

المجلس العالمي للبصمة الكربونية
GLOBAL CARBON COUNCIL



Project Submission Form

V4.0- 2022

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<u>INSTRUCTIONS FOR COMPLETING THIS FORM</u>	ERROR! BOOKMARK NOT DEFINED.
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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	14.70 MW bundled solar power project by Aditya Green Energy Pvt. Ltd.		
PSF version number	01		
Date of completion / Updating of this form	19/10/2022		
Project Owner(s) as per LON/LOA <small>(Shall be consistent with De-registered CDM Type B Projects)</small>	Aditya Green Energy Private Limited		
Country where the Project Activity is located	India		
GPS coordinates of the project site(s)	Project Name	Latitude	Longitude
	ASK Green Energy Private Limited	18°25'50.2"N (18.4306)	77°06'13.7"E (77.1038)
	Ganesh Dall Industries	18°25'50.2"N (18.4306)	77°06'13.7"E (77.1038)
	Ganga Mauli Solar Energy	18°30'31.5"N (18.5087)	76°20'10.2"E (76.3361)
	Kalika Ginning & Pressing Private Limited	19°27'00.0"N (19.4511)	75°34'12.0"E (75.5712)
	Mankari Petroleum	18°16'29.5"N	77°04'33.9"E

		(18.2748)	(77.0760)
	Shri Satyasai Baba Infra Ventures Private Limited	18°30'31.5"N (18.5087)	76°20'10.2"E (76.3361)
Eligible GCC Project Type as per the Project Standard (Tick applicable project type)	<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 (Tick applicable label categories)	<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)		

