

GIC Annual Conference, 11 August 2009

NZ GAS SECTOR ANNUAL STOCKTAKE

John Kidd :: Head of Research



Disclosure

McDouall Stuart Disclosure

This report is based on information in the public domain. McDouall Stuart Securities Ltd has acted for a number of oil, gas, coal and minerals companies, from whom it has earned fee revenues. McDouall Stuart Securities Ltd, the presenter and other employees of McDouall Stuart may own shares in these and other companies.

Disclosure Statements under the Securities Markets Act 1988 relating to the analyst associated with this presentation is available on request and free of charge.

McDouall Stuart Disclaimer

Additional information is available upon request. Information has been obtained from sources believed to be reliable, but McDouall Stuart Securities Ltd (including its subsidiaries and affiliates) does not warrant its completeness or accuracy. Opinions and estimates constitute our judgement as of the date of this material and are subject to change without notice.

Past performance is not indicative of future results. This material is not intended as an offer or solicitation for the purchase or sale of any financial instrument. Securities or financial instruments mentioned herein may not be suitable for all investors. Securities of any company involve a degree of risk and may be unsuitable for investors depending on their specific investment objectives and financial position.

The recipient of this presentation must make its own independent decisions regarding any securities or financial instruments mentioned herein. McDouall Stuart Securities Ltd. and/or its subsidiaries and affiliates may act as a principal in the securities discussed herein, or as underwriter, advisor or lender to such issuer.

McDouall Stuart Securities Ltd. and/or its affiliates, subsidiaries or employees may hold a position in any securities or financial instruments mentioned herein. Clients should contact analysts and execute transactions through a McDouall Stuart Securities Ltd advisor.

McDouall Stuart Group

Full service NZX sharebroker and investment banking firm established in 2002.

Offices in Wellington, Hastings and affiliate office in Melbourne.

Securities

- ▶ Foundation Member NZX Firm
- ▶ Retail and institutional sharebroking
- ▶ ECM mandates, IPOs, placements, underwrites
- ▶ In-depth sector and equity research, and the only NZX firm with a specialist in-house oil, gas & minerals equity research analyst

Corporate Finance

- ▶ Corporate and investment advisory
- ▶ Investment banking

McDouall Stuart Group

McDouall Stuart has led every public capital raising in the NZ oil, gas and minerals sectors for the past seven years.



2007: \$85m IPO
2008: \$60m Rights Issue
2009: \$45m 1:5 Rights Issue

2007: \$17.4m 1:10 Rights Issue.
2006: \$17.4m placement

2006: \$20m IPO

2006: \$10m IPO

Outline

- 1 NZ upstream sector review
- 2 NZ downstream sector review
- 3 Gas stocktake
- 4 Next generation gas
- 5 Outlook

ON FIRMER GROUND

IT'S BEEN FIVE YEARS SINCE THE HALFRIDEETERNIZATION
WHAT'S HAPPENED SINCE, WHERE ARE WE HEADING,
AND HOW ARE WE GOING TO GET THERE?



