

Maldives : Maldives Solar Power Development and Energy Storage Solution

1. Project Information

Project ID:	P000377	Instrument ID:	L0377A
Member:	Maldives	Region:	Southern Asia
Sector:	Energy	Sub-sector:	Renewable energy generation-solar
Instrument type:	<input checked="" type="checkbox"/> Loan:20.00 US Dollar million <input type="checkbox"/> Guarantee	Lead Co-financier (s):	World Bank
ES category:	B	Borrowing Entity:	Ministry of Finance and Treasury, Maldives
Implementing Entity:	Ministry of Environment, Maldives		
Project Team Leader:	Amit Kumar		
Responsible DG:	Rajat Misra		
Responsible Department:	INF1		
Project Team Members:	Gerardo Pio Parco, OSD - Environment & Social Development Specialist; Bernardita Saez, Project Counsel; Aditi Khosla, Alternate Counsel; Rui Xiang, OSD - Financial Management Specialist; Guoping Yu, OSD - Procurement Specialist		
Completed Site Visits by AIIB:	Mar, 2023 Project Team Leader made a site visit and did brief consultation with implementing agency, ME on the key concerns. The agenda of the mission was to meet the implementing agency and to confirm the reasons for the delay in project implementation.		
Planned Site Visits by AIIB:			
Current Red Flags Assigned:	1		
Current Monitoring Regime:	Regular Monitoring		
Previous Red Flags Assigned:	1		
Previous Red Flags Assigned Date:	2022/06		

2. Project Summary and Objectives

Project Summary: The project involves the development of a 36-megawatt (MW) solar power project and 50 megawatt hours (MWh) of battery energy storage solutions across various selected islands in the Maldives. The project also involves grid modernization to integrate variable renewable energy with the grid, which will be financed under the AIIB loan.

The project comprises the following components:

- Component 1. Solar Photovoltaic (PV) Risk Mitigation
- Component 2. Battery Energy Storage System (BESS)
- Component 3. Grid Modernization for Variable Renewable Energy (VRE) Integration

Component 4. Technical Assistance

Project Objective: To increase generation capacity from renewable energy sources and to facilitate the integration of renewable energy into the grid infrastructure of Maldives

3. Key Dates

Approval:	Feb. 25, 2021	Signing:	Mar. 17, 2021
Effective:	Jun. 16, 2021	Restructured (if any):	
Orig. Closing:	Oct. 31, 2025	Rev. Closing (if any):	

4. Disbursement Summary (USD million)

Contract Awarded:		Cancellation (if any):	0.00
Disbursed:	0.00	Most recent disbursement (amount/date):	0.00
Undisbursed:	20.00	Disbursement Ratio (%) ¹ :	0.00

5. Project Implementation Update

Component 1. Solar Photovoltaic (PV) Risk Mitigation Component

2. Battery Energy Storage System (BESS) Component 3. Grid Modernization for Variable Renewable Energy (VRE) Integration Component 4. Technical Assistance

Components	Physical Progress	Environmental & Social Compliance	Procurement
Component 1. Solar Photovoltaic (PV) Risk Mitigation	<p>Solar Photovoltaic (PV) Risk Mitigation</p> <ul style="list-style-type: none"> 10 MW Floating PV (S. Thithadhoo, S. Maradhoo, S. Hulhumeedhoo): <p>The technical requirement for the FPV bid was completed and shared with the World Bank.</p> <p>Project Update: The bids will be readvertised by June 2023.</p> <ul style="list-style-type: none"> 16 MW PV sub-project (L. Atoll, Lh. 	In compliance	<p>10 MW Floating PV (S. Thithadhoo, S. Maradhoo, S. Hulhumeedhoo)</p> <p>- WB hired an FPV consultant is working on detailed site assessments since July 2021. The wave and current assessment device were installed at the floating PV site of Hulhumeedhoo in August 2021 and the first data was downloaded successfully in January 2022. The Consultant submitted the Interim Report for the Second period of 4 months (Jan-May 2022) of the</p>

¹ Disbursement Ratio is defined as the volume (e.g. the dollar amount) of total disbursed amount as a percentage of the net committed volume.

