

المجلس العالمي للبصمة الكربونية
GLOBAL CARBON COUNCIL



**Project
Submission
Form**

V4.0- 2022

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COVER PAGE- Project Submission Form (PSF)																								
<i>Complete this form in accordance with the instructions attached at the end of this form.</i>																								
BASIC INFORMATION																								
Title of the Project Activity as per LON/LOA	Solar Power Project in Andhra Pradesh, India by UEPL																							
PSF version number	02																							
Date of completion / Updating of this form	15/12/2022																							
Project Owner(s) as per LON/LOA <small>(Shall be consistent with De-registered CDM Type B Projects)</small>	Ushodaya Enterprises Private Limited																							
Country where the Project Activity is located	India																							
GPS coordinates of the project site(s)	<table border="1"> <thead> <tr> <th>S.No.</th> <th>Name of the Project Proponent</th> <th>Latitude</th> <th>Longitude</th> <th>Latitude (Decimal)</th> <th>Longitude (Decimal)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Ushodaya Enterprises</td> <td>14°33' 59.0" N</td> <td>77°50'30.3" E</td> <td>14.5608 N</td> <td>77.8417 E</td> </tr> <tr> <td>2</td> <td>Private Limited</td> <td>14°32' 03.5" N</td> <td>77°48'40.9" E</td> <td>14.5343 N</td> <td>77.8113 E</td> </tr> </tbody> </table>						S.No.	Name of the Project Proponent	Latitude	Longitude	Latitude (Decimal)	Longitude (Decimal)	1	Ushodaya Enterprises	14°33' 59.0" N	77°50'30.3" E	14.5608 N	77.8417 E	2	Private Limited	14°32' 03.5" N	77°48'40.9" E	14.5343 N	77.8113 E
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2	Private Limited	14°32' 03.5" N	77°48'40.9" E	14.5343 N	77.8113 E																			
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>	AMS-I.D: Grid connected renewable electricity generation --- Version. 18
GHG Sectoral scope(s) linked to the applied methodology(ies)	GHG-SS 1- Energy Industries (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		Reference	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	31/12/2020	03.1	
	<input type="checkbox"/> Approved GCC Methodology (XXXXX)			
	<input checked="" type="checkbox"/> Program Definitions	31/12/2020	03.1	
	<input checked="" type="checkbox"/> Environment and Social Safeguards Standard	17/08/2020	03	
	<input checked="" type="checkbox"/> Project Sustainability Standard	31/12/2020	03	
	<input checked="" type="checkbox"/> Instructions in Project Submission Form (PSF)-template	31/12/2020	04	
	<input checked="" type="checkbox"/> Clarification No. 01	02/01/2022	1.1	
	<input type="checkbox"/> Clarification No. 02			
	<input type="checkbox"/> Clarification No. 03			
	<input type="checkbox"/> Clarification No. 04			
	<input type="checkbox"/> Clarification No. 05			
	<input type="checkbox"/> Standard on avoidance of double counting			
	<input type="checkbox"/> Add rows if required			
<input checked="" type="checkbox"/> CDM Rules ³	<input checked="" type="checkbox"/> Approved CDM Methodology (AMS-I.D: Grid connected renewable electricity generation)	AMS ID	18.0	
	<input type="checkbox"/> Tool for the demonstration and assessment of additionality	TOOL 1		

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

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

	<input type="checkbox"/> Combined tool to identify the baseline scenario and demonstrate additionality	TOOL 02	
	<input checked="" type="checkbox"/> Tool to calculate the emission factor for an electricity system	TOOL 07	07.0
	<input type="checkbox"/> Demonstration of additionality of microscale project activities	TOOL 19	
	<input checked="" type="checkbox"/> Demonstration of additionality of small-scale project activities	TOOL 21	13.1
	<input type="checkbox"/> Additionality of first-of-its-kind project activities	TOOL 23	
	<input type="checkbox"/> Common practice	TOOL 24	
	<input checked="" type="checkbox"/> Investment analysis	TOOL 27	11.0
	<input type="checkbox"/> Positive lists of technologies	TOOL 32	
	<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 checked="" type="checkbox"/> Platinum SDG Label <input type="checkbox"/> Diamond SDG Label		

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"/> CORSIA requirements (C ⁺) <input 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> <div style="border: 1px solid black; padding: 10px;"> <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> <ul style="list-style-type: none"> <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 <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>Specific requirements applicable to respective Project Types:</p> <p><i>For Project Type A1:</i></p> </div>

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 in 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 programs could be such as I-REC facilitating reliable energy claims with Renewable Energy Certificate (REC) schemes

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

	<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 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 Authorization - 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 type="checkbox"/> The initial submission for GSC; or</p> <p><input 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 it's 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>

	<p>Provide details (if any) below for the boxes ticked above:</p> <p>The Project Owner(s) declares that:</p> <p><input checked="" type="checkbox"/> All 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 willful 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>
<p>Appendixes 1-9</p>	<p>Details about the Project Activity are provided in Appendixes 1 through 9 to this document.</p>
<p>Name, designation, date and signature of the Focal point (as per LON/LOA)</p>	<p><i>Name and Designation:</i></p> <p><i>Signature:</i></p> <p></p> <p>Mr. G. Srinivas Chief Financial Officer and Company Secretary Ushodaya Enterprises Private Limited 16/12/2022</p> <p></p>
	<p><i>Name and Designation:</i></p> <p><i>Signature:</i></p> <p></p> <p>Mr. Niroj Kumar Mohanty Managing Director Core CarbonX Solutions Pvt Ltd 16/12/2022</p> <p></p>

1. PROJECT SUBMISSION FORM

Section A. Description of the Project Activity

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

The project activity “**Solar Power Project in Andhra Pradesh, India by UEPL**” (project) involves the installation of the following projects.

The sub-project 1 is a grid-connected solar power project being implemented by UEPL, involves the installation of 5 MW solar Power Project located in Tadimarri village of Ananthapur District of Andhra Pradesh.

The sub-project 2 is a grid-connected solar power project being implemented by UEPL, involves the installation of 5 MW solar Power Project located in Nidigallu village of Ananthapur District of Andhra Pradesh which is used for captive purposes.

All the project activities are located at sites where no renewable/solar power plant was operating prior to the implementation of the project activity (green-field power plant¹³). The generated energy is fed into the Indian National grid each one respectively. The Purpose of this project activity is to generate electricity by harnessing the solar energy by using of solar photovoltaic technology and there by feed the generated electricity to the Indian national grid. According to the section 7.12.2 of CDM project standard for project activities Ver 2.0, EB 93 the applicable type of the project is Type I – Renewable Energy Projects as the project activity is 10 MW Solar Power Plant.

The objective of the solar power project activity is to generate renewable electricity using solar photovoltaic.

Details of solar power project commissioned and operational is outlined in the table below:

No	Name of the developer	Capacity (MW)	Date of commissioning	Location	Purpose	Connectivity
1	Ushodaya Enterprises Private Limited	5	23/03/2016	Tadimarri Village and Mandal, Ananthapur District, Andhra Pradesh	3 rd Party Sale	Indian Grid
2	Ushodaya Enterprises Private Limited	5	22/09/2016	Nidigallu Village, Tadimarri Mandal, Ananthapur District, Andhra Pradesh	Captive Use	
Total Installed Capacity		10 MW				

¹³ A Greenfield power plant is defined as a new renewable energy power plant that is constructed and operated at a site where no renewable energy power plant was operated prior to the implementation of the project activity

The electricity generated from project activity (operational solar power plant) is connected to the Indian grid and used for 3rd party usage and captive use purposes which would otherwise draw the power from the grid in baseline scenario, thus replaces the feeding of equivalent amount of electricity generated from the operation of existing grid connected power plants (mostly fossil fuel based). The project activity thus reduces the anthropogenic emissions of greenhouse gases (GHGs) associated with equivalent amount of electricity generation from the existing grid connected power plants (mostly fossil fuel based) and from addition of new generation sources into the grid.

Baseline scenario as per paragraph 22 of Section 5.2.1 of applied methodology 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 described in the combined margin (CM) calculations described in “TOOL07: Tool to calculate the emission factor for an electricity system”.

The spatial extent of the project boundary includes the project power plant and all power plants connected physically to the National Grid. The Baseline scenario is that the electricity delivered to the National 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 into the grid.

The project activities are expected to generate an average of 17,192 MWh/year which will result in the average emission reductions of **15,997 tCO₂e/year**. The project activity is displacing equivalent amount of electricity from the generation-mix of power plants connected to the national grid, which is mainly dominated by thermal/fossil fuel-based power plant. The total estimated emission reductions over crediting period are **159,970 tCO₂e**.

Project’s contribution to the Sustainable Development:

Ministry of Environment, Forests and Climate Change, Govt. of India has stipulated the social well-being, economic well-being, environmental well-being and technological well-being as the four indicators for sustainable development in the host country approval eligibility criteria for Clean Development Mechanism (CDM) projects.

Social well-being

- There will be good amount of direct and indirect employment opportunities for the local people during the construction, commissioning and operation phases of the project activity.
- This project activity will also lead to development of infrastructure in this region.
- After the construction phase is over, the project activity will require workforce for the maintenance, monitoring, security etc.
- This project activity will lead to investments in the region accompanied with business and employment benefits along with the improvement of grid supply.
- The clean electricity generated by the project activity will be transmitted to the local grid which will ultimately be fed to this region. This will improve the availability of electricity in this region and will also give opportunities for the local companies to increase their production capacity. All these will ultimately improve the economic well-being of this region.

Environmental well-being

- The electricity exported by this project activity will displace the same amount of electricity generated by already operational emission intensive power plants. Thus, this will lead to reduction in greenhouse gas emission and will subsequently help in making the environment cleaner.

Technological well-being

- This project activity uses solar module made of crystalline high-power cells and hence will lead to the transfer of technology from urban region to the rural region.
- This will also enhance opportunities for big companies to set up new plants in this region

A.2. Location of the Project Activity

The project activity is located in the Ananthapur district of Andhra Pradesh state of India.

Address and geodetic coordinates of the physical site of the Project Activity				
Physical address	Latitude	Longitude	Latitude (Decimal)	Longitude (Decimal)
Tadimarri, Ananthapur, Andhra Pradesh	14°33' 59.0" N	77°50'30.3" E	14.5608 N	77.8417 E
Nidigallu, Ananthapur, Andhra Pradesh	14°32' 03.5" N	77°48'40.9" E	14.5343 N	77.8113 E



Figure 1: Project Location Andhra Pradesh, India.

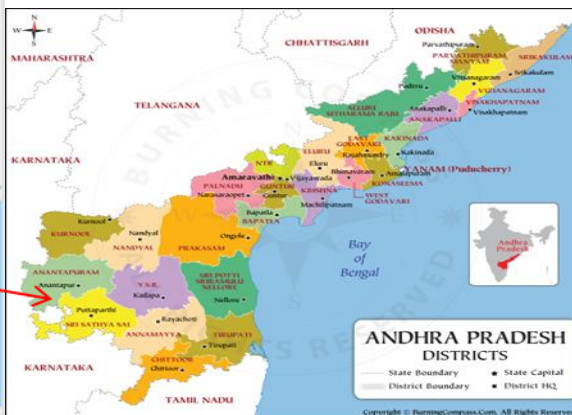


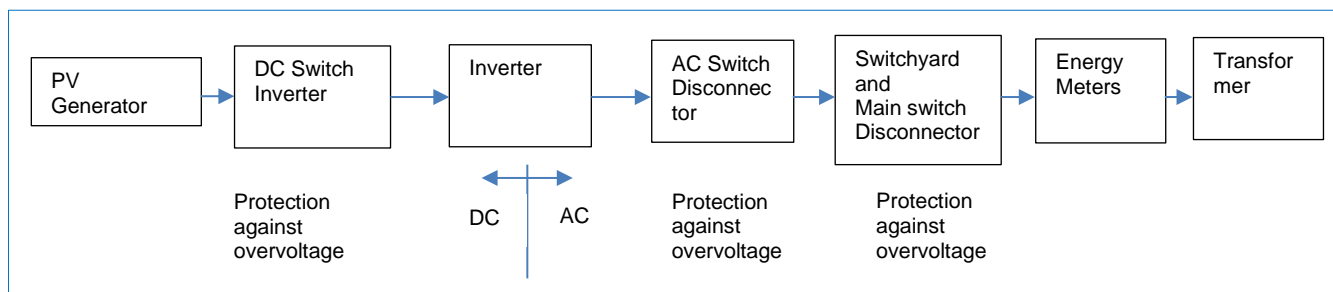
Figure2: Solar power plant Locations: Ananthapur,

A.3. Technologies/measures

The project activity involves installation of grid connected Solar PV based electricity generation units with a cumulative capacity of 10 MW. The solar PV-grid connected system produces DC power in Solar PV array (PV modules are connected in series and parallel to form an array to get the desired DC voltage and power. Modules in series, called strings, are grouped together through appropriate combiner boxes (AJB/SMU) to ensure that the inverter inputs match with the output of the combiner

boxes), converted to AC supply through inverters and step it up to an appropriate level for transmission and evacuation at the designated utility substation. The inverter/power conditioning unit extracts the maximum available power from the solar array and feeds it to the grid. If the grid voltage and/or frequency are out of the range, the PCU immediately isolates the system from the grid. Metering is carried out at solar power plant level and at utility substation level. Billing process is based on the meter installed by the utility.

The schematic of the solar power plant is presented in the figure below;



The Baseline scenario is same as the scenario existing prior to the project activity. Emission reductions will be claimed based on the net electrical energy that is supplied to grid. The metering of the electricity generated would be done at the project location using the appropriate metering devices

The standard estimated lifetime of the project activity is considered as 25 years. This may increase depending on the operation & maintenance of the plant.

The principal components of the project include the solar modules and inverters whose technical specifications are as given below for each location.

Technical details of Sub-project 1 and Sub-project 2:

Name of Sub-project	Sub-project 1	
Solar Modules	Module	
Technology type	Multi-crystalline	
Manufacturer	REC Peak Energy Series	
Model No.	REC 255PE	
Number of modules	19650	
Maximum power	255 Wp	
Voltage at P_{max} (V_m)	30.5 V	
Current at P_{max} (I_{mp})	8.42 A	
Module efficiency	15.5 %	
Open circuit voltage (V_{oc})	37.6 V	
Short circuit current (I_{sc})	8.95 A	

Name of Sub-project	Sub-project 2	
Solar Modules	Module	
Technology type	Multi-crystalline	
Manufacturer	REC Peak Energy Series	
Model No.	REC 255PE	REC 260PE

Number of modules	19275	21
Maximum power	255 Wp	260 Wp
Voltage at P_{max} (V_m)	30.5 V	30.7 V
Current at P_{max} (I_{mp})	8.42 A	8.50 A
Module efficiency	15.5 %	15.8 %
Open circuit voltage (V_{oc})	37.6 V	37.8 V
Short circuit current (I_{sc})	8.95 A	9.01 A

Inverters	Sub-project 1 and Sub-project 2
Manufacturer	TMEIC Industrial Systems India Private Limited
Model No.	PVL-I1000E
Maximum DC Voltage	1000 Vdc
Nominal AC output power	100 kW/ 100 kVA
Nominal AC voltage	380 Vac, 3-phase
Nominal AC Current	1519 A
Power Factor Range	+/- 0.85
Rated Power Factor	Over 0.99

A.4. Project Owner(s)

Location/ Country	Project Owner(s)	Where applicable ¹⁴ , indicate if the host country has provided approval (Yes/No)
India	Ushodaya Enterprises Private Limited	Not Applicable

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		
23/03/2016 ¹⁵	22/03/2026	Ushodaya Enterprises Private Limited	15,997 tCO ₂ e/ annum

¹⁴ 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).

