



Australia's Leader in Clean Coal Technology

Positioning UCG for Energy Independence
Interstate Oil and Gas Compact Commission
Kentucky, 25 May 2010

www.lincenergy.com.au

Potential of UCG

"The Lawrence Livermore National Laboratory (USA) has estimated variously; that recoverable reserves could be increased by at least 300% to 400% and that 1.6 trillion tons of un-mineable coal in the USA may be recoverable with Underground Coal Gasification (UCG)."

"Industry Review and an Assessment of the Potential of UCG and UCG Value Added Products," PricewaterhouseCoopers, 2008.

Potential of UCG

“The Clean Air Task Force recommends the rapid development and deployment of Underground Coal Gasification (UCG) to reduce carbon emissions and electricity prices.”

Source: US Clean Air Task Force for Federal Policy addressing climate change, September, 2009.

About Us

Our Technology

Our Assets and Projects

Desired Regulatory
Environment (USA)

In Summary

About Linc Energy

- At the forefront of the development of Underground Coal Gasification (UCG) for cleaner power generation and fuel production
- Commenced 1996; Listed in Australia in 2006; over 13,000 shareholders; Listed on the OTCQX in USA in 2007
- Over 120 staff (46 corporate; 80 technical), in six offices across two countries
- Commenced UCG in 1999. Since developed four generators, a Gas to Liquids (GTL) plant, on site laboratory, and waste water treatment plant
- Strategic goal to commercialize UCG in coal rich countries around the world.

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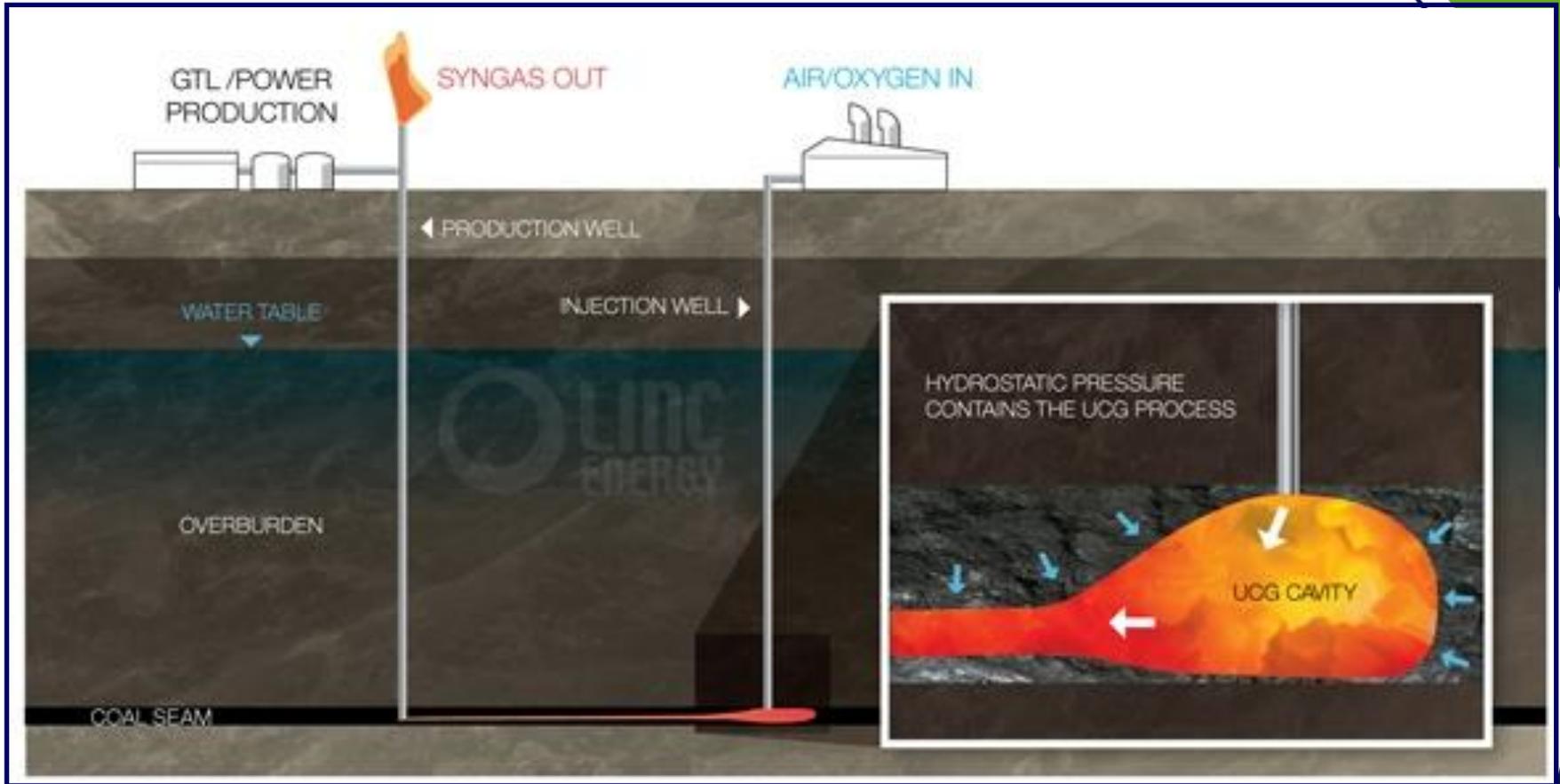
In Summary

