



carbonenergy

resource. technology. markets.

Carbon Energy Limited | ABN 56 057 552 137

ASX Announcement

23 October 2012

Level 12, 301 Coronation Drive,
Milton QLD 4064 Australia
PO Box 2118, Toowong DC
QLD 4066 Australia
phone + 61 (0) 7 3337 9944
fax + 61 (0) 7 3337 9945

www.carbonenergy.com.au

Carbon Energy Limited
ABN 56 057 552 137
Carbon Energy (Operations) Pty Ltd
ABN 61 105 176 967

Market Update Presentation – October 2012

Carbon Energy Limited (ASX:CNX) (OTCQX:CNXAY) is pleased to provide the attached presentation as an update to the market on the company's activities.

For and on behalf of the Board

Morné Engelbrecht
CFO & Company Secretary

CARBON ENERGY

PRESENTATION

October 2012



carbonenergy
resource. technology. markets.

IMPORTANT STATEMENTS

Disclaimer

The information contained in this presentation is given without any liability whatsoever to Carbon Energy Ltd or any of its related entities or their respective directors or officers, and is not intended to constitute legal, tax or accounting advice or opinion. No representation or warranty, expressed or implied, is made as to the accuracy, completeness or thoroughness of the content of the information. The recipient should consult with its own legal, tax or accounting advisers as to the accuracy and application of the information contained herein and should conduct its own due diligence and other enquiries in relation to such information.

The information in this presentation has not been independently verified by Carbon Energy Ltd. Carbon Energy disclaims any responsibility for any errors or omissions in such information, including the financial calculations, projections and forecasts set forth herein. No representation or warranty is made by or on behalf of Carbon Energy that any projection, forecast, calculation, forward-looking statement, assumption or estimate contained in this presentation should or will be achieved.

Please note that, in providing this presentation, Carbon Energy has not considered the objectives, financial position or needs of the recipient. The recipient should obtain and rely on its own professional advice from its tax, legal, accounting and other professional advisers in respect of the addressee's objectives, financial position or needs.

This presentation does not carry any right of publication. This presentation is incomplete without reference to, and should be viewed solely in conjunction with, the oral briefing provided by Carbon Energy. Neither this presentation nor any of its contents may be reproduced or used for any other purpose without the prior written consent of Carbon Energy.

Competent Persons

The estimates of the Conventional Coal Resources presented in this Report are considered to be a true reflection of the Coal Resources as at 9 September 2012 and have been carried out in accordance with the principles and guidelines of the Australian Code for Reporting of Coal Resources and Coal Reserves published in September 2004 (JORC Code). Where quoted, it should be noted that the Exploration Target tonnages presented herein are considered non-JORC and are conceptual in nature. There has been insufficient exploration to define a Coal Resource and that it is uncertain if further exploration will result in the determination of a Coal Resource. The information in this presentation (where it relates to Conventional Coal Resources) is based on information compiled by Mr Mark Biggs who is an employee of Moultrie Database & Geology and is a member of the Australian Institute of Mining and Metallurgy. Mr Biggs 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". Mr Biggs consents to the inclusion in the presentation of the matters based on his information in the form and context in which it appears.

The reserve estimates used in this document (where it relates to the syngas reserves at Bloodwood Creek) were compiled by Mr Timothy Hower of MHA Petroleum Consultants, Colorado, USA, a qualified person under ASX Listing Rule 5.11. Mr Hower has consented to the use of the reserve information contained within this document in the form and context in which it appears.



carbonenergy
resource. technology. markets.

CARBON ENERGY (ASX:CNX, OTCQX:CNXAY)

Executive Summary

- CNX is the world leader in underground coal gasification (UCG) technology
- CNX has 3 strategies for growth
 1. keyseam® UCG technology
 - Technology licenses (upfront fee + royalty)
 - Technology services
 2. Coal tenements (Surat Basin, QLD)
 3. Gas reserve (Bloodwood Creek, QLD)

Key Metrics

Share Price (A\$)	\$ 0.062
Shares (m)	776.3
Market Cap	\$ 48m

Strong Shareholder Base

Incitec Pivot Ltd	9.78%
Pacific Road Capital Management (combined shareholdings) ¹	8.36%

Notes

1. Under convertible note terms Pacific Road shareholding could increase to ~113m shares post conversion (full conversion of \$10 million facility @ \$0.15 per share)