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

<p>Applied methodologies including version No.</p> <p>(Shall be approved by the GCC or the CDM)</p>	<p>CDM approved consolidated Methodology</p> <p>AMS-I.D.: - Grid Connected renewable electricity generation – Version 18.0.</p>																																					
<p>GHG Sectoral scope(s) linked to the applied methodology(ies)</p>	<table border="1"> <thead> <tr> <th data-bbox="521 552 857 604">GHG Sectoral Scope</th> <th data-bbox="857 552 1446 604">GHG Sectoral Scope Title</th> </tr> </thead> <tbody> <tr> <td data-bbox="521 604 857 657">GHG-SS #1</td> <td data-bbox="857 604 1446 657">Energy (renewable/nonrenewable sources)</td> </tr> </tbody> </table>		GHG Sectoral Scope	GHG Sectoral Scope Title	GHG-SS #1	Energy (renewable/nonrenewable sources)																																
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<p>Applicable Rules and Requirements for Project Owners</p> <p>(Tick applicable Rules and Requirements)</p>	<table border="1"> <thead> <tr> <th colspan="2" data-bbox="521 695 1159 747">Rules and Requirements</th> <th data-bbox="1159 695 1442 747">Version</th> </tr> </thead> <tbody> <tr> <td colspan="2" data-bbox="521 747 1159 800"><input checked="" type="checkbox"/> ISO 14064-2</td> <td data-bbox="1159 747 1442 800"></td> </tr> <tr> <td colspan="2" data-bbox="521 800 1159 884"><input checked="" type="checkbox"/> Applicable host country legal requirements /rules</td> <td data-bbox="1159 800 1442 884"></td> </tr> <tr> <td data-bbox="521 884 805 1761" rowspan="12"> <input checked="" type="checkbox"/> GCC Rules and Requirements² </td> <td data-bbox="805 884 1159 936"><input checked="" type="checkbox"/> Project Standard</td> <td data-bbox="1159 884 1442 936">03.1</td> </tr> <tr> <td data-bbox="805 936 1159 1020"><input type="checkbox"/> Approved GCC Methodology (XXXXX)</td> <td data-bbox="1159 936 1442 1020"></td> </tr> <tr> <td data-bbox="805 1020 1159 1073"><input checked="" type="checkbox"/> Program Definitions</td> <td data-bbox="1159 1020 1442 1073">03.1</td> </tr> <tr> <td data-bbox="805 1073 1159 1157"><input checked="" type="checkbox"/> Environment and Social Safeguards Standard</td> <td data-bbox="1159 1073 1442 1157">03.0</td> </tr> <tr> <td data-bbox="805 1157 1159 1241"><input checked="" type="checkbox"/> Project Sustainability Standard</td> <td data-bbox="1159 1157 1442 1241">03.0</td> </tr> <tr> <td data-bbox="805 1241 1159 1356"><input checked="" type="checkbox"/> Instructions in Project Submission Form (PSF)-template</td> <td data-bbox="1159 1241 1442 1356">04.0</td> </tr> <tr> <td data-bbox="805 1356 1159 1409"><input checked="" type="checkbox"/> Clarification No. 01</td> <td data-bbox="1159 1356 1442 1409">V3.1</td> </tr> <tr> <td data-bbox="805 1409 1159 1461"><input checked="" type="checkbox"/> Clarification No. 02</td> <td data-bbox="1159 1409 1442 1461">0.1</td> </tr> <tr> <td data-bbox="805 1461 1159 1514"><input checked="" type="checkbox"/> Clarification No. 03</td> <td data-bbox="1159 1461 1442 1514">0.1</td> </tr> <tr> <td data-bbox="805 1514 1159 1566"><input checked="" type="checkbox"/> Clarification No. 04</td> <td data-bbox="1159 1514 1442 1566">0.1</td> </tr> <tr> <td data-bbox="805 1566 1159 1619"><input checked="" type="checkbox"/> Clarification No. 05</td> <td data-bbox="1159 1566 1442 1619">0.1</td> </tr> <tr> <td data-bbox="805 1619 1159 1703"><input checked="" type="checkbox"/> Standard on avoidance of double counting</td> <td data-bbox="1159 1619 1442 1703">0.1</td> </tr> <tr> <td data-bbox="805 1703 1159 1761"><input type="checkbox"/> Add rows if required</td> <td data-bbox="1159 1703 1442 1761"></td> </tr> </tbody> </table>		Rules and Requirements		Version	<input checked="" type="checkbox"/> ISO 14064-2			<input checked="" type="checkbox"/> Applicable host country legal requirements /rules			<input checked="" type="checkbox"/> GCC Rules and Requirements ²	<input checked="" type="checkbox"/> Project Standard	03.1	<input type="checkbox"/> Approved GCC Methodology (XXXXX)		<input checked="" type="checkbox"/> Program Definitions	03.1	<input checked="" type="checkbox"/> Environment and Social Safeguards Standard	03.0	<input checked="" type="checkbox"/> Project Sustainability Standard	03.0	<input checked="" type="checkbox"/> Instructions in Project Submission Form (PSF)-template	04.0	<input checked="" type="checkbox"/> Clarification No. 01	V3.1	<input checked="" type="checkbox"/> Clarification No. 02	0.1	<input checked="" type="checkbox"/> Clarification No. 03	0.1	<input checked="" type="checkbox"/> Clarification No. 04	0.1	<input checked="" type="checkbox"/> Clarification No. 05	0.1	<input checked="" type="checkbox"/> Standard on avoidance of double counting	0.1	<input type="checkbox"/> Add rows if required	
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² GCC Program rules and requirements: <http://www.globalcarboncouncil.com/resource-centre/>

	<input checked="" type="checkbox"/> CDM Rules ³	<input checked="" type="checkbox"/> Approved CDM Methodology (AMS- I.D.)	18.0
		<input type="checkbox"/> TOOL 1- Tool for the demonstration and assessment of additionality	
		<input type="checkbox"/> TOOL 02- Combined tool to identify the baseline scenario and demonstrate additionality	
		<input checked="" type="checkbox"/> TOOL 07- Tool to calculate the emission factor for an electricity system	07.0
		<input type="checkbox"/> TOOL 19- Demonstration of additionality of microscale project activities	
		<input checked="" type="checkbox"/> TOOL 21- Demonstration of additionality of small-scale project activities	13.0
		<input type="checkbox"/> TOOL 23- Additionality of first-of-its-kind project activities	
		<input type="checkbox"/> TOOL 24- Common practice	
		<input checked="" type="checkbox"/> TOOL 27- Investment analysis	11.0
		<input type="checkbox"/> TOOL 32- Positive lists of technologies	
		<input type="checkbox"/> Guidelines for objective demonstration and assessment of barriers	
		<input type="checkbox"/> Add rows if required	
Choose Third Party Project Verification by approved GCC Verifiers⁴	<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⁺)		

