Towards a Just Energy Transition in South Asia - Maldives case

(POISED and ASSURE Projects)

June 2023
Agenda

- ADB interventions Supporting Energy Transition
  - POISED Project and its additional financing
  - ASSURE Project (expect approval in Q3 2023)
- Energy Transition (ET)
- Pathways for Just Transition (JT) from ET
- Grounding JT principles into activities
- Lessons and opportunities
**Ongoing Project:**
**POISED & Additional Financing**

### POISED - Investment

<table>
<thead>
<tr>
<th>Grant</th>
<th>Amount</th>
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<tbody>
<tr>
<td>ADB Grant</td>
<td>USD 48.5 m</td>
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<tr>
<td>CTF Grant</td>
<td>USD 12 m</td>
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<tr>
<td>JFJCM Grant</td>
<td>USD 5 m</td>
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<tr>
<td>EU Grant</td>
<td>USD 5 m</td>
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<tr>
<td>EIB Loan</td>
<td>USD 50 m</td>
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<tr>
<td>Adl Financing</td>
<td>USD 10.5 m</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>USD 131 m</strong></td>
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### POISED - Outputs

- Solar PV installed: 28-30 MW
- Energy Storage: 10 MWh
- Diesel Generators: 20 MW
- "Scattered over 160 Outer Islands"

### POISED - Outcomes

- 30% Peak demand by PV
- Diesel savings: 0.1 - 0.3 Liters/Kwh
- Reduced Co2 emissions
- Tariff Reduction

### Impacts:

- More Sustainable energy sector based on renewable resources
- All Islands initiate electricity sector decarbonization

### Capacity development

Sustainable growth

**$131 million**
## Proposed ASSURE Project

<table>
<thead>
<tr>
<th><strong>1</strong></th>
<th>Private Sector Investments in Renewable Energy Enhanced</th>
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<tbody>
<tr>
<td>-</td>
<td>Up to 48% RE (from ~ 10-12%)</td>
</tr>
<tr>
<td>-</td>
<td>Covering at least 20 islands</td>
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<tr>
<td>-</td>
<td>Including Floating Solar</td>
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<tr>
<td></td>
<td>Sovereign Investments support BESS + EMS + Grid</td>
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<td></td>
<td>Private sector – Solar Panels in IPP</td>
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<tr>
<th><strong>2</strong></th>
<th>Solar Independent Power Producer projects de-risked</th>
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<tbody>
<tr>
<td>-</td>
<td>Liquidity support (ESCROW)</td>
</tr>
<tr>
<td>-</td>
<td>Performance incentive for bidders</td>
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<tr>
<td></td>
<td>Attract Private Sector</td>
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<tr>
<td></td>
<td>Reduce Government borrowings</td>
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<thead>
<tr>
<th><strong>3</strong></th>
<th>Renewable Energy Penetration using new Technologies and Net metering Increased</th>
</tr>
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<tbody>
<tr>
<td>-</td>
<td>Exploring wind and ocean energy</td>
</tr>
<tr>
<td>-</td>
<td>Model for Rooftop solar deployment (utility driven)</td>
</tr>
<tr>
<td></td>
<td>Identify and develop pilot for other technologies</td>
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<tr>
<td></td>
<td>Potential for scale up in future</td>
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<tr>
<th><strong>4</strong></th>
<th>Capacity building of MOECCT, FENAKA and URA Strengthened</th>
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<tbody>
<tr>
<td>-</td>
<td>Necessary technical support for relevant stakeholders</td>
</tr>
<tr>
<td>-</td>
<td>Policy and regulatory support for URA, EPA and others</td>
</tr>
<tr>
<td>-</td>
<td>New areas and cross sectoral areas energy sector has high potential</td>
</tr>
<tr>
<td>-</td>
<td>Financial Management support for FENAKA</td>
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</tbody>
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<tr>
<th><strong>5</strong></th>
<th>Disaster-resilient, innovative, and gender- and socially inclusive renewable energy-based farming technologies pilot tested and promoted</th>
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<tbody>
<tr>
<td>-</td>
<td>Support Energy–Water–Food nexus</td>
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<tr>
<td>-</td>
<td>Community driven / operated</td>
</tr>
<tr>
<td></td>
<td>Cross-sectoral approach supporting Agriculture using RE, efficient use of water, adopt new technologies, reduce chemical use.</td>
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</tbody>
</table>

**$100.5 million**
ADB’s entire energy sector portfolio in Maldives supports “ENERGY TRANSITION”

- **POISED project:** Fundamental Shift towards sustainable RE system from Fossil fuel (diesel) based.

- **ASSURE project:** Accelerated RE penetration by facilitating private sector and innovative technologies
100% Energy Transition
100% Energy Transition

- Solar-Battery hybrid systems (Optimal design) based on island configuration.

- Cross sectoral Interventions (Decarbonization strategy to support other sectors)
  - Solar PV-based ice making plants (Fisheries)
  - Solar PV-battery Ferry (Marine Transport)
  - Renewable Energy - Water - Food nexus (Agricultural)

- Innovative and emerging technologies
  - Ocean based technologies (wave, ocean current, tidal etc.)
  - Small wind technologies
  - Advanced storage (3C batteries, flow batteries)
Energy Transition to Just Transition

1) Public Outreach and Awareness Campaign
   - Attract strong community support – reduce air & noise pollution, improve quality of life
   - Covering 160 outer islands (~ 7000 participants and about 50% women)
2) Career Guidance Sessions for Students

- Covering grades 8 to 10 and 12 (including teachers)
- Covering 160 outer islands (~6750 students – 3300 girls and 3400 boys)
3) RE training and Community Empowerment

- **WDC’s trained on RE and its benefits**
- **Home Solar Program and Net metering campaign**
  (253 households installed rooftop solar in outer islands)
4) Energy Efficiency and Employment Opportunities

- 120 Male and 30 Women employed by Utility
- Distributed 3,221,250 LED bulbs, 78,760 LED tubes, 534 LED harbor lights and 2,500 LED streetlights
Just Transition Interventions

First Solar Powered Community Ice Plant in Dhiffushi to support Fisheries

- The plant is operated by the island council and Women Development Community
Just Transition Interventions

Solar PV Based Ice making Plant
-Cross sectoral intervention supporting Fisheries

Community Inclusion
- Solar PV system – Owned by Utilities
- Ice Making Machine – Owned by Island Community

Benefits for Community
- Residents use Ice to preserve fish – supporting the main economic activity
- Save fuel for Fishermen
- Generate Revenue for Island Council
- Create Ownership among Community

- 365 Tons of Ice
- ~ 320000 MVR
Replication of Success Stories

Replication of Solar Powered Community Ice Plants to support Fisheries

- 4 Ice-making plants to be installed in 2023 in:
  - N. Landhoo
  - Th. Vilufishi
  - Th. Madifushi
  - Th. Buruni
Just Transition Interventions

- **Renewable Energy–Water–Food Nexus**
  - **FIRST** Renewable Energy (PV+BESS) based reverse Osmosis desalination plant
  - **Support Irrigation** integrated with modern and efficient systems (sprinklers, drip system, timers, sensors etc.)
  - **For agriculture** activities (engaging modern methods – shade houses, green houses, pilot hydroponics etc.)

- **100% community and gender inclusive** intervention to be run by Women Development Councils.
Lessons and Opportunities

- Energy Transition / Just Transition
  - Country, State, District or City context
  - Shall not wait for large scale transition (region/country)
  - Identify areas of immediate interventions

- Grounding floating ideas into interventions

- Replicate Successful interventions

- Share experiences
Thank you