The Electricity Supply Situation

Power Price Rises

There's been a lot of scaremongering from interest groups that a ban on gas-fired baseload plants will "put prices up 50 per cent". We're paying more for our power now because the **gas** being used to generate electricity has tripled in cost.

"The steep rise in electricity prices that consumers have faced in the last decade has been caused mainly by the rise in gas and coal prices that have forced up the cost of fossil fuelled electricity… To suggest that New Zealand gas prices will buck that recent history, and the overseas trend of increasing oil and gas prices, is optimistic and wishful thinking from a lobby group whose interest lies in selling more gas… With renewable, once built, their fuel is free. Wind and geothermal steam don't go up in price. The same can't be said of gas."
Hon. David Parker, Minister of Energy, NZ Herald, 28 March 2008

"In the last five years we've had very large increases in the cost of gas. Early 2000 gas was somewhere around $2.50 to $3 a GJ. Wholesale gas is probably now in the order of $8 to $9 a GJ. That's a very rapid increase in the cost of gas but what it has done is that it's mobilised an enormous amount of effort in renewable projects that are cheaper. And those cheaper renewable projects will bring power into the market without big cost increases. And so the renewables strategy is not only good for avoiding the cost of carbon but it is sort of a flatlining of future costs."
Dr Keith Turner, departing CEO of Meridian Energy, 4 April 2008

"Before proceeding with their last gas-fired project, e3p, Genesis Energy entered into a risk-sharing agreement with the Government. The e3p project was only commercially viable because the Government was prepared to underwrite the fuel supply risk.
The giant Maui field is now in its declining years and the new fields replacing it are much smaller. Gas supplies are looking tight by the middle of next decade and the crunch would come sooner if Contact were to build another gas fired plant at Otahuhu and/or Genesis were to build one at Rodney… More gas may be found, of course, but there is probably only a five-year window of opportunity for doing so, because of the lead-times involved in the alternative, importing liquefied natural gas (LNG). LNG might make sense for a power company with a lot of capital sunk into gas-fired generation capacity. But it would be a fateful decision for the economy as a whole."
Brian Fallow, Business Columnist NZ Herald, 6 September 2007

Things to Consider in your Submission on the Plan Change

1. Can Genesis Energy justify building a gas-fired plant in Rodney, given the increasing price of gas, no guarantee that there'll be enough gas reserves in NZ to run it, and with their fallback plan being the importation of even more expensive LNG?

2. Should the Government underwrite the fuel supply risk for the Rodney proposal, as they did for Genesis Energy's e3p project?

3. Remember that while renewable generation may be more expensive to build, the fuel to run it (wind, steam and water) is free. Thermal plants are relatively quick and cheap to build but the price of gas means their operating costs are high. Thermal generators will incur extra costs under the emissions trading scheme – will this be passed on to the consumer also?

4. Has Genesis Energy accurately described all the opportunities for renewable generation in the Rodney district? Have they taken into account progress on renewable projects over the last year? For example, the Crest Energy proposal is set down for resource consent hearings in the coming weeks.

Other Thermal Projects

"There are currently consents held for over 1,000MW of potential thermal generation"
Advice to Cabinet from Hon. David Parker, Minister of Energy
Cabinet Paper CAB (07) 479, 14 September 2007

On 15 April 2008 Contact Energy announced they'd bought two 100MW gas turbines which are to be installed in their disused Stratford power station. These will be fired up during periods of peak electricity demand and are expected to be in service before winter 2010.

Contact Energy has already been granted resource consents for a 400MW gas-fired power station on their existing Otahuhu power station site.

The 155MW diesel-fired Whirinaki power plant was built so that it could be fired up in emergencies.

"Faster reductions in emissions may occur if the Genesis-owned Huntly plant can be economically retired into a drought year reserve role, or ***switched to gas****."*

"Our view is that all new generation should be renewable, except to the extent needed to ensure security of supply."

Excerpts from Minister of Energy's Speech to NZWEA Conference, 8 April 2008

Things to Consider in your Submission on the Plan Change

1. Are Contact Energy's plans for thermal projects at Stratford and Otahuhu, totalling 600MW, sufficient to ensure there is security of supply? Having existing consents means these plants can be built quickly and be operating much sooner than Genesis Energy's Rodney proposal, which is only just starting the resource consent process.