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

⁴ **Note:** GCC Verifiers under the Individual Track are not eligible to conduct verifications for GCC Project Activities whose

<p>(Tick applicable verification categories)</p>	<p><input checked="" type="checkbox"/> United Nations Sustainable Development Goals (SDG+)</p> <p><input type="checkbox"/> Bronze SDG Label</p> <p><input type="checkbox"/> Silver SDG Label</p> <p><input checked="" type="checkbox"/> Gold SDG Label</p> <p><input type="checkbox"/> Platinum SDG Label</p> <p><input type="checkbox"/> Diamond SDG Label</p> <p><input checked="" type="checkbox"/> CORSIA requirements (C+)</p> <p><input type="checkbox"/> Host Country Attestation on Double counting</p>
<p>Declaration by the 'Authorized Project Owner⁵ and focal point'</p> <p>(Tick all applicable statements⁶)</p>	<p>The Project Owner(s) declares that:</p> <p>Generic Requirements applicable to all Project Types:</p> <p><input checked="" type="checkbox"/> We confirm that the Project Activity complies with the eligibility of the applicable project type (A1, A2, A3, B1 or B2) as stipulated by the Project Standard and relevant clarifications.</p> <p><input checked="" type="checkbox"/> We confirm that the Project Activity shall start or have started operations, and shall start or have started generating emission reductions, on or after 1 January 2016.</p> <p><input checked="" type="checkbox"/> We confirm that the Project Activity is eligible to be registered under the GCC program.</p> <p>We shall ensure the following for the Project Activity (tick at least one of the two options):</p> <p><input checked="" type="checkbox"/> No outcomes (e.g. emission reductions, environmental attributes) generated by the Project Activity under GCC will be claimed as carbon credits or environmental attributes under any other GHG/non-GHG⁷ program, either for compliance or voluntary purposes, during the entire GCC crediting period; or</p> <p><input checked="" type="checkbox"/> If the project activity has been issued with carbon credits or environmental attributes of compensating nature⁸ by any other GHG/ non-</p>

owners intend to supply carbon credits (ACCs) for use within CORSIA.

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

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

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

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

⁸ The environment attributes of compensating nature are those which are used by captive users (e.g.


	<p>GHG program, either for compliance or voluntary purposes, the ACCs will be claimed only for the remaining crediting period (subject to a maximum of 10 years of crediting period including the periods under other programs and GCC program) for which carbon credits/ environmental attributes of compensating nature have not been issued by any other GHG/ non-GHG program.</p> <p>Specific requirements applicable to respective Project Types:</p> <p><u>For Project Type A1:</u></p> <p><input type="checkbox"/> For Project Type A1, we confirm that the Project Activity is NOT registered as a GHG Project Activity in any other GHG/non-GHG program or any other 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>
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corporates/industries) for offsetting their GHG emissions

	<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> <p>For Project Type B1 or Project Type B2, we confirm that for Project Activity, which has been registered with CDM or any GHG/non-GHG Program and we shall (tick at least one of the two options):</p> <p><input type="checkbox"/> Submit a proof for deregistration from CDM; or</p> <p><input type="checkbox"/> Submit a signed & stamped public undertaking, stating that the Project Owner will never submit any request for Issuance of ACCs or request for renewal of crediting period to CDM-EB or under article 6.4 or any authority after submission to GCC Program and shall formally inform CDM-EB or authority under article 6.4 or any authority after submission to GCC Program.</p> <p>Requirements to avoid double counting:</p> <p>We intend to submit or have submitted a written attestation⁹ (Host Country Letter of Authorisation - HCLOA) from the host country's national focal point or focal point designee for CORSIA eligible units generated beyond 31 December 2020 at the following stages¹⁰ (tick at least one of the three options):</p> <p><input checked="" type="checkbox"/> The initial submission for GSC; or</p> <p><input checked="" type="checkbox"/> Along with the submission for a request for registration (after Project Verification is completed); or</p> <p><input checked="" type="checkbox"/> Along with the submission for a request for the first or subsequent issuance of ACCs.</p> <p>Project specific requirements:</p> <p><u>CORSIA specific requirements:</u></p> <p><input checked="" type="checkbox"/> We confirm that bundled projects or grouped projects shall have registered crediting period starting on or after 1 Jan 2016 for the grouped/aggregated project as a whole.</p>
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⁹ In case of any change of Host Country Letter of Authorisation (HCLOA) the project owner shall inform the GCC operations team immediately