NEW ZEALAND ENERGY SECTOR REPORT 2008



1223

Outline

1 NZ upstream sector review

2 NZ downstream sector review

3 Gas stocktake

4 Next generation gas

5 Outlook

NZ Gas Inc: The Big Picture

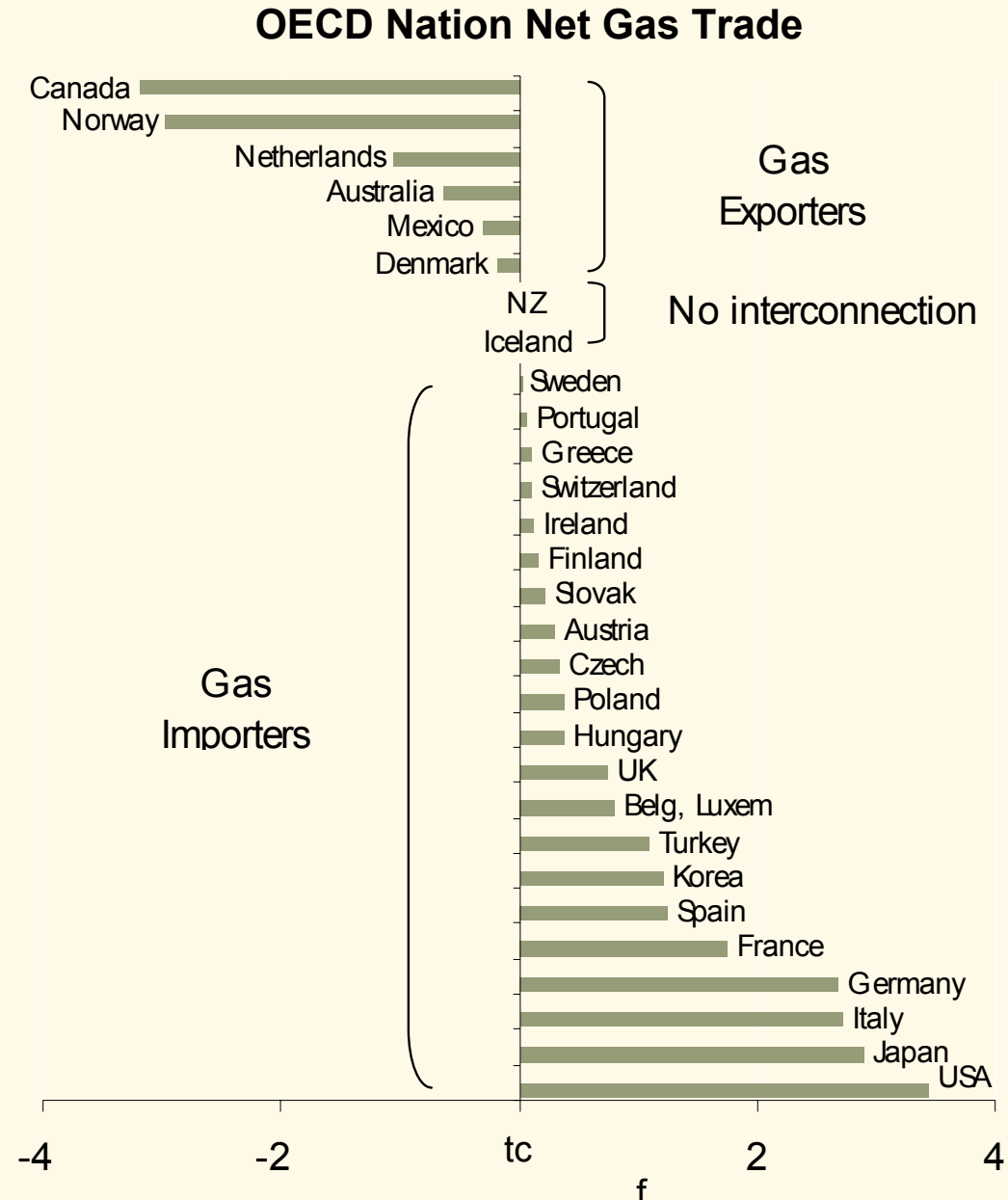
NZ an isolated, captive & shallow gas market.

Proven hydrocarbon province, but with a lumpy supply history.

Substitutes achievable, but expensive.

Regulatory environment has been fluid, but is firming.

Substantial load growth potential, much of which is 'easy', but reliant on gas availability.



Conventional Upstream t+6: “Very Good”

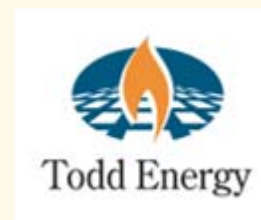
2006	Pohokura, Turangi
2007	Tui
2008	-
2009	Maari, Kupe, ... Mangahewa(?)

NZ E&P sector graduated from having just 1 strongly NPV-positive project in the first 25 years of its life to adding at least 4 more in just the last five years

2007/08 oil price surge = monetisation surge for precisely the right players. NZ E&P market now endowed with multiple high-quality players, most of whom are cashed-up and are actively re-investing.

Motunui train-1 recommissioned, adding important demand-side liquidity to wholesale gas market.

Political E&P landscape an order of magnitude more attractive than even just 12 months ago



Conventional Upstream 2009: “Relatively, Also Very Good”

Encouraging signs that NZ isn't following the global downturn in exploration activity.

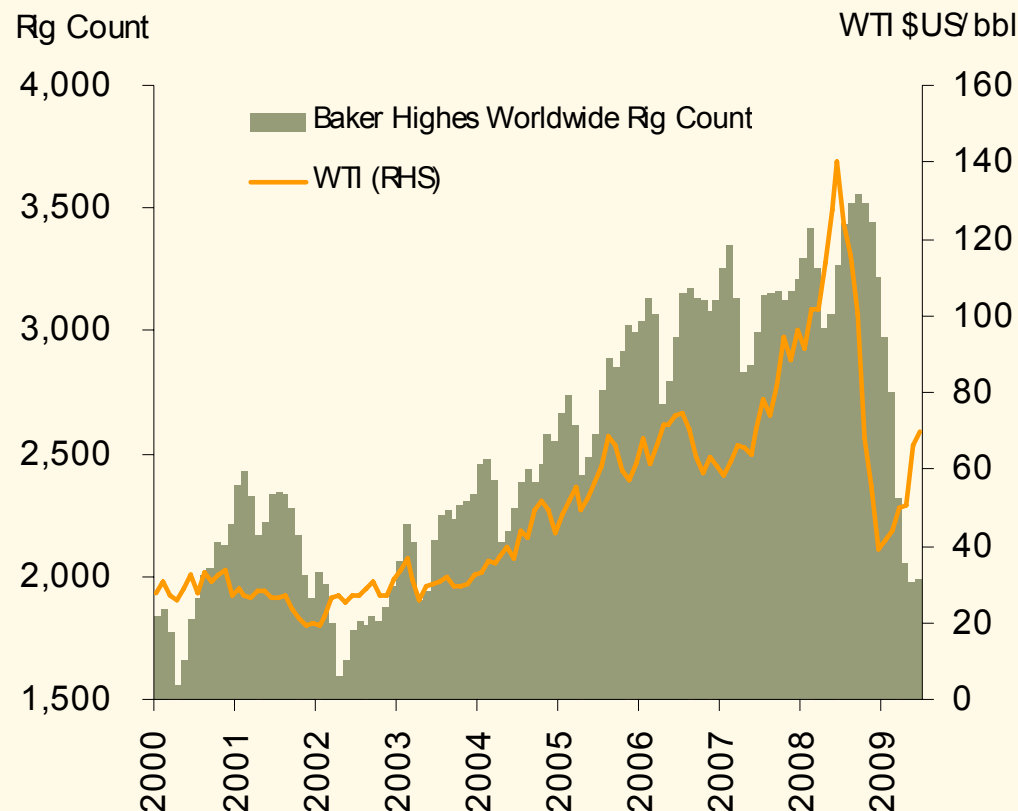
Offshore, 2009/10 shaping as a busy year, Taranaki and elsewhere.

