

المجلس العالمي للبصمة الكربونية
GLOBAL CARBON COUNCIL



**Project
Submission
Form**

V4.0- 2022

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COVER PAGE- Project Submission Form (PSF)								
BASIC INFORMATION								
Title of the Project Activity as per LON/LOA	30 MW Solar Power Plant by Aurobindo Pharma Limited							
PSF version number	01							
Date of completion / Updating of this form								
Project Owner(s) as per LON/LOA <small>(Shall be consistent with De-registered CDM Type B Projects)</small>	Aurobindo Pharma Limited							
Country where the Project Activity is located	India							
GPS coordinates of the project site(s)	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Project site</th> <th style="width: 30%;">Latitude</th> <th style="width: 30%;">Longitude</th> </tr> </thead> <tbody> <tr> <td>Varisam Village, Pydibhimavaram, Ranasthalam Mandal, Srikakulam District. Andhra Pradesh</td> <td>18.138° N (18° 08' 16.8" N)/ 18.1379° N</td> <td>83.649° E (83° 38' 56.4" E) / 83.6490° E</td> </tr> </tbody> </table>		Project site	Latitude	Longitude	Varisam Village, Pydibhimavaram, Ranasthalam Mandal, Srikakulam District. Andhra Pradesh	18.138° N (18° 08' 16.8" N)/ 18.1379° N	83.649° E (83° 38' 56.4" E) / 83.6490° E
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Eligible GCC Project Type as per the Project Standard <small>(Tick applicable project type)</small>	<input checked="" type="checkbox"/> Type A: <input type="checkbox"/> Type A1 <input checked="" type="checkbox"/> Type A2 <input checked="" type="checkbox"/> Sub-Type 1 <input type="checkbox"/> Sub-Type 2 <input type="checkbox"/> Sub-Type 3							

	<input type="checkbox"/> Sub-Type 4 <input type="checkbox"/> Type A3 <input type="checkbox"/> Type B – De-registered CDM Projects:¹ <input type="checkbox"/> Type B1 <input type="checkbox"/> Type B2
Minimum compliance requirements	<input checked="" type="checkbox"/> Real and Measurable GHG Reductions <input checked="" type="checkbox"/> National Sustainable Development Criteria (if any) <input checked="" type="checkbox"/> Apply credible baseline and monitoring methodologies <input checked="" type="checkbox"/> Additionality <input checked="" type="checkbox"/> Local Stakeholder Consultation Process <input checked="" type="checkbox"/> Global Stakeholder Consultation Process <input checked="" type="checkbox"/> No GHG Double Counting <input checked="" type="checkbox"/> Contributes to United Nations Sustainable Development Goal 13 (Climate Action)
Choose optional and additional requirements <small>(Tick applicable label categories)</small>	<input checked="" type="checkbox"/> Do-no-net-harm Safeguards to address Environmental Impacts <input checked="" type="checkbox"/> Do-no-net-harm Safeguards to address Social Impacts <input checked="" type="checkbox"/> Contributes to United Nations Sustainable Development Goals (in addition to Goal 13)
Applied methodologies including version No. <small>(Shall be approved by the GCC or the CDM)</small>	ACM0002- Grid-connected electricity generation from renewable sources, Version -20
GHG Sectoral scope(s) linked to the applied methodology(ies)	GHG SS1 (Energy (renewable/non-renewable sources))

¹ Owners of Type B projects shall fill in the form provided in Appendix 7.

Applicable Rules and Requirements for Project Owners (Tick applicable Rules and Requirements)	Rules and Requirements		Version
	<input checked="" type="checkbox"/> ISO 14064-2		
<input checked="" type="checkbox"/> Applicable host country legal requirements /rules			
<input checked="" type="checkbox"/> GCC Rules and Requirements ²	<input checked="" type="checkbox"/> Project Standard	03.1	
	<input type="checkbox"/> Approved GCC Methodology (XXXXX)		
	<input checked="" type="checkbox"/> Program Definitions	03.1	
	<input checked="" type="checkbox"/> Environment and Social Safeguards Standard	03	
	<input checked="" type="checkbox"/> Project Sustainability Standard	03	
	<input checked="" type="checkbox"/> Instructions in Project Submission Form (PSF)-template		
	<input checked="" type="checkbox"/> Clarification No. 01	03.1	
	<input checked="" type="checkbox"/> Clarification No. 02	01	
	<input checked="" type="checkbox"/> Clarification No. 03	01	
	<input type="checkbox"/> Clarification No. 04	01	
	<input checked="" type="checkbox"/> Clarification No. 05	01	
	<input checked="" type="checkbox"/> Standard on avoidance of double counting	01	
	<input type="checkbox"/> Add rows if required		
<input checked="" type="checkbox"/> CDM Rules ³	<input type="checkbox"/> Approved CDM Methodology (ACM0002)	20.0	
	<input checked="" type="checkbox"/> TOOL 1- Tool for the demonstration and assessment of additionality	07	
	<input checked="" type="checkbox"/> TOOL 02- Combined tool to identify the baseline scenario and demonstrate additionality	07	

² GCC Program rules and requirements: <http://www.globalcarboncouncil.com/resource-centre/>

³ CDM Program rules: <https://cdm.unfccc.int/Reference/index.html>

	<input checked="" type="checkbox"/> TOOL 07- Tool to calculate the emission factor for an electricity system	07
	<input type="checkbox"/> TOOL 19- Demonstration of additionality of microscale project activities	
	<input type="checkbox"/> TOOL 21- Demonstration of additionality of small-scale project activities	
	<input type="checkbox"/> TOOL 23- Additionality of first-of-its-kind project activities	
	<input checked="" type="checkbox"/> TOOL 24- Common practice	03.1
	<input checked="" type="checkbox"/> TOOL 27- Investment analysis	11
	<input type="checkbox"/> TOOL 32- Positive lists of technologies	
	<input type="checkbox"/> Guidelines for objective demonstration and assessment of barriers	
	<input type="checkbox"/> Add rows if required	
<p>Choose Third Party Project Verification by approved GCC Verifiers⁴</p> <p>(Tick applicable verification categories)</p>	<input checked="" type="checkbox"/> GHG emission reductions (i.e., Approved Carbon Credits (ACCs)) <input checked="" type="checkbox"/> Environmental No-net-harm Label (E⁺) <input checked="" type="checkbox"/> Social No-net-harm Label (S⁺) <input checked="" type="checkbox"/> United Nations Sustainable Development Goals (SDG⁺) <input type="checkbox"/> Bronze SDG Label <input type="checkbox"/> Silver SDG Label <input type="checkbox"/> Gold SDG Label <input type="checkbox"/> Platinum SDG Label <input checked="" type="checkbox"/> Diamond SDG Label <input checked="" type="checkbox"/> CORSIA requirements (C⁺)	

⁴ **Note:** GCC Verifiers under the Individual Track are not eligible to conduct verifications for GCC Project Activities whose owners intend to supply carbon credits (ACCs) for use within CORSIA.

	<input checked="" type="checkbox"/> Host Country Attestation on Double counting
<p>Declaration by the 'Authorized Project Owner⁵ and focal point'</p> <p>(Tick all applicable statements⁶)</p>	<p>The Project Owner(s) declares that:</p> <p>Generic Requirements applicable to all Project Types:</p> <p><input checked="" type="checkbox"/> We confirm that the Project Activity complies with the eligibility of the applicable project type (A1, A2, A3, B1 or B2) as stipulated by the Project Standard and relevant clarifications.</p> <p><input checked="" type="checkbox"/> We confirm that the Project Activity shall start or have started operations, and shall start or have started generating emission reductions, on or after 1 January 2016.</p> <p><input checked="" type="checkbox"/> We confirm that the Project Activity is eligible to be registered under the GCC program.</p> <p>We shall ensure the following for the Project Activity (tick at least one of the two options):</p> <p><input checked="" type="checkbox"/> No outcomes (e.g. emission reductions, environmental attributes) generated by the Project Activity under GCC will be claimed as carbon credits or environmental attributes under any other GHG/non-GHG⁷ program, either for compliance or voluntary purposes, during the entire GCC crediting period; or</p> <p><input checked="" type="checkbox"/> If the project activity has been issued with carbon credits or environmental attributes of compensating nature⁸ by any other GHG/ non-GHG program, either for compliance or voluntary purposes, the ACCs will be claimed only for the remaining crediting period (subject to a maximum of 10 years of crediting period including the periods under other programs and GCC program) for which carbon credits/ environmental attributes of compensating nature have not been issued by any other GHG/ non-GHG program.</p> <p>Specific requirements applicable to respective Project Types:</p> <p><u>For Project Type A1:</u></p> <p><input type="checkbox"/> For Project Type A1, we confirm that the Project Activity is NOT registered as a GHG Project Activity in any other GHG/non-GHG program or any other</p>

⁵ The Project Owner means the legal entity or organization that has overall control and responsibility for the Project Activity

⁶ **Consequences in case of Non-compliance with declaration statements:**

If at any point of time non-compliance with the declared statements is established as a result of negligence, fraud or wilful misconduct of the GCC Project Owner/s the GCC project activity will be disqualified and the registration of the proposed Project Activity will be rejected.

⁷ Non-GHG program could be such as I-REC facilitating reliable energy claims with Renewable Energy Certificate (REC) schemes

⁸ The environment attributes of compensating nature are those which are used by captive users (e.g. corporates/industries) for offsetting their GHG emissions

	<p>voluntary program and has not issued or will not issue credits under any other program.</p> <p><u>For Project Type A2 (Sub-Type 1):</u></p> <p><input checked="" type="checkbox"/> For Project Type A2 Sub-Type 1, we confirm that the Project Activity is NOT registered as a GHG Project Activity in any other GHG/non-GHG program or any other voluntary program and has not issued or will not issue credits under any other program.</p> <p><u>For Project Type A2 (Sub-Type 2 or Sub-Type 3):</u></p> <p>For Project Type A2 Sub-Type 2 or Project Type A2 Sub-Type 3, we confirm that for Project Activity, which has been registered with CDM or any GHG/non-GHG Program and we shall (tick at least one of the two options):</p> <p><input type="checkbox"/> Submit a proof for deregistration from CDM; or</p> <p><input type="checkbox"/> Submit a signed & stamped public undertaking, stating that the Project Owner will never submit any request for Issuance of ACCs or request for renewal of crediting period to CDM-EB or under article 6.4 or any authority after submission to GCC Program and shall formally inform CDM-EB or authority under article 6.4 or any authority after submission to GCC Program.</p> <p><input type="checkbox"/> For Project Type A2 Sub-Type 2 or Project Type A2 Sub-Type 3, we confirm that the Project Activity is NOT included as a component Project Activity (CPA) in any registered GHG Programme of Activities (PoA) or any other functionally equivalent grouped/aggregated activities under any GHG program (such as the CDM or any other voluntary program).</p> <p><u>For Project Type A2 (Sub-Type 4):</u></p> <p>For Project Type A2 Sub-Type 4, we confirm that the Project Activity has been included in a registered CDM-POA and we shall (tick at least one of the two options):</p> <p><input type="checkbox"/> Submit the proof for exclusion of CPA(s) from registered CDM-POA prior to the date of initial submission to the GCC Program; or</p> <p><input type="checkbox"/> Submit the proof of exclusion of CPA(s) from the registered CDM-PoA after the request for registration has been submitted to GCC Program but before the final decision is made by the GCC Steering Committee.</p> <p><u>For Project Type A3:</u></p> <p><input type="checkbox"/> For Project Type A3, we confirm that the Project Activity is NOT registered as a GHG Project Activity in any other GHG/non-GHG program or any other voluntary program and has not issued or will not issue credits under any other program.</p> <p><u>For Project Type B1 or B2:</u></p>
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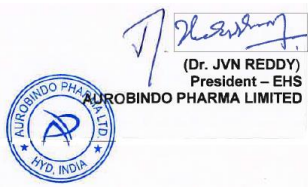
	<p>For Project Type B1 or Project Type B2, we confirm that for Project Activity, which has been registered with CDM or any GHG/non-GHG Program and we shall (tick at least one of the two options):</p> <p><input type="checkbox"/> Submit a proof for deregistration from CDM; or</p> <p><input type="checkbox"/> Submit a signed & stamped public undertaking, stating that the Project Owner will never submit any request for Issuance of ACCs or request for renewal of crediting period to CDM-EB or under article 6.4 or any authority after submission to GCC Program and shall formally inform CDM-EB or authority under article 6.4 or any authority after submission to GCC Program.</p> <p>Requirements to avoid double counting:</p> <p>We intend to submit or have submitted a written attestation⁹ (Host Country Letter of Authorisation - HCLOA) from the host country's national focal point or focal point designee for CORSIA eligible units generated beyond 31 December 2020 at the following stages¹⁰ (tick at least one of the three options):</p> <p><input checked="" type="checkbox"/> The initial submission for GSC; or</p> <p><input checked="" type="checkbox"/> Along with the submission for a request for registration (after Project Verification is completed); or</p> <p><input checked="" type="checkbox"/> Along with the submission for a request for the first or subsequent issuance of ACCs.</p> <p>Project specific requirements:</p> <p><u>CORSIA specific requirements:</u></p> <p><input checked="" type="checkbox"/> We confirm that bundled projects or grouped projects shall have registered crediting period starting on or after 1 Jan 2016 for the grouped/aggregated project as a whole.</p> <p><input checked="" type="checkbox"/> We confirm that the Project Activity meets all the requirement of the CORSIA Eligible Emissions Units¹¹ required for GCC projects and does not fall under the excluded unit types, methodologies, programme elements, and/or procedural classes.</p> <p><input checked="" type="checkbox"/> We confirm that the Project Activity aims to achieve at least Silver or higher SDG+ label (i.e. positively impact at least 3 or more United Nations Sustainability Development Goals).</p> <p><input checked="" type="checkbox"/> We confirm that the Project Activity will be implemented in a country which is UN member state¹².</p>
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⁹ In case of any change of Host Country Letter of Authorisation (HCLOA) the project owner shall inform the GCC operations team immediately

¹⁰ If the host country attestation is not submitted at the initial submission of GSC, the project can be tagged with an indicative CORSIA flag if its confirmed to be submitted later. If the host country attestation is not submitted at the request for registration, the project can be tagged with an indicative CORSIA flag if at least the PSF and Verification Report confirms to submit this letter, at first issuance. If the host country attestation is not submitted at request for first issuance, the ACCs will not be tagged as CORSIA (C+) compliant if this letter is not submitted.

¹¹ CORSIA Eligible Emissions Units containing approval and conditions for GCC Program: <https://www.icao.int/environmental-protection/CORSIA/Pages/CORSIA-Emissions-Units.aspx>

¹² The list of UN member states countries can be found at <https://www.un.org/en/about-us/member-states>

	Provide details (if any) below for the boxes ticked above:
	<p>The Project Owner(s) declares that:</p> <p><input checked="" type="checkbox"/> All of the information provided in this document, including any supporting documents submitted to the GCC or its registry operator IHS Markit at any time, is true and correct;</p> <p><input checked="" type="checkbox"/> They understand that a failure by them to provide accurate information or data, or concealing facts and information, can be considered as negligence, fraud or wilful misconduct. Therefore, they are aware that they are fully responsible for any liability that arises as a result of such actions.</p> <p>Provide details below for the boxes ticked above</p>
Appendixes 1-9	Details about the Project Activity are provided in Appendixes 1 through 9 to this document.
Name, designation, date and signature of the Focal point (as per LON/LOA)	<p>For Aurobindo Pharma Limited</p> 

1. PROJECT SUBMISSION FORM

Section A. Description of the Project Activity

A.1. Purpose and general description of the Project Activity

The proposed project activity is the installation of 30 MW solar power Grid connected Solar Project activity in Andhra Pradesh, India. At the sites where no renewable power plant was operating prior to the implementation of the project activity (green-field plant). The electricity generated from project activity is exported to the Indian grid in India there by displacing the consumption of electricity from the regional grid electricity distribution system.

The electricity generated by the project activity will replaces the equivalent amount of electricity generated by the operation of existing/ grid connected power plants (mostly fossil fuel-based power plants) and by addition of new generation sources into the grid. The project activity therefore reduces

the anthropogenic emissions of greenhouse gases (GHGs) in to the atmosphere associated with the equivalent amount of electricity generation from the existing grid connected power plants (mostly fossil fuel) and by addition of new generation sources into the grid.

The project is implemented by Aurobindo Pharma Limited.

Project Company	Locations	Capacity	Date of commissioning
Aurobindo Pharma Limited	Varisam village, Srikakulam district, Andhra Pradesh	30 MW	24/05/2017

The annual estimated emission reductions from project activity is 46,369 tCO₂/annum. Total estimated emission reduction from the project activity during the entire crediting period of 10 years is 46,3690 tCO₂.

The project contributions to the sustainable development of the local area as well as the host country are as follows: Ministry of Environment, Forest and Climate Change (MoEF&CC), Government of India, has stipulated the following indicators for sustainable development in the interim approval guidelines for CDM projects.

The project activity meets the following sustainable development criteria

1. Social Well being

The project activity improves the social well-being of all the peoples living in and around the project area. The project improves the daily wages of the local peoples and increase the opportunities of local people to upgrade their skill and improve their technical knowledge in operating the Solar PV generators. There is plenty scope for the overall development of the village area including improvement in road and infrastructure around the project area

2. Environmental Well being

The project activity is a green technology infusion in host country India and installation of Solar PV reduces greenhouse gas emission into the atmosphere, thereby help in meeting the requirements of Article 6 of Kyoto protocol and national GHG inventory.

3. Economic Well being

The project activity will provide employment opportunity to all the men and woman living in that area. There is considerable direct and indirect permanent and temporary employment opportunity, leading to economic well-being of the people living in and around the project site

4. Technology Well being

The implementation of project activity aid in upgrading the technical knowledge of the people through technology transfer and green field activity

A.2. Location of the Project Activity

The Project site is located near Varisam village, of Srikakulam district in Andhra Pradesh state, India. National Highway NH-16 connects the Project site to Srikakulam. Nearest major airport and railway station to the site is at Vishakhapatnam, 82km away from the site

Address and geodetic coordinates of the physical site of the Project Activity		
Physical address	Latitude*	Longitude*
Varisam village, Srikakulam district, Andhra Pradesh	18.138° N (18° 08' 16.8" N)/ 18.1379° N	83.649° E (83° 38' 56.4" E)/ 83.6490° E

Note: Geo-coordinates to presented in degree minute seconds as well in decimal place format (4 decimal places)

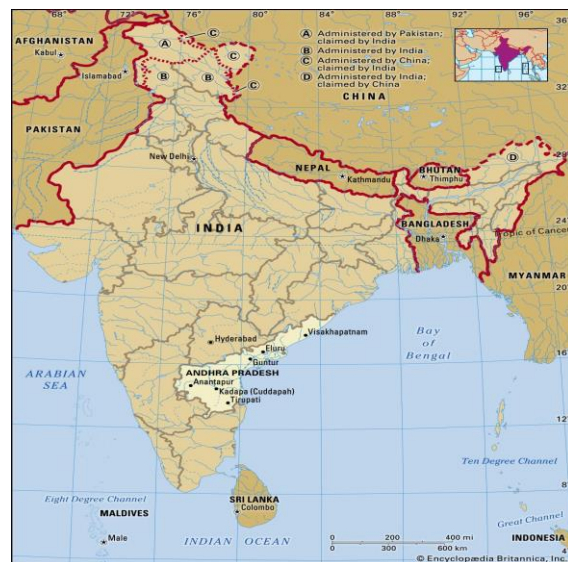
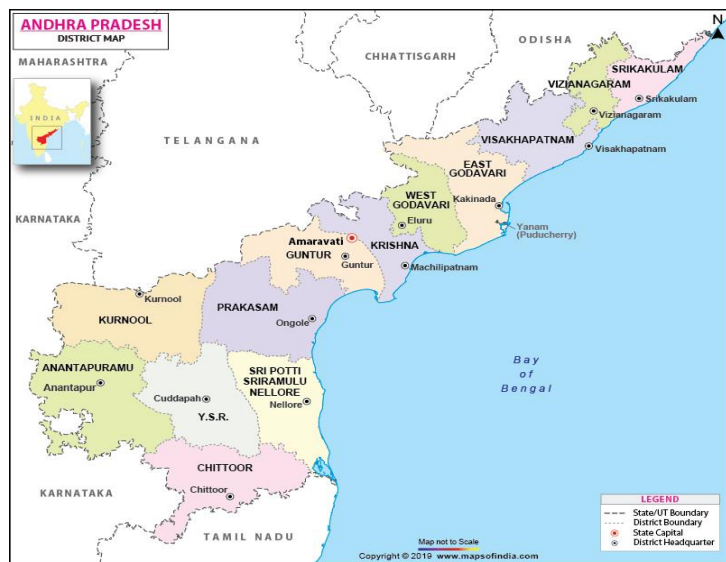




Figure 4-2: Google Earth image of the Project site

A.3. Technologies/measures

The project activity involves installation of Trina Solar PD-14 series of modules. These modules have a positive power tolerance of 0~+5W. The Trina solar poly-crystalline PV modules and ABB inverters are the key project components for the Project. Fixed tilt mounting structure, with south facing orientation, has been chosen to maximize the total annual incident solar irradiation. The modules shall be arranged in portrait orientation with two rows and each row shall accommodate 20 modules. Thus each mounting structure shall accommodate 40 modules. Twenty PV modules are electrically connected to form a string. The DC electrical output from the string is fed to junction boxes and further to inverters. Solar PV plants are modular in nature, with each inverter station comprising a set of inverters, step-up transformers and associated switchgear. The medium voltage 11kV outputs of the transformers shall be combined at main control room and further stepped up to 132kV using 19/31.5MVA, ONAN/ONAF power transformer within 132kV/11kV substation, located inside the plant boundary.

