Cabangan 10 MW OTEC Pilot Plant
Zambales, Philippines
Lourdesiree Latimer

Bell Pirie Power Corp. (PHL)
Energy Island Bell Pirie Ltd. (UK)
Project developer/owner of proposed 10 MW Cabangan CC-OTEC
with five (5) prime OTEC field sites in the Philippines
Our role as OTEC project developer/owner in the Philippines

Technology-neutral

Secure government service contract
  • Resource assessment
  • Feasibility study

Must register with Securities & Exchange Commission
  • Max 40% foreign

Secure permits and licenses
  • Grid impact study
  • Local government unit endorsement
  • Environmental Compliance Certificate

Secure Power Purchase Agreement
  • Feed-in-tariff rate eligibility certificate

Secure financial closing
  • Set up SPV (max 40% foreign)
  • EPC Contract
  • Loan agreement
  • Shareholders’ agreement
  • O&M Contract
Large market opportunity – > GWs OTEC potential
Highly dependent on imported fossil fuels – oil and coal
10 MW competitive with diesel

Government incentives and support for OTEC
Buoyant debt and equity market

First mover experience – geothermal and onshore wind in Asia
Abundant practical resource
Additional capacity requirement by 2030:

<table>
<thead>
<tr>
<th>Region</th>
<th>Capacity (MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Luzon</td>
<td>11,900</td>
</tr>
<tr>
<td>Visayas</td>
<td>2,150</td>
</tr>
<tr>
<td>Mindanao</td>
<td>2,500</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16,550</strong></td>
</tr>
</tbody>
</table>

Source: Power Demand & Supply Outlook, DOE, 2010

Measurement Targets

<table>
<thead>
<tr>
<th>Sector</th>
<th>2012-2015</th>
<th>2016-2020</th>
<th>2021-2030</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geothermal</td>
<td>50</td>
<td>940</td>
<td>175</td>
<td>1,165</td>
</tr>
<tr>
<td>Hydropower</td>
<td>310</td>
<td>3,125</td>
<td>1,892</td>
<td>5,326</td>
</tr>
<tr>
<td>Biomass</td>
<td>81</td>
<td>-</td>
<td>-</td>
<td>81</td>
</tr>
<tr>
<td>Wind</td>
<td>678</td>
<td>865</td>
<td>432</td>
<td>1,975</td>
</tr>
<tr>
<td>Solar</td>
<td>269</td>
<td>5</td>
<td>10</td>
<td>284</td>
</tr>
<tr>
<td>Ocean</td>
<td>-</td>
<td>36</td>
<td>35</td>
<td>71</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>1,388</strong></td>
<td><strong>4,970</strong></td>
<td><strong>2,544</strong></td>
<td><strong>8,902</strong></td>
</tr>
</tbody>
</table>

Ten (10) out of 12 months, WESM had price spikes higher than OTEC’s FIT rate of P17.65.
Government incentives and support for OTEC

Renewable Energy Act No. 9513

FISCAL:
- 7 years income tax free
- 10% corporate tax after 7 years
- Zero VAT – sale of power
- Duty free import of machineries, equipment and materials

NON-FISCAL:
- Feed in tariff (FIT)
  - Fixed price 20 years
- Renewable Portfolio Standard (RPS)
  - Priority purchase and despatch

Challenge: Fair and reasonable tariff per kWh.
Abundant resource

Zambales, Philippines

Source: Nihous & Vega, Oct 2011

- Blue jagged line is daily forecasts
- Black smooth line is monthly averages
TECHNOLOGY PROVIDER
Guarantees performance and availability

POWER PRODUCER
(max 40% Foreign)

Special Purpose Vehicle
(max 100% Foreign)

REPA*

Sell power

Receive revenue

OFFTAKER
National Grid Corporation of the Philippines (NGCP)

EPC Contract

Project finance 70/30

* Renewable Energy Purchase Agreement thru Republic Act 9513
Ideal technology providers are those who can/are:

1. Sign an EPC contract
2. Bankable - with strong balance sheet
3. Become shareholder in the SPV – maximum 40% foreign
4. Provide availability and performance guarantee
5. Willing to share key risks: technology and EDC (Engineering, Design, & Construction)
6. Provide acceptable long-term O&M service agreement