



**CarbonEnergy**

Australian National Carbon Conference

# Carbon Energy

Managing Director – Mr. Andrew Dash

28<sup>th</sup> August 2009



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# Statements

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## Competent Person

The information in this presentation (where it relates to resources) is based on information compiled by Dr C.W. Mallett, Executive Director Carbon Energy Limited who is a member of the Australian Institute of Mining and Metallurgy. Dr Mallett has sufficient experience which is relevant to the style of mineralization and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Dr Mallett consents to the inclusion in the presentation of the matters based on his information in the form and context in which it appears.



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# Carbon Energy (CNX)

## Recent History

Company restructured over the past year

- shift in strategic focus from diversified minerals exploration (Metex Resources) to dedicated UCG producer (Carbon Energy)
- acquired 100% of UCG joint venture with CSIRO in November 2007

Changed name to Carbon Energy

Ticker CNX (changed from MEE 15 July 2008)

New management team established in Brisbane during 2008

Registered office: Brisbane, QLD (transferred from Perth in January 2009)

## Listed Status

Shares on issue 579.1 million

- Highly liquid with 140-150% turnover

Market Capitalisation: \$376 million (@ \$0.65 ps)

Admitted to S&P/ASX 300 Index September 2008

- S&P/ASX Materials Index
- S&P/ASX Metals and Minerals Index

Diverse and supportive shareholder base

- CSIRO 15%
- Corporate (IPL) 11%
- Institutional 9%
- Directors 4%



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# Underground Coal Gasification (UCG)

UCG is the gasification of coal underground

- the energy in coal is extracted without the environmental impacts associated with coal mining

Gasification is a process where Oxygen and Steam react with coal at high temperatures

- an energy rich gas mixture is produced called **syngas**

## Strategic Focus

*“To produce clean energy and chemical feedstock from UCG syngas”*



# Energy Options & Coal

## Economics of Coal

Coal is worth \$20 Billion to the Australian Economy and protects 130,000 Australian jobs.

## Energy Growth

Energy use per household in Queensland is growing at almost twice that of the population growth.

## Power Generation

Over 80% of current power generation (QLD) is coal fired.

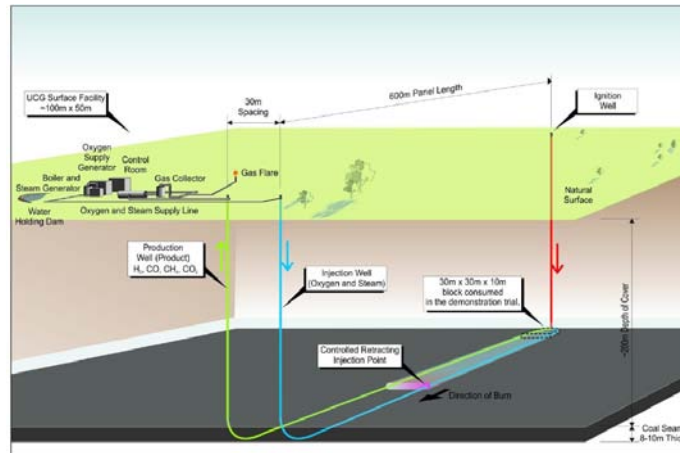
## Energy Options

1. MRET target set at 20% by 2020
2. Industry forecasts an additional 5,000 MW new base load plant to meet reliability by 2017/18
3. Low emission (clean coal) technology, an important part of Governments strategy to reduce greenhouse gas emissions from power generation.



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# Carbon Energy UCG process Video



This video is also available on our home page [www.carbonenergy.com.au](http://www.carbonenergy.com.au)



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# Strategy

To achieve our business goals Carbon Energy are pursuing a simple strategy that encompasses 3 key elements, these being;

## 1. Resource Availability

Carbon Energy's strategy is to build a portfolio of coal resource assets suitable for UCG, both in Australia and internationally.

## 2. Superior Technology

Carbon Energy's proprietary technology incorporates sophisticated modeling tools and UCG methodology – enabling the company to take a market leading position.

## 3. Ready Access to key Markets

Location, product mix and partner capabilities, involves identifying suitable resource availability located within close proximity to key markets and infrastructure.