¹⁵ The start date is considered to be the earliest date of commissioning among the two project activities. Hence 23/03/2016 which is the earliest commissioning date is taken as the start date of the project activity.

The project activity neither registered nor seeking registration in any carbon offsetting program; Hence the approved carbon credits (ACCs) from this project activity shall not be double counted.

A.6. Additional requirements for CORSIA

Please refer to section E (for details on compliance to the Environment and Social Safeguards Standard) and F (for details on compliance to the Project Sustainability Standard to ensure that the Project Activity demonstrates the level of contribution towards achieving the United Nations Sustainability Development Goals (SDGs).

Section B. Application of selected methodology(ies)

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

Methodology used:

Type: Type I – Renewable Energy Projects
 Methodology: AMS I.D. - Grid connected renewable electricity generation¹⁶
 Version: Version 18

Tools used:

1. Tool 01: Tool for the demonstration and assessment of additionality - Version 7.0.0¹⁷
2. Tool 07: Tool to calculate the emission factor for an electricity system', Version 7.0¹⁸
3. Tool 21: Demonstration of additionality of small-scale project activities --- Version 13.1¹⁹
4. Tool 27: Investment analysis – Version 11.0²⁰

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

The project activity is a green field grid interactive solar power project with cumulative capacity of 10 MW. Since the project is a small-scale project activity therefore small-scale methodology AMS-I. D - Grid connected renewable electricity generation--- Version 18.0 is applied.

S. No.	Applicability Conditions	Justification
1	This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable	The project activity comprises of solar power (renewable energy) generation unit supplying power to a 3 rd party user and for own captives' usage via Indian National

¹⁶ https://cdm.unfccc.int/filestorage/2/P/7/2P7FS6ZQAR84LG3NMKYUH50WI9ODBC/EB81_repan24_AMS-I.D_ver18.pdf?t=YVp8cmNqM3EzfDA2Ypz_TcVsbjVI2CMHZbrS

¹⁷ <https://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-01-v7.0.0.pdf>

¹⁸ <https://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-07-v7.0.pdf>

¹⁹ <https://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-21-v13.1.pdf>

²⁰ <https://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-27-v11.0.pdf>

	<p>biomass:²¹ (a) Supplying electricity to a national or a regional grid; or (b) Supplying electricity to an identified consumer facility via national/regional grid through a contractual arrangement such as wheeling.</p>	<p>Grid through a contractual wheeling agreement. Hence, this condition is satisfied.</p>
2	<p>Illustration of respective situations under which each of the methodology (i.e. AMS-I.D, AMS-I.F and AMS-I.A²²) applies is included in Table 1.</p>	<p>The project activity falls under point number 1 of the project category as mentioned in the table 1 of AMS ID version 18.</p>
4	<p>This methodology is applicable to project activities that: (a) Install a Greenfield plant; (b) Involve a capacity addition in (an) existing plant(s); (c) Involve a retrofit of (an) existing plant(s); (d) Involve a rehabilitation of (an) existing plant(s)/unit(s); or (e) Involve a replacement of (an) existing plant(s)</p>	<p>The project activity involves construction and operation of grid-connected solar power (renewable energy) project at a site where no renewable energy power plant was operated prior to the implementation of the project activity and therefore a “green field power project” as per the definition of the methodology and hence complies with the applicability condition (4.a). Hence the project activity meets the applicability condition of the methodology</p>
5	<p>Hydro power plants with reservoirs²³ that satisfy at least one of the following conditions are eligible to apply this methodology:</p> <ul style="list-style-type: none"> • The project activity is implemented in an existing reservoir with no change in the volume of reservoir; • The project activity is implemented in an existing reservoir²⁴, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the project emissions section, is greater than 4 W/m²; • The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the project emissions section, is greater than 4 W/m². 	<p>This is not applicable, as the given project activity doesn't involve the installation of hydro power plant.</p>

²¹Refer to EB 23, annex 18 or the definition of renewable biomass.

²² AMS-I.D “Grid connected renewable electricity generation”, AMS-I.F “Renewable electricity generation for captive use and mini-grid” and AMS-I.A “Electricity generation by the user”

²³A reservoir is a water body created in valleys to store water generally made by the construction of a dam.

²⁴A reservoir is to be considered as an “existing reservoir” if it has been in operation for at least three years before the implementation of the project activity.

6	If the new unit has both renewable and non-renewable components (e.g. a wind/diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component. If the new unit co-fires fossil fuel, ²⁵ the capacity of the entire unit shall not exceed the limit of 15 MW.	The project activity generates electricity from solar energy which is renewable source of energy; hence this condition is not applicable.
7	Combined heat and power (co-generation) systems are not eligible under this category.	The project activity doesn't involve co-generation; hence this condition is not applicable.
8	In the case of project activities that involve the addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct ²⁶ from the existing units.	The projects activity do not involve the addition of renewable energy generation units at an existing renewable power generation facility; hence this condition is not applicable.
9	In the case of retrofit or replacement, to qualify as a small-scale project, the total output of the retrofitted or replacement unit shall not exceed the limit of 15 MW.	The project activity doesn't retrofit or replace an existing facility; hence this condition is not applicable.
10	In the case of landfill gas, waste gas, wastewater treatment and agro-industries projects, recovered methane emissions are eligible under a relevant Type III category. If the recovered methane is used for electricity generation for supply to a grid, then the baseline for the electricity component shall be in accordance with procedure prescribed under this methodology. If the recovered methane is used for heat generation or cogeneration other applicable Type-I methodologies such as "AMS-I.C.: Thermal energy production with or without electricity" shall be explored.	The project activity does not involve landfill gas, waste gas, wastewater treatment and agro-industries projects, recovered methane emissions, hence this condition is not applicable
11	In case biomass is sourced from dedicated plantations, the applicability criteria in the tool "Project emissions from cultivation of biomass" shall apply.	The project activity does not involve biomass is sourced from dedicated plantations; hence this condition is not applicable.

Applicability Conditions	Justification of eligibility
Tool 07: Tool to calculate the emission factor for an electricity system (Version 07.0)	

²⁵A co-fired system uses both fossil and renewable fuels, for example the simultaneous combustion of both biomass residues and fossil fuels in a single boiler. Fossil fuel may be used during a period of time when the biomass is not available and due justifications are provided.

²⁶Physically distinct units are those that are capable of generating electricity without the operation of existing units, and that do not directly affect the mechanical, thermal, or electrical characteristics of the existing facility. For example, the addition of a steam turbine to an existing combustion turbine to create a combined cycle unit would not be considered "physically distinct".

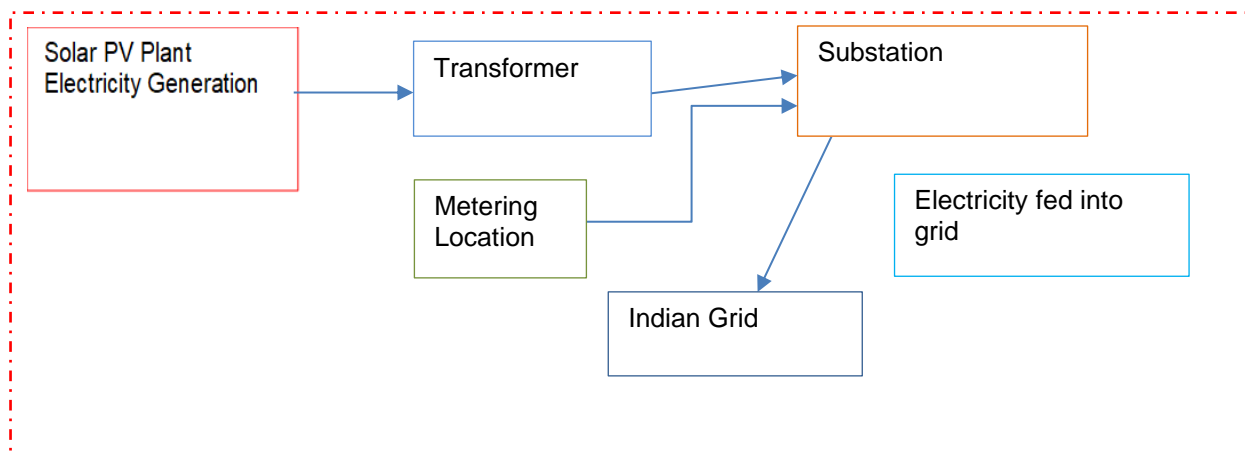
<p>This tool may be applied to estimate the OM, BM and/or CM when calculating baseline emissions for a project activity that substitutes grid electricity that is where a project activity supplies electricity to a grid or a project activity that results in savings of electricity that would have been provided by the grid (e.g. demand-side energy efficiency projects).</p>	<p>This condition of applicable, OM, BM and CM are estimated using this tool (under section B.6.1) for calculating of the baseline emission.</p>
<p>Under this tool, the emission factor for the project electricity system can be calculated either for grid power plants only or, as an option, can include off-grid power plants. In the latter case, two sub-options under the step 2 of the tool are available to the project participants, i.e. option II a and option IIb. If option II a is chosen, the conditions specified in “Appendix 1: Procedures related to off-grid power generation” should be met. Namely, the total capacity of off-grid power plants (in MW) should be at least 10 per cent of the total capacity of grid power plants in the electricity system; or the total electricity generation by off-grid power plants (in MWh) should be at least 10 per cent of the total electricity generation by grid power plants in the electricity system; and that factors which negatively affect the reliability and stability of the grid are primarily due to constraints in generation and not to other aspects such as transmission capacity</p>	<p>Since the project activity is grid connected, the condition is applicable and emission factor has been calculated accordingly.</p>
<p>In case of CDM projects the tool is not applicable if the project electricity system is located partially or totally in an Annex I country.</p>	<p>The project activity is located in India, a Non-Annex I country. Therefore, this condition is not applicable to the project activity</p>
<p>Under this tool, the value applied to the CO2 emission factor of biofuels is zero.</p>	<p>The project activity is a green field solar power plant and hence the condition of biofuel emission factor is not applicable.</p>

This comparison shows clearly that AMS-I.D is applicable to the project activity.

1. Compliance to applicability conditions of Methodological Tool “Tool for the demonstration and assessment of additionality - Version 7.0.0 is demonstrated in section B.5
2. Compliance to applicability conditions of Methodological Tool Investment analysis - Version 11.0 is demonstrated in section B.5
3. Compliance to applicability conditions of Methodological Tool “Demonstration of additionality of small-scale project activities – Version 13.1 is demonstrated in section B.5

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

According to the methodology, AMS ID, Version 18, “The spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system²⁷ that the CDM project power plant is connected to.” The project activity supplies/displaces electricity to the Indian grid and hence project boundary encompasses the project activity, the physical extent of the electricity system (Indian), and all other power plants connected physically to the electricity system



¹ Refer to the latest approved version of the “Tool to calculate the emission factor for an electricity system” for definition of an electricity system.

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	Baseline: CO ₂ emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity.	CO ₂	Yes	Major Source of emissions
		CH ₄	No	Minor source of emissions and limited data available. Exclusion is conservative assumption.
		N ₂ O	No	Minor source of emissions and limited data available. Exclusion is conservative assumption.
Project Activity	Project Activity: generation of electricity from solar power plants	CO ₂	No	Electricity generation from renewable power project involving solar does not incur any emission
		CH ₄	No	Electricity generation from renewable power project involving solar does not incur any emission
		N ₂ O	No	Electricity generation from renewable power project involving solar does not incur any emission

²⁷ Refer to the latest approved version of the “Tool to calculate the emission factor for an electricity system” for definition of an electricity system.

B.4. Establishment and description of the baseline scenario

As per the small scale methodology AMS-I.D- Grid connected renewable electricity generation (Version 18.0) para 19: “Baseline scenario for Greenfield power plant - The baseline scenario is that the 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 into the grid., as reflected in the combined margin (CM) calculations described in the “Tool to calculate the emission factor for an electricity system (Version 07.0)”.

The project activity involves setting up of solar power projects to harness the renewable energy (solar energy) resource to produce electricity and supply it to the grid. In the absence of the project activity, the equivalent amount of power would have generated by the operation of grid connected power plants and by the addition of new generation sources. Hence, the baseline for the project activity is the equivalent amount of power of the Indian grid that are displaced due to the project activity.

The combined margin ($EF_{\text{grid, CM,y}}$) 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 17.0 is the latest available data at the time of PSF submission to GCC verifier for verification, hence same is considered for emission factor calculations.

The combined margin of the Indian grid used for the project activity is as follows:

Parameter	Value	Nomenclature	Source
EF grid, CM,y	0.9305 tCO ₂ e/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, October 2021 published by Central Electricity Authority (CEA), Government of India
EF grid, OM,y	0.9522 tCO ₂ e/MWh	Operating margin CO ₂ emission factor for the project electricity system in year y	Calculated as the last 3-year (2018- 19, 2019-20, 2020-21) generation weighted average, sourced from Baseline CO ₂ Emission Database, Version 17.0, October 2021 published

			by Central Electricity Authority (CEA), Government of India
EF grid, BM,y	0.8653 tCO ₂ e/MWh	Build margin CO ₂ emission factor for the project electricity system in year y	Baseline CO ₂ Emission Database, Version 17.0, October 2021 published by Central Electricity Authority (CEA), Government of India

During the implementation of the project activity, the relevant national and/or sectoral policies, regulations and circumstances are taken into account.

- Implementation of solar PV based power generation unit for electricity generation is not mandatory under any law in India; the project activity is thus a voluntary action.
- Despite the gradual increase in renewable energy sources (including solar energy) in power sector, still about two-third of installed power generation capacity is based on fossil-fuel based energy sources, hence the electricity grid is fed by electricity generated predominantly in fossil fuel-based power plants.
- Solar PV based power plants belong to white category as per Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India and are exempted from Environmental Impact Assessment (EIA).

B.5. Demonstration of additionality

The additionality of a GCC Project shall be demonstrated by applying the following approach, consisting of two components:

- (i) A Legal Requirement Test; and
- (ii) An Additionality Test either based on a Positive List test or a projects-specific additionality test.

Legal Requirement Test:

The project is not mandated or enforced by law, statutes, regulations, court orders, environmental mitigation agreements, permitting conditions of other legally-binding mandates requiring its implementation and is entirely a voluntary activity. Since voluntary commitments/agreements within a sector or by an entity do not constitute the legal requirement, the project is additional as per paragraph 46 of GCC Project Standard.

Hence, the additionality is demonstrated in accordance with simplified modalities and procedures for small-scale Clean Development Mechanism (CDM) project activities, by demonstrating that the project activity would otherwise not be implemented due to the existence of one or more barrier(s) listed in Annex 4 of EB 105, "Guidelines on the demonstration of additionality of small-scale project activities", Version 13.1.

The barriers listed are as follows:

- **Investment barrier:**
- **Technological barrier:**
- **Barrier due to prevailing practice:**

- **Other barriers**

The additionality of the project activity is being established using the following barriers:

- a) Investment barrier

The investment analysis method recommends three analysis methods: simple cost analysis, investment comparison analysis and benchmark analysis. The proposed project produces economic benefits through the sales of electricity other than GCC related income; therefore, the simple cost analysis cannot be taken. The investment comparison analysis is not applicable to the proposed project because the alternative of the proposed project is "Equivalent electricity service provided by the grid", is outside the direct control of the PP.

According to the "Tool for demonstration and assessment of Additionality²⁸", 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.

Determination of appropriate analysis method:

As per Annex 4 of EB 105, the benchmark approach is suited to circumstances where the baseline does not require investment or is outside the direct control of the project developer, i.e. cases where the choice of the developer is to invest or not to invest. In the project, activity the baseline scenario is the generation of equivalent amount of electricity from the grid connected power plants.

