

**Seminar on Carbon Neutrality and the Voluntary Carbon
Market in New Zealand**

Wednesday 31 October 2007

**An Overview of
Contact Energy's Carbon Reduction
Programmes**



Snapshot of Generation Portfolio and Carbon Dioxide Emissions

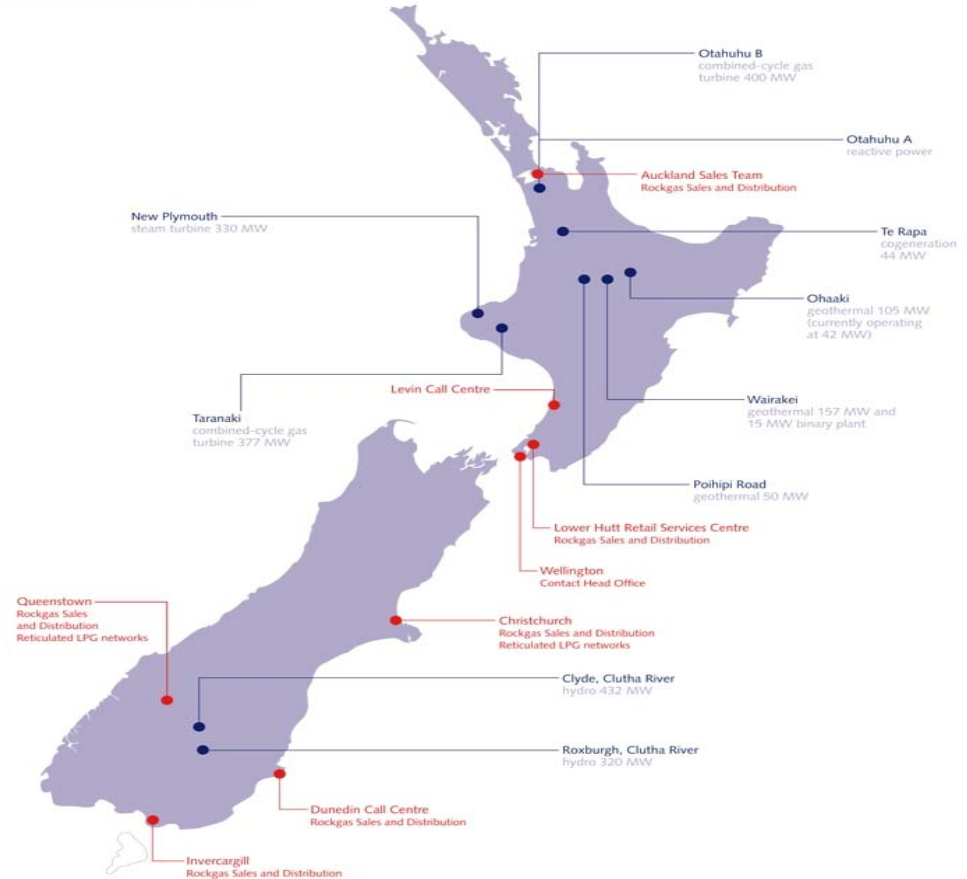
Contact generates about 27% of NZ's electricity demand from 10 power stations:

- 51% natural gas
- 34% hydro
- 15% geothermal

Plant CO ₂ emissions and plant efficiency					
Units	2003	2004	2005	2006	2007
CO₂					
kilotonnes	1,638	2,058	2,056	2,854	2,299
CO₂ intensity					
tonnes/GWh	466	432	456	429	425
Overall heat rate					
kJ/kWh	8,822	8,164	8,628	8,130	8,042

Contact Energy national overview

Contact can supply electricity and gas products across the country. Contact has reticulated natural gas customers across much of the North Island, reticulated LPG customers in Christchurch, Queenstown and Wanaka and can supply bottled LPG to customers nationwide.



Thermal Plant Improvements

Te Rapa gas cogeneration plant (44 MW)



Upgrade of gas turbine components saving about 16,000 tonnes of CO₂ emissions per year

Taranaki combined cycle plant (354 MW)



Upgrade planned for early 2008 saving about 24,500 tonnes CO₂ emissions per year

New Renewable Generation



Hauāuru mā raki - Waikato wind farm

The proposal is for up to 218 wind turbines with total installed capacity of up to 650 MW – enough to power up to 250,000 homes per annum. The proposed site extends for around 40km south of Port Waikato.

Te Mihi Geothermal Power Station

The new Te Mihi power station will produce up to 220 megawatts of electricity, and will gradually replace the Wairakei Power Station which will be phased out of production.



Contact's Green Office Programme

- ✓ Culture change, nationwide involvement
- ✓ Focus is on office emissions, not generation
- ✓ Offices accredited carbonZero Cert™
- ✓ Focus areas:
 - ✓ Waste – most visible to all staff
 - Everyone is involved and affected
 - 58% reduction in waste Jan – June
 - 25 tonnes removed from landfill
 - ✓ Prius change – 89% of drivers from the trial agreed that Contact should change its cars
 - ✓ Energy efficiency initiatives
 - ✓ Paper volume reduction and type changes
 - ✓ Ongoing 'personal' offers to staff e.g. carbon offset offer



Helping Our Customers Cut Emissions

We've set a target of helping our customers to reduce their own greenhouse gas emissions by a total of one million tonnes by 2014.



