



The World Bank

Grid-Connected Rooftop Solar Program (P155007)

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INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

A PROPOSAL FOR RE-STRUCTURING THE
GRID CONNECTED ROOFTOP SOLAR PROGRAM

APPROVED ON MAY 13, 2016

TO THE
STATE BANK OF INDIA

Energy & Extractives Global Practice
South Asia Region



CURRENCY EQUIVALENTS
(Exchange Rate Effective January 17, 2019)

Currency Unit = Indian Rupees
INR 71 = US\$1

FISCAL YEAR
April 1 – March 31

ABBREVIATIONS AND ACRONYMS



DATA SHEET (Grid-Connected Rooftop Solar Program - P155007)

Project ID P155007	Financing Instrument Program-for-Results Financing	IPF Component No
Approval Date 13-May-2016	Current Closing Date 30-Nov-2021	

Organizations

Borrower State Bank of India	Responsible Agency State Bank of India
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Program Development Objective(s)

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.

Summary Status of Financing

Ln/Cr/TF	Approval Date	Signing Date	Effectiveness Date	Closing Date	Net Commitment	Disbursed	Undisbursed
IBRD-86110	13-May-2016	30-Jun-2016	28-Sep-2016	30-Nov-2021	500.00	249.19	250.81
TF-A2023	13-May-2016	30-Jun-2016	28-Sep-2016	30-Nov-2021	5.00	5.00	0
TF-A2401	13-May-2016	30-Jun-2016	28-Sep-2016	30-Nov-2021	120.00	56.20	63.80

Policy Waiver(s)

Does the Program require any waivers of Bank policies applicable to Program-for-Results operations?

No



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Grid-Connected Rooftop Solar Program (P155007)



I. PROGRAM STATUS AND RATIONALE FOR RESTRUCTURING

Implementation Progress:

This project paper seeks the approval of the Country Director to extend the deadline of the DLI 2 - Aggregate amounts of loans originated by SBI for the financing of GRPVs power generation schemes, as stated in the IBRD Loan Agreement.

On May 13, 2016, the World Bank Board approved a Grid-Connected Rooftop Solar PV (GRPV) Program of US\$625 million¹ (US\$500 million from IBRD, US\$125 million from CTF) to support the Government of India in its initiative to generate electricity from the widespread installation of solar photovoltaic (PV) rooftops and to strengthen the capacity of relevant institutions for GRPV. This program is providing concessional financing to grid-connected rooftop solar developers through the State Bank of India (SBI). On November 15, 2016, the World Bank Board approved an additional amount of US\$22.93 million for the GRPV Program. This was to incentivize the SBI to lend to riskier categories of GRPV customers, such as non-banking financial institutions (NBFCs) and small and medium enterprises (SMEs). The additional financing was also allocated to strengthen the investment climate for the GRPV by building the capacity of its main stakeholders.

An advance of US\$162 million, which corresponds to 25 percent of the total financing of US\$647.93 million was made to SBI at the beginning of the program. The achievement of DLIs for utilization of this advance amount will be verified at the end of this program in November 2021.

Till March 25, 2019, under this program, the aggregate amounts of loans signed by SBI for the financing of GRPV power generation schemes is US\$87.64 million². Against achievement of results on DLI 2 of IBRD Loan Agreement (LA), *Aggregate amount of loan originated by SBI for the financing of GRPVs power generation schemes*³, US\$18.49 million has been disbursed to SBI. Additionally, an advance amount of US\$51 million from IBRD Loan has been allocated against achievement of future results on DLI2. US\$198.75 million of IBRD Loan can be utilized for DLI2 of which only US\$18.49 million has been utilized. In order to utilize US\$180.26 million, SBI has to sign new loans in the aggregate amount of US\$518.6 million for the financing of GRPV power generation schemes. SBI will need additional time to sign these new loans. SBI is launching new schemes and capacity building activities (details in rationale for restructuring section) to sign new loans.

About 142 MW has already been commissioned under this program. US\$104.45 million of IBRD Loan has been disbursed from IBRD Loan against DLI3 of the IBRD Loan Agreement, Megawatts of solar (PV) rooftop power generation installed and commissioned under SBI financing⁴. Additionally, an advance amount of US\$75.75 million of IBRD Loan has been allocated against achievement of future results on DLI3.