GROWTH DRIVERS

Carbon Energy is moving toward the next phase of development through the following three strategies



LICENSING TECHNOLOGY

New Approach – Shanxi Sanyuan Coal

- Announced on 14 May 2012, Definitive Agreement signed 17 October 2012
- 72nd largest of China's top 500 enterprises & 2nd largest coal company in China & Fortune 500
- In 2011 produced 40 million tonnes & transported 350 million tonnes & traded 250 million tonnes
- Aim to produce 100 million tonne & trade 300 million tonnes

The Project – Stage 1

- The first phase involves a demonstration panel adjacent to Changzhi city
- Exclusive Technology license agreement for Shanxi Province
- Recommendation for Carbon Energy's technology was provided by Peking University

The Project – Stage 2

- The second phase is the development of major commercial projects with a minimum production rate of 30 PJ p.a of syngas.

The Commercial Structure

- CNX does not provide development capital
- Upfront technology fee of \$7.5 million (payable in November 2012) & a further US\$2.5 million as gas production milestones are met
- Ongoing technical & engineering service fees
- Royalties
 - Stage 1: Up to US\$3 million once gas from demonstration project is sold to market
 - Stage 2: US\$400 million in royalties over a 20 year project life (based on a single 30 PJ p.a project).

Replicating Shanxi....

- **CNX's technology partnering strategy means it can take a multi project & multi country approach**
- **Discussions are underway with companies in Chile, US, Canada, India, South East Asia and South America, on the application of CNX's UCG technology**

SURAT BASIN COAL COMMERCIALISATION

Surat Basin Coal Resource

- 17 May 2012 – announcement of 4 to 8 Bt exploration target
 - 7 July 2012 – announcement of 1.2 Bt Inferred Resource
 - 10 September 2012 – announcement of 1.4 Bt Inferred Resource
- ⇒ **Provides a quality opportunity for a party looking for a large export thermal coal resource**

Ideal Location

- CNX Eastern Surat Exploration Leases are close to:
 - Existing domestic and export thermal mines
 - Existing rail and proposed infrastructure (including the future Surat Basin Rail link to the Moura coal handling system)
 - Existing power, gas and water infrastructure
 - Significant population and service centres
- Leases are largely free from:
 - Strategic Cropping Land and Buffer Zones
 - Environmentally sensitive areas
 - Culturally significant areas
 - Urban areas

CNX delivering on its plan to monetise its coal resource

- **CNX is on schedule in its development & packaging of the Surat Basin coal resource for sale and / or potential partnership opportunities**



