



Grid-Connected Rooftop Solar Program (P155007)

SOUTH ASIA | India | Energy & Extractives Global Practice | Requesting Unit: SACIN | Responsible Unit: ISAE1
IBRD/IDA | Program-for-Results Financing | FY 2016 | Team Leader(s): Amit Jain, Mani Khurana

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Program Development Objectives

Program Development Objective (from Program Appraisal Document)

The PDO is to increase installed capacity of Grid-connected Rooftop Solar Photovoltaic (GRPV) and to strengthen the capacity of relevant institutions for GRPV. The Program Environmental Objective (PEO) is to achieve reductions in GHG emissions through the displacement of thermal energy with solar energy.

Overall Ratings

Name	Previous Rating	Current Rating
Progress towards achievement of PDO	□ Highly Satisfactory	□ Satisfactory
Overall Implementation Progress (IP)	□ Satisfactory	□ Satisfactory

Implementation Status and Key Decisions

Between April 1, 2022, and July 31, 2022, the State Bank of India (SBI) has sanctioned US\$7.74 million of loans to solar rooftop developers and end-consumers, directly mobilizing US\$3.31 million of equity. Since the launch of the program, cumulatively, SBI has sanctioned \$384.56 million of loans, mobilizing \$164.70 million of equity from private sources and signing 606.48 MW of GRPV orders.

The technical assistance (TA) program engaged with the distribution utilities in 17 states to implement the Government of India's Phase-II of the grid-connected rooftop solar scheme, which targets 4,000 MW of rooftop solar capacity addition in the residential sector by March 31, 2026. The TA program supported the states in several aspects:

- Digitalizing the rooftop solar application and subsidy processes,
- Bid process management,
- Demand aggregation for both the residential sector and solarization of government buildings
- Devising innovative business models
- Capacity building, among others

Data on Financial Performance

Disbursements (by loan)

Project	Loan/Credit/TF	Status	Currency	Original	Revised	Cancelled	Disbursed	Undisbursed	% Disbursed
P155007	IBRD-86110	Effective	USD	500.00	500.00	0.00	500.00	0.00	100%
P155007	IBRD-94260	Not Effective	USD	150.00	150.00	0.00	0.00	150.00	0%
P155007	TF-A2023	Effective	USD	5.00	5.00	0.00	5.00	0.00	100%
P155007	TF-A2401	Effective	USD	120.00	120.00	0.00	100.00	20.00	83%



P160018	TF-A3753	Effective	USD	22.94	22.94	0.00	18.67	4.27	<div style="width: 81%; height: 10px; background-color: #28a745;"></div>	81%
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Key Dates (by loan)

Project	Loan/Credit/TF	Status	Approval Date	Signing Date	Effectiveness Date	Orig. Closing Date	Rev. Closing Date
P155007	IBRD-86110	Effective	13-May-2016	30-Jun-2016	28-Sep-2016	30-Nov-2021	31-Oct-2023
P155007	IBRD-94260	Not Effective	28-Jun-2022	--	--	30-Nov-2027	30-Nov-2027
P155007	TF-A2023	Effective	13-May-2016	30-Jun-2016	28-Sep-2016	30-Nov-2021	31-Oct-2023
P155007	TF-A2401	Effective	13-May-2016	30-Jun-2016	28-Sep-2016	30-Nov-2021	31-Oct-2023
P160018	TF-A3753	Effective	19-Jan-2017	19-Jan-2017	19-Jan-2017	30-Nov-2021	31-Oct-2023