Transmission line and infrastructure required for evacuation is developed and maintained by the Developer. Interconnection point / delivery point for energy generated from Solar PV plant is at substation. Energy metered at this point will be used for net billing facility against the recorded consumption at different locations.

The parts of the Solar PV technology are

- Solar panels;
- Switchyard;

- Inverters;
- Transformers;
- Main Control Room;
- Associated Facilities
- Internal Access Road; and
- Additional Project infrastructure such as scrap yard, storage area.

Technical Parameters

Specifications	TSM320 PD14
Nominal power (PMPP) at STC 320Wp	Nominal power (PMPP) at STC 320Wp
Voltage at PMAX (VMPP) 37.1V	Voltage at PMAX (VMPP) 37.1V
Current at PMAX (IMPP) 8.63A	Current at PMAX (IMPP) 8.63A
Open circuit voltage (VOC)	45.8V
Short circuit current (ISC)	9.10A
Efficiency (%)	16.5
Power tolerance (%)	0~+5W
Dimensions (mm)	1956 X 992 X 40 Weight (kg)
22.5 Temperature coefficient of PMPP	-0.41%/°C
Module area (m2)	1.94m2
Maximum load	5400Pa
Manufacturing warranty	10 years
Power warranty	25 years, 80%
Inverter	ABB PVS800-57-1000kW-C
Maximum input power (PPV, max)	1200KWp
ABB Central Inverter Specifications	
Inverter	ABB PVS800-57-1000kW-C
Type	Central inverter
Efficiency(%)	98.8

A.4. Project Owner(s)

Location/ Country	Project Owner(s)	Where applicable ¹³ , indicate if the host country has provided approval (Yes/No)
India	Aurobindo Pharma Limited	N/A

¹³ For example, *Project Coordination Form* is to be filled-in by Project Owners for projects located in Qatar. A written attestation from the host country's national focal point or the focal point's designee, as required by CORSIA (Refer section A.5 of the PSF guidelines).

A.5. Declaration of intended use of Approved Carbon Credits (ACCs) generated by the Project Activity

The Project Activity is expected to generate ACCs for a full 10-year crediting period and supply the credits to offset the following GHG emissions:

Period		Name of the Entities	Purpose and Quantity of ACCs to be supplied
From	To		
24/05/2017	23/05/2027	Aurobindo Pharma Limited	Offsetting 46,369 t CO ₂ /Annum for 10 years of crediting period

A.6. Additional requirements for CORSIA

Refer section B.5

Section B. Application of selected methodology(ies)

B.1. Reference to methodology(ies) and tools applied in the project

Applied methodology: Approved CDM Methodology: Grid-connected electricity generation from renewable sources, Version 20.0

Tool 01: Tool for the demonstration and assessment of additionality (Version 07.0.0 Annex 8)

Tool 02: Combined tool to identify the baseline scenario and demonstrate additionality Version,7

Tool 07-Tool to calculate the emission factor of electricity system, Version 7.0

Tool 24-Common Practice, Version -3.1

Tool 27-Investment Analysis, Version-11.0

B.2. Applicability of methodology(ies) and tools applied in the project

The project activity at Aurobindo, have the following applicability criteria

- The implementation of 30 MW Solar power project for electricity generation is a green field solar PV installation grid connected, that supply electricity through open access to their pharma plant. The grid connected power plant¹⁴ displaces equivalent amount of electricity that would have been supplied from the national grid in the absence of the project activity.

-
- ¹⁴ The power plant/unit supplies electricity to an electricity grid and to the captive unit and hence it is a grid connected power plant.

- The project activity uses the power in their Aurobindo Pharma plant as captive consumption. In the absence of project activity, the power will be imported from national grid.

The project activities meet the following applicability criteria as per the ACM0002, version 20

Para No.	Applicability Conditions as per ACM0002, Version 20.0	Applicability to this Project Activity
1.	<p>This methodology is applicable to grid-connected renewable energypower generation project activities that:</p> <ul style="list-style-type: none"> (a) Install a Greenfield power plant; (b) Involve a replacement of (an) existing plant(s)/unit(s). (c) Involve a capacity addition to (an) existing plant(s); (d) Involve a retrofit of (an) existing operating plants/units; (e) Involve a rehabilitation of (an) existing plant(s)/unit(s); or 	<p>The implementation of bundled grid connected solar plant/unit at the aforesaid project sites is for generating electricity. It is a green field installation, and displaces equivalent amount of electricity that would have been supplied from the national grid in the absence of the project activity</p>

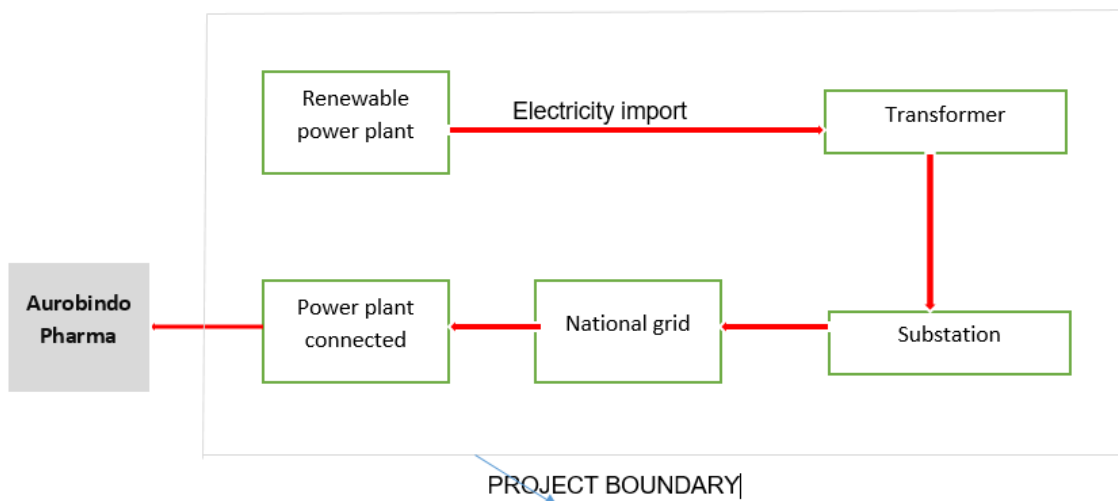
<p>2</p>	<p>In the case of capacity additions, retrofits, rehabilitations or replacements (except for wind, solar, wave or tidal power capacity addition projects) the existing plant/unit started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion, retrofit, or rehabilitation of the plant/unit has been undertaken between the start of this minimum historical reference period and the implementation of the project activity.</p>	<p>There is no capacity addition/Retrofit activity /rehabilitation/ replacement occurred. Hence this scenario is not applicable</p>
<p>3</p>	<p>(a) In case of hydro power plants, one of the following conditions shall apply:7 The project activity is implemented in existing single or multiple reservoirs, with no change in the volume of any of the reservoirs; or</p> <p>(b) The project activity is implemented in existing single or multiple reservoirs, where the volume of the reservoir(s) is increased and the power density, calculated using equation (7), is greater than 4 W/m² ; or</p> <p>(c) The project activity results in new single or multiple reservoirs and the power density, calculated using equation (7), is greater than 4 W/m² ; or</p>	<p>The project activity is not a hydropower plant. Hence scenario 2 is not applicable</p>

4	<p>In the case of integrated hydro power projects, project owner shall: Demonstrate that water flow from upstream power plants/units spill directly to the downstream reservoir and that collectively constitute to the generation capacity of the integrated hydro power project or</p>	<p>The project activity is not an integrated hydro power plant, hence it is not applicable</p>
5	<p>The methodology is not applicable to:</p> <ul style="list-style-type: none"> (a) Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site. (b) Biomass fired power plants/units. 	<p>The project activity is not a switch in fossil fuel and biomass-based power plants. Hence it is not applicable</p>

Tools	Applicability
<p>Tool 01: Tool for the demonstration and assessment of additionality (Version 07.0)</p>	<p>The project activity is large scale bundled project, that follows the recent tool and requirements of Additionality tool, Version 7. The procedures are followed as per the additionality tool to establish the appropriate method of computing the financial analysis for the project. (i.e) Investment analysis method .</p>
<p>Tool 02: Combined tool to identify the baseline scenario and demonstrate additionality (Version,07.0)</p>	<p>The project activity follows the Tool 02 to establish baseline alternative for the project activity</p>
<p>Tool 07: Tool to calculate the emission factor for an electricity system (Version 07.0) This tool may be applied to estimate the OM, BM and/or CM when calculating baseline emissions for a project activity that substitutes grid electricity that is where a project activity supplies electricity to a grid or a project activity that results in savings of electricity that would have been provided by the grid (e.g. demand-side energy efficiency projects)</p>	<p>The baseline for the project activity is power consumption from grid, in the absence of the project activity. The project activity substitutes the grid power and results in savings of electricity and the combined emission factor for the National Grid is computed based on the mentioned tool.</p>
<p>Tool 24-Common Practice,(Version 03.1)</p>	<p>The project activity follows the steps from common practice tool, to prove the project scenario is not business as usual during the time of implementation</p>
<p>Tool 27-Investment Analysis, Version-11.0</p>	<p>The investment analysis recent version and its step wise procedure are followed to establish equity IRR for the project activity</p>

B.3. Project boundary, sources and greenhouse gases (GHGs)

As per ACM0002, The spatial extent of the project boundary includes the project power plant/unit and all power plants/units connected physically to the electricity system that the project power plant is connected to. With respect to the project activity, the project boundary includes the renewable energy generation facility i.e. the Solar PV technology installed project site, the inverter and other components, National grid and metering systems along with the identified user.



The table below provides an overview of the emissions sources included or excluded from the project boundary for determination of baseline and project emissions.

Source		GHG	Included?	Justification/Explanation
Baseline	CO ₂ emissions from electricity generation in fossil fuel fired power plants that are displaced due to project activity	CO ₂	yes	CO ₂ emission that would have occurred in the absence of project activity from fossil fuel-based power plant.
		CH ₄	No	Not applicable
		N ₂ O	No	Not applicable
Project Activity	Auxiliary power consumption due to operation of the project activity	CO ₂	yes	CDM Tool: "Tool to calculate baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation"
		CH ₄	No	Not applicable
		N ₂ O	No	Not applicable

B.4. Establishment and description of the baseline scenario

As per the approved consolidated methodology ACM 0002, Version 20, para 22 If the project activity is the installation of a Greenfield power plant, the baseline scenario is the following:

Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the “Tool to calculate the emission factor for an electricity system”.

The combined margin (EF_{grid,CM,y}) is the result of a weighted average of two emission factor pertaining to the electricity system: the operating margin (OM) and build margin (BM), in accordance with the Tool to calculate the emission factor for an electricity system - Version 07 Calculations for this combined margin must be based on data from an official source (where available) and made publicly available. In India, Central Electricity Authority (CEA), Government of India provides this data, and accordingly the same has been used.

In the absence of the project activity, the equivalent amount of electricity would have been drawn from the state grid. Hence, the baseline for the project activity is the equivalent amount of power from the Indian Grid.

The combined margin (EF_{grid, CM,y}) is the result of a weighted average of two emission factor pertaining to the electricity system: the operating margin (OM) and build margin (BM).

Calculations for this combined margin must be based on data from an official source (where available) and made publically available. The CEA database version 17 is the latest available data at the time of PSF submission to GCC verifier for project verification, hence same is considered for emission factor calculations

Parameter	Value	Nomenclature	Source
EF _{grid,CM,y}	0.9305 tCO ₂ /MWh	Combined margin CO ₂ emission factor for the project electricity system in year y	Calculated as the weighted average of the operating margin (0.75) & build margin (0.25) values, sourced from Baseline CO ₂ Emission Database, Version 17.0, CEA, GOI
EF _{grid,OM,y}	0.9522 tCO ₂ /MWh	Operating margin CO ₂ emission factor for the project electricity system in year y	Calculated as the last 3-year (2018-19 and 2019-20,2020-21) generation-weighted average, sourced from Baseline CO ₂ Emission Database, Version 17.0, CEA, GOI
EF _{grid,BM,y}	0.8653 tCO ₂ /MWh	Build margin CO ₂ emission factor for the project electricity system in year y	Baseline CO ₂ Emission Database, Version 17.0, CEA, GOI

B.5. Demonstration of additionality

According to tool for demonstration and additionally the steps listed below are followed in detail:

Step 0: Demonstration whether the proposed project activity is the first-of-its-kind

The proposed project activity is not the first-of-its-kind.

Step 1: Identification of alternatives to the project activity consistent with current laws and regulations

Sub-step 1a: Define alternatives to the project activity:

Identify realistic and credible alternative(s) available to the project owners or similar project developers that provide outputs or services comparable with the proposed project activity.

The purpose of the project activity is to generate electrical power using solar energy and feed the electricity generated to the grid. Hence, the following alternatives are considered:

Alternative 1: The proposed project activity not undertaken as a GCC project activity.

The PP could proceed with the implementation of the project without Carbon credit benefits. The electricity produced from the renewable energy project would have been sold to the grid. This is in compliance with all applicable legal and regulatory requirements and can be a part of the baseline. However, the Project activity is not feasible without revenues from sale of Carbon Credits. This argument has been discussed in step 2 of the Additionality section.

Alternative 2: No proposed project activity and equivalent amount of energy would have been produced by the grid electricity system through its currently running power plants and by new capacity addition to the grid i.e. Continuation of the present situation.

The PP would have continued without investment in Project activity with usual business activities. The grid would continue with the fossil fuel-based power projects and this would result in GHG emissions. Hence, the new capacity add-on from a fossil fuel-based power plant is appropriate, realistic & credible baseline alternative for the project activity.

Outcome of Sub-step 1a: All the realistic alternatives for the project activity have been enlisted above.

Thus, though two alternatives are mentioned above as per step of additionality tool, the first alternative is not possible as project activity is not viable without carbon credit benefits and second alternative is the baseline scenario for the project activity as per methodology as mentioned in section B.4 of PSF.

It is to be noted that being the green field project activity, “the baseline scenario is electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the “Tool to calculate the emission factor for an electricity system”.

Sub-step 1b: Consistency with mandatory laws and regulations:

The alternative(s) shall be in compliance with all applicable legal and regulatory requirements, even if these laws and regulations have objectives other than GHG reductions, e.g., to mitigate local air pollution. The project activity comes under white category as per local regulation, thus there shall be no necessity of obtaining the Consent to Operate” for White category of industries. Since project activity falls under white category and the non-polluting nature of project fulfils the compliance to the local laws and regulations (This sub-step does not consider national and local policies that do not have legally-binding status.).

The relevant national laws and regulations pertaining to generation of energy in India are:

- Electricity Act 2003
- National Electricity Policy 2005
- Tariff Policy 2006
- The factories act 1948

The Project activity conforms to all the applicable laws and regulations in India:

- Power generation using renewable energy is not a legal requirement or a mandatory option.
- There are state and sectoral policies, framed primarily to encourage solar power projects.
- These policies have also been drafted realizing the extent of risks involved in the projects and to attract private investments.

- The Indian Electricity Act, 2003 (May 2007 Amendment) does not influence the choice of fuel used for power generation.
- There is no legal requirement on the choice of a particular technology for power generation.

The both alternatives are in compliance with laws and regulations required. There is no any mandatory requirement to implement the project activity.

Outcome of Sub-step 1b: Hence, both the alternatives enlisted above are found to comply with the mandatory laws and regulations taking into account the enforcement of the legislations in the region or country and EB decisions on national and/or sectoral policies and regulations. Since solar projects are categorized as white category, no any consent to operate required from pollution control board.

However, Alternative 2 has been selected as the appropriate baseline alternative for this project activity in line with methodology.

Step 2: Investment analysis¹⁵

The investment analysis has been done in order to make an economic and financial evaluation of the project. No public funding or ODA are available in India for finance of this type of projects. For investment analysis, loan conditions have been determined considering the average market rates/term sheets signed with the banks.

Sub-step 2a: Determine appropriate analysis method

There are three options for the determination of analysis method which are:

- Simple Cost Analysis
- Investment Comparison Analysis and
- Benchmark Analysis

The Project activity envisages to export the power to Indian grid and the revenues from the sale of electricity would be generated in accordance with the terms and tariffs established in the Power

¹⁵ <https://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-27-v11.0.pdf>

Purchase Agreement (PPA). Thus, simple cost analysis (Option I) cannot be used as the analysis method as the sale of the units of generated electricity shall result in a revenue stream during the operations of the Project activity.

In the absence of the project activity grid electricity would have been the obvious choice for the Project which requires no investment. Hence investment comparison analysis (Option II) is also not appropriate for the project activity.

However, after eliminating Option I and Option II, the use of Benchmark analysis (Option III) is the method of analysis that has been selected as the most suitable method. This method determines the attractiveness of the project activity for the investors, as well as provides a measure of the viability of the investment to generate revenues during its operation, as compared with other avenues and investment options. Hence, the Benchmark analysis method is to be employed for analysis of the said project.

Sub-step 2b (Option III): Apply benchmark analysis

Choice of Benchmark:

According to the “Tool for demonstration and assessment of Additionality”, the financial indicator can be based either on (1) project IRR or (2) equity IRR. There is no general preference between the approaches (1) or (2). The benchmark chosen for analysis shall be fully consistent with the choice of approach. Therefore, in accordance with the guidance, the relevant financial indicator for project activity has been chosen as post tax equity IRR.

As per Investment Analysis tool, Required/expected returns on equity are appropriate benchmarks for an equity IRR. The Equity IRR is considered as the financial indicator and the benchmarks used is cost of equity. Hence the benchmarks used are applicable to the project activity and the type of IRR calculation presented.

Hence, Project Owner has used Methodological Tool for Investment Analysis version 11 (EB 112, Annex 2). The default value as mentioned in version 11 is 10.55% for group 1 project in India is used which is appropriate and more conservative for benchmark calculation and PP has considered the same tool for default value of return on equity for the respective SPVs.

As per paragraph 16 of Appendix A of the above-mentioned document, “In situations where an investment analysis is carried out in nominal terms, project owners can convert the real term values

provided in the table below to nominal values by adding the inflation rate. The inflation rate shall be obtained from the inflation forecast of the central bank of the host c of the crediting period. If this information is not available, the target inflation rate of the central bank shall be used. If this information is also not available, then the average forecasted inflation rate for the host country published by the IMF (International Monetary Fund World Economic Outlook) or the World Bank for the next five years after the start of the project activity shall be used". For the concerned project activity, the inflation rate has been considered from the inflation forecast published by RBI

As per para 19 of EB 101, Annex 11 the cost of equity is determined by selecting the values provided in the Appendix, i.e., Default values for cost of equity (expected return on equity) is presented below:

The Required return on equity (benchmark) was computed in the following manner:

$$\text{Nominal Benchmark} = \{(1+\text{Real Benchmark}) \cdot (1+\text{Inflation rate})\} - 1$$

Where:

- Default value for Real Benchmark = 10.55 %
- Inflation Rate forecast for India, given by RBI % for medium term-5 %

Benchmark estimation:

Putting the respective values in above formula for benchmark estimation provides equity IRR of 14.08% as benchmark.

Sub-step 2c: Calculation and comparison of financial indicators

The parameters considered for the financial decision making during 2016, are mentioned below

Details of the project		Source
State where the project is situated	Andhra Pradesh	
Capacity in AC (MW)	30.0	As per DPR
Total Capacity in AC (MW)	30.0	As per DPR
Expected Date of Commissioning	7	As per DPR
Life of the plant (Yrs.)	25	As per DPR
Generation and sale of electricity		

PLF (%)	19.48%	As per Third Party Report in accordance to EB 48 Annex 11
Total Annual generation (kWh)	51,193,440	Calculated Value
Annual degradation from 2nd year onwards (%)	0.70%	As per DPR
Transmission Losses (%)	3.00%	As per DPR
Electricity Savings (INR/kWh)	5.36	As per DPR
Operation and maintenance cost and Insurance		
O & M Expenses (INR Mn.)	18.81	As per DPR
Escalation in the operational expenses (%)	6.00%	As per DPR
O & M free for (Yr.)	1.00	As per DPR
Administrative Expenses (INR Mn.)	1.05	As per DPR
Escalation in the administrative expense (%)	5%	As per DPR
Insurance (INR Mn.)	2.82	As per DPR
Financial parameters		
TOTAL COST (INR Mn.)	1,650.00	As per DPR
Equity Investment (INR Mn.)	1,650.00	As per DPR
Loan Amount (INR Mn.)	-	Loan Not Availed
Book Depreciation (SLM Method)		
Gross Depreciable Value (INR Mn.)	1,650.00	Calculated Value
Salvage Value (%)	5.00%	Industry Standard
Salvage value (INR Mn.)	82.50	Calculated Value
Net Depreciable Value (INR Mn.)	1,567.50	Calculated Value
Residual Value (INR Mn.)	82.50	Calculated Value
IT Depreciation (WDV Method)		
IT Depreciation Rate (%)	40.00%	As Per Income Tax , Depreciation rates for power generating units
Income Tax		
Assessment Year	FY 2015-16	
Income tax rate (%)	30.00%	Tax rates applicable to a domestic company
MAT (%)	18.50%	Tax rates applicable to a domestic company
Service Tax (%)	14.00%	As Per Service Tax Rule
Surcharge (%)	12.00%	

Health and Education Cess (%)	3.00%	Tax rates applicable to a domestic company
Final Tax rates		
Income tax rate (%)	35.23%	Calculated Value
MAT (%)	21.72%	Calculated Value
Service Tax (%)	14.00%	Calculated Value

The obtained IRR for the project activity is 10.88%, lesser than 14.08%.

