

Cougar Energy

Building UCG in the People's Republic of China



- High demand for energy
- High dependence on coal
- Planning for first commercial UCG plant in China

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Beijing

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COUGAR ENERGY'S INVESTMENT RATIONALE FOR UCG PROJECTS IN CHINA



- China's coal demand forecast to grow 2.6 % p.a. to 2035
- China's energy generation forecast to grow 4.1% p.a. to 2035
- 70% of all coal used in China will be for power generation

Significant growth potential for UCG fuelled electricity generation

- Vast deep and unused coal resources available in China
- Demand for coal causes environmental challenges and need for Chinese coal and power industries to focus on clean technologies
- UCG is an economically viable cleaner coal technology and is supported by Chinese regulators: UCG projects can utilise newly built infrastructure



- Chinese corporate partners keen to include a UCG project as part of traditional coal mining operations

COUGAR ENERGY'S UCG CAPABILITY



Smarter use of coal

▷ Energy alternative to solve current challenges in energy supply/demand imbalance

Low cost energy

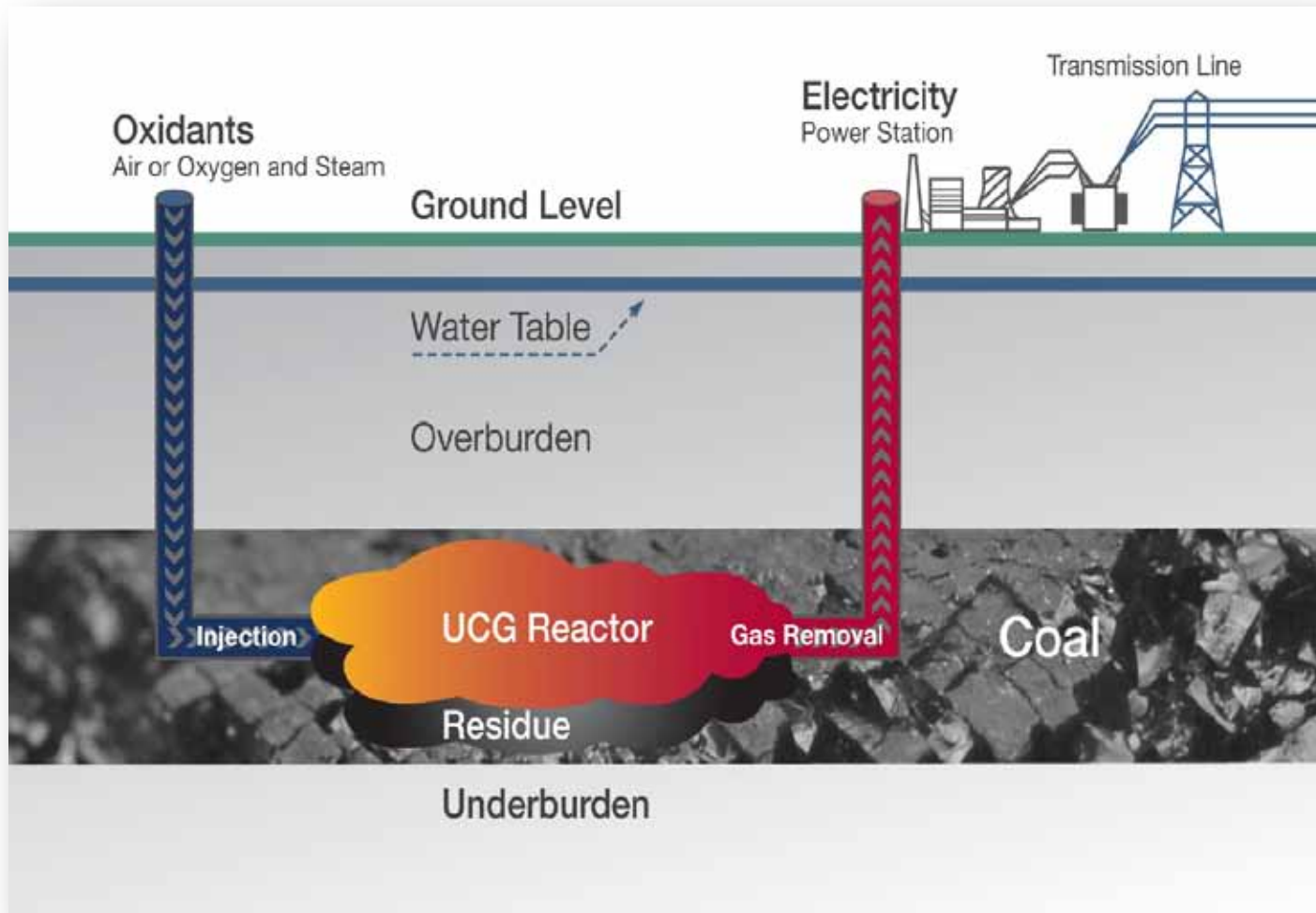
- cost effective feedstock (ca. 50% cost of natural gas) for multiple uses
- significant capex savings and low production costs
- sustainable source of base load power
- affordable and adds security of energy supply to local markets

Efficient utilisation of resources

- more efficient than conventional mining
- 15x less area than coal seam gas

Cleaner energy

- lower emissions compared to coal-fired utilities (25-40%)
- minimal impact – nominal waste water, no surface ash disposal
- process allows carbon separation