- ▶ 2009: NZ #9 in world for wildcat well-count
 - Kan Tan IV
 - Ensco 107
- ▶ Kupe
- ▶ Maui workover
- ▶ GSB?

Onshore, a cloudier picture, but also reason for optimism.

- ▶ Kapuni
- ▶ Mangaheva
- ▶ onshore Taranaki work programmes
- ▶ CSG...

Worldwide Rig Count



Source: Baker Hughes, McDouall Stuart Research

Outline

1 NZ upstream sector review

2 **NZ downstream sector review**

3 Stocktake

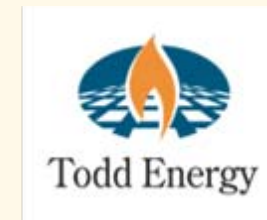
4 Next generation gas

5 Outlook

Downstream 2008/09

Broad themes:

- ▶ legacy gas entitlements lapsing, drawing very close attention by companies to gas book management.
- ▶ acceleration of buyer-led market maturation, not seen until post-2003 Maui redetermination
- ▶ options secured or exercised.
- ▶ ebb in upstream involvement by downstream players.
- ▶ Methanex re-commissioning of 1 x Motunui train. Net effect +15PJ (~10%) demand liquidity to NZ gas market, likely via primary & secondary gas suppliers.



Gas | Electricity

~100PJ pa, largely CCGT

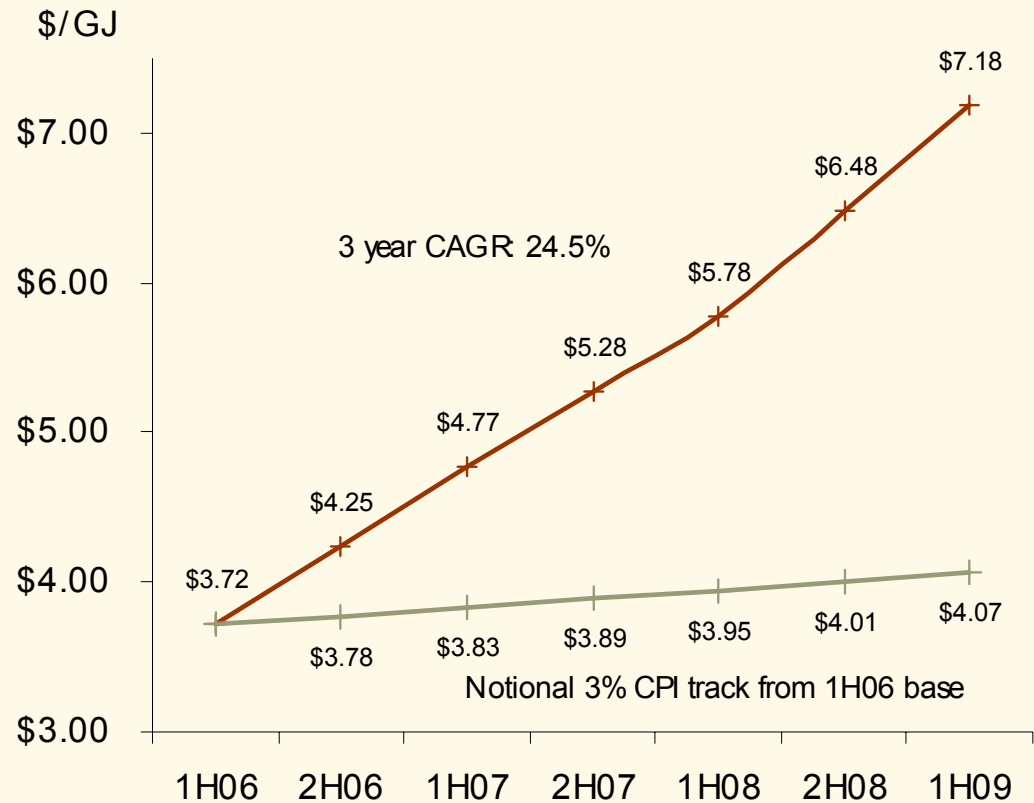
Average CCGT age ~8 yrs

Rapid transitioning away from (cheap) legacy gas entitlements, making generators reassess their gas use and develop strategies for optimising value from energy assets.