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

	<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. 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 of the information provided in this document, including any supporting documents submitted to the GCC or its registry operator IHS Markit at any time, is true and correct;</p> <p><input checked="" type="checkbox"/> They understand that a failure by them to provide accurate information or data, or concealing facts and information, can be considered as negligence, fraud or wilful misconduct. Therefore, they are aware that they are fully responsible for any liability that arises as a result of such actions.</p> <p>Provide details below for the boxes ticked above</p>
<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>	<div style="text-align: center;">  </div> <p>Vipul K Joisher Chief Executive Officer Aditya Green Energy Private Limited</p>

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>

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1. PROJECT SUBMISSION FORM

Section A. Description of the Project Activity

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

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This bundled project activity is the installation of a **14.70 MW** Solar power plant/unit at various sites in the state of Maharashtra where no renewable power plant was operating prior to the implementation of the project activity (green-field plant). The project activity is solar power project, which is being implemented in the state of Maharashtra, India. The purpose of the project is to generate clean energy by harnessing the Solar power and providing the energy to the Indian national grid. By implementing the project, investors also aim to reduce dependency to the fossil fuels thereby reducing the sources of environmental pollution. The electricity generated from Project Activity is exported to the Indian grid there by displacing the consumption of electricity from the regional grid electricity distribution system.

SPV Name	Capacity (DC)	Capacity (AC)	Location	Commissioning Date (COD)	Power Generation (MWh/annum)	Emission Reduction (tCO2/annum)
ASK Green Energy Private Limited	2.45	2	Maharashtra	05/08/2021	3491.74	3249.06
Ganesh Dall Industries	2.45	2	Maharashtra	05/08/2021	3500.50	3257.21
Ganga Mauli Solar Energy	2.45	2	Maharashtra	24/07/2021	3491.74	3249.06
Kalika Ginning & Pressing Private Limited	2.45	2	Maharashtra	01/10/2021	3500.50	3257.21
Mankari Petroleum	2.45	2	Maharashtra	02/08/2021	3491.74	3249.06
Shri Satyasai Baba Infra Ventures Private	2.45	2	Maharashtra	24/07/2021	3491.74	3249.06

Limited						
Total	14.70	12			20967.00	19510.00

The estimated annual average electricity generation by the project activity is 20,048 MWh. The crediting period chosen for the project activity “**14.70 MW bundled solar power project by Aditya Green Energy Pvt. Ltd.**” is 10 years Crediting Period in which total GHG emission reduction estimated is **1,86,548 tCO₂e**. The annual average estimated emission reductions from project activity are **18,654tCO₂e/annum**.

Scenario Existing Prior to Start of the Implementation of the Project Activity

The electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected fossil fuel dominated power plants (also the baseline scenario).

Contribution to reduction in GHG emissions by the project activity

With the implementation of the project activity, the electricity generated from Solar is supplied to the grid which is dominated by fossil fuel-based power plants there by reducing an equivalent amount of GHG emission, associated with thermal energy generating sources of the grid. The project results into 18,669 tCO₂e of annual average emission reduction.