Coal Gasification Simplified



- It is not coal burning
- Syngas is not natural gas
- Surface gasification was once widely used as 'town gas'
- Multiple uses (power, liquid fuel, petrochemical).

The UCG Process

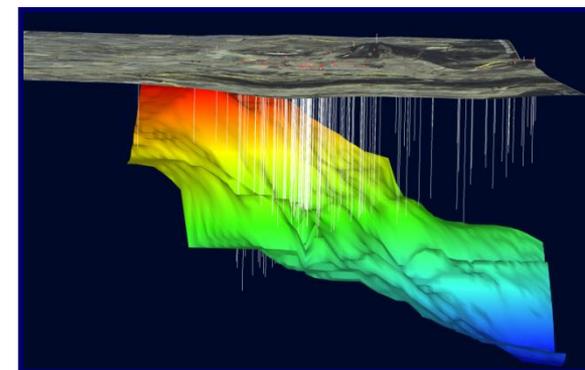
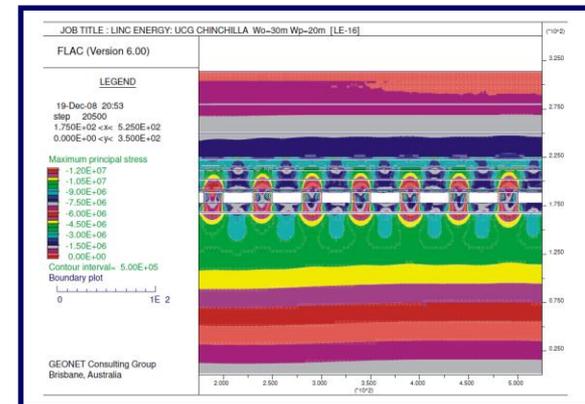
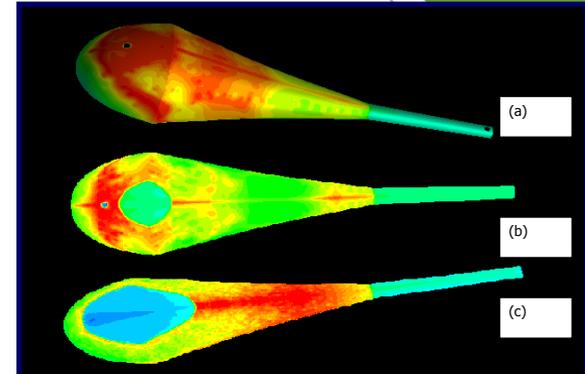


UCG Requirements

- Mid to low rank coal at depth – typically not suitable for mining
- Minimum seam thickness – nominally 20ft*
- Hydrostatic and Lithostatic pressure sufficient to maintain and contain process
- Favorable overburden characteristics:
 - Strength and/or sealing properties
 - Separation from overlying aquifers and coal seams
 - Depth of cover.
- Suitable environmental conditions.

Controlling UCG Impacts

- PREDICT > CONTROL > MONITOR
- Linc Energy has developed excellent prediction tools
- Groundwater flow and contaminant fate:
 - Prevention methods are well known and demonstrated
 - Excellent groundwater performance at Chinchilla by Linc Energy over 10 years.
- Subsidence
- Burn front and extinguishment.