Sub-step 2d: Sensitivity Analysis

Addressing Guidance 28 & 29 of EB 92, Annex 5, following factors has been subjected to sensitivity analysis:

1. PLF
2. O&M Cost
3. Project Cost
4. Tariff

The results of sensitivity analysis show that even with a variation of +10% & -10% in project cost, O&M cost, PLF and Tariff Rate Equity IRR is significantly lower than the benchmark. And it is evident from the results given above; the project remains additional even under the most favorable conditions.

Variation %	-10%	Normal	10%	Variation required to reach benchmark
PLF	9.31%	10.88%	12.36%	36.82%
O&M	11.03%	10.88%	10.72%	-404.54%
Project Cost	12.34%	10.88%	9.60%	-28.86%
Tariff Rate	9.31%	10.88%	12.36%	36.82%

Outcome of Step 2:

This substantiates that the investment is not financially attractive (Equity IRR for the project activity is less than the Benchmark Equity IRR) for any of the investor. Thus it can be easily concluded that project activity is additional & is not business as usual scenario.

The investment and sensitivity analysis shows that the ACC revenues will improve the financial indicators of the Project remarkably. Considering that figures above are based on a higher price rather than the government guaranteed floor price, optimistic estimations for yearly generation and that those figures do not reflect the risk for investment, role of carbon income is a most significant number to enable the project to proceed.

Step 3: Barrier analysis

Barrier analysis has not been used.

Step 4: Common practice analysis

The project activity involves generation of electricity from solar energy.

Stepwise approach for common practice analysis has been carried out as per Methodological tool “Common Practice”, version 03.1 EB 84, Annex 7:

Step (1): Calculate applicable capacity or output range as +/-50% of the total design capacity or output of the proposed project activity.

Range	Capacity	Unit
+50%	45	MW
Capacity of the proposed project activity	30	MW
-50%	15	MW

Step (2): Identify similar projects (both CDM and non-CDM) which fulfil all of the following conditions:

- The projects are located in the applicable geographical area;
- The projects apply the same measure as the proposed project activity;
- The projects use the same energy source/fuel and feedstock as the proposed project activity, if a technology switch measure is implemented by the proposed project activity;
- The plants in which the projects are implemented produce goods or services with comparable quality, properties and applications areas (e.g. clinker) as the proposed project plant;
- The capacity or output of the projects is within the applicable capacity range for the chosen projects.
- The projects started commercial operation before the PSF is published for global stakeholder consultation or before the start date of proposed project activity, whichever is earlier for the proposed project activity.

Identification of the similar projects (CDM and non-CDM) is carried out as per sub-steps of Step (2) as follows:

Developer Name	Project Location	Commissioned Capacity (MW)	Scheme (State/Central)	Commissioning Date	CDM Consideration
M/s Renew Solar Power Pvt Ltd			State Policy (PPA Bidding route)	8-Mar-16	https://cdm.unfccc.int/ProgrammeOfActivities/cpa_db/1RM4ZCOPF29LVSYD73K5XOEB8NA6J/view
M/s Welspun Renewable Energy Pvt Ltd		30	State Policy (PPA Bidding route)	20-Mar-16	https://cdm.unfccc.int/ProgrammeOfActivities/poa_db/4ZK9SWCUA8MTHPYENG2VBQO5F3XJ17/view
First Solar Power India Pvt Ltd (Hindupur Solar Park Pvt. Ltd)		40	State Policy (PPA Bidding route)	9-May-16	https://registry.terra.org/app/projectDetail/VCS/1770
ACME Clean Tech (M/s.Dayanidhi Solar Power Pvt Ltd)		40	State Policy (PPA Bidding route)	31-Mar-16	https://registry.terra.org/app/projectDetail/VCS/1580
Waneep Solar Pvt Ltd		25	State Policy (PPA Bidding route)	19-May-16	

The project activity is a Grid connected solar PV system that is present in Andrapradesh State, India. Andra Pradesh state is alone considered for Common practice analysis as tariff structure and CERC guidelines are state specific in India. The project is solar power plant with power as the output source of energy. All the solar power plant from Andra Pradesh from the CDM ratification until the Purchase order placement in the identified capacity range is considered for analysis. The no of projects identified in the range N solar (15-60 MW) is 5.

Step 3: within the projects identified in Step 2, identify those that are neither registered CDM project activities, project activities submitted for registration, nor project activities undergoing validation. Note their number, N_{all} .

The number of project activities under different carbon credits /programmes are identified and found as 4 and hence the remaining projects identified $N_{all}=1$

Step 4: within similar projects identified in Step 3, identify those that apply technologies that are different to the technology applied in the proposed project activity. As per the tool on CPA, projects have different nature of investments, hence $N_{diff}=0$

The project numbers identified as per step 4 is $N_{diff}=0$

Step 5: The share of similar projects (penetration rate of the measure/technology) using a measure/technology similar to the measure/technology used in the proposed project activity that deliver the same output or capacity as the proposed project activity is

$$F=1-N_{diff}/N_{all} =1-0/1=1>0.2$$

$$N_{all}-N_{diff} \text{ is } 1-0=1<3$$

Hence the project is not a common practice in the identified geographical area.

B.6. Estimation of emission reductions

B.6.1. Explanation of methodological choices

The project applies the methodology, ACM0002, Version 20.0.0, EB 81, Annex 9

Baseline Emission:

As per para 44 of ACM0002 version 20, Baseline emissions include only CO₂ emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity. The methodology assumes that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants. The baseline emissions are to be calculated as follows:

$$BE_y = EGP_{J,y} \times EF_{grid,CM,y}$$

BE _y	=	Baseline emissions in the year y ;(tCO ₂ /year)
EGPJ,y	=	Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr)
EF _{grid,CM,y}	=	Combined margin CO ₂ emission factor for the grid connected power generation in year y calculated using the latest version of the “tool to calculate the emission factor for an electricity system” (tCO ₂ /MWh)

Combined margin CO₂ emission factor for grid connected power generation in year y calculated using the latest version of the “Tool to calculate the emission factor for an electricity system” (tCO₂/MWh) of the CDM

Project participants shall apply the following six steps:

- (a) Step 1: Identify the relevant electricity systems;
- (b) Step 2: Choose whether to include off-grid power plants in the project electricity system (optional);
- (c) Step 3: Select a method to determine the operating margin (OM);
- (d) Step 4: Calculate the operating margin emission factor according to the selected method;
- (e) Step 5: Calculate the build margin (BM) emission factor;
- (f) Step 6: Calculate the combined margin (CM) emission factor.

Project participants may delineate the project electricity system using any of the following options:

- (a) **Option 1.** A delineation of the project electricity system and connected electricity systems published by the DNA or the group of the DNAs of the host country(ies), In case a delineation is provided by a group of DNAs, the same delineation should be used by all the project participants applying the tool in these countries

A national grid is, directly or indirectly affected by the project activities in host country India. Indian power system was divided into five independent regional grids, namely Northern, Eastern, Western, Southern, and North-Eastern. Each grid covered several states (see Table 2). Since August 2006, however, all regional grids except the Southern Grid had been integrated and were operating in synchronous mode. As of 31 December 2013, the Southern grid has also been synchronized with the NEWNE grid, hence forming one unified Indian Grid.

Northern	Eastern	Western	North-Eastern	Southern
Chandigarh	Bihar	Chhattisgarh	Arunachal	Andhra
Delhi	Jharkhand	Gujarat	Assam	Karnataka
Haryana	West Bengal	Daman & Diu	Manipur	Kerala
Himachal Pradesh	Sikkim	Dadar & Nagar Haveli	Meghalaya	Tamil Nadu
Jammu & Kashmir	Andaman &	Madhya Pradesh	Mizoram	Telangana
Punjab		Maharashtra	Nagaland	Puducherry
Rajasthan		Goa	Tripura	Lakshadweep
Uttar Pradesh				
Uttarakhand				

CO₂ BASELINE DATABASE, OCTOBER 2021

Step 2: Choose whether to include off-grid power plants in the project electricity system (optional)

Project participants may choose between the following two options to calculate the operating margin and build margin emission factor:

Option I: Only grid power plants are included in the calculation.

Option II: Both grid power plants and off-grid power plants are included in the calculation.

The Project Participants **has chosen only grid power plants** in the calculation, as the baseline is power generation from the Grid.

Step-3: Select a method to determine the operating margin (OM)

The calculation of the operating margin emission factor ($EF_{grid,OM,Y}$) is based on one of the following methods, which are described under Step 4:

- (a) Simple OM: or
- (b) Simple adjusted OM: or
- (c) Dispatch data analysis OM: or
- (d) Average OM.

The data required to calculate Simple adjusted OM and Dispatch data analysis OM is not possible due to lack of availability of data to project developers. The choice of other two options for calculating operating margin emission factor depends on generation of electricity from low-cost/ must-run sources. In the context of the methodology low cost/must run resources typically include hydro, geothermal

The percentage share of the hydro (16.15%), nuclear energy (2.36%), as per the CO₂ baseline database, Version 17, hence the percentage of total grid generation by low-cost/ must-run plants for the Indian grid is less than 50 % of the total generation. Thus, the Average OM method cannot be applied, as low cost/must run resources constitute less than 50% of total grid generation. Hence the Simple OM emission factor is calculated as the generation-weighted average CO₂ emissions per unit net electricity generation (t CO₂/MWh) of all generating power plants serving this system, not including low-cost/must-run power plants/units. Ex ante emission factor calculation approach is chosen, were chosen and the parameter remains constant over the whole crediting period.

Step 4: Calculate the operating margin emission factor ($EF_{grid,OMSimple,y}$) according to the selected method

The operating margin emission factor has been calculated using a 3-year data vintage:

Net Generation in Operating Margin (GWH) (incl. Imports)			
	2018-19	2019-2020	2020-21
Indian Grid	995,957	965,009	958,218

Simple Operating Margin (tCO ₂ /MWh) (incl. Imports) (1) (2)			
	2018-19	2019-2020	2020-21
Indian Grid	0.9603	0.9555	0.9405

Weighted Generation Operating Margin	
Indian Grid	0.9522

Step 5: Calculate the build margin (BM) emission factor ($EF_{grid,BM,y}$)

As per Methodological tool" Tool to calculate the emission factor for an electricity system" (Version 07.0, EB 100, Annex 4) para 72:

In terms of vintage of data, project participants can choose between one of the following two options:

Option 1- for the first crediting period, calculate the build margin emission factor ex ante based on the most recent information available on units already built for sample group m at the time of PD submission to the GCC Verifier for project verification. For the second crediting period, the build margin emission factor should be updated based on the most recent information available on units already built at the time of submission of the request for renewal of the crediting period to the GCC Verifier. For the third crediting period, the build margin emission factor calculated for the second crediting period should be used. This option does not require monitoring the emission factor during the crediting period.

Option 2- For the first crediting period, the build margin emission factor shall be updated annually, ex post, including those units built up to the year of registration of the project activity or, if information up to the year of registration is not yet available, including those units built up to the latest year for which information is available. For the second crediting period, the build margin emissions factor shall be calculated ex-ante as described in Option 1 above. For the third crediting period, the build margin emission factor calculated for the second crediting period should be used.

Option 1 as described above is chosen by PP to calculate the build margin emission factor for the project activity. BM is calculated ex-ante based on the most recent information available at the time of submission of PSF and is fixed for the entire crediting period.

Build Margin (tCO ₂ /MWh) (not adjusted for imports)			
	2018-2019	2019-20	2020-21
Indian Grid	0.8812	0.8682	0.8650

--	--	--	--

Step: Calculate the combined margin (CM) emission factor ($EF_{\text{grid,CM,y}}$)

As per Methodological too “Tool to calculate the emission factor for an electricity system” (Version 07.0, EB 100, Annex 4) para 81, The calculation of the combined margin (CM) emission factor ($EF_{\text{grid,CM,y}}$) is based on one of the following methods: Weighted average CM: or Simplified CM. PP has chosen option **(a) i.e. weighted average CM** to calculate the combined margin emission factor for the project activity.

The combined margin emissions factor is calculated as follows:

$$EF_{\text{grid,CM,y}} = EF_{\text{grid,OM,y}} * W_{\text{OM}} + EF_{\text{grid,BM,y}} * W_{\text{BM}}$$

Where

$EF_{\text{grid,BM,y}}$ = Build margin CO₂ emission factor in year y (t CO₂/ MWh)

$EF_{\text{grid,OM,y}}$ = Operating margin CO₂ emission factor in year y (t CO₂/MWh)

W_{OM} = Weighting of operating margin emissions factor (per cent)

W_{BM} = Weighting of build margin emissions factor (per cent)

The following default values should be used for W_{OM} and W_{BM} :

For project activities $W_{\text{OM}} = 0.75$ and $W_{\text{BM}} = 0.25$ (owing to their intermittent and non-dispatchable nature) for the second crediting period and for subsequent crediting periods. Since project activity is of power generation by using Wind, the above weightage has been considered for OM and BM.

$$EF_{\text{grid,CM,y}} = 0.9522 * 0.75 + 0.863 * 0.25$$

$$= 0.9305 \text{ tCO}_2/\text{MWh}$$

B.6.2 Data and parameters fixed ex ante

Data / Parameter:	$EF_{grid,OM,y}$
Methodology reference	ACM0002: Grid-connected electricity generation from renewable sources, Version 20.0
Data unit	tCO ₂ /MWh
Description	Operating Margin CO ₂ emission factor in year y of Indian Grid.
Measured/calculated/default	Calculate
Data source	CO ₂ Emission Database, Version 17.0, October 2021 published by Central Electricity Authority (CEA), Government of India
Value(s) of monitored parameter	0.9522
Measurement/ Monitoring equipment (if applicable)	Calculated in line with “Tool to calculate the emission factor for an electricity system” using data from Central Electricity Authority of India’s (CEA) “Baseline Carbon Dioxide Emission Database Version 17”. The value used is calculated ex-ante as generation based weighted average of last three years of the operating margin provided in the CEA database.
Measuring/reading/ recording frequency (if applicable)	Not applicable
Calculation method (if applicable)	Calculated in line with “Tool to calculate the emission factor for an electricity system” version 7
QA/QC procedures	NA
Purpose of data	To calculate baseline emissions
Additional comments	The operating margin emission factor is a 3-year generation-weighted average (2018-21). The operating Margin is calculated ex ante and fixed during the crediting period

Data / Parameter:	$EF_{grid,BM,y}$
Methodology reference	ACM0002: Grid-connected electricity generation from renewable sources, Version 20.0
Data unit	tCO ₂ /MWh
Description	Build Margin CO ₂ emission factor in the year y of Indian grid
Measured/calculated/default	Calculated

Data source	CO2 Emission Database, Version 17.0, October 2021 published by Central Electricity Authority (CEA), Government of India
Value(s) of monitored parameter	0.8653
Measurement/ Monitoring equipment (if applicable)	Calculated in line with “Tool to calculate the emission factor for an electricity system” using data from Central Electricity Authority of India’s (CEA) “Baseline Carbon Dioxide Emission Database Version 17”. The value is calculated ex-ante as most recent build margin provided by the CEA
Measuring/reading/ recording frequency (if applicable)	Not applicable
Calculation method (if applicable)	Calculated in line with “Tool to calculate the emission factor for an electricity system” version 7
QA/QC	
Procedures	NA
Purpose of data	To calculate baseline emissions
Additional comments	The Build Margin would be calculated ex ante and fixed during the crediting period. For ex ante calculation the most recent data (2020-21) available has been used and the build margin is thus calculated

Data / Parameter:	$EF_{grid,CM,y}$
Methodology reference	ACM0002: Grid-connected electricity generation from renewable sources, Version 20.0
Data unit	tCO ₂ /MWh
Description	Combined Margin CO ₂ emission factor in the year y of Indian Grid
Measured/calculated/default	Calculated
Data source	CO2 Emission Database, Version 17.0, October 2021 published by Central Electricity Authority (CEA), Government of India
Value(s) of monitored parameter	0.9305
Measurement/ Monitoring equipment (if applicable)	Not applicable
Measuring/reading/ recording frequency (if applicable)	Not applicable

Calculation method (if applicable)	The combined margin emissions factor is calculated as follows: $EF_{grid, CM, y} = EF_{grid, OM, y} * WOM + EF_{grid, BM, y} * WBM$
QA/QC procedures	Not applicable
Purpose of data	To calculate baseline emissions
Additional comments	The combined margin would be calculated ex-ante and fixed for the entire crediting period and the combined margin thus calculated is 0.9305

B.6.3. Ex-ante calculation of emission reductions

The ex-ante emission reductions (ER_y) for the project activity are calculated as follows

$$ER_y = BE_y - PE_y - LE_y$$

Where,

ER_y = Emission Reduction in tCO₂/year

BE_y = Baseline emission in tCO₂/year

PE_y = Project emissions in tCO₂/year

LE_y = Leakage Emissions in tCO₂/year

Baseline Emissions (BE_y):

The baseline emissions are the product of electrical energy baseline EGP_{J,y} expressed in MWh of electricity produced by the renewable generating unit multiplied by an emission factor.

$$BE_y = EG_{PJ,y} \times E_{fgrid,CM,y}$$

AS per para 4 of ACM0002, version 20.0, when the project activity is installation of Greenfield power plant, then:

Where,

EG_{facility,y} = Total quantity of net electricity delivered to the indian grid in year y (MWh/yr)

EF_{grid,CM,y} = Baseline grid emission factor (t CO₂/MWh)

$$= 0.9305 \text{ t CO}_2/\text{MWh}$$

The EG_{facility,y} is estimated from the PLF provided as per the DPR as below:

EG_{PJ,y} (MWh/year)
49,833

As per section B.6.1 above, the combined margin grid emission factor ($EF_{grid,CM,y}$) is 0.9346 tCO₂/MWh

Hence the annual baseline emission is calculated as below:

Capacity (MW)	PLF (%)	Net Generation	Baseline Emission factor	Baseline emissions	Emission reductions
		(MWh/year)	(tCO ₂ /MWh)	(tCO ₂ e/year)	(tCO ₂ e/year)
30	19.48	49,833	0.9305	46,369	46,369

$$BE_y = E_{GPJ,y} * EF_{grid,CM,y} = 49833 \text{ MWh} \times 0.9305 \text{ tCO}_2/\text{MWh} = 46,369 \text{ tCO}_2$$

Project Emissions (PE_y):

As explained in the above section B.6.2 Project emissions from the project activity is considered Zero.

$$PE_y = 0$$

Leakage Emissions (LE_y):

As explained in the above section B.6.2 Project emissions from the project activity is considered Zero.

$$LE_y = 0$$

Emission Reductions (ER_y):

$$ER_y = BE_y - PE_y - LE_y$$

Since the project and leakage emissions are estimated as zero,

$$ER_y = BE_y$$

B.6.4. Summary of ex ante estimates of emission reductions

Year	Baseline emissions (t CO ₂ e)	Project emissions (t CO ₂ e)	Leakage (t CO ₂ e)	Emission reductions (t CO ₂ e)
Year 1	46,369	0	0	46,369
Year 2	46,369	0	0	46,369
Year 3	46,369	0	0	46,369

Year 4	46,369	0	0	46,369
Year 5	46,369	0	0	46,369
Year 6	46,369	0	0	46,369
Year 7	46,369	0	0	46,369
Year 8	46,369	0	0	46,369
Year 9	46,369	0	0	46,369
Year 10	46,369	0	0	46,369
Total	463,690	0	0	463,690
Total number of crediting years	10 Years			
Annual average over the crediting period	46,369			46,369

B.7. Monitoring plan

>>

B.7.1. Data and parameters to be monitored ex-post

Data / Parameter Table 1.

