



**Contact Submission
on the National Policy Statement for Renewable Electricity Generation**

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Regulatory Affairs Manager

Based at Wellington's Head Office

Holds qualifications in economics

Current job involves interaction with Government and Government agencies on climate change and regulation of electricity and gas

Previously worked in strategy roles in Telecom, asset and liability management and asset sales at the NZ Treasury and Ministry of Foreign Affairs and Trade where I worked on disarmament and arms control and was posted to Chile.



About Contact Energy Limited



Largest private sector generator/retailer

2,000 MW of existing generation capacity and 1,400 MW under development

\$600 million of new investment under construction (geothermal, gas-fired peaking plant, underground gas storage)

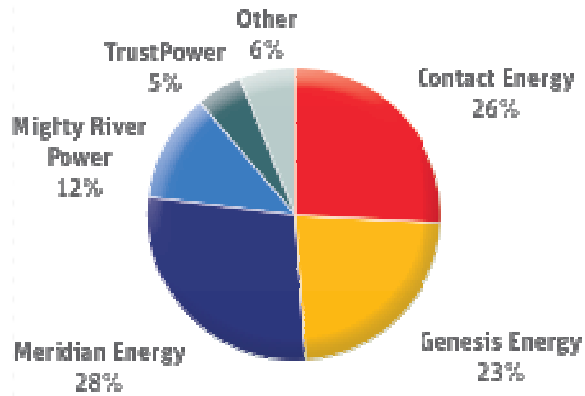
\$1.5 billion of new investment in various stages of development (geothermal)



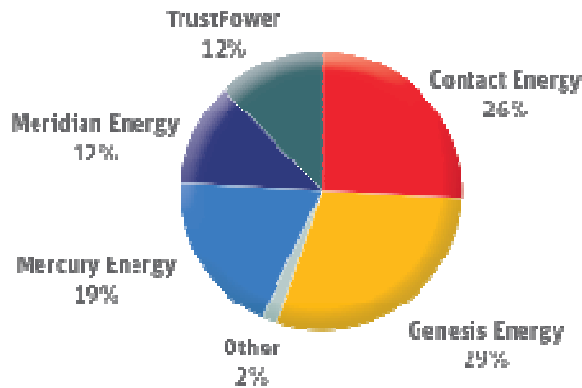
Diversified (fuels, products, geography), integrated (generation/retail)



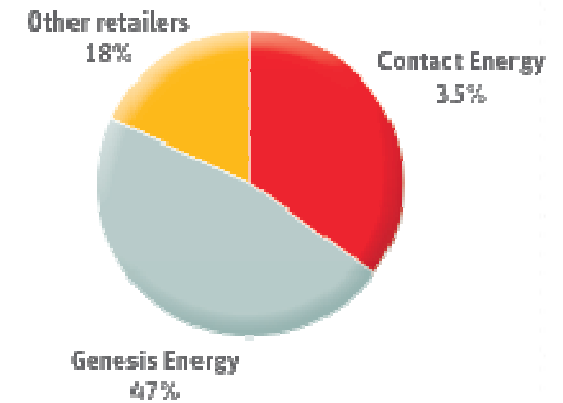
Electricity generation market share by volume



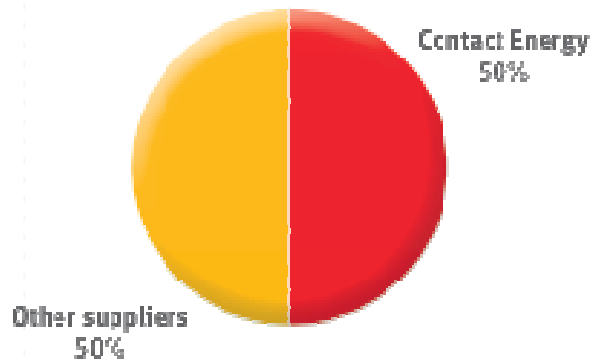
Electricity retail market share by customer number