2. Should Genesis instead switch their Huntly coal plant to gas, as suggested in the Minister's speech? That would cut CO2 emissions by an estimated 1 million tonnes.

3. The Whirinaki plant was specifically built so that it could be used if there was a risk to security of supply. Is this sufficient backup?

4. If the Government says that thermal peaking plants are necessary to ensure security of supply, are the four options mentioned above 'enough' (Stratford, Otahuhu, Whirinaki, Huntly conversion to gas)? Do we also need to build a gas-fired plant in Rodney?

Renewable Projects Underway

"Approval has been given for a marine energy trial in Cook Strait, which the project's backers believe has the potential to provide more than the country's current generation capacity. Neptune Power has been granted resource consent for an experimental turbine capable of producing 1MW of power in 80m of water 4.5km off the south coast of Wellington. Chris Bathurst, a director of the two-year-old Christchurch company, said installation of the tidal stream turbine could begin next summer…Bathurst's calculations suggest there is enough tidal movement in Cook Strait to generate 12GW of power, more than one-and-a-half times New Zealand's present generation capacity."
New Zealand Herald, 14 April 2008

Crest Energy has proposed a 200MW tidal generation project (incrementally developed) for the entrance to the Kaipara Harbour. Resource consent hearings are expected to take place in coming weeks.

"To achieve the proposed renewable electricity target, the majority of new generation investment would need to be renewable.This implies that we need around 175 megawatts of new renewable generation capacity every year. Already this year we're building 300 MW."
"…two more wind projects, in Manawatu and Wellington, are now under construction and are expected to deliver 188 megawatts. A further five wind farms, collectively totalling 312 megawatts, have been consented, and applications for resource consent are being processed for nine more projects totalling almost 1700 megawatts – with more on the way."
"Three more geothermal plants are being constructed now by Contact Energy, Mighty River Power and Top Energy, and these are expected to add 125 megawatts of capacity in the next two years. Another 130 megawatt plant has been consented in the central North Island, and another project, Te Mihi, is currently seeking consent. Yet more proposals are being prepared."
"With respect to hydro, resource consents have been lodged for five South Island hydro projects that would deliver collectively up to 415 megawatts of capacity."
Excerpts from Speech by Minister of Energy to NZWEA Conference, 8 April 2008

EECA commissioned Sinclair Knight Mertz to identify and assess the **renewable energy potential in Northland and Auckland**.

"If carefully planned, approximately 500 MW of wind capacity could be installed over a number of years with environmental impacts that were broadly acceptable to local communities." (SKM Renewable Energy Assessment Auckland Region 16 March 2007)

"For the Northland Region, this renewable potential comprises: Approximately 1,000 MW of wind capacity… Wave energy in the thousand MW range… Remaining hydro potential of about 30 MW" (SKM Renewable Energy Assessment Northland Region 16 July 2006)

Things to Consider in your Submission on the Plan Change

1. Do you agree that sufficient wind, hydro and geothermal projects are already underway to ensure security of supply?
2. Given the rapid progress being made in the area of wave and tidal generation, do you think we should delay building new thermal projects?
3. Will the planned wind and tidal projects for Rodney, and wind projects for Northland address any supply crisis for areas north of Auckland?

Where do I Find the Information?

Genesis Energy's Assessment of Environmental Effects March 2008
(available on CD, at RDC service centres, and downloadable from council websites)

Pages 4-17	Section 2 Project Background & Rationale
Pages 261-261	Section 7.3 Results of Consultation
Pages 324-325	Section 9.3.4 ARPS Chapter 5 - Energy
Page 354	Section 10.3 New Zealand Energy Strategy
Page 355	Section 10.4 Climate Change (Emissions Trading and Renewable Preference) Bill
Page 356	Section 11 Conclusion

Section 32 Report Proposed Rodney District Plan Variation and Rodney District Plan Proposed Plan Change
(available on CD, at RDC service centres, and downloadable from council websites)

Pages 1-13	
Pages 26-33	Auckland Regional Policy Statement
Pages 34-38	Auckland Regional Growth Strategy, Concept & Summary
Pages 49-52	Section 4.2 Climate Change & Energy Policy
Page 57	Site Selection Options for Proposed Power Station Development
Page 62-63	Section 7.2 Appropriateness of Objective in Achieving the Purpose of the RMA
Page 63-64	Section 7.3 Benefits, Costs & Appropriateness of Policies, Rules and Other Methods

Section 92 and Clause 23 Requests for Further Information
(available on CD, at RDC service centres, and downloadable from council websites)

Technical Report supporting Genesis Energy's Applications
(available on CD, at RDC service centres, and downloadable from council websites)
Assessment of Electricity Related Issues, Concept Consulting

Auckland Regional Policy Statement (ARC website)
The Auckland Regional Policy Statement (ARPS) is a statement about managing the use, development and protection of the natural and physical resources of the region.

