

Environmental and Social Management System Arrangement

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India: Solar Rooftop Investment Program (Tranche 2)

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1.0 INTRODUCTION

1.0 About SBI

1. State Bank of India (SBI) is a Fortune 500 company, an Indian multinational, public sector banking and financial services statutory body headquartered in Mumbai, India. SBI has over two centuries of rich heritage and legacy, accredits it as one of the trusted Bank through generations. SBI is the largest Indian Bank with over 25% market share, serves over 450 million customers through its vast network of over 22,000 branches 62,617 ATMs/ADWMs 71,968 Business Correspondents (BC) or Customer Service Point Kiosk outlets (CSPs) across India. SBI also has a global presence and operates across time zones through 229 offices in 31 countries worldwide.¹

1.0 Project Financing by SBI

2. SBI actively provides credit facilities for new projects as well as expansion, diversification, and modernization of existing projects in new and renewable energy sources, including grid-connected solar rooftop installations.²

3. The Government of India (GOI) has set an ambitious goal of reaching 40 GW in total solar capacity, with 10.9 GW of grid-connected solar rooftop installations already in operation, and there is vast potential for augmenting the lending portfolio to solar rooftop installations across India. Thus, SBI has drawn up plans to expand its lending portfolio/investments in this sector, enabling it to achieve its voluntary goal of Carbon Neutrality (scope 1 and scope 2) by 2030 and transition towards low-carbon and climate-resilient operations.

4. SBI has previously availed a line of credit from the World Bank for grid-connected solar rooftop installations in the residential sector and recently agreed in principle for another 150 million loan in the same sector across India. SBI has also availed line of credit from Kreditanstalt für Wiederaufbau (KfW) for the solar sector and the French Development Agency (Agence Française de Développement) for Climate Finance.

2.0 PROGRAM OVERVIEW

5. Asian Development Bank (ADB), through the solar rooftop investment program (SRIP), proposes to provide a \$500 million sovereign-guaranteed multi-tranche financing (MFF) comprising four tranches.³ The SRIP aims to finance solar rooftop systems through public financial institutions, including the SBI and the National Bank for Agriculture and Rural Development (NABARD). The definition of the solar roof top has been modified to include ground-mounted solar power installations by the Ministry of New and Renewable Energy, Government of India ⁴. The impacts

¹ Source: The official website of State Bank of India (sbi.co.in),

² SBI, in accordance with its Sustainability and Business Responsibility (BR) and Climate Change Risk Management Policy, has envisioned a voluntarily goal to achieve a state of Carbon Neutrality by 2030 and swiftly transitioning towards low carbon and climate resilient operations and as well as the augmenting its lending portfolio/investments in renewable energy generation in all its all national and international operations, and simultaneously endeavor to achieve the underlying aspirations of the United Nations Sustainable Development Goals (UN SDGs).

³ MFF comprise USD 9.5 million to PNB as Tranche-1, 90.5 million loan to SBI as Tranche-2 and USD 150 and 250 million loans as Tranches 3 & 4 respectively to NABARD.

⁴ Ministry of New and Renewable Energy, Government of India notification dated 5th September 2019, regarding the definition of solar rooftop installations, now include ground mounted solar power installations, Per MNRE notification, the Rooftop Solar (RTS) power

of the facility would be energy security provided to all in an environmentally sustainable manner and renewable energy developed, aligned with the Government of India's Integrated Energy Policy. The outcome would be solar rooftop capacity in India increased. The MFF (and tranche 2) outputs would be (i) debt funding to the solar rooftop sector increased, (ii) SBI and NABARD institutional capacity improved, and (iii) solar rooftop market infrastructure and bankable subproject pipeline developed.

6. SRIP is integral to GOI's investment program to meet the 40 GW solar rooftop capacity expansion target. With the loan becoming operational, SBI (borrower) will gear up to initiate lending operations under the line of credit from ADB to the state-owned power generation companies⁵ (sub-borrower) for the installation of the solar rooftop on the rooftop or on the vacant land within the existing premises of the residential buildings, whose owners have voluntarily willing to provide roof or vacant land within their legally owned premises to further avail the power subsidies by the state government or government and public institutions (e.g., substations, schools and hospitals) properties⁶. The power generation companies will appoint multiple aggregators/engineering, procurement, and construction (EPC) contractors through competitive bidding to supply, install, and maintain the solar rooftop installations at potential sites in respective states on an aggregated or standalone basis.

3.0 ENVIRONMENTAL REGULATIONS FOR SOLAR ROOFTOP INSTALLATIONS

7. The Ministry of New and Renewable Energy (MNRE) and Ministry of Environment, Forest and Climate Change (MoEF&CC), Government of India (GOI), vide respective office memorandums⁷ dated 14th August 2017 and 7th July 2017, have clarified that Solar Photo Voltaic (PV) Power Projects, Solar Thermal Power Plants and Development of Solar Parks are outside the purview of environment impact assessment (EIA) notification 2006 and its amendment thereon and as such no prior environmental clearances either at the center or at the state level is required. However, disposal of photovoltaic panels/cells is covered under the provisions of Hazardous and Other Waste (Management and Trans-Boundary Movement) Rules, 2016, and is to be handled accordingly. The SBI will ensure compliance with GOI's laws and other legal requirements through its sub-borrower.

8. The solar projects, except for solar parks, are placed under the 'White Category'⁸ for consent management under the Water and Air (Prevention and Control of Pollution) acts and are not required to seek consent to establish (CTE) and consent to operate (CTO) from the state pollution control boards (SPCB). A summary of the key environmental regulations relevant to solar rooftop installations is given in the following table.

plant is a solar power plant installed on the roof of the residential/Institutional/Commercial/Industrial Building and/or on the appurtenant and up to an area equivalent to two times the total super built up area of the Residential/Institutional/Commercial/Industrial Building. The super built up area shall include all Residential/Institutional/Commercial/Industrial Structures being used for these activities and shall also include stores, covered parking etc. as determined by the appropriate State Authorities. The appurtenant land shall be contiguous to the Residential/Institutional/Commercial/Industrial Structure.

⁵ The focal states, including but not limited to, Gujarat, Delhi, Kerala, Telangana, Chandigarh, Uttar Pradesh, and Andhra Pradesh. Telangana State Power Generation Company (TSGENCO) and similar government owned power generation companies in other states

⁶ Solar rooftop installation could possibly also include roofs of existing sub-station and other utility buildings, vacant lands within sub-stations and transformer yards of power generation companies across state.

⁷ Office memorandums notified by MNRE and MoEF&CC, regarding non-applicability of EIA Notification on Solar Projects can be accessed at <https://mnre.gov.in/img/documents/uploads/4912cd8c044042cf80b00c4e756e16b2.pdf>

⁸ Categorization of solar rooftop installations for consent management can be accessed at <https://cpcb.nic.in/openpdf.php?id=TGF0ZXN0RmlsZS9fMTU2NzgzOTg1OF9tZWVpYXBob3RvMTk2MDYucGRm>

Summary of Key Environmental Regulations of GOI Relevant for Solar Rooftop Installations

Sl. No.	Act / Rules	Key provisions and purpose	Applicability to Solar Rooftop Installations
1	Environmental Impact Assessment Notification-2006 ⁹ , notified on 14 th September 2006, and amendments thereon	To regulate the construction of new projects and/or expansion or modernization of existing projects and provide environmental clearance to new development activities following environmental impact assessment	The solar rooftop installations are outside the EIA notification's purview. The Ministry of New and Renewable Energy (MNRE) and Ministry of Environment, Forest and Climate Change (MoEF&CC), Government of India (GOI) vide respective office memorandums dated 14 th August 2017 and 7 th July 2017 have clarified that Solar Photo Voltaic (PV) Power Projects, Solar Thermal Power Plants and Development of Solar Parks are outside the purview of EIA notification 2006 and its amendment thereon and as such do not require any prior environmental clearances either at the center or at the state level.
2	Environmental (Protection) Act, 1986	To protect and improve the overall environment. All environmental legislation is covered in this umbrella Act.	Yes - this shall be the sub-borrower's responsibility through their aggregator/ EPC contractor for compliance wherever warranted.
3	Air (Prevention and Control of Pollution) Act, 1981 and amendments thereon	To control air pollution by controlling emissions as per the prescribed standards	No - Solar rooftop installation is under the white category for consent management under the Air (Prevention and Control of Pollution) Act and is not required to seek CTE and CTO from the SPCBs.
4	Water (Prevention and Control of Pollution) Act, 1974 and amendments thereon	To control water pollution by controlling the discharge of pollutants as per the prescribed standards	No - Solar rooftop installation is placed under the white category for consent management under the Water (Prevention and Control of Pollution) Acts and is not required to seek CTE and CTO from the SPCBs.
5	Hazardous Wastes (Management, Handling and Trans-boundary Movement) Rules, 2016 and amendments thereon	Safe handling, storage, transportation & disposal of hazardous wastes	Yes - The damaged or discarded solar PV panels should be disposed of in accordance with the provisions of Hazardous and Other Waste (Management and Trans-Boundary Movement) Rules, 2016, if panels are not covered under the take-back policy with the manufacturer/ supplier for the entire life cycle. This shall be the sub-borrower's responsibility through their aggregator/ EPC contractor for compliance with the loan tenure.

⁹ MoEF & CC, Government of India has issued the draft EIA Notification, 2020. As per the draft, there will not be any change to the requirements set forth for the solar rooftop installations. However, the requirements of the Final EIA Notification, 2020 will be applicable as and when issued.

