Case study: Solomon Islands’ Energy Transition Pathway

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BACKGROUND

• **Electricity Sector:**
  • Solomon Islands Electricity Authority (trading as Solomon Power) as state-owned and vertically integrated utility responsible for generation, transmission, distribution, licensing, etc.
  • No private sector involvement in Renewable Energy, expect one project structured as Public-Private Partnership:
    • 15MW Tina River Hydropower Project

• **Installed Capacity:**
  • Honiara grid (~30MW, ~19,000 customers)
  • 11 provincial grids (4MW, ~6,500 customers)

• **Renewable Energy share:**
  • Around 3% Renewable Energy (29MW diesel/ 1MW solar) in Honiara grid

• **Electrification:**
  • About 67% in Honiara
  • < 50% of households in Solomon Islands
  • Grids serve around 12% of the population

• **Electricity Tariff:**
  • With around 80c/ kWh among the highest in the world
## LEGAL & POLICY FRAMEWORK

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<th>Act/ Policy</th>
<th>Details</th>
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<td><strong>Electricity Act 1969</strong></td>
<td>Establishment of Solomon Islands Electricity Authority (monopoly for generation, transmission, distribution, licensing and tariff setting)</td>
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| **Electricity (Amendment) Act 2023**             | • Explicitly states that generation from any electricity generation equipment is allowed, including RE technology  
• Recognizes new tariff setting process under the MMERE |
| **Solomon Islands National Energy Policy 2019**   | • (i) promoting efficient use of energy resources and increasing sector sustainability, (ii) establishing a sound regulatory environment, and (iii) increasing use of renewable energy for power generation.  
  • Electrification target: 80% in urban households/ 40% in rural households by 2025  
  • Renewable energy: 50% by 2030 (grid power generation) |
| **Renewable Energy Strategy and Investment Plan** | Renewable energy: 100% RE share in 2050 (Solomon Islands)                                      |
| **Honiara RE Roadmap**                           | Renewable energy: 100% RE share in 2030 (Honiara Grid)                                        |
| **Nationally Determined Contribution**            | • Power sector is responsible for 39% of greenhouse gas emissions.  
• Committed to reduce GHG, with additional assistance, to a 27% reduction by 2025, and 45% by 2030. |
## CHALLENGES & ACTIONS

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| • Geographically dispersed (~1,000 islands/ 70% of the population in rural areas) | • Decentralized energy solutions  
• Development of suitable O&M models                                         |
| • High cost of transport & logistics                                       |                                                                                                |
| • Difficult to access & RE systems to maintain                            |                                                                                                |
| • Climate change impacts, disaster risk due to extreme natural events     | • Implementation of climate-resilient infrastructure and focus on sustainability                  |
| • 80% of land in Solomon Islands is customary (landownership issues)      | • Involvement of communities through Community Benefit Sharing Schemes                           |
| • Capacity Constraints                                                    | • Accelerated RE implementation and use of battery energy storage systems requires training and technical expertise |
| • Limited financial resources                                             | • Bilateral and multilateral development partner support  
• Private sector investment required                                         |
| • No private sector enabling legal & technical framework                  | • Power Sector Reforms  
• Policy Reforms                                                                |
| • Capacity Constraints                                                    |                                                                                                |
| • Limited financial resources                                             |                                                                                                |
| • No private sector enabling legal & technical framework                  |                                                                                                |
EXPANSION OF RENEWABLE ENERGY (ongoing)

- **Tina River Hydropower Project:**
  - 15MW plant, access road, dam, transmission lines, community benefit sharing program

- **Solar Power Development Project:**
  - Solar hybrid mini-grids in 5 provincial centers (2MW)

- **Solomon Islands Renewable Energy Project:**
  - 4 provincial solar hybrid mini-grids (0.8MW)

- **Solomon Islands Electricity Access & Renewable Energy Expansion Project:**
  - 2MW grid-connected solar capacity
  - 300kW rooftop solar
  - 5 provincial solar hybrid mini-grids (1.5MW)

- **Solomon Islands Rural Electrification Project:**
  - 7 micro-grids in provinces of Solomon Islands
POWER SECTOR REFORMS

• **Institutional:**
  - Establishment of Electricity Sector Planning Agency (at MMERE) - **ONGOING:**
    - Planning for grid-scale electrification and electrification of other urban areas and rural areas
    - Drafting Integrated Resource Plan to determine resources required to reliably supply power at least cost.
  
  - Establishment of Private Public Partnership (PPP) Unit (at MOFT) - **ONGOING:**
    - Capacitate MOFT staff
    - Identify potential PPP transactions
    - Structure, tender, award and monitor PPP transactions, including energy
    - Undertake advocacy and awareness campaigns.

• **Establishment of Independent Electricity Regulator:**
  - Protecting the interests of consumers and other participants in the sector
  - Tariff setting
  - Issuance of licenses
  - Regulate the performance of the Off taker and System Operator.
PLANNED POLICY REFORMS

• Structural:
  • Introduction of National Grid Code - COMPLETED:
    • Establishment of requirements for accessing and connecting to the grid.
  • Unbundling of Energy Sector:
    • Independent Power Producers (IPP) for electricity generation.

• Tariff:
  • Shortening of tariff review period:
    • Reduce from 5 to 3 years.
  • Removal of Demand Charge:
    • Customers who own a generation facility connected to the grid are currently charged around $70-$110/installed kW/month
    • Removal to incentivize RE installation, e.g. rooftop solar.
  • Introduction of Net Metering/ Feed-in-tariff:
    • Incentive for consumers to install solar rooftop generation plants.
Going forward

PIPELINE

• Increase Renewable Energy share in the generation mix
  • 1.5 MW provincial solar hybrid project
  • 1 MW solar farm grid-connected (Honiara grid)
  • Off-grid solar PV rooftop pilot on 2 provincial schools

• Development of utility-scale Battery Energy Storage for the Honiara grid
  • 9 MW/24 MWh Battery Energy Storage System (BESS) for the Honiara grid to enable higher solar penetration (grid stability, load shifting)
Going forward (cont).

• Further Increase of RE share in the generation mix

• Encourage Private Sector Investment in Renewable Energy
  • Policy reforms to facilitate private sector involvement in generation
    • By setting up institutional framework (PPP Unit, energy sector planning, etc.)
    • By establishing policies, guidelines (PPP guidelines, etc.)
    • Identification of PPP/ private sector opportunities
  • Solomon Power corporate reforms
  • Establishment of Independent Energy Regulator
    • Implement the technical conditions for increased grid-connected RE (utility-scale BESS)

• Rural Electrification
  • Lessons learned from mini-grid pilot projects to further scale-up
Thank you