OFFSHORE WIND AND FLOATING SOLAR PV - SUPPORT & FINANCING IN SIDS

Mark Leybourne
16th December 2021
Objective:
• Accelerate adoption of offshore wind in emerging markets
• Support to build pipeline of bankable projects

Program components:
1. Global knowledge generation and exchange
2. Bank Executed: Country roadmaps and technical assistance
3. Recipient Executed: Feasibility, site surveys, auctions

Current Work:
• **Global**: Env & Soc Framework, Concessional Finance study
• **Country**: Azerbaijan, Brazil, Colombia, Fiji, India, Philippines, Papua New Guinea, Saint Lucia, South Africa, Sri Lanka, Turkey, Vietnam, plus other initial engagements
Opportunities and Challenges in SIDS

**OPPORTUNITIES**
- High price of power
- Net-zero commitments
- Energy security needs – avoiding fuel imports and volatility
- Scarcity of available land for onshore generation
- Often good offshore wind resources and output potential
- Additional power could unlock new industry opportunities
- Good availability of concessional finance

**CHALLENGES**
- Projects are most likely to be <100MW
  - Difficult to attract project developers and operators
  - Potentially unattractive opportunities for suppliers and services
  - Few local supply and job opportunities
- But also perceived as large scale:
  - Permitting & tendering – Capability of local government agencies
  - Environmental & social – potential for relatively high, negative impacts
  - Grid connection – network strength and stability limits options
  - Large PPA agreement – challenge for offtaker and guarantees
Typical Country Activities Supported by WBG

**Roadmap**
Scoping and market analysis
Benefits and challenges
Provides recommendations

**Examples of Bank-Led Work**

- Market Development
  - Policy, Legal & Regulatory Studies
  - Approaches to tendering
  - Initial Geospatial Mapping
  - Grid Integration Analysis
  - Port & Infrastructure Assessment
  - Supply Chain & Economic Analysis

**Examples of Client-Led Work**

- Project Development
  - Site Surveys and Measurements
  - Wind Speed Measurements
  - Environmental & Social Assessments
  - Stakeholder Engagement
  - Tender Design & Management
  - Capacity Building & Technical Advisory

**Financing for Projects and Infra**

- **World Bank**: Public Sector Lending (grid, shared infrastructure etc.), Grants, Guarantees
- **IFC**: Private Sector Lending (project developers, ports, supply chain etc.), Guarantees
- **Other finance**: Commercial banks, concessional finance, export credit, other financial institutions
Near-shore Floating Solar PV

- Limited space for onshore solar deployment so need to consider marine environment (e.g. first near-shore pilots/projects in Maldives, Philippines, Seychelles, Singapore, UAE, etc.)

- WB is supporting Maldives in its near-shore FPV ambitions through Accelerating Renewable Energy Integration and Sustainable Energy (ARISE) Project
  - Preliminary technical assessment of the sites proposed for the tender of 10 MW, including collection of environmental and social data to be included in the tender package
  - Support to grid integration of solar, incl through battery storage

- WB/ESMAP is planning a publication on near-shore marine FPV to raise awareness about issues related to its deployment
  - Technical aspects (higher wind and waves, salinity, anchoring, etc.)
  - Environmental aspects (deployment in natural environment, unlike for standard FPV typically deployed in man-made reservoirs)
  - Social aspects (competition for marine space with navigation, fishing, recreation, etc.)
Thank You!

Mark Leybourne
Senior Energy Specialist, ESMAP, World Bank