	<p>Naifaru, GA. Villingili & Sh. Funadhoo): Site visits were made by PMU to Lh. Naifaru, GA. Villingili and L. Atoll project islands. Project information sessions were conducted for the Island Council, Women Development Committee (WDC), NGOs of the islands, and the site owners of solar PV installation. An information session regarding renewable energy for school students was also held at GA. Villingilli. As per the request from Lh. Naifaru Council, some sites were revised and the updated ESSR was finalized and approved by the World Bank team in April 2022. Site specification and concept preparation have been finalized in Jan 2023.</p> <p>Project Update:</p> <ul style="list-style-type: none"> Additional Information: The 10 MW FPV and the 16 MW Ground Mounted Solar will be showcased to developers and investors during an investor conference planned for the 7th and 8th of May. The bids will be advertised shortly thereafter. 		<p>Measurement Campaign on June 9, 2022.</p> <p>15 MW PV sub-project (L. Atoll, Lh. Naifaru, GA. Villingili & Sh. Funadhoo)</p> <ul style="list-style-type: none"> - PQ applications were opened in September 2021 and the evaluation report was approved on December 27, 2021. - The total MW capacity has been increased to 15MW. - Civil Engineer hiring process is completed and ongoing for the structural assessments required for the bid. World Bank provided approval to go ahead with finalizing the bidding document with the inclusion of a clause that indicates that prior to the signing of contracts, the due assessments will be completed and the designs would be subject to the findings and the E and S Screenings. - The grid connection options for the bidding document were finalized in May 2022. Site specification and concept preparation is ongoing and is targeted to be finalized during July 2022. Delays were faced in finalizing the bidding document due to inconsistencies noted in the drawings provided by FENAKA during the PMU site visits. Some site specifications require changes upon further confirmation. - The ESSR for ground-mounted PV installation in L.Isdhoo, L. Kalaidhoo, L. Dhambidhoo, L. Maabaidhoo, L/ Gan, L. Fonadhoo, L. Maamendhoo, L. Hithadhoo, L. Kunahandhoo, L. Maavah, Ga. Villingili and Sh. Funadhoo was cleared by
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			<p>the World Bank in March 2022.</p> <p>Project Update: Additional Solar PV sub-project - The PMU had been in the process of identifying other potential islands/locations for PV installation for an additional 15MW (balance of the ARISE target). This includes the Male region and other islands proposed by utility companies. Availability of capacity can only be firmed up once the site identification process can be concluded. As done previously, these will also be constrained based on network absorption capacities, and site availabilities as a lot of islands already have solar PV installed, and would be a matter of scaling up.</p>
<p>Component 2. Battery Energy Storage System (BESS)</p>	<p>The recommendation for the award has been shared with the World Bank and cleared.</p> <p>Project Update: This is in the standstill period currently and will be awarded by June 2023.</p>	<ul style="list-style-type: none"> - The environmental screening requirement of WB and Environmental Protection Agency Maldives (EPA) of all sites for this component has been completed. - The Environmental and Social Code of Practice for Battery Energy Storage System was prepared and approved by WB and AIIB in September 2021. 	<ul style="list-style-type: none"> • Received comments on BD from WB on 17th July 2022. • Further discussions, comments, and responses on the BD were exchanged between WB and PMU until 31st July 2022. <p>Project Update:</p> <ul style="list-style-type: none"> • On 1st August 2022, finalized BD, SPN, and TRF were sent to MOF for publishing. • After the SPN was finalized by WB it was published by MOF on 4th August 2022. • Pre-bid meeting was held on 1st September 2022. • PMU received final clarifications from bidders on the deadline of 6th October 2022. • After clearance by WB on Addendum 1 the Bid Submission deadline was extended to 17th November 2022. • Bid evaluation was completed in January 2023.

