



Kaitiakitanga

Kaitiakitanga in practice

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Te Ahurangi

Rotorua

June, 2014

Maori economy

(2010 NZ millions)

	Maori Asset Base 2010 \$m			
	Self-employed	Employers	Trusts, Incorporations, Boards, MIOs, POSEs, Holding Companies	Total
Agriculture			2,530	
Forestry			2,242	
Fishing			1,035	
Total Agriculture, Forestry and Fishing	1,534	3,238	5,807	10,579
Mining	0	0	5	5
Manufacturing	250	1,767	573	2,591
Electricity	0	0	270	270
Construction	397	1,040	0	1,438
Wholesale Trade	93	675	0	768
Retail Trade	98	660	0	758
Accommodation, Cafes & Restaurants	22	289	0	311
Transport and Storage	366	2,439	0	2,806
Communications	323	1,958	0	2,282
Finance and Insurance	112	1,484	0	1,597
Property and Business Services	1,525	4,583	808	6,916
Government	0	0	0	0
Education	41	950	278	1,269
Health and Community Services	39	286	66	391
Cultural, Recreational & Pers Services	269	877	2,813	3,958
Not Elsewhere Included	370	589	0	959
Total	5,440	20,837	10,620	36,897

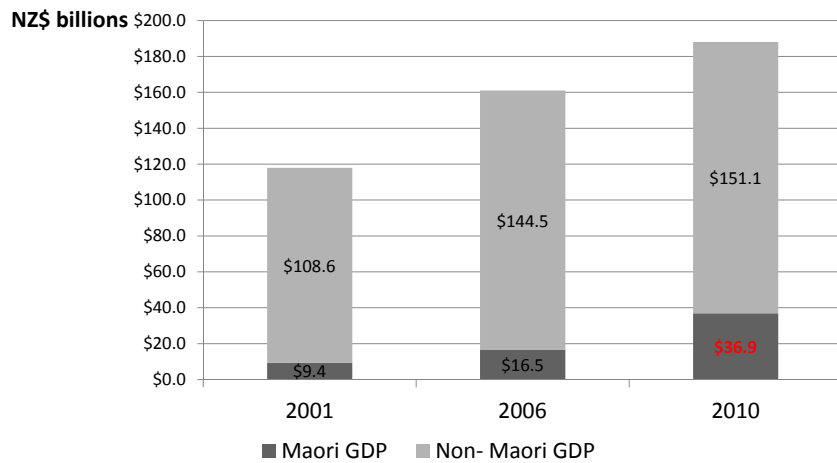
Source: BERL 2010

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Comparison

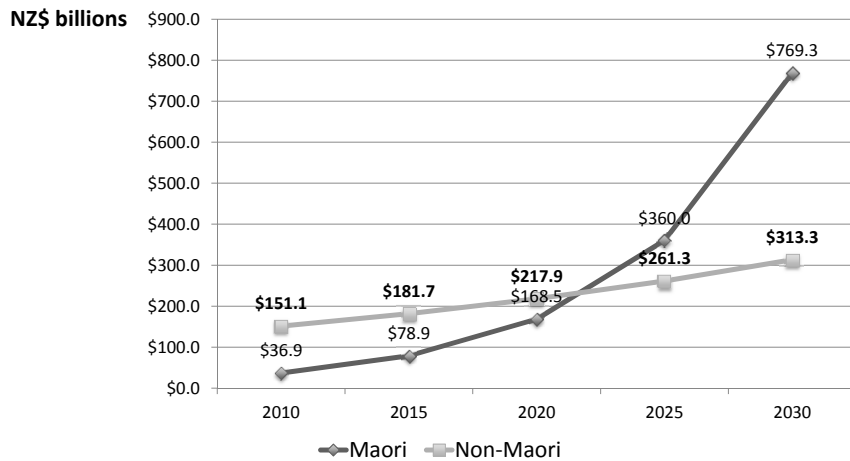


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Comparative GDP forecast



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Some findings

- \$37 billion is likely conservative
- Is growing fast (but, under the radar)
- Asset productivity is lower than peer non-Maori
- 1.2 million hectares of under-utilized Maori lands
- Science and technology – a key enabler
- There are barriers to Maori business accessing science and technology