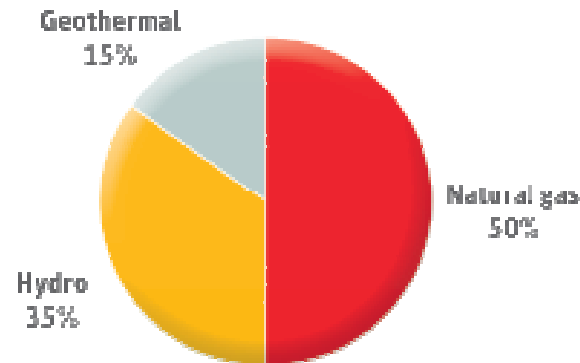
Gas retail market share by volume



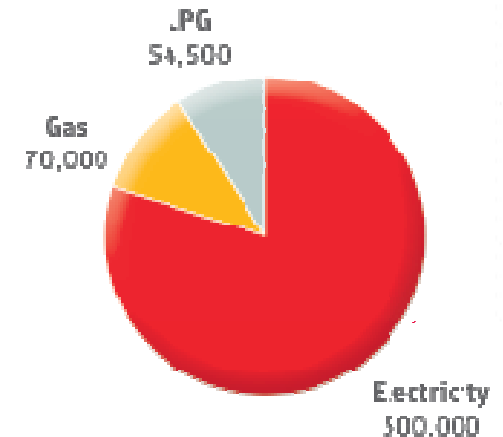
LPG market share by volume



Contact's average generation by type



Contact's customers

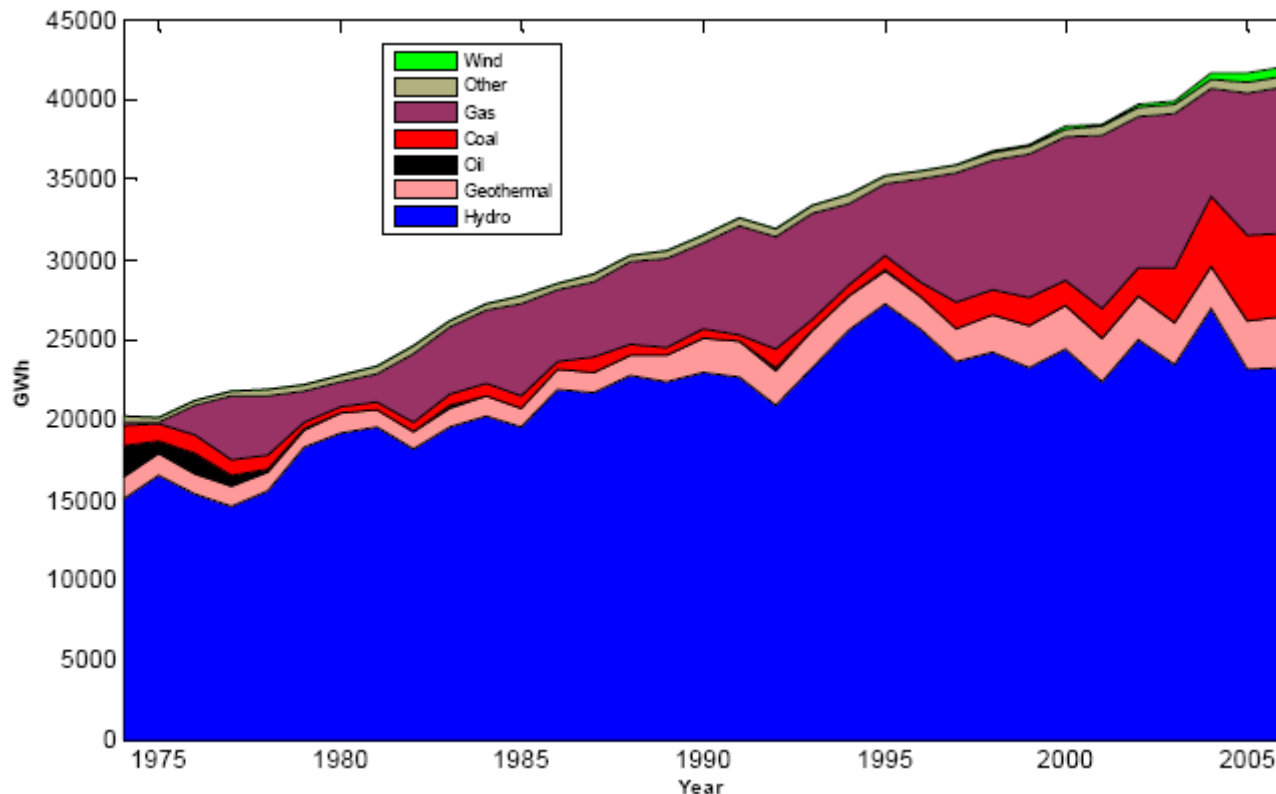


History of New Zealand generation



New Zealand has a strong historic reliance on hydro generation which brings with it significant fluctuations in hydro energy depending on rainfall for example 2003 vs 2004.

However, gas and coal fired generation has played an important role over recent decades. Wind and geothermal have grown quickly in the last few years.



Generation investment key factors



Each generator maintains a portfolio of investment options.

They weigh up these investments based on factors such as:

- Forecast wholesale prices (depends on investments of other generators and demand growth)
- Capital cost required (higher for hydro) relative to fuel costs required (higher for gas and coal)