Angren, Uzbekistan



UCG - Smaller Footprint, Lower Impact

UCG Benefits

- Small footprint
- Increases available resources
- Compatible with many other land users
- Less infrastructure
- No fugitive methane release
- Less water intensive
- Minimal waste
- Sequestration ready.

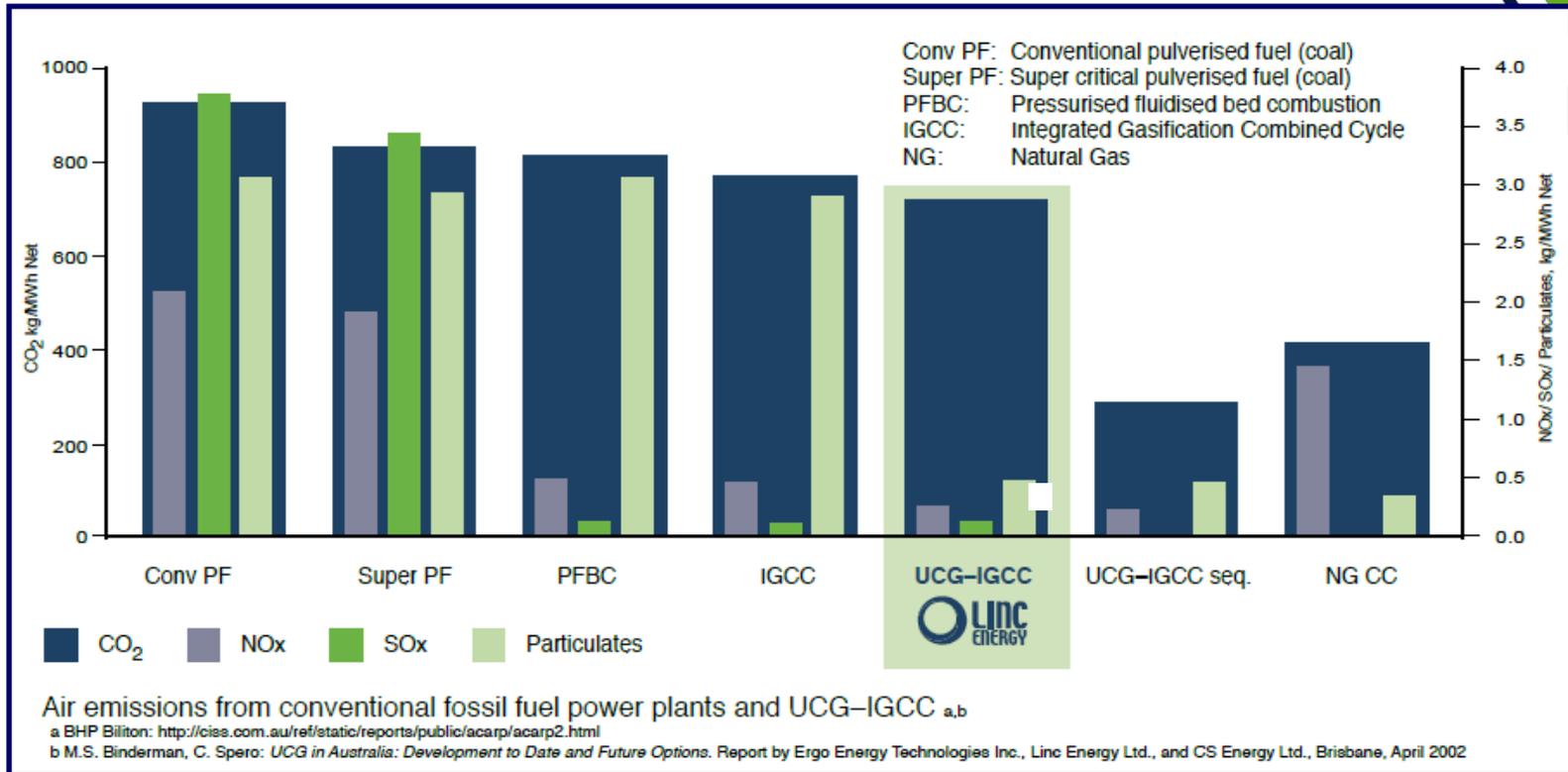


Environmental Benefits: UCG for Power Generation