Innovation, option-creation:

- ▶ Gasbridge LNG
- ▶ Rodney CCGT
- ▶ Ahuroa gas storage
- ▶ TCC peakers 2x100MW
- ▶ reseller trading.

Contact Energy Average Delivered Gas Price



Source: Contact Energy reports, McDouall Stuart Research

Gas | Petrochemicals

Methanex completed re-commissioning Motunui train I Oct 2008. Net impact + 900ktpa / 34PJ pa.

Waitara Valley (530ktpa/19PJ pa) on standby, currently inactive.

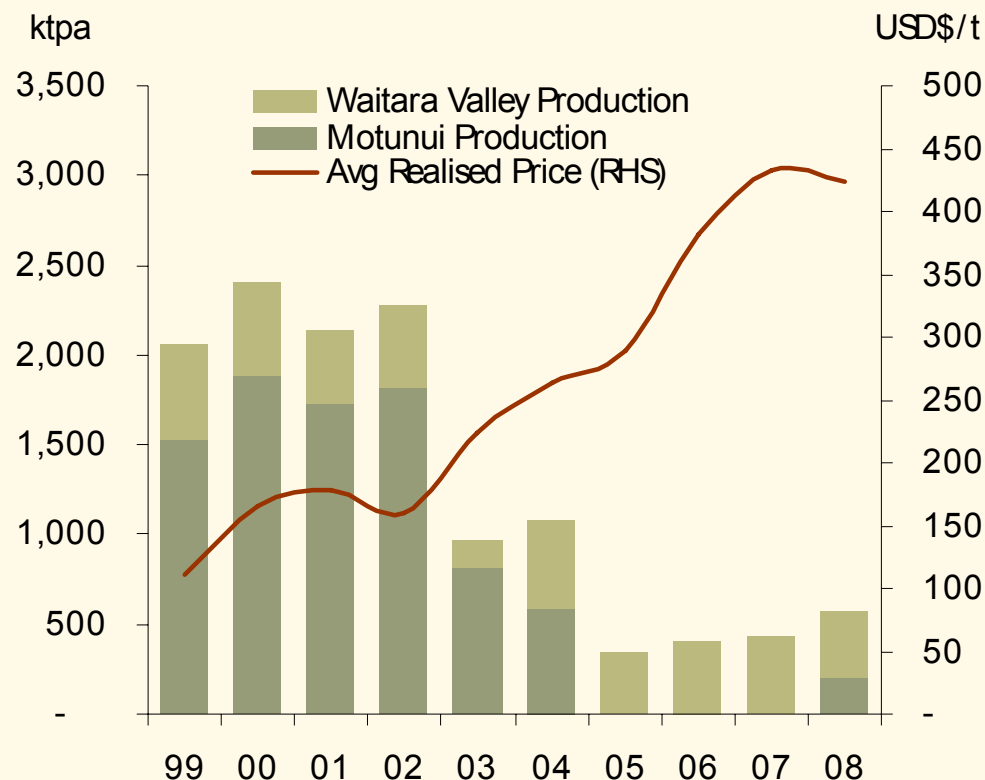
Methanex plays major role in NZ gas market, active buyer of both primary & secondary gas, and a vital liquidity sink.

NZ operations mid-merit, swing operator:

- ▶ Trinidad 1.9mtpa cap
- ▶ Chile 3.8mtpa cap*
- ▶ Egypt 0.8mtpa (2010)