- Cost of capital (borrowing or equity)
- Project life (Hydro approximately 80 years vs gas fired around 25 years).
- Difficulty and cost of consenting (reconsenting Clutha took over 6 years from application and 8 to 9 years from commencement of assessment studies to feed into the applications)
- Exchange rates (affect imported capital components, e.g. turbines)
- Forecast gas or coal cost (e.g. Will NZ run out of locally supplied gas and when?)
- Forecast CO₂ price (what will Government policy be and what will the price of emissions be)
- Transmission costs (how expensive is it to connect a project to the national grid)

Generation investment economics



This diagram illustrates Contact's view of the economics of the various generation technologies available now.

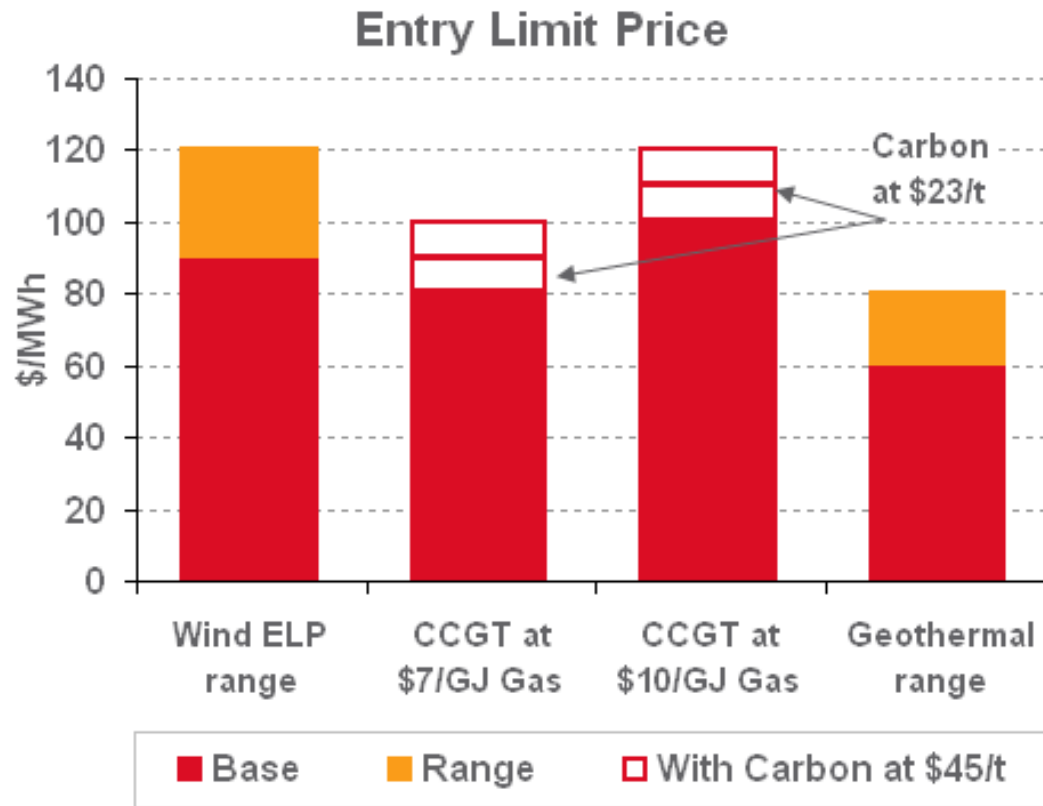
If the average wholesale price reaches the levels shown, it is economic to build new plant.

