 plume
- Emissions constrained future



### Offshore

- Australia's largest oil-fields
- Outstanding reservoirs
- Depletion constrained future

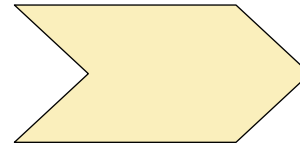
Gippsland Basin Oil & Gas Fields

- Halibut
- Mackerel
- Yellowtail
- Kingfish

Preferred CO2 Storage Zone

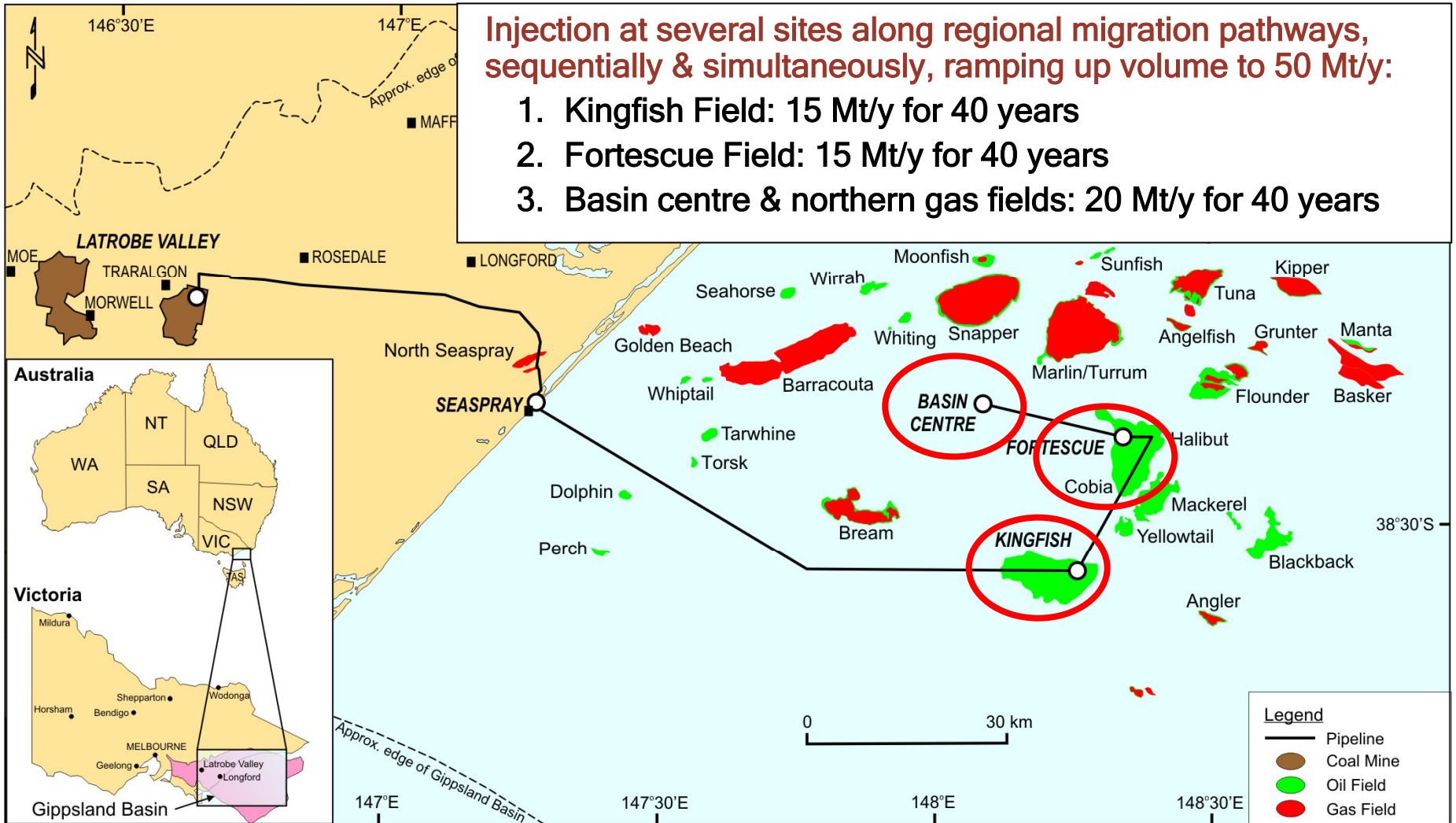


## Emissions Reduction and Regional Development Objectives



- **Store onshore CO<sub>2</sub> in offshore reservoirs - capacity 50 Mt/year**
- **Virtual elimination of Australia's largest emissions source - 60Mt/year**