Energy Savings In A Box

One of the ways Contact is helping customers cut energy use and emissions of greenhouse gases is through the Energy Savings in a Box offer.

Under this offer, Contact customers can receive:

- a voucher for a professionally conducted energy efficiency check-up of the customer's home
- three energy efficient light bulbs
- a discount of up to 20 per cent on a range of energy efficient products purchased through Mitre 10, including fitted insulation, draught stopping equipment and hot water cylinder wraps.

This is a unique and comprehensive integrated energy efficiency offer that can help customers understand the energy efficiency performance of their homes, and make improving energy efficiency more affordable.

The Energy Savings in a Box offer was piloted in the Hutt Valley and Hawke's Bay in June and July and is being rolled out to the country over the coming months.

Reducing Emissions With Low Flow Shower Heads

SHOWER HEAD MODEL

SELECT VARIABLES:

ZONE	4	
BASELINE FLOW RATE	15	l/minute
PROJECT FLOW RATE	8	l/minute
WATER HEATER TYPE	A	
INSTALLATION FACTOR	1	

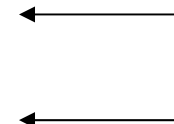
KEY ASSUMPTIONS

Shower temperature	40	°C
Shower time	7.5	minutes
Showers per person	1	per day
Household occupancy	2.7	people
Activity duration:	10	years

RESULT:

Energy used per annum kWh	
Baseline	Project
5,084	2,711
kg CO ₂ e annually	
3,177	1,695

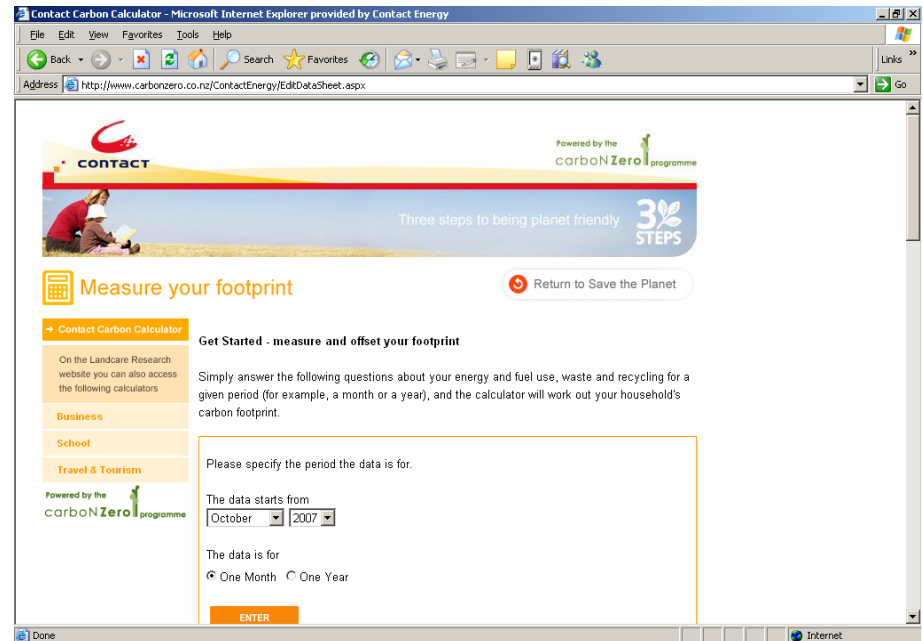
Annual Reduction	
Energy kWh	kg CO ₂ e
2,373	1,483
Lifetime Reduction	
Energy kWh	kg CO ₂ e
23,725	14,828



Using an emissions factor of 625 tonnes/GWh

Carbon Calculator

- The calculator, on Contact's website, was launched in March 2007 and then expanded in August 2007 to include an offset provision
- Developed by Landcare Research and tailored for Contact
- Users answer a few simple questions to calculate their household's carbon footprint, such as:
 - household energy use
 - fuel use
 - waste volumes
 - Recycling habits
- Users are directed to the numerous tips to reduce their carbon dioxide emissions
- And they can offset the remainder of their footprint by buying credits supplied by Landcare Research



Contact As A Seller and Buyer of Voluntary Credits

Seller of credits created by:

- Thermal plant improvements
- New renewable generation
- Energy efficiency projects (Energy Savings in a Box, HERS, commercial and industrial)

Buyer of credits for a range of offset products to offer to our customers, e.g.:

- Households (Carbon calculator)
- Businesses
- Food products
- Corporates
- Travel activities
- Events
- Public service

Key issue – We require accepted methodologies, standards and processes for how these credits can be created, issued and traded in a credible fashion and what kinds of parties can credibly purchase them.