
Upflow
PARTNERING FOR GROWTH AND SUCCESS
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Engagement

- Consideration
- Consultation
- Passive Participation - Beneficiary
- Active Participation – Partner or sole developer

www.canterbury.ac.nz/science/schools-and-departments/geological-sciences/research/geothermal-resource/

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Kaitiakitanga

‘Māori are tangata whenua. Not people in the land or over the land, but people of it.’

(Jackson, 1993:71)

Ngātoroirangi Rock Carving, Mine Bay, Lake Taupo. Credit: Flickr by Abaconda Management Group/ CC BY-SA 2.0

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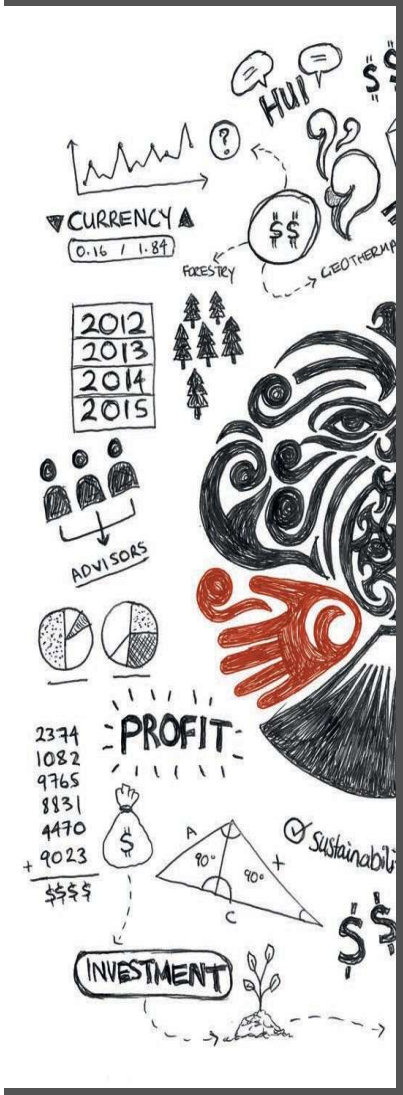
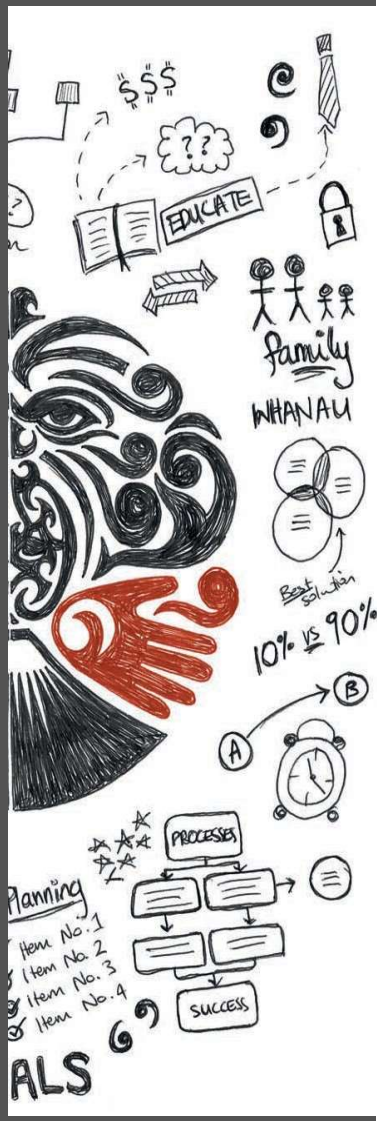


Kia mau ki te whenua
Hold fast to the land
Whakamahia ki te whenua
Make use of the land
Hei pai mo nga uri whakatipuranga
For the future generations



Tauhara North Number Two Trust (TN2T)

Investment in geothermal electricity generation

- 35% equity in Nga Awa Purua power station (140 Mw)
- 50% stake in Ngatamariki (84 MWe), and Rotokawa (34.5 Mw) steam supply

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Nga Awa Purua

- 140 MW
- Commissioned 2010 for NZ$430M
- Largest single shaft , triple flash, geothermal turbine in the world (Fuji Electric)
- 45,000t/day fluid, ~75% reinjection
- TN2T equity partner in the power station (35%) through active investment
- ~3% of NZ's total electricity needs, ~140,000 homes

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Tauhara North Number Two Trust (TN2T)