- **Remove emissions constraint on coal utilisation**
- **Sustain regional economic growth**
- **Extend coal use to liquid fuels and ultimately hydrogen**
- **Replace depleted domestic oil and transport fuel supply**

## Large-Scale Injection Scenarios



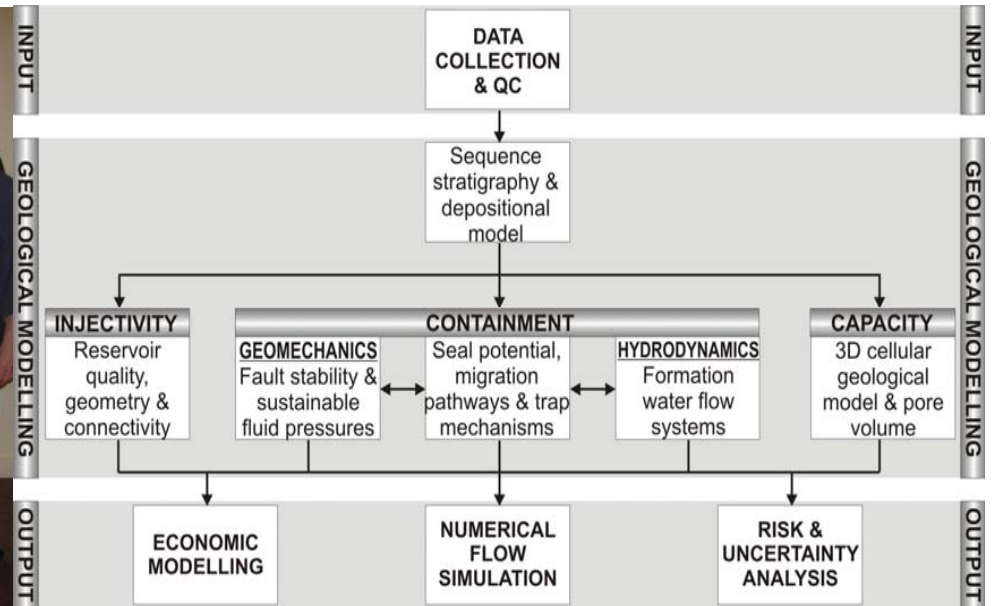
Source: CO2CRC



- Assessment of potential to store up to 50 Mta of Latrobe Valley CO<sub>2</sub>
- Undertaken by CO<sub>2</sub>CRC for Monash Energy
- Funded by Australian Government and CO<sub>2</sub>CRC
- 12 month project completed in December 2005