¹ US\$500 million under IBRD Loan No. 8611-IN, US\$120 million under CTF Loan No. TF0A2401-IN, and US\$5 million under CTF Grant No TF0A2023-IN

² Disbursement on DLI2 of the IBRD Loan agreement is based on evidence of loan agreements verified by Program External Auditor (PEA) signed by SBI. Till, March 25, 2019, SBI has evidence of loan agreements verified by PEA of US\$ 87.64 million.

³ DLI2 of IBRD LA corresponds to DLI3 of the Results Framework in Annex 1.

⁴ DLI3 of IBRD LA corresponds to DLI5 of the Results Framework in Annex 1.



Up to March 31, 2019, drawdowns from the CTF Loan facility are commensurate to the annual amounts of loan agreements signed with SBI's borrowers. CTF Loan of US\$26.2 million has been disbursed against the DLI2 of IBRD LA. Additionally, an advance amount of US\$30 million from CTF Loan has been allocated against achievement of future results on DLI2. US\$100 million of CTF Loan can be utilized against achievements of DLI2 results, of which only US\$26.2 million has been utilized. SBI has to sign additional loans⁵ aggregating to US\$369 million, to obtain the unutilized US\$73.8 million of CTF Loan. The SBI has requested extension of the deadlines for disbursement from CTF Loan in DLI 2 from March 31, 2019 to March 31, 2021 and from IBRD Loan in DLI 2 from March 31, 2020 to March 31, 2021.

The program also includes a technical assistance (TA) grant of US\$22.93 million. The SBI hired a Project Management Consultant (PMC), to manage the TA and Capacity Building program. Under the TA program, the PMC is now working with the SBI and the MNRE to implement a sector-wide capacity development program to improve the business environment for solar rooftop investment.

The drawdown of funds from the total program has been categorized into specific milestones (DLIs), which have been allocated across particular grants and loans (i.e. IBRD Loan, CTF Loan, CTF Grant) (Table 1 and 2).

⁵ Disbursement on DLI2 of the IBRD Loan agreement is based on evidence of financial closure on the loans signed by SBI.



Disbursements (including Advance) IBRD and CTF Loan Agreement					
DLI Description	Allocated amount (US\$ Millions)	CTF Grant	CTF Loan	IBRD Loan	GEF Grant
DLI 1 Establishing a Rooftop Solar PV Program at the State Bank of India.	5	5			
DLI 2 Aggregate amounts of loans signed by SBI for the financing of solar (PV) rooftop power generation schemes.	298.75		56.2	68.99	
DLI 3 Megawatts of solar (PV) rooftop power generation installed and commissioned under SBI financing.	300			180.20	
DLI 4 Sustainability of GRPV program	20				
GEF Loan Agreement					
DLI 1 Technical assistance to key stakeholders for the implementation of MNRE's GRPV program1	13				8.67
DLI 2 Piloting new business models3.	10				
Total	646.75	5	56.2	249.19	8.67
					319.06

Disbursements (excluding Advance) IBRD and CTF Loan Agreement					
DLI Description	Allocated amount (US\$ Millions)	CTF Grant	CTF Loan	IBRD Loan	GEF Grant
DLI 1 Establishing a Rooftop Solar PV Program at the State Bank of India.	5	5			
DLI 2 Aggregate amounts of loans signed by SBI for the financing of solar (PV) rooftop power generation schemes.	298.75		26.2	18.49	
DLI 3 Megawatts of solar (PV) rooftop power generation installed and commissioned under SBI financing.	300			104.45	



DLI 4 Sustainability of GRPV program	20				
GEF Loan Agreement					
DLI 1 Technical assistance to key stakeholders for the implementation of MNRE's GRPV program1	13				2.936
DLI 2 Piloting new business models3.	10				
Total	646.75	5	26.2	122.94	2.93
					157.08

Rationale for Restructuring

The project paper proposes to extend the deadline of the CTF component in DLI 2 from March 31, 2019 to March 31, 2021 and IBRD component in DLI 2 from March 31, 2020 to March 31, 2021. Progress on DLI 2, corresponding disbursement-linked results and allocated amounts applicable to DLI 2 will be updated accordingly. The current description of DLI 2, corresponding disbursement-linked results, and allocated amounts applicable to the program is shown in Table 3.