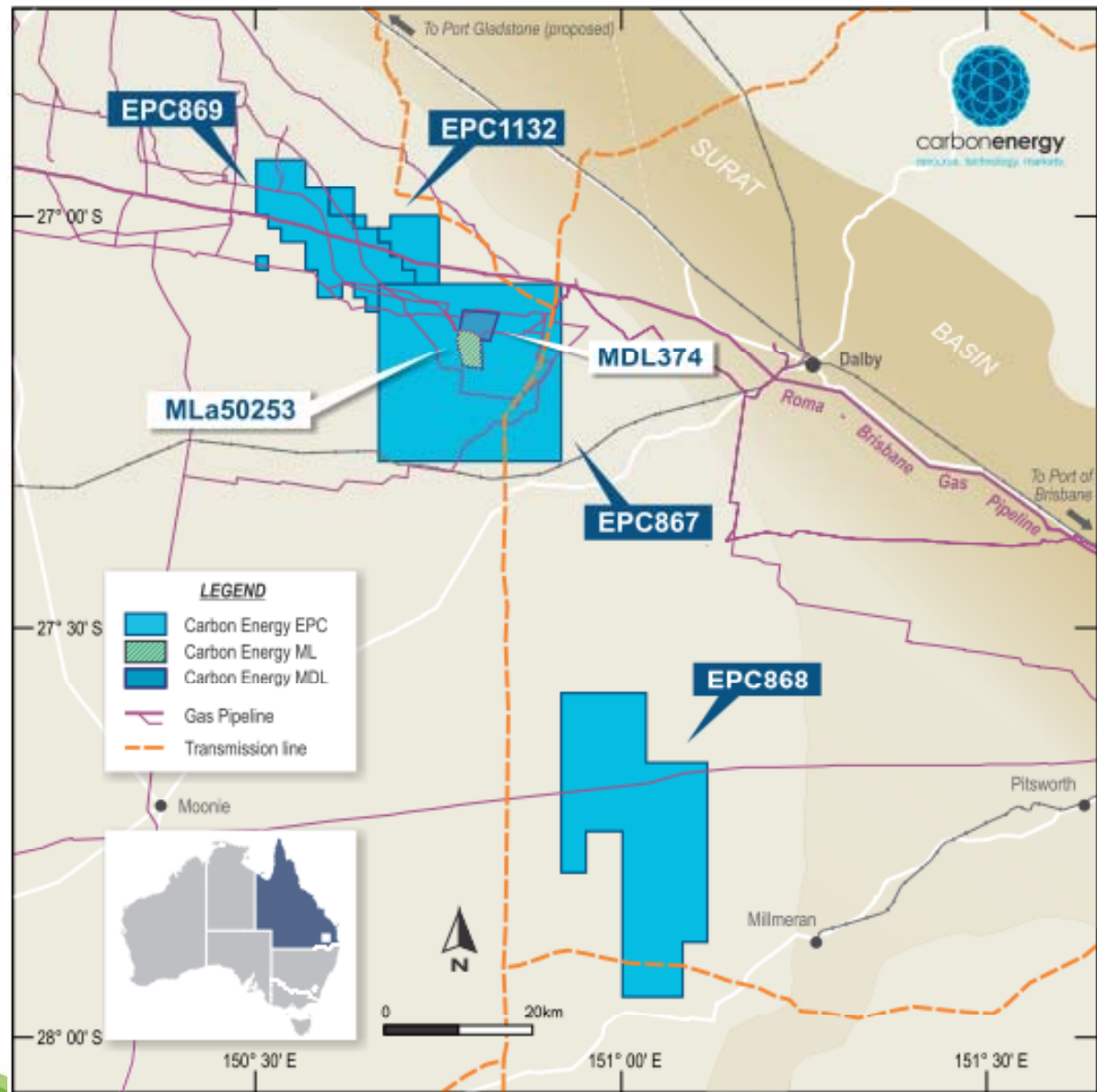
carbonenergy
resource. technology. markets.

RESOURCE POTENTIAL – BORE HOLES

Lease	Resource Model Sept 12	Additional Available Now
EPC867	145	25
EPC868	0	27
EPC869	26	8
EPC1132	5	8
Total	176	81

An additional 20 bore holes become available to public file across all EPC's in next 6 months

Resource	Indicative Value
Inferred	\$0.10/t
Indicated	?
Measured	?
Reserve	?



resource. technology. markets.

SURAT BASIN COAL COMMERCIALISATION CONCEPT

- Sale of initial minority interest(s) in coal tenements
- Purchaser funds all ongoing exploration and mining studies to meet defined resource and reserve targets
- Milestone payments to CNX upon achievement of targets
- CNX retains minority stake and is free carried during exploration, feasibility, construction and production phases

COAL STRATEGY TIMELINE

Seeking Commercial Partners for potential sale or partnership opportunities



carbonenergy
resource. technology. markets.

SYNGAS: BLOODWOOD CREEK, QLD

Strategic asset in an attractive gas market

Surat Basin Reserves

- 2P Reserves – 743 PJs of syngas, equivalent to Brisbane’s gas requirements for 15 years
- Located on the Roma to Brisbane Pipeline
- Application in power generation, natural gas, ammonia, liquid fuels and chemicals (such as methanol)

LNP QLD Govt

- CNX is constructively working with the LNP Government to obtain a regulatory regime for UCG syngas production
- The report by the Independent Scientific Panel (ISP) has been submitted to the Department of Natural Resources & Mines for review and comment

The QLD Gas Market

- CSM gas reserves being committed to the LNG projects scheduled to start in 2014/2015
- Domestic gas users unable to renew long term contracts
- The Queensland Government, 2012 Gas Market Review includes the following findings:
 - “The Queensland Market lacks liquidity, with gas in short supply for new contracts both pre and post 2015”
 - A modest oil and LNG development outlook could see prices in the order of \$6.50/GJ by 2015. Under the same scenarios, gas prices in 2020 would be in the range (High to Low) of \$12/GJ to \$7/GJ”