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# Queensland

Interest in 2,000 km<sup>2</sup> of EPC's

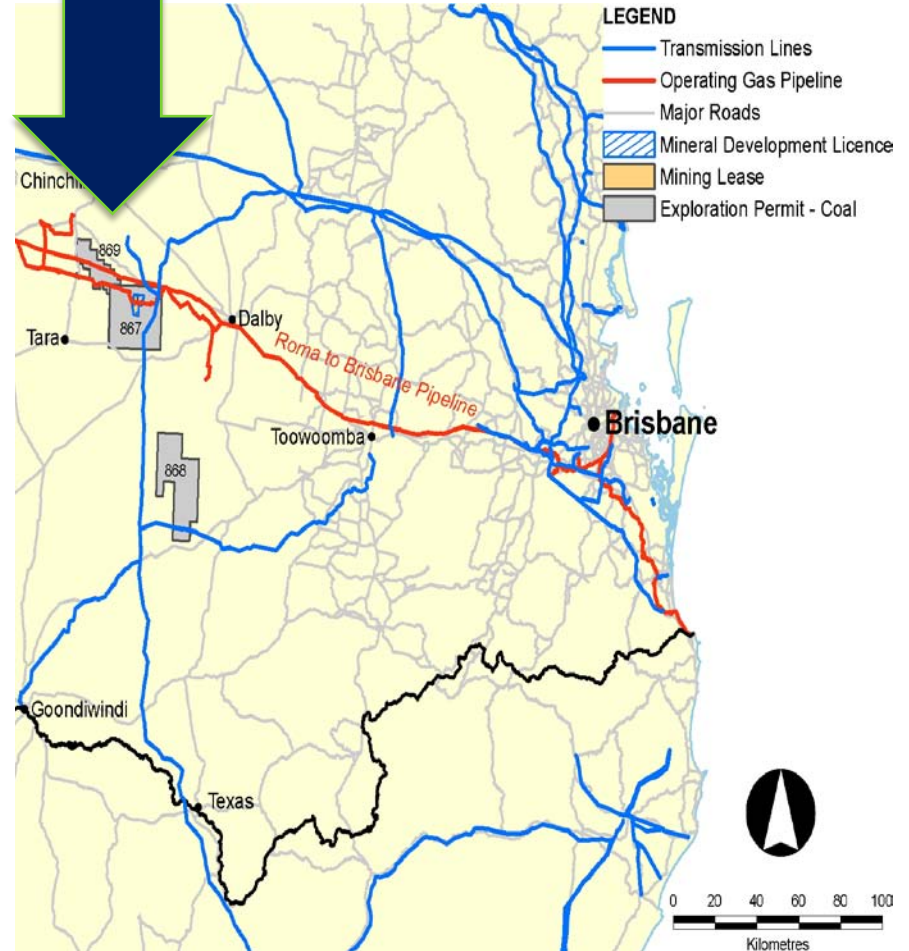
668 Mt (450 Mt Inferred and 218 Mt indicated with 2m cut-off) of JORC compliant coal resource (13,360 PJ of in-situ energy, of which at least 7,750 PJ is recoverable)