Sl. No.	Act / Rules	Key provisions and purpose	Applicability to Solar Rooftop Installations
6	Ancient Monuments and Archaeological Sites and Remains Act, 1958	Conservation of cultural and historical remains. For the sub-projects located within 300 m, if any, from such features.	Yes - The sub-borrowers, through their aggregator/ EPC contractor, shall be responsible for compliance within the loan tenure.
7	Occupational Safety, Health, and Working Conditions, 2020 and amendments thereon	Comprehensive Code on Occupational Safety, Health, and Working Conditions at workplaces	Yes - The sub-borrowers, through their aggregator/ EPC contractor, shall be responsible for compliance within the loan tenure.
8	Child Labour (Prohibition and Regulation) Act, 1986	Prohibits employment of children under 14 years of age.	Yes - The sub-borrowers, through their aggregator/ EPC contractor, shall be responsible for compliance within the loan tenure.
9	Workmen's Compensation Act, 1923	Ensure fair compensation in case of injury by accident during employment.	Yes - The sub-borrowers shall be responsible for compliance within the loan tenure through their aggregator/ EPC contractor.
10	Contract Labour (Regulation and Abolition) Act, 1970	Ensure the employer makes basic welfare measures available to the contract workers.	Yes - The sub-borrowers shall be responsible for ensuring compliance through their aggregator/ EPC contractor within the loan tenure.
11	Battery Waste Management Rules, 2022 and amendments thereon	The Act defines the requirements for disposal of used batteries for bulk users. The developers in the subproject would be bulk users.	Yes - The sub-borrowers, through their aggregator/ EPC contractor, shall be responsible for compliance with the safe handling and disposal of batteries throughout the life cycle.
12	Building and Other Construction Workers Act, 1998 and 2006, and amendments thereon	To regulate the employment and conditions of service of building and other construction workers and to provide for their safety, health, and welfare measures and for other matters connected therewith or incidental thereto.	Yes - The sub-borrowers shall be responsible for ensuring compliance through their aggregator/ EPC contractor within the loan tenure.
13	The E-Waste (Management) Rules, 2022 (effective from the 1st day of April, 2023)	Management of solar photovoltaic modules or panels or cells. (1) Every manufacturer and producer of solar photovoltaic modules or panels or cells shall (i) ensure registration on the portal; (ii) store solar photovoltaic modules or panels or cells waste generated up to the year 2034- 2035 as per the guidelines laid down by the Central Pollution Control Board in this regard;	Yes - The aggregator/ EPC contractors' responsibility for compliance during construction and the maintenance cycle, as applicable.

Sl. No.	Act / Rules	Key provisions and purpose	Applicability to Solar Rooftop Installations
		<p>(iii) file annual returns in the laid down form on the portal on or before the end of the year to which the return relates up to year 2034-2035;</p> <p>(iv) ensure that the processing of the waste other than solar photovoltaic modules or panels or cells shall be done as per the applicable rules or guidelines for the time being in force;</p> <p>(v) ensure that the inventory of solar photovoltaic modules or panels or cells shall be put in place distinctly on portal;</p> <p>(vi) comply with standard operating procedure and guidelines laid down by the Central Pollution Control Board in this regard.</p> <p>2) Recycler of solar photovoltaic modules or panels or cells shall be mandated for recovery of material as laid down by the Central Pollution Control Board in this regard.</p>	
14	Plastic Waste Management Rules, 2016	This provides for control and management of the plastic waste generated from any activity. Contractors will ensure compliance with this rule.	No - Not anticipated for solar rooftop installations. However, if applicable, it shall be the aggregator/ EPC contractors' responsibility for compliance during the maintenance period.

4.0 ENVIRONMENTAL AND SOCIAL POLICY OF SBI

9. SBI, at present, has the following policies, which comprehensively address the environmental, social, and climate change risk governance in all its operations, including its lending portfolio for the renewable energy sector.

4.1 Sustainability and Business Responsibility Policy of SBI

10. SBI's Sustainability and Business Responsibility (BR) Policy¹⁰ outlines the approach adopted by SBI to align its business practices with respect to the nine principles as defined in the National Voluntary Guidelines on Social, Environmental and Economic Responsibilities of Business published by the Ministry of Corporate Affairs, GOI, in July 2011 and SEBI (Listing Obligations and Disclosure Requirements) Regulations 2015.

11. SBI's Corporate Centre Sustainability Committee (CCSC) oversees the execution of the BR Policy. This policy helps in aligning the Bank's sustainability strategy with its business strategy

¹⁰ The policy has been approved by the SBI Board on 28 July 2023.

and identifies the key environmental and social areas. Further, it outlines SBI's approach towards managing economic, environmental, and social performance in an integrated manner.

12. The CCSC has representation from several functions and is headed by the Deputy Managing Director and Corporate Development Officer. SBI also has a separate Board level Corporate Social Responsibility Committee, which undertakes periodic reviews of the Bank's CSR activities.

4.2 Climate Change Risk Management Policy of SBI

13. The primary objective of the Climate Change Risk Management Policy is to guide SBI to transition towards low carbon and climate-resilient operations and investments. The Climate Change Risk Management Policy shall apply to all national and international operations and the Bank's lending portfolio.

14. SBI is committed towards integrating climate change concerns into its operations and decision-making to lend momentum towards transitioning to a greener and more climate-resilient business.

15. In addition to climate-related risks, business opportunities presented by climate change shall also be explored, allowing the SBI to better position itself in reducing operating costs and meeting the growing demand for low-carbon lending. SBI has adopted a target of achieving carbon-neutral status by 2030 and is focusing on aligning its products and services with the United Nations Sustainable Development Goals (SDGs)

4.3 Environmental, Social and Governance financing framework of SBI

16. SBI has several frameworks and policies to support Environmental, Social, and Governance (ESG), including but not limited to the Climate Change Risk Management Policy, Renewable Energy Policy, Sustainability and Business Responsibility Policy, Corporate Social Responsibility Policy, Code of Ethics, etc. In addition, SBI also has a Green Bond Framework in place.

17. The ESG Framework¹¹ will be used for the financing or refinancing eligible assets/projects with environmental or social benefits to extend SBI's sustainability strategy and contribute to the sustainable development of the Indian economy.

18. All credit portfolios recognized under the ESG Framework shall have to go through SBI's due diligence structure and process, and only upon being sanctioned by the competent authority shall be reckoned for allocation under Green/Social/Sustainable Project portfolios.

19. SBI has devised an 'ESG risk rating model' to assess relevant borrowers on ESG criteria for facilitating the identification of Social, Environmental, and Governance risks associated with the relevant project(s). SBI, as of 31st March 2022, has sanctioned ₹10.89 billion for grid-connected rooftop solar PV projects in commercial institutions and industrial buildings with smaller roofs.

5.0 SCOPE OF APPLICATION OF ESMS FOR ADB'S LINE OF CREDIT

20. By adopting this environmental and social management system (ESMS) for ADB's line of credit, SBI will comply with ADB's Safeguard Policy Statement (SPS), 2009 requirements. The ADB loan agreement with SBI (borrower) will have covenants to safeguard environmental, health,

¹¹ Approved by SBI Board in January 2023

and safety at all solar rooftop installations financed through ADB's line of credit. Accordingly, SBI will ensure that:

- (i) Solar rooftop installation(s) within the current MNRE's definition shall only be taken up for financing under the loan if they do not involve any land acquisition or adverse impacts (permanent/ temporary) on involuntary resettlement and indigenous people.
- (ii) Facilities shall not be sited in locations with social conflicts.
- (iii) Avoid land acquisition and involuntary resettlement by using rooftops and vacant government land within existing premises.
- (iv) No subproject will be located in or encroach upon legally protected areas, including national parks, wildlife sanctuaries, conservation/elephant/tiger reserves, forest land (reserved and protected forest), ecologically sensitive areas, notified or draft ecologically sensitive zones, Coastal Regulation Zones, and Ramsar sites, etc.
- (v) No subproject will be located in or encroach upon the default 10km buffer where an ecologically sensitive zone is yet to be notified by government, excepting where a draft ecologically sensitive zone is mapped then rooftop solar will be permitted on buildings outside of it.
- (vi) No subproject will be located in or encroach upon forest areas.
- (vii) No subproject will be located in or encroach upon other internationally or nationally recognized biodiversity sites, including key biodiversity areas, important bird areas, and wildlife corridors unless it has been clearly demonstrated to ADB through an ecological assessment undertaken by an external expert in consultation with relevant biodiversity stakeholders, that the subproject activity will not have significant adverse impacts on the ecology of the area.
- (viii) No subproject will result in destruction/disturbance to historical and cultural places/values including buildings;
- (ix) The subprojects shall not be located within 100 m of Archaeological Survey of India (ASI) protected monuments/sites and the 300 m regulated zone will be avoided to the extent possible. However, if the regulated zone is encroached, permissions, as required from ASI shall be obtained prior to start of work and shared with ADB confirming that the subproject activity will not have significant adverse impacts on the heritage/archaeology of the area.
- (x) No proceeds from the loan will be used to finance any activity qualifying as "category A" environment and "category A and B" for involuntary resettlement and indigenous people safeguards.
- (xi) ADB is consulted in screening and categorizing any solar rooftop installation(s) that are not on the rooftop of a traditional building or will be ground mounted within an existing premises.
- (xii) No subproject that is requiring a new power line to evacuate electricity will be supported, even if the power line will be provided by a 3rd party.
- (xiii) The subproject must comply with all requirements of relevant national and state laws;
- (xiv) Grievances of the stakeholders, if any, are addressed effectively and efficiently by the GRM of the sub-borrower during the installation and maintenance of all solar rooftop installations.
- (xv) All solar rooftop installations financed under the ADB loan shall (a) make the existence of a grievance redress mechanism officially known and (b) proactively and constructively

review and redress grievances of affected people in relation to the qualified solar rooftop installations.