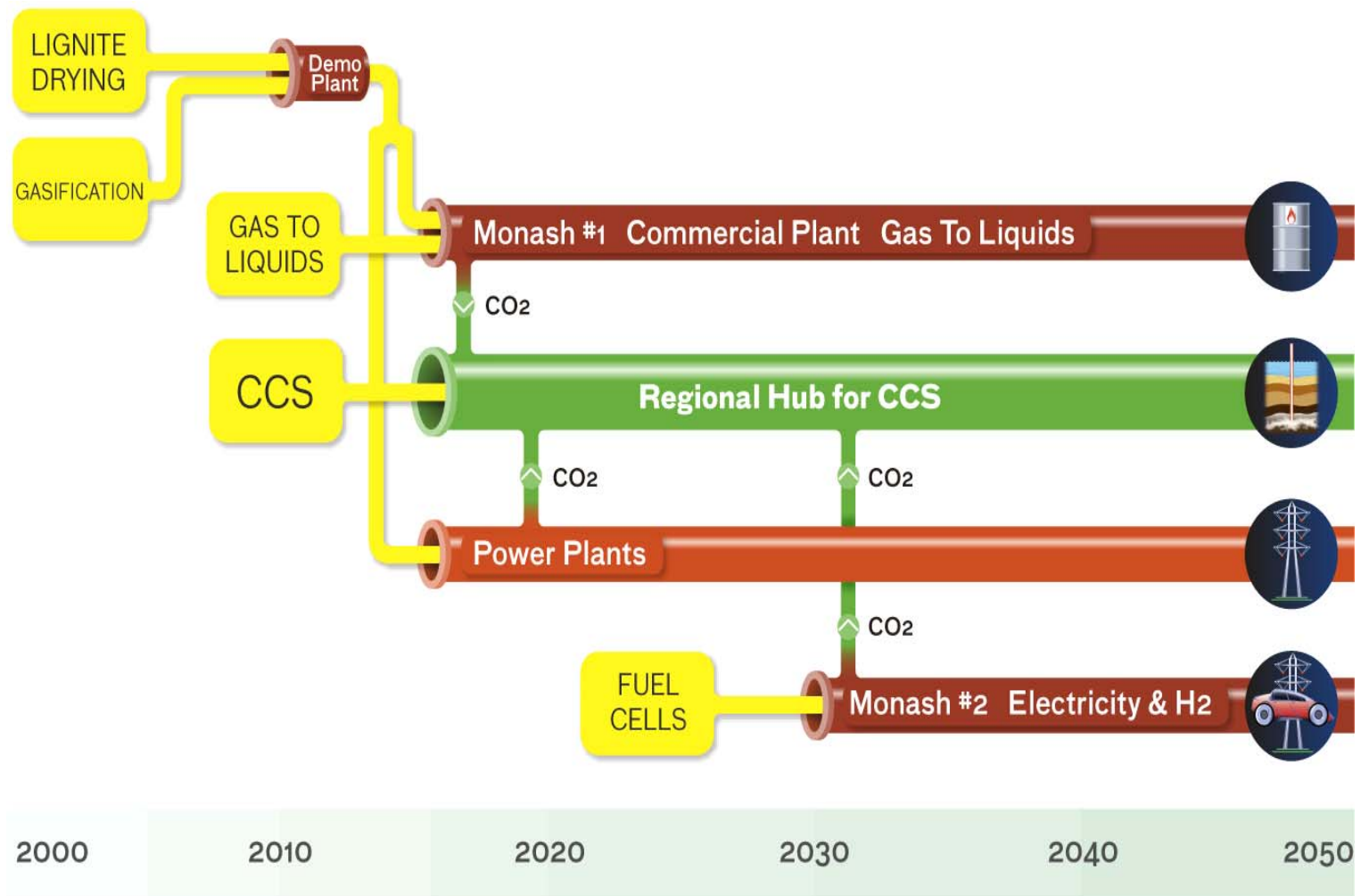
**LVCSA Researchers**

**Assessment Work Flow**



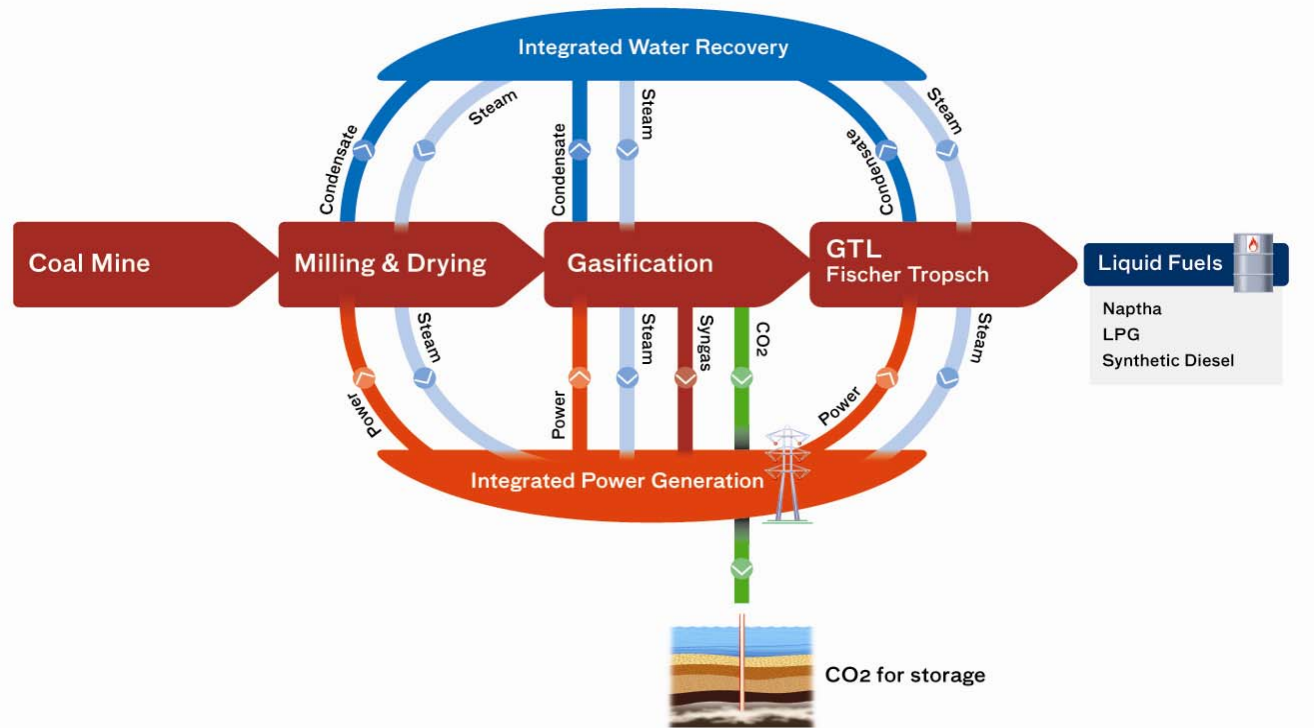
- **geology, chemistry and hydrology are favourable for CO<sub>2</sub> storage**
- **regional seal rock is of good quality to store CO<sub>2</sub>**
- **adequate capacity and injectivity for large-scale storage of 50 Mt/year**
- **growing CO<sub>2</sub> injection and depleting oil production can co-exist**
- **the unit cost of storage is low by world standards - around US\$7/tonne**
- **risks are low and can be readily managed by proponents**
- **collaboration with oil producers established**
- **framework for:**
  - > stakeholder engagement and regulatory development
  - > follow-up detailed site characterisation

# Long-Term Monash Energy Pathway to Low Emissions





## Monash #1 - First Large-Scale Commercial Plant



- **Early CCS deployment opportunity – embedded capture minimises cost**
- **Commission mid next decade**
- **60,000 barrels per day of ultra-low sulphur diesel**
- **13 Million tonnes per year of CO<sub>2</sub> captured and stored**