Geothermal is the most cost effective.

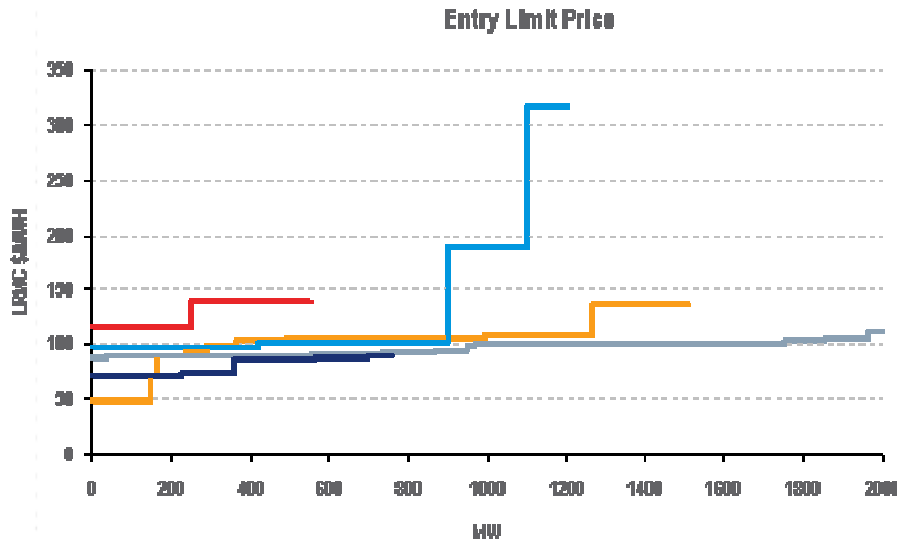
Gas and wind are more finely balanced.

If gas has no CO₂ price and is plentiful (\$7/GJ), it can compete with wind.

If there is a price on CO₂ and/or gas scarcity (\$10/GJ) wind is more economic.



