GRID CONNECTED ROOFTOP SOLAR PV PROGRAM

ENVIRONMENT AND SOCIAL SYSTEMS ASSESSMENT
- Executive Summary

JANUARY 2016

1.1 Context

1. Government of India (GoI) has set an ambitious goal of providing uninterrupted power for all homes, industrial and commercial establishments and adequate power for farmers by 2022 through its "*24X7 Power for All* program". GoI wants a growing share of the country's electricity to come from renewable energy. It aims to achieve a "solar revolution" by installing 100GW of solar power by 2022 - a thirty fold increase from 3.4 GW in early 2015. This includes an official target of installing 40GW of grid connected rooftop solar PV (GRPV) by 2022[1]. This target supersedes and significantly increases the targets of 20GW of grid connected solar power that were initially set under the National Action Plan on Climate Change (NAPCC) and Jawaharlal Nehru National Solar Mission (JNNSM). Together with large utility scale solar parks and ultra-mega solar projects, the government sees tremendous potential for generating decentralized and distributed solar power by utilizing the rooftops of industrial, commercial, residential and public buildings.

1.2 Program Description

2. The proposed program, requested by Ministry of New and Renewable Energy (MNRE) is one of a series of World Bank's (the "Bank") engagements in India's solar sector and as an important means to implement its scheme to install 10GW of grid connected rooftop solar power on an accelerated basis in the next three years. The program is aligned to the India Country Partnership Strategy (CPS) along two of its three pillars – integration, transformation, and inclusion. This operation is proposed to be undertaken as Program for Results (PforR). A result based / disbursement linked approach using a PforR instrument will be used for the loan and grant amount to finance investments in GRPV systems.

   The program would have two components:

   - Component 1: Commercial Lending for GRPV; and
   - Component 2 - Institutional support and Technical Assistance

3. Essentially two types of grid-connected rooftop systems are available as given below:

   i. Grid-tied wherein systems are primarily designed to supply the generated power to both the grid and the connected load (at consumer end). These systems will not generate power during a power failure as the inverter shuts down the system to stop sending power into the grid and avoids the risk of electrocuting utility personnel who are working to repair the grid (i.e. islanding protection").

   ii. Grid-interactive system works in conjunction with either a battery backup or diesel generator to support the load even during a power failure.

1.3 Scope of the Program

4. In terms of geographical scope, the program would be applicable on all Grid connected/interactive Solar PV projects located on Rooftops (commercial, industrial and institutional buildings – both public and private) in all parts of India. The program encourages installation of rooftop solar photovoltaic power generation plant for self-consumption as well as supply/sale of electricity to the

[1] The technical, economic and market potential of rooftop Solar PV in urban areas in India is estimated to be 352GWp and 210GWp and 124GWp, respectively. These estimates are based on MNRE's White Paper on Rooftop Solar PV in India, "Reaching the sun with rooftop solar".

grid. The program may also include lending to Non-Banking Finance Companies for further on-lending for GRPV. The program will also cover installation on the vacant land along with rooftop installation on the same premises. The developer will only select land parcels for installation that are free of all encroachment and other encumbrances.

1.4 Need for Environmental and Social Systems Assessment

5. The Program for Results instrument - PforR requires technical, fiduciary, environment and social assessments to be carried out as required under Operational Policy (OP 9.00) - *Program for Results Financing.* An initial environmental and social screening enabled to understand that the proposed Program is expected to lead to a reduction in negative externalities associated with local pollution and Green House Gas (GHG) emissions and have mainly have positive environmental impacts. Therefore, based on this assessment, program will be categorized as Category B and C investments.

6. The purpose of the Environmental and Social Systems Assessment (ESSA) is to: (i) review the environmental and social management rules and procedures and institutional responsibilities that are being used by the Program (ii) assess the implementing agency's (SBI) institutional capacity and performance to date to manage potential adverse environmental and social issues under the Program; and (iii) recommend specific actions for improving the capacity of the SBI in regard to effective management of environmental, health and safety and social issues during implementation.