- (xvi) No proceeds from the loan will be used to finance any activity included in the list of prohibited investment activities as provided in Appendix 5 of the ADB's SPS, 2009 (**Appendix 1**).
- (xvii) No solar rooftop installations will be made on roofs of buildings that comprise of asbestos, absence being determined by a competent asbestos surveyor employed by the EPC contractor of the sub-borrower.

21. All EPC work contracts for supply, installation, and maintenance of solar rooftop installation by the aggregators/ EPC contractors commissioned by the sub-borrowers (viz. power generation companies, etc.) shall follow applicable national and state level environment, labor, health and safety laws and that these further include provisions to ensure that aggregator/ EPC contractors (a) carry out HIV/AIDS awareness programs for labor and disseminate information at worksites on risks of sexually transmitted diseases and HIV/AIDS as part of health and safety measures for those employed during construction; (b) follow and implement all statutory provisions on labor (including not employing or using children as labor, forced labor, equal pay for equal work), health, safety, welfare, sanitation, and safe working conditions; and (c) confirm no solar rooftop installations will be made on roofs of buildings that comprise of asbestos, absence being determined by a competent asbestos surveyor employed by the EPC contractor of the sub-borrower.

6.0 ENVIRONMENTAL, HEALTH, SAFETY AND SOCIAL IMPACTS

22. The environmental impacts of rooftop solar installation are temporary or insignificant in intensity. Such impacts can be mitigated to acceptable levels with standard, cost-effective measures that are commercially available. The installation of the solar system may have the following environmental, health-safety safety and social impacts:

- (i) **Land use:** The installation of the solar rooftop will be done on the rooftop or on the vacant land within the existing premises of the residential buildings, whose owners have voluntarily willing to provide a roof or vacant land within their legally owned premises to further avail the power subsidies by the state government or government and public institutions (e.g., substations, schools, and hospitals) properties¹². The installation is not expected to result in any land acquisition or involuntary resettlement impacts on the titled or non-titled households.
- (ii) **Dust and noise pollution:** There are likely impacts on the landscape, which may lead to increased dust and noise levels limited to the installation phase and temporary. Such envisaged impacts will be minor - minimal and can be mitigated by taking adequate measures such as intimating the work schedule in advance to the occupants of buildings and surrounding residents.
- (iii) **Discharge of pollutants:** Although solar rooftop installations are not expected to discharge any liquid waste or emissions, wet cleaning of panels may lead to the generation of wash

¹² Solar rooftop installation could possibly also include roofs of existing sub-station and other utility buildings, vacant lands within sub-stations and transformer yards of power generation companies across state.

water, which can be discharged into the building drainage system without any specific treatment.

- (iv) **Disposal of Discarded/Damaged Panels:** The discarded or damaged solar panels are considered hazardous waste and must be disposed of per GOI's set-forth regulations.
- (v) **Fire and Safety:** Fire and safety issues in solar rooftop installation and operations can be mitigated by adopting standard operating procedures and following safety rules and regulations under the Indian Electricity Act.
- (vi) **Batteries management:** Used or discarded batteries from solar roof installation sites are to be disposed of in accordance with the Battery Waste Management Rules, 2022, by the sub-borrower through the respective aggregator/ EPC contractor during installation and maintenance phases.
- (vii) **Visual impacts:** Due consideration shall be given while planning the solar panel installation and avoiding or minimizing visual/aesthetic impacts at installation sites including glint/glare.
- (viii) **Asbestos:** there is a risk that some rooftops may be made of bonded asbestos cement, since this causes health hazards if disturbed solar rooftop installations on such rooftops is to be avoided.
- (ix) **Social Benefits:** Solar rooftop installations in the residential sector are expected to reduce GHG emissions. However, solar rooftop installations will cause restrictions to access or a reduction in usable rooftop space, which will also have to cater to overhead water tanks and other utilities like drying clothes, fixing TV antennas, etc. The panel installation configuration shall consider such utility requirements of the roof area and obtain voluntary and informed consent from the rooftop owners through a subproject information checklist (**Appendix 2**). The EPC contractor will obtain all the consents and documents, and SBI will maintain records for any future reference.
- (x) **Stakeholder consultation:** The information related to the project components will be disseminated among the general public, affected communities, and other stakeholders, starting early and continuing throughout the project life.

7.0 SCREENING, CATEGORIZATION, AND REVIEW PROCEDURE

23. Solar rooftop installations are not expected to cause any involuntary resettlement or indigenous peoples safeguard impacts, however, there might be minor – minimal, mostly temporary environmental impacts. All the installations will be done within the existing premises (for rooftops or vacant and encumbrance-free land belonging to government or public institutions (e.g., schools and hospitals) and on individual residential buildings whose owners have voluntarily agreed to provide roof or vacant land within their legally owned premises to further avail the power subsidies by the state government. The subprojects categorized as "A" for environment and "A and B" for involuntary resettlement and indigenous people will not be considered for financing under the program.

24. As per the BR policy of SBI, the sub-borrowers of SBI are responsible for assessing their subproject's environmental and social impacts, preparing safeguard plans, and engaging with affected communities through information disclosure, consultation, and informed participation, following all policy principles and safeguard requirements. Accordingly, the sub-borrower is mandated to submit all required information, including assessment reports, safeguard

(environmental and social) management plans, and safeguard implementation monitoring reports to SBI for review and clearance. The safeguards consultant to be supported under ADB TA will support SBI in the review and clearance of safeguards documents under the program. In line with this, SBI will obligate/mandate all its sub-borrowers to implement environmental and social screening through information checklist, categorization, and implementation of environmental, health, and safety (EHS) management plan at all solar rooftop installation sites as part of its loan appraisal and approval process.

25. Environment and social screening of the project components likely financed under the SRIP is mandatory. SBI, through its sub-borrower and their aggregator/ EPC Contractor, will seek site-relevant information from every solar rooftop installation site through an information checklist in **Appendix 2**. The information checklist shall be filled out by the aggregator/ EPC Contractor of the sub-borrower, which shall form an integral part of subsequent safeguards monitoring and reporting by the sub-borrower to SBI. The information checklist is designed to elicit all relevant information, which can have the potential for environmental, social, health, and safety concerns at the installation and maintenance phases of solar rooftop installations.

26. Based on the information checklist received from the aggregator/ EPC Contractor of the sub-borrower (**Appendix-2**), the loan processing officer(s) of SBI will scrutinize the sub-project information for its completeness before its approval in consultation and coordination with the safeguards focal person.

27. In case solar rooftop installations lean towards "Category B" for environmental safeguards due to certain site-specific conditions¹³, an Initial Environmental Examination (IEE) report, including an environmental management plan (EMP) for each sub-loan, will be prepared by the sub-borrower through the respective aggregator/EPC contractor before approval of the solar rooftop installation subproject. A guidance content/structure for preparing the IEE report is given in **Appendix 4**. The IEE reports shall be reviewed by the safeguard specialist¹⁴ engaged through ADB's Technical Assistance to SBI under the SRIP. Only if the assessment and EMP are adequate will the subproject be eligible for approval. The designated officer(s) to handle environmental and social safeguards for solar rooftop installations under its PIU for SRIP will then duly categorize them in accordance with ADB's SPS, 2009. ADB will be consulted before categorizing any solar rooftop installation(s) that are not on the rooftop of a traditional building or will be ground mounted within an existing premises.

28. If required, the PIU will seek additional information from the sub-borrower or the respective aggregator/EPC Contractor and/or safeguard specialist engaged through ADB's Technical Assistance, including undertaking a site visit to assess site conditions before categorization. The PIU will use the checklist to categorize solar rooftop installations (**Appendix 3**). Further, the IEE reports shall be disclosed on the ADB website before the commencement of works at such solar rooftop installation sites under SRIP.

29. The above requirements apply to all new subprojects and will also be followed for any subprojects for which retroactive finance is to be sought by SBI following ADB's loan approval. For

¹³ Site specific condition could include solar rooftop installation which require tree felling in large numbers or clearance of natural vegetation or any other environmental issues.

¹⁴ Safeguards (environment and social) specialist shall be engaged through ADB's Technical Assistance to SBI during implementation of SRIP. The terms of reference (TOR) is provided in **Appendix-9**.

sub-projects (rooftop installation sites), which are considered under takeout financing by the borrower through ADB's LOC, a safeguard due diligence/audit of all such individual sub-projects will be carried out by the safeguards focal person with the support of the safeguard specialist engaged through ADB's Technical Assistance. The due diligence report for category C/environment audit for category B including corrective action plan for the sub-borrower if needed will be prepared to cover all sub-project(s) aspects included under **Appendix 2, 3, 4, 7, and 8**.

30. All legal agreements between SBI and the sub-borrower will include back-to-back terms with the safeguards covenants of its loan from ADB including compliance with the requirements of this ESMS as applicable to the subprojects.

8.0 EHS MANAGEMENT AT SOLAR ROOFTOP INSTALLATION SITES

31. Potential environmental health and safety (EHS) concerns at solar rooftop installations are not expected to be significant. The EHS concerns or issues likely to arise from the installation and operation of the solar rooftop installations are limited and can be managed/mitigated, except for the disposal of damaged or discarded panels and batteries if these are not covered under the take-back policy with the manufacturer/supplier. If a take-back policy is unavailable or cannot be ensured throughout the life cycle, the discarded or damaged panels are to be disposed of by the EPC contractor as per the provisions of Hazardous and Other Waste (Management and Trans-Boundary Movement) Rules, 2016.