Auckland Regional Growth Strategy (ARC website)
Adopted by all the region's councils in 1999, the Regional Growth Strategy (RGS) sets a vision for how the region can manage growth sustainably for the next 50 years. It aims to improve livability, protect the environment and get the right infrastructure in place. It was developed by the Regional Growth Forum.

Planned Generation Projects in NZ

The following table shows the status of larger electricity generation projects planned for New Zealand. Updated on 14 April 2008 by the Ministry of Economic Development.

Company	***Plant Name***	***Fuel Type***	***Probable Commissioning Year***	***Capacity (MW)***	***Project Status***	***Island***	***Notes***
Allco Wind Energy	Motorimu	Wind		110	Under Appeal	North	A
Allco Wind Energy	Waverly	Wind		135	Planning	North	
Contact Energy	Otahuhu C	Gas		400	Consented	North	
Contact Energy	Poihipi Road	Geothermal	2009	25	Awaiting Consent	North	
Contact Energy	Te Mihi	Geothermal	2011	220	Notified	North	
Contact Energy	Tauhara	Geothermal	2011	200	Planning	North	
Contact Energy	Centennial Drive (Taupo)	Geothermal		20	Consented	North	
Contact Energy	Hawea Gates Hydro	Hydro		17	Consented	South	
Crest Energy	Kaipara Harbour	Tidal		200	Awaiting Consent	North	

Genesis Energy	Rodney (Stage 1)	Gas		240	Applied	North	
Genesis Energy	Rodney (Stage 2)	Gas		240	Applied	North	
Genesis Energy	Awhitu	Wind		18	Consented, On Hold	North	
Hawkes Bay Wind Farm	Te Pohue Wind Farm	Wind	2008	225	Consented	North	
Mainpower	Mt Cass	Wind		35–63	Planning	South	
Meridian Energy	West Wind	Wind	2009	142.6	Consented	North	
Meridian Energy	Manapouri Efficiency	Hydro	2008	16	Efficiency Gain	South	
Meridian Energy	Waitaki, North Bank Hydro	Hydro		230-260	Partially Applied	South	
Meridian Energy	Mokihinui	Hydro		85	Applied	South	
Meridian Energy	Project Hayes	Wind		630	Under Appeal	South	
Mighty River power	Kawerau	Geothermal	2008	90	Consented	South	
New Zealand Windfarms	Te Rere Hau Wind Farm (Stage 1)	Wind	2008-2009	22	Consented	North	
New Zealand Windfarms	Te Rere Hau Wind Farm (Stage 2)	Wind		26.5	Consented	North	B
Pioneer Generation	Horseshoe Bend	Wind		1.8	In Process	South	
Taharoa C	Taharoa Wind Farm	Wind		100	Consented	North	
Top Energy	Ngawha 2	Geothermal	2008	15	Consented	North	
Trustpower	Wairau River	Hydro		70	Under Appeal	South	
Trustpower	Arnold River/Dobson	Hydro		46	Awaiting Consent	South	
Trustpower	Mahinerangi	Wind		200	Awaiting Consent	South	
Trustpower	Kaiwera Downs	Wind		240	In Process	South	
Unison	Te Waka	Wind		102	Notified	North	
Unison/Hydro Tasmania	Titiokura Wind Farm	Wind	2009	48	Consented	North	C
Ventus Energy (NZ)	Taumatatotara West Road	Wind	2008	20	Consented	North	
WEL Energy	Te Uku	Wind		84	In Process	North	

Notes

A Original consent application was for 108 MW with 127 turbines. However, resource consent reduced the number of turbines to 75 with a total capacity of 64 MW. Allco Wind Energy has appealed the decision.

B Te Rere Hau Wind Farm is being commissioned in stages. The first five turbines (2.5 MW) were installed and operational from 2006, with a further 14 turbines (7 MW) due to be commissioned in late 2007

C New application. Original application was declined by the Environment Court.

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