DLI Disbursement

DLI ID	DLI Type	Description	Coc	DLI Amount	Achievement Status	Disbursed amount in Coc	Disbursement % for DLI
Loan: TFA2023-001							
1	Regular	Establishing GRPVs program at SBI	USD	5,000,000.00	Fully Achieved	5,000,000.00	<div style="width: 100%; height: 10px; background-color: #28a745;"></div> 100 %
Loan: IBRD86110-001							
2	Regular	Agg amt loan for GRPVs power gen sch	USD	198,750,000.00	Partially Achieved	102,293,000.00	<div style="width: 51%; height: 10px; background-color: #28a745;"></div> 51 %
3	Regular	MW solar PV rooftop ins commi	USD	300,000,000.00	Partially Achieved	271,456,750.00	<div style="width: 90%; height: 10px; background-color: #28a745;"></div> 90 %
Loan: TFA2401-001							
2	Regular	Aggr amt for finan GRPV power gen sch	USD	100,000,000.00	Partially Achieved	70,000,000.00	<div style="width: 70%; height: 10px; background-color: #28a745;"></div> 70 %
4	Regular	Sustainability of GRPV program	USD	20,000,000.00	Not Achieved	0.00	<div style="width: 0%; height: 10px; background-color: #28a745;"></div>
Loan: TFA3753-001							
1	Regular	Tech assis for impl MNRE GRPV prg	USD	12,935,780.00	Partially Achieved	2,936,000.00	<div style="width: 23%; height: 10px; background-color: #28a745;"></div> 23 %
2	Regular	Piloting New Business Models	USD	10,000,000.00	Fully Achieved	10,000,000.00	<div style="width: 100%; height: 10px; background-color: #28a745;"></div> 100 %

Program Action Plan

Action Description	Monitor compliance with MNRE's Quality Assurance and Quality Control requirements, as basic standards applicable to the market.				
Source	DLI#	Responsibility	Timing	Timing Value	Status
Other		Client	Due Date	31-Dec-2019	Completed



Completion Measurement	SBI to (i) prepare and share report on the implementation of MNRE's QA/QC requirements with Bank during the mid-term review of the project; and (ii) share the report with MNRE
Comments	In all the loan agreements between SBI and sub-borrower, there is standard clause for the borrower to ensure the quality standards established by MNRE/Gol.

Action Description	Include the Grid Connected Solar Rooftop Program in the existing complaints handling mechanism of SBI.				
Source	DLI#	Responsibility	Timing	Timing Value	Status
Other		Client	Due Date	02-Apr-2018	Completed
Completion Measurement	Information on how to access the grievance mechanism for Grid Connected Solar Rooftop Program publicized on SBI's website				
Comments					

Action Description	Implement the procedures identified in the ESSA to manage environmental and social issues and risks.				
Source	DLI#	Responsibility	Timing	Timing Value	Status
Environmental and Social Systems		Client	Due Date	31-Jan-2023	In Progress
Completion Measurement	SBI to share information with Bank during the first review mission of the program				
Comments	SBI has shared some information, however, the reporting of ESSA requirements needs to be strengthened—to be confirmed through mutually agreed actions.				

Risks

Systematic Operations Risk-rating Tool

Risk Category	Rating at Approval	Previous Rating	Current Rating
Political and Governance	<input type="checkbox"/> Low	<input type="checkbox"/> Low	<input type="checkbox"/> Low
Macroeconomic	<input type="checkbox"/> Low	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate
Sector Strategies and Policies	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate
Technical Design of Project or Program	<input type="checkbox"/> Substantial	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate
Institutional Capacity for Implementation and Sustainability	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate
Fiduciary	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate
Environment and Social	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate
Stakeholders	<input type="checkbox"/> Substantial	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate
Other	--	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate



Overall □ Substantial □ Moderate □ Moderate

Results

PDO Indicators by Objectives / Outcomes

Capacity of GRPV connected to the grid (Megawatt, Custom)				
▶ Capacity of GRPV connected to the grid (Megawatt, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	365.51	365.51	250.00
Date	30-Sep-2016	31-Mar-2022	30-Sep-2022	31-Oct-2023
Comments				

Reduction of Carbon emissions				
▶ GHG emissions (Metric tons/year, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	0.00	0.00	1,200,000.00
Date	19-Sep-2016	23-Mar-2022	30-Sep-2022	31-Oct-2023
Comments GHG emissions will be reported at the end of the program.				

