INNOVATIVE RENEWABLE ENERGY PROCUREMENT STRATEGIES FOR SMALL ISLAND STATES

17 JUNE 2021
Problem:
Small island states face procurement challenges
• Small scale
• High RE penetration
• Remote
• Extreme weather

✓ High power prices
✓ Limited pool of developers
✓ Supply and demand mismatch

Challenge for Tonga:
Meeting NDC commitment
• 70% renewable energy by 2030

Solution:
Design a better procurement structure
• All-in-one procurement
• Technology agnostic
• Dispatchability focus
• Guaranteed minimum energy purchased
✓ Lower power prices
✓ Broad pool of developers
✓ Flexible contract structure

Context

Current vs Target Generation Mix

Current

2030

Diesel Renewable

19% 70%

81% 30%
EOI OVERVIEW

• Technology agnostic
  o Specifies quantity of energy (~34GWh/year) instead of generating capacity
  o IPP to propose solutions for appropriate technologies to meet specified quantity

• Focus on dispatchability
  o Increase renewable energy penetration, while minimizing electricity spill
  o Promote network stability as loads and generation mix changes
  o Ensure renewable power available 24 hours a day

• Maintain Bankability
  o Offtaker will commit to purchasing a minimum quantity of electricity over specified periods
FLEXIBILITY AND TECHNOLOGY

- Estimated energy required to meet target: 34 GWh/year
  - Could increase based on status of current procurements, growth in energy demand
  - EOI will seek developer approaches to addressing increase in energy needs

- Based on Tonga’s load profile, developers to determine what they consider to be the best combination to:
  - Minimize spill
  - Be cost efficient
  - Benefit from innovation

2030 Generation Capacity (GWh)
**Dispatchability**

- A focus on dispatchability will assist utility with managing network stability as loads and generation mix changes:
  - Fast ramp rate & response
  - Low demand, high solar days

*Figure 1: Maximum Load Profile: Wednesday, 27th February 2019*

*Figure 2: Minimum Load Profile: Sunday, 1st July 2018*
Contract Terms

• Long-term PPA
• TPL incentives: land, potential for shared forex risk, tax benefits
• Minimum quantity of energy purchase guaranteed to meet bankability requirements
EOI REQUIREMENTS

Respondent to provide:

• Company and contact information
• Relevant experience
• References
• Intended solution, or approach to finding solution
• Indicative price—built around set of assumptions for given energy (quantity) and technology (developer provided)
• Suggestions for additional information required from TPL

✓ Intention is for TPL to develop a shortlist of bidders for a full tender
<table>
<thead>
<tr>
<th>Item</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>EOI Issued</td>
<td>30 June 2021</td>
</tr>
<tr>
<td>EOI Responses Due</td>
<td>31 July 2021</td>
</tr>
<tr>
<td>Completion of EOI Evaluation and Shortlisting</td>
<td>31 August 2021</td>
</tr>
<tr>
<td>Release of Tender</td>
<td>Early Q4 2021</td>
</tr>
<tr>
<td>Tender Process completion and signing of PPA</td>
<td>End Q1 2022</td>
</tr>
<tr>
<td>Financial close and commence EPC</td>
<td>Q4 2022</td>
</tr>
<tr>
<td>Commissioning of first facility(ies)</td>
<td>Q4 2023-Q2 2024</td>
</tr>
</tbody>
</table>
Conclusion

<table>
<thead>
<tr>
<th>PROCUREMENT APPROACH</th>
<th>INTENDED RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• All-in procurement</td>
<td>✓ Economies of scale</td>
</tr>
<tr>
<td>• Technology agnostic approach</td>
<td>✓ Bankable project</td>
</tr>
<tr>
<td>• Focus on dispatchability</td>
<td>✓ Innovative solutions</td>
</tr>
<tr>
<td>• Minimum quantity commitment</td>
<td>✓ Competitive pricing</td>
</tr>
<tr>
<td></td>
<td>✓ Maintain network stability</td>
</tr>
</tbody>
</table>
Thank you!

We welcome your feedback!

Amanda Lonsdale
Amanda.Lonsdale@magnitudeglobalfinance.com

Gavin Street
Gavin.street@coronium.com.au