Revenue from commercial operations provide >NZ$6M/year for investments in grants and programs for owners and descendants:

- Health, Education, Sports, Arts and Māori culture funding
- Annual camps- engagement of youth aged 10-18 to learn traditional stories, waiata (songs) and haka; as well as focus on empowerment and achievement

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Indigenous Peoples

USAID Kenya Exchange

- Ngati Tahu Tribal Lands Trust and Contact Energy met with the Maasai (Kenya) and KenGen (Kenya)
- Share experiences, lessons and provide guidance on strategies and tools to support long-term positive relationships
- Maasai developed a strategic plan to 2050 to support their social, environmental and economic aspirations
- KenGen is formalising a community engagement framework to support the Maasai achieve their goals

Caitlin Smith, US Energy Association, 2017 (Dorothy Raroa and Masai representatives)

"Indigenous communities have unique relationships and values when it comes to geothermal resources and the natural environment and that recognising this, alongside the unique aspirations of the community are critical to building meaningful relationships into the future." (Campbell, 2018)

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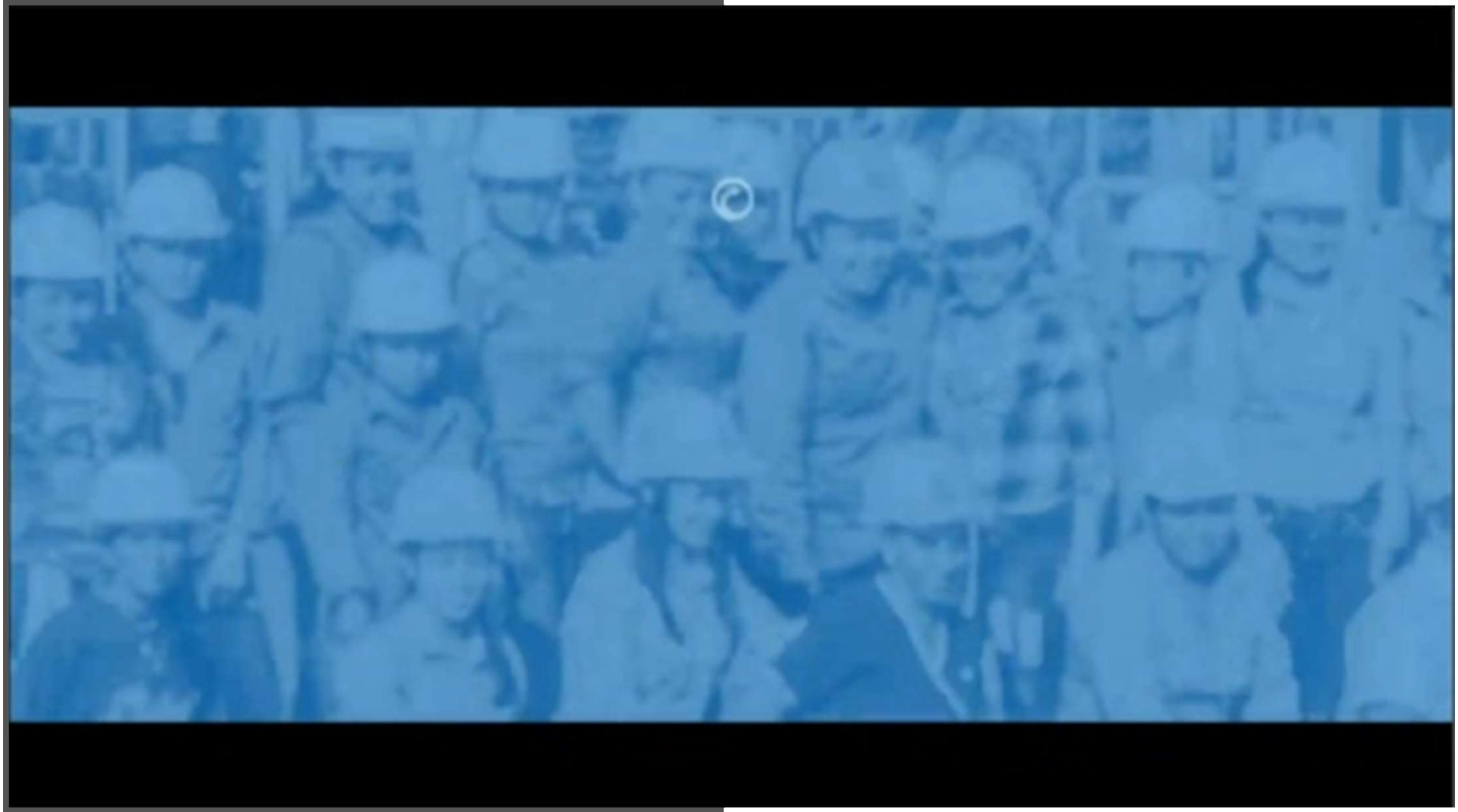
“We went to Kenya . We delivered. We left knowing that Ngati Tahu & Contact Energy will become part of the Olkaria Maasai history”