Table 3: Disbursement-Linked Indicator 2, Corresponding Disbursement-Linked Results and Allocated Amount(s) Applicable to the Program

DISBURSEMENT LINKED INDICATORS	DISBURSEMENT LINKED RESULTS									
	RESULTS TO BE ACHIEVED IN FY2016/17 (YEAR 1)		RESULTS TO BE ACHIEVED IN FY2017/18 (YEAR 2)		RESULTS TO BE ACHIEVED IN FY2018/19 (YEAR 3)		RESULTS TO BE ACHIEVED IN FY2019/20 (YEAR 4)		RESULTS TO BE ACHIEVED IN FY2020/21 (YEAR 5)	
<i>2. Aggregate amounts of loans signed by the SBI for the financing of GRPV's power generation schemes.</i>	The SBI has signed loans for the financing of installation of solar (PV) rooftops for an aggregate amount of at least USD 50 million equivalent		The SBI has signed loans for the financing of installation of solar (PV) rooftops for an additional aggregate amount of at least USD 10 million equivalent above Year 1.		The SBI has originated loans for the financing of installation of solar (PV) rooftops for an additional aggregate amount of at least USD 10 million equivalent above Year 2.		The SBI has originated loans for the financing of installation of solar (PV) rooftops for an additional aggregate amount of at least USD 10 million equivalent above Year 3.			
<i>Allocated Amount(s) & Source of Funding</i>	CTF	USD 500,000 per USD 1 million equivalent of loans originated	CTF	USD 400,000 per USD 1 million equivalent of loans originated	CTF	USD 200,000 per USD 1 million equivalent of loans originated	CTF	N/A		
	IBRD	USD 500,000, per USD 1 million equivalent of loans originated	IBRD	USD 150,000 per USD 1 million equivalent of loans originated	IBRD	USD 350,000 per USD 1 million equivalent of loans originated	IBRD	USD 500,000 per USD 1 million equivalent of loans originated		

Due to the reasons outlined below, the full utilization of the CTF and IBRD Loan's balance amount by March 2019 is unlikely to materialize. Given this scenario, the SBI has submitted a request for extending the timeline for achieving the CTF Loan component in DLI 2 to March 31, 2021 and IBRD component in DLI 2 from March 31, 2020 to March 31, 2021.

A request for an extension is being made on the following grounds:

- (i) Under the DLI matrix, the maximum amount available for drawdown from the CTF Loan is during the first year of the project; i.e. for each US\$1 million worth of underlying loans signed, it is possible to drawdown an amount of US\$0.50 million. In the following year, the amount allocated for drawdown is reduced to US\$ 0.40 million; in the final or third year it is reduced to US\$ 0.20 million per US\$1 million equivalent of loans originated. Since the program was only launched in September 2016 (a six-month delay happened due to a resolution on the sovereign guarantee fee), the SBI had only six months to achieve DLI 2 during the first year. Consequently, the benefit of a high drawdown allocation in the first year was not availed.
- (ii) Three large value projects which amount to US\$178 million have been sanctioned, but the relevant documents were not signed due to the delayed firm pipeline generation by its respective borrowers. Main reasons for the pipeline slowdown are lack of policy clarity and slow demand aggregation by project developers. The SBI is continuously engaging with its borrowers and is monitoring the pipeline development for financing. The SBI launched a Rooftop Solar Lending



Campaign on October 15, 2018, which ended on the January 31, 2019. During this period, the Rooftop Solar lending campaign received a good response as the SBI branches were able to develop a pipeline of 22 projects (US\$45 million in total). This campaign will be extended and the SBI is implementing various measures to boost it internally. These initiatives include:

- Extensive training programs for SBI staff, targeting specific (Medium and Small enterprises) MSME industrial clusters.
 - Offers of special products with concessional lending terms for small size projects (up to 1 MW) and petrol pump dealers.
 - A campaign to incentivize SBI personnel financing rooftop solar projects.
 - Ongoing discussions with leading NBFCs for on-lending to solar rooftop projects.
- (iii) The SBI's appraisal efforts and time (five to six months) depend on the size and complexity of the project proposals. The SBI has appointed nodal officers in each region to streamline the approval process for project appraisals. The SBI is conducting workshops with branch managers to spread awareness about the GRPV appraisal process.
- (iv) There has been a lack of policy clarity by the MNRE (amount of safeguard duty⁶, an appropriate definition of solar rooftops). Due to the delays pertaining to final decisions on the amount of safeguard duty on imported modules, there was uncertainty among many solar players. The additional cost they would have to incur was uncertain, which resulted in delayed pipeline development and implementation.
- (v) The definition of 'solar rooftop' also varies across the country, and a few states consider open land in their definition of what constitutes a rooftop premises. In some cases, when premises are being defined, elevated and open areas on the land are also allowed as part of a rooftop system. The treatment to open land raise questions to what extent the ground-mounted solar systems can be considered under the rooftop arrangement. To resolve policy issues on the GPRV, the SBI and the Bank will submit a white paper and make a presentation to the MNRE.