Balance ammonia/urea stable ~7PJ pa

Methanex NZ Production & Pricing



Source: Methanex, McDouall Stuart Research

Outline

NZ upstream sector review

2 NZ downstream sector review

3 Gas stocktake

4 Next generation gas

5 Outlook

Reserves

1 Jan 2009: Conventional Reserves = 1,975PJ

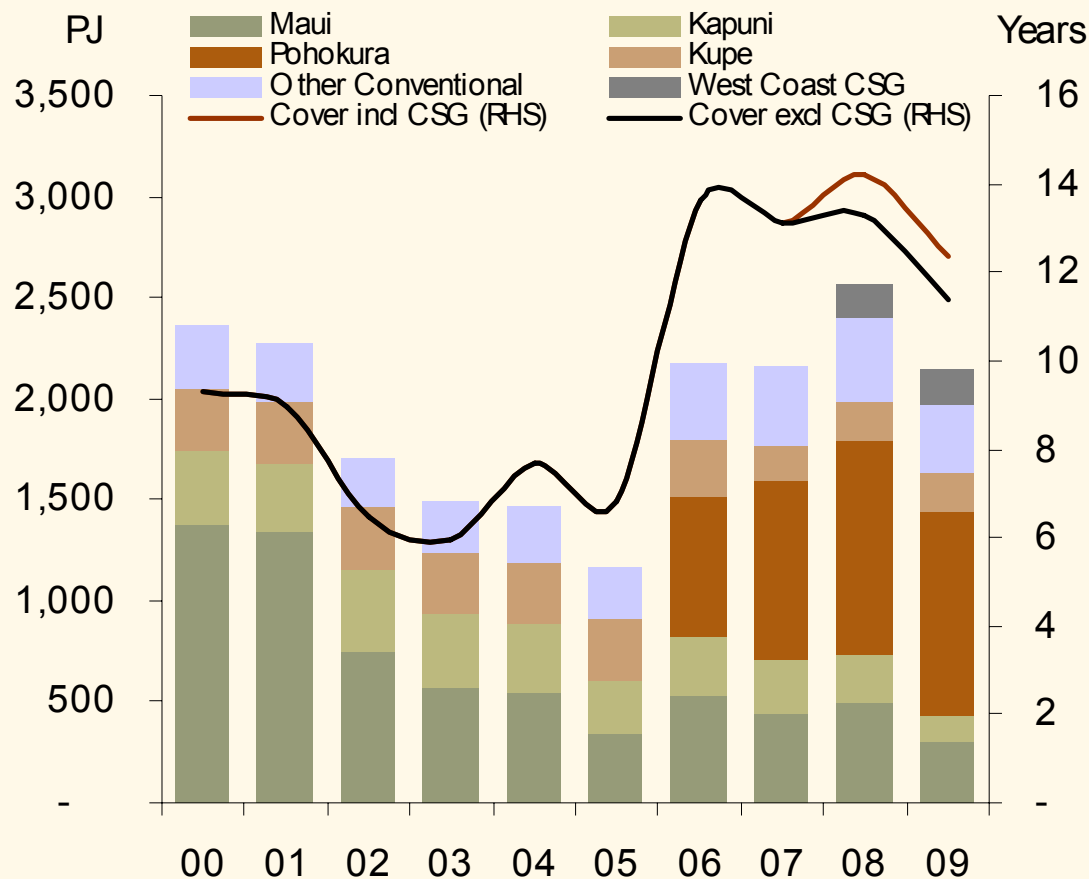
Producing fields	1,771PJ
Non-producing fields	204PJ
Total Conventional	1,975PJ
West Coast CSG	171Bcf

Producing fields

Pohokura	1,012PJ
Maui	307PJ
Kapuni	118PJ
Mangahewa	76PJ
All others	259PJ
Already producing	1,772PJ
Kupe	188PJ
Producing 2009	1,960PJ