The baseline scenario is outside the direct control of the PP. Hence, the benchmark analysis is chosen and the Project IRR is used as the financial indicator to assess the financial viability of the project activity.

Benchmark Calculation:

At the time of decision made of project activity, Version 05 of methodological tool "Investment Analysis" (EB 62, Annex 5) was the latest available tool to Project owner. However, the request for registration for Version 5 could be submitted till 23/07/2015. Hence, Project owner has used Methodological Tool for Investment Analysis version 11 (EB 112, Annex 02).

Project owner has considered the same tool for default value of return on equity for the project. The default value of Return on Equity for Group-1 projects in India is 10.55 % as per EB 112, Annex 02

According to paragraph 16 of Tool 27: Investment Analysis, Version 11.0, "In situations where an investment analysis is carried out in nominal terms and the available IRR benchmarks are in real terms, project participants shall convert the real term values of benchmarks 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 country for the duration 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."

²⁸ <https://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-21-v13.1.pdf>

The PDs have considered the inflation rate forecast as published by the IMF (International Monetary Fund World Economic Outlook)²⁹ for the calculation of benchmark.

The benchmark has been computed in the following manner:

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

Where,

Real Benchmark = Default Value, i.e., 10.55% (as per Appendix of Annex 2, EB 112)

Inflation rate = Projected Inflation Rate for India by IMF

Inflation Rates for sub-project 1:

Year	Inflation rate
2015	4.90%
2016	4.50%
2017	3.60%
2018	3.43%
2019	4.76%
Average	4.238%

Inflation Rates for sub-project 2:

Year	Inflation rate
2016	4.50%
2017	3.60%
2018	3.43%
2019	4.76%
2020	4.95%
Average	4.248%

S. No.	Sub-project	Project Developers	Investment decision date	Commissioning / start date	Benchmark
1	Sub-project 1	Ushodaya Enterprises Private Limited	14/10/2015	23/03/2016	15.24%
2	Sub-project 2		16/06/2016	22/09/2016	15.25%

²⁹ <https://www.imf.org/en/Publications/WEO/weo-database/2020/October/weo-report?c=534.&s=PCPIPCH.&sy=2020&ey=2024&ssm=0&scsm=1&sc=0&ssd=1&ssc=0&sic=0&sort=country&ds=.&br=1>

Financial Indicator Calculation:

As per the guidance on assessment of Investment Analysis version 11, depreciation, and other non-cash items related to the project activity, which have been deducted in estimating gross profits on which tax is calculated, is added back to net profits for the purpose of calculating the financial indicator.

The typical assumptions which will be used to calculate the financial indicator are listed as under:

Financial Parameters of Sub-project 1:

<i>Ushodaya Enterprises Private Limited</i>	Value	Source of data	Links for the Sources
Project Capacity (in MWp)	5.00	Quotation ,dated 24/09/2015, P-1	
No of Modules	19300	Quotation ,dated 24/09/2015,P-3	
Expected Lifetime of the project (Years)	25.00		
Project Cost per MW (Crores/MW)	6.55	Calculated	
Operations			
Plant Load Factor (%)	20.55%	Energy Estimation Report	
Operation & Maintenance Expenses for 1 st year (7 Lakhs/MW)(Million)	3.50	Tariff Order	https://cercind.gov.in/2016/orders/sm_3.pdf
O&M Charges escalation from 2 nd year onwards (%)	5.72%	Tariff Order	https://cercind.gov.in/2016/orders/sm_3.pdf
Auxiliary Consumption (% of energy generation)	0.00%	DPR	
Wheeling Losses	0.00%	DPR	
Degradation from 2 nd Year (% of energy generation)	1.0%	Energy Estimation Report	
Tariff	Value		
Energy Charges for HT-I	6.07	https://aperc.gov.in/admin/upload/151357815612855392435a375eac0673b.pdf , Page No-23	
Project Cost	Rs Million		
Land and Site development	13.50	Land Documents	
Additional Cost	14.71	Quotation ,dated 24/09/2015, P-2	
EPC Cost	299.44	Quotation ,dated 24/09/2015, P-1	
Total Project Cost	327.65	Calculated	
Means of Finance		Rs.Million	

Equity	100.00%	327.65	
Debt	0.00%	0.00	
Total Source		327.65	
Terms Loan of the Project			
Interest Rate	0.00%	%	NA
Tenure	0	Quarters	NA
Moratorium	-	Months	NA
Book Depreciation (SLM Method)			
Land Cost (INR Mn.)	13.50	As per DPR	
Gross Depreciable Value (INR Mn.)	314.15	Calculated Value	
Salvage Value (%)	10.00%		https://cercind.gov.in/2016/orders/sm_3.pdf
Salvage value (INR Mn.)	31.42	Calculated Value	
Net Depreciable Value (INR Mn.)	282.74	Calculated Value	
Residual Value (INR Mn.)	44.92	Calculated Value	-
IT Depreciation (SLM Method)			
IT Depreciation Rate (%)	7.69%	As Per Income Tax , Depreciation rates for power generating units	http://www.incometaxindia.gov.in/charts%20%20tables/depreciation%20rates.htm
Income Tax			
Financial Year	FY 2015-16		
Income tax rate (%)	30.00%	Tax rates applicable to a domestic company	As per Tax rules
MAT (%)	30.00%		
Surcharge (%)	12.00%		
Health and Education Cess (%)	3.00%		
Final Tax rates			
Income tax rate (%)	34.61%	Calculated Value	
MAT (%)	34.61%	Calculated Value	

Financial Parameters of Sub-project 2:

<i>Ushodaya Enterprises Private Limited</i>	Value	Source of data	Links for the Sources
Project Capacity (in MWp)	5.00	Quotation for 5MW Solar Power Plant, P-1	
No of Modules	19300	Quotation for 5MW Solar Power Plant, P-3	
Capacity of each Module (Wp)	225.00	Quotation for 5MW Solar Power Plant, P-3	

Expected Lifetime of the project (Years)	25.00		
Project Cost per MW (Crores/MW)	5.65	Calculated	
Operations			
Plant Load Factor (%)	20.55%	Energy Estimation Report	
Operation & Maintenance Expenses for 1 st year (% of Capital Cost)(Million)	3.50	Tariff Order	https://cercind.gov.in/2015/orders/SO4.pdf
O&M Charges escalation from 2 nd year onwards (%)	5.7%	Tariff Order	https://cercind.gov.in/2015/orders/SO4.pdf
Transmission and Wheeling Losses	0.00%		
Degradation from 2 nd Year (% of energy generation)	1.0%	Energy Estimation Report	
Loan Processing charges (Including Service Tax and Cess) (%)	2.00%	AP Solar Power Policy,2015	
Tariff	Value		
Tariff Applicable for the first 10 Years (Rs./kWh)	5.43	PPA Document, P-11	
Tariff Applicable from 11th to 25th Year (Rs./kWh)	5.43	PPA Document, P-11	
Project Cost	Rs Million		
Land	17.00	DPR, P-69	
Solar Module Cost	158.02	DPR, P-69	
Others	34.39	DPR, P-69	
EPC Cost	107.24	DPR, P-69	
Total Project Cost	282.26	DPR, P-69	
Means of Finance		Rs.Million	
Equity	45.59%		144.61
Debt	54.41%		172.58
Total Source			317.19
Terms Loan of the Project			
Interest Rate	4.5%		%
Tenure	20		Quarters
Moratorium	15		Months
Book Depreciation (SLM Method)			
Land Cost (INR Mn.)	17.00	As per DPR	
Gross Depreciable Value (INR Mn.)	300.19	Calculated Value	
Salvage Value (%)	10.00%		https://cercind.gov.in/2016/orders/sm_3.pdf

Salvage value (INR Mn.)	30.02	Calculated Value	
Net Depreciable Value (INR Mn.)	270.17	Calculated Value	
Residual Value (INR Mn.)	47.02	Calculated Value	-
IT Depreciation (SLM Method)			
IT Depreciation Rate (%)	7.69%	As Per Income Tax , Depreciation rates for power generating units	http://www.incometaxindia.gov.in/charts%20%20tables/depreciation%20rates.htm
Income Tax			
Financial Year	AY 2015-16		
Income tax rate (%)	30.00%	Tax rates applicable to a domestic company	As per Tax rules
MAT (%)	30.00%		
Surcharge (%)	12.00%		
Health and Education Cess (%)	3.00%		
Final Tax rates			
Income tax rate (%)	34.61%	Calculated Value	
MAT (%)	34.61%	Calculated Value	

S. No.	Sub-project	Project Developers	Benchmark	IRR
1	Sub-project 1	Ushodaya Enterprises Private Limited	15.24%	8.60%
2	Sub-project 2		15.25%	9.73%

Thus, it is evident that the project is not financially attractive.

The robustness of the conclusion drawn above, namely that the project is not financially attractive, has been tested by subjecting critical assumptions to reasonable variation. As required by Annex 05 of EB 62, only variables, including the initial investment cost, that constitute more than 20% of either total project costs or total project revenues should be subjected to reasonable variation. PDs have identified the total revenue from the project activity is dependent on the Plant Load Factor and Tariff. Further, Project Cost, O&M Costs constitute more than 20% of the project costs. These four factors have been subjected to a 10% variation on either side and the results of the sensitivity analysis so conducted are given in the following tables.

Sub-Project 1:

FACTOR	VARIATION		
	-10%	0%	10%
PLF	7.22%	8.60%	9.92%

Project Cost	9.90%	8.60%	7.50%
O&M Costs	8.89%	8.60%	8.41%
Tariff	7.22%	8.60%	9.92%
Benchmark	15.24%		

Sub-Project 2:

FACTOR	VARIATION		
	-10%	0%	10%
PLF	7.77%	9.73%	11.70%
Project Cost	12.38%	9.73%	7.76%
O&M Costs	10.03%	9.73%	9.43%
Tariff	7.77%	9.73%	11.70%
Benchmark	15.25%		

The above analysis proves that varying the parameters does not lead to a Project IRR without carbon credit revenue which will cross the benchmark value.

The PDs have also evaluated the percentage variation in each parameter which leads to the financial indicator to breach the benchmark. The result of the percentage variation at which the financial indicator breaches the benchmark is included in the below table:

Variation at which the financial indicator breaches the benchmark for each sub-project:				
Project Activity	Factors			
	PLF	Project Cost	O&M cost	Tariff
Sub-project 1	53.00%	-37.10%	-535.00%	53.00%
Sub-project 2	27.60	-17.70	-206.00%	27.60%

However, the occurrences of these events are highly unlikely.

In spite of the low returns for the project activities under the PSF, the Project Developers have made the investments only in lieu of the due consideration of the carbon credit revenue. Hence, it is evident that without the GHG emission reduction credits, the project activity would not have been taken up.

The carbon revenue from the project activity would provide significant amount of returns from the sale of the Emission Reductions accrued from the project activity and in turn increase the financial attractiveness of the project activity and hence make the project activity more financially viable.

As described above, the project fulfills all necessary requirements of additionality specified in the methodology. Hence, the project is additional.

B.6. Estimation of emission reductions

According to the methodology AMS I.D. version 18, paragraph 43, Emission reductions are calculated as follows:

$$ER_y = BE_y - PE_y - LE_y$$

Where:

ER_y = Emission reductions in year y (t CO₂)

BE_y = Baseline Emissions in year y (t CO₂)

PE_y = Project emissions in year y (t CO₂)

LE_y = Leakage emissions in year y (t CO₂)

B.6.1. Explanation of methodological choices

As per AMS I D version 18 paragraph 22:

The baseline emissions are the product of electrical energy baseline $EG_{BL,y}$ expressed in MWh of electricity produced by the renewable generating unit multiplied by the grid emission factor.

$$BE_y = EG_{PJ,y} * EF_{CO_2, grid, y}$$

Where:

BE_y Baseline Emissions in year y; t CO₂

$EG_{PJ,y}$ Quantity of net electricity supplied to the grid as a result of the Implementation of the CDM project activity in year y(MWh)

$EF_{CO_2, grid, y}$ CO₂ emission factor of the grid in year y (t CO₂/MWh)

Input values and data sources for emission reductions associated with electricity displacement

Parameter	Description	Source
BE_y	Baseline Emissions in year y; t CO ₂	Calculated
$EG_{PJ,y}$	Quantity of net electricity supplied to the grid as a result of the implementation of the project activity in year y in MWh	<p>Calculated as Installed Capacity × PLF × Operating Hours</p> <p>The PLF of [PLF]; considered for the determination of ex-ante emission reductions.</p> <p>The PLF of 20.55% for both the projects mentioned in their respective energy yield estimation reports are taken along with the electricity generation from the project activity. The degradation factor of 1% from the second year of generation is also considered. Thus, the estimated electricity generation has been</p>

		considered for the determination of ex-ante emission reductions.
$EF_{CO_2,grid,y}$ = $EF_{grid,CM,y}$	CO ₂ Emission Factor in year y; t CO ₂ e/MWh of [National grid]	The emission factor as reported by Central Electricity Authority (CEA) CO ₂ database or any other official source made available by the host party.

As per paragraph 23, AMS ID Version 18, the Emission Factor can be calculated in a transparent and conservative manner as follows:

A combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the ‘Tool to calculate the Emission Factor for an electricity system’, Version 07.0.

OR

The weighted average emissions (t CO₂e/MWh) of the current generation mix. The data of the year in which project generation occurs must be used.

In the project activity, the option A may be used which prescribes use of ‘Tool to calculate the emission factor for an electricity system’, Version 07.0.

Step 1: Identify the relevant electricity systems

As the project activity is connected to the national grid, it is preferred to take the National grid as project boundary than the state boundary. It also minimizes the effect of interstate power transactions, which are dynamic and vary widely.

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

One of the following two options may be chosen 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.

Only Grid power plants are included in the Combined Margin calculation as published by Central Electricity Authority in “The Central Electricity Authority (CEA): Baseline Carbon Dioxide Emission database version 17 dated October 2021”, hence the Option I may be considered for the given project activity.

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

The calculation of the operating margin emission factor ($EF_{grid,OM,y}$) is based on one of the following methods: (a) Simple OM, (b), Simple adjusted OM, (c) Dispatch Data Analysis, or (d) Average OM. The two variants “Simple adjusted operating margin” and “Dispatch data analysis operating margin” cannot currently be applied in India due to lack of necessary data.

In India, hydro and nuclear stations qualify as low-cost / must-run sources and are excluded.

The average of the low cost / must-run sources to the Net generation of the National Grid over the period of the last five years is as per the below table:

Share of Must-Run (% of Net Generation)	2016-17	2017-18	2018-19	2019-20	2020-21
National Grid	14.6%	14.3%	14.5%	17.0%	16.5%

As the low-cost/must-run resources constitute less than 50% of total grid generation in the five most recent years, thus Simple O.M. has been used to calculate the operating margin.

The Central Electricity Authority (CEA): Baseline Carbon Dioxide Emission database version 17 dated October 2021 data have been publicized and the simple OM has been referred for the OM calculation.

The ex-ante option is selected for the project activity.

Step 4: Calculate the operating margin emission factor according to the selected method (OM)

The simple OM emission factor is calculated as the generation-weighted average CO₂ emissions per unit net electricity generation (tCO₂e/MWh) of all generating power plants serving the system, not including low-cost/must-run power plants/units.

The simple OM may be calculated by one of the following two options:

- Option A: Based on the net electricity generation and a CO₂ emission factor of each power unit; or
- Option B: Based on the total net electricity generation of all power plants serving the system and the fuel types and total fuel consumption of the project electricity system.

Option A of the above two options which is “Option A - Based on the net electricity generation and a CO₂ emission factor of each power unit” is used for the calculation simple O.M.