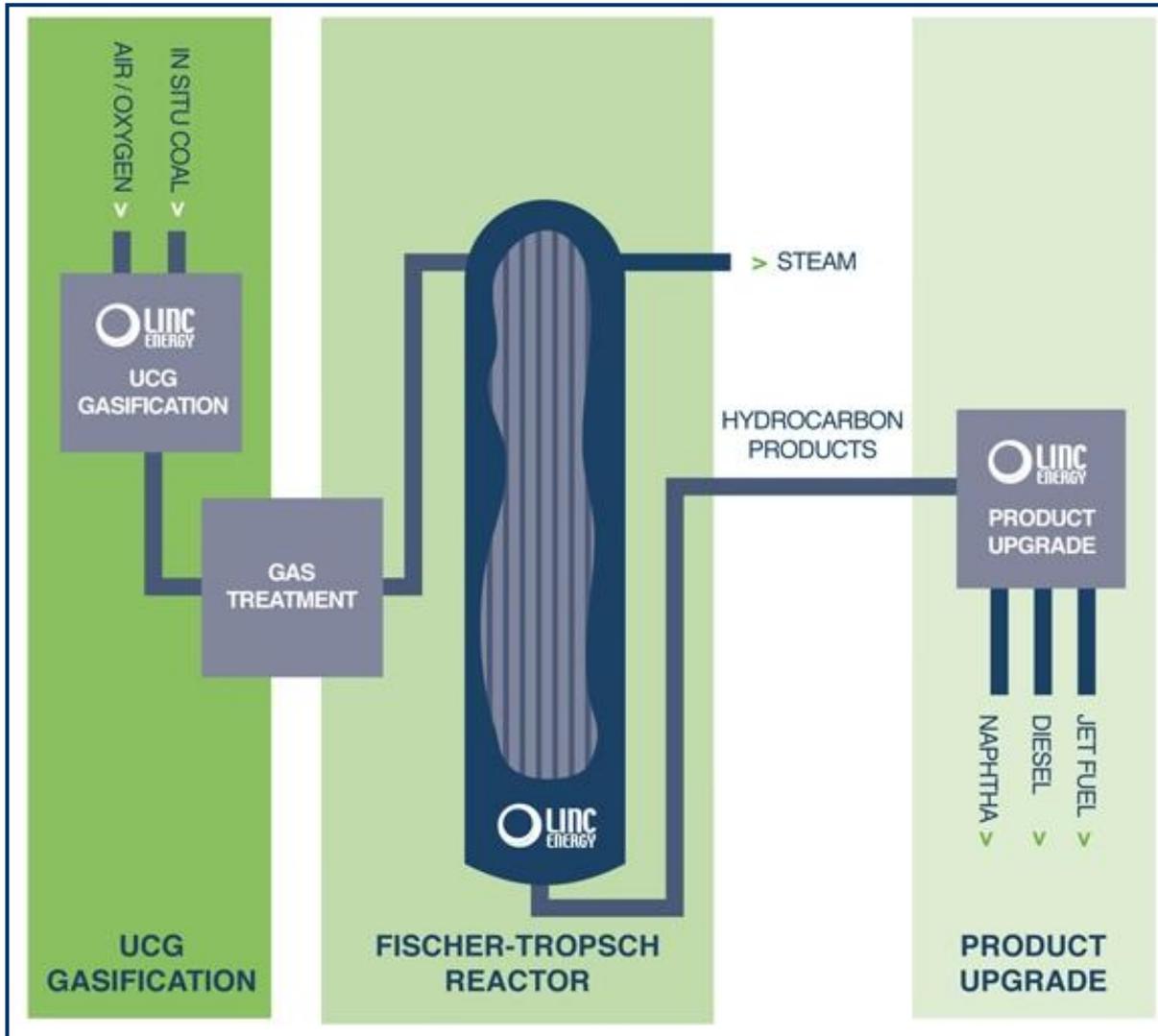
- Efficiency improvements:
 - Coal gasification technology is the key to all clean coal applications
 - UCG is the only low cost gasification option
 - UCG provides efficiency advantages over solid fuel steam cycle.
- Greenhouse gases:
 - 25% reduction over coal/steam cycles prior to any sequestration
 - The most 'realizable' clean coal technology.