NZ 2P Gas Reserves

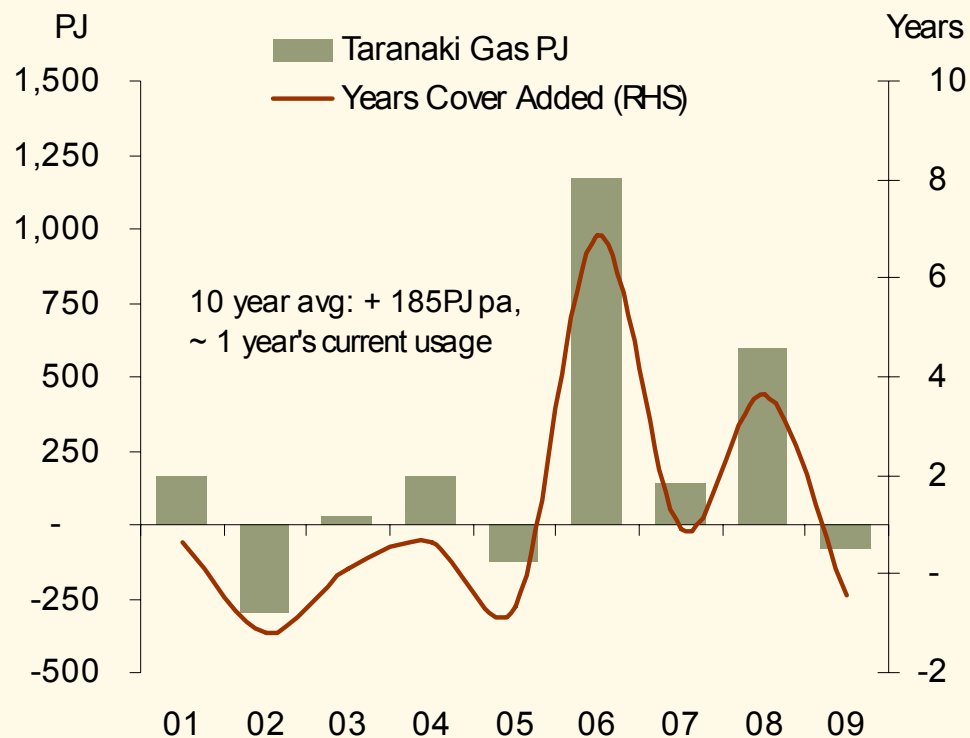
At 1 January



Source: MED Data, McDouall Stuart Research

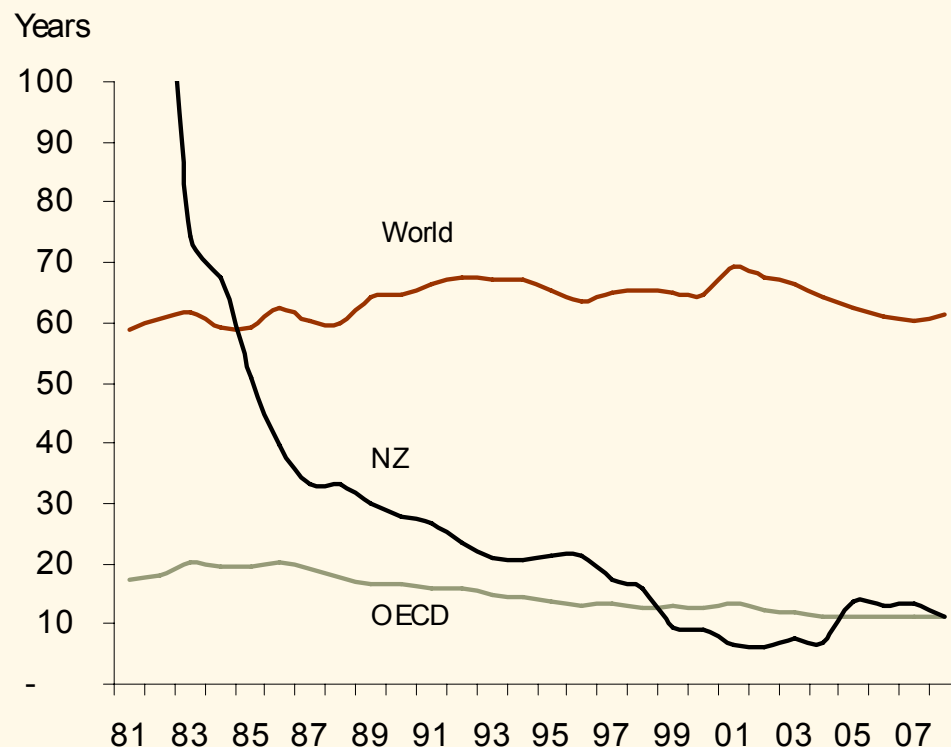
Reserves

Net New Reserve Additions



Source: MED Data, McDouall Stuart Research

Global 2P Gas Reserve Coverage



Source: BP Statistical Review of World Energy, McDouall Stuart Research

Outline

NZ upstream sector review

2 NZ downstream sector review

Stocktake

4 Next generation gas

5 Outlook

Conventional gas: What's next?

Industry appears broadly in agreement that known conventional sources are likely to meet expected demand for at least the next decade.

Kupe the last known but undeveloped NZ field of any significance:

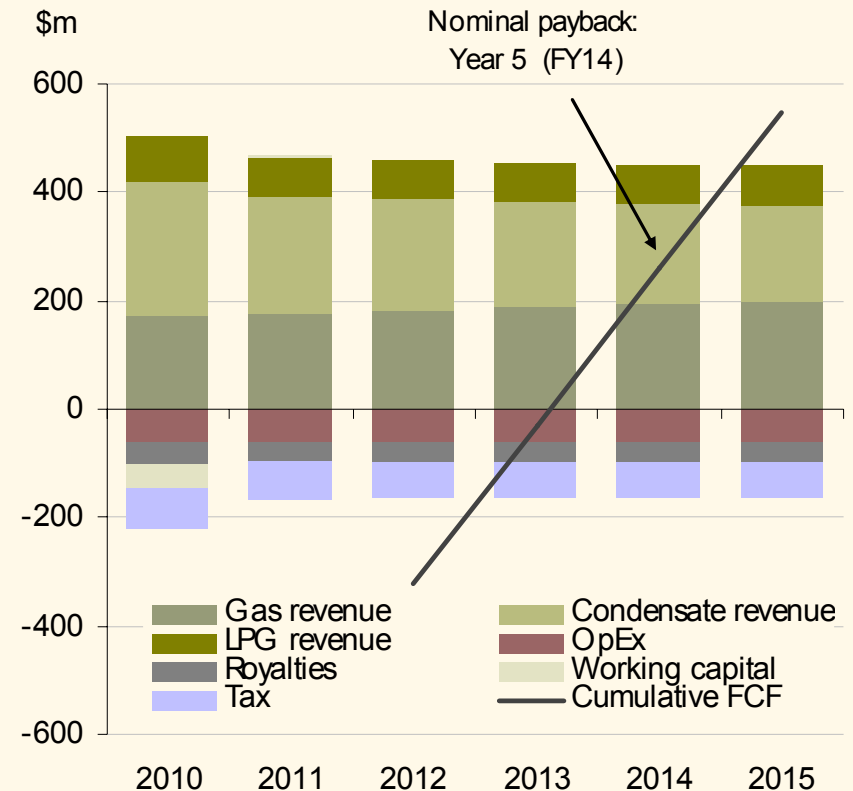
- ▶ 23 years from discovery to delivery
- ▶ \$1.2b hard capital cost
- ▶ at US\$70/bbl oil, standalone economics not enormously compelling.