Contact view of New Zealand's investment options

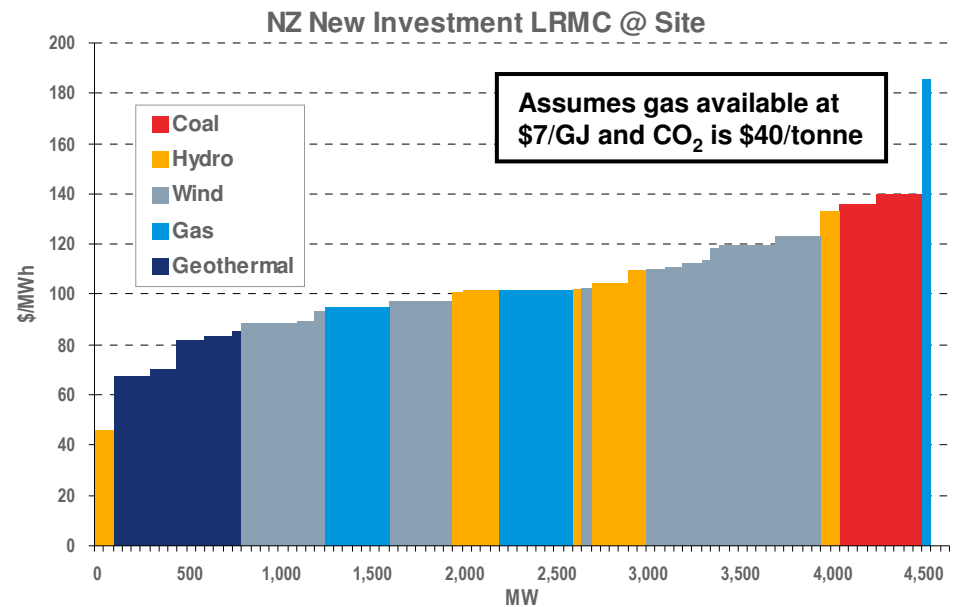
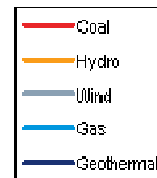


Another way to view the economics is to look at all the technologies together.

Given the quantities of generation available, it is possible that by 2025, up to 25% of generation will be from wind – which is inherently volatile and unpredictable.

To keep a secure and stable electricity system this level of wind generation needs to be backed up by:

- hydro; or
- fast starting gas plant.



Contact's approach



In the last two years Contact has shifted its generation investment focus away from baseload gas towards geothermal, wind and gas fired peaking plant to support wind.

The supply and market price of gas and emissions price risks inherent in more baseload thermal generation are too high in our view. So we have put our plans for a consented baseload gas fired plant at Otahuhu on hold.

We believe geothermal is the most cost effective new generation available and that hydro and wind will be competitive over time.

Contact is also building its generation options and is looking at wind farm options near Dannevirke and coastal Waikato and has started discussions about new hydro dam options on the Clutha River in Otago.

However, the risk with renewables is that they may not be consented or consented in a timely way.