UCG and GHG Emissions: Power

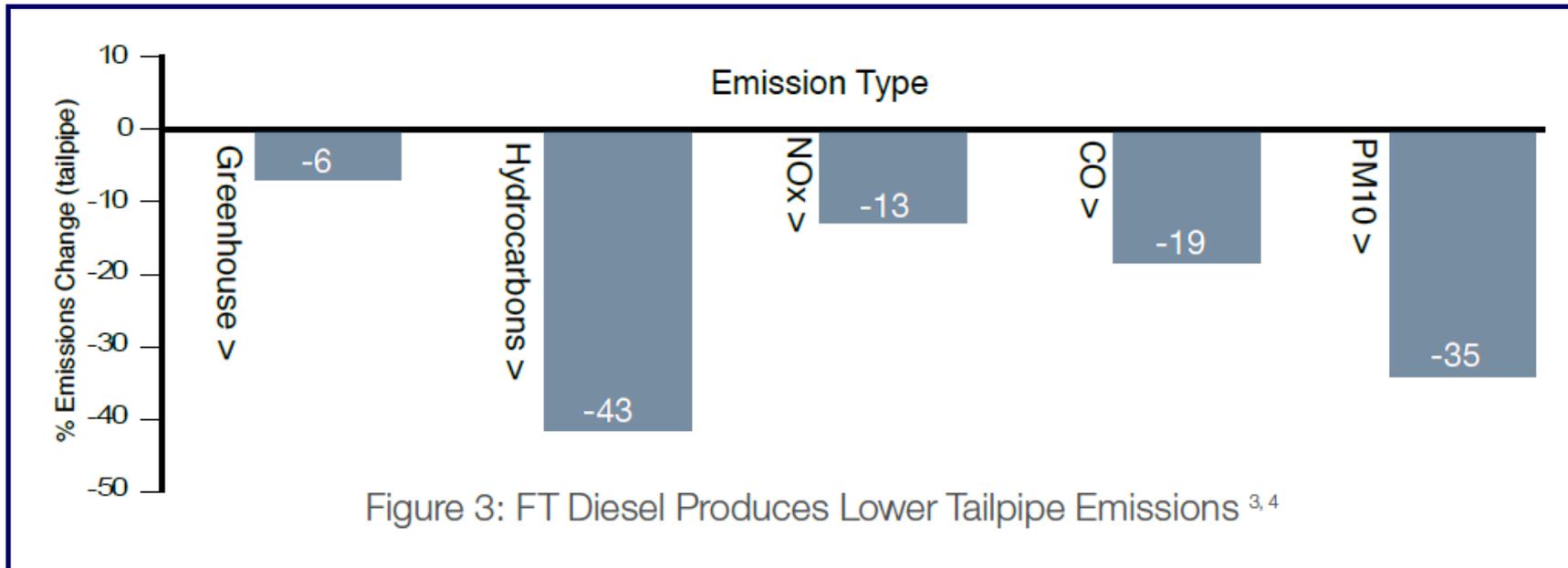


Syngas for Fuels



FT Diesel Tailpipe Emissions

- % change relative to conventional diesel (US2).



Source: CSIRO

Chinchilla Demonstration Facility



UCG Development

- Significant developments in UCG modelling, design and resource building
- New generation of UCG:
 - Horizontal well technology
 - Adoption of oil and gas technology for reliability and repeatability
 - Increased resource recovery and generator life
 - Oxygen enrichment
 - Increased capital efficiency.
- Generator 4 producing.
- Visible progress towards commercialization.



GTL Technology Progress

- GTL production from UCG gas
- Advancement in Fischer-Tropsch technology
- Modifications to GTL plant. Focus on improved conversion and reliability
- Conceptual design study with Aker Solutions.