			<p>Recommendations for the award were shared with WB.</p> <ul style="list-style-type: none"> • Environmental and Social Screening (both World Bank and EPA) has been completed and as per the screening outcomes Environmental Social Code of Conduct has been developed for this sub-project and was included with the bidding package.
Component 3. Grid Modernization for Variable Renewable Energy (VRE) Integration	<p>Project Update: The recommendation for the award was shared by the MECCT team. The GU was currently in a standstill period. A query was raised during the standstill period, which the GoM has responded to and resolved with guidance from the National Tender Board and MoF. The project is due to be signed by June 2023.</p>	<p>The environmental and Social Code of Practice for this component was shared with WB and AIIB in November 2021 and has been approved. The environmental screening requirement of WB and EPA of all sites for this component has been completed.</p> <p>In compliance.</p>	<p>Project Update:</p> <ul style="list-style-type: none"> • Received no objection to Addendum and Clarifications on 17th July 2022. Based on the Addendum the Bid Submission deadline was extended to 11th August 2022. • During Bid evaluation RFI was issued on 14th September with a deadline to respond by 21st September 2022. • Bid Evaluation Report was sent to MOF for no objection on 10th October 2022. • No objection to the Bid Evaluation Report was received on 26th October 2022 and the report was forwarded to WB for no objection on the same date. • Received comments from WB on the report on 15th November 2022. • Updated report after clearance by MOF was sent to WB on 20th November 2022. • Received a 2nd set of comments on the evaluation report by WB on 30th November 2022. • Based on the 2nd set of WB comments PMU prepared responses and updated the evaluation report as required. The updated report was again

			<p>signed by all the evaluators and sent for MOF clearance. MOF clearance was received on 14th December 2022 and the report was forwarded to WB for no-objection on the same date. This was cleared by WB and in a standstill with the signing planned for June 2023.</p> <ul style="list-style-type: none"> • Environmental and Social Screening (both World Bank and EPA) has been completed and as per the screening outcomes Environmental Social Code of Conduct has been developed for this sub-project and was included with bidding package.
Component Technical Assistance	<p>4. The Owners Engineer has supported the BESS, FPV, and GU projects. The support is ongoing.</p> <p>The gender mainstreaming and training capacity is being developed in consultation with the utilities.</p>	in compliance	<ul style="list-style-type: none"> - A review of potential islands for further scale-up is being discussed with FENAKA and STELCO. A list of islands is expected to be reviewed and shortlisted and site acquisition works are to be started upon finalization of that list. - Additional surveys for rooftops and open space in the Male region (in particular Thilafsuhi, Gulhifalhu, and Hulumale') were carried out but not considered, since the majority of spaces had now been planned to be taken up by STELCO as their own investments. - PMU is preparing an additional funding request note for the World Bank which will include the need to meet the 36 MW indicator for ARISE and beyond as to accelerate the works for Maldives' net-zero target. - A comprehensive needs assessment is being worked and some of the areas for additional interventions

		<p>under consideration include piloting new renewable technologies and electrification of the transport sector through the adaptation of EV's. Grid infrastructure upgrade needs and technical assessment areas will also be identified.</p> <p>Project Update: Capacity building - PMU will plan out capacity building for the whole of 2023 targeted towards the PMU, Utilities, Ministry, URA in both technical and non-technical areas. This may include local workshops, overseas programs, and study tours.</p>
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Financial Management:

The Project Management Unit (PMU) under the Ministry of Environment, Climate Change, and Technology for the ASPIRE project (previous World Bank project) shall continue to function as the PMU for the project. The planning, budgeting, funds flow, accounting, reporting, internal controls, and audit arrangements shall be aligned with the government's system. The PMU prepared the annual work plan and budget for the year 2021-2022 and was shared with WB in August 2021. The PMU is staffed with a project director, procurement management specialist, environment and social safeguards specialist, communications specialist, monitoring and evaluation specialist, sustainable energy specialist, senior energy specialist, and financial management officer.

6. Status of the Grievance Redress Mechanism (GRM)

The GRM for the project has been formulated and included in the project safeguards documents including Stakeholder Engagement Plan (SEP), Environmental and Social Management Framework (ESMF), and Environmental and Social Commitment Plan (ESCP). As per project safeguards documents, prior to implementation of any physical activities, GRM details will be displayed on the project sites, moreover, this information will be made available physically and through the website of the Ministry and the council.

7. Results Monitoring (please refer to the full RMF, which can be found on the last page of this PIMR)

It is early for actual results. The development objective of the Project is to increase generation capacity from renewable energy sources and to facilitate the integration of renewable energy into the grid infrastructure of Maldives.

Remarks:

The Project components are at the advanced stage of bidding. Progress on the procurement part for each component is updated above in section 5 to reflect the current status.