Energy (renewable) and Maori Development

Ko te whenua te wai mo nga uri i whakatipuranga
(The land will provide sustenance for our future generations)

Investment and Strategy

Te Papa, Wellington, New Zealand
15th April 2014

Chris Karamea Insley | Iwi Leadership Group (Climate change)
Kia ora

• The growing and diversifying Maori economy
  – Maori sustainability (kaitiakitanga) values framework
  – Maori economy and Renewable energy

• Current New Zealand political (policy) climate
  and energy settings

• Two Maori led Renewable energy case studies
  – Maori Geothermal energy
  – Large scale global food innovation strategy
  – A Maori community-owned renewable energy)
## Contrasting Maori/Western (Sustainability) Values Frameworks

<table>
<thead>
<tr>
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</tr>
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<tbody>
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</tr>
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<td>Strong over-riding driver of decisions (NPV, IRR, Profitability Index, Payback period etc.)</td>
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</tr>
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# Contrasting Maori/Western (Sustainability) Values Frameworks

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<td><strong>Economic</strong></td>
<td>Strong over-riding driver of decisions (NPV, IRR, Profitability Index, Payback period etc.)</td>
<td>Strong (NPV, IRR, Profitability Index, Payback period but may accept lower Return)</td>
</tr>
<tr>
<td><strong>Profits</strong></td>
<td>Owned individually and often lost offshore</td>
<td>Owned communally (reinvested back into whanau, communities, regions and the Nation)</td>
</tr>
<tr>
<td><strong>+ Social</strong></td>
<td>Very low (only what is prescribed in law)</td>
<td>Very strong (What is prescribed in law is bare minimum, whanau jobs, education, health and well-being)</td>
</tr>
<tr>
<td><strong>++ Environment</strong></td>
<td>Very low (only what is prescribed in law)</td>
<td>Very strong (What is prescribed in law is bare minimum, preservation of Papatuanuki)</td>
</tr>
<tr>
<td><strong>+++ Culture</strong></td>
<td>Nil</td>
<td>Very strong (Preservation of Te Reo, culture, tikanga – our identity)</td>
</tr>
<tr>
<td><strong>Planning horizon</strong></td>
<td>1- 5 years</td>
<td>Intergenerational (100 years plus)</td>
</tr>
</tbody>
</table>
1.2 Million hectare Development opportunity
The Maori economy

(2010 NZ millions)

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

Source: BERL 2010
Comparative historic GDP Growth

NZ$ billions

- 2001: $9.4 (Maori) + $108.6 (Non-Maori) = $118.0
- 2006: $16.5 (Maori) + $144.5 (Non-Maori) = $161.0
- 2010: $36.9 (Maori) + $151.1 (Non-Maori) = $188.0
Comparative forecast GDP Growth

NZ$ billions

2010 $36.9 $151.1 $360.0
2015 $78.9 $181.7 $217.9
2020 $168.5 $261.3
2025 $360.0
2030 $769.3

Maori
Non-Maori
Iwi Leaders on climate change policy

Karamea Insley
Independent Board Director
Current New Zealand climate policy a disgrace

- Withdrawn from Kyoto Protocol
- No NZ strategy to meet medium term international emission reduction targets
- Knowingly allowed the carbon price to collapse costing NZ tribes $NZ600 million
- Perverse incentives rewarding polluters $NZ100’s millions
- No incentives towards Renewable energy
- An election year
  - Opposition parties have strong emission reduction policies and support renewables
  - A major National and International issue for Iwi in 2014

Iwi Leaders $2.0 billion Proposal

Benefits

To Iwi:

– Immediate recovery of $400 million of value on current Iwi NZU’s
– This value is immediately available for reinvestment by iwi
– Make productive 1.2 million hectares of Maori lands
– Return on under utilised land without risk to land ownership

For Maori Communities:

– Utilises available rural labour capacity and increases skills
– Brings long term wealth and social benefits to Maori communities

Regional economic development - Employment:

– Large scale employment opportunities (50,000 new long term rural jobs) in Maori communities where the new forests are established
– Double the size of the forest industry and foster local wood processing industry
Benefits (cont’d)

For Environment:
   – Significant long term environmental benefits including waterway cleansing and erosion control
   – No trade offs required to attain environmental benefits

For New Zealand:
   – Promote Brand New Zealand
   – Trigger new Maori low-emissions clean-tech industry
   – 0.7% increase in incomes nationwide; or
   – An Increase in wealth of $900 per person over 10 years.

For International obligations and reputation
   – Would become New Zealand’s strategy to meet it’s medium term emission reduction obligations (currently has nothing)
study ONE

100% tribal-owned Geothermal energy company – a large (and growing) established company

wharetoa ki Kawerau

Karamea Insley
Independent Board Director
Ko wai tatou? (Who are we?)

Our Maori (tribal) uniqueness

• 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
  – for electricity
• for over 50 years

Our wood-processing customers
Our performance and growth plans

- Treaty Settlement of $NZ10 million
- Current net asset book value $NZ35m
- Market value $NZ70m+
- 20% compound annual growth rate (CAGR)
- Resource consent to double take from steam field
- Strategic plan to continue growth through diversification
Maori owned 6-step Value-chain strategy

Chris Karamea Insley
Independent Board Director

Renewable energy into Innovation Foods strategy
Our diversification growth-strategy

Ormat Geothermal Energy

Wageningen Greenhouse
5 Year Geothermal energy & Food Innovation Value-chain strategy
Community-owned Renewable energy

Karamea Insley
Chairman and Project Manager

Flagship marae-owned project
2013 Odyssey Engineer Design Challenge
Winning engineering concept designs
Partner strategy
- Formalizing Memorandum of Understanding right now
- Will provide expert engineering advice for large 2-5 Year Projects,
- Provide access to key New Zealand and international expertise and renewable energy technologies

ENERGY GENERATION
EXPERT ADVISORY PANEL
Alastair Brookes  

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.
- Preliminary structuring options
- Legal agreements
- Memorandum of Understanding (MOU) for Expert Advisory Panel

LEGAL UPDATE – LARGE ELECTRICITY GENERATION PROJECTS
Preliminary structuring thinking ...

Project goals (large energy generation projects)

- Cheap power for the whanau through an energy company owned/controlled by the hapu
- Energy security and a new revenue stream for the hapu
- New and real jobs.

Legal objectives

- Owned by marae
- Flexible to enable growth (new entities and other marae)
- Tax efficient
- Distributions back to marae
Energy (renewable) and Maori Summary
But, biggest oil discovery in 50 Years?

$20 trillion shale oil find surrounding Coober-Pedy ‘can fuel Australia’

Source: Linc Energy: Released two reports in January 2013 with estimates ranging between 3.5 to 233 billion barrels. Linc aims to drill six horizontal wells (A$150-300m) to confirm its figures.
Summing up

- Iwi are major players in the New Zealand economy and growing rapidly and will likely continue to out-perform the NZ GDP growth rate.
- Apply an intergenerational and holistic approach to investment decision making and will act together to create scale investment.
- Have active engagement with government on climate change policy that is both fair equitable, takes a long term view and practically incentivizes behavior change.
- Renewable energy fits well with our values of kaitiakitanga and provides the basis for step up the value-chains.
- What Iwi are seeking is not only good for Iwi, but good for all of New Zealand.
- Kia ora...