Contribution of project activity to sustainable development

project activity has the following sustainable development aspects:

- 1. Social well-being:** The project activity provides direct and indirect job opportunities to the local population during construction of the project as well as during operation stage. Employment generation helps poverty alleviation in the local community and bring about reduction in the disparity of income.
- 2. Economic well-being**
The Project Activity will create direct and indirect job opportunities to the local community during installation and operation of the renewable energy projects. The investment for the Project Activity would lead to the improvement in the economic activity in the local area.
- 3. Environmental well-being:** The Solar energy-based electricity generation is a renewable energy and replaces fossil fuel-based electricity generation, thereby helping in conservation of fossil fuel resources and mitigation of GHG emissions.
- 4. Technological well-being:** Solar power plant deployed in the project activity are from well-known international manufacturer; the technology is proven and ensures efficient and safe operation of the project activity.

A.2. Location of the Project Activity

>>

Address and geodetic coordinates of the physical site of the Project Activity			
SPV Name	Physical address	Latitude	Longitude
ASK Green Energy Private Limited	Post Somnathpur, Udgir, Taluka Udgir, District Latur, Maharashtra - 413517	18°25'50.2"N (18.4306)	77°06'13.7"E (77.1038)
Ganesh Dall Industries	Post Somnathpur, Udgir, Taluka Udgir, District Latur, Maharashtra - 413517	18°25'50.2"N (18.4306)	77°06'13.7"E (77.1038)
Ganga Mauli Solar Energy	Post Gadwad, Taluka & Dist Latur, MH 413511	18°30'31.5"N (18.5087)	76°20'10.2"E (76.3361)
Kalika Ginning & Pressing Private Limited	Post Vihamandwa, Taluka Paithan, District Aurangabad, Maharashtra - 431503	19°27'00.0"N (19.4511)	75°34'12.0"E (75.5712)
Mankari Petroleum	Survey no. 6/1/2, Deoni, Taluka Deoni, District Latur, Maharashtra 413519	18°16'29.5"N (18.2748)	77°04'33.9"E (77.0760)
Shri Satyasai Baba Infra Ventures Private Limited	Post Gadwad, Taluka & Dist Latur, MH 413511	18°30'31.5"N (18.5087)	76°20'10.2"E (76.3361)



Figure 1:ASK Green Energy Private Limited



Figure 2:Ganga Mauli Solar Energy

A.3. Technologies/measures

>>

The bundled project activity involves the installation of Solar PV based electricity generation project by **Aditya Green Energy Pvt. Ltd.** The total installed capacity of the bundled project is **14.70 MW** Solar PV plant located in the state of Maharashtra in India.

The Project Activity is a new facility (Greenfield) and the electricity generated by the project will be exported to the Indian electricity grid. The Project Activity will therefore displace an equivalent amount of electricity which would have otherwise been generated by fossil fuel dominant electricity grid. The estimated lifetime of the project activity is considered as **25 years** for solar technology. This may increase depending on the operation & maintenance of the plant. In the Pre- project scenario the entire 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.

The project shall result in replacing anthropogenic emissions of greenhouse gases (GHG's) estimated to be approximately 18,669tCO₂e per year, thereon displacing 20,048 MWh/year amount of electricity from the grid. The bundle project activity aims to harness solar energy through installation of Solar PV project with total installed capacity of **14.70 MW.**

The proposed solar will include the following:

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

Technical Specification of ASK Green Energy Private Limited –

Technical Specification of Solar PV modules			
Model	WS-335		
Technology	Solar Photovoltaic Systems		
Rated Power at STC (Wp)	335		
Manufacturer	WAAREE ENERGIES LIMITED		
Number of PV modules	7843		
At operating cond. (50°C)			
Pmpp	2377 kWp		
U mpp	1076 V		
I mpp	2209 A		
Total PV power			
Nominal (STC)	2627 KWp		
Total	7843 modules		
Module area	15615 m2		
Cell area	13875 m2		
Technical specifications of Inverters			
Make	Model	Capacity (kW)	No. of Inverters
Sungrow Power Supply Co., Ltd	SG250HX-IN	200	11

Technical Specification of Ganesh Dall Industries-

Technical Specification of Solar PV modules	
Model	WS-335
Technology	Solar Photovoltaic Systems
Rated Power at STC (Wp)	335
Manufacturer	WAAREE ENERGIES LIMITED
Number of PV modules	7843
At operating cond. (50°C)	