Short-term reserve gains likely to come from workovers of known reservoirs.

Access to long-term gas on economic terms remains a significant barrier to local energy investment decisions.

Kupe Indicative Cash Flows

100% Field Basis, US\$70/bbl oil



Source: McDouall Stuart Research

Conventional gas: What's next?

Competition for the hydrocarbon investment dollar is both global and intense.

Despite a fiscal regime that is internationally competitive, New Zealand's attractiveness has struggled for traction.

Government has a major role in putting in place investment conditions that are as accommodating as possible to exploration while still ensuring an adequate return on what is an extremely valuable category of national asset.

Global Petroleum Survey 2008 Rankings

CRITERIA	RANK ¹ / 81	COMMENT
Fiscal Terms	1=	With 30 others
Taxation Regime	51=	With Florida & Pakistan
Local Natural Gas Prices	1=	With 29 others
Regulatory Compliance	1=	With 34 others
Regulatory Uncertainty	74=	With Sudan
Environmental Regulations	50=	With Michigan & West Virginia
Local Processing Requirements	1=	With 45 others
Trade Regulations	1=	With 52 others
Labour Regulations	1=	With 34 others
Local Public Infrastructure	1=	With 31 others
Business Infrastructure	1=	With 38 others
Geological Database	1=	With 38 others
Labour Availability	1=	With 37 others
Aboriginal Land Claims	1=	With 43 others
Political Stability	1=	With 31 others
Security	1=	With 31 others
All Inclusive Composite	48	Between Chile & North Dakota
Lowest Investment Barriers Composite	58	Between Libya & Alaska
Commercial Environment Index	14	Between UK North Sea & Libya
Regulatory Climate Index	31=	With Indonesia, Norwegian North & Sudan
Business Environment Index	35	Between Cote D'Ivoire & Michigan
Geopolitical Risk Index	1=	With 26 others

Notes

1. "1= " meaning that multiple countries were rated as "not a deterrent to investment based on this criteria"

Source: Fraser Institute: Global Petroleum Survey 2008, McDouall Stuart Research

Conventional gas: What's next?

Competition for the hydrocarbon investment dollar is both global and intense.

Despite a fiscal regime that is internationally competitive, New Zealand's attractiveness has struggled for traction.

Government has a major role in putting in place investment conditions that are as accommodating as possible to exploration while still ensuring an adequate return on what is an extremely valuable category of national asset.

Global Petroleum Survey 2008 Rankings

CRITERIA	RANK ¹ / 81	COMMENT
Fiscal Terms	1=	With 30 others
Taxation Regime	51=	With Florida & Pakistan
Local Natural Gas Prices	1=	With 29 others
Regulatory Compliance	1=	With 34 others
Regulatory Uncertainty	74=	With Sudan
Environmental Regulations	50=	With Michigan & West Virginia
Local Processing Requirements	1=	With 45 others
Trade Regulations	1=	With 52 others
Labour Regulations	1=	With 34 others
Local Public Infrastructure	1=	With 31 others
Business Infrastructure	1=	With 38 others
Geological Database	1=	With 38 others
Labour Availability	1=	With 37 others
Aboriginal Land Claims	1=	With 43 others
Political Stability	1=	With 31 others
Security	1=	With 31 others
All Inclusive Composite	48	Between Chile & North Dakota
Lowest Investment Barriers Composite	58	Between Libya & Alaska
Commercial Environment Index	14	Between UK North Sea & Libya
Regulatory Climate Index	31=	With Indonesia, Norwegian North & Sudan
Business Environment Index	35	Between Cote D'Ivoire & Michigan
Geopolitical Risk Index	1=	With 26 others

Notes

1. "1= " meaning that multiple countries were rated as "not a deterrent to investment based on this criteria"

Source: Fraser Institute: Global Petroleum Survey 2008, McDouall Stuart Research

The slightly unconventional : “Helpful”

Coal Seam Gas emerging, rather than exploding onto the national scene.

- ▶ Macdonald Chartwell
- ▶ Comet Ridge
- ▶ L&M Group
- ▶ Solid Energy
- ▶ L&M Petroleum
- ▶ Pike River Coal

Misperception that South Island CSG represents stranded, unmonetisable hydrocarbons.

- ▶ **Direct Use:**
 - reticulation
 - CNG
 - LNG
- ▶ **Conversion**
 - petrochemicals
 - gas-to-liquids
 - electricity

UCG also under investigation

Sharpridge-1 CSG Flare



Source: L&M Petroleum

The very unconventional : “Promising”

Gas Hydrates: crystalline water-based solids physically resembling ice in which gases are trapped inside “cages” of water molecules.

Found on or near seafloor, in ocean sediments, in deep lake sediments, and in permafrost.

NZ significant deposits: seabed off the East Coast, between Marlborough and Gisborne estimated to hold ~800TCFe, 21TCFe considered “particularly rich”.

Not yet any dedicated hydrate conversion projects operating, but major research projects underway in Japan, India, Korea, China, Canada, Norway and USA.

Japan targeting 2015 commercialisation.

