



# Island Kingdom of Tonga

Presentation for Carbon Expo Australia 2012





Figure 1: Map of Tonga

# BACKGROUND

- Population of 104,000 people.
- Comprised of five island divisions (Tongatapu, Vava'u, Ha'apai, 'Eua and the Niuas)
- The government is emphasizing the development of the private sector and especially encourages investment.
- } GDP: \$816 million (purchase power parity)
- } GDP per capita: \$7,500 (purchase power parity)
- } GDP growth: 1.4%
- } GDP by sectors : agriculture, 20.8%; industry, 18.1%; services, 61.1%.
- Climate is warm all year round and gets fairly hot during summer (highest at 35 degrees celsius)
- Tonga lies within the south-east trade wind zone of the South Pacific. Wind speed over its surrounding oceans averages 12 knots.
- Tonga like other Small Island Developing State (SIDS) is highly susceptible to the impacts of climate change and natural hazards due to its geographical, geological and socioeconomic characteristics.

## **TONGA'S ENERGY SOURCES -**

limited to indigenous sources, particularly biomass, renewable (solar, wind, waves) and imported petroleum products.

**Table 1 Energy Sources in Tonga**

<b>Energy Sources</b>	<b>Terajoules [TJ]</b>	<b>%</b>
Indigenous Biomass	519.1	27%
Renewables [solar]	1.8	0%
Imported Petroleum	1,415.8	73%
<b>Total</b>	<b>1,936.7</b>	<b>100%</b>

# Regulatory Policies and Legislations

---

- } **National Renewable Energy Policy 2006**
  - } **Renewable Energy Act 2008:** To regulate the use of renewable energy in the Kingdom and related matters.
  - } **Environmental Impact Assessment Act 2003:** To provide for the application of environmental impact assessment to the planning of development in Tonga
  - } **Environmental Impact Assessment Regulations 2010:** To regulate major development projects and the applications of notification consistent with the **EIA Act 2003**.
  - } **Environment Management Act 2010:** To establish the Ministry of Environment & Climate Change to ensure the protection and proper management of the environment and the promotion of sustainable development.
  - } **Climate Change Policy 2006**
  - } **Ozone Layer Protection Act 2010:** To regulate the use of ozone depleting substances and to implement the provisions of the Convention for the Protection of the Ozone Layer and the Protocol on substances that deplete the ozone layer and for related purposes.
  - } **Waste Management Act 2005:** To manage and oversee the function of the Waste Management Board
- 



# TONGA ENERGY ROAD MAP (2010-2020)

---

- } The Tonga Energy Road Map (TERM) provides a detailed pathway towards a low carbon, cost-effective, technically sound, equitable transformation of the entire energy sector in the Kingdom of Tonga.
  - } The Government of Tonga launched the plan to address the challenge of energy security combined with the substantial reduction of the Kingdom's contribution to Green House Gas (GHG) emissions
  - } TERM is made possible through close cooperation between Government of Tonga and bilateral partners including AusAID, NZAID, JICA, IRENA, European Union, World Bank and the Asian Development Bank.
  - } TERM's innovative policy was the decision to amalgamate all development partner resources under a cohesive planned approach
-

# Tonga Energy Road Map 2010 - 20

**TARGET : 50%** of Electricity from  
**Renewable Sources**

TERM Media Releases Energy Reports Laws FAQ Reegle Expo

## Latest Articles



### Ground-breaking ceremony welcomes Tonga's first renewable energy power plant

NUKU'ALOFA, Tonga: Tonga's first renewable energy power plant, will begin to take shape this month, following the groundbreaking ceremony for the new 1MW photovoltaic Popua Solar Farm on November 10.

### Ground-breaking ceremony welcomes Tonga's first renewable energy power plant



NUKU'ALOFA, Tonga: Tonga's first renewable energy power plant, will begin to take shape this month, following the groundbreaking ceremony for the new 1MW photovoltaic Popua Solar Farm on November 10.

November 14, 2011 | 0 comments | View Post

### Tonga Village Network Upgrade recruits nine trainees



NUKU'ALOFA, Tonga: The Tonga Village Network Upgrade to improve the rural and peri-urban low voltage network, is currently underway with the initial training and certification of nine trainee Line Mechanics.

November 14, 2011 | 0 comments | View Post

enter search terms

## Partners



## Subscribe

Enter your email address below to receive updates each time we publish new content.

# Potential CDM Projects

- Tonga is addressing policy and legislation changes to improve the business conditions and providing incentives for investment in renewable energy, energy efficiency, biogas capture and energy use project
- The proposed projects will displace diesel-based power generation, reducing CO<sub>2</sub> emissions significantly, thus mitigating global warming and its adverse impacts on sea level rise
- These initiatives and efforts also provide supportive business environment in Tonga for investment in CDM projects

# Popua 1MW Solar Farm, Tongatapu Island

The first grid-connected photovoltaic (PV) plant in Tonga and the second largest in Oceania. Constructed by Meridian company from NZ and funded by NZAID 9 million USD.



## Neiafu 500kW Photovoltaic Plant, Vava'u Island

- Constructed by Masdar Company from Abu Dhabi, the United Arab Emirates with a financial grant provided by the Abu Dhabi Fund for Development (ADFD). Total cost USD 4 million.
- The projects estimated power generating capacity is 500kW and the expected original energy output is 695MWh, saving 180,990L diesel and providing 13.8% of Vava'u annual electricity supply



# Other renewable energy initiatives

## Solar panels for remote outer islands



# Challenges

---

- } Scattered islands / remote access
- } Coordination amongst key stakeholders, both government and non-government
- } Maximising on current/potential platform of projects on energy
- } Capacity constraint both financial and technical skills for effective coordination
- } Long delay in the set up of a Designated National Authority (DNA)



# Way Forward

---

- } Continue network with regional and international organisations
- } Promote visibility of TERM for potential investors
- } Increase core capacity for the set-up of the DNA
- } Set up of a DNA
- } Advocacy for CDM projects and investors



# Contact details

---

- } Ms. Lilika Fusimalohi
- } Aid and Project Management Division
- } Ministry of Finance and National Planning
- } Nuku'alofa, TONGA.
- }
- } Email: [lfusimalohi@finance.gov.to](mailto:lfusimalohi@finance.gov.to)