CNX Ideally positioned

- **CNX requires partners on the production development of the Bloodwood Creek gas reserve**
- **Recent engineering study by LogiCamms found the cost of producing pipeline quality natural gas from Carbon Energy’s UCG Syngas was estimated to be in the range of \$3.50/GJ to \$4.50/GJ (capex and opex combined cost for 25PJ to 8PJ projects respectively at FEL1 and excluding taxes)**
- **Discussions with off-takers & partners are at an early stage**

CONCLUSION

- Proof of Concept achieved for keyseam® technology – and independently verified
- First technology license agreement executed
- Early cash flow generated from upfront technology license fee and ongoing technical and engineering service fees
- Large thermal coal resource in Surat Basin, QLD
- Regulatory regime for UCG in QLD awaited



APPENDICES



TECHNOLOGY DEVELOPMENT



- 10 years of scientific development and research

Achievements

- Development of the site selection and ground response modelling
- Development of syngas production operational prediction models

- 5 years of scientific development
- Research & development spend of approximately \$100m

Achievements

- Commercial proof of concept
- Over 4 years of in-field UCG demonstration and operation
- Validation that multiple panels adjacent to each other can operate independently
- 12 months consistent high quality syngas production from Panel 2
- Export of electricity produced from syngas to the local grid
- Confirmation that the models developed by CSIRO translates to operational performance

- Chile
- USA
- China

Achievements

- Establishment of Joint Venture partners in these locations with Antofagasta, Great Northern Properties and Anadarko
- Advancing with project with Antofagasta in Mulpun, Chile
- Site selection modelling refined
- HOA with Shanxi Sanyuan Coal

- ATO Tax rebate (\$ m)
 - Shanxi Sanyuan Coal upfront fee (\$10m) and ongoing royalty fees
 - Upside from additional technology licensing agreements (multi-project, multi-country)
- Commercialisation opportunities for coal / gas assets**



carbonenergy
resource. technology. markets.

UCG POTENTIAL

- UCG/syngas is able to provide 20 times more energy from the same coal resource compared to CSG production
- Our proprietary technology keyseam® produces consistently high quality syngas
 - keyseam unlocks value in deep coal reserves that have no other economic or commercial potential
 - keyseam also extracts 20 times more equivalent energy from the same resource footprint as compared with CSG
 - CNX has achieved proof of concept with 12 months continuous production of high quality syngas and the generation of electricity

Potential Market

- Expected undersupply of gas in Queensland & Eastern States
 - Large proportion of Queensland resources are committed for LNG purposes
 - Will see a marked rise in demand leading to possible price increases (as evidenced in Western Australia)
 - Possible government involvement in near future
- The current proven world coal reserves are approximately 909 billion tonnes; world coal resources have been estimated to lie somewhere around the 6,000 billion tonne mark, suggesting that only 15% of the resource is currently accessible. The use of UCG could therefore unlock billions of tonnes of potential coal resources



carbonenergy
resource. technology. markets.

