

# Unconventional gas

A game changer

Nigel Shaw

13 December 2009



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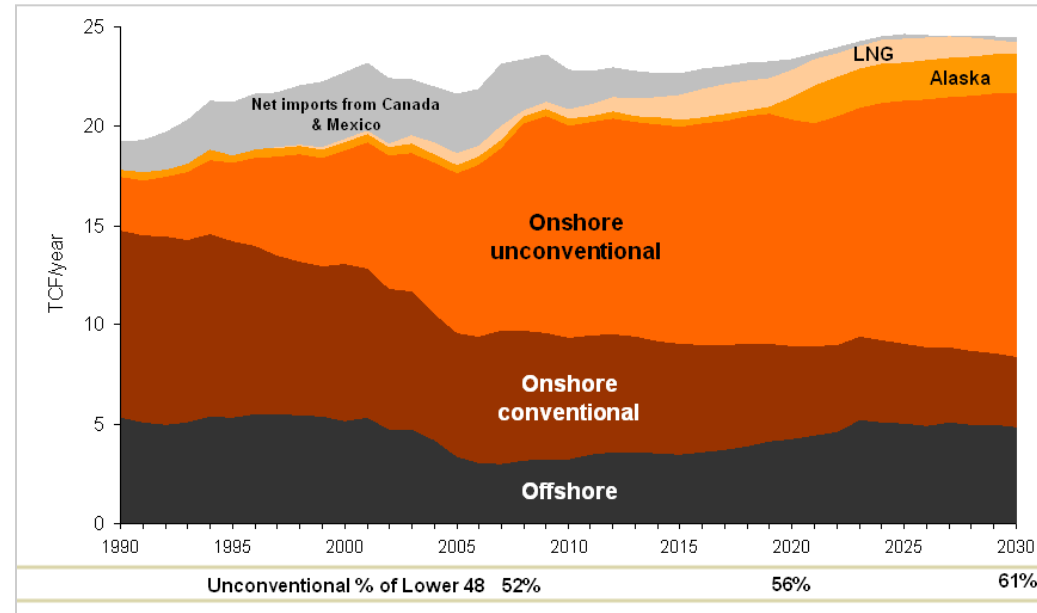
# Combating climate change

- Clean and efficient gas is part of the solution
  - A key part of IPCC mitigation options for energy
  - Diverse, plentiful and economic
  - Reliable and flexible backup for intermittent renewable power
  - Versatile and smart energy choice
- BG Group's focus on gas
  - Developing gas markets
  - Increasing supply: conventional and unconventional
  - Supporting security of supply – LNG
  - Investing in technologies to improve efficiency

# Unconventional gas revolution

- A new wave of plentiful unconventional gas in the USA is transforming the energy market
  - 15% increase in production in past 18 months
  - USA now has up to 100 years of recoverable gas reserves

US natural gas production outlook



Source: EIA

# New opportunities for North America

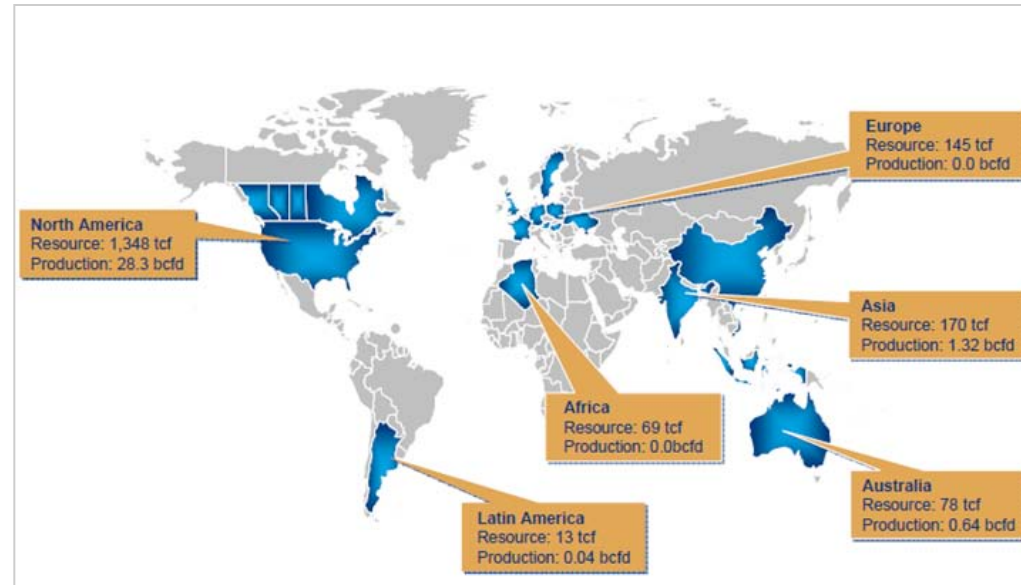
- Fuel switching in power
  - 370 GW of coal fired power at 70% load vs. 450 GW of gas generation at 25%
- Natural gas vehicles
  - Using natural gas instead of gasoline decreases CO<sub>2</sub> emissions by at least 30% and NOX emissions by 90%
- LNG exports?