Water



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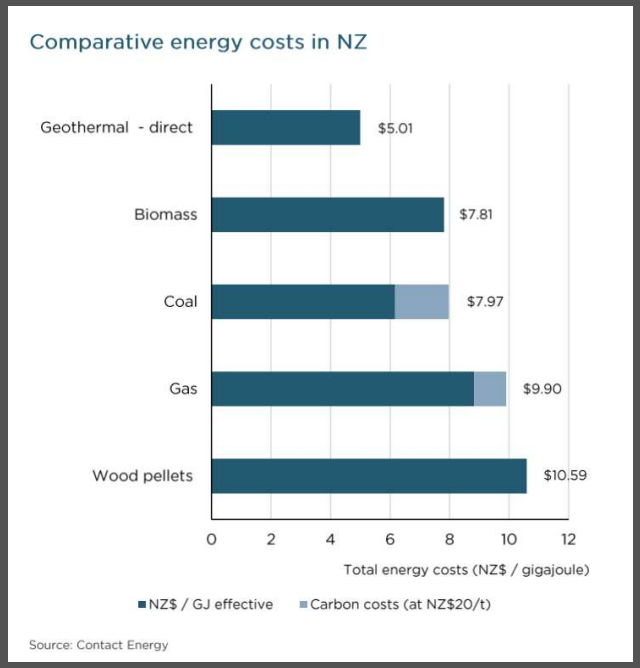
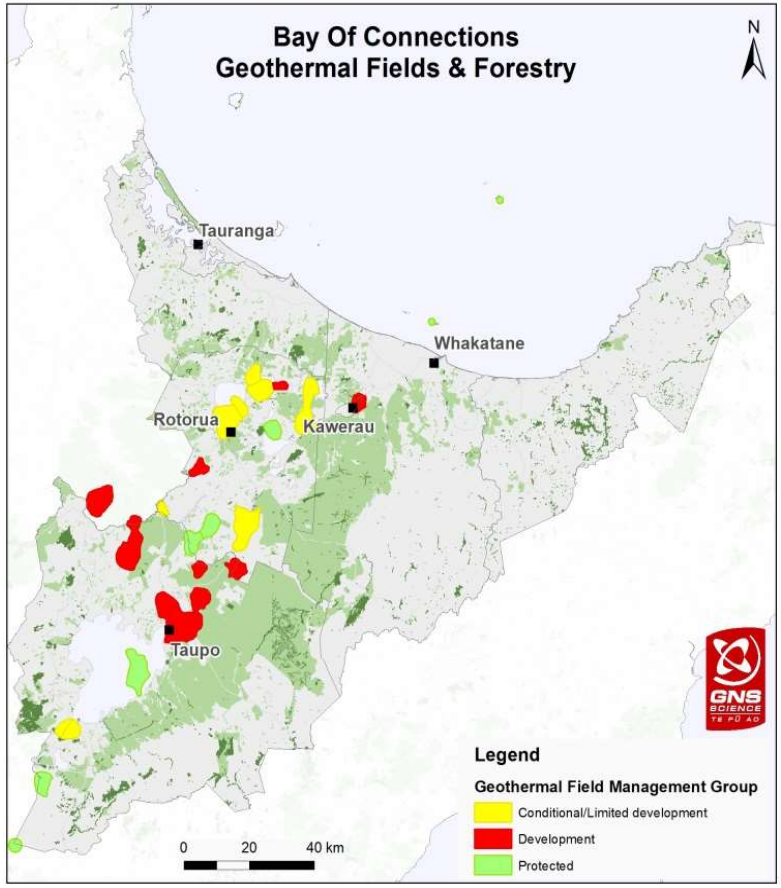
Co-location of Resources



Tuwharetoa mai Kawerau ki te Tai website



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Employment

- Once constructed geothermal power plants require few but highly skilled staff (~0.5-2 persons/Mwe)
- Geothermal direct use project require much larger numbers