1.5 Key Program Implementation Entities

7. The program will have two responsible agencies - SBI and MNRE. SBI -- India's oldest and largest financial services company, with more than 16,000 branches in the country, 190 foreign offices in 36 countries, will be the borrower and implementing agency for the PforR component (Component 1) of this operation.
8. Under the P4R Program, SBI will oversee the implementation of a technical assistance program, under the leadership of MNRE and the Forum of Regulators (FOR), to improve the capacity of discoms, SNAs and SERCs and other entities, as required, to promote and manage GRPV in the country.

1.6 Approach to Draft ESSA of Program

9. The ESSA is a World Bank document requirement for PforR investment operations. It is prepared by the Bank staff with consultant support as necessary through a combination of reviews of existing program materials and available technical literature, and SBI staff, and consultations with key stakeholders and experts. The findings, conclusions, and opinions expressed in the ESSA document are those of the Bank.
10. The methodology in the preparation of the ESSA involved the following

    (i) a review of the systems proposed in the Program Operational Manual prepared by SBI to address potential environment and social issues including its review against the six core principles outlined in the OP 9.00;
    (ii) a desk review of the laws, regulations, requirements, and guidelines on the EHS and social management;
    (iii) interactions with private aggregators who are involved in the business of setting up rooftop Solar PV systems;
    (iv) based on identified gaps, if any, in respect were identified, and a Program Action Plan is devised;
    (v) discussions were held with SBI for their responses on suggested Program Actions and to finalize the draft; and finally

(vi) the draft ESA report was subsequently disclosed to a set of stakeholder for their inputs and to finalize of the report.

2.1 Stakeholder Consultations

11. Stakeholder Consultations involved interactions with private aggregators, currently involved in setting up Rooftop Solar PV systems. The purpose of the interactions were to elicit their views in respect of their experience thus far in this emerging business; constraints or challenges faced; approach to management of environment and social issues. A consultation meeting was held with relevant stakeholders to disclose the draft ESSA and to elicit inputs into the Environmental and Social System Assessment (ESSA) at World Bank (WB) office. Relevant sections of the ESSA were shared in advance of the meeting with the participants. Process and rationale for the consultations were explained by the WB and SBI teams.

3.1 Potential Environmental, Health and Safety Concerns/Impacts

12. Potential environmental and social impacts for investments to be financed under the Program are not expected to be significant since subprojects with high environment and social risks will not be included in the Program. As a result, all investments to be covered by the Program will have the following potential EHS issues (a) small or modest in intensity, (b) of limited duration and extent, (c) mostly completely reversible, and (d) readily mitigated to acceptable levels with standard cost effective measures commercially available in the country. In general proposed investments are minor modifications on existing facilities where the incremental effects are clearly identified to be small and are readily known. Potential investments will not encroach or degrade sensitive habitats, be located in sensitive areas of bio-diversity value, or located in areas protected for physical cultural resources.

13. The environmental concerns or issues likely to arise from the installation and operation of the GRPV facility are limited and can be managed/mitigated, except for the disposal of damaged or discarded panels, if these are not covered under the take-back policy with the manufacturer/supplier during replacement. In case take-back policy is not available or cannot be ensured throughout the life cycle, the discarded or damaged panels should be disposed off as per the local laws on the disposal of hazardous wastes. The issues of safety of personnel during installation and operation can be ensured through provision of required measures.

14. In terms of social impacts, the Program through financing energy efficiency and green energy projects will bring general social benefit for the region through air quality improvement, and also bring economic growth and employment opportunities to the local communities albeit in a limited manner. Since all PV panels would be installed on rooftops, the only negative social impacts could be access restrictions to rooftop.

4.1 Applicable laws and regulations -- National, State and World Bank

15. The program would be governed by National, State level policies that are specific to Rooftop Solar energy as applicable (See **Annexure 1** of ESSA for a tentative list of these policies). Other laws and regulations at the National and State level would be applicable to the program which are relevant for Rooftop Solar, in context of environment and social issues.

In context of Environment regulations, the Government of India through the Ministry of Environment and Forests (MoEF) is responsible for the environmental policy and regulatory formulations and the State Governments are responsible to ensure implementation and enforcement of National policies and laws. At the central level, the Ministry of Environment and Forests (MoEF) and the Central Pollution Control Board (CPCB) are the nodal agencies responsible for ensuring compliance of environmental regulations and enforcement. The State Government's Departments of Environment and Forests and the State Pollution Control Boards (SPCBs) are the designated agencies to perform these functions at the State level.