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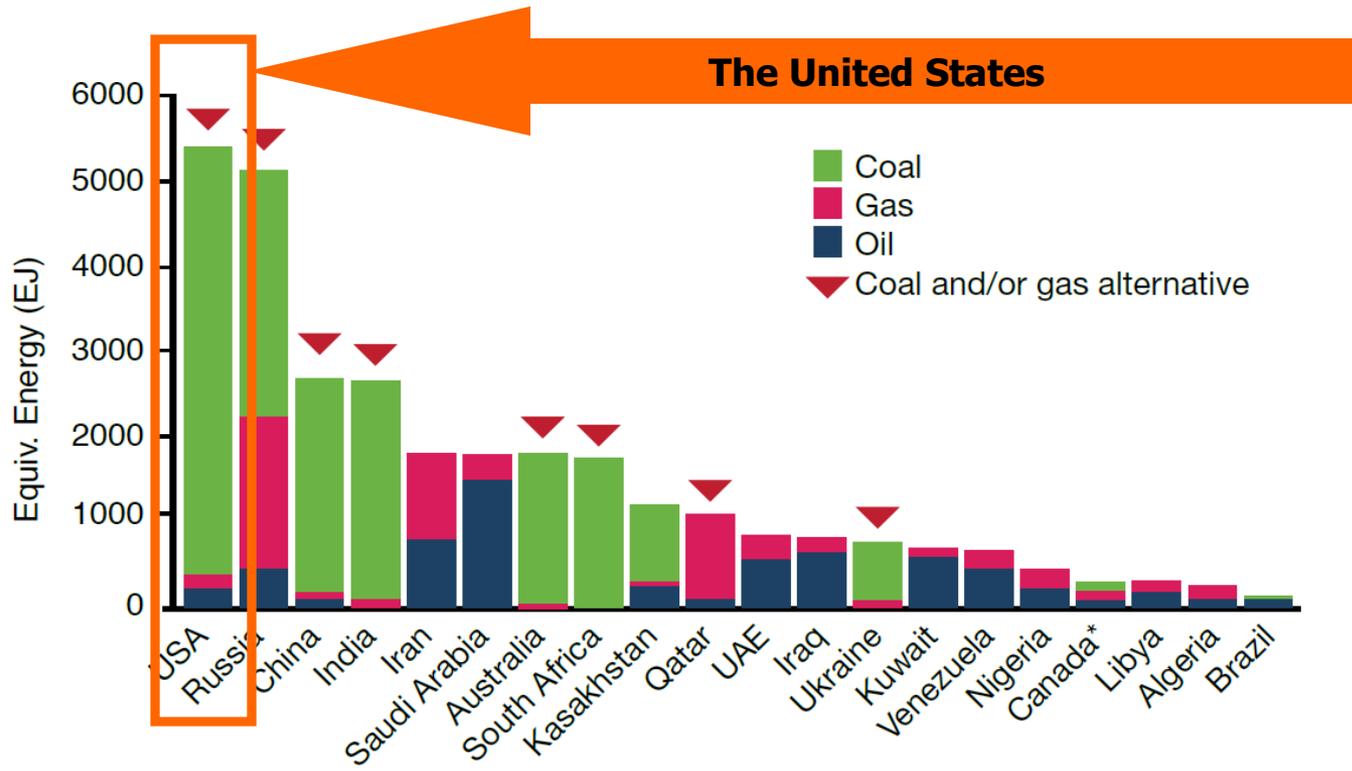
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Global Snapshot

