Cook Islands Country Report

Renewable Energy Progress in the Cook Islands

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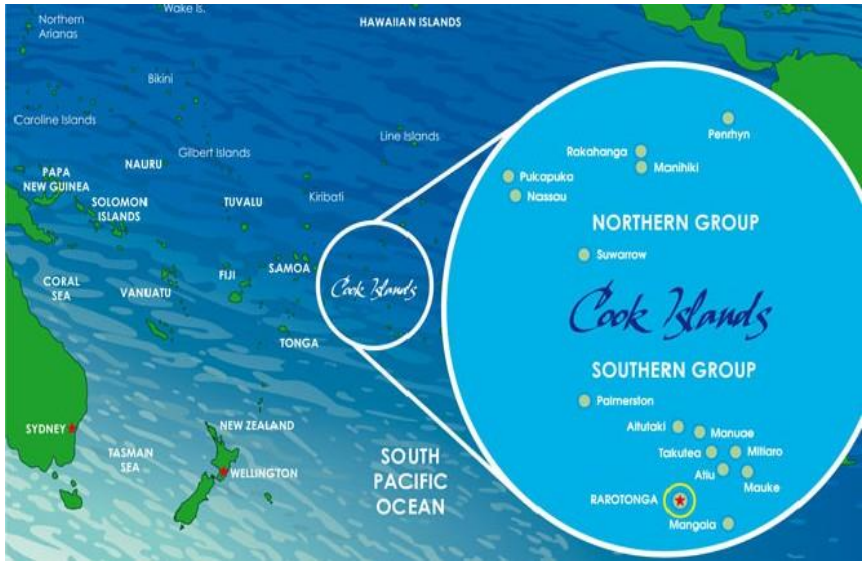


- Consist of 15 islands, with a land area of about 240 square km, scattered over 2 million square km of ocean
- Permanent population of 11 thousand, annual tourist number is 150 thousand

- Te Aponga Uira – Government owned Enterprise, Power Utility in the Cook Islands

- Responsibility
  - generation, distribution and retailing of electricity on Rarotonga
  - servicing 80% of the power needs of the country, on Rarotonga

- Presentation
  - National goals on the electricity sector
  - Electricity sector pre RE state, current, and future plans

National Goals

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

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

- Renewable Energy transformation for TAU began in 2009:
  - Policy changes was introduced, own installation involving large scale systems with 1MW PV grid tie system commissioned in 2014

Electricity sector – Pre RE state

- Predominantly (99%) diesel based generation, until 7 – 8 years ago.
- One Island, Pukapuka, had 100% PV generation from the early 1990s
- Renewable energy was just another energy source - expensive

Electricity sector – Current

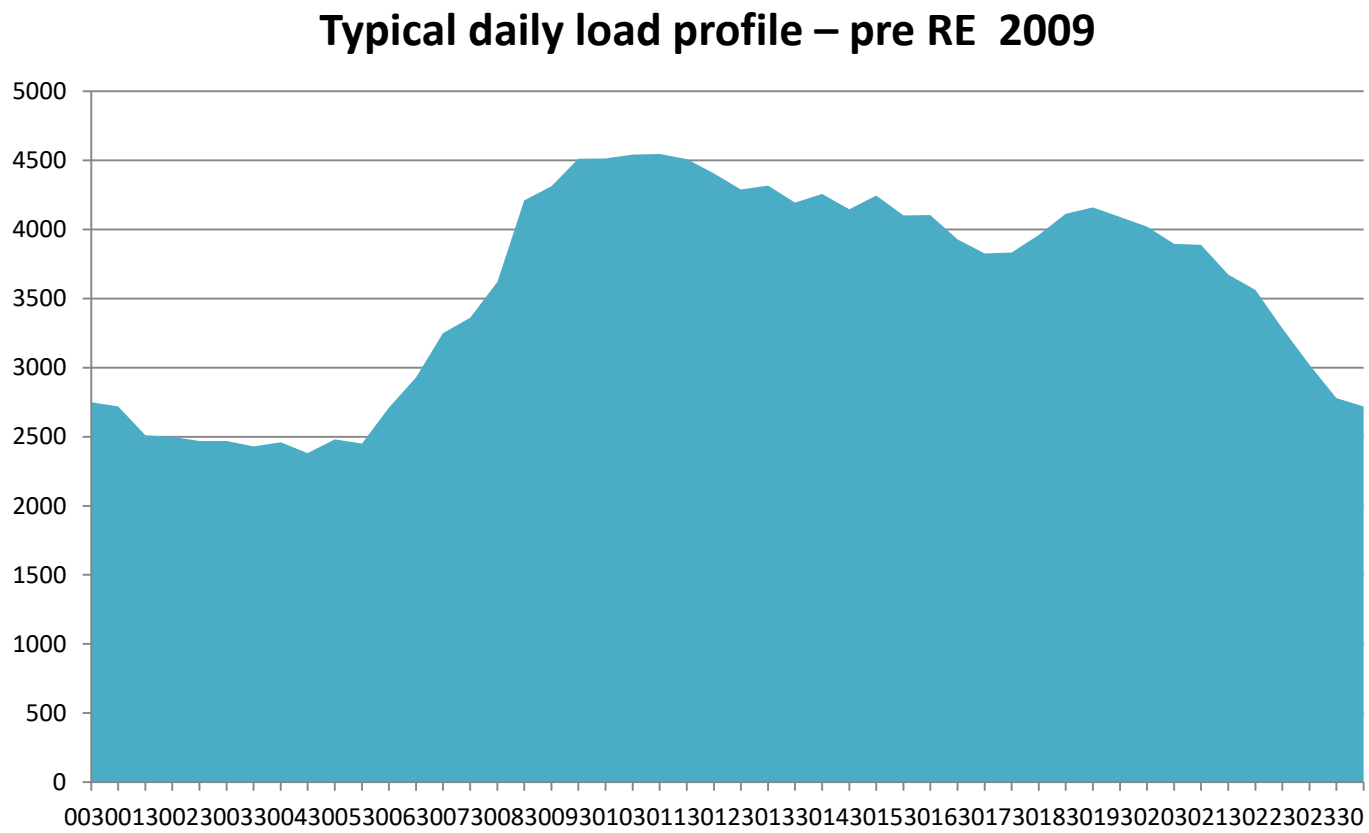
- 50% of the inhabitated Islands, six, have been transformed from 0 to 100% in 2015
- By March 2018 four more Islands will also be transformed, bringing to 84% the Islands running on 100% RE
- 100% of all Islands is possible by 2020