Data / Parameter:	EG_{PJ,y}
Methodology reference	ACM0002: Grid-connected electricity generation from renewable sources, Version 20
Data unit	MWh/Year
Description	Net quantity of electricity exported to the grid by the project activity during the year y
Measured/calculated/default	Measured & calculated
Data source	Monthly Joint meter reading
Value(s) of monitored parameter applied with basis	49,833

Measurement/ Monitoring equipment	
	Type of meter(s)
	Location of meter(s)
	Accuracy of meter(s)
	Serial number of meter(s)
	Calibration frequency
	Date of Calibration/ validity
	Reference No. of Calibration Certificates
	Calibration Status
Frequency of Measuring/reading	Recording: Monthly
Recording frequency	Continuous
Calculation method (if applicable)	<p>his is based on the monthly Joint Meter Report which provides the electricity exported and electricity imported by the Wind power project.</p> <p>Hence net electricity is calculated as electricity exported – electricity imported.</p> <p>Net Electricity = Eexport – Eimport. Measurement methods and procedures:</p> <p>Data Type: Measured and Calculated (Export - Import)</p> <p>Monitoring: Energy Meter is used for monitoring Monitoring Frequency:</p> <p>Continuously</p> <p>Recording Frequency: M</p>
QA/QC procedures	<p>The calibration of all the meters will be undertaken at required intervals (at least once in five years) and faulty meters will be duly replaced immediately. The meters will be of accuracy class 0.2s or 0.5s. The meter(s) shall be calibrated and maintained by the state utility as per their own schedule, and this frequency of meter calibration is not within the control of the Project Owner. Calibration of electricity meters is carried out in-line with the Nation standard which recommends at least once in 5-year calibration or whenever abnormal difference/inconsistency is observed between main meter and check meter.</p>
Purpose of data	Baseline Emission Calculations.
Additional comments	The Monitored Data to be kept for a minimum of two years after the end of the crediting period or the last issuance whichever is later

Data / Parameter:	Climate Action (SDG 13)
Methodology reference	GCC Project Sustainability Standard_V3
Data unit	tCO ₂

Description	Emission reductions achieved per year	
Measured/calculated/default	Calculated	
Data source	As per Estimated ER sheet. During the verification, the results are obtained from the Actual ER sheet	
Value(s) of monitored parameter	46,369	
Measurement/ Monitoring equipment		
	Type of meter(s)	Not Applicable
	Location of meter(s)	Not Applicable
	Accuracy of meter(s)	Not Applicable
	Serial number of meter(s)	Not Applicable
	Calibration frequency	Not Applicable
	Date of Calibration/ validity	Not Applicable
	Reference No. of Calibration Certificates	Not Applicable
	Calibration Status	Not Applicable
Measuring/reading/ recording frequency	Monthly	
Recording frequency	Monthly	
Calculation method (if applicable)	The baseline emissions are the product of electrical energy baseline EGPJ, y expressed in MWh of electricity produced by the renewable generating unit multiplied by an emission factor	
QA/QC procedures	Reduction of Greenhouse gases results in clean environment	
Purpose of data	To justify SDG Goal 13 – Take urgent action to combat climate change and its impacts	
Additional comments	-	

Data / Parameter:	Solid waste Pollution from Hazardous wastes
Methodology reference	GCC Environment-and-Social-Safeguards-Standard-v3
Data unit	N/A
Description	Proper disposal of generated hazardous waste
Measured/calculated/default	N/A
Data source	Plant record
Value(s) of monitored parameter	N/A

Measurement/ Monitoring equipment	N/A
Measuring/reading/ recording frequency	Regularly
Recording frequency	Regularly
Calculation method (if applicable)	Record of damaged/defunct solar PV modules will be maintained and submitted during verification
QA/QC procedures	<ul style="list-style-type: none"> • Damaged/defunct solar PV modules shall be stored separately • Damaged/defunct solar PV modules shall be disposed-off as per the guidance of national/local laws
Purpose of data	To justify Environmental safeguard – Solid waste pollution from hazardous wastes (EL02)
Additional comments	Monitoring of the parameter is a continual process and is being initiated from the start date of the project activity and will be carried out for entire lifetime of the project activity.

Data / Parameter:	Battery-waste
Methodology reference	GCC Environment-and-Social-Safeguards-Standard-v3
Data unit	N/A
Description	Proper disposal of generated e-waste
Measured/calculated/default	N/A
Data source	Plant Record
Value(s) of monitored parameter	N/A
Measurement/ Monitoring equipment	N/A
Measuring/reading/ recording frequency	Regularly
Recording frequency	Regularly
Calculation method (if applicable)	Record of damaged/defunct solar PV modules will be maintained and submitted during verification.

QA/QC procedures	<ul style="list-style-type: none"> • Battery waste should be stored separately. • Maintain records of e-waste generated. • End-of-life electrical and electronic equipment are not ad-mixed with Battery-waste containing radioactive material if any. • Battery-waste generated should be channelized through collection center or dealer of authorized producer or dismantler or recycler or through the designated take back service provider of the producer to authorized dismantler or recycler. • Battery-waste should be managed in compliance of E-Waste (Management) Rules
Purpose of data	To justify Environmental safeguard – Solid waste pollution from Batterywastes (EL04)
Additional comments	Monitoring of the parameter is a continual process and is being initiated from the start date of the project activity and will be carried out for entire lifetime of the project activity.

Data / Parameter:	End of life products/equipment
Methodology reference	GCC Environment-and-Social-Safeguards-Standard-v3
Data unit	N/A
Description	Proper disposal of waste generated at the end-of-life products/ equipment
Measured/calculated/default	Measured
Data source	Plant Records
Value(s) of monitored parameter	N/A
Measurement/ Monitoring equipment	N/A
Measuring/reading/ recording frequency	Regularly
Recording frequency	Regularly
Calculation method (if applicable)	Record of damaged/defunct solar PV modules, associated auxiliaries and related structures will be maintained and submitted during verification.

QA/QC procedures	<ul style="list-style-type: none"> • E waste should be stored separately. • Maintain records of e-waste generated. • End-of-life electrical and electronic equipment are not ad-mixed with e-waste containing radioactive material if any. • E-waste generated should be channelized through collection center or dealer of authorized producer or dismantler or recycler or through the designated take back service provider of the producer to authorized dismantler or recycler. • E-waste should be managed in compliance of E-Waste (Management) Rules
Purpose of data	To justify Environmental safeguard – Solid waste pollution from end-oflife products/ equipment (EL06)
Additional comments	Monitoring of the parameter is a continual process and is being initiated from the start date of the project activity and will be carried out for entire lifetime of the project activity.

For Parameters to be monitored for E+/S+ assessments and SDG labels (positive impacts)

Data / Parameter:	SDG 5- Achieve gender equality and empower all women and girls	
Purpose:	<i>Achieve gender equality and empower all women and girls.</i>	
Describe the related environment /social/ SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.	Number of women employed due to the project activity and number of women empowered through creation of livelihood opportunities for women	
Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate “harmless” condition or demonstrate Impact on SDG		
	Parameter to be monitored	No of woman employed
	Frequency of monitoring	Annual
	Legal /regulatory / corporate limits (if any)	No
	QA/QC	Annual pay slip
Remarks	Data will be archived in paper & electronically for a period of 2 years beyond the end of crediting period or of the last issuance of credits for this project activity, whichever occurs later.	

Data / Parameter:	SDG 8	
Purpose:	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	
Describe the related environment /social/ SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.	Number of local employment generation including both direct or indirect employment during project construction and project operation	
Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate “harmless” condition or demonstrate Impact on SDG		
	Parameter to be monitored	HR records
	Frequency of monitoring	Annual
	Legal /regulatory / corporate limits (if any)	N/A
	QA/QC	HR records for employment
Remarks	Data will be archived in paper & electronically for a period of 2 years beyond the end of crediting period or of the last issuance of credits for this project activity, whichever occurs later.	

Data / Parameter:	SDG 4	
Purpose:	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	
Describe the related environment /social/ SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.	Expenditure incurred towards facilitating education and training programme organized towards skill enhancement.	

Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate “harmless” condition or demonstrate Impact on SDG		
	Parameter to be monitored	No of Training
	Frequency of monitoring	Annual
	Legal /regulatory / corporate limits (if any)	No
	QA/QC	Training records
Remarks	Data will be archived in paper & electronically for a period of 2 years beyond the end of crediting period or of the last issuance of credits for this project activity, whichever occurs later.	

Data / Parameter:	SDG 1	
Purpose:	End poverty in all its forms everywhere	
Describe the related environment /social/ SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.	Number of persons employed considering both direct and indirect (engagement of persons through contracting agency).	
Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate “harmless” condition or demonstrate Impact on SDG		
	Parameter to be monitored	The total number of direct and indirect employment
	Frequency of monitoring	Annual
	Legal /regulatory / corporate limits (if any)	N/A
	QA/QC	appointment letter
Remarks	Data will be archived in paper & electronically for a period of 2 years beyond the end of crediting period or of the last issuance of credits for this project activity, whichever occurs later.	

B.7.2 Data and parameters to be monitored for E+/S+ assessments (negative impacts)

There are no parameters identified as harmful and scored as negative indicator. Hence, monitoring is not required under this section

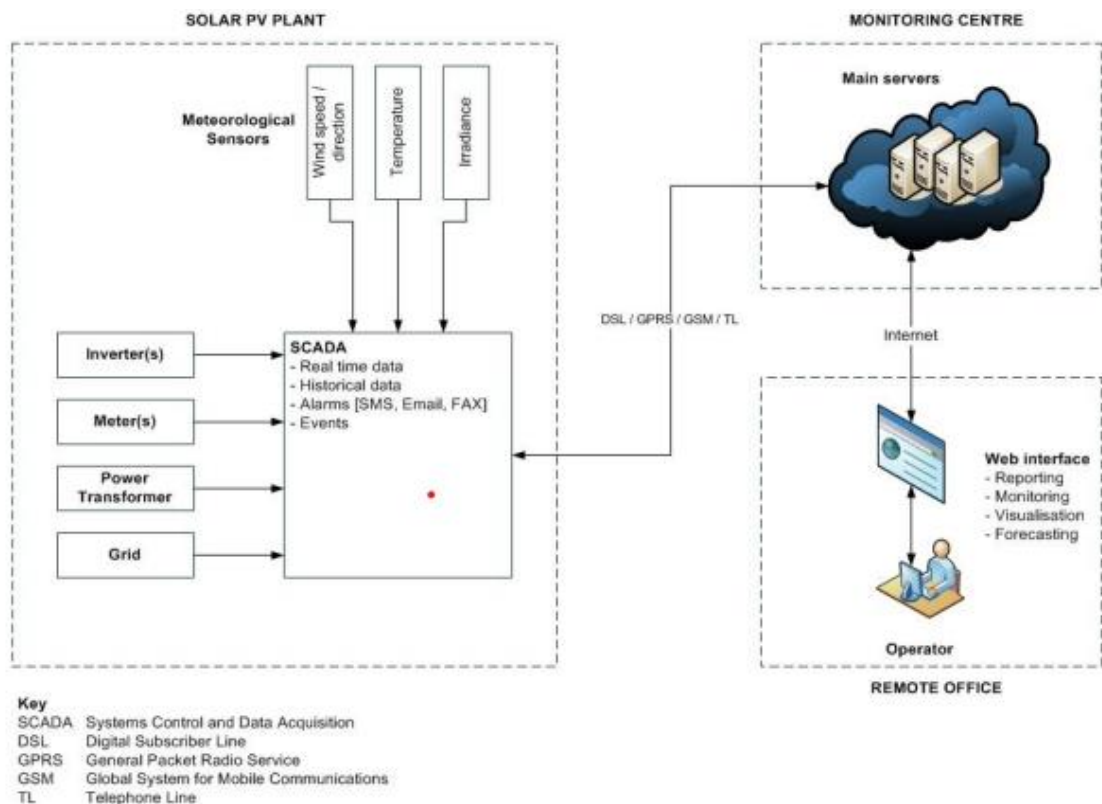
Data / Parameter:	XX																																																																											
Purpose:	<i>To demonstrate compliance of XXXX aspects to legal/regulatory/corporate requirements or to demonstrate that they do not cause any net harm to environment / society or have an impact on SDG as per selected indicators.</i>																																																																											
Describe the related environment /social/ SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.																																																																												
Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate “harmless” condition or demonstrate Impact on SDG																																																																												
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Program of Risk Management Actions to mitigate risk related to aspect (if any for aspects assessed to be harmful)	<table border="1"> <thead> <tr> <th>S.No.</th> <th>Action and targets</th> <th>Responsibility</th> <th>Resource Requirement</th> <th>Target to be Achieved by (insert date)</th> <th>Key Performance Indicators (KPI)</th> <th>Targets achieved on (insert date)</th> </tr> </thead> <tbody> <tr><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>2</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>3</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>4</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>5</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>6</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2">Date of Closing the Program:</td> <td colspan="2"></td> <td colspan="2"></td> <td></td> </tr> </tbody> </table>						S.No.	Action and targets	Responsibility	Resource Requirement	Target to be Achieved by (insert date)	Key Performance Indicators (KPI)	Targets achieved on (insert date)	1							2							3							4							5							6																					Date of Closing the Program:						
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B.7.3. Sampling plan

No sampling plan is required

B.7.4. Other elements of the monitoring plan

The SCADA system will be a combination of web based internet portal solution and on site local area network for acquisition of data through onsite servers located in each of plant main control / switchgear rooms.



The monitoring plan is developed in accordance with the modalities and procedure with project activity and is proposed for grid-connected Solar energy power projects being implemented in Telangana, India. The monitoring plan, describes about the monitoring organization, parameters to be monitored, monitoring practices, quality assurance, quality control procedures, data storage and archiving.

The authority and responsibility for registration, monitoring, measurement, reporting and reviewing of the data rests with the project participants. The following structure is proposed for data monitoring, collection, data archiving and calibration of equipment for this project activity. The team comprises of the following members:

Organizational Structure for Monitoring

Responsibilities of Head- Projects: Tracking and reviewing the overall functioning and maintenance of the project activity from Head (Operations). Head (Operations) will be reporting Head (Projects).

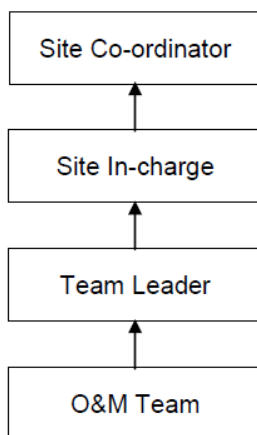
Responsibilities of Head- Operations: Overall functioning of the project activity and Coordinating with the O & M Team for the proper functioning of Project activity. He will be reporting to Head (Projects).

Responsibilities of O & M Team: O & M team is responsible for Operations and Maintenance related issues, they are also responsible for day-to-day data collection and monitoring, ensures completeness and reliability of data (calibration of equipment).

The Site In-charge will be responsible for carrying out internal auditing and QA/QC.

The meters will be tested & sealed by the State Utility and are in the custody of State Utility. The metering arrangement, accuracy class of meters, calibration frequency is under control of state utility and Project owner do not have any control on it. The calibration of all the meters will be carried out in-line with the National standard which recommends at least once in 5-year calibration. Faulty meters will be duly replaced. The meters will be of accuracy class 0.2s or 0.5s.

In any case where values have slightest of variation in different records the most conservative value will be taken in the project monitoring report.



Data collection and archiving

Export & Import readings from main & check meter are collected under the supervision of PP or its authorized representative. The net electricity supplied to grid are calculated based on export & import readings. Export and Import data would be recorded and stored in electronic &/or paper. The records are checked periodically by the Head (Operations) and discussed thoroughly with the O & M Team.

The period of storage of the monitored data will be 2 years after the end of crediting period or till the last issuance of ACCs for the project activity whichever occurs later.

Mismatch in Monitoring Period and the Billing Period

In case the dates of a particular monitoring period do not match with the dates of the billing period, the net electricity exported to the grid would be calculated from

A= Difference of number of days which are not matching of billing period and monitoring period.

B=Number of days of the billing period/month which was not matched with the monitoring period.

C= Net electricity supplied to the grid for that given billing period/month

The calculated value after apportioning would be used for calculation of emission reductions during that period or **conservative among two different values will be used.**

Emergency preparedness

The project activity will not result in any unidentified activity that can result in substantial emissions from the project activity. No need for emergency preparedness in data monitoring is visualized. In the unlikely event of failure of both Main meter & Check meter installed at sub-station, where both the faulty meters are required to repair or replaced simultaneously, the export & import readings from Main & Check Meter installed at the inter-connection point at the project site will be used for monitoring of net electricity exported to the grid.

Personnel Training

In order to ensure a proper functioning of the project activity and a properly monitoring of emission reductions, the staff (CDM team) will be trained. The plant helpers will be trained in equipment operation, data recording, reports writing, operations and maintenance and emergency procedures in compliance with the monitoring plan.

Section C. Start date, crediting period type and duration

C.1. Start date of the Project Activity

>> Start date of the Project Activity -24/05/2017

C.2. Expected operational lifetime of the Project Activity

Operational lifetime of the Project Activity is 25 years

C.3. Crediting period of the Project Activity

>> 10 years

C.3.1. Start and end date of the crediting period

Start date - 24/05/2017

End date – 23/05/2027

C.3.2. Duration of crediting period

10 Years

Section D. Environmental impacts

D.1. Analysis of environmental impacts

Kindly refer to section E

D.2. Environmental impact assessment and management action plans

Examinations and evaluations were made regarding the projects, and the measures to be taken against environmental impacts were deemed sufficient in the project introduction file. Relevant projects have received the approval of the EIA report in this context. Thus, the project is considered to be implemented according to the national laws and regulations as long as the environmental precautions stated in the report are applied

Section E. Environmental and social safeguards

The project activity does not involve any major construction activity. It primarily requires the installation of the solar panels, interfacing the generators with the State Electricity Board by setting up HT transmission lines and installation of other accessories. This report clearly mentioned that solar project activity operations do not result in direct air pollution, noise pollution. Thus, there is not any significant impact due to implementation of project activity on air, water, soil quality and ambience are envisaged due to the project activity

E.1. Environmental safeguards

Impact of Project Activity on		Information on Impacts, Do-No-Harm Risk Assessment and Establishing Safeguards							Project Owner's Conclusion		
		Description of Impact (both positive and negative)	Legal/voluntary corporate requirement /regulatory/voluntary corporate threshold Limits	Do-No-Harm Risk Assessment (Choose whichever is applicable)			Risk Mitigation Action Plans for aspects marked as Harmful		Performance indicator for monitoring of impact	Ex-Ante scoring of environmental impact	Explanation of the conclusion
				Not Applicable (No actions required)	Harmless (No actions required)	Harmful (Actions required)	Operational Controls	Program of Risk Management Actions			
<p>Environmental impacts on the identified categories¹⁶ indicated below.</p>	<p>Indicators for environmental impacts</p>	<p>Describe and identify anticipated and actual significant environmental impacts, both positive and negative from all sources (stationary and mobile) during normal and abnormal/emergency conditions, that may result from the construction and operations of the Project Activity, within and outside the project boundary, over which the</p>	<p>Describe the applicable national regulatory requirements /legal limits related to the identified risks of environmental impacts.</p>	<p>If no environmental impacts are anticipated, then the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as Not Applicable</p>	<p>If environmental impacts exist, but are expected to be in compliance with applicable national regulatory /stricter voluntary corporate requirements and will be within legal/voluntary corporate limits by way of plant design and operating principles, then the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as Harmless /If the project has an positive impact on the environment mark it as "harmless" as well.</p>	<p>If negative environmental impacts exist that will not be in compliance with the applicable national legal/regulatory requirements or are likely to exceed legal limits, then the Project Activity is likely to cause harm (may be un-safe) and shall be indicated as Harmful</p>	<p>Describe the operational controls and best practices, focusing on how to implement and operate the Project Activity, to reduce the risk of impacts that have been identified as "Harmful" at least to a level that is in compliance with applicable legal/regulator requirements or industry best practice or stricter voluntary corporate requirements</p>	<p>Describe the Program of Risk Management Actions (refer to Table 3), focusing on additional actions (e.g., installation of pollution control equipment) that will be adopted to reduce the risk of impacts that have been identified as Harmful.</p>	<p>Describe the monitoring approach and the parameters (KPI) to be monitored for each impact irrespective of whether it is harmless of harmful. The frequency of monitoring to be specified as well including the data source.</p>	<p>-1 0 +1</p>	<p>Confirm the score of environmental impact of the project with respect to the aspect and its monitored value in relation to legal /regulatory limits (if any) including basis of conclusion.</p>

¹⁶ sourced from the CDM SD Tool and the sample reports are available (<https://www4.unfccc.int/sites/sdcmicrosite/Pages/SD-Reports.aspx>)

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		Project Owner(s) has/have control.									
Environment - Air	SO _x emissions (EA01)	The solar power project does not cause any Sox emissions in the project scenario. However, in the baseline scenario (grid) some of the fossil fuel power plants may have emitted SO _x emissions, on which data is not available and can't be quantified.	The Air (Prevention & Control of Pollution) Act 1981 stipulates thresholds for both ambient air quality as well as stack emissions.	Not Applicable expected to or does not cause any harm.	Harmless	Not Applicable. No Action Required	Not Applicable.	Not Applicable.	No Action Required	Not Applicable	With reference to the modified direction No. B29012/ESS(CP A)/2015-16; dated March 07, 2016 (Appendix A) solar power project falls in White category and it is mentioned in the notification that there shall be no necessity of obtaining the Consent to Operate" for White category of industries. However, the in the baseline scenario (grid) some of the fossil fuel power plants may have emitted Sox emissions, on which data is not available and can't be

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												quantified and therefore the emission reductions cannot be quantified and therefore this parameter will not be scored.
	<i>NO_x emissions (EA02)</i>	Not Applicable	The Air (Prevention & Control of Pollution) Act 1981	Not Applicable	Harmless	No Action Required	Not Applicable	Not Applicable	No Action Required	Not Applicable	Not Applicable	<p>With reference to the CPCB modified B29012/ESS(CP A)/2015-16; dated March 07, 2016 (Appendix A) solar power project falls in White category and it is mentioned in the notification that there shall be no necessity of obtaining the Consent to Operate” for White category of industries.</p> <p>However, in the baseline scenario (grid) some of the fossil fuel power plants may have emitted NOx emissions, on which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and therefore this parameter will not be scored.</p>

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	CO ₂ emissions (EA03)	The solar power project does not cause any CO ₂ emissions in the project scenario. However, in the baseline scenario (grid) some of the fossil fuel power plants may have emitted CO ₂ emissions, which has been calculated by the combined margin emission factor as mentioned in the PSF	The Air (Prevention & Control of Pollution) Act 1981 stipulates thresholds for both ambient air quality as well as stack emissions.	Not Applicable as no emissions occur in the project scenario and therefore is not expected to or does not cause any harm.	Harmless	Not Applicable. No Action Required	Not Applicable	Not Applicable	Not Applicable	The generated electricity by the project activity will be continuously measured and the related CO ₂ emission reduction will be calculated according to the underlying methodology GCCM001 v3.0	+1	With reference to the CPCB modified direction No. B29012/ESS(CP A)/2015-16; dated March 07, 2016 (Appendix A) solar power project falls in White category and it is mentioned in the notification that there shall be no necessity of obtaining the Consent to Operate" for White category of industries. However, in the baseline scenario (grid) some of the fossil fuel power plants may have emitted CO ₂ emissions, which has been calculated by the combined margin emission factor as mentioned in the PSF. Therefore, emission reductions are expected to be reduced which will be regularly monitored and verified ex-post and therefore is eligible to be scored.
	CO emissions (EA04)	Not Applicable	The Air (Prevention & Control of Pollution) Act 1981	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	No Action Required	Not Applicable	Not Applicable	With reference to the CPCB modified direction No. B29012/ESS(CP A)/2015-16; dated March 07, 2016 (Appendix

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											<p>A) solar power project falls in White category and it is mentioned in the notification that there shall be no necessity of obtaining the Consent to Operate" for White category of industries.</p> <p>However, the in the baseline scenario (grid) some of the fossil fuel power plants may have emitted CO emissions, on which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and therefore this parameter will not be scored.</p>
	Suspended particulate matter (SPM) emissions (EA05)	Not Applicable	The Air (Prevention & Control of Pollution) Act 1981	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	No Action Required	Not Applicable	<p>With reference to the CPCB modified direction No. B29012/ESS(CP A)/2015-16; dated March 07, 2016 (Appendix A) solar power project falls in White category and it is mentioned in the notification that there shall be no necessity of obtaining the Consent to Operate" for</p>

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											White category of industries However, the in the baseline scenario (grid) some of the fossil fuel power plants may have emitted SPM emissions, on which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and therefore this parameter will not be scored.
<i>Fly ash generation (EA06)</i>	Not Applicable	The Air (Prevention & Control of Pollution) Act 1981	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	No Action Required	Not Applicable	With reference to the CPCB modified direction No. B29012/ESS(CP A)/2015-16; dated March 07, 2016 (Appendix A) solar power project falls in White category and it is mentioned in the notification that there shall be no necessity of obtaining the Consent to Operate' for White category of industries However, the in the baseline scenario (grid) some of the fossil fuel power plants may have emitted fly ash emissions, on which data is not available and can't be quantified and	

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												therefore the emission reductions cannot be quantified and therefore this parameter will not be scored.
	<i>Non-Methane Volatile Organic Compounds (NMVOCs) (EA07)</i>	Not Applicable	The Air (Prevention & Control of Pollution) Act 1981	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	No Action Required	Not Applicable	Not Applicable	With reference to the modified direction No. B29012/ESS(CP A)/2015-16; dated March 07, 2016 (Appendix A) solar power project falls in White category and it is mentioned in the notification that there shall be no necessity of obtaining the Consent to Operate " for White category of industries. However, the in the baseline scenario (grid) some of the fossil fuel power plants may have emitted NM/VOCs emissions, on which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and therefore this parameter will not be scored.