Intermediate Results Indicators by Results Areas

Launch of Rooftop Solar PV program at SBI and development of internal procedures for the identification, risk assessment, appraisal and approval of rooftop solar projects.				
▶ Launch of Rooftop Solar PV program at SBI and development of internal procedures for the identification, risk assessment, appraisal and approval of rooftop solar projects (Text, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	Done	Done	One time
Date	13-May-2016	21-Jul-2016	21-Jul-2016	31-Oct-2023
Comments				

Implementation of TA and capacity building program for discoms, SNAs, SERCs etc.				
▶ Implementation of TA and capacity building program for discoms, SNAs, SERCs etc. (Text, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target



Value	0.00	work ongoing in 17 States on demand aggregation, policy and regulatory matter	The PMC contract ended on August 8, 2022. SBI, in consultation with MNRE, may hire a new PMC.	TA completed
Date	13-May-2016	31-Mar-2022	30-Sep-2022	31-Oct-2023
Comments				

Amount rooftop solar loans approved by SBI				
▶ Amount rooftop solar loans approved by SBI (Amount(USD), Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	417,000,000.00	384,560,000.00	625,000,000.00
Date	13-May-2016	31-Mar-2022	30-Sep-2022	31-Oct-2023
Comments The approved (sanctioned and signed) loan amount has decreased from the last ISR because some of the projects have dropped out of the pipeline project. However, the total amount disbursed by SBI is US\$319.13 million. This is because of the time lag between loans sanctioned / signed and disbursed by SBI.				

Amount of additional equity financing from private sources mobilized by SBI				
▶ Amount of additional equity financing from private sources mobilized by SBI (Amount(USD), Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	178,600,000.00	164,706,000.00	265,000,000.00
Date	13-May-2016	23-Mar-2022	30-Sep-2022	31-Oct-2023
Comments In line with the lower sanctioned and signed loan amount, the equity financing amount has lowered from the previous ISR.				

Capacity (MW) of GRPV orders				
▶ Capacity (MW) of GRPV orders (Megawatt, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	606.48	606.48	600.00
Date	13-May-2016	31-Mar-2022	30-Sep-2022	31-Oct-2023
Comments				

Phase 2 of SBI's Rooftop Solar PV program launched				
▶ Phase 2 of SBI's Rooftop Solar PV program launched (Text, Custom)				



	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	Not yet due	Not yet due	Completed
Date	13-May-2016	31-Mar-2022	30-Sep-2022	31-Oct-2023
Comments				

Capacity of rooftop solar installed and commissioned under the program (MW)				
► Capacity of rooftop solar installed and commissioned under the program (MW) (Megawatt, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	365.51	365.51	500.00
Date	13-May-2016	31-Mar-2022	30-Sep-2022	31-Oct-2023
Comments				

Disbursement Linked Indicators

► DLI 1 DLI 1: Establishing a Rooftop Solar PV Program at the State Bank of India. (Intermediate Outcome, 5,000,000.00, 100%)				
	Baseline	Actual (Previous)	Actual (Current)	till Nov 30, 2027
Value	0.00	5,000,000.00	5,000,000.00	5,000,000.00
Date	13-May-2016	31-Mar-2022	30-Sep-2022	--
Comments				

► DLI 2 DLI 2: Technical assistance to key stakeholders for the implementation of MNRE's GRPV program (Intermediate Outcome, 13,000,000.00, 67%)				
	Baseline	Actual (Previous)	Actual (Current)	till Nov 30, 2027
Value	0.00	8,670,000.00	8,670,000.00	13,000,000.00
Date	13-May-2016	31-Mar-2022	30-Sep-2022	--
Comments				

► DLI 3 DL3: Aggregate amounts of loans signed by SBI for the financing of solar (PV) rooftop power generation schemes. (Intermediate Outcome, 298,750,000.00, 0%)				
	Baseline	Actual (Previous)	Actual (Current)	till Nov 30, 2027
Value	0.00	251,969,000.00	251,969,000.00	298,750,000.00
Date	13-May-2016	31-Mar-2022	30-Sep-2022	--



Comments

► DLI 4 DLI 4: Piloting new business models (Outcome, 10,000,000.00, 0%)

	Baseline	Actual (Previous)	Actual (Current)	till Nov 30, 2027
Value	0.00	10,000,000.00	10,000,000.00	10,000,000.00
Date	13-May-2016	31-Mar-2022	30-Sep-2022	--

