New Zealand Aid Programme
Geothermal Energy

Merinda-Lee Hassall, Development Manager
June 2017
$550m New Zealand’s annual aid budget

Budget allocation by region:

- Pacific
- Africa
- Multi-lateral
- Asia
- Latin America/Caribbean

- Multi-sector (e.g. UNDP, budget support, multi-sector projects)
- Economic Development (e.g. agriculture, transport, tourism)
- Human Development (e.g. scholarships, health)
- Other (e.g. law, justice, leadership, humanitarian aid)

$371m 25%
$448m 30%
$261m 17.5%
$409m 27.5%

Estimates for 2012-2015 by sector
MFAT Vision

Renewable Energy Investment Priority

“Expand access to affordable, reliable and clean energy”

Pukapuka Solar Farm - Jan 2015 – Cook Islands
Crowded space...
New Zealand Geothermal

- New Zealand expertise in R&D, drilling, manufacturing, suppliers, construction, development.
- 10 GW installed capacity, approx 17% of NZ’s electricity supply
- Aid programme focus on utilising NZ’s experience and expertise
- Special Envoy for Renewable Energy promotes geothermal.

Nga Awa Purua (2010) – 140 MW, Triple Flash single steam turbine
• New Zealand is small donor = strategic, unique, smart, niche

• New Zealand recognises four factors that assist geothermal development
  1. Well characterised geothermal resource
  2. Adequate human and engineering resources
  3. An investment enabling regulatory process
  4. Access to finance (equity, debt) & opportunity to leverage.
Indonesia has 40% of world’s geothermal energy potential

Government of Indonesia plans to install additional 5500MW by 2025

New Zealand and Indonesia 35 year history of cooperation

1. Geo-INZ- technical assistance and capacity building activities ($10million over 5 years)
2. NZSTIGS – Pilot course training for geothermal well drilling for Trades, Technicians and Plant Operators. Larger programme to design training framework, competency standards
3. Scholarships
New Zealand provides technical assistance to the Caribbean

St Lucia, Grenada, Dominica, St Kitts & Nevis, St Vincent & Grenadines
Caribbean
<table>
<thead>
<tr>
<th>Phase</th>
<th>Project size</th>
<th>Dominica</th>
<th>Grenada</th>
<th>Nevis</th>
<th>Montserrat</th>
<th>St Kitts</th>
<th>St Lucia</th>
<th>St Vincent</th>
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<tbody>
<tr>
<td>1</td>
<td>Surface exploration</td>
<td>7MW</td>
<td>12-15MW</td>
<td>6-9MW</td>
<td>3-5MW</td>
<td>12-15MW</td>
<td>30MW</td>
<td>10-12MW</td>
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<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td>80%</td>
<td>100%</td>
<td>100%</td>
<td>80%</td>
<td>75%</td>
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<td>Exploration drilling</td>
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<td></td>
<td>2017</td>
<td>2019</td>
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<td>100%</td>
<td>2018</td>
<td>70%</td>
<td>100%</td>
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<td>3</td>
<td>Production drilling</td>
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<td></td>
<td>100%</td>
<td>2017</td>
<td>2016</td>
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<tr>
<td>5</td>
<td>Operation</td>
<td>2019</td>
<td></td>
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</table>
Caribbean Projects

- New Zealand geothermal adviser based in St Lucia 2014-16.

- NZ project examples:
  - St Lucia: surface geothermal exploration, aerial survey work to model geothermal resource potential.
NZ project examples:

- Grenada: surface exploration, infrastructure and drilling plan
- St Vincent and Grenadines: business case for geothermal
- Caribbean Development Bank: Geo-smart Facility
Dominica

- Government lead 7MW plant underway.
- NZ involved in feasibility study update, ESIA, tender documentation.
- NZ Project Manager in Dominica Geothermal Development Company (DGCD).
• NZ Africa Geothermal Facility, AGF (NZD10 million) over 5 years

• AGF will provide geothermal technical assistance and capacity building to 11 countries in East Africa

• AGF established under the MFAT and Africa Union Commission partnership arrangement.

• A Project Manager will be based in Addis.
Africa - Comoros

- Partnership with Government of Comoros, UNDP and New Zealand
- Geothermal resource estimated 40MWe
- Successful Comoros application to Geothermal Risk Mitigation Facility (GRMF)
- To date USD18million for surface exploration and test drilling
Base camp at Karthala, Grande Comoros
New Zealand has limited engagement in geothermal in the Pacific but continue to monitor developments in Fiji, Solomon Islands and PNG.

NZ has provided technical assistance such as ESIA to support the Government of Vanuatu.
Geothermal Scholarships

• New Zealand Aid Programme Geothermal Scholarships

• University of Auckland, Geothermal Institute

Geothermal Institute field trip
Supplier panels

A panel is a list of pre-approved suppliers that offer services required by the New Zealand Aid programme. There are five supplier panels that support international development.

Supplier Panels are the preferred method for sourcing suppliers.

How to get on panel

Panels are established through an open competitive tender process advertised on GETS. Each panel has agreed terms and conditions. Some panels are 'open', meaning the number of suppliers on them may be increased from time to time to meet
THANK YOU

Students at Wairakei borefield, MB Century Drilling Rig