Thus, given all these points which include a slowdown in pipeline development, a lack of clarity in the market regarding definitions, and given loan structures, an extension for the CTF Loan component in DLI 2 and IBRD Loan component in DLI 2 is being requested. With this extension, various measures for improvements that will foster long-term growth will be implemented.

II. DESCRIPTION OF PROPOSED CHANGES

No changes are proposed in PDO, results framework, program action plans, safeguards sections of the GRPV program.

The following changes are proposed in the CTF and IBRD component in DLI 2 in Schedule 3 to the loan agreement between the SBI and the IBRD dated June 30, 2016 (IBRD Loan Agreement). For year four and five of the project, the amount allocated for drawdown from the CTF Loan is increased from zero to US\$0.20 million

⁶ Government of India notified a 25% safeguard duty on imported solar panels for a period of two years. The duty, typically imposed during import surges, is meant to protect domestic manufacturers.



per US\$1 million equivalent of loans originated. For year four, IBRD component has been reduced from US\$500,000 to US\$350,000 per US\$1 million equivalent of loans originated and for year five, IBRD component has been increased from zero to US\$350,000 per US\$1 million equivalent of loans originated.

**PROPOSED SCHEDULE 3 to IBRD LOAN AGREEMENT Disbursement-Linked Indicators,
Disbursement-Linked Results and Allocated Amount(s) Applicable to the Program**

DISBURSEMENT LINKED INDICATORS	DISBURSEMENT LINKED RESULTS									
	RESULTS TO BE ACHIEVED IN FY2016/17 (YEAR 1)		RESULTS TO BE ACHIEVED IN FY2017/18 (YEAR 2)		RESULTS TO BE ACHIEVED IN FY2018/19 (YEAR 3)		RESULTS TO BE ACHIEVED IN FY2019/20 (YEAR 4)		RESULTS TO BE ACHIEVED IN FY2020/21 (YEAR 5)	
<i>2. Aggregate amounts of loans signed by the SBI for the financing of GRPV's power generation schemes.</i>	The SBI has signed loans for the financing of installation of solar (PV) rooftops for an aggregate amount of at least USD 50 million equivalent		The SBI has signed loans for the financing of installation of solar (PV) rooftops for an additional aggregate amount of at least USD 10 million equivalent above Year 1.		The SBI has originated loans for the financing of installation of solar (PV) rooftops for an additional aggregate amount of at least USD 10 million equivalent above Year 2.		The SBI has originated loans for the financing of installation of solar (PV) rooftops for an additional aggregate amount of at least USD 10 million equivalent above Year 3.		The SBI has originated loans for the financing of installation of solar (PV) rooftops for an additional aggregate amount of at least USD 10 million equivalent above Year 4.	
<i>Allocated Amount(s) & Source of Funding</i>	CTF	USD 500,000 per USD 1 million equivalent of loans originated	CTF	USD 400,000 per USD 1 million equivalent of loans originated	CTF	USD 200,000 per USD 1 million equivalent of loans originated	CTF	USD 200,000 per USD 1 million equivalent of loans originated	CTF	USD 200,000 per USD 1 million equivalent of loans originated
	IBRD	USD 500,000, per USD 1 million equivalent of loans originated	IBRD	USD 150,000 per USD 1 million equivalent of loans originated	IBRD	USD 350,000 per USD 1 million equivalent of loans originated	IBRD	USD 350,000 per USD 1 million equivalent of loans originated	IBRD	USD 350,000 per USD 1 million equivalent of loans originated

III. SUMMARY OF CHANGES

	Changed	Not Changed
Reallocation between and/or Change in DLI	✓	
Change in Disbursements Arrangements	✓	
Change in Disbursement Estimates	✓	
Change in Implementation Schedule	✓	
Change in Implementing Agency		✓
Change in Program's Development Objectives		✓
Change in Program Scope		✓



Change in Results Framework		✓
Change in Loan Closing Date(s)		✓
Change in Cancellations Proposed		✓
Change in Systematic Operations Risk-Rating Tool (SORT)		✓
Change in Safeguard Policies Triggered		✓
Change in Legal Covenants		✓
Change in Institutional Arrangements		✓
Change in Technical Method		✓
Change in Fiduciary		✓
Change in Environmental and Social Aspects		✓
Other Change(s)		✓

IV. DETAILED CHANGE(S)

DISBURSEMENT ESTIMATES

Year	Current	Proposed
2016	0.00	0.00
2017	157,500,000.00	155,000,000.00
2018	150,000,000.00	44,320,000.00
2019	150,000,000.00	135,990,000.00
2020	125,000,000.00	131,720,000.00
2021	42,500,000.00	131,720,000.00
2022	0.00	0.00



ANNEX 1: RESULTS FRAMEWORK

Results framework

Program Development Objectives(s)

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.