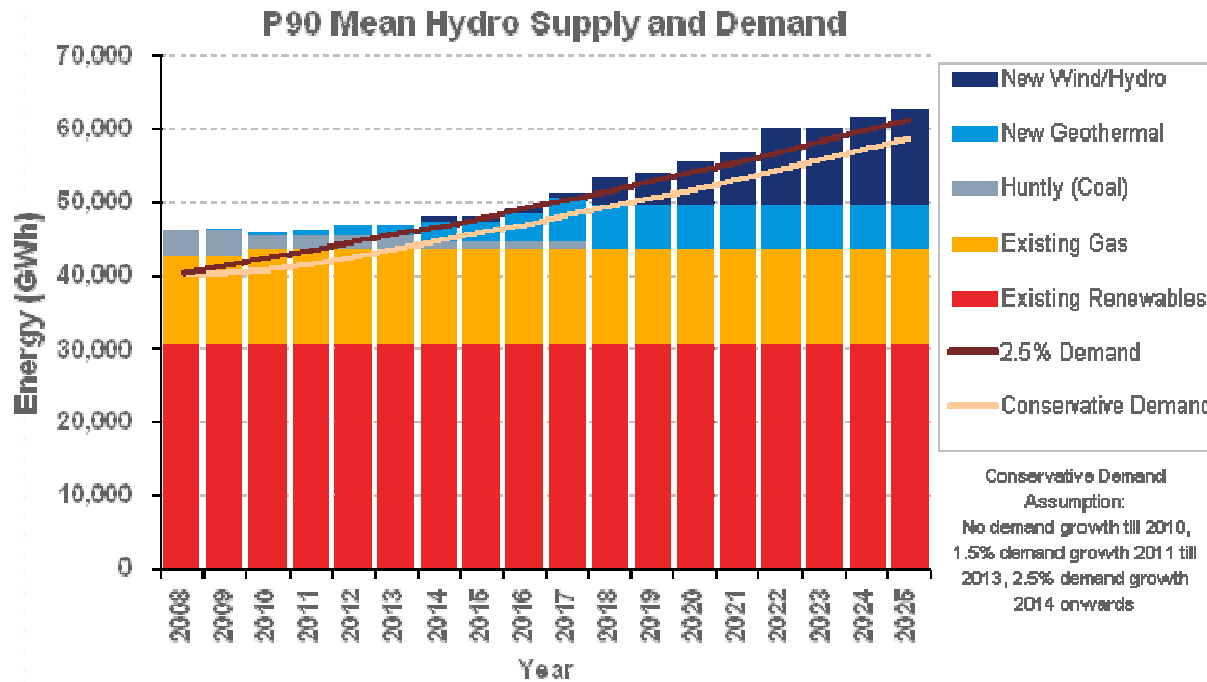


RMA has major strategic significance



This chart shows how growing electricity demand could be met by new geothermal, wind and hydro projects.

If renewable projects are blocked by RMA processes and costs, it will put pressure on security of supply if thermal options cannot be taken up quickly enough.



In addition, more thermal generation is likely to tie the cost of NZ's electricity to the vagaries of international energy markets because NZ would need to import gas sooner. This would flow through into electricity prices.

Therefore the RMA, and Policy Statements made under it, are critical in enabling renewable generation to help maintain NZ's economic advantage from cost effective energy .

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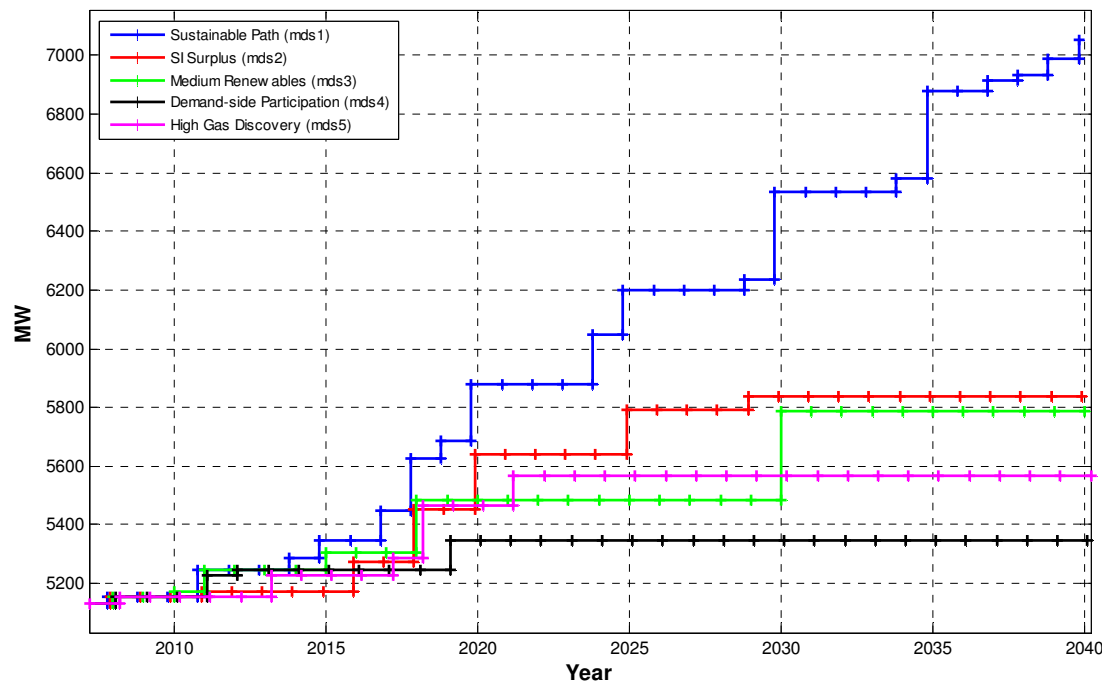
Renewable options for New Zealand



The importance of having a portfolio of options is clear from Electricity Commission forecasts of possible hydro capacity in NZ up to 2040. (The EC has similar option charts for wind, geothermal gas etc).