Pmpp	2377 kWp		
U mpp	1076 V		
I mpp	2209 A		
Total PV power			
Nominal (STC)	2627 KWp		
Total	7843 modules		
Module area	15615 m ²		
Cell area	13875 m ²		
Technical specifications of Inverters			
Make	Model	Capacity (kW)	No. of Inverters
Sungrow Power Supply Co., Ltd	SG250HX-IN	200	10

Technical Specification of Ganga Mauli Solar Energy

Technical Specification of Solar PV modules			
Model	WS-335		
Technology	Solar Photovoltaic Systems		
Rated Power at STC (Wp)	335		
Manufacturer	WAAREE ENERGIES LIMITED		
Number of PV modules	7409		
At operating cond. (50°C)			
Pmpp	2245 kWp		
U mpp	1076 V		
I mpp	2087 A		
Total PV power			
Nominal (STC)	2482 KWp		
Total	7409 modules		
Module area	14751 m ²		
Cell area	13107 m ²		
Technical specifications of Inverters			
Make	Model	Capacity (kW)	No. of Inverters

Sungrow Power Supply Co., Ltd	SG250HX-IN	200	10
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Technical Specification of Kalika Ginning & Pressing Private Limited

Technical Specification of Solar PV modules			
Model	WS-335		
Technology	Solar Photovoltaic Systems		
Rated Power at STC (Wp)	335		
Manufacturer	WAAREE ENERGIES LIMITED		
Number of PV modules	7967		
At operating cond. (50°C)			
P _{mpp}	2414 kWp		
U _{mpp}	1076 V		
I _{mpp}	2244 A		
Total PV power			
Nominal (STC)	2669 KWp		
Total	7967 modules		
Module area	15862 m ²		
Cell area	14094 m ²		
Technical specifications of Inverters			
Make	Model	Capacity (kW)	No. of Inverters
Sungrow Power Supply Co., Ltd	SG250HX-IN	200	11

Technical Specification of Mankari Petroleum

Technical Specification of Solar PV modules	
Model	WS-335
Technology	Solar Photovoltaic Systems
Rated Power at STC (Wp)	335
Manufacturer	WAAREE ENERGIES LIMITED
Number of PV modules	8215

At operating cond. (50°C)			
Pmpp	2490 kWp		
U mpp	1076 V		
I mpp	2314 A		
Total PV power			
Nominal (STC)	2752 KWp		
Total	8215 modules		
Module area	16356 m2		
Cell area	14533 m2		
Technical specifications of Inverters			
Make	Model	Capacity (kW)	No. of Inverters
Sungrow Power Supply Co., Ltd	SG250HX-IN	200	11

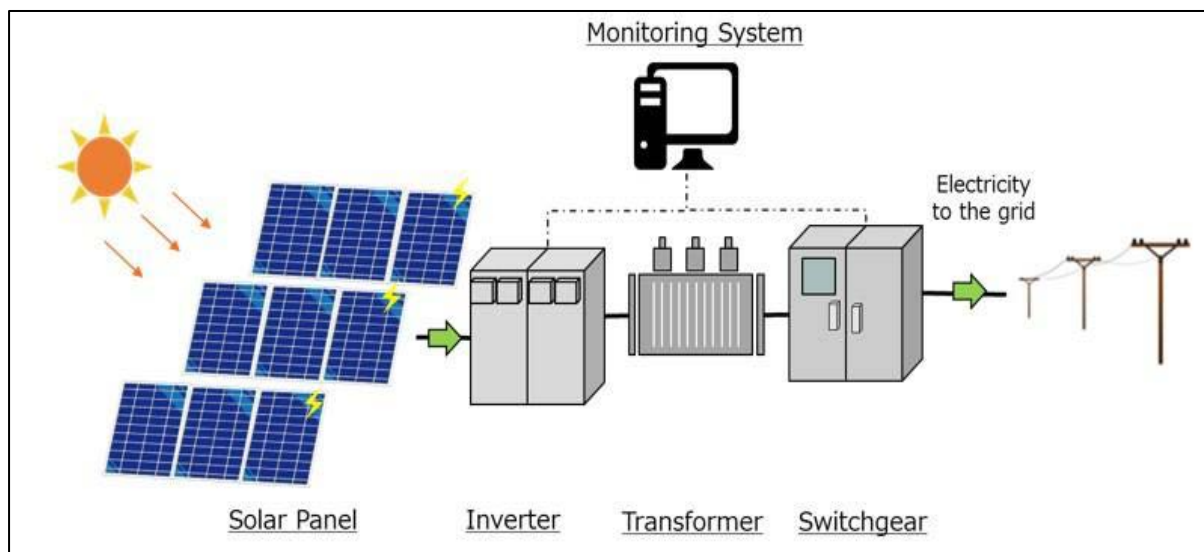
Technical Specification of Shri Satyasai Baba Infra Ventures Private Limited-