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- National and International reach
- World leading science and technology organizations
- One to one relationships with Maori
- Applied (tech-transfer) focus
- Our bi-culturism as a source of competitive advantage

INTERNATIONAL TECHNOLOGY CONNECTIONS *(for Maori)*

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Extensive Global Connections

2014

Science and Technology connections:

1. Institute of Food Research, Norwich
2. University of Nottingham, Sutton Bonington Campus, Nottingham
3. The French National Institute for Agricultural Research (INRA), Microbiology and Food Process Engineering Unit, Grignon
4. AgroParisTech UMR, Genial, Massy
5. SEPAREX, Champigneulle
6. The Food Valley, Wageningen
7. Wageningen University and Research Centre (WUR), Wageningen
8. FeyeCon D&I B.V., Weesp
9. Technical University Munich, Freising
10. Fraunhofer Institute for Process Engineering and Packaging IVV, Freising

Government connections:

1. European Commission
2. Ministry of Foreign Affairs & Trade
3. Ministry of Business Innovation & Employment

2013

Science and Technology connections:

1. Institute of Food Research, Norwich
2. Leatherhead Food Research Institute
3. Wageningen University and Research Centre (WUR), Wageningen
4. German Institute of Technology
5. Swiss federal Institute of Technology (Zurich)
6. Seftal capital Limited (Zurich)

AND:

1. Extensive links to Science and Research institutes across New Zealand
2. Links to private sector Innovative Food businesses
3. Links to government Science and Innovation system

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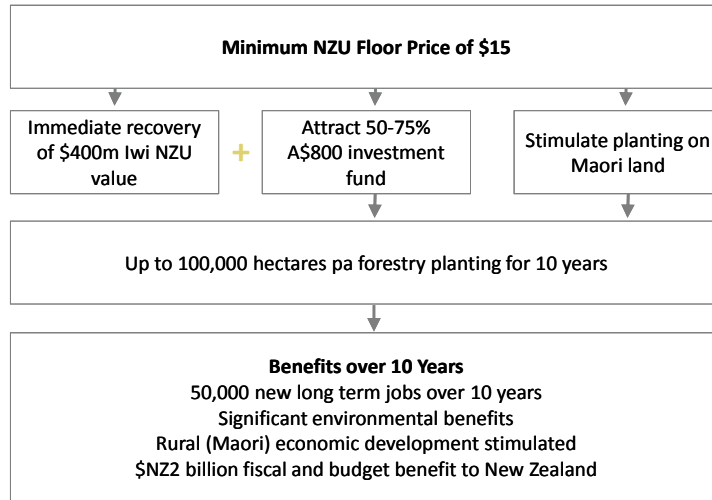
Climate change is arguably the biggest single issue facing the planet is already having a major economic, social, environmental and cultural impact on Maori. Iwi leaders are actively championing for policy that is fair and equitable to the interests of Iwi/Maori.

CLIMATE CHANGE AND IWI

The \$600 million problem for Iwi



Proposal to Government



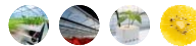
Practical case study leveraging European technology capabilities towards high value innovative foods from an integrated Maori-owned value-chain

ENERGY TO INNOVATIVE FOOD STRATEGY

Tuwharetoa Geothermal Assets

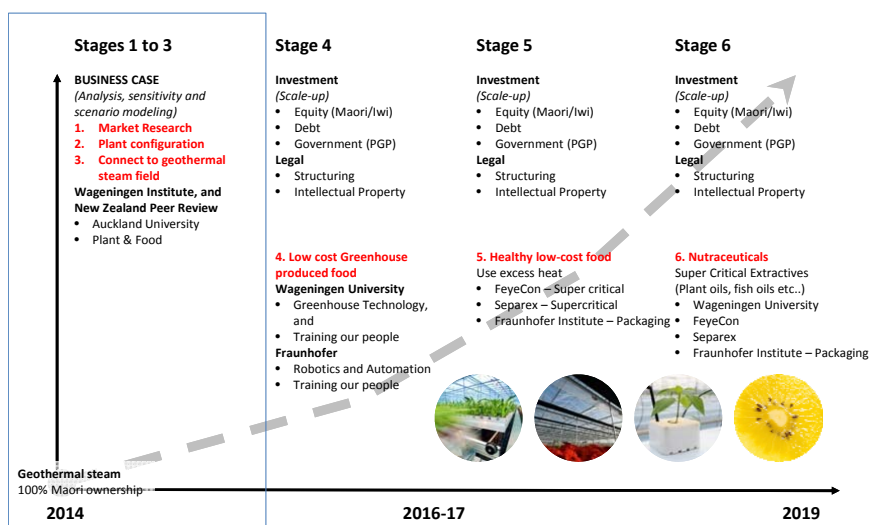
- Only 100% tribally owned geothermal business in New Zealand
- Only geothermal business predominantly supplying process heat;
- Largest geothermal process heat supplying business in the world;
- Support local industry by providing geothermal energy for process drying, and electricity for over 50 years
- 20% compound annual growth rate
- Resource consent to double take from steam field
- Strategic plan to continue growth through diversification