Technology unlikely to be either easy or cheap, but its potential to meet NZ’s long-term energy needs is very encouraging.

Parallels with Athabasca oil sands?

Gas Hydrate Crystalline



Source: IFM-GEOMAR Kiel, Germany

Outline

NZ upstream sector review

NZ downstream sector review

Gas stocktake

4 Next generation gas

5 **Outlook**

Outlook | Likely Energy Sector Themes

- ▶ energy policy emphasis shift towards economic development, with greater upstream/downstream integration
- ▶ electricity industry appears increasingly likely to face change, more a question of extent
- ▶ infrastructure investment phase
- ▶ streamlining of resource consent process
- ▶ SOEs to come under increasing performance scrutiny
- ▶ harmonisation over global leadership with carbon
- ▶ reason for significant optimism for operators in NZ oil, gas & minerals space.

Huntly: still the elephant in the room

Wolak: just 57MW of net new thermal generation added in 23 year period 1985-2008. Demand growth over that same period exceeded 650GWh pa, 75MW pa!

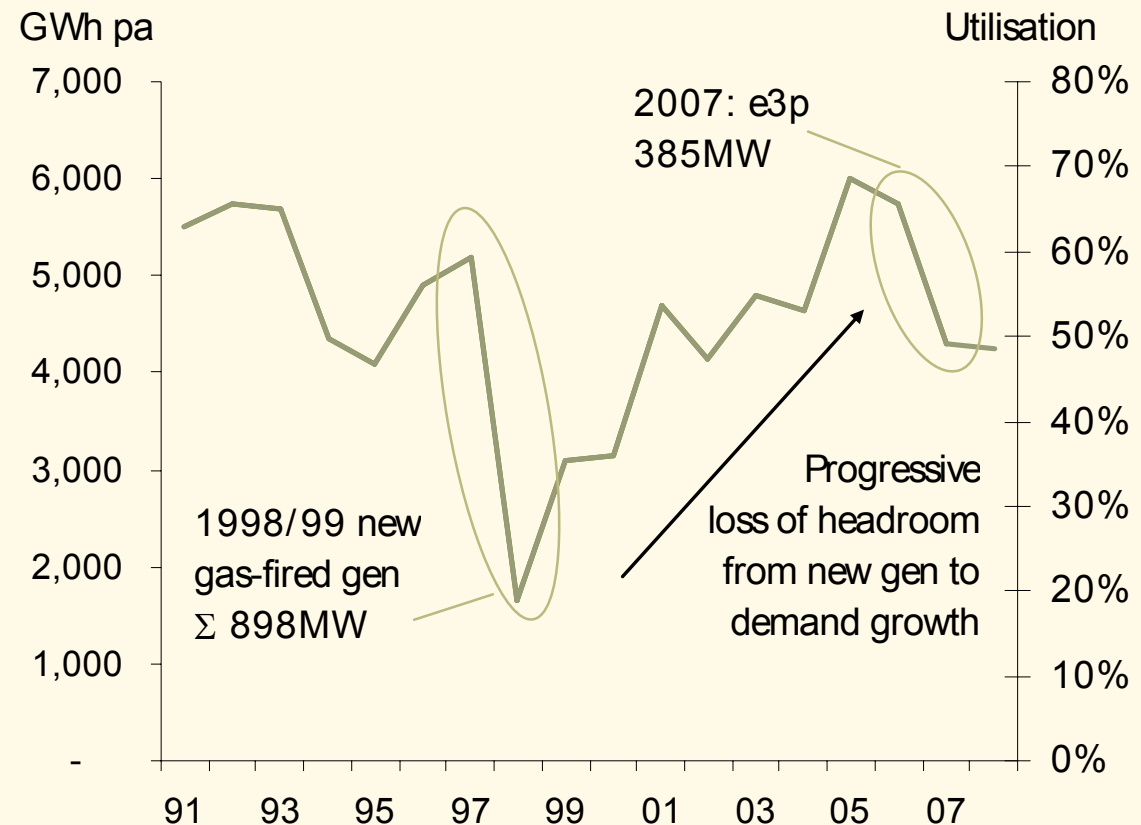
The clock is ticking ... in 2012/13:

- Huntly site consents expire
- coal supply contracts lapse
- ETS or proxy likely in place

Very difficult to imagine a t+4 supply mix without Huntly in it

Location, infrastructure, economics & politics make for huge gas opportunity

Huntly Units 1-4 Output & Utilisation



Source: Genesis Energy, McDouall Stuart Research

Outlook | Likely Gas Sector Themes

- ▶ increasing political leadership in oil, gas & minerals space?
- ▶ buyer/seller tension towards availability of long-term gas to continue
- ▶ options to remain parked, pending forward clarity
- ▶ increasing risk of litigation, particularly around carbon and unitisation
- ▶ hydrocarbons: is it the South Island's turn?
- ▶ no easing of any substance on delivered gas prices
- ▶ bringing to market of further conventional hydrocarbons critical to meeting short- to medium-term energy demand, but look for hydrates longer-term.

john.kidd@mcdouallstuart.co.nz