# Global unconventional gas resources

- Can the unconventional revolution spread globally?
  - As-yet-undeveloped unconventional reserves estimated at 4,000 to 16,000 tcf\*
  - Adds 60% to 240% on top of 2008 world proven gas reserves

Global unconventional gas



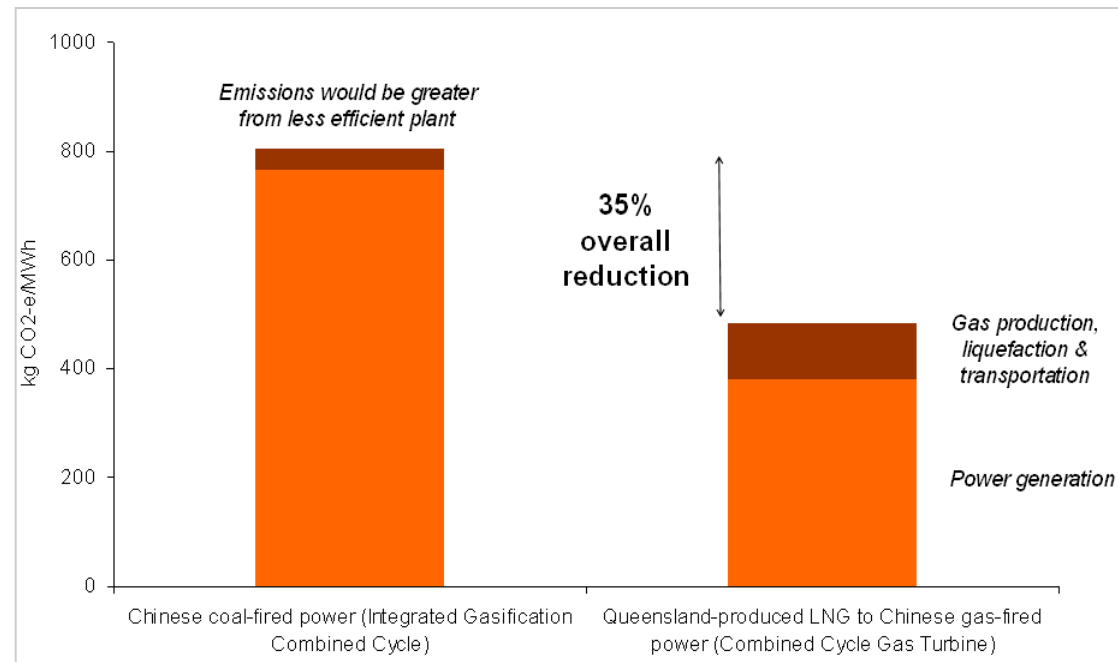
Source: Wood Mackenzie

\* Source: IHS CERA

# CSG to LNG - a new paradigm

- USA and Australia already use CSG in domestic markets
- CSG to LNG is another opportunity to deliver gas to markets where it displaces more carbon intensive fuels
- Australia leading the way

## QCLNG - displacing carbon intensive fuels



Source: BG Group

## Versatile, flexible and plentiful energy choice

- Gas is lower-carbon, plentiful and technologically available today
- Unconventional gas revolution has led to increased abundance and geographical diversity of natural gas
- Gas can respond quickly to back up intermittent renewable energy, making it a long-term energy choice