5.1 Assessment of Program Systems vis-à-vis Core Principles of OP 9.00

16. According to OP 9.00, assessment and comparison of the principles of OP 9.00 against the country legal system for EHS and social management should be conducted. The core principles are:

- promote environmental and social sustainability in the Program design; avoid, minimize, or mitigate adverse impacts, and promote informed decision-making relating to the Program's environmental and social impacts;

- avoid, minimize, or mitigate adverse impacts on natural habitats and physical cultural resources resulting from the Program;

- protect public and worker safety against the potential risks associated with: (i) construction and/or operations of facilities or other operational practices under the Program; (ii) exposure to toxic chemicals, hazardous wastes, and other dangerous materials under the Program; and (iii) reconstruction or rehabilitation of infrastructure located in areas prone to natural hazards;

- manage land acquisition and loss of access to natural resources in a way that avoids or minimizes displacement, and assist the affected people in improving, or at the minimum restoring, their livelihoods and living standards;

- give due consideration to the cultural appropriateness of, and equitable access to, Program benefits, giving special attention to the rights and interests of the Indigenous Peoples and to the needs or concerns of vulnerable groups; and

- avoid exacerbating social conflict, especially in fragile states, post-conflict areas, or areas subject to territorial disputes.

17. SBI would follow a due diligence approach at each stage from pre-sanction to monitoring.

6.1 RECOMMENDATIONS

18. The section presents the recommendations to address the gaps identified in respect of Program capacity. These are given below:

Due Diligence processes

- Land if any is required should be in possession, with clear title at sanctions or pre-disbursement stage. Also screening would be undertaken on such lands to assess adverse impacts, if any and in case the land is encroached or encumbered, the site will not be considered for the sub-project.
- Sanction condition should stipulate that verification of title deed and execution of rooftop lease/rent agreement wherever applicable should be pre-condition to disbursement.

- It should be confirmed that the roofing material does not include carcinogenic material such as Asbestos.
- A generic guidance checklist for addressing the EHS requirements of RTSPV program can facilitate appraisal and periodical monitoring during installation and operation of RTSPV Program. An additional guidance checklist for compliance is also provided, to enable by proponents to understand the EHS requirements of RTSPV program and comply accordingly **(See Annexure 2 and 3).**
- LIE scope of work should include monitoring of applicable Environmental, Health and Safety (EHS) norms including fire safety clearance on project site during construction and post commissioning (till 3 month of COD)
- in case of default, SBI would agree on a time-bound mitigation plan with the sub-borrower and if not mitigated might lead to huge penalty or prepayment of the facility
- Facilitate operationalizing *Vishakha* guidelines among participating aggregators.

Monitoring

- In respect of management of Environment and Social issues, at specific request from WB, SBI will submit report prepared by:
    - **Independent Engineer (IE, third party)** if the size of sub-project is INR 100 crore and above project cost or SBI's share is INR 50 crores and above) till date of commissioning i.e. COD
    - **SBI's own staff** (if project cost is less than INR 100 crores or SBI's share is less than INR 50 crores)

For individual project funded under the program on compliance of applicable Environment, Health and Safety norms including safety clearance on project site during construction and post commissioning.

Grievance Redressal Mechanism

- Existing GRM is transparent and accessible and it would segregate and furnish report related to the grievances that might arise under this Program.

ANNEXES

State policies specific to Solar Power/Energy

Name of Policy	Salient features relating to Social/Environment
Gujarat Solar Power Policy, 2009	• Have nodal agencies to identify suitable locations for Solar projects, and prepare a land bank and requirement of creation / upgradation connecting infrastructure to project site i.e. roads, etc. • Facilitation in arranging Right of Way, water supply and obtaining other clearances and approvals which are in the purview of the state government • carry out awareness campaigns on energy conservation and use of Renewable sources of energy at all levels, village, Taluka, District, etc. through schools, colleges, educational institutions, community centres and civil society organizations