The formula used for calculating the simple operating margin is as follows:

$$EF_{grid,OMsimple,y} = \frac{\sum_m EG_{m,y} \cdot EF_{EL,m,y}}{\sum_m EG_{m,y}}$$

- EF_{grid,OMsimple,y} = EF_{grid,OM,y} = Simple operating margin CO₂ emission factor in year y (tCO₂e/MWh)
- EG_{m,y} = Net quantity of electricity generated and delivered to the grid by power unit m in year y(MWh)
- EF_{EL,m,y} = CO₂ emission factor of power unit m in year y (tCO₂e/MWh)
- m = All power units serving the grid in year y except low-cost / must-run power units
- y = the relevant year as per the data vintage

The Operating Margin for the project activity is calculated considering the 3-year generation weighted average of Operating Margin data for National grid as published by Central Electricity Authority (CEA) CO₂ database version 17 dated October 2021.

Indian National Grid	2018-19	2019-20	2020-21
Net generation in operating margin(GWh)	995,957	965,009	958,218
Operating Margin Emission Factor (tCO ₂ e/MWh)	0.9603	0.9555	0.9405
Weighted average operating margin (tCO ₂ e/MWh)	0.9522		

The value of Operating Margin Emission Factor = 0.9522 tCO₂e/MWh

Step 5: Calculate the build margin emission factor

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 PSF submission to the GCC Verifier for validation. 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.

The option 1 is chosen in the PSF.

The build margin considered is for the year 2020-2021 for the Indian Grid and the value is 0.8653 tCO₂/MWh. The data for the build margin and the operating margin is taken from the Central Electricity Authority Baseline Carbon Dioxide Emission database version 17.0 – October 2021.

Step 6: Calculate the combined margin emission factor

The combined margin emission factor is calculated as follows:
Input values and data sources for the calculation of EF_{CO₂} (EF_{grid,CM,y})

Parameter	Description	Unit	Source
-----------	-------------	------	--------

$EF_{grid, CM, y} = EF_{grid, OM, y} * W_{OM} + EF_{grid, BM, y} * W_{BM}$			“Tool to calculate the emission factor for an electricity system” version 07.0, equation 16
$EF_{grid, CM, y} = EF_{CO2, grid, y}$	Combined margin CO ₂ emission factor in year y. This equals to EF _{CO₂} for National grid.	tCO ₂ /MWh	Calculated
$EF_{grid, OM, y}$	Simple operating margin CO ₂ emission factor for National grid in year y.	tCO ₂ /MWh	Calculated
$EF_{grid, BM, y}$	Build margin CO ₂ emission factor for National grid in year y	tCO ₂ /MWh	Calculated
W_{OM}	Weighting of operating margin emission factor	0.75	“Tool to calculate the emission factor for an electricity system” version 07.0”
W_{BM}	Weighting of build margin emission factor	0.25	“Tool to calculate the emission factor for an electricity system” version 07.0”

As per “Tool to calculate the emission factor for an electricity system” version 07.0, “The following default values should be used for w_{OM} and w_{BM} : Wind and solar power generation project activities: $w_{OM} = 0.75$ and $w_{BM} = 0.25$ (owing to their intermittent and non-dispatch able nature) for the first crediting period and for subsequent crediting periods”

Hence the values used are $w_{OM} = 0.75$ and $w_{BM} = 0.25$

Hence, the grid emission factor, $EF_{grid, CM, y}$ is calculated as

$$EF_{CO2, grid, y} = 0.9522 * 0.75 + 0.8653 * 0.25 = 0.9305$$

Baseline Emission Factor: $EF_{CO2, grid, y} = EF_{grid, CM, y} = 0.9305$ tCO₂e/MWh

Leakage

In accordance with methodology AMS I.D, leakage is to be considered only if the energy generating equipment is transferred from another activity.

This is not applicable for the project activity as the energy generating equipment’s are not transferred from another activity, hence, $LE_y = 0$

Project Emissions

As per AMS ID, Version 18, “For most renewable energy project activities, $PE_y = 0$. However, for the following categories of project activities, project emissions have to be considered following the procedure described in the most recent version of ACM0002.

- Emissions related to the operation of geothermal power plants (e.g. non-condensable gases, electricity/fossil fuel consumption)

- Emissions from water reservoirs of hydro power plants” As the project activity is solar power project, hence PEy = 0

As the project activity is solar PV power project, hence PEy = 0

Emissions Reductions = Baseline Emissions (BEy,) – Project Emissions (PEy) – Leakage (LEy)

Hence,

ERy= BEy

B.6.2 Data and parameters fixed ex ante

Data / Parameter Table 1.

Data / Parameter:	EF_{grid,OM,y}																
Methodology reference	AMS I.D. (Version 18)																
Data unit	tCO ₂ /MWh																
Description	Operating Margin CO ₂ emission factor in the year y																
Measured/calculated /default	Calculated																
Data source	CO ₂ Emission Database, version 17.0, dated October 2021 published by Central Electricity Authority (CEA), Government of India (www.cea.nic.in)																
Value(s) of monitored parameter	0.9522																
Measurement/ Monitoring equipment (if applicable)	<table border="1"> <tr> <td>Type of meter</td> <td>Not applicable</td> </tr> <tr> <td>Location of meter</td> <td>Not applicable</td> </tr> <tr> <td>Accuracy of meter</td> <td>Not applicable</td> </tr> <tr> <td>Serial number of meters</td> <td>Not applicable</td> </tr> <tr> <td>Calibration frequency</td> <td>Not applicable</td> </tr> <tr> <td>Date of Calibration/ validity</td> <td>Not applicable</td> </tr> <tr> <td>Reference No. of Calibration Certificate</td> <td>Not applicable</td> </tr> <tr> <td>Calibration Status</td> <td>Not applicable</td> </tr> </table>	Type of meter	Not applicable	Location of meter	Not applicable	Accuracy of meter	Not applicable	Serial number of meters	Not applicable	Calibration frequency	Not applicable	Date of Calibration/ validity	Not applicable	Reference No. of Calibration Certificate	Not applicable	Calibration Status	Not applicable
Type of meter	Not applicable																
Location of meter	Not applicable																
Accuracy of meter	Not applicable																
Serial number of meters	Not applicable																
Calibration frequency	Not applicable																
Date of Calibration/ validity	Not applicable																
Reference No. of Calibration Certificate	Not applicable																
Calibration Status	Not applicable																
Measuring/reading/ recording frequency (if applicable)	Not applicable																
Calculation method (if applicable)	The value used is calculated ex-ante as generation based weighted average of the last three years of the Operating margin provided by Central Electricity Authority (CEA) CO ₂ database version 17 dated October 2021. (www.cea.nic.in)																

QA/QC procedures	Not applicable
Purpose of data	Calculation of baseline emissions
Additional comments	This parameter is fixed ex-ante for the entire crediting period

Data / Parameter Table 2.

Data / Parameter:	EF_{grid, BM, y}																	
Methodology reference	AMS I.D. (Version 18)																	
Data unit	tCO ₂ /MWh																	
Description	Build Margin CO ₂ emission factor in the year y																	
Measured/calculated /default	Calculated																	
Data source	CO ₂ Emission Database, version 17.0, dated October 2021 published by Central Electricity Authority (CEA), Government of India (www.cea.nic.in)																	
Value(s) of monitored parameter	0.8653																	
Measurement/ Monitoring equipment (if applicable)	<table border="1"> <tr> <td>Type of meter</td> <td>Not applicable</td> </tr> <tr> <td>Location of meter</td> <td>Not applicable</td> </tr> <tr> <td>Accuracy of meter</td> <td>Not applicable</td> </tr> <tr> <td>Serial number of meter</td> <td>Not applicable</td> </tr> <tr> <td>Calibration frequency</td> <td>Not applicable</td> </tr> <tr> <td>Date of Calibration/ validity</td> <td>Not applicable</td> </tr> <tr> <td>Reference No. of Calibration Certificate</td> <td>Not applicable</td> </tr> <tr> <td>Calibration Status</td> <td>Not applicable</td> </tr> </table>		Type of meter	Not applicable	Location of meter	Not applicable	Accuracy of meter	Not applicable	Serial number of meter	Not applicable	Calibration frequency	Not applicable	Date of Calibration/ validity	Not applicable	Reference No. of Calibration Certificate	Not applicable	Calibration Status	Not applicable
Type of meter	Not applicable																	
Location of meter	Not applicable																	
Accuracy of meter	Not applicable																	
Serial number of meter	Not applicable																	
Calibration frequency	Not applicable																	
Date of Calibration/ validity	Not applicable																	
Reference No. of Calibration Certificate	Not applicable																	
Calibration Status	Not applicable																	
Measuring/reading/ recording frequency (if applicable)	Not applicable																	
Calculation method (if applicable)	The value used is calculated ex-ante as generation based weighted average of the last year of the build margin provided by Central Electricity Authority (CEA) CO ₂ database version 17 dated October 2021. (www.cea.nic.in)																	
QA/QC procedures	Not applicable																	
Purpose of data	Calculation of baseline emissions																	
Additional comments	This parameter is fixed ex-ante for the entire crediting period																	

Data / Parameter Table 3.

Data / Parameter:	EF_{grid,CM,y} = EF_{CO₂,grid,y}																	
Methodology reference	AMS I.D. (Version 18)																	
Data unit	tCO ₂ /MWh																	
Description	The Indian Grid CO ₂ emission factor in the year y																	
Measured/calculated/default	Calculated																	
Data source	CO ₂ Emission Database, version 17 dated October 2021 published by Central Electricity Authority (CEA), Government of India (www.cea.nic.in)																	
Value(s) of monitored parameter	0.9305																	
Measurement/Monitoring equipment (if applicable)	<table border="1"> <tr> <td>Type of meter</td> <td>Not applicable</td> </tr> <tr> <td>Location of meter</td> <td>Not applicable</td> </tr> <tr> <td>Accuracy of meter</td> <td>Not applicable</td> </tr> <tr> <td>Serial number of meter</td> <td>Not applicable</td> </tr> <tr> <td>Calibration frequency</td> <td>Not applicable</td> </tr> <tr> <td>Date of Calibration/validity</td> <td>Not applicable</td> </tr> <tr> <td>Reference No. of Calibration Certificate</td> <td>Not applicable</td> </tr> <tr> <td>Calibration Status</td> <td>Not applicable</td> </tr> </table>		Type of meter	Not applicable	Location of meter	Not applicable	Accuracy of meter	Not applicable	Serial number of meter	Not applicable	Calibration frequency	Not applicable	Date of Calibration/validity	Not applicable	Reference No. of Calibration Certificate	Not applicable	Calibration Status	Not applicable
Type of meter	Not applicable																	
Location of meter	Not applicable																	
Accuracy of meter	Not applicable																	
Serial number of meter	Not applicable																	
Calibration frequency	Not applicable																	
Date of Calibration/validity	Not applicable																	
Reference No. of Calibration Certificate	Not applicable																	
Calibration Status	Not applicable																	
Measuring/reading/recording frequency (if applicable)	Not applicable																	
Calculation method (if applicable)	The value has been calculated as $0.75 \cdot EF_{grid,OM,y} + 0.25 \cdot EF_{grid,BM,y}$																	
QA/QC procedures	Not applicable																	
Purpose of data	Calculation of baseline emissions																	
Additional comments	This parameter is fixed ex-ante for the entire crediting period																	

B.6.3. Ex-ante calculation of emission reductions

As per AMS I D version 18 paragraph 22:

The baseline emissions are the product of electrical energy baseline $EG_{BL, y}$ expressed in MWh of electricity produced by the renewable generating unit multiplied by the grid emission factor:

Parameter	Description	Value	Source
$BE_y = EG_{PJ,y} * EF_{CO2,grid,y}$			
BE_y	Baseline Emissions in year y; t CO2	Calculated	
$EG_{PJ,y}$	Quantity of net electricity supplied to the National Grid as a result of the implementation of the project activity in year y in MWh	Year	MWh
		23/03/2016 - 22/03/2017	18,002
		23/03/2017 - 22/03/2018	17,822
		23/03/2018 - 22/03/2019	17,642
		23/03/2019 - 22/03/2020	17,462
		23/03/2020 - 22/03/2021	17,282
		23/03/2021 - 22/03/2022	17,102
		23/03/2022 - 22/03/2023	16,922
		23/03/2023 - 22/03/2024	16,742
		23/03/2024 - 22/03/2025	16,562
		23/03/2025 - 22/03/2026	16,382
$EF_{CO2,grid,y}$	CO ₂ Emission Factor in year y; t CO ₂ e/MWh of National Grid	0.9305	Calculated using the operating margin and the build margin as reported by The Central Electricity Authority (CEA): Baseline Carbon Dioxide Emission database version 17 dated October 2021.

Leakage

In accordance with methodology AMS I.D, leakage is to be considered only if the energy generating equipment is transferred from another activity.

This is not applicable for the project activity as the energy generating equipment's are not transferred from another activity, hence, $LE_y = 0$

Project Emissions

As per AMS ID, Version 18, "For most renewable energy project activities, $PE_y = 0$. However, for the following categories of project activities, project emissions have to be considered following the procedure described in the most recent version of ACM0002.

- Emissions related to the operation of geothermal power plants (e.g. non-condensable gases, electricity/fossil fuel consumption)

- Emissions from water reservoirs of hydro power plants” As the project activity is solar power project, hence $PE_y = 0$

As the project activity is solar PV power project, hence $PE_y = 0$

Emissions Reductions = Baseline Emissions (BE_y) – Project Emissions (PE_y) – Leakage (LE_y)

Hence,

Ex-ante calculation of emission reductions is equal to ex-ante calculation of baseline emissions as project emissions and leakage are nil.

Emission reductions are calculated as follows:

$$ER_y = BE_y - PE_y$$

Where:

ER_y = Emission reductions in year y (t CO₂e/yr)

BE_y = Baseline emissions in year y (t CO₂e/yr)

PE_y = Project emissions in year y (t CO₂/yr)

Project emissions = 0

Leakage = 0

$$ER_y = BE_y$$

Year	ER_y (tCO ₂ e)
23/03/2016 - 22/03/2017	16,751
23/03/2017 - 22/03/2018	16,583
23/03/2018 - 22/03/2019	16,416
23/03/2019 - 22/03/2020	16,248
23/03/2020 - 22/03/2021	16,081
23/03/2021 - 22/03/2022	15,913
23/03/2022 - 22/03/2023	15,746
23/03/2023 - 22/03/2024	15,578
23/03/2024 - 22/03/2025	15,411
23/03/2025 - 22/03/2026	15,243

$$BE_y = EG_{P,y} \times EF_{grid,CM,y}$$

$$BE_y = 17,192 \text{ MWh} \times 0.9305 \text{ MWh/tCO}_2\text{e}$$

$$BE_y = 15,997 \text{ tCO}_2\text{e}$$

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)
23/03/2016 - 22/03/2017	16,751	0	0	16,751
23/03/2017 - 22/03/2018	16,583	0	0	16,583
23/03/2018 - 22/03/2019	16,416	0	0	16,416

23/03/2019 - 22/03/2020	16,248	0	0	16,248
23/03/2020 - 22/03/2021	16,081	0	0	16,081
23/03/2021 - 22/03/2022	15,913	0	0	15,913
23/03/2022 - 22/03/2023	15,746	0	0	15,746
23/03/2023 - 22/03/2024	15,578	0	0	15,578
23/03/2024 - 22/03/2025	15,411	0	0	15,411
23/03/2025 - 22/03/2026	15,243	0	0	15,243
Total	1,59,969	0	0	1,59,969
Total number of crediting years	10			
Annual average over the crediting period	15,997	0	0	15,997

B.7. Monitoring plan

The monitoring plan is developed in accordance with the modalities and procedures for GCC project activities and is proposed for grid-connected renewable power projects being implemented. The monitoring plan, which will be implemented by the GCC Project Owner describes about the monitoring organization, parameters to be monitored, monitoring practices, quality assurance, quality control procedures, data storage and archiving. The details of the monitoring plan are provided in section B.7.4

B.7.1. Data and parameters to be monitored

Data / Parameter Table 1.