- a. **Installation safety:** The solar rooftop installations pose safety risks to the workers/laborers involved in both the installation and maintenance phases. Thus, it is essential to have safety procedures and management systems to mitigate safety hazards. The following are the best practices for the installation of solar rooftops.
- b. **Electrical safety:** A licensed electrician shall work on live electrical equipment and perform de-energizing solar panel activities during installation. Verifying the standard color scheme for phase identification is necessary for all electrical connections. Power tools shall be double insulated or equipped with a grounding system and a polarized cord connector. There should be protection for all extension cords and equipment with a ground fault circuit interrupter system. Electrical power cables laid on the floor or ground shall be inspected regularly by a licensed electrician and secured and protected from damage due to travel hazards. The working space and walkway should be clear of any extension cords. While working on the solar panel, the DC (direct current) disconnect switch should always be disengaged. Battery banks can store voltages with high current potential that can create an electric arc hazard. Thus, due care should be taken while working with battery banks (if any).
- c. **Lifting safety:** Lifting solar panels to rooftops can be dangerous and may lead to back injury or sprain or even cause permanent damage to the spine of personnel if lifting is not done correctly. Use of cranes, hoists, and forklifts for unloading, lifting, and placing panels shall be followed to ensure the safety of the workforce/personnel.
- d. **Ladder safety:** Using the correct size and type of ladder during the installation process is a first step. Select the ladder after verifying the work-load rating, ladder length and material, and maximum weight to be lifted. Tying off and using a ladder stabilizer for straight and extension ladders is recommended. Ensure the ladders are electrically insulated and secured correctly. A ratio of 1:4 for distance from the wall to the height of a ladder shall be maintained to ensure ladder safety.

- e. **Scaffold safety:** Solar panels are installed on a raised platform. Thus, following proper safety procedures and taking adequate measures while installing panels on the raised platform is necessary. Scaffolding should be securely held on a level surface with adequate counterweights. A fall protection mechanism should be implemented if the scaffold is over 6 feet tall.
- f. **Fall protection:** Working at height, where there is no permanent provision for access or work platforms, or at the edge of the structure/building can be hazardous. Safety measures and procedures should be implemented to mitigate the risk of working at heights. A full-body harness should be worn to ensure safety. A guardrail system around the work area is required for fall protection. A safety net must be installed while working on heights.

32. The EHS management includes the safety of the workforce/ personnel during installation and maintenance of solar rooftop installation, which is the responsibility of the aggregator/ EPC contractor of the sub-borrower. The aggregator/ EPC Contractor of the sub-borrower will be contractually obligated to implement EHS management measures at all solar rooftop installation sites. A checklist seeking information on EHS management at solar rooftop installation sites by implementing entity/borrower as part of the loan agreement is given in **Appendix 5**. A summary of the key EHS concerns and preventive measures relevant to solar rooftop installations is given in the following table.

Summary of Key EHS concerns relevant to Solar Rooftop Installations.

Activity	Level of Concern	Preventive Measures
All weather safe access/ staircase, parapet wall, and safety railing for installation and operation	Moderate	An all-weather safe staircase to the roof will be available throughout the year. Additional safety measures should be ensured if the roof does not have a parapet wall and safety railing as per the National Building Code.
Lopping and Pruning of Trees for shadow-free areas	Moderate	In case of trees cast a shadow, permission from competent authorities will be obtained for periodic lopping and/or pruning of trees through the life cycle of solar rooftop installation.
Roof Condition and Drainage	Moderate	Periodic maintenance shall be undertaken to ensure the roof has proper and adequate drainage if required.
Availability of Water for cleaning of solar panels	Moderate	The existing water supply will be used for cleaning the water panels. If water supply for cleaning panels is unavailable, commercial water tankers will be made available.
Safety of solar panel installers and O&M Personnel	Moderate	All operational personnel of the EPC contractor shall be trained in standard operating procedures (SoP) and first aid training/ measures relevant to the solar rooftop installations. All personnel at work shall be provided with safety gear like boots, safety gloves, hard hats, and safety belts while working at heights.

Activity	Level of Concern	Preventive Measures
Safety and Fire Hazards	Moderate	All work areas shall be provided with safety accessories like rubber mats, gloves, first-aid boxes, and fire extinguishers to handle all types of fires and well-lit exit routes while installers and O&M personnel are at work in case of fire or any emergency.

9.0 INSTITUTIONAL STRUCTURE FOR ESMS MANAGEMENT

33. SBI, at present, has a multi-tier corporate governance structure for sustainability and climate risk management for all its operations, which will adequately ensure the safeguards compliance requirements at solar rooftop installation sites in accordance with loan covenants and ADB's SPS, 2009.

34. SBI has established the Environment, Social and Governance and Climate Finance Unit (ESG & CFU) at headquarters, which functions as the project implementation unit (PIU) for all the LoCs from the World Bank, KfW, and AFD. A Deputy General Manager (DGM) rank officer at PIU will be the focal person for implementing safeguards (through respective aggregator/ EPC contractors of sub-borrower) under ADB's line of credit. The focal person (safeguards) will be supported by qualified and experienced safeguard specialists (environment and social) engaged through ADB's Technical Assistance. The flowchart of institutional structure for environmental and social safeguard monitoring at solar rooftop installation sites under ADB's line of credit is given in **Appendix 5**.

35. The focal person (safeguards) and safeguard specialist engaged through ADB's Technical Assistance will undertake site visits to solar rooftop installation sites selected on the basis representing different capacities, installation configuration(s), siting/location for onsite verification of information provided in checklist under declaration by the aggregator/ EPC contractor of the sub-borrower (**Appendix 2 & 5**) and prepare the environmental and social safeguards assessment and implementation reports.

10.0 CAPACITY BUILDING AND TRAINING NEEDS

36. As a capacity-building initiative for safeguards compliance, SBI will organize training and orientation workshops for all its designated officers at branch levels to familiarize them with environmental and social safeguards requirements as part of the appraisal of solar rooftop loan applications. The training will be conducted by the safeguard specialist engaged through ADB's Technical Assistance through support by the SBI.

37. The loan processing SBI officer(s) at the designated branches are the primary functionaries, expected to appraise the solar rooftop loan application(s) and thus best suited for undergoing training and attending orientation workshops. The training/workshops will be organized at SBI's headquarters and/or at designated branches, and the same will be attended by nominated officers designated for the solar rooftop loan processing/disbursement.

38. SBI will ensure that designated branch and circle level officers will also undergo appropriate training/brainstorming workshops to enhance their competency and skills in environmental safeguards management as per ADB's SPS, 2009. They will also ensure that all their subborrowers receive appropriate training on the ESMS requirements, applicable national laws and regulations

(especially labor, health and safety) and in turn their respective aggregators/EPC contractors. The safeguard specialist (environment and social) engaged through ADB's Technical Assistance will support in conducting the capacity building program on ADB's safeguards requirements. SBI and its subborrowers may also nominate the officers to the training programs on safeguards organized by the ADB from time to time.

39. The capacity building undertaken by the officials of SBI for ESMS implementation will be shared with ADB through bi-annual safeguards monitoring reports.

11.0 MONITORING AND REPORTING

40. SBI's focal person for safeguards at PIU, with the support of the safeguard specialist engaged through ADB's Technical Assistance to SBI, will review the information checklist of all rooftop sites (**Appendix 2**), screen and endorse the categorization (**Appendix 3**), ensure preparation of IEEs reports including EMP (in case of category B sub-projects) (**Appendix 4**) and liaise with ADB as required on the categorization and for capacity building activities. Further, the designated ESSU officers under PIU will ensure the implementation of EHS management (**Appendix 5**) at all solar rooftop sites by the aggregator/ EPC contractor of the sub-borrower under SRIP.

41. The focal person (safeguards) and safeguard specialist will undertake site visits to solar rooftop installation sites selected on a basis representing different capacities, installation configuration(s), siting/location for onsite verification of information provided in the information checklist under declaration by the aggregator/ EPC contractor of the sub-borrower and prepare semi-annual monitoring reports on ESMS implementation covering implementation of the environmental and social safeguards aspects at both the FI and subproject levels and submit it to ADB. The format for the semi-annual safeguards monitoring report (SSMR) is provided in **Appendix 8**. For category B subprojects SBI will obtain semi-annual environmental monitoring reports on EMP implementation for the subproject from the sub borrower and attach these to their monitoring reports. SBI will identify corrective actions, wherever required, to enhance safeguards compliances at solar rooftop installation sites and ensure the same is implemented by the aggregator/ EPC contractor of the sub-borrower at solar rooftop installation sites, wherever warranted.

12.0 GRIEVANCE REDRESSAL MECHANISM & INFORMATION DISCLOSURE

42. All SBI branches designated for processing loans for solar rooftop installations and regional offices will be authorized to receive grievances from any person(s)/group. SBI's website already has a link for receiving grievances, which will be monitored by the designated SBI branches for solar rooftop loans and the PIU.

43. All the grievances received at the solar rooftop installation sites or at the designated loan branch, or at the website of the sub-borrower are to be resolved by the respective aggregator/ EPC Contractor/ sub-borrower within seven days under intimation to sub-borrower and borrower (Teir-1 arrangement for resolving the grievance). In case un-resolved, grievances will be escalated to the grievance redressal committee (GRC) of SBI at Teir-2 level comprising of designated officers from PIU, the loan approval branch of the borrower, and senior management functionaries of sub-borrower, and grievance shall be resolved within ten days.

44. The focal person for safeguards will routinely review all grievances received and redressed at solar rooftop installation sites and/or at SBI's website, identify unresolved grievances, if any,

compile the type and number of grievances received, resolved along with outcome, and include same in semi-annual monitoring reports. A typical format for receiving grievances from aggrieved persons/groups, along with the flow chart for the grievance redressal mechanism, is given in **Appendix 7**.

45. The complainant will be informed in writing about the resolution of their complaint or the decision of the grievance redress committees. The complainants are free to approach the court of law at any time of their own will at any stage, and accessing the country's legal system can run parallel to accessing the GRM and is not dependent on the negative outcome of the GRM.