Name of Policy	Salient features relating to Social/Environment
Rajasthan Solar Policy 2011	• Government of Rajasthan has prepared land banks in various Districts for setting up of Grid Interactive Solar Power Projects in Rajasthan. The Solar Power Producers can access these land banks for selection of sites for development of Grid Interactive Solar Power Project in Rajasthan. • Rajasthan Renewable Electricity Corporation (RREC) will recommend to the concerned District Collector for reservation of the land identified by the Solar Power Producer. The District Collector will set apart the land for the project for a period of three years after examining it's suitability for allotment under Rajasthan Land Revenue (Allotment of Land for setting up of Power plant based on Renewable Energy Sources) Rules, 2007, as amended from time to time. RREC will act as a Nodal Agency for development of Solar Parks in Rajasthan. A special purpose vehicle (SPV) in form of a subsidiary company of RREC will formulate Policy and Rules in respect of land allotment, sharing of development cost by the Solar Power producers and manufacturers • The process of reservation of land will be completed by the concerned District Collector within the 30 days from the receipt of recommendation of RREC. • After registration of land, the allotment of land to the Solar Power Projects will be done as per the provisions of Rajasthan Land Rules, 2007, as amended from time to time. The Government land required for Solar Power Plant shall be allotted to Solar Power Producer at concessional rate of 10% of the DLC rate (agriculture land). • The allotment of land to the Solar Power Projects will be done as per the provisions of **Rajasthan Land Revenue (Allotment of Land for setting up of Power plant based on Renewable Energy Sources) Rules, 2007**, as amended from time to time. • Private Land: Power Producers shall be allowed to purchase private land from the Khatedar for setting up of Solar Power Plants in excess of ceiling limit prescribed in the Ceiling Act, 1973. Conversion of private land to industrial use shall be required for setting up of Solar Power Plant/Solar manufacturing plant before start of work. The conversion charges shall be 10% of charges levied for Industrial purpose under the relevant rules. • Water Availability: Water Resource Department will allocate required quantity of water from IGNP canal/the nearest available source for development of Solar Thermal Power Plants subject to the availability of water for power generation.
Karnataka Solar Policy 2011-16	• Has specific provisions under the G.O. on Karnataka Solar Policy (2014-2021) for solar projects **(See Table 4.1)**.
• Madhya Pradesh Solar Policy 2012	• For setting up Solar Power Plant in Madhya Pradesh, maximum land use permission for government land, if available, to the Solar Power Producer shall be 3.0 Hectares per MW. In case the Developer purchases private land for the project, then they will be eligible for an exemption of 50% on stamp duty. • In case of land owned by Revenue Department or any other State Government Department, the New & Renewable Energy Department shall take possession of the land and subsequently give permission for use of land to the concerned Developer (whose project has been accorded administrative approval). • Projects on Private Land: There is no maximum capacity cap on single project installed on private land. For projects proposed to be set up on private land, any developer willing to establish solar power project shall be eligible for incentive subject to registration with the GoMP. Performance Guarantee to be provided will be as per the guidelines specified in the qualification/selection document issued by GoMP Projects on government Land: For projects on government land,

Name of Policy	Salient features relating to Social/Environment
	maximum/minimum project capacity is limited as prescribed • Land requirement: For setting up Solar Power Plant in Madhya Pradesh, maximum land use permission for government land, if available, to the Solar Power Producer shall be 3.0 Hectares per MW. • If the government revenue land is recorded as forest land with small and minor trees in the revenue records or it is defined as a forest land as per Revenue Department (GoMP) Circular dated 8-08-2011, then the applicant will have to take permission, as per provisions of Forest Conservation Act 1980, from concerned authorities. • Stamp duty exemption on purchase of private land: In case the Developer purchases private land for the project, then they will be eligible for an exemption of 50% on stamp duty. In case of non-installation of the project on this land, the exemption (given) will be withdrawn and recovery shall be made as per rules. • Government land Use Permission: In case of land owned by Revenue Department or any other State Government Department, the New & Renewable Energy Department shall take possession of the land and subsequently give permission for use of land to the concerned Developer (whose project has been accorded administrative approval).
Andhra Pradesh Solar Policy, 2012 & Amendment	• Operative Period of the policy is from 2012 till 2017 • **It is the responsibility of the Project Developer to acquire the land required for the project.** • A Nodal agency (New and Renewable Energy Development Corporation of A.P. Ltd (NREDCAP) be responsible for clearance, facilitation and implementation of the proposed Solar Power Policy
Chhattisgarh Solar Policy 2012-2017	• Operative Period of the policy is from 2012 till 2017 • **It is the responsibility of the Project Developer to acquire the land required for the project.** • All the statutory clearances/approvals shall be obtained by the developer of the solar power plant • Land acquisition and statutory clearances/approvals shall be obtained by the developer of the solar power plant as per policy of the state. Govt. land will be made available depending on the availability • There would be a nodal agency to facilitate to o identify suitable locations and create a land bank o facilitate allotment of suitable land/space in control of state government or its agencies o assistance in establishing Right of way, water supply, connectivity through roads, etc
Draft Uttar Pradesh Solar Policy 2012	• Time frame for commissioning of Solar PV projects will be 13 months • Facilitation in all clearances approvals, permissions, training and consents required from the State Government/its agencies will be the main task of the Nodal Agency as single window.