Data / Parameter:	EG_{PJ,y}
Methodology reference	ACM0002
Data unit	MWh/y
Description	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y
Measured/calculated/default	Measured & calculated
Data source	Credit note/ JMR/Form B reports/ monthly generation report from state electricity board/DISCOM
Value(s) of monitored parameter	17,192 MWh

Measurement/ Monitoring equipment	The meter details will be provided during the verification. Energy meters of accuracy class 0.2s Main and Check meters are installed at the govt substations by the electricity utility to measure the net exported electricity from the plant.			
	Type of meter	ABT Cum Tri-Vector Meter		
	Location of mete	33/11KV Tadimarri SS		
	Accuracy of meter	0.2S		
	Serial number of meters	Main Meter	Check Meter	Standby Meter
		APX00698	APX00699	APX00700
	Calibration frequency	As per SEB standards		
	Date of Calibration/ validity	Calibration Date: 30/09/2021 Validity: 29/09/2022		
	Reference No. of Calibration Certificate	Main	GCSPL/CAL/7701/13944	
		Check	GCSPL/CAL/7701/13945	
Standby		GCSPL/CAL/7701/13946		
Calibration Status	Satisfactory			
Measuring/reading/ recording frequency	Measurement: Continuous Recording: Monthly			
Calculation method (if applicable)	The value of net electricity generation supplied to the grid as per Monthly Joint Meter Reading Report forms (B-Forms) the basis for calculation of the emission reductions; which can be crosschecked from the invoice raised to Consumer. The Net electricity is calculated based on Export- Import Transmission loss. Monthly meter readings are taken from the main and check meter installed at metering point and certified by the representatives of SEB Officials and the representatives of the project participant. The export and import values of the formB/Credit note or Joint Meter Reports is cross checked with the export and import values mentioned at the electricity sales invoice			
QA/QC procedures	Calibration of electricity meters is carried out in-line with the Nation standard ³⁰ which recommends at least once in 5 year calibration or whenever abnormal difference/inconsistency is observed between main meter and check meter. The meter(s) shall be calibrated and maintained by the state utility as per their schedule, and this frequency of meter calibration is not within the control of the Project Proponent.			
Purpose of data	Calculation baseline emission			
Additional comments	Not Applicable			

³⁰ (Page number 12 of) http://www.aegcl.co.in/Metering_Regulations_Of_CEA_17_03_2006.pdf

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

E+ Assessment

Data / Parameter Table 2.

Data / Parameter:	CO ₂ emissions (EA03)	
Purpose:	<i>To demonstrate positive impacts of aspects wrt baseline scenario / BAU / pre-existing scenario and 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.	The project reduces CO ₂ emissions since it reduces the amount of fossil fuel used. In case of “no project”, stated amount of electricity would be generated from fossil fuels and cause air pollution.	
Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate “harmless” condition or demonstrate Impact on SDG		
	Parameter to be monitored	CO ₂ emissions
	Frequency of monitoring	Yearly
	Legal /regulatory / corporate limits (if any)	The Air (Prevention & Control of Pollution) Act 1981
	QA/QC	The amount of CO ₂ emission avoided will be estimated based on the net quantity of electricity supplied to the grid and the grid emission factor. The electricity meter used
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 Table 3.

Data / Parameter:	Replacing fossil fuels with renewable sources of energy (ENR07)	
Purpose:	<i>To demonstrate positive impacts of aspects wrt baseline scenario / BAU / pre-existing scenario and 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.	The wind power project replaces fossil fuel with the renewable wind energy for the power generation by installing the wind power plant which would have been otherwise generated from the fossil fuel dominant grid connected power plants in the absence of the project activity.	
Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate		
	Parameter to be monitored	Quantum of electricity generated
	Frequency of monitoring	Monitored continuously and recorded on a monthly basis

"harmless" condition or demonstrate Impact on SDG	Legal /regulatory / corporate limits (if any)	Energy Conservation Act 2001
	QA/QC	<p>The meters are approved, 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 electricity board and GCC Project owner do not have any control on it. The calibration of all the meters is planned to be undertaken at required intervals (once in five years) and faulty meters will be duly replaced immediately. The meters will be of accuracy class 0.2s or 0.5s.</p> <p>The net electricity supplied/exported to the grid can be obtained from the record of Monthly Joint Meter Reading / Bill of Supply/Invoice based on Monthly Generation Report.</p>
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.	

S+ Assessment Data / Parameter Table 4.

Data / Parameter:	Long-term jobs (> 10 year) created/ lost (SJ01)	
Purpose:	To demonstrate positive impacts of aspects wrt baseline scenario / BAU / pre-existing scenario and to demonstrate that they do not cause any net harm to environment / society or have an impact on SDG as per selected indicators.	
Describe the related environment /social/ SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.	Project activity creates direct long-term employment for project lifetime of 25 years. Since the project activity results in employment in compliance to regulation of country, thereby result in positive social impact. Therefore, there is no related social/ SDG risk associated with the long-term jobs. Long term employment generation contributes positively to SDG 8.	
Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate "harmless" condition or demonstrate Impact on SDG		
	Parameter to be monitored	Long-term jobs (> 1 year) created
	Frequency of monitoring	Yearly
	Legal /regulatory / corporate limits (if any)	Not applicable
	QA/QC	Information relating to number of persons employed/ continuing employment during any particular year will be cross verified from the employment contract/salary slips
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 Table 5.

Data / Parameter:	New short-term jobs (< 1 year) created/ lost (SJ02)									
Purpose:	To demonstrate positive impacts of aspects wrt baseline scenario / BAU / pre-existing scenario and to demonstrate that they do not cause any net harm to environment / society or have an impact on SDG as per selected indicators.									
Describe the related environment /social/ SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.	Project activity created short term jobs for less than year during the project construction period. Since the project activity results in short-term employment in compliance to regulation of country, thereby result in positive social impact. Therefore, there is no related social/ SDG risk associated with the long-term jobs. Long term employment generation contributes positively to SDG 8.									
Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate “harmless” condition or demonstrate Impact on SDG	<table border="1"> <tr> <td>Parameter to be monitored</td> <td>New short-term jobs (< 1 year) created</td> </tr> <tr> <td>Frequency of monitoring</td> <td>Yearly</td> </tr> <tr> <td>Legal /regulatory / corporate limits (if any)</td> <td>Not applicable</td> </tr> <tr> <td>QA/QC</td> <td>The number of temporary employments can be cross verified from the construction work records and employment records.</td> </tr> </table>		Parameter to be monitored	New short-term jobs (< 1 year) created	Frequency of monitoring	Yearly	Legal /regulatory / corporate limits (if any)	Not applicable	QA/QC	The number of temporary employments can be cross verified from the construction work records and employment records.
Parameter to be monitored	New short-term jobs (< 1 year) created									
Frequency of monitoring	Yearly									
Legal /regulatory / corporate limits (if any)	Not applicable									
QA/QC	The number of temporary employments can be cross verified from the construction work records and employment 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 Table 6.

Data / Parameter:	Specialized training / education to local personnel (SE01)
Purpose:	To demonstrate positive impacts of aspects wrt baseline scenario / BAU / pre-existing scenario and to demonstrate that they do not cause any net harm to environment / society or have an impact on SDG as per selected indicators.
Describe the related environment /social/ SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.	Project involves training of new people on project technology. Project owner confirms that by training the people on new technology it will upgrade their skills and creates positive impact.

Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate “harmless” condition or demonstrate Impact on SDG		
	Parameter to be monitored	Training sessions for employees on new technologies implemented in the project
	Frequency of monitoring	Yearly
	Legal /regulatory / corporate limits (if any)	Not applicable
	QA/QC	The training sessions or skills imparted in the employees will be cross verified through the office 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 Table 7.

Data / Parameter:	Project-related knowledge dissemination effective or not (SE03)	
Purpose:	To demonstrate positive impacts of aspects wrt baseline scenario / BAU / pre-existing scenario and to demonstrate that they do not cause any net harm to environment / society or have an impact on SDG as per selected indicators.	
Describe the related environment /social/ SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.	Project activity transfers knowledge on new renewable energy technology. Project proponent employees around 50 people to work on the operation and maintenance e of the project during its lifetime. Project owner keep training them on the new technology installed in the project and its operation and maintenance.	
Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate “harmless” condition or demonstrate Impact on SDG		
	Parameter to be monitored	Operation and maintenance of the project by imparting knowledge in employees.
	Frequency of monitoring	Yearly
	Legal /regulatory / corporate limits (if any)	Not applicable
	QA/QC	This parameter can be monitored through training records and interview with plant O&M team.
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.	

Assessment of SDG Level

Data / Parameter Table 8.

Data / Parameter:	SDG 5- Achieve gender equality and empower all women and girls
Purpose:	To demonstrate positive impacts of aspects wrt baseline scenario / BAU / pre-existing scenario and to demonstrate that they do not cause any net harm to environment / society or have an impact on SDG as per selected indicators.

Describe the related environment /social/ SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.	No discrimination against women. Equal pay for work of equal value for both men and women								
Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate “harmless” condition or demonstrate Impact on SDG	<table border="1"> <tr> <td>Parameter to be monitored</td> <td>No discrimination against women</td> </tr> <tr> <td>Frequency of monitoring</td> <td>Yearly</td> </tr> <tr> <td>Legal /regulatory / corporate limits (if any)</td> <td>Not applicable</td> </tr> <tr> <td>QA/QC</td> <td>Project owner implement and maintain the HR policy to ensure that no gender discrimination will be entertained while employing the workforce and paying the wages for the project activity to both men and women employees</td> </tr> </table>	Parameter to be monitored	No discrimination against women	Frequency of monitoring	Yearly	Legal /regulatory / corporate limits (if any)	Not applicable	QA/QC	Project owner implement and maintain the HR policy to ensure that no gender discrimination will be entertained while employing the workforce and paying the wages for the project activity to both men and women employees
Parameter to be monitored	No discrimination against women								
Frequency of monitoring	Yearly								
Legal /regulatory / corporate limits (if any)	Not applicable								
QA/QC	Project owner implement and maintain the HR policy to ensure that no gender discrimination will be entertained while employing the workforce and paying the wages for the project activity to both men and women employees								
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 Table 9.

Data / Parameter:	SDG 7- Ensure access to affordable, reliable, sustainable and modern energy for all								
Purpose:	To demonstrate positive impacts of aspects wrt baseline scenario / BAU / pre-existing scenario and to demonstrate that they do not cause any net harm to environment / society or have an impact on SDG as per selected indicators.								
Describe the related environment /social/ SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.	The project generates electricity from the sustainable and renewable wind source and contributes to increase the share of renewable energy mix in the global energy mix.								
Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate “harmless” condition or demonstrate Impact on SDG	<table border="1"> <tr> <td>Parameter to be monitored</td> <td>Amount of renewable energy supplied to grid for consumption.</td> </tr> <tr> <td>Frequency of monitoring</td> <td>Monitored continuously and recorded Monthly</td> </tr> <tr> <td>Legal /regulatory / corporate limits (if any)</td> <td>Not Applicable</td> </tr> <tr> <td>QA/QC</td> <td>The meters used for monitoring of the net renewable energy supplied to the grid are calibrated regularly in accordance to the state/central govt norms.</td> </tr> </table>	Parameter to be monitored	Amount of renewable energy supplied to grid for consumption.	Frequency of monitoring	Monitored continuously and recorded Monthly	Legal /regulatory / corporate limits (if any)	Not Applicable	QA/QC	The meters used for monitoring of the net renewable energy supplied to the grid are calibrated regularly in accordance to the state/central govt norms.
Parameter to be monitored	Amount of renewable energy supplied to grid for consumption.								
Frequency of monitoring	Monitored continuously and recorded Monthly								
Legal /regulatory / corporate limits (if any)	Not Applicable								
QA/QC	The meters used for monitoring of the net renewable energy supplied to the grid are calibrated regularly in accordance to the state/central govt norms.								

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.
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Data / Parameter Table 10.

Data / Parameter:	Goal 8. Promote sustained, inclusive, and sustainable economic growth, full and productive employment and decent work for all	
Purpose:	To demonstrate positive impacts of aspects wrt baseline scenario / BAU / pre-existing scenario and to demonstrate that they do not cause any net harm to environment / society or have an impact on SDG as per selected indicators.	
Describe the related environment /social/ SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.	Project activity supports creation of short term and long-term job opportunities during the construction and operation of the project activity. Supports economic productivity through technology up gradation and innovation through training of labour in highly intensive sector.	
Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate “harmless” condition or demonstrate Impact on SDG		
	Parameter to be monitored	Number of jobs created due to the project activity
	Frequency of monitoring	Yearly
	Legal /regulatory / corporate limits (if any)	Not applicable
	QA/QC	Number of persons employed will be assessed/estimated from the employment record and cross verified from employment contract and payslips. Maintains company HR policy to create standard operating procedures (SOPs) to follow and maintain safe and secure work environment.
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 Table 11.

Data / Parameter:	Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
Purpose:	To demonstrate positive impacts of aspects wrt baseline scenario / BAU / pre-existing scenario and to demonstrate that they do not cause any net harm to environment / society or have an impact on SDG as per selected indicators.

Describe the related environment /social/ SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.	Project activity involves up gradation to advanced WTG technology which is clean and resilient infrastructure from the conventional fossil fuel-based power plant technology. Supports advanced industrialization by providing zero greenhouse gas and nonpolluting clean electricity. Support industrialization through local hiring, procurement, and training and skills development.											
Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate “harmless” condition or demonstrate Impact on SDG	<table border="1"> <tr> <td colspan="2" data-bbox="508 531 1414 562"></td> </tr> <tr> <td data-bbox="508 562 808 621">Parameter to be monitored</td> <td data-bbox="824 562 1406 621">Operation and maintenance of the power plant</td> </tr> <tr> <td data-bbox="508 621 808 680">Frequency of monitoring</td> <td data-bbox="824 621 1406 680">Continuous monitoring and regular maintenance</td> </tr> <tr> <td data-bbox="508 680 808 739">Legal /regulatory / corporate limits (if any)</td> <td data-bbox="824 680 1406 739">Not applicable</td> </tr> <tr> <td data-bbox="508 739 808 888">QA/QC</td> <td data-bbox="824 739 1406 888">O&M team monitors the real time generation from the plant and calculated equivalent CO₂ reductions. Plant outage and grid availability can be monitored through real-time scada data and O&M records.</td> </tr> </table>				Parameter to be monitored	Operation and maintenance of the power plant	Frequency of monitoring	Continuous monitoring and regular maintenance	Legal /regulatory / corporate limits (if any)	Not applicable	QA/QC	O&M team monitors the real time generation from the plant and calculated equivalent CO ₂ reductions. Plant outage and grid availability can be monitored through real-time scada data and O&M records.
Parameter to be monitored	Operation and maintenance of the power plant											
Frequency of monitoring	Continuous monitoring and regular maintenance											
Legal /regulatory / corporate limits (if any)	Not applicable											
QA/QC	O&M team monitors the real time generation from the plant and calculated equivalent CO ₂ reductions. Plant outage and grid availability can be monitored through real-time scada data and O&M 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 Table 12.