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Integrated Value-chain Strategy



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Kaitiakitanga (*sustainability*)

Practical case study leveraging community owned assets towards a flagship marae-owned renewable energy project at Omaio in the Eastern Bay of Plenty

COMMUNITY-OWNED RENEWABLE ENERGY

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Key drivers

- Rising cost of energy
- Disproportionate impact on Maori households
- Create new community-owned enterprise
- Create new high skilled jobs for whanau
- Owned by marae
- Pilot project towards scale up
- \$NZ 500 million market (annual – national)

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2013 (Omaio) Odyssey Design Challenge

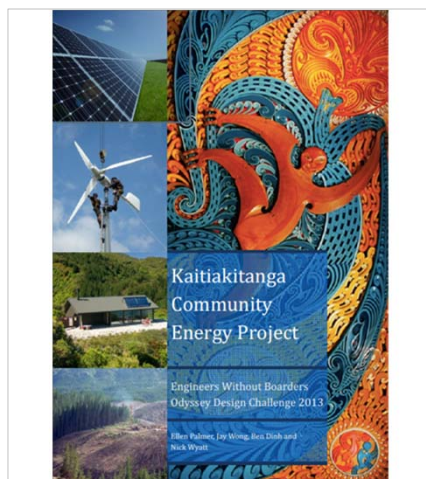


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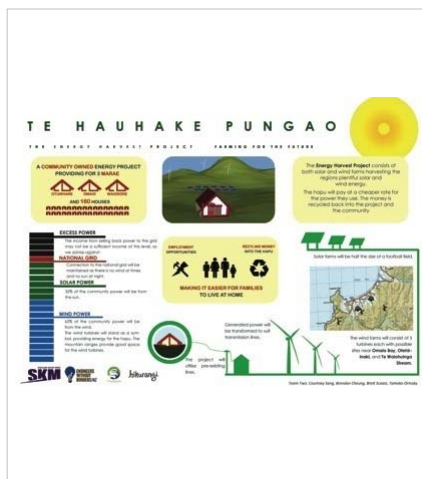
Winning Designs *(hybrid)*



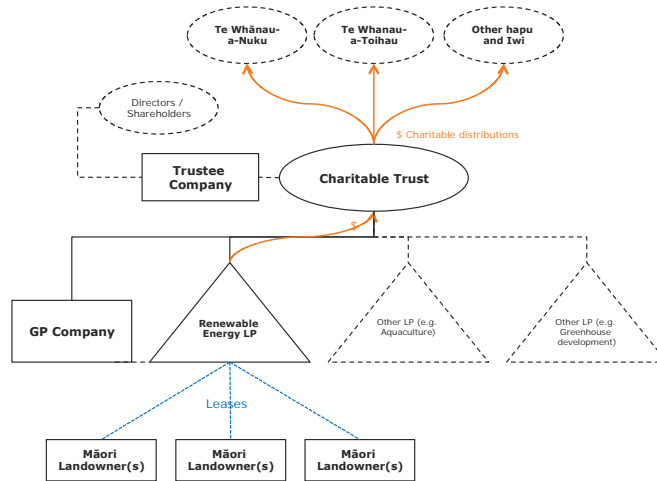
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Legal Structure *(draft)*



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Partner strategy

Investment

- Akina
- Government (Central and Regional)
- Banks

Engineering

- Engineers Without Borders
- Institute of Professional Engineers of NZ
- AECOM international
- Sinclair, Knight & Mertz