Business Name	Activity	Size of operation	Geothermal Energy Used	Geothermal Field	FTE*
Miraka	Milk processing facility	~300ML/year milk processed into milk powders and UHT	~2,400t/day clean steam from 2 pre-existing wells	Mokai	~120
Tenon	Timber Drying	150,000m3/year of timber dried	Geothermal heat plant with an installed capacity of 27 MW to heat 9 timber drying kilns. Consented take of 4110 tonnes/day of ~209°C fluid	Tauhara	265
Huka Prawn Park	Aquaculture tourism (Prawns)	~7.8 tonnes of prawns produced per year	450 tonnes/hour (~115°C) cascaded fluid from binary plant	Wairakei	60
Asaleo Care	Tissue & Toilet Paper Manufacturing	~50,000 tonnes/year of tissue product	254,510 GJ energy from geothermal steam (2016)	Kawerau	~200
Norske Skog	Paper production (Newsprint)	~150,000 tonnes/year paper production	3600 tonnes/day consented (~185°C). Including TA3 generator producing 9MW using 140t/hr steam	Kawerau	161

Blair, Andrea, Siratovich, Paul. A., Campbell, A. *Geothermal Fuels Prosperity: How geothermal projects in New Zealand are catalyzing significant socio-economic benefits for Māori*. Proceedings Mexican Geothermal Association Annual General Meeting Morelia, Michoacán, México, 19-20th April 2018 (2018)

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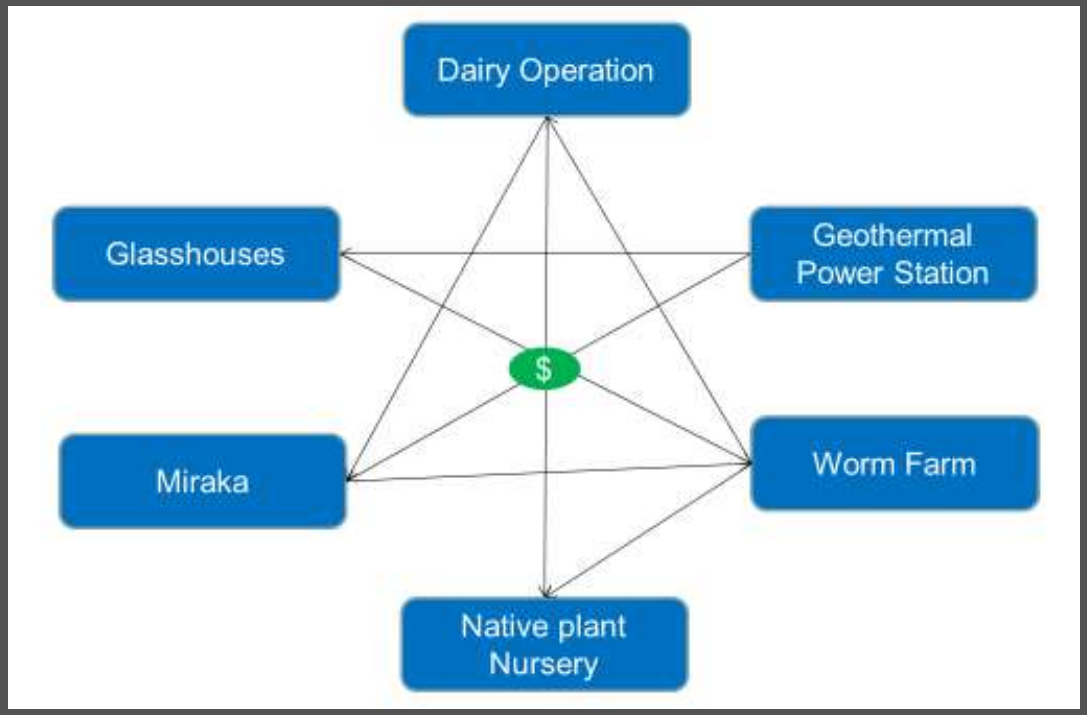
SOFT ON YOU
Purex
SOFT ON OUR ENVIRONMENT
Soft White
12
Rolls
200 sheets
110 x 99mm
LOCALLY MADE
IN NEW ZEALAND
SINCE 1955
HARNESSING
GEOTHERMAL
STEAM
USING
NZ HYDRO
POWER
SUSTAINABLY
ACCREDITED
FORESTS

Integrated Use



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Partnering for growth ideas

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