FIJI ISLANDS

PRESENTER – HASMUKH PATEL, CEO OF FIJI ELECTRICITY AUTHORITY

The views expressed in this presentation are those of the presenter and do not necessarily represent those of the Asian Development Bank.
Energy Sector Overview

- Population: 850,000
- Electrification Rate: 4,000 new customers/year
- Population Connected to Grid: 600,000
- Energy Stakeholders: Government, Land Owners, IPPs
- Deficit in electrical energy: Nil
  - Installed Capacity in 2011 – 200MW; 240MW in 2012
  - Total Renewable Energy by Dec 2011 – 140MW
  - Maximum Demand in 2011– 140MW
POWER DEVELOPMENT PLAN TO 2015

- Diesel generation (FEA)
- Lower Wailoa Additions (FEA)
- Wailoa improvements (FEA)
- Tropik Nadi (IPP)
- Nadarivatu (FEA)
- Iviti Bio Mass (IPP)
- Deuba Bio Mass (IPP)
- Tropik Drasa (IPP)
- FSC Lautoka (IPP)
- Butoni (FEA)
- FSC Labasa (IPP)
- Wainikasou/Nagado (IPP)
- Monasavu (FEA)
Power Generation

- Total Power Generation - 856,680MWh
- Power Generation Mix (2010)
  - Hydro – 49%
  - Thermal – 48%
  - Wind – 1%
  - Biomass (IPP) – 2%
Renewable Energy

• RE Policy/ies, highlights:

**FEA MISSION STATEMENT**

“We will provide clean and affordable energy solutions to Fiji. We aim to provide 90% of energy through renewable energy resources by 2015”

• As an incentive, all renewable energy projects are exempted from any Government Duty

• Wind Target: **No set targets exist currently**
Electricity Cost: Subsidies and Incentives

- **RE Subsidies**

<table>
<thead>
<tr>
<th>RE Source</th>
<th>Base Rate (US$/kWh)</th>
<th>Subsidy ($/kWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wind</td>
<td>0.1457</td>
<td>NA</td>
</tr>
<tr>
<td>Solar</td>
<td>0.1457</td>
<td>NA</td>
</tr>
<tr>
<td>Biogas</td>
<td>0.1457</td>
<td>NA</td>
</tr>
<tr>
<td>Others</td>
<td>0.1457</td>
<td>NA</td>
</tr>
</tbody>
</table>

- **Fossil Fuel Subsidies**

<table>
<thead>
<tr>
<th>Fossil Fuel</th>
<th>Base Rate ($/kWh)</th>
<th>Subsidy ($/kWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Oil</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>
Wind Resource Potential

• Country Wind Potential (MW, source):
  - Yet to be assessed

• Realizable Potential (MW):
  - Yet to be assessed
# Total Installed Wind Capacity

as of December 2010

<table>
<thead>
<tr>
<th>Operational Wind Projects</th>
<th>MW</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Butoni Wind Farm</td>
<td>10</td>
<td>2007</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>
Photo of Butoni Wind Farm - Fiji
Status of the backup software called « server »

- Green light when the software is running
- Gray light when it's stopped.

Main date of park totals
- The active power.
- The reactive power.
- The three composed voltages (U1-U2 / U1-U3 / U2-U3).
- The power factor (ratio between active and apparent power).
- The total energy since the wind farm has been started.
- The date when the main counters have started (wind farm installation).
- The total WTG installed on site.
- Number of WTG in production.

The summary « Status of the power station » explains the different symbols and colours behaviours.

The power curves page
## Additional Wind Capacity

<table>
<thead>
<tr>
<th>Pipeline of Wind Projects</th>
<th>MW</th>
<th>Estimated Year</th>
<th>Estimated Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ovalau Wind Farm</td>
<td>0.5</td>
<td>2014</td>
<td>US$0.6</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Next Steps

- Is target doable in the next 5 or 10 years? Yes
- Briefly discuss issues encountered and how to overcome:
  - Land Owner Demands
  - Lack of wind data and monitoring
  - High capital cost
  - Lack of local skill for operation and maintenance
- Identify support needed to meet target:
  - Funding for assessment
  - Wind data monitoring expert
THANK YOU