Proven commercial UCG technology: Ergo Exergy Technologies, Inc

Cougar Energy using the only UCG technology proven at genuine large scale levels of commercialisation

- Former Soviet Union – over 15 million tonnes coal gasified since 1950s
- Approximately two-thirds of this at the Angren plant in Uzbekistan
- Angren has been the only commercial size UCG plant generating gas for 100-150 MW of power
- Key ex-Angren staff now lead Cougar Energy's UCG technology partner
- USA / European Union – less than 100,000 tonnes gasified (RM1 test in 1987/88 gasified 10,000 tonnes)

Key role in UCG development history

1982-1984	UCG feasibility study for South Australian mine site
1988-1992	Evaluation of UCG opportunities in Queensland
1996	Formation of Linc Energy and acquisition of Queensland coal leases
1996-1999	Site evaluation of Angren UCG facility (Uzbekistan)
1999	Technology Agreement with Ergo Exergy Technologies, Inc.
1999-2002	Chinchilla (Queensland) Pilot Burn - 35,000 tonnes coal gasified (led by Dr Len Walker of Cougar Energy and Dr Michael Blinderman of Ergo Exergy Technologies, Inc.)
2006	Formation and ASX listing of Cougar Energy
2007-2009	Lease acquisition/agreements in Queensland and Victoria Construction of Kingaroy (Queensland) Pilot Burn and planning for 400MW commercial plant (including prefeasibility study)
2010	Kingaroy Pilot Burn ignition
2010-2011	Preliminary agreements for projects in Inner Mongolia and Xinjiang regions - opening of Beijing office



The assets in this photograph do not belong to Cougar Energy

Project outcomes:

Surat Basin, Queensland

1999 – 2003

35,000 tonnes coal gasified

Gas calorific value
4-6 MJ / m³

Designed and led by the current Cougar Energy / Ergo Exergy team



Plant site layout



Project outcomes:

Construction 2009 – 2010

Ignition March 2010

High quality gas flows and caloric value, followed by production well casing break

Well casing rectification works completed

Contesting Queensland Government proposal to put project on care and maintenance



Gas processing plant

Plant designed by
Cougar Energy
engineers

Constructed on skids

Future utilisation:

- (a) replicate designs and
manufacture in China,
or
- (b) dismantle and
transport to other sites

Developments for UCG commercialisation across the globe

International activities involving Cougar Energy (*) and Ergo Exergy (**):

- Four year pilot burn history in **South Africa** **, with electricity generation (40 MW) to commence shortly
- Pilot plant and development plan **Kingaroy (Australia)** *
- Pilot burn to commence in **New Zealand** ** later this year
- Project developments progressing in **China** *
- Projects under consideration in **Pakistan** * and **Indonesia** *
- Preparations progressing for pilot burn in Alberta, **Canada** **

COUGAR ENERGY'S PROJECTS IN CHINA



Inner Mongolia Autonomous Region
XinJiang Autonomous Region



Inner Mongolia Autonomous Region

Wu Ni Te Project

Project summary	
Project partner	DeTailong Investment Energy Ltd (Detailong)
Coal resource	<ul style="list-style-type: none"> Ø Tenement 60 km² in area, two main coal seams Ø Location: East Wu Zhu Mu Qin County, 650 km north of Beijing Ø 400 million tonnes target resource (non JORC) Ø Primary seam is at 200 metres below surface with average thickness of 4.5 metres Ø Target resource will provide syngas to fuel 400 MW + power generation facility
Status	<ul style="list-style-type: none"> ■ Letter of Intent and Co-operation Agreement signed with DeTailong ■ Project application lodged with government authorities (in Xilinhot) ■ Pilot trial permits expected May/June 2011 ■ Site characterisation work program planning commenced ■ Drilling and well installation estimated to commence 3Q 2011

XinJiang Autonomous Region

Limitless International Holdings Pty Ltd

Project summary	
Project partner	Limitless International Holdings Pty Ltd [LIH] (100% owned Australian subsidiary of Shanghai Limitedless Investment Group [SLI])
Coal resource	<ul style="list-style-type: none"> Ø Target to exceed 200 million tonnes (non JORC) Ø Data on 4 leases currently being evaluated Ø North-east and south of Urumqi Ø Up to 6 metres of coal – details under evaluation
Status	<ul style="list-style-type: none"> ■ Memorandum of Understanding signed with LIH 1 October 2010 ■ LIH subscribed A\$ 1 million in new shares in Cougar Energy 3Q/2010 ■ “Definitive Co-operation Agreement” is contemplated once UCG coal resources confirmed: LIH to contribute further A\$ 1 million to Cougar Energy and contribute first A\$ 3 million equivalent to project developments in China

UCG provides China with a cleaner coal solution

- China's robust GDP projections support strong long term growth for energy consumption
- Coal will remain the most used fuel for electricity production in China, presenting environmental challenges
- Chinese Central Government actively pursuing non-conventional coal mining solutions
- Underground Coal Gasification (UCG) provides a cleaner coal solution
- Local government authorities supporting UCG project proposals as part of major coal mining projects

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**Gasification
Asia Pacific**