Z Energy talks biofuels

BusinessNZ Energy Council

Lunchtime Seminar

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Key Messages

Presentation on Z's new biodiesel plant to be built at Wiri

- The global crude oil market has fundamentally changed making biofuels more challenging
- There are plenty of different support mechanisms globally
- We have assessed all forms of alternate energy for transport and are focussing on two near-term opportunities
- Our Wiri biodiesel project will be NZ's first scaled domestic biodiesel production - without subsidy or mandate
- Biodiesel investment establishes a commercially viable point of difference for Z

Existing market context

The long-term supply / demand profile for crude oil has changed substantially

Insights

- Improved drilling and extraction technology has led to emergence of tight oil and shale gas reserves
- US a net exporter in next five years
- GFC reduced demand
- ‘Green’ prioritisation has stalled but economic recovery should reignite it
- OECD oil demand/GDP has peaked, non OECD continues to grow
- Large distortions created by government incentives may continue
- Improvements in vehicle efficiency will continue
- Transition of NZ’s vehicle fleet will continue albeit slowly

Global impact

- Mineral-based fuels will dominate transport for decades to come
- Vehicle efficiency and demand for transport trends will reduce demand over time
- Green considerations now driven by consumers not oil supply constraints
- Climate change considerations will gain personal and political momentum as economy improves

Catalyst for market change

Changes in global supply / demand for fossil fuels will create a challenging environment for the emergence of alternatives, however customer demand exists

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Impact on alternative energy

- The present environment supports the status quo and any substantive growth in alternative energy will only come from either:
  - A dramatic improvement in alternative energy technologies / economics
  - A sustained increase in oil prices, or
  - Government intervention

Impact on Z

- Mineral-based fuels will remain essential to transport for decades to come, extending Z's core business model
- Volatility will remain driven by offshore events
- Potential resurgence of green consumerism driving gradual increase in demand for alternative energy
- Meaningful penetration by electric vehicles is still 10-20 years away