Short term commercialisation

- Power generation into the NEM
- Synthetic natural gas

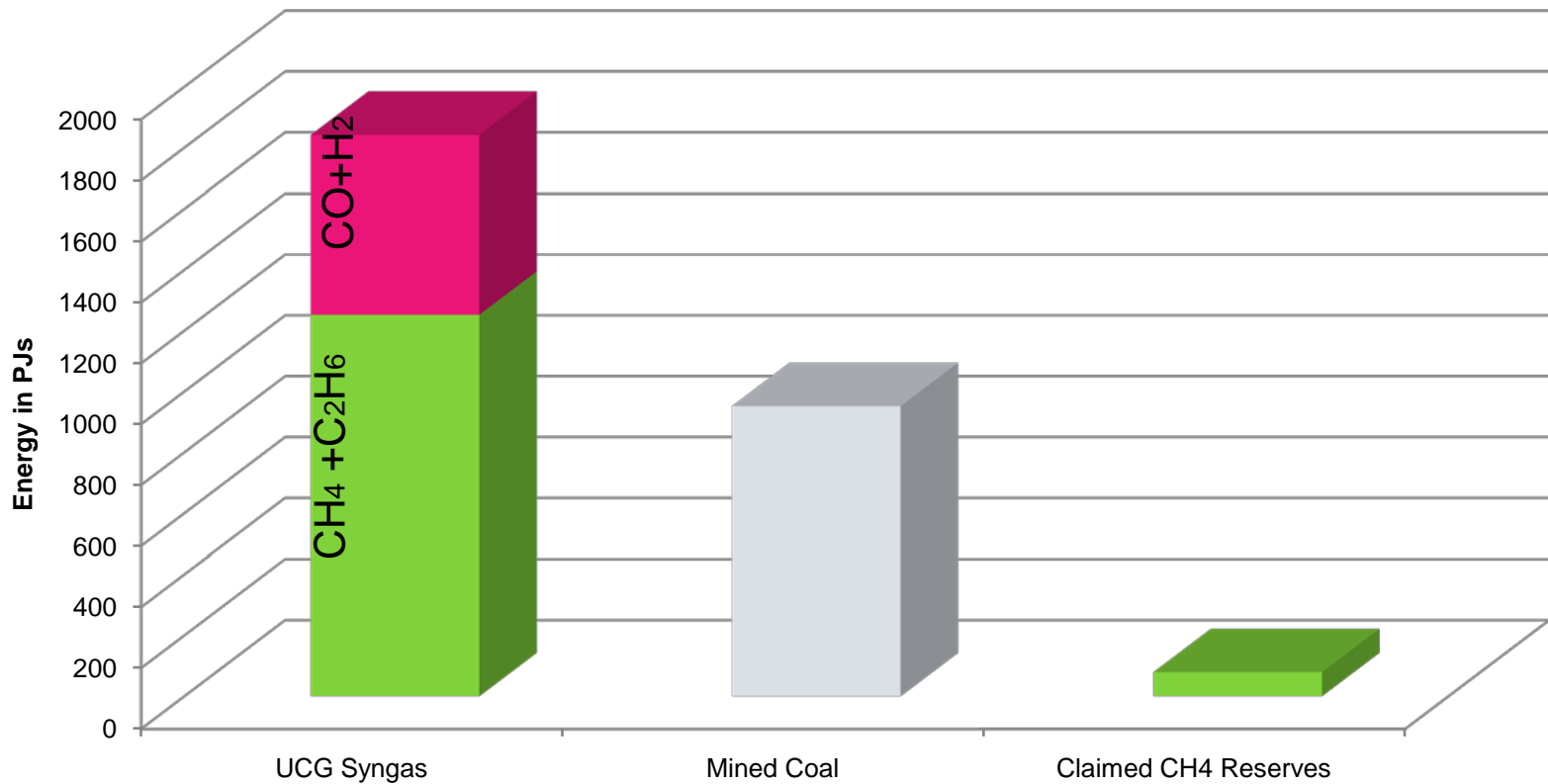
Medium term commercialisation

- Chemicals (eg ammonia)
- Liquid fuels





# Comparative Energy Recovery





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# Power Generation

Phase 1	Size 5MW
Project Committed	July 2009
First Generation	Dec 09

Phase 2	Size 20MW – Demo CCS
Project – commit	Late 2009
First Generation	Approx – 12 months later





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# Low emission (Clean) Coal Process



- 30 – 50% reduction in capex
- Lower environmental impact
- UCG lowest cost pathway to clean coal



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# Low emission (Clean) Coal Technology

The company is currently scoping a 20MW power plant at Bloodwood Creek this facility will incorporate Carbon Capture and storage technologies.

July (2009) Carbon Energy signed an agreement with Queensland company ZeroGen. This signals the first phase of a CO<sub>2</sub> injection test program, which will see Carbon Energy combine their successful Underground Coal Gasification (UCG) technology with ZeroGen's techniques for CO<sub>2</sub> injection.



When constructed this facility will be Australia's first demonstration of Underground Coal Gasification (UCG) with Carbon Capture and Storage (CCS)



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# Power Generation Blue Gum Energy Park

Phase

3



- 1 - Central gas processing and Gas Power-Station
- 2 - Ammonia Plant
- 3 - Chemical Plant
- 4 - Transport Fuel manufacture

- 5 - Synthetic Natural Gas manufacture
- 6 - Commercial and Administration Facilities
- 7 - Carbon Energy's existing UCG facility (Bloodwood Creek)



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# Summary

## Opportunity

- Market opportunities are significant - power generation, synthetic natural gas production chemical manufacture (fertiliser, industrial explosives, plastics) and transport fuels.
- Energy Recovery – huge potential for energy recovery from a small area of land.
- Lower cost route for carbon capture and storage (CCS).
- Future energy requirements supplied through a mix of renewable and low emission fossil fuel technologies

## Challenges

- Framework required for carbon legislation (CPRS)
- Regulations need to keep pace with technology development (eg carbon storage)
- Access to funding and or financial incentives for early investment in technology

## Response to Challenges

- Carbon Energy has taken a leadership position UCG technology and has plans to do the same in the area of Low Emission Coal solutions (eg CCS)
- Co-location of processing industries provides opportunities for lowering emissions (eg Urea manufacture)