:

Annexure 2

Guidance Checklist for verification of adequacy on Environmental, Health and Safety (EHS) requirements during appraisal and monitoring (Installation and Operation phases) of individual project funded under the Program by SBI

Sl No	EHS Requirements of RTSPV Program	Status (State Yes/No/Not Applicable)	Guidance for ensuring compliance of EHS requirements by SBI	Review and Monitoring by SBI for adequacy and compliance of EHS requirements
Proposal Appraisal Phase				

Sl No	EHS Requirements of RTSPV Program	Status (State Yes/No/Not Applicable)	Guidance for ensuring compliance of EHS requirements by SBI	Review and Monitoring by SBI for adequacy and compliance of EHS requirements
1	Whether RTSPV proposal require consent to establish (CTE). If yes, whether the proponent has received CTE from State Pollution Control Board		If Yes, check validity and imposed consent conditions by State Pollution Control Board, if any. If not, ensure first disbursement is released subject to submission of valid consent by proponent	Assess/Review compliance to consent conditions by proponent through periodic monitoring (till COD) by Independent Engineer or SBI's staff as per project cost thresholds.
2	Whether RTSPV proposal require lopping/pruning of tree branches to ensure shadow free area on roof. If yes, state whether permissions are obtained from competent authorities for periodic lopping/pruning of trees		If Yes, check validity and conditions imposed on proponent by competent authority, if any. If not, ensure first disbursement is released subject to submission of valid permissions for loping /pruning of trees	Review compliance to permissions including conditions, if any by proponent through site inspections by Independent Engineer or SBI's staff.
3	Whether roof rights have been secured		If yes, please verify the lease agreement/draft lease agreement /title deed for establishing clear rights over the roof for installation and operations	Review compliance to permissions including conditions, if any by proponent through Legal Counsel or SBI's staff.
4	Whether proposal has right to access roof through existing stair case on a 24X365 (all days of year irrespective of public holidays and Sundays). If not, what alternatives are considered to access like an external staircase or ring ladder etc dedicated to RTSPV etc		If not, seek details of alternative safe access along with the permission from owner	Review the safety of the alternate access to roof through site inspections by Independent Engineer or SBI's staff.
5	Whether proposal includes estimated water requirements for washing of panels and dependable arrangements to draw		Seek details of water requirements and its sources along with required permissions from competent authorities, if any required	Review the adequacy of arrangements through monitoring by Independent Engineer or SBI's staff.

Sl No	EHS Requirements of RTSPV Program	Status (State Yes/No/Not Applicable)	Guidance for ensuring compliance of EHS requirements by SBI	Review and Monitoring by SBI for adequacy and compliance of EHS requirements
	or share water from the same water connection or overhead tanks with owner of the building			
6	Whether structural safety of the building, present condition of roof for leakages and/ or cracks and adequacy of roof drainage has been assessed		Seek a structural safety and roof condition certificate from a certified/approved Chartered Engineer / Architect/ Competent person along with an action plan for rectifications and responsibilities, if any required. If not ensure certificate is submitted by proponent prior to first disbursement of loan	Check the validity, review the adequacy of arrangements through by Independent Engineer or SBI's staff
7	Whether the proponent has a accreditation of ISO 14000, OHSAS 18001 or has received any recognitions for environmental friendly initiatives or best EHS practices		If Yes, seek details of valid certifications and or recognitions Accreditation(s) give an indication to institutional capacity of the proponent to EHS requirements	
CONFIRM THAT ROOFING MATERIAL DOES NOT CONTAIN ANY CARCINOGENIC MATERIAL LIKE ASBESTOS.				
Installation And Operation Phase				
8	Whether RTSPV project require consent to operate (CTO). If yes whether proposal has received CTO from State Pollution Control Board		If Yes, seek a copy of the valid consent If not, ensure the same is submitted prior to following disbursement of loan	Assess/Review compliance to consent conditions by proponent through periodic monitoring by Independent Engineer or SBI's staff