The blue line represents a sustainable scenario in which NZ achieves 90% renewable generation by 2030, resulting in CO2 emissions from the sector falling by around 60%.

However, it requires an additional 1000 MW of hydro capacity. Even under the other options, 1 or 2 large dams are forecast on the Clutha before 2020.



The draft NPS in Policy 3 could effectively block hydro projects.

NZ therefore faces some tough choices - more renewable electricity and lower emissions or less renewable electricity and more thermal generation and higher emissions.



Contact's current projects

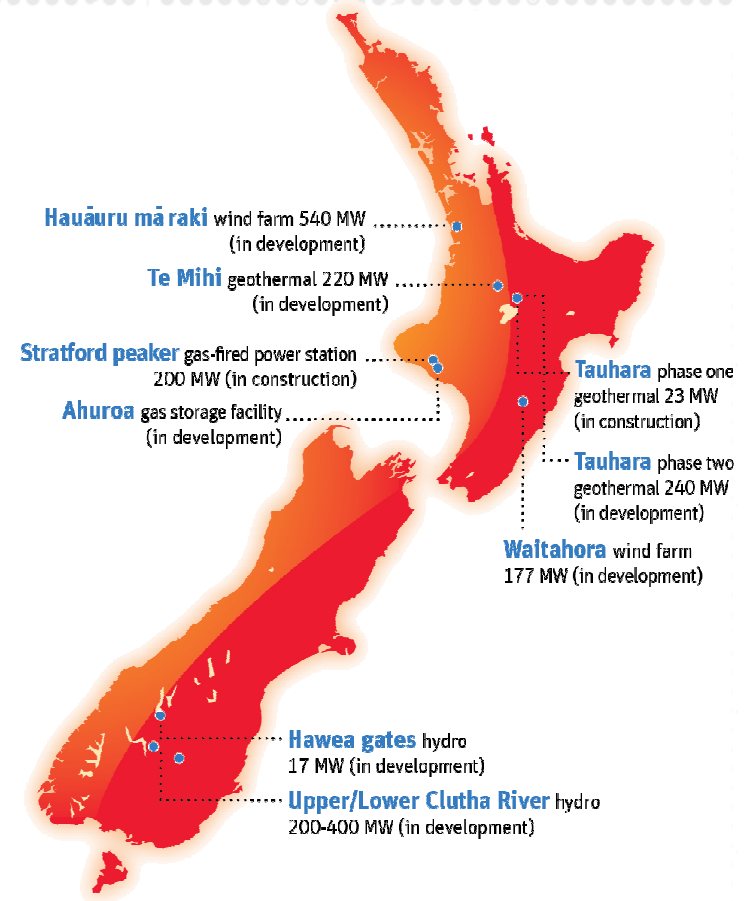


Under construction

- Tauhara geothermal (phase 1, 23 MW): \$100m
- Stratford gas-fired fast-start peakers (2x100 MW): \$250m
- Ahuroa gas storage: Gas injection underway: \$250m
- All three projects expected to be operational in 2010

In development

- Te Mihi geothermal (220 MW), will replace Wairakei: consented
- Tauhara geothermal (phase 2, 240 MW): applications to be lodged later this year
- HMR / Waikato wind (540 MW): consent applications called-in; part heard; adjourned until May 2010
- Waitahora wind (177 MW): declined at first instance; on appeal
- Hawea Gates hydro (17 MW): consented: Tenders under consideration
- Upper/Lower Clutha hydro: Conceptual design and community engagement underway



NPS Renewable
Electricity Generation