Data / Parameter:	Goal 13. Take urgent action to combat climate change and its impacts											
Purpose:	To demonstrate positive impacts of aspects wrt baseline scenario / BAU / pre-existing scenario and to demonstrate that they do not cause any net harm to environment / society or have an impact on SDG as per selected indicators.											
Describe the related environment /social/ SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.	Project activity generates renewable energy-based electricity and mitigates the CO ₂ emissions which would have been generated from the fossil fuel-based power plants.											
Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate “harmless” condition or demonstrate Impact on SDG	<table border="1"> <tr> <td colspan="2" data-bbox="508 1486 1414 1518"></td> </tr> <tr> <td data-bbox="508 1518 808 1633">Parameter to be monitored</td> <td data-bbox="824 1518 1406 1633">Amount of greenhouse emission avoided is calculated based on monitored quantity of the animal manure composted and quantum of fossil fuel and electricity consumed for its production.</td> </tr> <tr> <td data-bbox="508 1633 808 1692">Frequency of monitoring</td> <td data-bbox="824 1633 1406 1692">The quantum of greenhouse gas combusted is monitored on a monthly basis</td> </tr> <tr> <td data-bbox="508 1692 808 1751">Legal /regulatory / corporate limits (if any)</td> <td data-bbox="824 1692 1406 1751">Not applicable</td> </tr> <tr> <td data-bbox="508 1751 808 1810">QA/QC</td> <td data-bbox="824 1751 1406 1810">The parameter is calculated based on the monitored data/parameter.</td> </tr> </table>				Parameter to be monitored	Amount of greenhouse emission avoided is calculated based on monitored quantity of the animal manure composted and quantum of fossil fuel and electricity consumed for its production.	Frequency of monitoring	The quantum of greenhouse gas combusted is monitored on a monthly basis	Legal /regulatory / corporate limits (if any)	Not applicable	QA/QC	The parameter is calculated based on the monitored data/parameter.
Parameter to be monitored	Amount of greenhouse emission avoided is calculated based on monitored quantity of the animal manure composted and quantum of fossil fuel and electricity consumed for its production.											
Frequency of monitoring	The quantum of greenhouse gas combusted is monitored on a monthly basis											
Legal /regulatory / corporate limits (if any)	Not applicable											
QA/QC	The parameter is calculated based on the monitored data/parameter.											

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

There were no data and parameters identified that have negative impacts on the project activity. Hence there are no data and parameters to be monitored for E+/S+ assessments for negative impacts.

Data / Parameter:	NA						
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.	NA						
Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate “harmless” condition or demonstrate Impact on SDG							
	Parameter to be monitored	NA					
	Frequency of monitoring	NA					
	Legal /regulatory / corporate limits (if any)	NA					
	QA/QC	NA					
Program of Risk Management Actions to mitigate risk related to aspect (if any for aspects assessed to be harmful)	NA						
	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:							

B.7.3. Sampling plan

Not Applicable

B.7.4. Other elements of the monitoring plan

The project activity is operated and managed by the project proponent with the help of site in-charge. For the accurate execution of the Project activity a project team will be constructed. The solar power project abides and will abide by all regulatory and statutory requirements as prescribed under the state and central laws and regulations. The project team is delegated with the responsibility of monitoring and documenting the electricity generated and also safe keeping of the recorded data. Based on the data for electricity generation the project team in consultation with associated consultants will calculate the emission reductions.

The electricity being generated is monitored at the grid interconnection point. The monthly meter readings are taken jointly by the representative from the appropriate authority and the representatives of the sub-projects/ project proponents.

Measurement:

The export and import energy will be measured continuously using Main and Check meters located at the substations. Readings of meters shall be taken on monthly basis by authorized officer of respective State Electricity Board in the presence of GCC Project proponent or representative of GCC Project proponent. Based on the Meter Reading Statement to GCC Project proponent, invoices will be raised. These invoices can be used for cross checking the meter readings taken for the respective project activity.

Metering Equipment:

Metering equipment will be electronic tri-vector meters of accuracy class 0.2s required for all the sub-projects listed in the document.

Meter Test Checking:

The electricity being generated will be monitored using the metering equipment consisting of main and check meters. Both the main and check meters will be identical in make, technical standards and of 0.2 accuracy class and calibration and comply with the requirements of electricity rules. The main and check meters shall be tested for accuracy in accordance with the state rules.

If during testing, both the main and check meters are found within the permissible limit of error i.e. 0.2%, the energy computation will be as per the main meter. If during test, any of the main meters is found to be within the permissible limits of error but the corresponding check meter is beyond the permissible limit, the energy computation will be as per the main meter. The check meter shall be calibrated immediately. If during the tests, the main meter is found to be beyond permissible limits of error, but the corresponding check meter is found to be within the permissible limits of error, then the energy computation for the month to date and time of such test check shall be in accordance with check meter. The main meter shall be calibrated immediately and the energy for the period thereafter shall be as per the calibrated main meter.

Data collection and archiving:

Main and check meters are installed at the substation of all the sub projects to measure the combined amount of electricity exported and imported from the grid by the power units. The reading of the JMR

report will be cross checked with the monthly electricity sales invoices. The data will be archived on the paper throughout the crediting period.

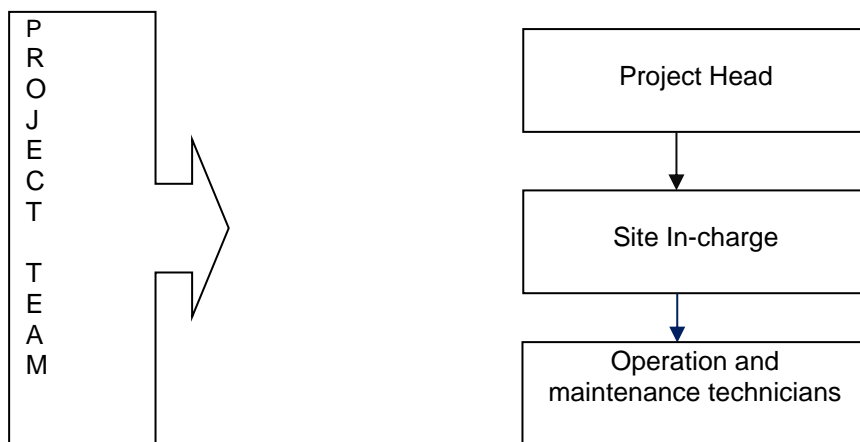
Internal audits and performance review:

The records will be regularly audited and will be checked by the senior officials from the projects on annual basis. The officials will monitor the actual emission reduction. The site in-charge will be responsible for taking readings at site.

Emergency procedures:

In case of monitoring meter failure or errors, the grid officials would immediately replace the meter with a calibrated meter. Although main and backup meters will be installed as an emergency measure in the substation, onsite meters will be available in case both meters at the substation are out.

Designation	Responsibilities
Project Head	<ul style="list-style-type: none"> • Performance reviews and review of the data every month.
Site In-charge	<ul style="list-style-type: none"> • Operation, Monitoring and verification of data • Data recording • Storage of data • Review of reported data
Operation and maintenance technicians	<ul style="list-style-type: none"> • Operation and maintenance • Storage of data • Data recording



Section C. Start date, crediting period type and duration

C.1. Start date of the Project Activity

23/03/2016²⁴

C.2. Expected operational lifetime of the Project Activity

25 years.

C.3. Crediting period of the Project Activity

10 Years.

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

23/03/2016 to 22/03/2026

C.3.2. Duration of crediting period

10 years

Section D. Environmental impacts

D.1. Analysis of environmental impacts

According to Indian regulation, the implementation of the solar power project does not require an environmental impact assessment. As per the Ministry of Environment and Forests (Government of India) notification dated September 14, 2006 regarding the requirement of environmental Impact Assessment (EIA) studies as per the Environmental Protection Rule, 1986 (Published in the Gazette of India, Extraordinary, Part-II, and Section 3, Sub-section (ii) Ministry of Environment and Forests), any project developer in India needs to file an application to the Ministry of Environment and Forests (including a public hearing and an EIA) in case the proposed industry or project is listed in a predefined list. Solar Power Projects are not included in this list and thus an EIA is not required. Hence, environmental analysis is not required for project activity.

The report on “Developmental Impacts and Sustainable Governance Aspects of Renewable Energy Projects” prepared by MNRE dated September 2013 clearly mentioned that solar project activity operations do not result in direct air pollution, noise pollution. Please refer below web link for the same.

The project doesn't have any significant impact on the environment.

D.2. Environmental impact assessment and management action plans

According to Indian regulation, the implementation of the solar power project does not require an environmental impact assessment. As per the Ministry of Environment and Forests (Government of India) notification dated September 14, 2006 regarding the requirement of environmental Impact Assessment (EIA) studies as per the Environmental Protection Rule, 1986 (Published in the Gazette of India, Extraordinary, Part-II, and Section 3, Sub-section (ii) Ministry of Environment and Forests), any project developer in India needs to file an application to the Ministry of Environment and Forests (including a public hearing and an EIA) in case the proposed industry or project is listed in a

predefined list. Solar Power Projects are not included in this list and thus an EIA is not required. Hence, environmental analysis is not required for the project activity.

Further amendments to the notification dated on September 14, 2006 have been done on 14 July 2018. As per the notification:

“The following projects or activities shall require prior environmental clearance from the concerned regulatory authority, which shall hereinafter referred to be as the Central Government in the Ministry of Environment and Forests for matters falling under Category ‘A’ in the Schedule and at State level the State Environment Impact Assessment Authority (SEIAA) for matters falling under Category ‘B’ in the said Schedule, before any construction work, or preparation of land by the project management except for securing the land, is started on the project or activity:

- 1) All new projects or activities listed in the Schedule to this notification;
- 2) Expansion and modernization of existing projects or activities listed in the Schedule to this notification with addition of capacity beyond the limits specified for the concerned sector, that is, projects or activities which cross the threshold limits given in the Schedule, after expansion or modernization;
- 3) Any change in product - mix in an existing manufacturing unit included in Schedule beyond the specified range.”

As the solar generation projects are not listed in any of the categories of the schedule, so, the project is considered environmentally safe and as per Host party- India no EIA is required.

Section E. Environmental and social safeguards

The main purpose of the environment and social safeguard assessment is to identify, evaluate and manage environmental and social impacts that may arise due to implementation and operation of the project. The solar power project is not likely to have significant adverse environmental and social impacts during the construction & operation period of the project activity. Further, 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.

E.1. Environmental safeguards

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Impact of Project Activity on		Information on Impacts, Do-No-Harm Risk Assessment and Establishing Safeguards								Project Owner's Conclusion		GCC Project Verifier's Conclusion (To be included in Project Verification Report only)	
		Description of Impact (positive or negative)	Legal/voluntary corporate requirement / regulatory/voluntary corporate threshold Limits	Do-No-Harm Risk Assessment (choose which ever 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	3 rd Party Audit
				Not Applicable	Harmless	Harmful	Operational Controls	Program of Risk Management Actions	Monitoring parameter frequency and of	Ex- Ante scoring of the environmental impact (as per scoring matrix Appendix-02)			
<p>Environmental Aspects on the identified categories³¹ 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 Project Owner(s) has/have control.</p>	<p>Describe the applicable national regulatory requirements /legal limits / voluntary corporate 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</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</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/regulatory 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 or eliminate 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 or 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>	<p>Describe how the GCC Verifier has assessed that the impact of the Project Activity against the particular aspect and in case of "harmful impacts" how has the project adopted Risk Mitigation Action Plans to mitigate the risks of negative environmental impacts to levels that are unlikely to cause any harm as well as the net positive impacts of the project with respect to the most likely baseline alternative.</p>	

³¹ 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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					operating principles, then the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as Harmless /If the project has a positive impact on the environment mark it as "harmless" as well.	(may be un-safe) and shall be indicated as Harmful						
Reference to paragraphs of Environmental and Social Safeguards Standard		Paragraph 12 (a)	Paragraph 13 (c)	Paragraph 13 (d) (i)	Paragraph 13 (d) (ii)	Paragraph 13 (d) (iii)	Paragraph 13 (e) (i)	Paragraph 13 (e) (ii)	Paragraph 12 (c) and Paragraph 13 (f)	Paragraph 22		Paragraph 24 and Paragraph 26 (a) (i)
Environment - Air	SO_x emissions (EA01)	There are no SO _x emissions caused by the solar power project	The Air (Prevention & Control of Pollution) Act 1981 stipulates thresholds for both ambient air quality and stack emissions	Not applicable as there are no SO _x emissions from the project activity.	No actions required	No actions required	Not applicable	Not applicable	Not applicable	Not applicable	The CPCB letter dated 17-Nov-2017 (B-29012/IPC-VI/2017-18) clearly states that the solar power projects of all capacities are to be considered as the industries under White category. There shall be no requirement of obtaining the "Consent to Operate" for White category industries.	
	NO_x emissions (EA02)	There are no NO _x emissions caused by the solar power project	The Air (Prevention & Control of	Not applicable as there are no	No actions required	No actions required	Not applicable	Not applicable	Not applicable	Not applicable	The CPCB letter dated November 2017 clearly states	

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			Pollution) Act 1981 stipulates thresholds for both ambient air quality and stack emissions	<i>NO_x</i> emissions from the project activity.								that the solar power projects of all capacities are to be considered as the industries under White category. There shall be no requirement of obtaining the "Consent to Operate" for White category industries.
<i>CO₂ emissions (EA03)</i>	The project reduces CO2 emissions since it reduces the amount of fossil fuel used. In case of "no project", stated amount of electricity would be generated from fossil fuels and cause air pollution	The Air (Prevention & Control of Pollution) Act 1981 stipulates thresholds for both ambient air quality and stack emissions	Not applicable as there are no CO ₂ emissions from the project activity.	No actions required	No actions required	Not applicable	Not applicable	Not applicable	+1	<p>The CPCB letter dated November 2017 clearly states that the solar power projects of all capacities are to be considered as the industries under White category. There shall be no requirement of obtaining the "Consent to Operate" for White category industries.</p> <p>However, in the baseline scenario (grid) some of the fossil fuel power plants may have emitted CO2 emissions, which has been calculated by the combined margin emission factor as mentioned in the PSF. Therefore, emission reductions are</p>		

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											expected to be reduced which will be regularly monitored and verified ex-post and therefore is eligible to be scored.	
<i>CO emissions (EA04)</i>	There are no <i>CO</i> emissions caused by the solar power project	The Air (Prevention & Control of Pollution) Act 1981 stipulates thresholds for both ambient air quality and stack emissions	Not applicable as there are no <i>CO</i> emissions from the project activity.	No actions required	No actions required	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	The CPCB letter dated November 2017 clearly states that the solar power projects of all capacities are to be considered as the industries under White category. There shall be no requirement of obtaining the "Consent to Operate" for White category industries.	
<i>Suspended particulate matter (SPM) emissions (EA05)</i>	There are no <i>suspended particulate matter</i> emissions caused by the solar power project	The Air (Prevention & Control of Pollution) Act 1981 stipulates thresholds for both ambient air quality and stack emissions	Not applicable as there are no <i>SPM</i> emissions from the project activity.	No actions required	No actions required	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	The CPCB letter dated November 2017 clearly states that the solar power projects of all capacities are to be considered as the industries under White category. There shall be no requirement of obtaining the "Consent to Operate" for White category industries.	
<i>Fly ash generation (EA06)</i>	There are no <i>fly ash</i> emissions caused by the solar power project	The Air (Prevention & Control of Pollution) Act 1981 stipulates	Not applicable as there are no <i>fly ash</i> emissions from the	No actions required	No actions required	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	The CPCB letter dated November 2017 clearly states that the solar power projects of all capacities	

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			thresholds for both ambient air quality and stack emissions	project activity.							are to be considered as the industries under White category. There shall be no requirement of obtaining the "Consent to Operate" for White category industries.	
<i>Non-Methane Volatile Organic Compounds (NMVOCs) (EA07)</i>	There are no SO _x emissions caused by the solar power project	The Air (Prevention & Control of Pollution) Act 1981 stipulates thresholds for both ambient air quality and stack emissions	Not applicable as there are no SO _x emissions from the project activity.	No actions required	No actions required	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	The CPCB letter dated November 2017 clearly states that the solar power projects of all capacities are to be considered as the industries under White category. There shall be no requirement of obtaining the "Consent to Operate" for White category industries.	
<i>Odor (EA08)</i>	There are no odor emissions caused by the solar power project	The Air (Prevention & Control of Pollution) Act 1981 stipulates thresholds for both ambient air quality and stack emissions	Not applicable as there are no odor emissions from the project activity.	No actions required	No actions required	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	The CPCB letter dated November 2017 clearly states that the solar power projects of all capacities are to be considered as the industries under White category. There shall be no requirement of obtaining the "Consent to Operate" for White category industries.	