Comments

► DLI 5 DLI 5: Megawatts of solar (PV) rooftop power generation installed and commissioned under SBI financing (Output, 300,000,000.00, 115%)

	Baseline	Actual (Previous)	Actual (Current)	till Nov 30, 2027
Value	0.00	346,450,000.00	346,450,000.00	300,000,000.00
Date	13-May-2016	31-Mar-2022	30-Sep-2022	--

Comments The actual disbursed amount includes advances, which are being settled upon SBI's submission of results achieved.

► DLI 6 DLI 6: Sustainability of GRPV program (Outcome, 20,000,000.00, 0%)

	Baseline	Actual (Previous)	Actual (Current)	till Nov 30, 2027
Value	0.00	0.00	0.00	20,000,000.00
Date	13-May-2016	31-Mar-2022	30-Sep-2022	--

Comments

► DLI 1 DLI 1: Establishing a Rooftop Solar PV Program at the State Bank of India. (Intermediate Outcome, 5,000,000.00, 100%)

	Baseline	Actual (Previous)	Actual (Current)	till Nov 30, 2027
Value	0.00	5,000,000.00	5,000,000.00	--
Date	13-May-2016	30-Sep-2022	30-Sep-2022	--

Comments

► DLI 2 DLI 2: Technical assistance to key stakeholders for the implementation of MNRE's GRPV program (Intermediate Outcome, 13,000,000.00, 67%)

	Baseline	Actual (Previous)	Actual (Current)	till Nov 30, 2027
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Value	0.00	8,670,000.00	8,670,000.00	--
Date	13-May-2016	30-Sep-2022	30-Sep-2022	--
Comments				

► DLI 3 DL3: Aggregate amounts of loans signed by SBI for the financing of solar (PV) rooftop power generation schemes. (Intermediate Outcome, 298,750,000.00, 0%)

	Baseline	Actual (Previous)	Actual (Current)	till Nov 30, 2027
Value	0.00	251,969,000.00	251,969,000.00	--
Date	13-May-2016	30-Sep-2022	30-Sep-2022	--
Comments				

► DLI 4 DLI 4: Piloting new business models (Outcome, 10,000,000.00, 0%)

	Baseline	Actual (Previous)	Actual (Current)	till Nov 30, 2027
Value	0.00	10,000,000.00	10,000,000.00	--
Date	13-May-2016	30-Sep-2022	30-Sep-2022	--
Comments				

► DLI 5 DLI 5: Megawatts of solar (PV) rooftop power generation installed and commissioned under SBI financing (Output, 300,000,000.00, 8%)

	Baseline	Actual (Previous)	Actual (Current)	till Nov 30, 2027
Value	0.00	346,450,000.00	346,450,000.00	--
Date	13-May-2016	30-Sep-2022	30-Sep-2022	--
Comments				

► DLI 6 DLI 6: Sustainability of GRPV program (Outcome, 20,000,000.00, 0%)

	Baseline	Actual (Previous)	Actual (Current)	till Nov 30, 2027
Value	0.00	0.00	0.00	--
Date	13-May-2016	30-Sep-2022	30-Sep-2022	--
Comments				

► DLI 7 Aggregate amounts of sub-loan agreements signed by SBI for the financing of solar (PV) rooftop systems in the residential sector, of which at least 50 percent should be for system sizes up to 10 kW (Intermediate Outcome, 115,500,000.00, 0%)



	Baseline	Actual (Previous)	Actual (Current)	till Nov 30, 2027
Value	0.00	0.00	0.00	--
Date	--	01-Dec-2022	01-Dec-2022	--
Comments				

► DLI 8 Megawatts of solar (PV) rooftop systems installed, commissioned, and connected to the grid in the residential sector (Intermediate Outcome, 49,500,000.00, 0%)

	Baseline	Actual (Previous)	Actual (Current)	till Nov 30, 2027
Value	0.00	0.00	0.00	--
Date	--	01-Dec-2022	01-Dec-2022	--
Comments				