12.1 Documentation

46. SBI, with the support of sub-borrowers will be responsible for the timely registration of grievances, related disclosure, and communication with the aggrieved party. SBI will also ensure that all the details from submission to resolution are well recorded and documented.

12.2 Record-keeping

47. SBI, with the support of the sub-borrower, will be responsible for keeping records of grievances received, including contact details of the complainant, the date the complaint was received, the nature of grievance, agreed corrective actions, and the date these were affected and final outcome. The number of grievances recorded and resolved will be reported in monitoring reports submitted to ADB semi-annually.

12.3 Grievance Redressal Cost

48. All costs related to resolving grievances (meetings, consultations, communication, and reporting/ information dissemination, as well as costs incurred by affected persons to attend GRC meetings, if any) will be borne by the project.

12.4 ADB's Accountability Mechanism

49. The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice and seek a resolution of their problems and report alleged violations of ADB's operational policies and procedures. If the established GRM is not able to resolve the issue, the affected person can use the ADB Accountability Mechanism by directly contacting (in writing) the Complaint Receiving Officer. Before submitting a complaint to the Accountability Mechanism, it is recommended that affected people make a good-faith effort to resolve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach the Accountability Mechanism.

Appendix-1: ADB Prohibited Investment Activities List

The following do not qualify for Asian Development Bank financing:

- (i) production or activities involving harmful or exploitative forms of forced labor¹ or child labor;²
- (ii) production of or trade in any product or activity deemed illegal under host country laws or regulations or international conventions and agreements or subject to international phaseouts or bans, such as (a) pharmaceuticals,³ pesticides, and herbicides,⁴ (b) ozone-depleting substances,⁵ (c) polychlorinated biphenyls⁶ and other hazardous chemicals,⁷ (d) wildlife or wildlife products regulated under the Convention on International Trade in Endangered Species of Wild Fauna and Flora,⁸ and (e) transboundary trade in waste or waste products;⁹
- (iii) production of or trade in weapons and munitions, including paramilitary materials;
- (iv) production of or trade in alcoholic beverages, excluding beer and wine;¹⁰
- (v) production of or trade in tobacco;¹⁰
- (vi) gambling, casinos, and equivalent enterprises;¹⁰
- (vii) production of or trade in radioactive materials,¹¹ including nuclear reactors and components thereof;
- (viii) production of, trade in, or use of unbonded asbestos fibers;¹²
- (ix) commercial logging operations or the purchase of logging equipment for use in primary tropical moist forests or old-growth forests; and
- (x) marine and coastal fishing practices, such as large-scale pelagic drift net fishing and fine mesh net fishing, harmful to vulnerable and protected species in large numbers and damaging to marine biodiversity and habitats.

¹ Forced labor means all work or services not voluntarily performed, that is, extracted from individuals under threat of force or penalty.

² Child labor means the employment of children whose age is below the host country's statutory minimum age of employment or employment of children in contravention of International Labor Organization Convention No. 138 "Minimum Age Convention" (www.ilo.org).

³ A list of pharmaceutical products subject to phaseouts or bans is available at <http://www.who.int>.

⁴ A list of pesticides and herbicides subject to phaseouts or bans is available at <http://www.pic.int>.

⁵ A list of the chemical compounds that react with and deplete stratospheric ozone resulting in the widely publicized ozone holes is listed in the Montreal Protocol, together with target reduction and phaseout dates. Information is available at <http://www.unep.org/ozone/montreal.shtml>.

⁶ A group of highly toxic chemicals, polychlorinated biphenyls are likely to be found in oil-filled electrical transformers, capacitors, and switchgear dating from 1950 to 1985.

⁷ A list of hazardous chemicals is available at <http://www.pic.int>.

⁸ A list is available at <http://www.cites.org>.

⁹ As defined by the Basel Convention; see <http://www.basel.int>.

¹⁰ This does not apply to project sponsors who are not substantially involved in these activities. Not substantially involved means that the activity concerned is ancillary to a project sponsor's primary operations.

¹¹ This does not apply to the purchase of medical equipment, quality control (measurement) equipment, and any equipment for which ADB considers the radioactive source to be trivial and adequately shielded.

¹² This does not apply to the purchase and use of bonded asbestos cement sheeting where the asbestos content is less than 20%.

Appendix-2: Information Checklist for Solar Rooftop Installations

Note: Information checklist shall be filled out and submitted for each solar rooftop/ground mounted site by the aggregator/ EPC contractor on behalf of sub-borrower, for both standalone and aggregated installations, as may be applicable.

If ground mounted provide boundary map of the premises and siting of PV within it, in all cases photos of buildings and sites to be attached to the checklist.

A. Sub-borrower and aggregator (EPC Contractor)/ Individual Roof Owner Information

Type of Solar Rooftop Installation:	Aggregator/Individual (standalone) (✓ whichever is applicable)
Name of Sub-borrower	
Name of aggregator/ EPC Contractor or Individual Roof owner (in case of standalone cases)	
Name of person filling checklist for aggregator/ EPC Contractor with contact details (mobile and email)	
Address of Solar Rooftop/Ground mounted Installation Site	

B. Sub-project Information

Particulars	Response
Roof/ Plot Area for panel installation (sqm)	Roof area: sqm Land area for ground mount ¹⁵ , if applicable: sqm Total area: sqm
Solar panel installations within premises include	Only rooftop Combination of both rooftop and ground mount Only Ground mount within the premises Sloping roof, if any (mention type of roofing material RCC/GI sheet /Tiles/Others) Note: Asbestos materials shall not be used for any of the activities under the Project. No installations will be on rooftops identified as containing asbestos. Its presence or absence in the rooftop will be confirmed by a competent asbestos surveyor of the EPC contractor.
Installed capacities (kW)	Rooftop (including sloping roof) kW Ground Mount: kW Total capacity: (kW)
Geographical/GPS Coordinates of Installation Site	Latitude: Longitude:
State whether the roof has safe access and if the roof owner has been informed about the consent for installing solar panels without compromising on other utility requirements of the roof, like an overhead tank, circulation area, etc.	Yes No
State if water for cleaning of solar panels is available on a weekly basis (approx. 10 litres/ cleaning cycle per KW)	Yes No
State whether a toilet facility is available for the workforce at the time of installation of panels.	Yes No

¹⁵ Please provide boundary map of the premises indicating the location of solar photo voltaic panels.

Undertaking: I/ we hereby declare and affirm that the information furnished above is true and correct to the best of my/ our knowledge and belief and no material has been concealed therein.

Name: Contact No.: Email:

Date: Place:

Aggregator/ EPC Contractor of Sub-borrower

Appendix-3: Environment/ Social Screening & Categorization for Solar Rooftop Installation

Environmental/ Social/ Indigenous People Categorization Checklist

A. Environmental Screening

Sl. No.	Parameter	Response
1	<p>Is the solar rooftop installation site area adjacent (within 1000 meters or 10km for legally protected areas) to or within any of the following environmentally sensitive areas: (Please provide the approximate distance from the proposed site):</p> <ul style="list-style-type: none"> (i) Located in or near a legally protected area; (ii) Located in or near special habitats for biodiversity (critical or natural habitats, key biodiversity areas, important bird areas etc.); (iii) Wetland; (iv) Mangrove; (v) Estuarine; (vi) Offshore (marine) 	No/ Yes (if yes, state the name and type of such areas along with the aerial distance of the installation site)
2	Is the solar rooftop installation site within or near (within 300 meters) any of the archeological/ historical monuments protected under the Ancient Monuments and Archeological and Remains Act, 1958	No/ Yes (if yes, state the name of the monument along with the aerial distance of the installation site to such monument.)
3	Confirm whether installation requires forest clearance for any sub-projects.	No/ Yes (if yes, state whether required permissions are available along with compliances thereof)
4	Confirm whether installation requires tree cutting/ pruning/ lopping to avoid shade areas.	No/ Yes (if yes, state whether required permissions are available along with compliances thereof)
5	Confirm whether the ground mount component of solar rooftop installation requires any clearance of vegetation/ bushes, etc.	No/ Yes (if yes, state area for clearance and type of vegetation)
6	<p>Potential Environmental Impacts Will the sub-projects cause</p> <ul style="list-style-type: none"> • land disturbance and land use impacts especially due to diversion of productive lands? • disturbance to heritage buildings? • noise, vibration, and dust from construction activities? • Aesthetic degradation and property value loss due to the establishment of plant and ancillary facilities? • Soil/water contamination due to use of hazardous materials or disposal of broken or damaged solar cells (photovoltaic technologies contain lesser amounts of cadmium, selenium, and arsenic) during installation, operation, and decommissioning? • noise disturbance during operation due to the proximity of settlements or other features? • risks to community health and safety due to the transport, storage, and use and/or disposal of materials and wastes such as explosives, fuel and other chemicals during construction, and operation? • community safety risks due to both accidental and natural causes, especially where the structural elements or components of the 	No/ Yes

	Project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation, and decommissioning?	
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B. Social Parameters

Sl. No.	Parameter	Response
1.	Confirm the willingness of owner for solar rooftop installation	Yes/ No (state reason viz. not interested in govt. scheme or any other reason)
2.	Confirm ownership status of site/ plot	Govt. owned/ Individual owned (tick whichever is applicable)
3.	Confirm whether solar rooftop installation is being carried out within the legally owned premises	Yes/ No
4.	Confirm whether NOC/ permission from concerned authority has been obtained.	No/ not applicable/ Yes (if yes, provide information on extent of land required and present users if any and provide copy of NOC/ permission)