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	Noise Pollution (EA09)	There is no noise pollution caused by the solar power project	The Noise pollution (regulation and control), rules 2000 (amended in 2010) stipulates thresholds for noise pollution.	Not applicable as there is no noise pollution caused from the project activity.	No actions required	No actions required	Not applicable	Not applicable	Not applicable	Not applicable	There is no significant noise generated in the solar power plant, hence the noise pollution remains negative	
	Others (EA10)	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	
	Add more rows if required and corresponding notation with EA as prefix)											
Environment - Land	Solid waste Pollution from Plastics (EL-01)	Negative	Plastic Waste (Management and Handling) Rules, 2016 (Amended in 2018)	Not applicable	No actions required	No actions required	Not applicable	Not applicable	Not applicable	Not applicable	There would be no prominent plastic waste generated from the project activity. Hence this parameter would not be scored	
	Solid waste Pollution from Hazardous wastes (EL02)	Negative	Hazardous and other wastes (Management and Trans boundary Movement) Rules, 2016	Not applicable	No actions required	No actions required	Not applicable	Not applicable	Not applicable	Not applicable	There would be no hazardous waste generated in the project activity. However, the project proponent would take the complete responsibility to ensure the proper disposal of hazardous	

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											waste (If any). Hence this parameter would not be scored	
<i>Solid waste Pollution from Bio-medical wastes (EL03)</i>	Negative	Bio-medical waste management rules, 2016 (Amended in 2019)	Not applicable	No actions required	No actions required	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	There would be no prominent bio-medical waste generated from the project activity. Hence this parameter would not be scored	
<i>Solid waste Pollution from E-wastes (EL04)</i>	Negative	E- Waste (Management) Amendment Rules, 2018	Not applicable	Harmless	No actions required	All the details of e wastes and disposed batteries of the project activity will be recorded.	The project proponent will be responsible for maintaining the records and filling of returns as per laws applicable	Not applicable	Not applicable	Not applicable	The project proponent will be responsible for maintaining the records and filling of returns as per laws applicable. Hence this parameter would not be scored.	
<i>Solid waste Pollution from Batteries (EL05)</i>	Negative	Batteries (Management) Amendment Rules, 2001 (Amended in 2017-18)	Not applicable	Harmless	No actions required	All the details of e wastes and disposed batteries of the project activity will be recorded.	The project proponent will be responsible for maintaining the records and filling of returns as per laws applicable	Not applicable	Not applicable	Not applicable	The project proponent will be responsible for maintaining the records and filling of returns as per laws applicable. Hence this parameter would not be scored.	
<i>Solid waste Pollution from end-of-life products/equipment (EL06)</i>	Negative	Solid waste management rules, 2016	Not applicable	Harmless	No actions required	Solid waste from the project activity would be disposed as per the laws applicable.	The project proponent will be responsible for maintaining the records and filling of returns as per laws applicable.	Not applicable	Not applicable	Not applicable	The project proponent will be responsible for maintaining the records and filling of returns as per laws applicable. Hence this parameter	

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											would not be scored.	
	<i>Soil Pollution from Chemicals (including Pesticides, heavy metals, lead, mercury) (EL07)</i>	Negative	There are no stipulated rules for soil quality standards.	Not applicable	No actions required	No actions required	Not applicable	Not applicable	Not applicable	Not applicable	There is no prominent soil pollution from chemicals from the project activity. Hence this parameter would not be scored.	
	<i>land use change (change from cropland /forest land to project land) (EL08)</i>	Negative	There are no stipulated rules for soil quality standards.	Not applicable	No actions required	No actions required	Not applicable	Not applicable	Not applicable	Not applicable	There is no prominent soil erosion caused from the project activity. Hence this parameter would not be scored.	
	<i>Others (EL09)</i>	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	
	<i>Add more rows if required</i>											
Environment - Water	<i>Reliability/ accessibility of water supply (EW01)</i>	Negative	The Water (Prevention & Control of Pollution) Act 1974	Not applicable	No actions required	No actions required	Not applicable	Not applicable	Not applicable	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 such emissions, on which data is not available and can't be quantified and therefore this	

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											parameter will not be scored.	
<i>Water Consumption from ground and other sources (EW02)</i>	Negative	Permission for abstraction of Ground water under Environmental (Protection) Act 1986	Not applicable	No actions required	No actions required	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	There is no ground water consumption in the two project sites and necessary permissions will be obtained from the local authorities if the ground water is used. Hence this parameter would not be scored. However, the in the baseline scenario (grid) some of the fossil fuel power plants may have such emissions, on which data is not available and can't be quantified and therefore this parameter will not be scored.	
<i>Generation of wastewater (EW03)</i>	Negative	The Water (Prevention & Control of Pollution) Act 1974	Not applicable	No actions required	No actions required	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	There is no prominent effect as provisions of soak pits and septic tanks are onsite for treatment and disposal of waste water discharge. However, the in the baseline scenario (grid) some of the fossil fuel power plants may have generation of waste water on which data is not available	

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												and can't be quantified and therefore the emission reductions cannot be quantified and therefore this parameter will not be scored.	
	<i>Wastewater discharge without/with insufficient treatment (EW04)</i>	Negative	The Water (Prevention & Control of Pollution) Act 1974	Not applicable	No actions required	No actions required	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	There is no prominent effect as provisions of soak pits and septic tanks are onsite for treatment and disposal of waste water discharge. However, the 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.	
	<i>Pollution of Surface, Ground and/or Bodies of water (EW05)</i>	Negative	The Water (Prevention & Control of Pollution) Act 1974	Not applicable	No actions required	No actions required	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	There is no prominent effect as provisions of soak pits and septic tanks are onsite for treatment and disposal of waste water discharge. However, the in the baseline scenario (grid) some of the	

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												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.	
	<i>Discharge of harmful chemicals like marine pollutants / toxic waste (EW06)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	<i>Others (EW07)</i>	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	
	<i>Add more rows if required</i>												
Environment – Natural Resources	<i>Conserving mineral resources (ENR01)</i>	Negative	There are no stipulated rules for mineral resource standards.	Not applicable	No actions required	No actions required	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Since the project activity is solar power plant, no minerals were used in the activity. Hence this parameter would not be scored.	
	<i>Protecting/enhancing plant life (ENR02)</i>	Negative	There are no stipulated rules and regulations to	Not applicable	No actions required	No actions required	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	The project activity has been implemented in barren land. Hence this	

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			ascertain for protecting plant life.								parameter would not be scored.	
<i>Protecting/enhancing species diversity (ENR03)</i>	Negative	There are no stipulated rules and regulations to ascertain for protecting plant life.	Not applicable	No actions required	No actions required	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	The project activity has been implemented in barren land. Hence this parameter would not be scored.	
<i>Protecting/enhancing forests (ENR04)</i>	Negative	The Forest (Conservation) Act 1980 & 1981	Not applicable	No actions required	No actions required	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	The project activity has not used any forest land. Hence this parameter would not be scored.	
<i>Protecting/enhancing other depletable natural resources (ENR05)</i>	Negative	National Forest Policy (Revised) 1988	Not applicable	No actions required	No actions required	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	The project activity has been implemented in barren land, so no prominent impact. Hence this parameter would not be scored.	
<i>Conserving energy (ENR06)</i>	Negative	Energy Conservation Act 2001	Not applicable	No actions required	No actions required	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	There is no prominent impact. Hence this parameter would not be scored.	
<i>Replacing fossil fuels with renewable sources of energy (ENR07)</i>	The solar power project replaces fossil fuel with the renewable solar energy for the power generation by installing the solar power plant which would have been otherwise generated from the fossil fuel dominant grid connected power plants in the absence of the project activity	Energy Conservation Act 2001	Project activity causes positive impact on the environment by replacing the fossil fuels with the renewable energy	No actions required	No actions required	Not applicable	Not applicable	Not applicable	Not applicable	+1	There is no prominent impact. Hence this parameter would not be scored.	

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				sources of energy (WTG). Hence not applicable								
<i>Replacing ODS with non-ODS refrigerants (ENR08)</i>	Negative		There are no stipulated rules ODS & non-ODS refrigerants	Not applicable	No actions required	No actions required	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	There is no prominent impact. Hence this parameter would not be scored.
<i>Others (ENR09)</i>	Not applicable		Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	
<i>Add more rows if required</i>												
Net Score:		+2										
Project Owner's Conclusion in PSF:		The Project Owner confirms that the Project Activity will not cause any net harm to Environment.										
GCC Project Verifier's Opinion:		The GCC Verifier certifies that the Project Activity [is not likely to cause any] or [is likely to cause] net harm to the environment...										

E.2. Social Safeguards

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Impact of Project Activity on	Information on Impacts, Do-No-Harm Risk Assessment and Establishing Safeguards	Project Owner's Conclusion	GCC project Verifier's Conclusion
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											(To be included in Project Verification Report only)
		Description of Impact <i>(positive or negative)</i>	Legal requirement /Limit, Corporate policies / Industry best practice	Do-No-Harm Risk Assessment <i>(Choose which ever is applicable)</i>			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	3 rd Party Audit
				Not Applicable	Harmless	Harmful					
Social Aspects on the identified categories³² indicated below.	<i>Indicators for social impacts</i>	<i>Describe and identify actual and anticipated impacts on society and stakeholders, both positive or negative, from all sources 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</i>	<i>Describe the applicable national regulatory requirements / legal limits or organizational policies or industry best practices related to the identified risks of social impacts</i>	<i>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</i>	<i>If social impacts exist but are expected to be in compliance with applicable national regulatory requirements/ stricter 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, project having positive impact on society. To the BAU / baseline scenario must also mark their aspect as "harmless"</i>	<i>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</i>	<i>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.</i>	<i>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</i>	-1 0 +1	<i>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</i>	<i>Describe how the GCC Verifier has assessed that the impact of Project Activity on social aspects (based on monitored parameters, quantitative or qualitative) and in case of "harmful" aspects how has the project owner adopted Risk Mitigation Action / management actions plans and policies to mitigate the risks of negative social impacts to levels that are unlikely to cause any harm. Also describe the positive impacts of the project on the society as compared to the baseline alternative or BAU scenario.</i>

³² 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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Reference to paragraphs of Environmental and Social Safeguards Standard		<i>Paragraph 12 (a)</i>	<i>Paragraph 13 (c)</i>	<i>Paragraph 13 (d) (i)</i>	<i>Paragraph 13 (d) (ii)</i>	<i>Paragraph 13 (d) (iii)</i>	<i>Paragraph 13 (e) (i)</i>	<i>Paragraph 12 (c) and Paragraph 13 (f)</i>	<i>Paragraph 23</i>		<i>Paragraph 24 and Paragraph 26 (a) (ii)</i>
Social - Jobs	<i>Long-term jobs (> 10 year) created/lost (SJ01)</i>	Project activity creates direct long term employment for project lifetime of 25 years	There is no legal requirement from local authority to create permanent employment from the project activity.	Not applicable	No actions required	No actions required	Not applicable	Project activity creates direct employment for around 25 people per year during the Operation and maintenance of the project activity. Which provides the positive impact on society which would have not been available in the absence of the project activity? It will be monitored through Employment records and PF challans	+1	Not applicable	
	<i>New short-term jobs (< 1 year) created/lost (SJ02)</i>	Project activity created short term jobs for less than year during the project construction period.	There is no legal requirement from local authority to create permanent employment from the project activity.	Not applicable	No actions required	No actions required	Not applicable	Project activity created short term jobs during the construction of the project activity. It can be verified from the construction work records and employment records. Since it is one time impact during the crediting period need not be monitored for the entire crediting period	+1	Not applicable	
	<i>Sources of income generation increased/reduced (SJ03)</i>	Negative	There is no legal requirement from local authority to create permanent employment from the project activity.	Not applicable	No actions required	No actions required	Not applicable	Not applicable	Not applicable	The income level of the local area has increased owing to the generation of employment because of the solar plant.	

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	<i>Avoiding discrimination when hiring people from different race, gender, ethnics, religion, marginalized groups, people with disabilities (SJ04)</i> <i>(Human rights)</i>	Not Applicable	No regulation	Not applicable	No action required	No action required	Not applicable	It should be ensured that proper and adequate number of toilets is constructed for the Labourers so that hygienic conditions prevail in the site area. Therefore this parameter will not be scored	NA	Not applicable	
Social - Health & Safety	<i>Disease prevention (SHS01)</i>	<i>Disease prevention</i>	Negative	The Factories Act, 1948	Not applicable	No actions required	No actions required	Not applicable	Not applicable	Not applicable	There are adequate number of toilets in the plant area to maintain the hygienic conditions and proper health of the employees. Therefore this parameter will not be scored.
	<i>Occupational health hazards (SHS02)</i>	Not Applicable	Crime comes under law & order of local government authority and there is no legal requirement from local authority to project proponent to liable to reduce crime	Not applicable	No action required	No action required	Not applicable	Not applicable	NA	Not applicable	

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	<i>Reducing / increasing accidents /Incidents /fatality (SHS03)</i>	Negative	The Factories Act, 1948	Not applicable	No actions required	No actions required	Not applicable	Not applicable	Not applicable	Not applicable	The project proponent 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 (SHS04)</i>	Negative	The law and order of the local government is the authority that looks after the crimes. There is no stipulated requirement from the local authority to make the project proponent liable to reduce crimes.	Not applicable	No actions required	No actions required	Not applicable	Not applicable	Not applicable	Not applicable	Project activity will increase local employment so there is no chance to increase crime in the local area due to the solar projects. Therefore this parameter will not be scored
	<i>Reducing / increasing food wastage (SHS05)</i>	Negative	The Compulsory Food Waste Reduction Bill, 2018	Not applicable	No actions required	No actions required	Not applicable	Not applicable	Not applicable	Not applicable	A 2-bin system for the food waste and recyclables viz. paper, plastic, glass,

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										scrap metal waste etc. for the segregation and storage in designated waste bins will be implemented. Therefore this parameter will not be scored.	
<i>Reducing / increasing indoor air pollution (SHS06)</i>	Negative	The (Prevention & Control of Pollution) Act 1981	Air & Act	Not applicable	No actions required	No actions required	Not applicable	Not applicable	Not applicable	The solar power plant falls under the white category of industries. There is no prominent air pollution caused from the project activity. Hence this parameter would not be scored.	
<i>Efficiency of health services (SHS07)</i>	Negative	There are no stipulated rules for health services		Not applicable	No actions required	No actions required	Not applicable	Not applicable	Not applicable	There are limited health services in the village, the solar plant is located. Global Coal and Mining Private Limited and Abijit Solar Energy Private Limited shall conduct regular health checkups	

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										as their CSR activity. Hence this parameter would not be scored.	
	<i>Sanitation and waste management (SHS08)</i>	Negative	Hazardous and Other Wastes (Management and Trans-boundary Movement) Amendment Rules, 2016	Not applicable	No actions required	No actions required	Not applicable	Not applicable	Not applicable	The MoEFCC notification dated 01.03.2019 (G.S.R. 178(E)) states that 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.	