Sl No	EHS Requirements of RTSPV Program	Status (State Yes/No/Not Applicable)	Guidance for ensuring compliance of EHS requirements by SBI	Review and Monitoring by SBI for adequacy and compliance of EHS requirements
9	State whether any arrangement has been agreed with manufacturer to take back damaged /discarded panels, batteries etc		Seek details of take back arrangement with manufacturer and in case such arrangement is not there with manufacturer stipulate condition in the sanction that the disposal of panel should be as per applicable law for discarding such hazardous waste.	Undertaking will be taken from the proponent for compliance of the condition.
10	Whether any provision to include DG set as power backup has been considered to regulate /govern power demand and ensure synchronized connectivity with Grid as well as solar power generation level If yes, state reasons to prefer DG set over Batteries for power back up Also state whether DG set is considered as part of the RTSPV or function as standalone & independent		Seek the details of DG set funded under the project, confirm installed and precautions considered for avoiding backflow of current to DG set from solar panels/grid supply, which can lead to blast at times due to malfunction of relays etc.	If DG set has been funded as part of the RTSPV facility, then check whether RTSPV has all precautions considered for avoiding backflow of current to DG set from solar panels/grid supply. Assess/Review RTSPV has all required consents/permissions and comply with conditions imposed thereof through periodic monitoring by Independent Engineer or SBI's staff.
11	Whether permissions from the owner is available to access the roof through existing staircase or whether external access will be required.		Seek details of arrangements made for safe lifting of the materials to roof top through existing staircase or temporary/ permanent external access.	Assess adequacy and review the safety procedures followed during material handling through site inspections and periodic monitoring by Independent Engineer or SBI's staff until 3 months after CoD. Follow up with only annual visit reports
12	Whether earthing of all plant and equipments / components under		Seek certification from Chief Electrical Inspector to Government (CIG).	

Sl No	EHS Requirements of RTSPV Program	Status (State Yes/No/Not Applicable)	Guidance for ensuring compliance of EHS requirements by SBI	Review and Monitoring by SBI for adequacy and compliance of EHS requirements
	RTSPV as per Indian Electricity Act,1956 and amended up to 2000 has been made, and tested by an approved competent agency			
13	Whether all safety provisions like provision of rubber mats, electric shock chart, first aid box, fire extinguishers to handle all types of fire (ABC type of required capacity), sand buckets, etc are provided/installed at appropriate locations		Seek details of safety measures/provisions mandatorily provided prior to testing, trial run and commercial operations of RTSPV facility	Assess adequacy and review the safety provisions including exit routes provided and procedures followed during site inspections and monitoring by Independent Engineer or SBI's staff.
14	Whether provision to provide safety wear like boots, hard hats(helmets), gloves, safety belts for personnel while working at heights among others have been included in the proposal		Seek details of safety measures/provisions mandatorily provided to all work force deployed on site to ensure safety of personnel at work.	Assess adequacy and review the safety provisions provided and procedures followed during site inspections and periodic monitoring by Independent Engineer or SBI's staff.
15	Whether all personnel deployed for Installation / Operation and Maintenance are provided with basic training in first aid and fire fighting		An undertaking from the proponent that they will ensure that personnel deployed for Installation / O & M has basic knowledge about first aid and fire- fighting instruments.	
16	Whether all personnel deployed for Installation / Operation and Maintenance (unskilled, semi-skilled and skilled) are paid at minimum wages as per applicable Minimum Wages Act		An undertaking from the proponent that they will ensure compliance of applicable Minimum Wages Act	