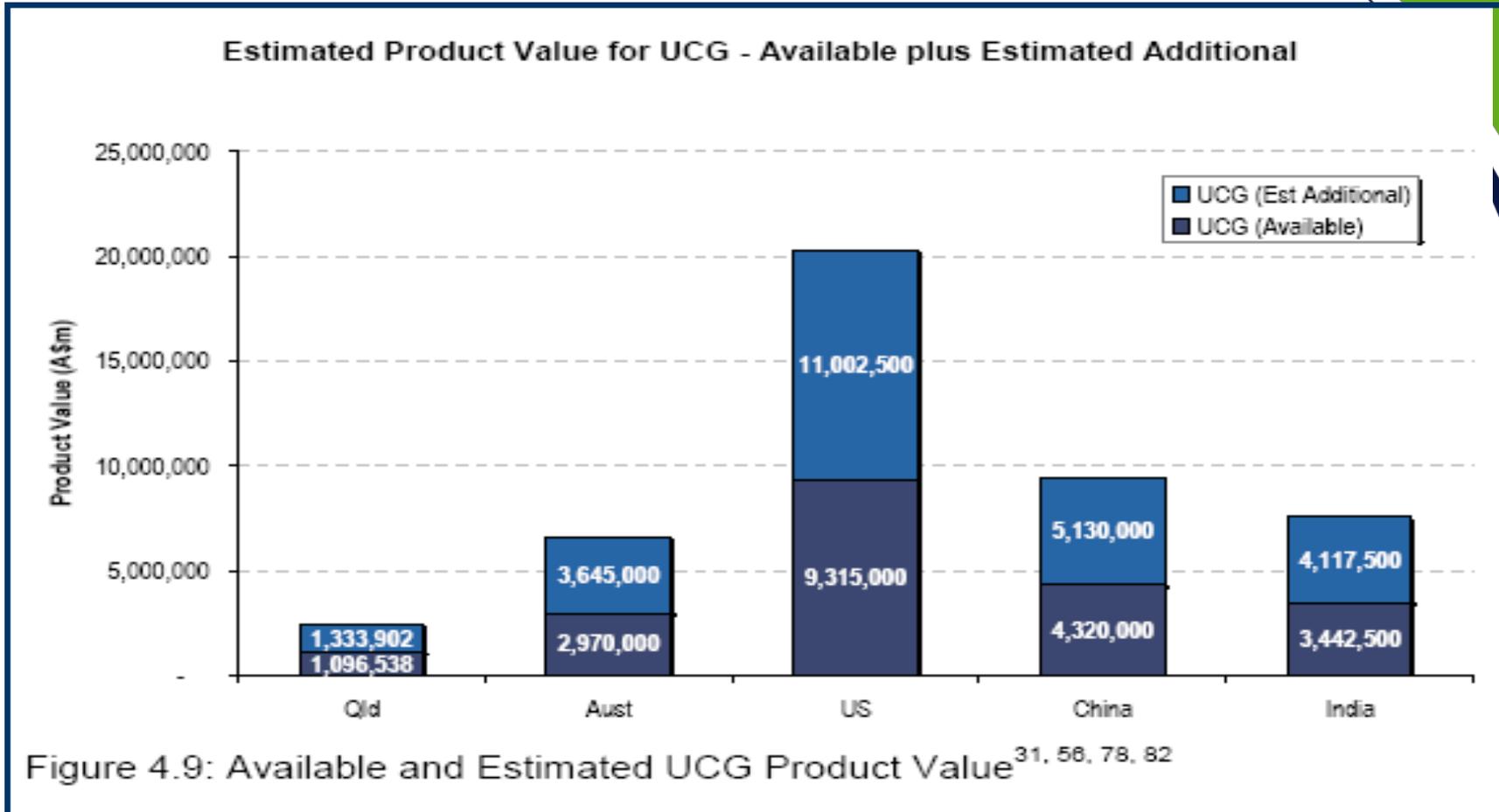


Countries with Coal



Coal has to be part of the solution.
Linc Energy and UCG offers one.

UCG: A \$20 Trillion Value in USA



PriceWaterhouseCoopers, 2008-2007 Survey of Energy Resources (2007), World Energy Council.

Entry into the USA

- Linc Energy holds over 296,000 acres in coal, oil and gas leases across the Cook Inlet, Powder River, and Williston Basins
- Linc Energy has established USA offices in:
 - Anchorage, Alaska
 - Casper, Wyoming
 - Denver, Colorado.
- Site selection and permitting processes are now underway for UCG pre-production trials.

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Desired Regulatory Environment

- UCG participants:
 - Coal explorers
 - Gas producers.
- Australian regulatory experience in the emerging UCG industry.

Desired Regulatory Environment

Key aspects of effective regulation of UCG:

1. Clarity regarding the responsible agency or 'lead' agency.
2. Certainty and predictability regarding:
 - leasing and permitting requirements
 - tax and royalty regimes.
3. Focus upon technical and operational competence of participants.
4. Processes to avoid conflict between holders of different resource rights.

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- UCG offers a significant opportunity for environmentally responsible and cleaner energy solutions
- The USA is uniquely placed globally to benefit from the development of this energy industry sector
- A regulatory environment providing certainty and predictability is required to support continued development
- UCG participants **must** be capable of demonstrating technical and operational competence to ensure safe and environmentally responsible operations.

Questions?

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