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										<p>The project proponent provides soak pits, toilets for proper sanitation and waste water management in the project site.</p> <p>The project proponent shall ensure proper disposal of Hazardous waste through actual user, waste collector etc., in accordance with the Central Pollution Control Board guidelines.</p> <p>Hence, this parameter is not scored.</p>	
	<i>Other health and safety issues (SHS09)</i>	Negative	There are no stipulated rules for this parameter.	Not applicable	No actions required	No actions required	Not applicable	Not applicable	Not applicable	There is no prominent health issues caused from the project activity. Hence this parameter would not be scored.	
	<i>Add more</i>										

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	<i>rows if required</i>										
Social - Education	<i>specialized training / education to local personnel (SE01)</i>	Project involves training of new people on project technology.	There are no legal requirements from local authority to provide training.	Not applicable	No actions required	No actions required	Not applicable	Not applicable	+1	The project proponent 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. Hence, this parameter would not be scored.	
	<i>Educational services improved or not (SE02)</i>	Negative	There are no legal requirements from local authority to provide education.	Not applicable	No actions required	No actions required	Not applicable	Not applicable	Not applicable	The project proponent shall take initiative in promoting education, employment and skill development among children and women especially. Hence this parameter would not be scored.	
	<i>Project-related knowledge dissemination effective</i>	Project activity transfers knowledge on new renewable energy technology	There are no legal requirements from local authority to provide knowledge on the project.	Not applicable	No actions required	No actions required	Not applicable	Not applicable	+1	The stakeholder consultation meeting has been conducted to take the	

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	<i>or not (SE03)</i>									opinion of the local stakeholders and inform them about the project. Hence this parameter would not be scored.	
	<i>Other educational issues (SE03)</i>	Negative	There are no legal requirements from local authority to provide education.	Not applicable	No actions required	No actions required	Not applicable	Not applicable	Not applicable	The project proponent shall take initiative in promoting education, employment and skill development among children and women especially. Hence this parameter would not be scored.	Not applicable
	<i>Add more rows if required (SE04)</i>										
Social - Welfare	<i>Improving/deteriorating working conditions (SW01)</i>	Negative	No local regulation or requirements.	Not applicable	No actions required	No actions required	Not applicable	Not applicable	Not applicable	The project proponent maintains highly efficient work culture for their employees. There is no chance of any deteriorating working conditions. Hence this parameter would not be scored.	

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<p><i>Community and rural welfare (indigenous people and communities)</i> (SW02)</p>	<p>Negative</p>	<p>No local or regulation requirements.</p>	<p>Not applicable</p>	<p>No actions required</p>	<p>No actions required</p>	<p>Not applicable</p>	<p>Not applicable</p>	<p>Not applicable</p>	<p>In the stakeholder meeting, the local communities were of the opinion that the project provides good economic opportunities and more such projects will help the local community to develop. Hence this parameter would not be scored.</p>	
<p><i>Poverty alleviation (more people above poverty level)</i> (SW03)</p>	<p>Negative</p>	<p>No local or regulation requirements.</p>	<p>Not applicable</p>	<p>No actions required</p>	<p>No actions required</p>	<p>Not applicable</p>	<p>Not applicable</p>	<p>Not applicable</p>	<p>The project proponent's objective is to develop the project along with the local community. The local people have a good involvement in the project maintenance. Hence this parameter would not be scored.</p>	
<p><i>Improving/deteriorating wealth</i></p>	<p>Negative</p>	<p>No local or regulation requirements.</p>	<p>Not applicable</p>	<p>No actions required</p>	<p>No actions required</p>	<p>Not applicable</p>	<p>Not applicable</p>	<p>Not applicable</p>	<p>Local community might chose to work during</p>	

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	<i>distribution/ generation of income and assets (SW04)</i>									the construction of access roads and other project components and as security guards for the plant.. Hence this parameter would not be scored.	
	<i>Increase or / deterioration municipal revenues (SW05)</i>	Negative	No local regulation or requirements.	Not applicable	No actions required	No actions required	Not applicable	Not applicable	Not applicable	Projects do not fall under municipal areas,. Hence this parameter would not be scored.	
	<i>Women's empowerment (SW06) (Human rights)</i>	Negative	No local regulation or requirements.	Not applicable	No actions required	No actions required	Not applicable	Not applicable	Not applicable	The project proponent shall take initiative in promoting gender equality and encouraging women to grow economically. Hence this parameter would not be scored.	
	<i>Reduced / increase traffic congestion (SW07)</i>	Negative	No local regulation or requirements.	Not applicable	No actions required	No actions required	Not applicable	Not applicable	Not applicable	There will be adequate training on traffic and road safety operations to the drivers of project vehicles. Road	

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										safety awareness programs will be organized in coordination with local authorities to sensitize target groups. Hence this parameter would not be scored.	
<i>Exploitation of Child labour</i> <i>(Human rights)</i> <i>(SW08)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	
<i>Minimum wage protection</i> <i>(Human rights)</i> <i>(SW09)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	
<i>Abuse at workplace. (With specific reference to women and people with special disabilities / challenges)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	

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	<i>(Human rights) (SW10)</i>										
	<i>Other social welfare issues (SW11)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	
	<i>Avoidance of human trafficking and forced labour (Human rights) (SW12)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	
	<i>Avoidance of forced eviction and/or partial physical or economic displacement of IPLCs (Human rights) (CW13)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	
	<i>Provisions of resettlement and human settlement displacement (Human rights)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	

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	(CW14)										
	Add more rows if required										
Net Score:		+4									
Project Owner's Conclusion in PSF:		The Project Owner confirms that the Project Activity will not cause any net harm to society.									
GCC Project Verifier's Opinion:		The GCC Verifier certifies that the Project Activity [is not likely to cause any] or [is likely to cause] 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 for guidance.	Define project-level targets/actions in line with new 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)
Goal 1: End poverty in all its forms everywhere	N/A	N/A	N/A	N/A	N/A	N/A		
Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture	N/A	N/A	N/A	N/A	N/A	N/A		

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Goal 3. Ensure healthy lives and promote well-being for all at all ages	N/A	N/A	N/A	N/A	N/A	N/A		
Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	N/A	N/A	N/A	N/A	N/A	N/A		
Goal 5. Achieve gender equality and empower all women and girls	5.1 End all forms of discrimination against all women and girls everywhere	Yes	Equal pay for work of equal value for both men and women	No discrimination against women	5.1.1 Project owner implement and maintain the HR policy to ensure that no gender discrimination will be entertained while employing the workforce and paying the wages for the project activity to both men and women employees	Employment register, complaint register and pay slip		
Goal 6. Ensure availability and sustainable management of water and sanitation for all	N/A	N/A	N/A	N/A	N/A	N/A		
Goal 7. Ensure access to affordable, reliable, sustainable, and modern energy for all	SDG Target 7.2 "By 2030, increase substantially the	Yes	The project generates electricity from the sustainable and renewable solar source and contributes to increase the share of renewable energy mix in the global energy mix. Project uses solar PV technology which	Project target to generate and feed 17,192 MWh/year solar based electricity for entire lifetime of the project to the INDIAN national grid. Project has already started contributing	Project owner ensures and undertake following actions to contribute to the SDGs. 1.	Project O&M team at project site continuously monitors the Quantity of net		

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	share of renewable energy in the global energy mix” by the utilization of biomass as a renewable energy source.” Indicator 7.2.1 Renewable energy share in the total final energy consumption		is cleaner source of energy which avoids the equivalent amount of fossil fuel consumption for the power generation in the absence of the project activity. Project activity thus promotes investment into the cleaner technology-based power generation projects. By installing advanced solar PV energy technology project owner also promotes upgraded cleaner technology solutions and infrastructure in the power generation sector in the host country.	to the SDG 7 from its start date 23/03/2016 Project target to generate and supplies the solar –based electricity of 17,192 MWh/year to the Indian national grid for entire lifetime of the project activity.	Signed Power purchase agreement with consumers to ensure the consumption of generated power by the end consumer. 2. Ensures optimum plant efficiency to reduce outages and maximum generation. 3. Educate customers about consumption patterns to optimize renewable energy use	electricity generation supplied by the project (Solar) plant. Main and Check meters are installed at the substation by the electricity utility to measure the net exported electricity from the plant. The value of net electricity generation supplied to the grid as per Monthly Joint Meter Reading Report forms (BForms) which can be crosschecked from the invoice raised to Consumer		
Goal 8. Promote sustained, inclusive, and sustainable economic growth, full and productive employment and decent work for all	8.5 By 2030, achieve full and productive employment and decent work for all	Yes	Project activity supports creation of short term and long term job opportunities during the construction and operation of the project activity. Supports economic productivity through technology up gradation and innovation through training of labour in highly intensive sector. Project protects labour rights and promotes safe and secure	Project creates new employment and generates income for 25 no of people during the project lifetime. Through Project activity economic development has been achieved in the project location by creating opportunities to the other allied services and indirect employment.	1. Employment per the national labour and company law. 2. Maintains company HR policy to create standard	Project owner monitors the implantation of the policies and employee grievances if any through the separate HR manager		

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	women and men, including for young people and persons with disabilities, and equal pay for work of equal value 8.8 Protect labor rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment		working environments. Supports a transition to a low carbon society through employment training for former fossil fuel industry employees	Project creates new employment and generates income for 25 no of people during the project lifetime.	operating procedures (SOPs) to follow and maintain safe and secure work environment 3. paying the wages as per the minimum wages act of the country	and site in charge.		
Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	SDG Target 9.4 requires "By 2030, upgrade	YES	Project activity involves up gradation to advanced WTG technology which is clean and resilient infrastructure from the conventional fossil fuel-based power plant technology. Supports advanced	Project activity involves installation of 10 MW solar project in India. Project activity reduces 15,997 tCO2/year during the crediting period	Project O&M team continuously work to reduce the plant outages and trying to	O&M team monitors the real time generation from the plant and calculated		

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	<p>infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities". Indicator 9.4.1 CO2 emission per unit of value added</p>		<p>industrialization by providing zero greenhouse gas and nonpolluting clean electricity. Support industrialization through local hiring, procurement, and training and skills development.</p>		<p>achieve the maximum grid availability to generate and feed the maximum renewable energy to the grid</p>	<p>equivalent CO2 reductions. Plant outage and grid availability can be monitored through real-time scada data and O&M records.</p>		
<p>Goal 10. Reduce inequality within and among countries</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>		

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Goal 11. Make cities and human settlements inclusive, safe, resilient, and sustainable	N/A	N/A	N/A	N/A	N/A	N/A		
Goal 12. Ensure sustainable consumption and production patterns	N/A	N/A	N/A	N/A	N/A	N/A		
Goal 13. Take urgent action to combat climate change and its impacts	SDG Target 13.3 "Improve education, awareness-raising and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning". Indicator 13.3.2 Number of countries that have communicated the strengthening of	NO	Project activity generates renewable energy based electricity and mitigates the CO2 emissions which would have been generated from the fossil fuel based power plants.	Project activity involves installation of 10 MW solar projects in India. Project activity reduces 15,997 tCO2e per annum and 159,970 tCO2e during the crediting period.	Ensure optimum generation from the plant to the grid	O&M team monitors the real time generation from the plant and calculated equivalent CO2 reductions. Main and Check meters are installed at the substation by the electricity utility to measure the net exported electricity from the plant. The value of net electricity generation supplied to the grid as per Monthly Joint Meter Reading Report forms (BForms)		

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	institutional, systemic and individual capacity-building to implement adaptation, mitigation and technology transfer and development actions.					the basis for calculation of the emission reductions; which can be crosschecked from the invoice raised to Consumer.		
Goal 14. Conserve and sustainably use the oceans, seas, and marine resources for sustainable development	N/A	N/A	N/A	N/A	N/A	N/A		
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	N/A	N/A	N/A	N/A	N/A	N/A		
Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to	N/A	N/A	N/A	N/A	N/A	N/A		

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justice for all and build effective, accountable, and inclusive institutions at all levels								
Goal 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
SUMMARY						Targeted		Likely to be Achieved
Total Number of SDGs						5		5
Certification label (Bronze, Silver, Gold, Platinum, or Diamond) for the ACCs as defined in the PSF						Platinum		Platinum

Section G. Local stakeholder consultation

G.1. MODALITIES FOR LOCAL STAKEHOLDER CONSULTATION

Local stakeholders were invited by sending invitation letter to the local panchayat office. The consultation was carried out on 18/06/2022 within plant premises. Around 12 Stakeholders consulted in the meeting. The local stakeholder consultation process was carried out through a physical meeting at the project site. Local stakeholders were invited by sending invitation letter to the local panchayat office. As individual invitations are not a possible option. So, the local people were invited through the public notice. Around 12 Stakeholders consulted in the meeting which included village/panchayat president, Village development officer, Electricity Board officials and local villagers residing in the project area. As a part of the consultation process, the project representatives explained all stakeholders about the type of development through the project and the technology used for power generation towards enhancing stakeholders' awareness about the project. During the meeting the project representative talked about the employment opportunities and other benefits likely to be rendered through this project and its contribution towards fighting against climate change. Also, regular stakeholder engagement is one the key focus at the site. The project stakeholders were totally in support for setting up of these kinds of projects in the region.

G.2. SUMMARY OF COMMENTS RECEIVED

>> Some of the comments received from the local stakeholder consultation meeting for the project activities are as follows:

- Question: Will there be any more such projects in the future?
- Clarification: Definitely. We look forward to establish such projects which benefit the environment in the future.
- Question: It would be really good if government would take up the initiative to establish such plants in the barren lands so that the villages nearby get good appreciation and benefits.
- Clarification: We would definitely take up the initiative to talk to local authorities to encourage such projects.

G.3. CONSIDERATION OF COMMENTS RECEIVED

There were no other concerns from the stakeholders in all the above-mentioned meetings and they expressed satisfaction on the project activities. They understood the environmental, social and economic benefits of the solar project.

Section H. Approval and authorization

>> Project owner will submit a host country attestation for meeting the requirements of CORSIA.

APPENDIX 1. CONTACT INFORMATION OF PROJECT OWNERS

Organization name	Ushodaya Enterprises Private Limited
Country	India
Address	3 rd. Floor, Corporate Building, Ramoji Film City, Anajpur Village, Hayathnagar Mandal, Ranga Reddy, Telangana State -501512, India
Telephone	Mobile:+91-8008535421
Fax	-
E-mail	gsrinivas@eenadu.net
Website	-
Contact person	G. Srinivas, Chief Financial Officer and Company Secretary

APPENDIX 2. AFFIRMATION REGARDING PUBLIC FUNDING

The project developers declare that there would be no divergence of Official Development Assistance (ODA) in any of the project activity. This would be confirmed through undertaking / declaration from the project owner.

APPENDIX 3. APPLICABILITY OF METHODOLOGY(IES)

>> Please refer section B.6.1

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

>> please refer to section B.6.2

APPENDIX 5. FURTHER BACKGROUND INFORMATION ON MONITORING PLAN

>> please refer to section B.7.

APPENDIX 6. SUMMARY REPORT OF COMMENTS RECEIVED FROM LOCAL STAKEHOLDERS

>> Refer Section G.2

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

>> Not Applicable to this project activity since it is type A2.

<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>	

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 program’s website and the corresponding URLs.</p>	

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

As per clarification No.1, the projects/activities in this bundle form homogeneous type bundle based on two level analysis as all activities in the bundle have:

- Similarity in Technological Considerations i.e., All activities in this bundle apply same type of technology (solar-PV).
- Similarity in Economic and Policy Considerations i.e., Activities under this bundle have same additionality approach (Investment analysis).
- Similarity in Environmental or Methodological Considerations i.e., Activities in this bundle have same methodology, baseline and monitoring approach.

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

Not Applicable.

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 ³³ ;
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

³³See 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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