Sl No	EHS Requirements of RTSPV Program	Status (State Yes/No/Not Applicable)	Guidance for ensuring compliance of EHS requirements by SBI	Review and Monitoring by SBI for adequacy and compliance of EHS requirements
17	Whether all personnel deployed for Installation / O & M are covered under workmen compensation insurance policy, EPF Act, Gratuity Act etc as may be applicable or relevant		An undertaking from proponent they will ensure that all personnel deployed for Installation/ O & M personnel will be covered with workmen compensation insurance policy and are provided with benefits of any other applicable acts	The adequacy of insurances to be checked by LIA or SBI's staff.
19	Managing chemicals used in transformers and other ancillary facilities		Ensure that the Standard Operating Procedures (SOPs) are followed and regulatory permissions for recycling and /or disposal under Hazardous Substances Rules are available for compliance	Verification during the site visit; Check Documentation including receipts from recyclers, etc.

Annexure 3

Guidance Checklist for compliance on Environmental, Health and Safety (EHS) requirements for RTSPV Proposal by PROPONENT

Sl No	Environmental, Health and Safety(EHS) Requirements for RTSPV Program	Status (State Yes/No/Not Applicable)	Guidance for EHS compliance by proponent and Appraisal, and Monitoring during installation and operation phases by SBI
Proposal Appraisal Phase			

Sl No	Environmental, Health and Safety(EHS) Requirements for RTSPV Program	Status (State Yes/No/Not Applicable)	Guidance for EHS compliance by proponent and Appraisal, and Monitoring during installation and operation phases by SBI
1	Whether RTSPV proposal require consent to establish (CTE). If yes, whether RTSPV proposal has received consent to establish (CTE) from State Pollution Control Board		If Yes, furnish a copy of the valid consent along with consent conditions. In case consent is not in place, it should be made available prior to first disbursement of loan.
2	Whether RTSPV proposal require lopping/pruning of tree branches to ensure shadow free area on roof.		If yes, state whether permissions are obtained from competent authorities for periodic lopping/pruning of trees and furnish a copy of the permissions. In case permission is not in place, it should be made available prior to first disbursement of loan.
3	Whether proposal has right to access roof through existing stair case on a 24X365 (all days of year irrespective of public holidays and Sundays). If not, what alternatives are considered to access like an external staircase or ring ladder etc dedicated to RTSPV etc		In case right to access through existing stair case is not available, details of alternative access to roof, agreed upon with owner, is to be provided. If an external staircase has been considered, whether its location has been agreed upon with owner. If yes provide a copy of the same along with application.
4	Whether proposal includes estimated water requirements for washing of panels and dependable arrangements to draw or share water from the same water connection or overhead tanks with owner of the building		If not, how water requirement are intended to be met. Whether through a new water connection or through commercial water tankers or installation of new tube well. If tube well is considered, whether location has been agreed upon with owner and permissions obtained from competent authorities.
5	Whether structural safety of the building, present condition of roof for leakages and/ or cracks and adequacy of roof drainage has been assessed by a certified/approved Chartered Engineer / Architect/ Competent person		If Yes, furnish a copy of the certificate issued by a competent authority. In case certificate is not in place, it should be made available prior to first disbursement of loan. In case of any inadequacies in roof condition and drainage, arrangements for rectification should be taken up prior to first disbursement of loan.
6	Whether the proponent has an accreditation of ISO 14000, OHSAS 18001 or has received any recognitions for environmental friendly initiatives or best EHS practices		If Yes, furnish details of valid certifications and or recognitions
7	State the PV technology to be adopted under this proposal		
8	State whether any arrangement		If yes, state tenure/stage up to which take