Biofuels support mechanisms

Production of biofuels exist due to various forms of Government support

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Support mechanisms globally

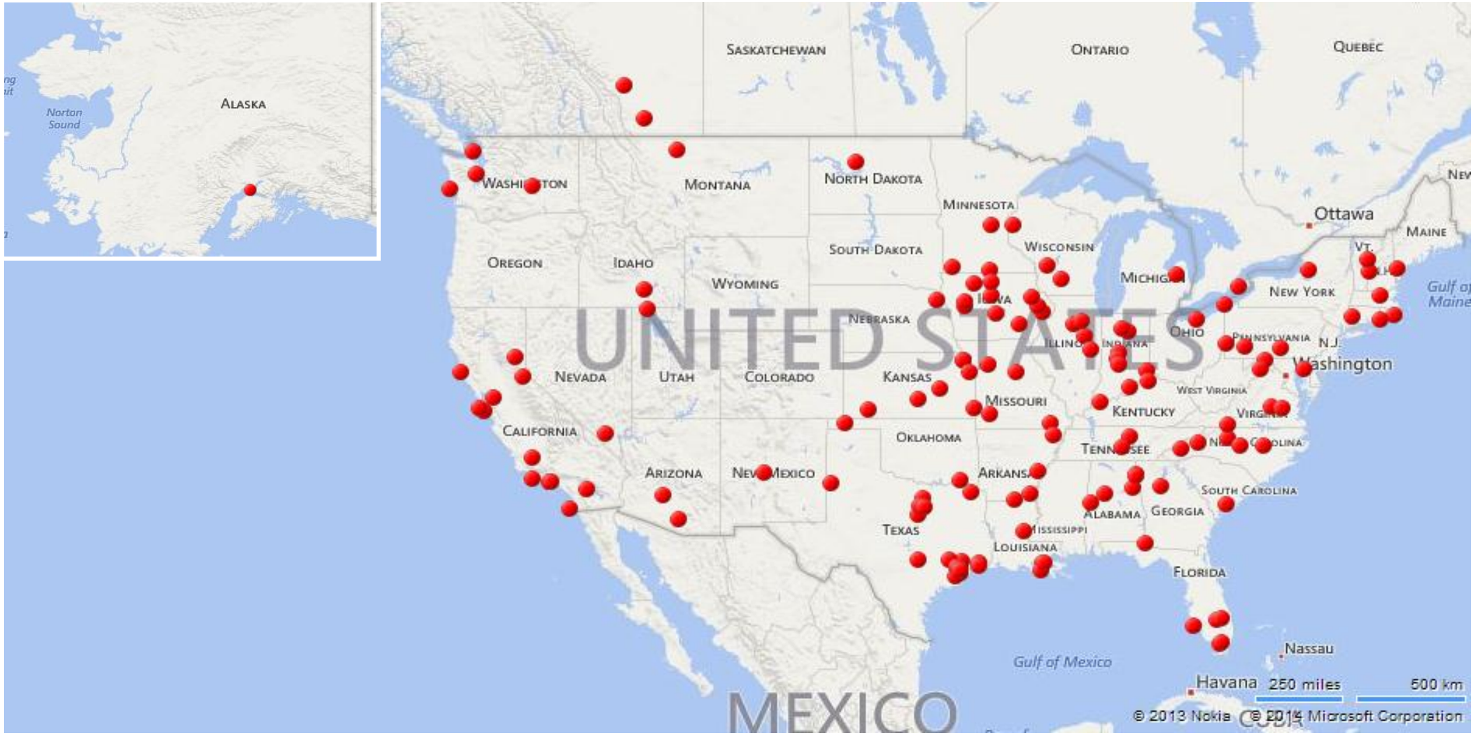
- Ensuring a correct price on carbon
  - C-Tax or ETS
- Tax Rebates and Other Subsidies
  - Excise tax credits (e.g. US, Canada)
  - Excise tax exemptions (eg EU)
- Blending Mandates and Renewable Fuel Standards
  - Increasingly revenue neutral to governments
  - Introduced in ~ 60 countries
  - Mandated volumes increasingly linked to GHG reduction levels / fuel standards based on feedstock source

US and Europe

- The US have a Renewable Fuel Standard:
  - Renewable fuel to be blended climbing to 36 billion gallons by 2022.
  - Increased focus on 2nd generation biofuels
- The EU Fuel Quality Directive
  - Oil Co's must meet a 6% reduction in GHG emissions across all fuels by 2020
  - Limits on palm oil and soy oil content in biodiesel
  - EU wide biofuels subsidies estimated at €8.4 billion in 2011 with the bulk of these going to biodiesel

US legislation supports growth

137 plants produced 1.8 billion US gallons ~4.6% of total diesel consumed (2013)



Biodiesel mandates globally

Production of biodiesel is supported by mandates in many nations

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Americas

- Argentina 10%
- Brazil 5%
- Canada 2%
- Colombia (5%)
- Costa Rica (20%)
- Ecuador (5%)
- Paraguay 1%
- Peru 2%
- Uruguay (2%)

[Figures in (Orange) are targets only and not mandated]

Asia-Pacific

- Australia NSW 2%
- Fiji (5%)
- Indonesia (2% in mining operations)
- Malaysia 5%
- The Philippines 2%
- South Korea 2%
- Taiwan 1%
- Thailand 5%

There is no mandate or target in NZ

Domestic biofuel policies

Government support has changed over the years

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Historical

- Labour 2008
  - Biofuel Bill
    - 2.5% mandate over 5 years
    - Repealed by National Dec 2008
- Greens 2009
  - Sustainable Biofuels Bill
    - Passed 1st reading only
- National 2009-12
  - Grant of $36m over 3 years for local biodiesel production
- National 2013
  - Primary Growth Partnership "stump to pump" funding