C. Indigenous Peoples Screening

Sl. No.	Parameter	Response
1.	State whether the roof/ landowner belongs to the General/Scheduled Tribe (ST) Category (Applicable only in case of individual roof/landowners)	Yes/ No/ not applicable (please provide details in case of belonging to ST)
2.	Does the household maintain distinct culture/ social norms/ dialect?	Yes/ No/ not applicable
3.	Has the households/population been historically/ socially/ marginalized/ excluded, and/or discriminated against?	Yes/ No/ not applicable
4.	Does households/population maintain collective attachments to distinct habitats/ ancestral territories/ natural resources where the installation will be carried out?	Yes/ No/ not applicable

Environmental/ Social/ Indigenous People Categorization Checklist

A. Instructions		
<p>Sub-project categorization is to be done based on the sub-project information (Appendix-2) by the aggregator/ EPC contractor of sub-borrower and endorsed by the borrower's/sub-borrower's designated officer.</p> <p>Categorization of sub-project is a continuous process. If there is a change in the project components or/and site that may result in category change, the sub-borrower must submit a new form and request for recategorization and endorsed by the designated officer of the loan borrower. Previous categorization form must also be enclosed for reference, in such cases.</p>		
B. Borrower Information		
Name of Borrower:	Name of Sub-Borrower:	
Address/Contact:	Address/Contact:	
C. Sub-project Categorization		
Environment:		
Category A	Category B	Category C
Social:		
Category A	Category B	Category C
Indigenous People		
Category A	Category B	Category C
D. Basis for Categorization/Recategorization:		
Guidance for categorization:		
Environment:		
<ul style="list-style-type: none"> • Category A: A proposed project is classified as category A if it is likely to have significant adverse environmental impacts that are irreversible, diverse, or unprecedented. These impacts may affect an area larger than the sites or facilities subject to physical works. An environmental impact assessment is required. No proceeds from the loan will be used to finance any activity qualifying "category A" (for environmental safeguards). • Category B: A proposed project is classified as category B if its potential adverse environmental impacts are less adverse than those of category A projects. These impacts are site-specific, few if any of them are irreversible, and in most cases, mitigation measures can be designed more readily than for category A projects. An initial environmental examination is required. • Category C: A proposed project is classified as category C if it is likely to have minimal or no adverse environmental impacts. No environmental assessment is required, although environmental implications need to be reviewed. 		
Involuntary Resettlement:		
<ul style="list-style-type: none"> • Category A. A proposed project is classified as category A if it is likely to have significant involuntary resettlement impacts. A resettlement plan, including an assessment of social impacts, is required. • Category B. A proposed project is classified as category B if it includes involuntary resettlement impacts that are not deemed significant. A resettlement plan, including an assessment of social impacts, is required. • Category C. A proposed project is classified as category C if it has no involuntary resettlement impacts. No further action is required. 		
Indigenous People:		
<ul style="list-style-type: none"> • Category A. A proposed project is classified as category A if it is likely to have significant impacts on Indigenous Peoples. An Indigenous Peoples plan (IPP), including assessment of social impacts, is required. • Category B. A proposed project is classified as category B if it is likely to have limited impacts on Indigenous Peoples. An IPP, including assessment of social impacts, is required. • Category C. A proposed project is classified as category C if it is not expected to have impacts on Indigenous Peoples. No further action is required. 		
E. Approval		
Prepared by:	Endorsed & accepted by:	
Aggregator/ EPC Contractor for Sub-Borrower	Designated Officer of Borrower	
(Signature)	(Signature)	
Date:	Date:	

Appendix-4: Guidance for Initial Environmental Examination (IEE) report for Solar rooftop installations with certain site-specific conditions¹⁶

(This shall be prepared by the aggregator/ EPC contractor on behalf of the sub-borrower and shall be reviewed by a safeguard specialist engaged through ADB's Technical Assistance to SBI under SRIP)

OUTLINE OF AN ENVIRONMENTAL IMPACT ASSESSMENT (IEE) REPORT

An environmental assessment report is required for all environment category A and B projects. Its level of detail and comprehensiveness is commensurate with the significance of potential environmental impacts and risks. A typical EIA report contains the following major elements, and an IEE may have a narrower scope depending on the nature of the project. The substantive aspects of this outline will guide the preparation of environmental impact assessment reports, although not necessarily in the order shown.

A. Environment Assessment

This section describes concisely the critical facts, significant findings, and recommended actions.

B. Policy, Legal, and Administrative Framework

This section discusses the national and local legal and institutional framework within which the environmental assessment is carried out. It also identifies project-relevant international environmental agreements to which the country is a party.

C. Description of the Project

This section describes the proposed project; its major components; and its geographic, ecological, social, and temporal context, including any associated facility required by and for the project (for example, access roads, power plants, water supply, quarries and borrow pits, and spoil disposal). It normally includes drawings and maps showing the project's layout and components, the project site, and the project's area of influence.

D. Description of the Environment (Baseline Data)

This section describes relevant physical, biological, and socioeconomic conditions within the study area. It also looks at current and proposed development activities within the project's area of influence, including those not directly connected to the project. It indicates the accuracy, reliability, and sources of the data.

E. Anticipated Environmental Impacts and Mitigation Measures

This section predicts and assesses the project's likely positive and negative direct and indirect impacts to physical, biological, socioeconomic (including occupational health and safety, community health and safety, vulnerable groups and gender issues, and impacts on livelihoods through environmental media), and physical cultural resources in the project's area of influence, in quantitative terms to the extent possible; identifies mitigation measures and any residual negative impacts that cannot be mitigated; explores opportunities for enhancement; identifies and estimates the extent and quality of available data, key data gaps, and uncertainties associated with predictions and specifies topics that do not require further attention; and examines global, transboundary, and cumulative impacts as appropriate.

¹⁶ Solar Rooftop Installation on Gram Panchayat Land/ Grazing (pastureland)/ open or barren land, beyond the legal premises of Govt. buildings.

F. Analysis of Alternatives

This section examines alternatives to the proposed project site, technology, design, and operation—including the no project alternative—in terms of their potential environmental impacts; the feasibility of mitigating these impacts; their capital and recurrent costs; their suitability under local conditions; and their institutional, training, and monitoring requirements. It also states the basis for selecting the particular project design proposed and, justifies recommended emission levels and approaches to pollution prevention and abatement.

G. Information Disclosure, Consultation, and Participation

This section:

- (i) describes the process undertaken during project design and preparation for engaging stakeholders, including information disclosure and consultation with affected people and other stakeholders;
- (ii) summarizes comments and concerns received from affected people and other stakeholders and how these comments have been addressed in project design and mitigation measures, with special attention paid to the needs and concerns of vulnerable groups, including women, the poor, and Indigenous Peoples; and
- (iii) describes the planned information disclosure measures (including the type of information to be disseminated and the method of dissemination) and the process for carrying out consultation with affected people and facilitating their participation during project implementation.

H. Grievance Redress Mechanism

This section describes the grievance redress framework (both informal and formal channels), setting out the time frame and mechanisms for resolving complaints about environmental performance.

I. Environmental Management Plan

This section deals with the set of mitigation and management measures to be taken during project implementation to avoid, reduce, mitigate, or compensate for adverse environmental impacts (in that order of priority). It may include multiple management plans and actions. It includes the following key components (with the level of detail commensurate with the project's impacts and risks):

- (i) Mitigation:
 - a. identifies and summarizes anticipated significant adverse environmental impacts and risks;
 - b. describes each mitigation measure with technical details, including the type of impact to which it relates and the conditions under which it is required (for instance, continuously or in the event of contingencies), together with designs, equipment descriptions, and operating procedures, as appropriate; and
 - c. provides links to any other mitigation plans (for example, for involuntary resettlement, Indigenous Peoples, or emergency response) required for the project.
- (ii) Monitoring:
 - a. describes monitoring measures with technical details, including parameters to be measured, methods to be used, sampling locations, frequency of measurements,

detection limits and definition of thresholds that will signal the need for corrective actions;
and

- b. describes monitoring and reporting procedures to ensure early detection of conditions that necessitate particular mitigation measures and document the progress and results of mitigation.

(iii) Implementation arrangements:

- a. specifies the implementation schedule showing phasing and coordination with overall project implementation;
- b. describes institutional or organizational arrangements, namely, who is responsible for carrying out the mitigation and monitoring measures, which may include one or more of the following additional topics to strengthen environmental management capability: technical assistance programs, training programs, procurement of equipment and supplies related to environmental management and monitoring, and organizational changes; and
- c. estimates capital and recurrent costs and describes sources of funds for implementing the environmental management plan.

- (iv) Performance indicators: describes the desired outcomes as measurable events to the extent possible, such as performance indicators, targets, or acceptance criteria that can be tracked over defined time periods.

J. Conclusion and Recommendation

This section provides the conclusions drawn from the assessment and provides recommendations.

Appendix-5: EHS Management Plan applicable for Solar Rooftop/Ground Mounted Installation Sites

Note: Information checklist shall be filled out and submitted for each solar rooftop/ground mounted site by the EPC contractor, for both scenarios of standalone and aggregated installations, as may be applicable.