Sl No	Environmental, Health and Safety(EHS) Requirements for RTSPV Program	Status (State Yes/No/Not Applicable)	Guidance for EHS compliance by proponent and Appraisal, and Monitoring during installation and operation phases by SBI
	has been agreed with manufacturer to take back damaged /discarded panels, batteries etc		back arrangements are agreed upon. Otherwise proponent has to be provided an undertaking that 'panel will be disposed as per applicable law for disposal of such hazardous waste'.
9	Whether any provision to include DG set as power backup has been considered to regulate /govern power demand and ensure synchronized connectivity with Grid as well as solar power generation level. If yes, state reasons to prefer DG set over Batteries for power back up. Also state whether DG set is considered as part of the RTSPV or function as standalone & independent.		If yes, and DG set has been considered as part of the funding of the RTSPV facility, then furnish the following information prior to first disbursement of loan • Rated capacity of DG set • Precautions considered for avoiding backflow of current to DG set from solar panels/grid supply • Consent to establish and operate DG set, if rated capacity is above 15KVA, issued by State Pollution Control Board • State whether DG set has all mandatory acoustic enclosures and installed to minimize noise and vibration levels • On site diesel storage facilities (maximum in liters) considered. • In case diesel storage is more than 2500 liters; permissions from competent authorities under Petroleum and Natural Gas Act are required and submitted to SBI. Additional firefighting facilities due to DG set are to be provided to RTSPV.
We confirm that Roofing material does not contain any carcinogenic material like Asbestos.			
Installation And Operation Phase			
10	Whether proposal has received consent to Operate (CTO) from State Pollution Control Board		If Yes, furnish a copy of the valid consent along with consent conditions or proponent should advise expected time line for its submission.
11	Whether roof rights have been secured		A lease agreement/ rent agreement with the property owner clearly detailing roof rights with the developer for the entire period of the project in years/ months.

Sl No	Environmental, Health and Safety(EHS) Requirements for RTSPV Program	Status (State Yes/No/Not Applicable)	Guidance for EHS compliance by proponent and Appraisal, and Monitoring during installation and operation phases by SBI
12	Whether permissions from the owner are available to lift the panels to roof through existing stair case.		If not, what alternate arrangements are considered for lifting of panels. This should be available for the life of the project for O&M.
13	Whether earthing of all plant and equipments has been made and tested by an approved agency as per latest Indian Electricity Act, 1956.		If Yes, furnish a certificate from Chief Electrical Inspector (CIG) / appropriate approval for safe installation.
14	Whether all safety provisions like provision of rubber mats, electric shock chart, first aid box, fire extinguishers to handle all types of fire (ABC type of required capacity), sand buckets etc are provided/installed at appropriate locations.		If not, all safety measures/provisions are mandatorily to be provided prior to testing, trial run and commercial operations date of RTSPV facility. All exit routes from the roof shall be well lit and free from all obstacles and unlocked, whenever O&M Personnel's are at work/duty.
15	Whether provision to provide safety wear like boots, hard hats (helmets), gloves, safety belts for personnel while working at heights among others have been included in the proposal.		If not, all such required safety wear are to be mandatorily provided to all work force deployed on site to ensure safety of personnel at work. • All personnel involved in material lifting operations shall be provided with safety gear like shoes, hard hats gloves etc. • Safety belts shall be mandatorily provided for persons working at height. Awareness shall be created amongst workforce about safety and strict adherence to wear safety gear at work shall be enforced
16	Whether all personnel deployed for Operation and Maintenance are provided with basic knowledge about first aid and fire fighting		If not, ensure all O&M personnel undergo a basic training in first aid and fire fighting as part of their induction, training, prior to their deployment on site.
17	Whether all personnel deployed for Installation / Operation and Maintenance (unskilled, semi-skilled and skilled) are paid at minimum wages as per applicable Minimum Wages Act		If not, ensure wages are mandatorily paid as per as per applicable Minimum Wages Act.
18	Whether all personnel deployed for Installation / Operation and Maintenance are covered under workmen compensation		If not, ensure all O&M personnel are mandatorily covered under workmen compensation insurance policy. Ensure the benefits of any other applicable acts are

Sl No	Environmental, Health and Safety(EHS) Requirements for RTSPV Program	Status (State Yes/No/Not Applicable)	Guidance for EHS compliance by proponent and Appraisal, and Monitoring during installation and operation phases by SBI
	insurance policy, EPF Act, Gratuity Act etc as may be applicable or relevant		available to O&M personnel. Provide a copy of the insurances taken for the personnel.
19	Managing chemicals used in transformers and other ancillary facilities		Ensure that the Standard Operating Procedures (SOPs) are followed and regulatory permissions for recycling and /or disposal under Hazardous Substances Rules are available for compliance