Current

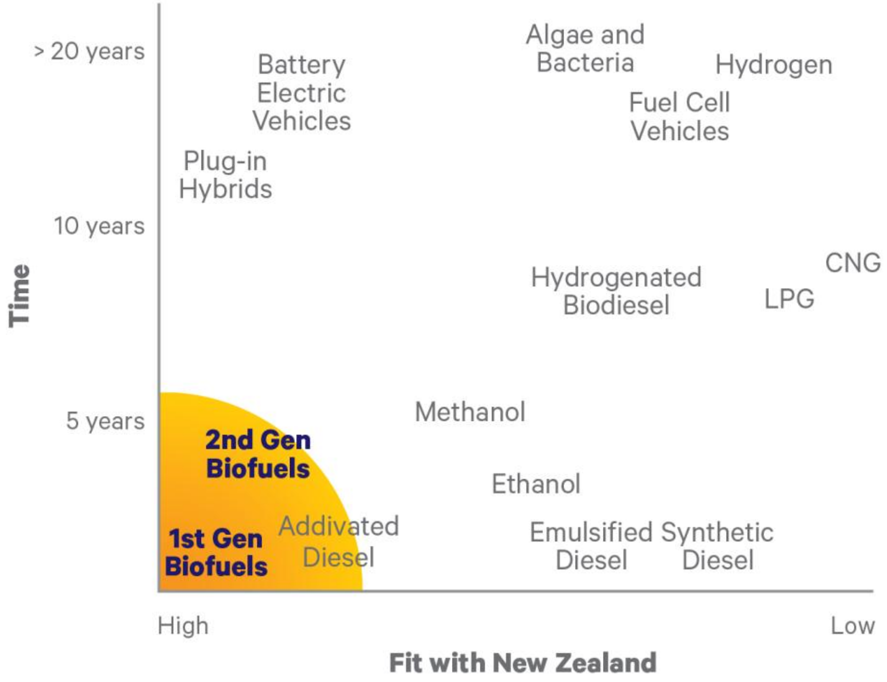
- NZ ETS
  - Biofuel component is zero rated for ETS obligations
- Excise duty exemption on Ethanol in petrol
- EECA educational materials

Future?

- Labour / Greens…
  - Reintroduce mandate?
  - Labour: strengthen ETS?
  - Introduce sustainability measures?
  - Greens: increase carbon tax to $25?
  - Create incentives to help biofuels industry?

Alternative energy – options

We have assessed alternate transport energy sources for NZ and all commercially viable alternatives within the next 10 years are liquid fuel technologies



Wiri biodiesel project

NZ’s first scaled domestic biodiesel production - without subsidy or mandate

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Key features

- Total capital costs of $21m. Majority of project costs are under fixed price contracts
- Production of 20mlpa of B100 biodiesel starts early 2015 potentially doubling in two years to 40mlpa
- Chemical process using tallow and used cooking oil feedstocks is well known and safe and our distillation process assures product quality
- Product will meet NZ and EU Fuel Specifications
- We have secured a suitable site near our storage facilities at Wiri
- Opportunity has been under development over the past four years
- Biodiesel reduces greenhouse gas emissions by up to 86% (ECCA) and eliminates P5 and P10 Particulate Matter

Artist impression of site in Wiri

Remaining conditions precedent

- Secure few remaining consents
- Complete a long-term supply agreement

Wiri biodiesel project

Investment establishes a commercially viable point of difference, delivering a competitive advantage for Z

Production economics are attractive

- Inedible tallow is a relatively plentiful by-product with stable supply volumes
- Historically attractive price spreads between tallow and diesel
- Confirmed demand from Commercial customers at premium price point

Supports our brand position

- Establishing a market-leading position in biofuels meets the changing demands of our customers
- We will have a differentiated offer for Commercial customers and potential to offer it to retail customers
- Unlike some other biofuel feedstocks, inedible tallow has very high sustainability credentials

A competitively advantaged source of biofuels

- Capital input to biofuel production output ratio is world class at less than NZ$1 per litre of annual production
- Forecast production costs materially lower than imported biodiesel alternatives
- First mover advantage will secure a leadership position that will be difficult for competitors to match

Investment rationale

- Our target case meets our internal hurdles delivering a positive NPV
- Future subsidies, grants or mandate provides potential upside
- Provides a bridge to advanced biofuels and creates optionality

References

Slide 4

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