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<i>Odor (EA08)</i>	Not Applicable	The Air (Prevention & Control of Pollution) Act 1981	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	Not Applicable	Not Applicable	With reference to the CPCB modified direction No. B29012/ESS(CP A)/2015-16; dated March 07, 2016 (Appendix A) solar power project falls in White category and it is mentioned in the notification that there shall be no necessity of obtaining the Consent to Operate" for White category of industries However, the in the baseline scenario (grid) some of the fossil fuel power plants may have emitted Odor emissions, on which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and therefore this parameter will not be scored
<i>Noise Pollution (EA09)</i>	Not Applicable	Noise (Regulation and Control) Rules 2000 amended in 2010)	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	No significant noise emission is expected from project activity during operational phase as there is no major equipment in solar project who generate noise

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Environment - Land	Solid waste Pollution from Plastics (EL-01)	Not Applicable	Plastic Waste (Management and Handling) Rules, 2016	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	No Action Required	Not Applicable	No significant plastic waste is expected from the project activity during operational phase. Hence, this parameter will not be scored.
	Solid waste Pollution from Hazardous wastes (EL02)	Damaged solar PV modules at site might have negative environmental impacts if not managed well	Hazardous and Other Wastes (Management and Transboundary Movement) Amendment Rules, 2016	-	Harmless	No Action Required	Not Applicable	The damaged solar PV modules shall be stored and disposed-off as per the national/local law	The details of damaged and returned solar PV modules will be maintained in records for future verification. Refer section B.7.2 PRMA 01.	+1	As per MoEFCC notification dated 01.03.2019 (G.S.R. 178(E)) the Occupier (developer) is not required to obtain authorization under Hazardous and Other Wastes (Management and Transboundary Movement) Amendment, Rules, 2019 if they are exempted from obtaining consent under Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981. However, the project owner should ensure (through ESMS) proper disposal of Hazardous Waste (DG oil, if DG is installed) through actual waste user,

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											collector or operator of the disposal facility, in accordance with the Central Pollution Control Board guidelines. Moreover, though not covered under the rule, the broken part of the solar plant are recommended to be sent back to the manufacture or an authorized recycler.
<i>Solid waste Pollution from Bio-medical wastes (EL03)</i>	Not Applicable	Bio-medical Waste Management Rules, 2016	Not Applicable	No Action Required	No Action Required	Not Applicable	No Action Required	No Action Required	Not Applicable	No significant bio-medical waste will be generated from the project activity. Hence, this parameter will not be scored.	
<i>Solid waste Pollution from E-wastes (EL04)</i>	e-waste pollution is anticipated through the operation of the project.	E-waste (Management and Handling) Rules	-	Harmless	-	Records all electrical & electronics waste of projects and filling of return.	The project owner is responsible to maintain records and filling of returns as per applicable law and Their ESMS system	The details of damaged and returned solar PV modules will be maintained in records for future verification. Refer section B.7.2 PRMA 01	+1	Project owner is responsible to maintain records and filling of returns as per applicable law and have no significant impact.	
<i>Solid waste Pollution from Batteries (EL05)</i>	The project does not deploy batteries for storage as this project is grid connected. No solid waste pollution from	Batteries (Management and Handling) Rules	Not Applicable	Not Applicable	-	-	-	Not Applicable	Not Applicable	NA	

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	batteries is anticipated										
<i>Solid waste Pollution from end of life products/equipment (EL06)</i>	Solar PV modules at site might have negative environmental impacts if not managed well after their end-of-life	Solid Waste Management Rules, 2016	-	Harmless	-	Sold waste from the project activity must be disposed as applicable law	Project owner is responsible to maintain records and dispose all products after ending lifecycle as per applicable law Solid Waste Management Rules, 2016	Since the Crediting Period is lesser than the project life, however the record will be maintained for future verification. Refer section B.7.2 PRMA 01.	+1	Project owner is responsible to maintain records and dispose all products after ending lifecycle as per applicable law.	
<i>Soil Pollution from Chemicals (including Pesticides, heavy metals, lead, mercury) (EL07)</i>	Not Applicable	In India, there are no comprehensive soil quality regulations and standards to ascertain the seriousness of contamination	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	No Action Required	Not Applicable	No significant soil pollution from chemicals during operation phase of the project activity. However, in the baseline scenario (grid) some of the fossil fuel power plants may have emitted soil emissions, on which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and therefore this parameter will not be scored.	
<i>land use change (change from cropland)</i>	Land use change of the project site may have	Not applicable	-	Harmless	No Action Required	Not Applicable	Not applicable	Not applicable	Not applicable	The project does not involve diversion of any forest as per ESIA study and	

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	/forest land to project land) (EL08)	negative impact if the land was a forestry or agricultural land previously.									hence it is not monitored
Environment - Water	<i>Reliability / accessibility of water supply (EW01)</i>	Not Applicable	The Water (Prevention & Control of Pollution) Act 1974	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	No Action Required	Not Applicable	Supply water from local body will be used and necessary approval to be obtained. However, in the baseline scenario (grid) some of the fossil fuel power plants may have emitted accessibility of water emissions, on which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and therefore this parameter will not be scored.
	<i>Water Consumption from ground and other sources (EW02)</i>	Not Applicable	Permission for abstraction of Ground water under Environmental (Protection) Act 1986	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	No Action Required	Not Applicable	No ground water will be consumed in all sites of the project activity & necessary permission to be obtained from concerned local authority in case use ground water in future. However, in the baseline scenario (grid) some of the fossil fuel power plants may have consumed water from ground and other sources, on

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												which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and therefore this parameter will not be scored.
	Generatio n of wastewat er (EW 03)	Not Applicable	The Water (Prevention & Control of Pollution) Act 1974	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	No Action Required	Not Applicabl e		There is no significant effect as provisions of septic tank and soak pits will be provided onsite for treatment and disposal of sewage, thereby minimizing the impacts of wastewater discharge. Planning of toilets, soak pits and septic tanks, waste collection areas will be away from natural drainage channels. However, in the baseline scenario (grid) some of the fossil fuel power plants may have generation of waste water on which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and therefore this parameter will not be scored.

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	<i>Wastewater discharge without/with insufficient treatment (EW04)</i>	Not Applicable	The Water (Prevention & Control of Pollution) Act 1974	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	No Action Required	Not Applicable	There is no significant effect as provisions of septic tank and soak pits will be provided onsite for treatment and disposal of sewage, thereby minimizing the impacts of wastewater discharge. Planning of toilets, soak pits and septic tanks, waste collection areas will be away from natural drainage channels. However, the in the baseline scenario (grid) some of the fossil fuel power plants may have generation of waste water or its treatment on which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and therefore this parameter will not be scored
	<i>Pollution of Surface, Ground and/or Bodies of water (EW05)</i>	Not Applicable	The Water (Prevention & Control of Pollution) Act 1974	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	No Action Required	Not Applicable	There is no significant effect as provisions of septic tank and soak pits will be provided onsite for treatment and disposal of sewage, thereby minimizing the impacts of wastewater

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											<p>discharge. Planning of toilets, soak pits and septic tanks, waste collection areas should be away from natural drainage channels</p> <p>However, in the baseline scenario (grid) some of the fossil fuel power plants may have from surface water on which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and therefore this parameter will not be scored.</p>
	<i>Discharge of harmful chemicals like marine pollutants / toxic waste (EW06)</i>	Not Applicable	Costal Regulation Zone (CRZ) 2019	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	No Action Required	Not Applicable	<p>The project is not located in the CRZ boundary defined in the CRZ Notification 2019. So, there is no marine environment nearby the project site, hence data is not available and can't be quantified and therefore this parameter will not be scored</p>
Environment	<i>Conserving mineral</i>	Not Applicable	In India, there are no conserving	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	No Action Required	Not Applicable	<p>This is solar project activity and it is not using</p>

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nt – Natura / Resou rces	<i>resources (ENR01)</i>		mineral resources regulations and standards to ascertain								any natural minerals. Therefore, this parameter will not be scored.
	<i>Protecting / enhancin g plant life (ENR02)</i>	Not Applicable	In India, there are no comprehens ive regulations and standards to ascertain for protecting plant life	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	No action required	Not Applicabl e	The project activity has been implemented in barren land and very low impact is being observed on flora loss. Therefore this parameter will not be scored.
	<i>Protecting / enhancin g species diversity (ENR03)</i>	Not Applicable	In India, there are no comprehens ive regulations and standards to ascertain for protecting plant life	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	No Action Required	Not Applicabl e	The project activity has been implemented in barren land and very low impact is being observed on flora loss. therefore, this parameter will not be scored.
	<i>Protecting / enhancin g forests (ENR04)</i>	Not Applicable	The Forest (Conservatio n) Act 1980 & 1981	Not Applicable	No Action Required	No Action Required	Not Applicable	No Action Required	Not Applicable	Not Applicabl e	No forest land has been used for the project activity.
	<i>Protecting / enhancin g other depletabl e natural resources (ENR05)</i>	Not Applicable	National Forest Policy (Revised) 1988	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	No action required	Not Applicabl e	The project activity has been implemented in barren land and very low impact is being observed on flora loss or no other natural resource has been used to operate project activity therefore this parameter will not be scored.

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<i>Conserving energy (ENR06)</i>	Not Applicable	Energy Conservation Act 2001	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	No Action Required	Not Applicable	All efficient products & instruments has been used in the project activity, hence no significant impact due to this. therefore this parameter will not be scored
<i>Replacing fossil fuels with renewable sources of energy (ENR07)</i>	The project utilizes renewable solar resource to generate electricity which will replace the electricity generated by fossil fuel plants.	Energy Conservation Act 2001	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	Continuous measuring for electricity generation will be done	+1	The project is expected to supply an average of 110,202 MWh per year renewable electricity to grid.
<i>Replacing ODS with non-ODS refrigerants (ENR08)</i>	Not Applicable	In India, there are no comprehensive regulations and standards to ODS & non ODS	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	No Action Required	NA	No impact Therefore this parameter will not be scored.

Note: If the score is: (a) zero or greater, the overall impact is neutral or positive and there is no net harm; and (b) less than zero, the overall impact is negative and there is net harm to Environment. Score is obtained after adding the individual scores in each of the rows in the last column of the above table.

Net Score:	+5
Project Conclusion in PSF:	Owner's The Project Owner confirms that the Project Activity will not cause any net harm to Environment.

E.2. Social Safeguards

Impact of Project Activity on		Information on Impacts, Do-No-Harm Risk Assessment and Establishing Safeguards							Project Owner's Conclusion	
		Description of Impact (positive or negative)	Legal requirement /Limit, Corporate policies / Industry best practice	Do-No-Harm Risk Assessment			Risk Mitigation Action Plans	Performance indicator for monitoring of impact.	Ex-ante scoring of environmental impact	Explanation of the Conclusion
				Not Applicable	Harmless	Harmful	Operational / Management Controls	Monitoring parameter and frequency of monitoring (as per scoring matrix Appendix-02)	Ex- Ante scoring of social impact of the project	Ex- Ante description and justification/explanation of the scoring of social impact of the project
Social impacts on the identified categories¹⁷ indicated below.	Indicators for social impacts	Describe and identify actual and anticipated impacts on society and stakeholders, both positive or negative, from all source during normal and abnormal/emergency conditions that may result from constructing and operating of the Project Activity within or outside the project boundary, over which the project Owner(s) has/have control .	Describe the applicable national regulatory requirements / legal limits related to the identified risks of social impacts.	If no social impacts are anticipated, then the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as Not Applicable	If social impacts are anticipated, but are expected to be in compliance with applicable national regulatory requirements/ legal limits, then it the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as Harmless . project having positive impact on society wrt. To the BAU / baseline scenario must also mark their aspect as "harmless	If negative social impacts exist that will not be in compliance with the applicable national legal/ regulatory requirements or are likely to exceed legal limits then the Project Activity is likely to cause harm and shall be indicated as Harmful	Describe the operational or Management controls that can be implemented as well as best practices, focusing on how to implement and operate the Project Activity, to reduce the risk of impacts that have been identified as Harmful .	Describe the monitoring approach and the parameters (KPI) to be monitored for each impact irrespective of whether it is harmless of harmful. The frequency of monitoring to be specified as well. Monitoring parameters can be quantitative or qualitative in nature along with the data source.	+1 0 -1	Confirm the score of the social impacts of the project with respect to the aspect and its monitored value in relation to legal/regulatory limits (if any) including basis of conclusion
	Long-term jobs	The project creates long	There is no legal requirement from	Not Applicable	-	-	Not Applicable	Number of people	+1	There is no mandatory law to generate permanent

¹⁷ sourced from the CDM SD Tool and the sample reports are available (<https://www4.unfccc.int/sites/sdcmicrosite/Pages/SD-Reports.aspx>)

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Social - Jobs	(> 1 year) created/ lost (SJ01)	term job opportunities during operation.	local authority to create permanent employment from the project activity					employed by the project will be monitored through checking payroll records or the social insurance		employment from the project activity, however, project Owner has planned to provide training to the local people & generate employment for local people.
	New short-term jobs (< 1 year) created/ lost (SJ02)	The project creates short term job opportunities during construction .	There is no legal requirement from local authority to create permanent employment from the project activity	Not Applicable as short term employment is for construction phase only	-	-	Not Applicable	Local labor force will be employed during construction period	Not applicable	There is no mandatory law to generate temporary employment from the project activity and hence not scored
	Sources of income generation increased / reduced (SJ03)	Not Applicable	There is no legal requirement from local authority to create permanent employment from the project activity	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	NA
	Avoiding discrimination when hiring people from different race, gender, ethnics, religion, marginalized groups, people with disabilities (SJ04) (human rights)	Not Applicable	IFC Performance Standard-2: Labour and Working conditions	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	The project will not make employment decisions based on personal characteristics unrelated to inherent job requirements. The project will base the employment relationship on the principle of equal opportunity and fair treatment and will not discriminate with respect to any aspects of the employment relationship. The project will take measures to prevent and address harassment, intimidation, and/or exploitation, especially regarding women. Therefore this parameter will not be scored.

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Social - Health & Safety	<i>Disease prevention (SHS01)</i>	Not Applicable	The Factories Act, 1948	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	It should be ensured that proper and adequate number of toilets is constructed for the Labor's so that hygienic conditions prevail in the site area. Therefore this parameter will not be scored.
	<i>Occupational health hazards (SHS02)</i>	Not Applicable	EHS policy	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	The project owner will provide regular safety training to their workers about the accident hazards and risk related to specific works and preventive measures for avoiding accidents at site Therefore this parameter will not be scored.
	<i>Reducing / increasing accidents/ Incidents/fatality (SHS03)</i>	Not Applicable	EHS policy	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	The project owner will provide regular safety training to their workers about the accident hazards and risk related to specific works and preventive measures for avoiding accidents at site Therefore this parameter will not be scored.
	<i>Reducing / increasing crime (SAS04)</i>	Not Applicable	Crime comes under law & order of local government authority and there is no legal requirement from local authority to project owner to liable to reduce crime.	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	Project activity will increase local employment so there is no chance to increase crime in the local area due to the solar power projects. Therefore, this parameter will not be scored.
	<i>Reducing / increasing food wastage (SHS05)</i>	Not Applicable	THE COMPULSORY FOOD WASTE REDUCTION BILL, 2018	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	Use a 2-bin system so that food waste and recyclables viz. paper, plastic, glass, scrap metal waste etc. are segregated and stored in designated waste bins/ containers. Therefore this parameter will not be scored.