USES OF UCG



Syngas
H₂; CO; CH₄; CO₂

CO₂

Enhanced Oil Recovery

Processing Plant

Pipeline Quality Gas

CH₄

Fertiliser & Industrial Explosives

H₂

Methanol

CO₂

Fischer-Tropsch Process

Diesel/Gasoline/Methanol/Naphtha

H₂

CO

Direct syngas feed

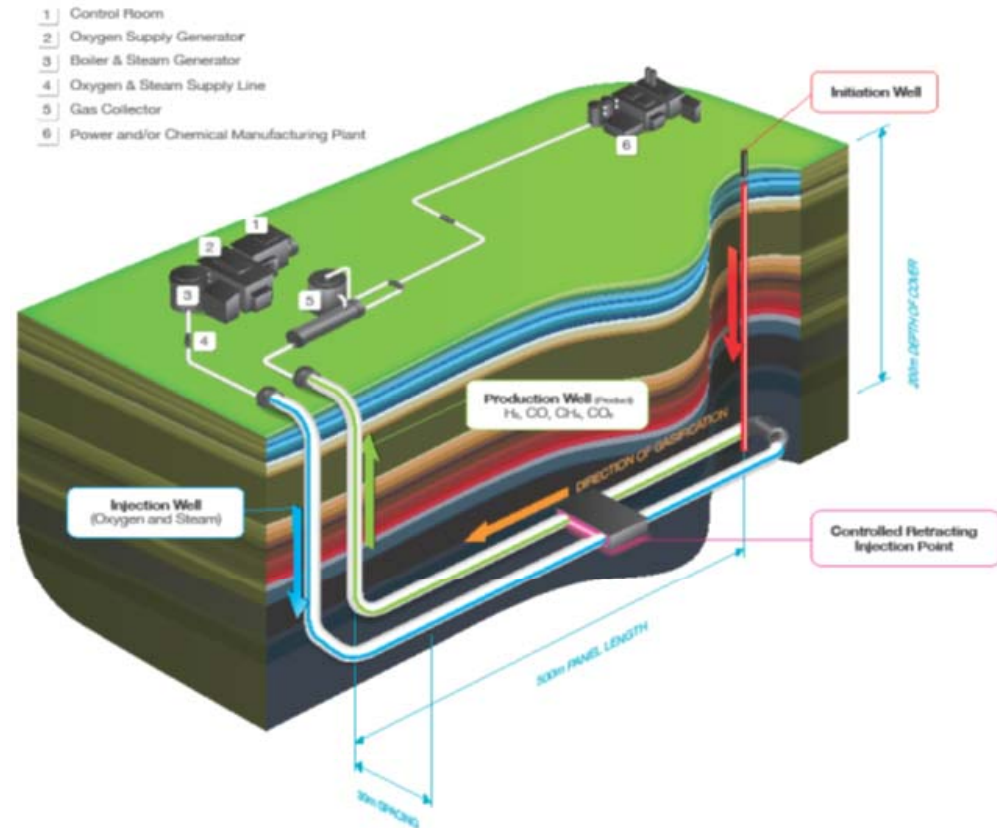
Low Emission Electricity

Syngas

PROOF OF CONCEPT keyseam TECHNOLOGY

Carbon Energy has achieved Proof of Concept and has demonstrated the following key elements:

- Drilling and construction of Carbon Energy's unique panel design
- Ignition and commissioning of two UCG panels
- Over 5 years of in-field UCG syngas trials
- 12 months continuous syngas production from UCG Panel 2
- Consistent production of high quality syngas
- Export of 1.5 MW of electricity to the local electricity grid
- Validation of gasification prediction models with operational data
- Environmental management during operations



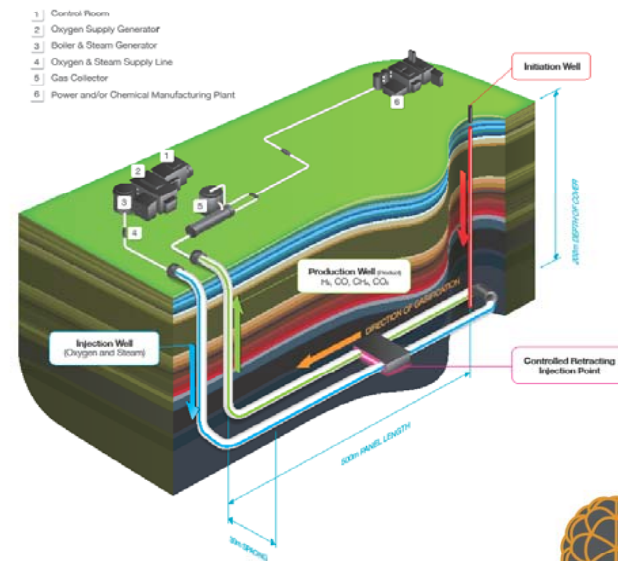
carbonenergy
resource. technology. markets.

keyseam ENVIRONMENTAL ADVANTAGES

1. **Maximises resource efficiency** by extracting 20 times more energy from the same resource when compared to CSG production.
2. **Minimises surface disturbance** by extracting the energy from coal through a series of boreholes rather than mechanical excavation used in conventional mining methods.
3. **Preserves groundwater quality** by operating the gasification process below the hydrostatic pressure and not pumping groundwater to the surface. Maintaining the surrounding groundwater pressure acts as containment for the gasification process and ensures that syngas flows to the surface under pressure via the Production Well.
4. **Leaves rock and ash underground** in the coal bed, originally mixed with the coal.
5. **Cuts carbon emissions** by producing syngas-fuelled electricity with 10-20% less CO₂ emissions than traditional coal-fired power plants and reducing the cost of carbon capture.
6. **No fracking process or chemicals.**

keyseam can extract the equivalent energy from an area 20 times smaller than CSG without fracking and with minimal impact on the water table.

keyseam



keyseam®