RE Status: November 2017

Island Group	Penetration	Contribution
Northern Group Islands (6 Islands)	100%	100%
Southern Group Islands (4 Islands)	20%	100% Mar 18
Aitutaki	10%	100% 2019
Rarotonga	80%	16%, 70 to 100% by 2020

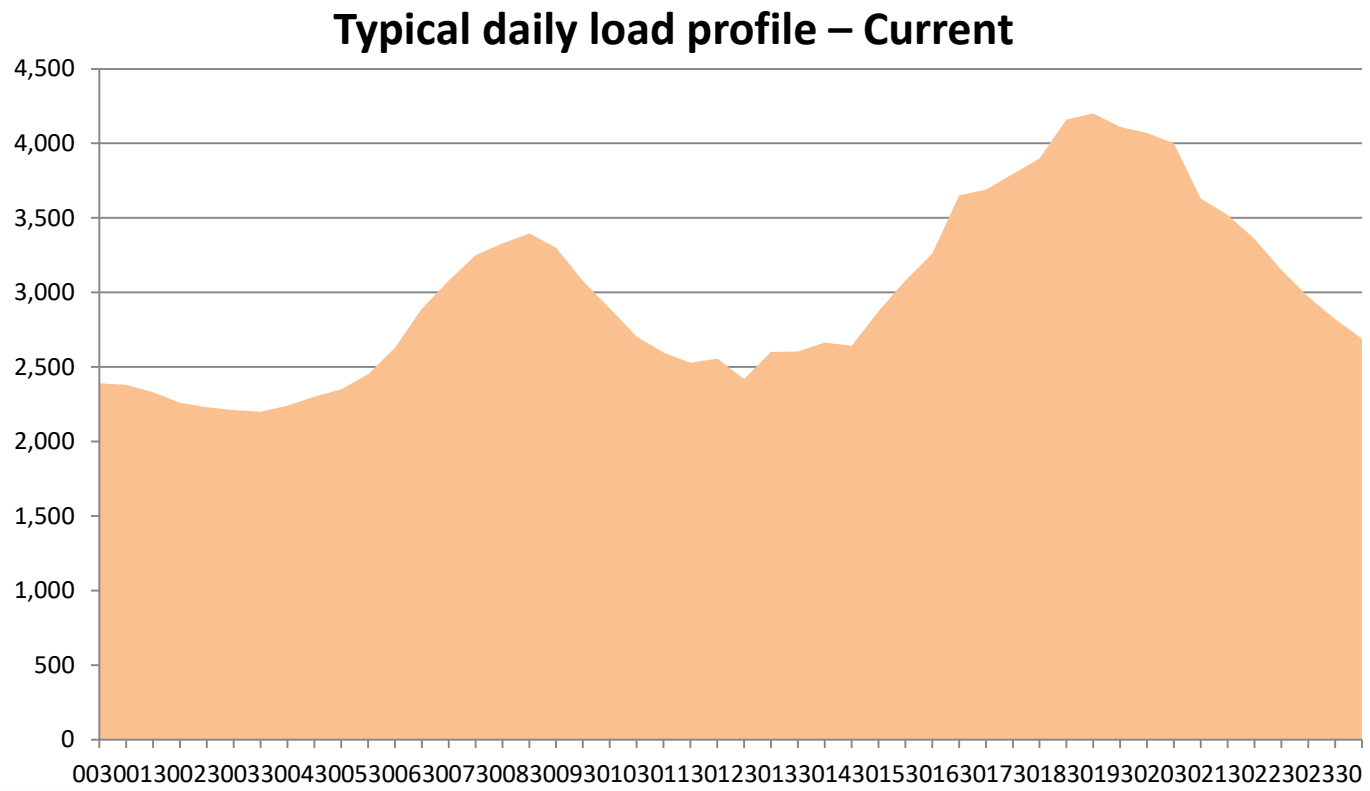
Te Aponga Uira – pre RE profile

- 100% diesel based generation until 2009



Te Aponga Uira – Current Load Profile

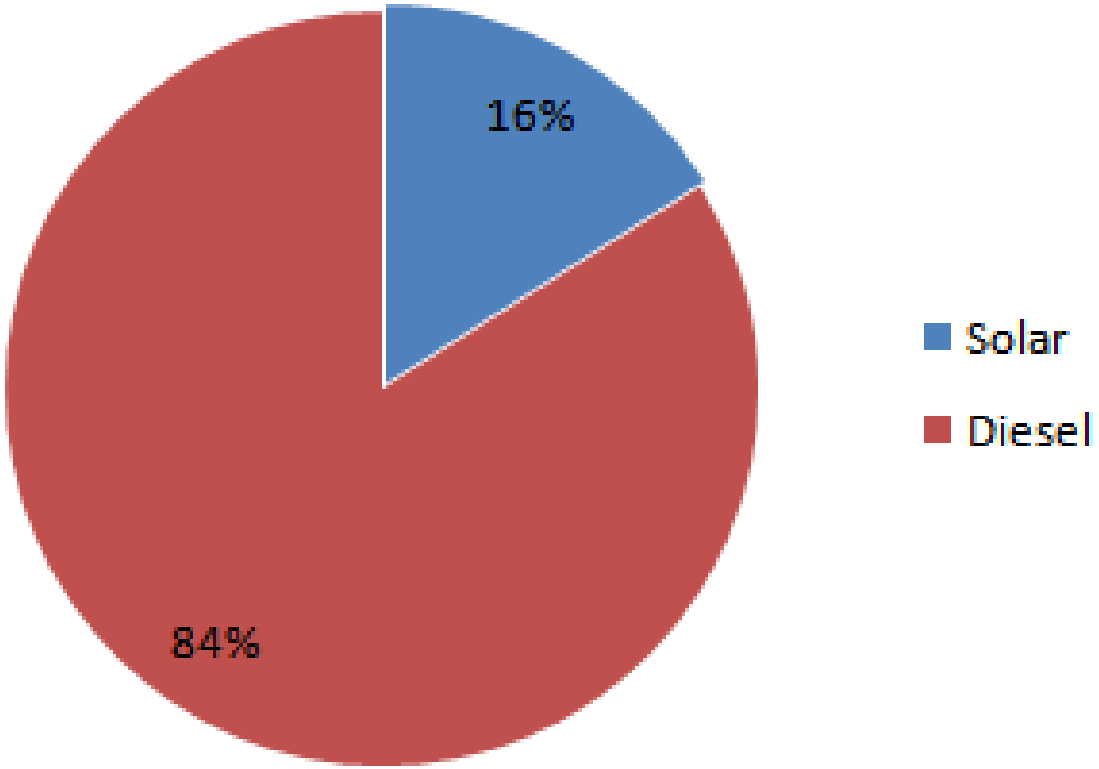
- Maximum Demand 4.8MW
- Base load is around 2.3MW



Generation

- Generating capacity of 12MW (diesel)
- 3.95MWp grid connected PV, 0.1MW off-grid system
  - Capacity split is 73% private sectors & 27% TAU owned
    - Private sector split - IPP 62%, Net-meter 38%
- Grid connected solar generators ranges in size from 1kWp – 960kWp.

- Proportion of electricity generated by diesel and solar
  - Annual average energy generated is 30GWh



Monitoring & control

- Generation
  - Diesel power plant is fully automated and unmanned
- Distribution
  - TAU large PV plant is controllable
- Retail
  - Customers are all read manually, however we are moving towards smart metering and smart billing
- Currently connections to the grid is on hold. Next phase involves storage, enablers, power station control system upgrade - starting 2017

Thank You