Sl. No.	Environmental, Health and Safety (EHS) Management Indicators	Due Diligence by Aggregator/ EPC Contractor	Guidance notes for EHS Management and Compliance by Aggregator/ EPC Contractor of sub-borrower
1	State the present condition of existing building's roof required for solar rooftop/ground mounted installation <ul style="list-style-type: none"> o structural safety o leakages and/or cracks o adequacy of roof drainage, o condition and adequacy of parapet wall (minimum 900 mm height parapet is desirable from safety concerns) 	Yes/ NO	If yes, submit a Certificate from an approved Chartered Engineer /Structural Engineer/ Architect for its suitability requirements along with filled in checklist and loan application, if the building is more than 15 years old. In case of any inadequacies, the same is to be rectified by the owner prior to first disbursement of loan or commissioning of the solar rooftop/ground mounted installation, whichever is earlier. If no, state time limit for submitting the required certificate (not later than first disbursal of the loan)
2	State availability of water for periodic washing solar panels, without affecting other users either on sharing or through dedicated arrangements (approx. 10 liters/ cleaning cycle per kW)	Yes/ NO	Submit commitment letter from land/building owner regarding water availability for each cleaning cycle weekly. If not, state arrangements should be made for ensuring the availability of water for each cleaning cycle.
3	State whether the labor license and workmen insurance has been obtained by the aggregator/ EPC contractor	Yes/ NO	Provide the supporting documents (Copy of the labor license and workmen insurance).
4	State arrangement agreed upon with manufacturer to take back <ul style="list-style-type: none"> • damaged/discarded panels • disused/worn out batteries etc. 	Yes/ No	If yes, state tenure up to which take back arrangements are agreed upon. If no, EPC contractor must ensure that 'All such damaged/discarded panels and disused batteries are stored and disposed as per Hazardous and other waste (management and transboundary movement) Act and Rules, 2016
5	State whether earthing of all plant and equipment has been made and tested by an approved agency as per latest Indian Electricity Act, 1956.	Yes/ No	If yes, furnish a certificate from Competent Authorities approval for safe installation, prior to COD (Commercial Operations Date) of solar rooftop/ground mounted installation.
6	State whether all workforces are adequately trained and experienced in solar rooftop/ground mounted installation and maintenance	Yes/ No	If not, ensure only trained and experienced workforce are deployed at solar rooftop/ground mounted installation site. All workforces are to be led by an experienced supervisor, who shall have a daily 'toolbox talk' prior to start of the work and ensure all workforce is oriented about safety procedure at work
7	State 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 at solar rooftop/ground mounted installation site	Yes/ No	Provide details of the safety provision provided during the solar rooftop/ground mounted installation.
8	State whether safety gear like boots, hard hats (helmets), gloves, safety harness/belts for working at heights are provided for workforce during installation	Yes/ No	If not, ensure all such required safety gear is mandatorily provided to all work force deployed on site to ensure safety of personnel at work.

Sl. No.	Environmental, Health and Safety (EHS) Management Indicators	Due Diligence by Aggregator/ EPC Contractor	Guidance notes for EHS Management and Compliance by Aggregator/ EPC Contractor of sub-borrower
	and maintenance of solar rooftop/ground mounted installation		<ul style="list-style-type: none"> All personnel involved in material lifting operations shall be provided with safety gear like shoes, hard hats, gloves etc. Safety belts/harness shall be mandatorily provided for workforce working at height. Awareness shall be created amongst workforce about safety and strict adherence to wear safety gear at work shall be enforced
9	State whether basic training in first aid and firefighting to all personnel deployed for Erection, Operation Phases are included in solar rooftop/ground mounted installation proposal	Yes/ No	If not, ensure all O&M personnel undergo a basic training in first aid and firefighting as part of their induction, training, prior to their deployment for installation and maintenance phases of solar rooftop/ground mounted installation
10	State whether all workforce (unskilled, semi-skilled and skilled) deployed for Installation / O&M are paid at minimum wages as per applicable Wages Act	Yes/ No	If not, ensure all work force are mandatorily disbursed as per the applicable Wages Act.
11	State whether equal wages are ensured for both men and women workforce (unskilled, semi-skilled and skilled) deployed for Installation / O&M are paid as per applicable Equal Remuneration Act and Rules, 1976	Yes/ No	If not, ensure equal wages are mandatorily disbursed for all men and women workforce deployed for installation and maintenance phases.
12	State whether all personnel deployed for Installation / O&M are adequately covered under workers compensation insurance policy, EPF Act, Gratuity Act etc. as applicable/relevant	Yes/ No	If not, ensure all personnel deployed for installation and maintenance phases of solar rooftop/ground mounted installation are mandatorily covered under workers compensation insurance policy. Please also ensure that the requisite labor license is obtained by the EPC contractor during construction and O&M periods.

Declaration by Aggregator/ EPC Contractor of Sub-Borrower for Solar rooftop/ground mounted Installation (applicable for both aggregated/ standalone installation):

1. I/We affirm that that the information furnished above with respect to environmental, health and safety management measures at the solar rooftop /ground mounted installation site is true to the best of our knowledge and no material facts have been concealed/mis-stated.
2. I/we shall accept all contractual liabilities as may be initiated against us arising in relation to misstatement/concealment and or mismanagement of the information furnished above.

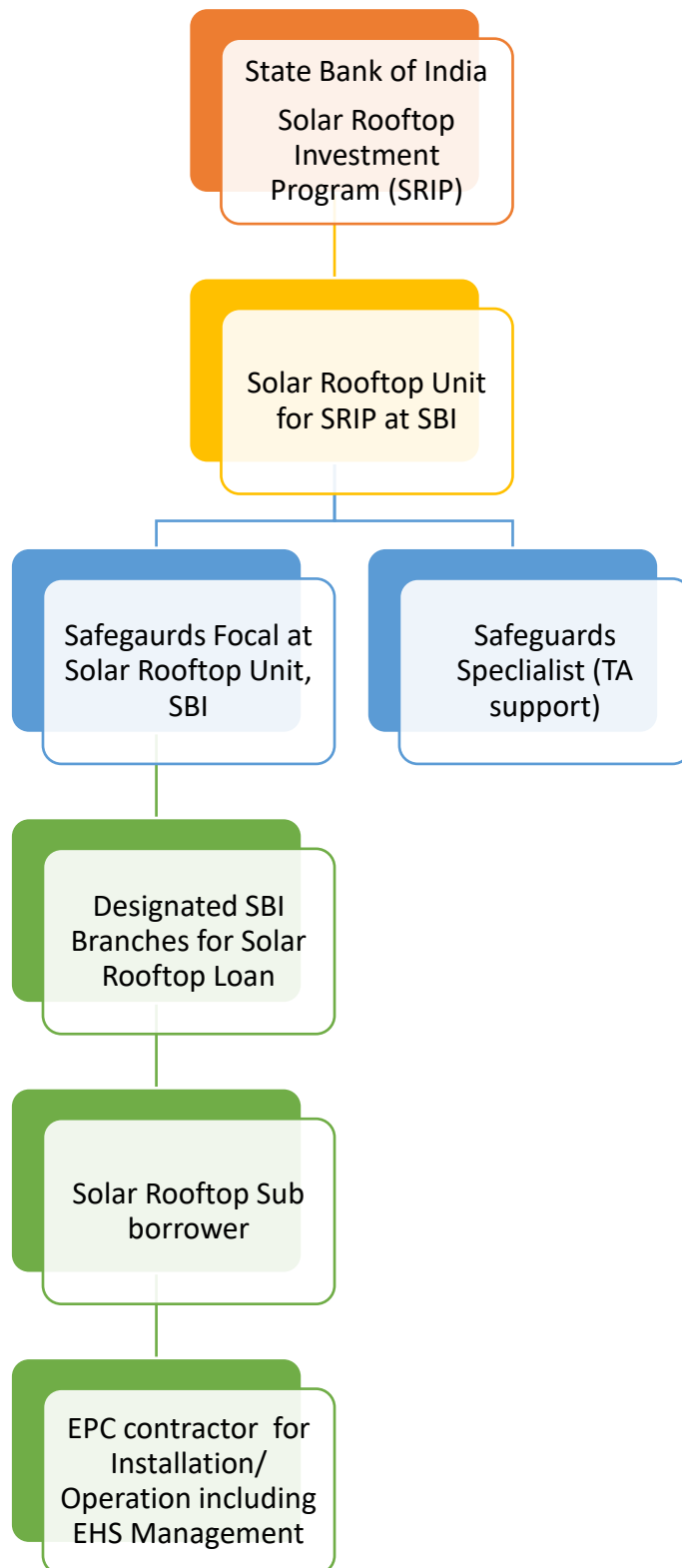
Authorized Signatory

Aggregator/ EPC Contractor of Sub-Borrower for Solar rooftop/ground mounted Installation)

Place:

Date:

Appendix-6: Institutional Structure for ESMS Management –



Appendix-7: Format for receiving grievances from aggrieved person(s)

Grievance Information Form

Form No:

Date:

- 1. Name of Aggrieved Party:
- 2. Contact Address:
- 3. Contact Mobile No.:
- 4. Grievance Description:
- 5. Nature of Grievance:
- 6. Type of Grievance
- 7. Place/ Location of Grievance:
- 8. Period From:
- 9. Expected relief required:

Signature:

Place:

Date:

Grievance Acknowledgement Receipt

Form No.