Program Development Objective Indicators by Objectives/ Outcomes

Indicator Name	DLI	Baseline	End Target
Capacity of GRPV connected to the grid (Megawatt, Custom)			
Capacity of GRPV connected to the grid (Megawatt)		0.00	250.00
Reduction of Carbon emissions			
GHG emissions (Tones/year)		0.00	1,200.00

Intermediate Results Indicators by Result Areas

Indicator Name	DLI	Baseline	Intermediate Targets	End Target
			1	
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.				



Indicator Name	DLI	Baseline	Intermediate Targets	End Target
			1	
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)		0.00		One time
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)		0.00		TA completed
Amount rooftop solar loans approved by SBI				
Amount rooftop solar loans approved by SBI (Amount(USD))		0.00		625,000,000.00
Amount of additional equity financing from private sources mobilized by SBI				
Amount of additional equity financing from private sources mobilized by SBI (Amount(USD))		0.00		265.00
Phase 2 of SBI's Rooftop Solar PV program launched				
Phase 2 of SBI's Rooftop Solar PV program launched (Text)		0.00		Completed
Capacity (MW) of GRPV orders				
Capacity (MW) of GRPV orders (Megawatt)		0.00		600.00
Capacity of rooftop solar installed and commissioned under the program (MW)				
Capacity of rooftop solar installed and commissioned under the program (MW) (Megawatt)		0.00		500.00

**Disbursement Linked Indicators Matrix**

Disbursement Linked Indicators Matrix				
DLI 1	DLI 1: Establishing a Rooftop Solar PV Program at the State Bank of India.			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Intermediate Outcome	Yes	Amount(USD)	5,000,000.00	100.00
Period	Value		Allocated Amount (USD)	Formula
Baseline	0.00			
till Nov 30, 2021	5,000,000.00		5,000,000.00	
DLI 2	DLI 2: Technical assistance to key stakeholders for the implementation of MNRE's GRPV program			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Intermediate Outcome	No	Amount(USD)	13,000,000.00	66.69
Period	Value		Allocated Amount (USD)	Formula
Baseline	0.00			
till Nov 30, 2021	13,000,000.00		13,000,000.00	
DLI 3	DL3: Aggregate amounts of loans signed by SBI for the financing of solar (PV) rooftop power generation schemes.			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Intermediate Outcome	No	Amount(USD)	298,750,000.00	7.28
Period	Value		Allocated Amount (USD)	Formula



Baseline	0.00			
till Nov 30, 2021	298,750,000.00		298,750,000.00	
DLI 4	DLI 4: Piloting new business models			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Outcome	No	Amount(USD)	10,000,000.00	0.00
Period	Value		Allocated Amount (USD)	Formula
Baseline	0.00			
till Nov 30, 2021	10,000,000.00		10,000,000.00	
DLI 5	DLI 5: Megawatts of solar (PV) rooftop power generation installed and commissioned under SBI financing			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Output	No	Amount(USD)	300,000,000.00	7.52
Period	Value		Allocated Amount (USD)	Formula
Baseline	0.00			
till Nov 30, 2021	300,000,000.00		300,000,000.00	



DLI 6		DLI 6: Sustainability of GRPV program		
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Outcome	No	Amount(USD)	20,000,000.00	0.00
Period	Value		Allocated Amount (USD)	Formula
Baseline	0.00			
till Nov 30, 2021	20,000,000.00		20,000,000.00	



ANNEX 2: PROGRAM ACTION PLAN

Action Description	Source	DLI#	Responsibility	Timing		Completion Measurement
Monitor compliance with MNRE's Quality Assurance and Quality Control requirements, as basic standards applicable to the market.			Client	Due Date	31-Dec-2019	
Include the Grid Connected Solar Rooftop Program in the existing complaints handling mechanism of SBI.			Client	Due Date	02-Apr-2018	
Implement the procedures identified in the ESSA to manage environmental and social issues and risks.			Client	Due Date	31-Dec-2019	