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<i>Reducing / increasing indoor air pollution (SHS06)</i>	Not Applicable	The Air (Prevention & Control of Pollution) Act 1981	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	With reference to the CPCB modified direction No. B29012/ESS(CPA)/2015-16; dated March 07, 2016 (Appendix A) solar power project falls in White category and it is mentioned in the notification that there shall be no necessity of obtaining the Consent to Operate" for White category of industries, hence it can be assumed that no chance of increasing air pollution from project activity. Therefore this parameter will not be scored.
<i>Efficiency of health services (SHS07)</i>	Not Applicable	No local regulation available	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	The CSR team will draft polciya nd work absed on people needs, hence it is not scored.
<i>Sanitation and waste management (SHS08)</i>	Not Applicable	Hazardous and Other Wastes (Management and Transboundary Movement) Amendment Rules, 2016	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	+1	As per MoEFCC notification dated 01.03.2019 (G.S.R. 178(E)) the Occupier (developer) is not required to obtain authorization under Hazardous and Other Wastes (Management and Transboundary Movement) Amendment, Rules, 2019 if they are exempted from obtaining consent under Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981. However, project owner should ensure proper disposal of Hazardous Waste (DG oil, if DG is installed) through actual user, waste collector or operator of the disposal

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										facility, in accordance with the Central Pollution Control Board guidelines. Septic tank and soak pits will be provided onsite for treatment and disposal of sewage, thereby minimizing the impacts of wastewater discharge. Planning of toilets, soak pits and septic tanks, waste collection areas should be away from natural drainage channels Therefore this parameter will not be scored.
	<i>Other health and safety issues (SHS09)</i>	Not Applicable	EHS policy	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	All health & safety issue at project sites to be mitigate as per EHS policy of and local regulation. Therefore this parameter will not be scored.
Social - Education	<i>specialized training / education to local personnel (SE01)</i>	The project owner provides job related training according to the positions	There is no legal requirement from local authority to provide training to local people	Not Applicable	-	-	Not Applicable	Training records/evidence by the project owner	+1	The project Owner will provide regular safety training to their workers about the accident hazards and risk related to specific works and preventive measures for avoiding accidents at site.
	<i>Education services improved or not (SE02)</i>	Not Applicable	CSR policy	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	The project owner has good CSR team that works based on people need and requirement of the project site and hence it is not scored
	<i>Project-related knowledge dissemination effective or not (SE03)</i>	Not Applicable	CSR policy	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	Stakeholder consultation meeting was done before starting of project work where project owner was informed about the project and taken their comments. Further meeting can be planned in future as per stakeholder request. Therefore this parameter will not be scored.
	<i>Other education</i>	Not Applicable	CSR policy	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	The project owner has good CSR team that works based on people

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	<i>al issues (SE04)</i>									need and requirement of the project site and hence it is not scored
Social - Welfare	<i>Improving / deteriorating working conditions (SW01)</i>	Not Applicable	EHS policy of	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	There is no chance of deteriorating working conditions as the project activity will increase the income and will maintain high working culture for their employee with complying EHS guideline & local regulation Therefore this parameter will not be scored.
	<i>Community and rural welfare (indigenous people and communities) (SW02)</i>	Not Applicable	CSR policy	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	In the stakeholder meeting, the local communities were of the opinion that apart from the economic opportunities, the local community should also benefit from the project in terms of community development activities identified included medical infrastructure, access to middle and higher schools, separate schools for girls and trainings for youth and women within the village. This can be done by collaborating with local NGOs working on these areas Therefore this parameter will not be scored.
	<i>Poverty alleviation (more people above poverty level) (SW03)</i>	Not Applicable	No local regulation	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	The objective of the company policy is to assist project sites to reduce poverty and enhance economic growth, human well-being, and development effectiveness by addressing the gender disparities and inequalities that are barriers to development, and by

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										assisting member countries in formulating and implementing their gender and development goals. Therefore this parameter will not be scored. The CSR activities of the project owner covers education, health care, trainings and awareness and hence it is not scored.
	<i>Improving / deteriorating wealth distribution / generation of income and assets (SW04)</i>	Not Applicable	No local regulation	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	Local community might choose to work during the construction of access roads and other project components and as security guards for the plant. There is also a likelihood of reduced dependence on agriculture for income. Therefore this parameter will not be scored.
	<i>Increased or / deteriorating municipal revenues (SW05)</i>	Not Applicable	No local regulation	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	Projects does not cause any activities that reduces the municipal revenue, it infact may increases the revenue of land of surrounding villages and hence same will not be applicable. Therefore this parameter will not be scored.
	<i>Women's empowerment (SW06) (human rights)</i>	Not Applicable	No local regulation	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	The HSR policy is mainly devoted to gender equality and promoting woman empowerment. Therefore this parameter will not be scored.
	<i>Reduced / increased traffic congestion (SW07)</i>	Not Applicable	No local regulation	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	The project activity created buffer zones on both side of government road. Adequate training on traffic and road safety operations will be imparted to the drivers of project vehicles. Road safety awareness programs will be organized in coordination with local authorities to

Project Submission Form

										sensitize target groups viz. school children, commuters on traffic safety rules and signage during construction & operation phase of the project. Therefore this parameter will not be scored.
	<i>Exploitation of Child labour (human rights) (SW08)</i>	Not Applicable	IFC Performance Standard-2: Labour and Working conditions	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	The project will not employ children in any manner that is economically exploitative or is likely to be hazardous or to interfere with the child's education, or to be harmful to the child in any way. National laws related to employment of minors are to be followed. No person under the age of 14 is to be allowed to work on the site according to Indian Child Labour Law. Therefore this parameter will not be scored.
	<i>Minimum wage protection (human rights) (SW09)</i>	Not Applicable	Centralized HR policy based on Indian Labor act	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	The project owner ensures indian labour act on wages and salaries will be followed , to ensure that all the contracted workers are provided with condition of services, rate of wages, holidays, hours of work as stipulated in the rules as per applicability and tenure of service, by the deputed contractor. Therefore this parameter will not be scored.
	<i>Abuse at work place.(with specific reference to women and people with special</i>	Not Applicable	EHS policy	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	The trainings and self-education imparted by the project owner to the workers prevent abuse at work and hence not scored

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<i>disabilities / challenges (human rights) (SW10)</i>										
<i>Other social welfare issues (SW11)</i>	Not Applicable	CSR policy	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA		The CSR team of the project owners will draft policies that protect peoples/workers interest and hence it is not scored.
<i>Avoidance of human trafficking and forced labour (human rights) (SW12)</i>	Not Applicable	EHS policy	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA		The project owner ensure that all the contracted workers are provided with condition of services, rate of wages, holidays, hours of work as stipulated in the rules as per rules and guidelines and hence it is not scored.
<i>Avoidance of forced eviction and/or partial physical or economic displacement of IPLCs (human rights) (CW13)</i>	Not Applicable	Land Acquisition Act 1894 (Amended in 1984) and The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA		Land for the project is being procured on willing seller willing buyer basis. Land is primarily a barren land and no habitat is present on the site.. Hence, project does not involve any involuntary displacement. Therefore this parameter will not be scored
<i>Provisions of resettlement and human settlement displacement (human rights) (CW14)</i>	Not Applicable	Land Acquisition Act 1894 (Amended in 1984) and The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA		Land for the project is being procured on willing seller willing buyer basis. Land is primarily a barren land and no habitat is present on the site.. Hence, project does not involve any involuntary displacement. Therefore this parameter will not be scored

Net Score:	+3
Project Owner's Conclusion in PSF:	The Project Owner confirms that the Project Activity will not cause any net harm to society.

Section F. United Nations Sustainable Development Goals (SDG)

>>

UN-level SDGs	UN-level Target	Declared Country-level SDG	Defining Project-level SDGs				GCC Project Verifier's Conclusion (to be included in Project Verification Report only)	
			Project-level SDGs	Project-level Targets/Actions	Contribution of Project-level Actions to SDG Targets	Monitoring	Verification Process	Are Goal/Targets Likely to be Achieved?
<p>Describe UN SDG targets and indicators</p> <p>See: https://unstats.un.org/sdgs/indicators/indicators-list/</p>	Describe the UN-level target(s) and corresponding indicator no(s)	Has the host country declared the SDG to be a national priority? Indicate Yes or No	Define project-level SDGs by suitably modifying and customizing UN/ Country-level SDGs to the project scope or creating a new indicator(s). Refer to previous column of guidance.	Define project-level targets/actions in line with the project level indicators chosen. Define the target date by which the project Activity is expected to achieve the project-level SDG target(s).	Describe and justify how actions taken under the Project Activity are likely to result in a direct positive effect that contributes to achieving the defined project-level SDG targets	Describe the monitoring approach and the monitoring parameters to be applied for each project-level SDG indicator and its corresponding target, frequency of monitoring and data source	Describe how the GCC Verifier has verified the claims that the project is likely to achieve the identified Project level SDGs target(s).	Describe whether the project-level SDG target(s) is likely to be achieved by the target date (Yes or No)

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Goal 1: End poverty in all its forms everywhere	End poverty in all its forms everywhere	Yes	Improved earnings of personnel (including persons from below poverty line (BPL) category) because of the direct and/or indirect engagement during project construction (temporary employment direct and indirect) and project operation (direct and indirect employment).	Project activity will result in both direct and indirect including engagement of persons through contracting agency.	1. Eradicate poverty 2. No. of persons employed directly No. of persons employed indirectly including through contractors	Provisioning of employment have direct linkage with increased earning and eradication of poverty especially in case of BPL person employed (directly /indirectly) under the project	Project owner maintain the employee logbook or register at the site for both direct employees and for those manage through contractors	Project activity is already operational and has resulted in generation of employment both at construction and operational phase.	Yes
Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Goal 3. Ensure healthy lives and promote well-being for all at all ages	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university	Not Applicable	Access to quality education has always been a challenge in the rural setup. Project owner will identify key knowledge gap and will design priority programme in line.	Project owner will endeavour towards ensuring access to quality education by provisioning infrastructure support in the existing education facilities, undertake relevant training	Documents relating to infrastructure being provided Documents relating to training	Infrastructure support and training will help in ensuring access to quality educations	Key contribution will be monitored through expenditure relating to infrastructure support and training programme organised.	Project owner will ensure compliance to the intended targets with necessary resource allocation and continual monitoring.	Yes

Project Submission Form

<p>Goal 5. Achieve gender equality and empower all women and girls</p>	<p>SDG Target 5.5 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision making in political, economic and public life"</p>	<p>Yes</p>	<p>Gender equality would be ensured by the project developer and no biasness would be there between men and women</p>	<p>No discrimination against women.</p>	<p>Contribute to achieve qual rights for men & women</p>	<p>Number of women employed directly due to the project activity As per company policy, men & women have equal rights and no discrimination will be tolerated against women. Social Security Institution Records & HR Records</p>	<p>Pay slip and employment register</p>	<p>GCC verifier Can check the pay slips and employment register from the project owner</p>	<p>Yes</p>
<p>Goal 6. Ensure availability and sustainable management of water and sanitation for all</p>	<p>Not Applicable</p>	<p>Not Applicable</p>	<p>Not Applicable</p>	<p>Not Applicable</p>	<p>Not Applicable</p>	<p>Not Applicable</p>	<p>Not Applicable</p>	<p>Not Applicable</p>	<p>Not Applicable</p>
<p>Goal 7. Ensure access to affordable, reliable,</p>	<p>Increase substantially the</p>	<p>Yes</p>	<p>7.2.1 Renewable energy share in the total energy consumption</p>	<p>49,833 MWh per year .i</p>	<p>The net generated renewable</p>	<p>Contribute renewable</p>	<p>The net electricity</p>	<p>Contributing clean energy</p>	<p>yes</p>

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<p>sustainable and modern energy for all</p>	<p>share of renewable energy in the global energy mix" the total</p>				<p>electricity, which will be used as captive use over a period y will be used as project level dictator</p>	<p>energy</p>	<p>supplied to the grid by the project activity is continuously monitored through energy meter (main and check meter) installed at the substation. The meters remain under the custody of state utility</p>		
<p>Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</p>	<p>Substantially reduce the proportion of youth not in employment, education</p>	<p>Yes</p>	<p>Number of local employment generation. The project activity will create both direct or indirect employment during project construction and project operation</p>	<p>The project owner will enhance the capacity of the persons through on 1 nos. of training of direct and indirect employee engaged during</p>	<p>The number of permanent created, will be used as project-level indicator for mapping productive employment generated.</p>	<p>The project activity activity has created jobs in the renewable energy sector, which diversify and upgrades employee's knowledge and capacity</p>	<p>The total number of persons employed in the plant would be assessed based on the employee logbook or register</p>	<p>Project activity is already operational and has resulted in generation of employment t both at construction</p>	<p>Yes</p>

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	n or training			operation of the project activity.		over and above the the commonly used technology in the energy sector of India.	available at site.	n and operational phase. Moreover, training has already been imparted to employee on the technological issues	
Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Goal 10. Reduce inequality within and among countries	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable Not Applicable	Not Applicable
Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Goal 12. Ensure sustainable consumption and production patterns	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Goal 13. Take urgent action to combat climate change and its impacts	Improve education, awareness raising and	Yes	The project activity generates electricity through Renewable energy (solar) which result in reduction of power generation from fossil fuelbased generation unit supplying electricity to the grid and hence reduction in Greenhouse gases emission	The project activity through implementation of 30 MW of Solar power generation unit will result in reduction of 46369 tCO2 /year	The reduced greenhouse gas emissions per year will be used as proper project-level indicator and the	Emission reductions achieved per year	Electricity produced by the renewable generating unit multiplied by an emission factor	Reduction of Greenhouse gases	Yes

Project Submission Form

	human and institutional capacity on climate change mitigation adaptation, impact reduction and early warning				information regarding the project activity will be disseminated to enhance stakeholders' awareness				
Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

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Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Goal 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
SUMMARY						Targeted		Likely to be Achieved	
Total Number of SDGs						6		6	
Certification label (Bronze, Silver, Gold, Platinum, or Diamond) for the ACCs as defined in the PSF						Diamond		Diamond	

Section G. Local stakeholder consultation

G.1. MODALITIES FOR LOCAL STAKEHOLDER CONSULTATION

Local Stakeholder consultation is not mandatory for the solar projects in the host country. However, Project Proponent planned to conduct the Local stakeholder consultation (LSC) as per the GCC Project standard and the instructions given in the Project submission form template.

To comply with the prerequisite requirements of the GCC project standard a survey was conducted in the project area among the local stakeholders to get their opinion and feedback on the development of the Solar Project in the region. Stakeholder feedback is conducted during the following dates with survey checklist/questionnaire. A structured approach was adopted for stakeholder consultation across the business through questionnaires and interviews.

Project Name	Project Owner	LSC DATE as per the GCC
Aurobindo Pharma (30 MW) Solar PV	Aurobindo Pharma Limited	10-6-2022

During the stakeholder meeting, the following stakeholders are invited


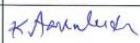



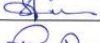
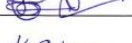






1. Project team
2. Villagers in the study area, and villagers outside the study area where an existing project is operational.
3. Land-sellers


Date: 10/06/2022

Attendance Sheet
30 MW Solar Power Plant - Aurobindo Pharma Limited
Project Site, Varisam (V), Pydibhimavaram, Ranasthalam (M), Srikakulam (Dist.), Andhra Pradesh

S. No	Name	Occupation	Village	Sex (M/F)	Age (y)	Signature
1	N. Narayana Rao		Varisam	Male	44	N. Narayana Rao
2	B. Srinu		Varisam	Male	38	B. Srinu
3	S. Srinu		Varisam	M	42	S. Srinu
4	P. Srinu		Varisam	M	33	P. Srinu
5	B. Srinu		Varisam	M	38	B. Srinu
6	P. Hari Babu		Varisam	M	47	P. Hari Babu
7	P. Srinu		Varisam	M	23	P. Srinu
8	P. Ravi		Varisam	M	24	P. Ravi
9	L. Appa		Varisam	M	35	L. Appa
10	J. Polamma		Varisam	F	41	J. Polamma

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S. No	Name	Occupation	Village	Sex (M/F)	Age (y)	Signature
11	J. Teja		Ravivalata	M	23	
12	K. Asiri Naidu		pusapathirega	M	23	
13	Y. MOHAN		Pirihini	M	23	
14	K. Kumaraswamy		chintalapeta	M	24	
15	S. Shanmukha Rao		Nanava(Village)	M	24	
16	B. Saivao		patmayenispete	M	26	
17	T. Ganesh		Chakkirapalem	M	24	
18	K. Giram		chakkirapalem	M	24	
19	M. Babu Rao		Thirupathi Palam	M	24	
20	S. Setyapala		Vasri, Sam	M	23	
21	P. Girinda Rao		varasam	M	46	
22	K. Saijan		chillapeta	M	32	
23	B. B. R.		varasam	M	36	

S. No	Name	Occupation	Village	Sex (M/F)	Age (Y)	Signature
24	P. Subrahmanya	V.L.O	P. R. Vanni	Male	50	
25						
26						





The project was briefed to the stakeholders and asked whether they have any doubt or concern/feedback over the project activity. The following questions were raised in the LSC.

Project Submission Form

Questionnaire

30 MW Solar Power Plant - Aurobindo Pharma Limited
 Project Site, Varisam (V), Pydibhimavaram, Ranasthalam (M),
 Srikakulam (Dist.), Andhra Pradesh

Name :
 Address :

S. No.	Feedback Question	Response
1	Are you aware of the project?	
2	Is there any improvement in livelihood after project implementation?	
3	Whether any increase in local employment happened (including male/female/skilled/unskilled) after project implementation?	
4	Any trainings/education or CSR activity planned by the project owner for the people in the surrounding locality?	
5	Whether the people are happy with the project activity? Any resettlements happened?	
6	Whether the project activity is safer to woman/children?	

1

S. No.	Feedback Question	Response
7	Whether the project has any negative environmental effects like noise/biodiversity loss/air pollution/water pollution happened during project operation?	
8	Any major damage happened to roads or buildings during project implementation and operation?	
9	Any noticeable child labor employed by the project activity?	
10	What do you like about the project?	
11	What do you not like about the project?	
12	Any other comments /Suggestions?	

ప్రశ్నావళి:

30 MW సోలార్ పవర్ ప్లాంట్ - ఆరబిందో ఫార్మా లిమిటెడ్
 ప్రాజెక్ట్ సైట్, వరసం (V), పిడిబిమవరం, రణస్థలం (మం), శ్రీకాకుళం (జిల్లా), ఆంధ్రప్రదేశ్

పేరు :
 చిరునామా :

క్రమ సంఖ్య	ప్రశ్న	సమాధానం
1	ఈ ప్రాజెక్ట్ గురించి మీకు తెలుసా?	
2	ఈ ప్రాజెక్ట్ అమలు తర్వాత జీవనోపాధిలో ఏకైకా మెరుగుదల ఉందా?	
3	ఈ ప్రాజెక్ట్ అమలు తర్వాత ప్రాథమిక ఉద్యోగంలో ఏకైకా మెరుగుదల (స్థానికుడు/ఆడ/స్త్రీ/పెళ్లయిన/వైవాహికం లేనివారితో సహా) జరిగిందా?	
4	యజమాన్య ప్రాంతంలోని వ్యక్తుల కోసం ప్రాజెక్ట్ యజమాని ఏకైకా శిక్షణలు/దర్శన లేదా ఇతర కార్యకలాపాన్ని అమలు చేశారా?	
5	ఈ ప్రాజెక్ట్ కార్యదర్శితో ప్రజలు సంబంధంగా ఉన్నారా? ఈ ప్రాజెక్ట్ వల్ల, స్థానికవాళ్లు ఏకైకా జరిగిందా?	

క్రమ సంఖ్య	ప్రశ్న	సమాధానం
6	ఈ ప్రాజెక్ట్ కార్యకలాపం ప్రస్తుతం పరిష్కరించబడిందా?	
7	ప్రాజెక్ట్ అవసరమైన సమయంలో కలిగించినవివేక వసతులను కాలిక్యులేట్ చేయడం వంటి ఏకైకా ప్రతికూల పరిణామాలను కలిగి ఉందా?	
8	ప్రాజెక్ట్ అమలు మరియు అవసరమైన సమయంలో లేకుండా భవనాలను ఏకైకా పని పని జరిగిందా?	
9	ప్రాజెక్ట్ కార్యకలాపంలో ఏదైనా భారం కార్యకలాపం నియమించారా?	
10	ఈ ప్రాజెక్ట్ గురించి మీకు నచ్చిన అంశాలు చెప్పండి.	
11	ఈ ప్రాజెక్ట్ గురించి మీకు నచ్చని అంశాలు చెప్పండి.	
12	ఈ ప్రాజెక్ట్ గురించి ఏకైకా ఇతర సలహాలు /సూచనలు ఉన్నాయా?	

G.2. SUMMARY OF COMMENTS RECEIVED

The summary of comments received during the survey and responses provided by PP representative are provided below

Stakeholder comment	Explanation provided by PP representative
You are claiming the job preference will be given to local people. But recently we requested job for one of the local person. But the job is not provided yet.	Currently there is no opening available for the skill category. As and when the requirement comes, first preference will be given to local person.
What is the life time of the project? What will happen to modules after the lifetime?	The life time of the solar power plant is about 25 years. After the lifetime, the solar modules will be disposed as per the regulatory requirements.
Does the solar plant affect the rain in the local area?	No, the solar module installation does have impact over the rainfall.
Any additional CSR activities will be conducted to our village?	You can provide your requirements to the site in charge through village representative. The activities will be undertaken based on the priority and fund availability.
Is there any vacancy in the solar plant?	Currently there is no vacancy available at the plant. However, you can provide your CV to the plant in-charge. If any vacancy arises in the future, the first preference will be give to qualified people from the local area.

G.3. CONSIDERATION OF COMMENTS RECEIVED

All comments raised during local stakeholder consultation have been considered and no negative impacts identified and people were happy with the project implementation and positive impacts of the project activity

Section H. Approval and authorization

As per the guideline available in this regard, submission of Host Country Attestation (HCA) on Double Counting as and when required by CORSIA will provide during the verification

APPENDIX 1. CONTACT INFORMATION OF PROJECT OWNERS

Project Owner name (as per LON/LOA)	Aurobindo Pharma Limited
Country	India
Address	Aurobindo Pharma Limited ,Plot No 2, Maithrivihar, Ameerpet, Hyderabad, 500038
Telephone	9848050898
Fax	-
E-mail	jvnreddy@aurobindo.com
Website	-
Contact person	JVN Reddy

APPENDIX 2. AFFIRMATION REGARDING PUBLIC FUNDING

>>NA

APPENDIX 3. APPLICABILITY OF METHODOLOGY(IES)

>>
Refer section B-3

APPENDIX 4. FURTHER BACKGROUND INFORMATION ON EX ANTE CALCULATION OF EMISSION REDUCTIONS

>>NA

APPENDIX 5. FURTHER BACKGROUND INFORMATION ON MONITORING PLAN

>>NA

APPENDIX 6. SUMMARY REPORT OF COMMENTS RECEIVED FROM LOCAL STAKEHOLDERS

>>NA

APPENDIX 7. SUMMARY OF DE-REGISTERED CDM PROJECT OR PROJECTS FROM OTHER GHG / NON-GHG PROGRAMS (TYPE B)

>>NA

<i>Complete this form in accordance with the instructions attached at the end of this form.</i>	
Program Name	
Project registration number	
Date of registration in the program	
Title of the Project Activity	
Project de-registration reference number	
Date of de-registration of the Project	
Project Participants <small>(authorized by the host / annex 1 country letter of approval)</small>	
Country where the project is located	
Applied methodology(ies) <small>(provide reference and version number(s))</small>	

Project Submission Form

Pre-registration changes to the Project Activity (Tick as applicable)	Pre-registration Changes	Reference number	Approved	Provide a summary of pre-registration changes
	Deviations from approved baseline and monitoring methodology		<input type="checkbox"/>	
	Deviations from applied Tool & Guidance		<input type="checkbox"/>	
	Deviations from the rules		<input type="checkbox"/>	
	Other.....		<input type="checkbox"/>	
Post-registration changes to the Project Activity (Tick as applicable)	Post registration Changes	Reference number	Approved	Provide a summary of post-registration changes
	Change in project design		<input type="checkbox"/>	
	Request for revision of monitoring plan		<input type="checkbox"/>	
	Request for change in start date of crediting period		<input type="checkbox"/>	
	Renewal of crediting period		<input type="checkbox"/>	
	Temporary deviations		<input type="checkbox"/>	
	Other.....		<input type="checkbox"/>	

Crediting Period(s)	Crediting period(s)		Period (start & end dates)	ERs as per registered PDD/MR/Project documents	Credits issued	
	Crediting Period (shall start on or after 1 Jan 2016)	Fixed 10 year				
		Renewable (7 years, with 2 approved renewals)	1 st			
			2 nd			
			3 rd			
	Period for which Credits have been issued					
	Period for which Credits have been requested but not issued					-
	Period for which Credits have never been requested for issuance (no monitoring reports submitted)					-
Period for which Credits have never been requested for issuance prior to CDM de-registration					-	
Remaining Crediting period, after de-registration, for which Credits have not been issued by the program, subject to a ceiling of 10 years as allowed under the GCC Program					-	
Details of Previous Issuance Requests	Issuance Request	Period (start & end dates)	ERs as per registered PDD	Quantity of Credits requested to be issued	Quantity of Credits issued	
	1 st					
	2 nd					
	3 rd					
	4 th					
	5 th					
	Add rows					
	Total					

<p>List any open issues in the Validation and last Verification Report (e.g., FARs, if any) and how they have been addressed</p>	
<p>Any other relevant information that has not been reported in the registered documents and that may have adverse impacts on the environmental integrity of the Project Activity</p>	
<p>Provide the list of all the registered documents related to this project, as available on the programs website and the corresponding URLs.</p>	

Appendix 8. FURTHER INFORMATION ON DETERMINATION OF BUNDLE IN PROJECT ACTIVITY.