Sub-Project Name & Address:

Estimated time required for resolution of grievance Days (max. allowed seven days)

(Grievance Receiving Officer of Aggregator/EPC contractor/ Sub-Borrower)

Signature:

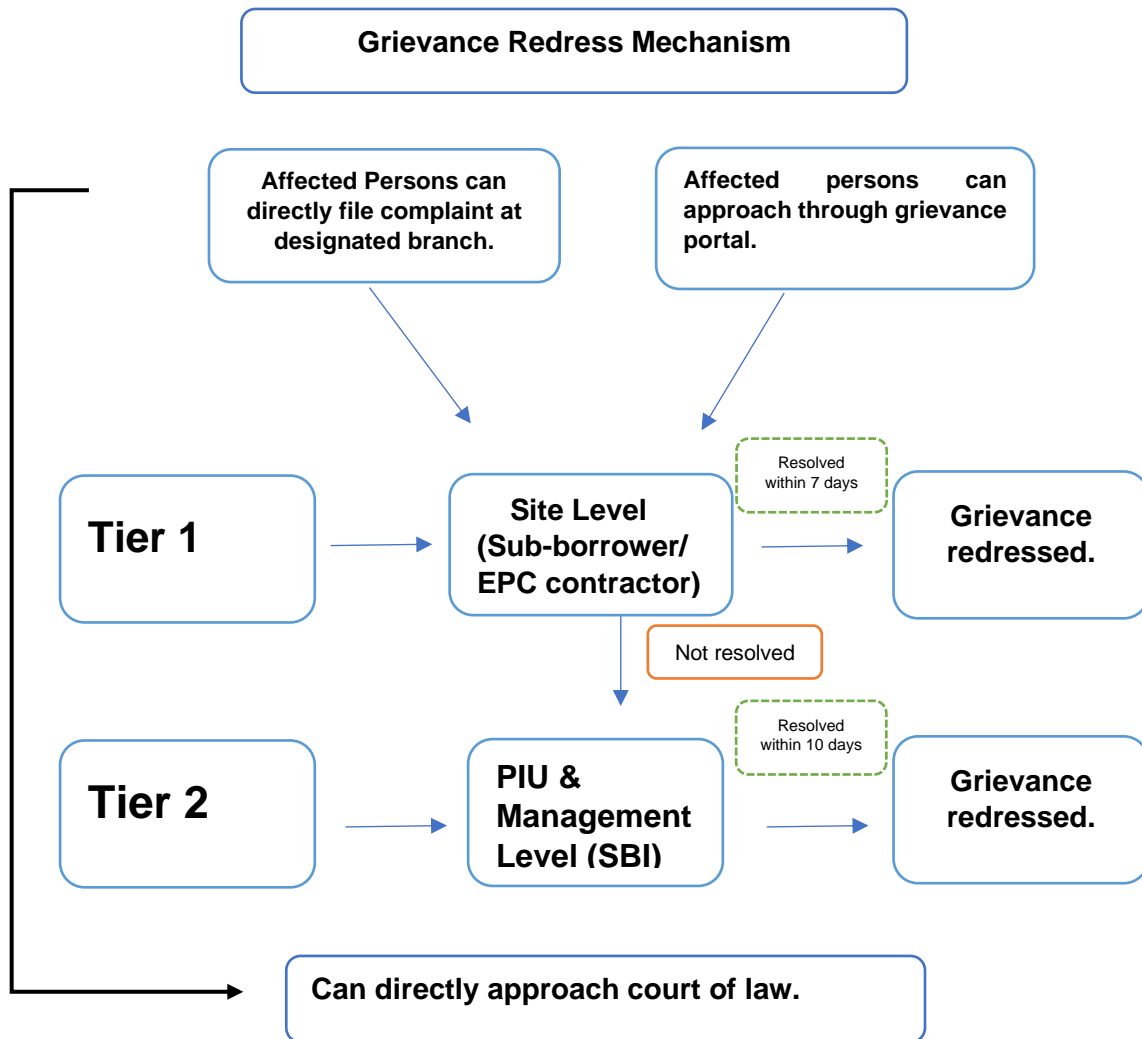
Name:

Contact No.:

Note: If the grievance is not resolved within 10 days (about 2 weeks), kindly contact Designated Empowered Committee Member for grievance redressal.....; Contact No.:.....

Note: The aggrieved persons/ group shall be free to approach the court of law at any stage

Flow Chart for Redressal of Grievances



Notes:

1. Any grieved Solar Rooftop/ground mounted Loan Applicant/ any grieved community/ person may submit complaint/ grievance at designated Branches of Borrower or register through website of Borrower.
2. Grievances are to be resolved by respective aggregator/ EPC Contractor under intimation to Sub-Borrower and Borrower within 7 days (about 1 weeks). In case un- resolved, grievances can be escalated to the grievance redressal committee, comprising designated officer from PIU and loan approval branch of borrower and senior management functionaries of aggregator of sub-borrower.
3. Grievances are to be resolved within 10 days (about 2 weeks) after escalation to the grievance redress committees.
4. All designated Branches of Borrower for processing of Solar Rooftop/ground mounted Loan shall also receive and resolve the grievances, received, or registered through website of borrower.
5. The complainants are free to approach the court of law at any time of their own will at any stage, and accessing the country's legal system can run parallel to accessing the GRM and is not dependent on the negative outcome of the GRM.

Appendix-8: Format for Environmental and Social Safeguards Monitoring Report (ESMR) for Solar Rooftop/Ground mounted Installations.

(To be prepared by the Designated Officers under PIU (through ADB's safeguards specialist¹⁷ engaged under the Project) of Borrower for Environmental & Social Safeguard Unit (ESSU) in coordination with the respective EPC Contractor of Sub-Borrower for each standalone or aggregated installations, as may be applicable. In case of aggregated installations, ESMR shall be submitted individually for each solar rooftop/ground mounted installation proposal location/site)

A. Sub-project Information

Type of Solar Rooftop/ground mounted Installation:	Aggregated Individual (standalone) (✓ whichever is applicable)
Name of Sub-Borrower	
Name of Aggregator/ EPC Contractor or Individual Roof owner (in case of standalone cases) with contact details (mobile and email)	
Address of Solar Rooftop/ground mounted installation site	
Geographical/GPS Coordinates of Installation Site	Latitude: _____ Longitude: _____
Installed capacities (kW)	Rooftop (including sloping roof): _____ Ground Mount: _____ Total capacity: (kW)

B. Environmental and Social Safeguards Compliance

Particulars	Compliance Remarks
Status of implementation	State whether under installation/ commissioning/ operation phase
Status of environmental and social safeguards information checklist (as per Appendix-2)	Whether duly filled in checklist available for review and verification Any crucial information not furnished/ left out. Obtain missing information from sub-borrower or their aggregator/EPC Contractor for respective site
Status of IEE and environmental management plan (EMP), if warranted (applicable for category 'B' as per Appendix-3)	Yes/ No If yes Whether EMP is available for review and verification Any crucial information not furnished/ left out Obtain missing information from sub-borrower or their aggregator/EPC Contractor for respective site
Status of environmental health and safety (EHS) (as per Appendix-5)	Whether duly filled in checklist available for review and verification Any crucial information not furnished/ left out

¹⁷ Safeguards specialist shall be engaged through TA funds during implementation of SRIP.

Particulars	Compliance Remarks
	Obtain missing information from sub-borrower or their aggregator/EPC Contractor for respective site Evidence for implementation of EHS measures (to be ascertained during site visit/ through geo-tagged site photographs)
Any scope for improvement on EHS management at solar rooftop/ground mounted installation sites	No (if implementation of EHS is satisfactory) If yes (briefly mention scope for improvement along with time limit for implementation and verification)
Provide the details of the location of the site along with the ownership status during the reporting period.	Include the landowner status of the locations where the installation has been carried out during the current reporting period.
Status of grievances received and its resolution (grievances shall include those received at loan appraisal branch/ regional office/aggregator/EPC contractor or through the EA website)	No If yes (state the nature of the grievance and its resolution, if the grievance is not resolved, state the hindrance and time limit for resolution to the satisfaction of aggrieved person/ party)

C. Summary of Environment and Social Safeguards Implementation Monitoring

<p>Provide a summary note on the environmental and social safeguard compliance at the solar rooftop/ground mounted installation sites, best practices adopted and scope for improvements during installation and operation phases. Summary notes shall preferably be supported by the geo-tagged photographs taken during the site visit.</p> <p>.....</p> <p>.....</p> <p>.....</p>	
<p>ESSR prepared by Designated Officers under PIU of Borrower for Environmental & Social Safeguard Unit (ESSU) Date: Place:</p>	<p>ESSR approved by Designated Head of PIU for Solar Rooftop Installation Unit of Borrower Date: Place:</p>

Appendix-9: Terms of Reference for Engagement of Safeguard Specialist under ADB TA

A. Minimum Qualification Requirements

Safeguards Specialist (Environment and Social) should have an advanced (masters) degree in environmental sciences or relevant field with 8 years of experience in environmental/social assessments in energy sector projects. A thorough understanding of ADB's Safeguards Policy Statement, 2009 and other related guidelines, policies, and procedures of Government of India concerning environmental and social safeguards is preferable.

- Minimum General Experience : **15 years**
- Minimum Specific Experience : **8 years**
(relevant to assignment)

B. Detailed Tasks and/or Expected Output

- (i) The EPC contractor (aggregator) will collect the information pertaining to screening/categorization of the sub-projects as per SPS, 2009. The Safeguard Specialist will support to sub-borrower (through EPC contractor)/borrower in carrying out the mandatory environment and social safeguards screening of the sub-projects under the Project;
- (ii) Support to sub-borrower/borrower in (a) preparation of initial environmental examination (IEE) report including the environmental management plan (EMP) for "category B" (for environmental safeguards) sub-projects; and (b) submission of IEE reports to ADB for clearance before commencement of works under the Project;
- (iii) Support to sub-borrower/borrower in the implementation of environment and social management system (ESMS) under the Project;
- (iv) Provide safeguards orientation program to the Project staff (sub-borrower/borrower/contractors) responsible for ESMS/EMP implementation under the Project;
- (v) Perform regular coordination with the PIU for any matters related to the implementation (site visit would be undertaken as per requirement), monitoring, and reporting of ADB safeguard policy;
- (vi) Provide support to PIU in matters relating to implementation and monitoring of ESMS/EMP and social-related issues (as required by civil work contractors) under the Project; and
- (vii) Support to sub-borrower/borrower in preparing and submitting semi-annual environmental and social safeguards monitoring reports to ADB for review and clearance.
- (viii) Conduct capacity building training for the staff of EA on ADB's Safeguards Policy Statement, 2009.

Inputs required: 10-15 working days /month on intermittent basis since commencement to closure of the Program.