- **Drying and Gasification Trials (Early 2005)**



*Coal from Loy Yang*



*Dried at RWE Frechen*

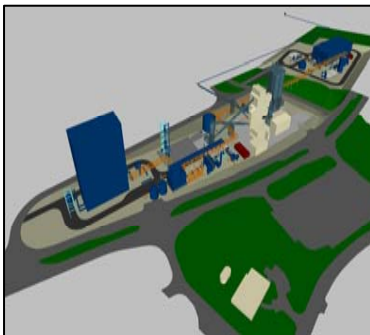


*Gasified in Freiberg*



*To required specifications*

- **Demonstration Plant in Planning**



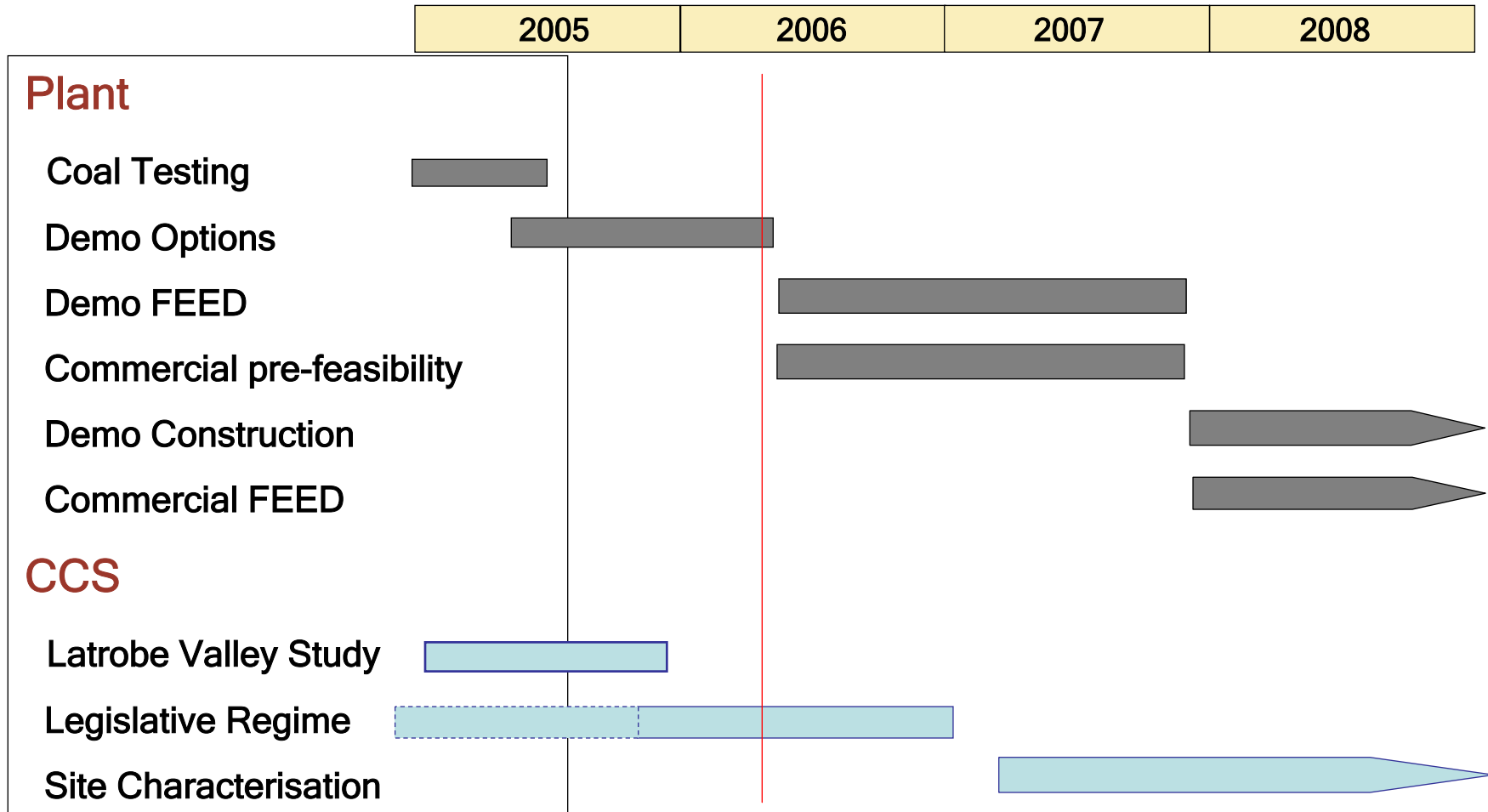
*Schematic*



*Site*

- Mitigation of technical risk
- Commercial-scale gasification of dried brown coal
- FEED 2006/7
- Construction 2007/8
- Parallel detailed injection site characterisation

Moving Forward - Demo Plant & Injection Site Characterisation



Thank You

