Promoting Clean Energy in the Pacific Islands

Renewable Energy Progress in the Cook Islands
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Te Aponga Uira - Power Utility in the Cook Islands

Responsibility - serving about 80% of the power needs of the country, on the main Island of Rarotonga

Presentation - national perspective on the electricity sector - was, transformation and next
Overview

1. Energy Sector

2. Electricity Sector

3. Power Utility, Te Aponga Uira, RE progress
Energy Sector

- Petroleum - diesel, petrol and LPG aviation are the main energy source:
  - Land transport use 50% of diesel and petrol
  - Electricity use 50% of diesel
  - LPG predominantly in cooking, some heating and cooling
  - Solar water heating is common, mainly on residential premises

- Renewable Energy - has made significant inroads - electricity sector, and soon the transport sector
Electricity sector - Was!

• Up until 7 or 8 years ago - predominantly diesel based generation, 99%

• One Island, Pukapuka, had 100% PV generation from the early 1990s
  – limited usage, lighting mainly
  – DC appliances unavailable and expensive
  – Maintenance was simple - mainly involving batteries

• Renewable energy was just another energy source - expensive
Electricity sector - Transformation!

- Government focus:
  - National target of 50/15 and 100/20 targets announced in 2010

- Policy changes instigated:
  - Renewable Energy Chart developed and finalised 2012
  - Stakeholders started implementation

- Investigations and studies launched:
  - Technical, economical, environmental, social etc
  - What's doable and not doable were identified
Electricity sector - Transformation!

- Engagement with partners launched
  - Funding identified - donors, borrowing, self
  - Technical - projects were developed and implemented

- Operational policies transforming
  - infrastructure transformed - augmented to integrate RE
    - generation - modernisation, automation
    - distribution - progressive update
  - enhancement of service delivery - communications
  - corporate restructuring - technology adaptation, skills, cost, tariff etc
Progress in Renewable Energy

• 50% of the inhabitated Islands, six, have been transformed from 0 to 100% by 2015

• By March 2018 four more Islands will also be transformed, bringing to 84% the Islands running on 100% RE

• 100% of all Islands is possible by 2020
### Status of RE as at June 2017

<table>
<thead>
<tr>
<th>Island Group</th>
<th>Penetration</th>
<th>Contribution</th>
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</thead>
<tbody>
<tr>
<td>Northern Group Islands (6 Islands)</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Southern Group Islands ((4 Islands)</td>
<td>20%</td>
<td>100% Mar 18</td>
</tr>
<tr>
<td>Aitutaki</td>
<td>10%</td>
<td>100% 2019</td>
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<tr>
<td>Rarotonga</td>
<td>80%</td>
<td>16%, 70 to 100% by 2020</td>
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</tbody>
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Te Aponga Uira - RE Progress

• Government owned utility
• 100% diesel based generation until 2009
• Renewable Energy transformation began in 2009:
  – Policy changes:
    • Netmetering introduced
    • Self generation encouraged and implemented
    • Gross generation introduced in 2013
    • Private sector generation, IPP, encouraged and implemented
  – Own installation involving large scale systems with 1MW PV grid tie system commissioned in 2014
Te Aponga Uira - RE Progress

• 2% RE contribution end of 2012
• Computerised controls commissioned 2014
• 1MW PV system commissioned in 2014
• RE contribution increased to 12% in 2015
• High speed engines commissioned early 2016
• RE contribution increased to 16% by end of 2016

• Next Phase involve Storage - starting 2017
Thank You