>> NA

Appendix 9. PUBLIC DECLARATION FOR A2 (Sub Type 2 and 3), B1 & B2 PROJECTS ON NON CONTINUATION FROM CDM/GHG/NON-GHG PROGRAMS.

>>NA

INSTRUCTIONS

Instructions for completing this form

General instructions

1. For designing and developing a project for the GCC Program, the requirements stipulated in the 'Project Standard', clarifications (if any) and the applicable GCC or CDM Methodologies and tools, are applicable to Project Owners to ensure conformance with applicable GCC Rules and requirements while completing the Project Submission Form (PSF, this document).
2. The Project Standard stipulates that the Project Owners wishing to register a proposed GCC Project Activity with the GCC Program shall prepare a Project Submission Form, using the valid version of the applicable PSF form, available on the GCC website.¹⁸
3. When completing the PSF form, the Project Owners shall follow the instructions therein and provide all necessary information and documentation to demonstrate compliance of the proposed GCC Project Activity with all applicable requirements in this document and other applicable GCC Rules and requirements.
4. The terms¹⁹ used in this document have been defined in the Program Definitions document and shall be referred to while completing the PSF.
5. The Project Owners shall assess the project to identify the appropriate project type (A1, A2, A3, B1 or B2), which complies with the eligibility criteria of the Project Standard. Once the eligible project type is identified, the PSF shall be completed, clearly identifying the requirements including the voluntary certification labels and/or market eligibility (e.g., CORSIA) they wish to target. The choices made by the Project Owners in the PSF (including on the cover page) shall become a package of requirements against which the GHG Verifier as well as the GCC Operations Team and Steering Committee shall assess and evaluate the Project Activity throughout the project cycle.
6. For Type A (A1, A2, A3) projects, all of the sections of the PSF are required to be completed, including the cover page. If the voluntary certification labels and/or market eligibility (e.g., CORSIA) have been chosen to be targeted, sections A.5 (requirements related to CORSIA including Host Country Attestation on Double Counting), B.7.2 (E+/S+/SDG monitoring), E.1 (Do-No-Net-Harm requirements for Environment), E.2 (Do-No-Net-Harm requirements for Society), and F (contribution to UN SDGs) are required to be filled with new information.
7. For Type B (de-registered from CDM) projects being submitted to the GCC Program, the PSF shall be completed as per the guidance provided below:

(a) For Type B1 projects:

¹⁸ GCC website : <http://www.globalcarboncouncil.com/resource-centre/>

¹⁹ While using any GCC document, the terms/definitions/Acronyms and the names of the regulatory documents referred have their first letter in capitals (e.g., 'Project Standard').

- (i) All of the sections of the PSF are required to be completed, including the cover page. New sections are required to be filled with new information not contained in the registered CDM PDD.
 - (ii) Sections A.4, A.5 (requirements related to CORSIA including Host Country Attestation on Double Counting), A.6, C.1, C.2, C.3, H (if applicable) and Appendix 1 are required to be completed with new and/or updated information.
 - (iii) If the voluntary certification labels and/or market eligibility (e.g., CORSIA) have been chosen to be targeted, sections A.5 (requirements related to CORSIA including Host Country Attestation on Double Counting), B.7.2 (SDG monitoring), E.1 (Do-No-Net-Harm requirements for Environment), E.2 (Do-No-Net-Harm requirements for Society) and F (contribution to UN SDGs) are required to be completed with new information.
- (b) For Type B2 projects:**
- (i) All of the sections of the PSF are required to be completed, including the cover page. New sections are required to be filled with new information not contained in the registered CDM PDD.
 - (ii) Sections A.4, A.5 (requirements related to CORSIA including Host Country Attestation on Double Counting), A.6, C.1, C.2, C.3, H (if applicable) and Appendix 1 are required to be filled with new and/or updated information.
 - (iii) For project type B2, since the voluntary certification labels and market eligibility (e.g., CORSIA) are not chosen, mark the sections: B.7.2 (SDG monitoring), E.1 (Do-No-Net-Harm requirements for Environment), E.2 (Do-No-Net-Harm requirements for Society) and F (contribution to UN SDGs) as “Not applicable” and explicitly state that they have been left blank intentionally.
- (c) For both B1 and B2 projects:**
- (i) The remaining sections of the PSF, except those mentioned in paragraphs 7 (a) and (b) above and particularly related to GHG reduction, shall:
 - i. refer to the corresponding sections of the registered CDM PDD, where the same information as contained in the registered CDM PDD, is required; and
 - ii. provide, in the appropriate sections, additional information if required.
 - (ii) The PSF shall also provide the required information in Appendix 7.
 - (iii) The GCC Program shall not allow any post-registration changes or deviations from the contents of the registered CDM project documents (including registered CDM PDD and supporting documents such as spreadsheets, Modalities of Communication (CDM-MoC), letters of approval, etc.), unless approved by UNFCCC/ CDM as per its rules and CDM project cycle procedures. Therefore, any post-registration changes or deviations from the contents of the registered CDM project documents shall be approved under the CDM, following the CDM Project cycle procedures, prior to de-registering the CDM Project and completing the PSF for Type B projects.

8. Use this PSF form for all types of GCC Project Activities, except for afforestation and reforestation (A/R) Project Activities and carbon dioxide capture and storage (CCS) Project Activities, for which a separate template may be designed in future.
9. Where a PSF and/or spreadsheet contains information that the Project Owner(s) wish to be treated as confidential/proprietary, submit documentation in two versions:
 - (d) One electronic version where all parts containing confidential/proprietary information are redacted (e.g., made illegible by covering them with black ink) so that the version can be made publicly available without displaying confidential/proprietary information; and
 - (e) One electronic version containing all information that is to be treated as strictly confidential/proprietary by all parties handling this documentation (GCC approved verifiers, Steering committee members, external experts requested to consider such documents in support of work for the Steering committee, and the GCC team).
10. Information used to demonstrate additionality, to describe the application of the selected methodologies, and to support the environmental impact assessment, is not considered proprietary or confidential. The Project Owner(s) shall make any data, values and formulae included in spreadsheets provided accessible and verifiable. In case of strictly confidential financial information regarding a project, the Project Owner(s) can prepare two versions of spreadsheets in a similar way as mentioned in paragraph 10 above and mark one spreadsheet accordingly as “confidential”.
11. Complete this form in English. All sections of this form are mandatory, unless otherwise indicated, and shall be completed with all required information. Prepare all attached supporting documents in English, or, if their originals were prepared in another language, provide a full translation of the relevant sections of these documents in English.
12. Complete this form using the same format without modifying its font, headings or logo, and without any other alterations to the form.
13. Do not modify or delete tables and their columns in this form. Add rows to the tables as needed. Add additional appendices as needed.
14. If a section of this form is not applicable, explicitly state that the section has been left blank intentionally.
15. Use an internationally- recognized format for presentation of values. For example, use digits grouping in thousands and mark a decimal point with a dot (.), not with a comma (,).
16. Complete this form deleting the ‘Instructions for completing this form’.
17. Provide the information requested on the cover page.
18. The Project Owner(s) shall note that non-compliance with the instructions provided in this document shall lead to non-compliance of the Project Owner(s) with the Project Standard and the applicable GCC documents containing the rules and requirements governing the GCC Program.

Section A. Description of the Project Activity

A.1. Purpose and general description of the Project Activity

1. Provide the purpose and a general description of the Project Activity, including a summary of:
 - (a) The location of the Project Activity;
 - (b) The technologies/measures employed by the Project Activity;
 - (c) The project boundary;
 - (d) The baseline scenario;
 - (e) The estimates of annual average and total GHG emission reductions for the chosen crediting period.
2. Describe how the Project Activity contributes to sustainable development .
3. Provide a full description of 1(a)–(e) above in sections A2,A3, B3, , and B6, respectively.

Note: For Type A1, A2 and A3 projects, this section requires new information. For both Type B1 and B2 projects, the same information is required as provided in the registered CDM PDD. This section shall provide information as per the guidance provided in the General Instructions section in paragraph 7, above.

A.2. Location of Project Activity

4. Provide details of the physical/geographical location of the Project Activity, including the physical address (host country, region/state/province, city/town/community, street name and number) and a map identifying the project clearly, and if necessary, other information allowing for the unique identification of the Project Activity (e.g., geodetic coordinates). The geo-coordinates needs to be presented in degree minutes seconds as well as in decimal format.
5. Do not exceed one page for the description of the location.

Note: For Type A1,A2 and A3 projects, this section requires new information. For both Type B1 and B2 projects, the same information is required as provided in the registered CDM PDD. This section shall provide information as per the guidance provided in the General Instructions section in paragraph 7, above.

A.3. Technologies/measures

6. Describe the technologies/measures to be employed and/or implemented by the Project Activity, including:
 - (a) A list of the facilities, systems and equipment that will be installed and/or modified under the Project Activity;
 - (b) The arrangement of the facilities, systems and equipment;
 - (c) The monitoring equipment and their location in the systems.

7. Describe the types and levels of services (normally in terms of mass or energy flows) provided by the facilities, systems and equipment that are being modified and/or installed under the Project Activity and their relation, if any, to other facilities, systems and equipment outside the project boundary.
8. For the facilities, systems and equipment that are being modified and/or installed under the Project Activity, provide information on:
 - (a) The age and average lifetime of the equipment based on the manufacturer's specifications and industry standards;
 - (b) The existing and forecast installed capacities, load factors and efficiencies;
 - (c) The energy and mass flows and balances of the facilities, systems and equipment, if necessary.
9. Provide a short summary of facilities, systems and equipment in the baseline scenario as established in section **Error! Reference source not found.**
10. Do not provide information that is not essential to understanding the purpose of the Project Activity and how it reduces GHG emissions. Do not include information related to facilities, systems and equipment that are auxiliary to the main scope of the Project Activity and that do not affect directly or indirectly GHG emissions and/or mass and energy balances of the processes related to the Project Activity.
11. Describe how the technologies/measures and know-how for their use are transferred to the host country, where applicable.

Note: For Type A1, A2 and A3 projects, this section requires new information. For both Type B1 and B2 projects, the same information is required as provided in the registered CDM PDD. This section shall provide information as per the guidance provided in the General Instructions section in paragraph 7, above.

A.4. Project Owner(s)

12. Using the table provided, list the Project Owner(s) involved in the Project Activity in line with the LOA/LON, and provide contact information for each Project Owner in Appendix 01, the end of the PSF.
13. When this form is completed in support of a proposed new GCC methodology, identify at least the host country and any known Project Owner(s) (e.g., those proposing the new methodology).

Note: For Type A1,A2 and A3 projects, this section requires new information. For both Type B1 and B2 projects, the same information is required as provided in the registered CDM PDD. This section shall provide information as per the guidance provided in the General Instructions section in paragraph 7, above.

A.5. Declaration of intended use of carbon credits (ACCs) from the Project Activity

14. Indicate the intended use of carbon credits (ACCs) from the Project Activity.

15. Confirm that the carbon credits (ACCs) from the Project Activity shall not be double counted.

Note: For all project (Types A1, A2, B1 and B2), this section requires new information. This section shall provide information as per the guidance provided in the General Instructions section in paragraph 7, above.

A.6. Additional Requirements for CORSIA

16. If the Project Owner(s) intend to use/sell/transfer/retire the carbon credits (ACCs) generated by the Project Activity for offsetting purposes to Airlines under ICAO's CORSIA requirements, the Project Owner(s) shall:

(a) The start of Project Activity operation and the start of crediting period shall be on or after 1 January 2016 and complies with all the applicable GCC rules and requirements;

(b) The Project Activity is likely to result in GHG emission reductions as a result of implementation of the registered GCC project activity;

(c) The Project Activity has not caused any net harm to the environment and/or society and therefore achieves Environmental No-net-harm Label (E +) and Social No-net harm Label (S +);

(d) The Project Activity has made contributions for achieving United Nations Sustainability Development Goals (SDGs) and has contributed to achieving at least three SDGs and therefore targets to achieve Silver or higher SDG certification label (SDG+); and

(e) The project meets all the requirement of the CORSIA Eligible Emissions Units²⁰ required for GCC projects and does not fall under the excluded unit types, methodologies, programme elements, and/or procedural classes;

If GCC Program receives the approval to issue CORSIA eligible units beyond 31 December 2020, the Project owner shall ensure that there is no double counting for Emission units generated after 31 December 2020:

(i) A written attestation, expressing the intention, from the host country's national focal point or focal point designee shall be provided prior to submission of request for registration to the GCC Program; and

(ii) A self-declaration from the Project Owner in the PSF that written attestation from the host country's national focal point or focal point designee will be provided at the earliest opportunity, but prior to submission of requesting issuance to the GCC Program.

At registration stage, the GCC Project Verifier shall provide a certification opinion on whether a project is expected to achieve an indicative CORSIA (C+ label) only if the project activity complies with the conditions stated in paragraph above and is likely to:

(a) reduce a forecasted quantity of greenhouse gases (ACC label);

(b) achieve Environmental No-Net Harm (E+ label);

(c) achieve Social No-Net Harm (S+ label); and

²⁰ICAO Document "CORSIA Emission unit Eligibility Criteria"

(d) achieve United Nations Sustainability Development Goals (Silver or higher SDG+ label)

Note: For all projects (Types A1, A2, A3, B1 and B2) that wish to apply for the *E+* or *S+* and/or *SDG+* label and for use under CORSIA, this section requires new information. This section shall provide information as per the guidance provided in the General Instructions section in paragraph 7, above.

Section B. Application of selected Methodologies

B.1. Reference to methodologies

17. Indicate the exact reference (number, title, version) of:

- (a) The selected methodology(ies) (approved by any GHG program including by the GCC or the CDM);
- (b) Any tools and other methodologies to which the selected methodology(ies) refers;
- (c) The selected CDM standardized baseline, where applicable.

18. Refer to the GCC²¹ or UNFCCC CDM website for the exact references for approved methodologies, tools and standardized baselines.

Note: For Type A1, A2 and A3 projects, this section requires new information. For both Type B1 and B2 projects, the same information is required as provided in the registered CDM PDD. This section shall provide information as per the guidance provided in the General Instructions section in paragraph 7, above.

B.2. Applicability of Methodologies and tools applied in the project

19. Justify the choice of the selected methodologies and tools, where applicable, the selected standardized baseline by showing that the Project Activity meets all applicability conditions of the methodology(ies), tools and, where applicable, the standardized baseline. Explain/describe any documentation that has been used in the justification and provide references to it or include the documentation in **Error! Reference source not found.**

20. Ensure that the Project Activity complies with all the relevant requirements of the selected methodology(ies) and, where applicable, the selected standardized baseline, including the application of any tools, standards or guidelines required by the methodology(ies) and, where applicable, the standardized baseline.

Note: For Type A1, A2 and A3 projects, this section requires new information. For both Type B1 and B2 projects, the same information is required as provided in the registered CDMPDD. This section shall provide information as per the guidance provided in the General Instructions section in paragraph 7, above.

B.3. Project boundary, sources and greenhouse gases (GHGs)

²¹ GCC Methodologies: <https://www.globalcarboncouncil.com/standards/baseline-monitoring-methodologies/>
CDM Methodologies: <https://cdm.unfccc.int/methodologies/index.html>

21. Define the project boundary of the Project Activity, including the physical delineation of the Project Activity, and which sources and GHGs are included in the project boundary, in accordance with the applied methodology(ies) and, where applicable, the applied standardized baseline.
22. In the table provided, describe emission sources and GHGs included in the project boundary for the purpose of calculating project emissions, baseline emissions and, if applicable, leakage emissions.
23. In addition to the table, where possible, present a pictorial depiction of the project boundary based on the description provided in section **Error! Reference source not found.** Include in the flow diagram all of the facilities, systems and equipment, and flows of mass and energy described in that section. In particular, indicate in the diagram the emission sources and GHGs included in the project boundary and the data and parameters to be monitored.

Note: For Type A1,A2 and A3 projects, this section requires new information. For both Type B1 and B2 projects, the same information is required as provided in the registered CDM PDD. This section shall provide information as per the guidance provided by the General Instructions section in paragraph 7, above.

B.4. Establishment and description of the baseline scenario

24. Describe the baseline scenario for the Project Activity and explain how it is established in accordance with applicable provisions for the establishment and description of baseline scenarios in the Project Standard, the applied methodology(ies) and, where applicable, the applied standardized baseline.
25. Where the procedure in the applied methodology(ies) and, where applicable, the applied standardized baseline involves several steps, describe how each step is applied and transparently document the outcome of each step. Explain and justify key assumptions and rationales. Provide and explain all data used to establish the baseline scenario (variables, parameters, data sources, etc.). Provide all relevant documentation and/or references.
26. Where “future anthropogenic emissions by sources are projected to rise above current levels due to the specific circumstances of the host Party,” use the CDM document: “Guidelines on the consideration of suppressed demand in CDM methodologies” to propose a revision to an approved methodology to cover such scenario if it is not covered in the methodology.
27. Describe how the relevant national and/or sectoral policies, regulations and circumstances are taken into account.
28. Provide a list of facilities, systems and equipment in the baseline scenario, and clearly explain how the same types and levels of services provided by the Project Activity would have been provided in the baseline scenario.
29. Provide a transparent description of the baseline scenario as established above.
30. Note that this section and section B.5 are complementary. Some of the steps undertaken in one section may overlap with the steps undertaken in the other, depending on the procedures used

to establish the baseline scenario and demonstrate additionality. If the “CDM Methodological tool: Combined tool to identify the baseline scenario and demonstrate additionality” is used, replicate the same information in both sections. In this case, make a reference to the other section where the description is contained.

Note: For Type A1,A2 and A3 projects, this section requires new information. For both Type B1 and B2 projects, the same information is required as provided in the registered CDM PDD. This section shall provide information as per the guidance provided in the General Instructions section in paragraph 7, above.

B.5. Demonstrating additionality

31. If the Project Activity is a type of Project Activity which is deemed automatically additional, in accordance with the GCC Project Standard or CDM rules:
 - (a) Specify the relevant methodologies, tools, standardized baselines or specific technologies/measures conferring automatic additionality; and
 - (b) Explain how the Project Activity meets the criteria established in these for determining automatic additionality.
32. If the Project Activity is not a type of Project Activity that is deemed automatically additional, then follow the instructions in paragraphs 33 through 35 below.
33. Demonstrate that the Project Activity is additional in accordance with the applied methodology(ies), and where applicable the applied standardized baseline, and applicable provisions for demonstrating additionality in the GCC Project Standard. Where the procedure in the applied methodology(ies) and/or tools involves several steps, describe how each step is applied and transparently document the outcome of each step. Indicate clearly the method selected to demonstrate additionality (e.g., investment analysis or barrier analysis). Present in a transparent manner, in the form or in a separate appendix, all data used (variables, parameters, data sources, etc.) and how the additionality of the Project Activity is demonstrated.
34. Where investment analysis is used, clearly indicate the date of investment decision for the project, list all relevant assumptions and parameters used in the analysis. Where benchmark analysis is used, clearly indicate the benchmark. Where cost comparison is used, describe the scenarios compared.
35. Where barrier analysis is involved in demonstrating additionality, only select the most relevant barriers. Justify the credibility of the barriers, presenting key facts, assumptions and rationale. Provide relevant documentation or references.

Note: For Type A1,A2 and A3 projects, this section requires new information. For both Type B1 and B2 projects, the same information is required as provided in the registered CDM PDD. This section shall provide information as per the guidance provided in the General Instructions section in paragraph 7, above.