Research

- Auckland University
- Auckland Institute of Technology
- Canterbury University
- Scion Forest Research

Technology

- Fraunhofer (Germany)
- Wageningen (UR)

Legal

- Chapman Tripp (Law)
- Maori Land Court

Government

- Environment Bay of Plenty
- Opotiki District Council

Industry Associations

- New Zealand Wind Energy Association
- New Zealand Bio-energy Association

Industry

- TransPower (energy)
- Hancock Forest Management (forestry)

Maori

- Other marae (communities)
- Other Iwi
- Other indigenous people (*T'Sou-ke*)

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Alastair Brookes

Qualifications: MSc Renewable Energy Systems Technology, Loughborough University (2007, Distinction); BScTech Engineering and Business Studies, Sheffield University (1997, 2:1, Hons).



Christian Jirkowsky

Qualifications: Mechanical Engineering, Federal College of Mechanical Engineering.

Experience Christian is a General Manager with over 20 years of experience in areas such as: Power and Heat Generation via Biomass and Fossil Fuels, Emission Control and Heat Recovery Systems; and markets such as Europe, Oceania and Americas. Proficiency in Mechanical and Performance Engineering as well as in Team Building and Leading.



Doug Hattersley

Qualifications Bachelor of Engineering (Honours) degree, is a Chartered Professional Engineer, Graduate Member of the Australian Institute of Company Directors.

Experience Doug has over 39 years experience on large infrastructure projects in USA, New Zealand, Africa, South America and Asia.



Pat Bodger

Qualifications Doctor of Philosophy (PhD), Electrical Engineering, University of Canterbury

Experience Pat is a Professor of Electrical Engineering at the University of Canterbury specialising in Power Systems. Pat is also a director of the Electric Power Engineering Centre, a university-based research organisation that consults to industry. Pat has over 35 years' experience in electric power engineering.



Patrick Harnett

Qualifications Bachelor of Science with triple major (Computer Science/Operations Research/Statistics) from the University of Canterbury, and a Master of Commerce with honours in Operations Research. Qualified Chartered Secretary and member of the Institute of Directors.

Experience Patrick works as a professional problem solver following from extensive work in the area of deregulated energy markets.



Stacey Fellows

Qualifications B.Tech (Biotechnology and Bioprocess Engineering) Hons, Massey University (1993).

Experience Stacey has 17 years experience of process engineering in the chemical and dairy industries. Her project experience includes Fonterra Energy Efficiency Project which contributed to 15% energy savings.



Susan Krumdieck

Qualifications PhD, Mechanical Engineering, Advanced Materials Processing, Combustion, Biofuels, University of Colorado Boulder, BS, MS, Mechanical Engineering, Energy Systems Engineering, Arizona State University.

Experience Susan is Associate Professor in Mechanical Engineering at the University of Canterbury where she has been based since 2000. Her areas of research include transition engineering, energy systems engineering, energy demand management and fossil fuel reduction.



Richard Gapes

Was born in New Zealand and graduated in Chemical and Materials Engineering followed by Biotechnology. He then worked in differing fields in private industry including consulting engineering, plant construction in both the dairy and mining industries, and in production in an ethanol distillery. He then completed his doctorate in Austria and headed the research group Biochemical Engineering for many years.



Project plan

No.	Task	April	June	Sept	Dec
1.	Complete legal docs (MOU)	█			
2.	Finalize governance and legal entity	█			
3.	Appoint Project Manager	█			
4.	Complete household audits	█			
5.	Complete household projects business case	█			
6.	Develop funding and finance strategy	█			
7.	Secure funding for household strategy		█		
8.	Installation of pilot household projects		█	█	█
9.	DRAFT business case of large projects				█
10.	Final DRAFT ownership structures for large projects				█
11.	Begin resource consenting for large projects				█

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T'Sou-ke First Nations Project (video)



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Summing up

- Kaitiakitanga is about sustainable;
 - Economic
 - Environmental
 - Social, and
 - Cultural development
- While governments procrastinate on policy, leadership can (must) start at home *on the marae and engage our Rangatahi*
- Technology will be a critical enabler of kaitiakitanga
- Thank you and *kia ora* to you all and to Environment Bay of Plenty.