B.6. Estimation of emission reductions

B.6.1. Explanation of methodological choices

36. Explain how the methods or methodological steps in the applied methodology(ies) and, where applicable, the applied standardized baseline, for calculating baseline emissions, project emissions, leakage emissions and emission reductions are applied to the Project Activity. Clearly state which equations will be used in calculating emission reductions.
37. Explain and justify all relevant methodological choices, including:
- (a) Where the applied methodologies and, where applicable, the applied standardized baselines include different scenarios or cases, indicate and justify which scenario or case applies to the Project Activity;
 - (b) Where the applied methodologies and, where applicable, the applied standardized baselines allow different default values, indicate and justify which default value has been chosen for the Project Activity.

Note: For Type A1, A2 and A3 projects, this section requires new information. For both Type B1 and B2 projects, the same information is required as provided in the registered CDM PDD. This section shall provide information as per the guidance provided in the General Instructions section in paragraph 7, above.

B.6.2 Data and parameters fixed *ex ante*

38. Include a compilation of information on the data and parameters that are not monitored during the crediting period of the Project Activity but are determined prior to registration of the Project Activity and that remain fixed throughout the crediting period. Do not include data that will only become available upon implementation of the Project Activity (e.g., measurements taken after Project Activity implementation begins). Such data shall be included in section **Error! Reference source not found.**
39. The compilation of information may include data that are measured or sampled, and data that are collected from other sources (e.g., official statistics, expert judgment, proprietary data, the IPCC, commercial and scientific literature, etc.). Do not include data that are calculated applying equations provided in the applied methodology(ies) or default values specified in the methodology(ies) in the compilation.
40. For each piece of data or parameter, complete the table following the instructions below:
- (a) Value(s) applied: provide the value applied. Where a time series of data is used, where several measurements are undertaken or where surveys have been conducted, provide detailed information in **Error! Reference source not found.** To report multiple values referring to the same data or parameter, use one table. If necessary, use references to spreadsheets;

- (b) Source of data: indicate and justify the choice of data source. Provide clear and valid references and, where applicable, additional documentation in **Error! Reference source not found.**;
- (c) Measurement methods and procedures: where values are based on measurement, include a description of the measurement methods and procedures applied (e.g., which standards have been used), indicate the responsible person/entity that undertook the measurement, the measurement date and the measurement results. More detailed information can be provided in **Error! Reference source not found.**;
- (d) Purpose of data: choose one of the following:
 - (i) Calculation of baseline emissions;
 - (ii) Calculation of project emissions;
 - (iii) Calculation of leakage.

Note: For Type A1, A2 and A3 projects, this section requires new information. For both Type B1 and B2 projects, the same information is required as provided in the registered CDM PDD. This section shall provide information as per the guidance provided in the General Instructions section in paragraph 7, above.

B.6.3. Ex-ante calculation of emission reductions

- 41. Provide a transparent ex-ante calculation of baseline emissions, project emissions (or, where applicable, direct calculation of emission reductions) and leakage emissions expected during the crediting period of the Project Activity, applying all relevant equations provided in the applied methodology(ies) and, where applicable, the applied standardized baseline. For data or parameters available before the registration of the Project Activity, use values contained in the table in section **Error! Reference source not found.**
- 42. For data or parameters not available before the registration of the Project Activity and monitored during the crediting period of the Project Activity, use estimates contained in the table in section B.7.1 . If any of these estimates has been determined using a sampling approach, provide a description of the sampling efforts undertaken in accordance with the “CDM Standard: Sampling and surveys for CDM project activities and programme of activities.”
- 43. Document how each equation is applied, in a manner that enables the reader to reproduce the calculation. Where relevant, provide additional background information and/or data in **Error! Reference source not found.**, including relevant spreadsheets.
- 44. Provide a sample calculation for each equation used.

Note: For Type A1, A2 and A3 projects, this section requires new information. For both Type B1 and B2 type projects, the same information is required as provided in the registered CDM PDD. This section shall provide information as per the guidance provided in the General Instructions section in paragraph 7, above.

B.6.4. Summary of ex-ante estimates of emission reductions

45. Summarize the results of the ex-ante calculation of emission reductions for all years of the crediting period of the Project Activity, using the table in the form.

Note: For Type A1, A2 and A3 projects, this section requires new information. For both Type B1 and B2 projects, the same information is required as provided in the registered CDM PDD. This section shall provide information as per the guidance provided in the General Instructions section in paragraph 7, above.

B.7. Monitoring plan

46. In sections **Error! Reference source not found.** through **Error! Reference source not found.**, provide a detailed description of the monitoring plan for the Project Activity developed in accordance with the applicable provisions in the Project Standard, the applied methodology(ies) and, where applicable, the applied standardized baseline.

Note: For Type A1, A2 and A3 projects, this section requires new information. For both Type B1 and B2 projects, the same information is required as provided in the registered CDM PDD. This section shall provide information as per the guidance provided in the General Instructions section in paragraph 7, above.

B.7.1. Data and parameters to be monitored ex-post

47. Include specific information on how the data and parameters that need to be monitored in accordance with the applied methodology(ies), tools and, where applicable, the applied standardized baseline will be collected during monitoring. Include here data and parameters that are determined only after the implementation of the Project Activity begins.

48. For each piece of data or parameter, complete the table following the instructions below:

- (a) Source of data: indicate the source(s) of data that will be used for the Project Activity (e.g., records, invoices etc.). Where several sources are used, justify which data sources should be preferred;
- (b) Value(s) applied: the value applied is an estimate of the data or parameter that will be monitored during the crediting period of the Project Activity, and is used for the purpose of calculating estimated emission reductions in sections **Error! Reference source not found.** and **Error! Reference source not found.**. To report multiple values referring to the same data or parameter, use one table. If necessary, use references to spreadsheets;
- (c) Measurement methods and procedures: where data or parameters are to be monitored, specify the measurement methods, details of measuring instruments and procedures, standards to be applied, accuracy of the measurements, person/entity responsible for the measurements, and, in case of periodic measurements, the measurement intervals;
- (d) QA/QC procedures: describe the Quality Assurance (QA)/Quality Control (QC) procedures to be applied, including calibration procedures where applicable;

(e) Purpose of data: choose one of the following:

- (i) Calculation of baseline emissions;
- (ii) Calculation of project emissions;
- (iii) Calculation of leakage emissions.

49. Provide any relevant further background documentation in **Error! Reference source not found..**

Note: For Type A1, A2 and A3 projects, this section requires new information. For both Type B1 and B2 projects, the same information is required as provided in the registered CDM PDD. This section shall provide information as per the guidance provided in the General Instructions section in paragraph 7, above.

B.7.2 Data and parameters to be monitored for E+/S+ assessments and SDG labels

50. The aim of Do-No-Harm Residual Risk Assessments is to re-evaluate risks to determine the severity of environmental and social impacts and the mechanism to demonstrate that the impact remains within legal/regulatory/corporate limits or they result in positively impacting the environment or society. In case of projects which may have “harmful” impact the assessment helps to put in place risk mitigation plan and identification of residual risks.

51. Describe the monitoring approach and the monitoring parameters corresponding to each impact that has been identified as either harmless or harmful, as per Table 3 of the Environment and Social Safeguards Standard.

Note: For Type A1, A2 and A3 projects, that wish to apply for the *E+* and/or *S+* label, this section requires new information. Information shall be provided as per the guidance provided in the General Instructions section in paragraph 7, above.

B.7.3. Sampling plan

52. If data and parameters to be monitored in section **Error! Reference source not found.** are to be determined by a sampling approach, provide a description of the sampling plan in accordance with the recommended outline for a sampling plan in the “CDM Standard: Sampling and surveys for CDM project activities and programme of activities.”

Note: For Type A1, A2 and A3 projects, this section requires new information. For both Type B1 and B2 projects, the same information is required as provided in the registered CDM PDD. This section shall provide information as per the guidance provided in the General Instructions section in paragraph 7, above.

B.7.4. Other monitoring plan elements

53. Describe the other elements of the monitoring plan as outlined in the Project Standard and the applied methodology(ies) and, where applicable, the applied standardized baseline, including the

operational and management structure for monitoring, provisions for data archiving, and responsibilities and institutional arrangements for data collection and archiving.

54. Provide any relevant further background information in **Error! Reference source not found.**

Note: For Type A1, A2 and A3 projects , this section requires new information. For both Type B1 and B2 projects, same information is required as provided in the registered CDM PDD. This section shall provide information as per the guidance provided in the General Instructions section in paragraph 7, above.

Section C. Start date, crediting period type and duration

C.1. Project Activity start date

55. State the start date of the Project Activity in the format of dd/mm/yyyy

56. Describe how the start date has been determined in accordance with the start date definition provided in the Project Standard and provide evidence to support this date.

Note: For Type A1, A2 and A3 projects) , this section requires new information. This section shall provide information as per the guidance provided in the General Instructions section in paragraph 7, above.

C.2. Expected operational lifetime of the Project Activity

57. State the expected operational lifetime of the Project Activity in years and months.

Note: For Type A1, A2 and A3 projects this section requires new information. For both Type B1 and B2 projects, the same information is required as provided in the registered CDM PDD. This section shall provide information as per the guidance provided in the General Instructions section in paragraph 7, above.

C.3. Crediting period of the GCC Project Activity

C3.1. Start date and end date of crediting period

58. State the start date and the end date of the crediting period of the Project Activity in the format of dd/mm/yyyy. Do not attach any qualifications to the start date, such as “expected.”

Note: For Type A1, A2 and A3 projects , this section requires new information. This section shall provide information as per the guidance provided in the General Instructions section in paragraph 7, above.

C3.2. Duration of crediting period

Specify the duration of crediting period in years and months format.

Note: For Type A1, A2 and A3 projects), this section requires new information. This section shall provide information as per the guidance provided in the General Instructions section in paragraph 7, above.

Section D. Environmental impacts

59. If the Project Owner(s) opt to implement Environmental and Social Safeguards, then this information will be provided in section E of this document. A summary may be provided here.

D.1. Analysis of environmental impacts

60. Provide a summary of the analysis of the environmental impacts of the Project Activity, including transboundary impacts, and provide references to all related documentation. The section to include a summary of the assessment of the aspects presented as applicable to the project in sections E.1 and E.2 of the PSF.

Note: For Type A1, A2 and A3 projects, this section requires new information. For both Type B1 and B2 projects, the same information is required as provided in the registered CDM PDD. This section shall provide information as per the guidance provided in the General Instructions section in paragraph 7, above.

D.2. Environmental impact assessment

61. Where relevant, provide a copy of the Environmental Impact Assessment (EIA) or provide evidence that an EIA is not required.

62. If an environmental impact assessment is carried out in accordance with the applicable provisions of host country requirements, provide conclusions and references to all related documentation. If an environmental impact assessment is not carried out, indicate "Not applicable" and provide a justification.

Note: For Type A1, A2 and A3 projects, this section requires new information. For both Type B1 and B2 projects, the same information is required as provided in the registered CDM PDD. This section shall provide information as per the guidance provided in the General Instructions section in paragraph 7, above.

Section E. Environmental and Social Safeguards

63. This section is optional and voluntary and provides an opportunity to submit information for those GCC Projects which, in addition to reducing greenhouse gases (GHG), voluntarily intend to ensure that their Project Activity does not cause any net harm to the environment and society. This option provides an opportunity to demonstrate this achievement by obtaining additional certification labels: the Environmental No-net-harm (*E+*) label and the Social No-net-harm (*S+*) label.

64. If the Project Owner(s) select this option, they shall indicate their choice in this form and apply the requirements provided in the Environment and Social Safeguards Standard.

Note: For all project Types (A1, A2, A3, B1) that wish to apply for the *E+* and/or *S+* label, this section requires new information. Information shall be provided as per the guidance provided in the General Instructions section in paragraph 7, above.

E.1. Environmental Safeguards

65. The Project Owner(s) shall design and define its plan for identifying and mitigating or eliminating the environmental impacts that may be caused due to the Project Activity in this form, as per Table 1(a) of the Environment and Social Safeguards Standard.

Note: For all project Types (A1, A2, A3, B1) that wish to apply for the *E+* label, this section requires new information. Information shall be provided as per the guidance provided in the General Instructions section in paragraph 7, above.

E.2. Social Safeguards

66. The Project Owner shall design and define its plan for identifying and mitigating or eliminating the social impacts that may be caused as a result of the construction and operation of the Project Activity in this form, as per Table 1(a) of the Environment and Social Safeguards Standard.

Note: For all project Types (A1, A2, A3, B1) that wish to apply for the *S+* label, this section requires new information. Information shall be provided as per the guidance provided in the General Instructions section in paragraph 7, above.

Section F. United Nations Sustainable Development Goals (SDG)

67. This section is optional and voluntary and provides an opportunity to submit information for those GCC Projects which, in addition to reducing greenhouse gases (GHG), voluntarily intend to ensure that their Project Activity demonstrates a given level of contribution towards achieving the United Nations Sustainability Development Goals (SDGs), and provides an opportunity to demonstrate this achievement by obtaining an additional certification label: the *SDG+* label (Bronze, Silver, Gold, Platinum, or Diamond).

68. If the Project Owner(s) select this option, they shall indicate their choice in this form and apply the requirements mentioned in the Project Sustainability Standard.

69. The project owner shall design and define its Project Level SDGs, Targets and Indicators in this form, as per the Table 1 of the Project Sustainability Standard.

Note: For all project Types (A1, A2, A3, B1) that wish to apply for the *SDG+* label, this section requires new information. Information shall be provided as per the guidance provided in the General Instructions section in paragraph 7, above.

Section G. Local stakeholder consultation

G.1. Modalities for conducting local stakeholder consultations

70. If there are host country rules regarding local stakeholder consultations that are applicable to the Project Activity, provide a summary of the consultations carried out in compliance with the host country rules, including the direct positive and negative impacts identified and how the negative impacts identified will be addressed. If such host country rules do not exist, follow the instructions in paragraphs 71 through 74, below.

71. Describe the local stakeholder consultation process undertaken for the Project Activity and demonstrate how the process complies with the relevant requirements in the GCC rules regarding:
- (a) The scope of local stakeholder consultation;
 - (b) The minimum group of stakeholders to be involved;
 - (c) The means for inviting stakeholders' participation;
 - (d) The information to be made available to stakeholders specifically wrt. E+/S+ performance and SDG impacts due to the project.
 - (e) The consultation(s) conducted.
72. For 72 (b) above, provide evidence that invitations were sent to the relevant stakeholders and that their comments were invited. If any of the relevant stakeholders were not invited, provide an appropriate justification.
73. For 72 (c) above, describe the steps/actions taken to invite comments, taking into account local and national circumstances.

Note: For all project Types (A1, A2, A3, B1) this section requires new information. For both Type B1 and B2 type projects, additional information than that required in the registered CDM PDD may be required. For all project Types (A1, A2, A3, B1) that wish to apply for the *E+*, *S+*, and/or *SDG+* label, this section requires new and additional information. This section shall provide information as per the guidance provided in the General Instructions section in paragraph 7, above.

G.2. Summary of comments received

74. Prepare a summary report of the comments received during the local stakeholder consultation and attach the report as **Error! Reference source not found.**
75. Provide an executive summary of the comments in this section.
76. Describe complaints from local stakeholders, if any, submitted to the competent authority of the host country and forwarded through the GCC Verifier on the handling of the outcome of the local stakeholder consultation.

Note: For all project Types (A1, A2, A3, B1) , this section requires new information. For both Type B1 and B2 projects, additional information than that required in the registered CDM PDD may be required. For project Types (A1, A2, B1) that wish to apply for the *E+*, *S+* and/or *SDG+* label, this section requires new and additional information. This section shall provide information as per the guidance provided in the General Instructions section in paragraph 7, above.

G.3. Consideration of comments received

77. Describe how the comments and, where applicable, complaints provided by local stakeholders have been taken into account in this form or in a revised PSF, including a justification if any comments were not incorporated.

Note: For all project Types (A1, A2, A3, B1) , this section requires new information. For both Type B1 and B2 projects, additional information than that required in the registered CDM PDD may be required. For project Types (A1, A2, B1) that wish to apply for the *E+*, *S+* and/or *SDG+* label, this section requires new and additional information. This section shall provide information as per the guidance provided in the General Instructions section in paragraph 7, above.

Section H. Approval and authorization

78. Where applicable, indicate whether any host-country clearance is required and has been received from the host country of the project, at the time of submitting the PSF to the GCC. If so, provide the relevant document that demonstrates that the host country has provided the clearance to the Project Owner(s).

Note: For all project Types (A1, A2, A3, B1, B2), this section requires new information. This section shall provide information as per the guidance provided in the General Instructions section in paragraph 7, above.

Appendix 1. Contact information of the Project Owner(s)

79. Complete the table for each Project Owner listed in section A.4 in line with details provided in the LOA/LON. Copy and paste the table as needed.

Appendix 2. Affirmation regarding public funding

80. If applicable, attach the affirmation obtained from the entity providing public funding for the Project Activity.

Appendix 3. Applicability of methodology(ies)

81. Provide any further background information on the applicability of the selected methodology(ies) and, where applicable, the selected standardized baseline.

Appendix 4. Further background information on ex-ante calculation of emission reductions

82. Provide any further background information on the ex-ante calculation of emission reductions. This may include data, measurement results, data sources, etc.

Appendix 5. Further background information on the monitoring plan

83. Provide any further background information used when developing the monitoring plan. This may include tables with time series data, additional documentation of measurement equipment, procedures, etc.

Appendix 6. Summary report of comments received from local stakeholders

84. Provide a summary report of the comments received from local stakeholders on the Project Activity during and, if any, after the local stakeholder consultation. In the report, also identify stakeholders who have made comments, including comments forwarded by the host country (if applicable) where project is located.

Appendix 7. Summary of other Program de-registered project (Type B)

85. For Type B projects, provide a summary of information regarding the de-registered project as detailed below:

- (a) Project registration number with other Program;
- (b) Date of registration of the Project;
- (c) Title of the Project Activity;
- (d) Project de-registration reference number;
- (e) Date of de-registration of the Project;
- (f) Project Participants (authorized by the host / annex 1 country letter of approval);
- (g) Country where project is located;
- (h) Applied methodology(ies) (provide reference and version number(s));
- (i) Pre-registration changes to the Project Activity;
- (j) Post-registration changes to the Project Activity;
- (k) Crediting Periods;
- (l) Details of previous requests for issuance;
- (m) List of any open issues in the Validation and last Verification Report (e.g., FARs, if any) and how they have been addressed;
- (n) Any other information that you wish to provide that would be necessary or has not been reported in the registered project documents and that may have an adverse impact on the environmental integrity of the Project Activity; and
- (o) A list of all of the registered documents related to this project as available on other Program website and the corresponding URLs.

Appendix 8. Further information on determination of bundle in project activity

86. Provide any further background information used when determining homogenous bundles in bundled project activities. This has to be done in with the line with the procedure clarified under Clarification No. 01.

Appendix 9. Public declaration for A2 (sub type 2 and 3), B1 & B2 projects on non-continuation from CDM/GHG/NON-GHG programs

87. If deregistration from CDM/ or under article 6.4 or any Program is not feasible/possible, submit a signed & stamped public undertaking, which states that the Project Owner will never submit any request for Issuance or request for renewal of crediting period to CDM - EB or under article 6.4 or any authority after submission to GCC Program.

DOCUMENT HISTORY

Version	Date	Comment
V 4.0	27/09/2022	<ul style="list-style-type: none"> ▪ Revised version released on approval by Steering Committee as per GCC Program Process; ▪ Revised version contains following changes: <ul style="list-style-type: none"> ○ Introduced A3 type projects A2 project sub-types; ○ Included revised Declaration by the 'Authorized Project Owner and focal point' on GCC requirements; ○ Included modified format for E+/S+/ SDG assessment; ○ Revised instructions for filling in the PSF; ○ Editorial changes to the document.
V 3.2	31/12/2020	<ul style="list-style-type: none"> ▪ The name of GCC Program's emission units has been changed from "Approved Carbon Reductions" or ACRs to "Approved Carbon Credits" or ACCs.
V 3.1	17/08/2020	<ul style="list-style-type: none"> ▪ Editorial revisions made <ul style="list-style-type: none"> ○ Revised Table in section B.7.2 on Monitoring-program of risk management actions ○ Revised Table in section E.1 on Environmental Safeguards ○ Revised Table in section E.1 on Social Safeguards ○ Revised Table in section F on United Nations Sustainable Development Goals (SDG)
V 3.0	05/07/2020	<ul style="list-style-type: none"> ▪ Revised version released on approval by Steering Committee as per GCC Program Process; ▪ Revised version contains following changes: <ul style="list-style-type: none"> ○ Change of name from Global Carbon Trust (GCT) to Global Carbon Council (GCC); ○ Considered and addressed comments raised by Steering Committee: <ul style="list-style-type: none"> ➤ during physical meeting (SCM 01, dated 29 Oct 2019, Doha Qatar); and ➤ electronic consultations EC01-Round 01 (15.09.2019 – 25.09.2019), EC01-Round 02 (27.03.2020 – 27.06.2020). ○ Feedback from Technical Advisory Board (TAB) of ICAO on GCC submission for

		approval under CORSIA ²² ;
V 2.0	25/06/2019	<ul style="list-style-type: none"> ▪ Revised version released for approval by the GCC Steering Committee. ▪ Revised version includes additional details and instructions on the information to be provided, consequent to the latest developments world-wide (e.g., CORSIA EUC).
V 1.0	01/11/2016	Initial version released under the GCC Program Version 1

²²See ICAO recommendation for conditional approval of GCC at https://www.icao.int/environmental-protection/CORSIA/Documents/TAB/Excerpt_TAB_Report_Jan_2020_final.pdf

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