Technical Specification of Solar PV modules	
Model	WS-335
Technology	Solar Photovoltaic Systems
Rated Power at STC (Wp)	335
Manufacturer	WAAREE ENERGIES LIMITED
Number of PV modules	7409
At operating cond. (50°C)	
Pmpp	2245 kWp
U mpp	1076 V
I mpp	2087 A
Total PV power	
Nominal (STC)	2482 KWp
Total	7409 modules
Module area	14751 m2
Cell area	13107 m2
Technical specifications of Inverters	

Make	Model	Capacity (kW)	No. of Inverters
Sungrow Power Supply Co., Ltd	SG250HX-IN	200	10

- Scheduled maintenance activities will be carried out by plant operation team and the same will be monitored by Site in Charge.
- Site team will comply to all necessary statutory compliances and monitors their status on periodic basis.

Project plant flow diagram is given below:



A.4. Project Owner(s)

Location/ Country	Project Owner(s)	Where applicable ¹³ , indicate if the host country has provided approval (Yes/No)
India	Aditya Green Energy Private Limited	Not Applicable

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

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

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

Period		Name of the Entities	Purpose and Quantity of ACCs to be supplied
From	To		
24/07/2021	23/07/2021	Aditya Green Energy Private Limited	For offsetting Greenhouse gases 186,548 tCO ₂ e for 10-year period

Project owner hereby confirms that the proposed project activity is neither applied nor registered under any other GHG reduction certification mechanism. Hence, the ACCs generated from this project activity will not be double counted under any other mechanism.

A.6. Additional requirements for CORSIA

>>

a) The Project Activity does not cause any net harm to the environment or society and provides an opportunity to demonstrate this achievement by obtaining the additional certification labels E+ and S+

Please Refer Section E

b) The Project Activity demonstrates the level of contribution towards achieving the United Nations Sustainability Development Goals (SDGs) and provides an opportunity to demonstrate this achievement by obtaining the additional Silver SDG+ label.

Please Refer Section F

Section B. Application of selected methodology(ies)

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

>>

Title: AMS-I.D. Grid-connected renewable electricity generation --- Version 18.0

Tools involved in the project are listed below:

1. Tool to calculate the emission factor for an electricity system - Version 7.0¹⁴
2. Investment analysis – Version 11.0¹⁵
3. Demonstration of additionality of small-scale project activities – Version 13.1¹⁶

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

>>

Scope 01 – Energy Industries (Renewable/non-renewable sources): Approved small-scale baseline methodology AMS-I.D, version 18: “Grid connected renewable electricity generation.”

The project activity is grid-connected solar power projects. Methodology AMS.I.D. (version 18) is applicable to grid -connected renewable power project activities that:

- The 12 MW AC and 14.70 MW DC project activity is a solar power type, grid connected and captive consumer renewable electricity generation project,
- The project does not involve combined heat and power (co-generation) systems,
- The project does not involve co-firing of fossil fuel of any kind.
- The project activity is not a Distributed Power Plants (DPP); Hence not applicable.
- The project does not involve switching from fossil fuels to renewable energy sources and is
- not a biomass fired power plant.
- The project does not involve retrofits, rehabilitations, replacements, and it’s not a capacity addition.

The project activity is solar activity based renewable energy source, zero emission power project connected to the grid, which forms part of the Indian electricity grid. The project activity will displace fossil fuel-based electricity generation that would have otherwise been provided by the operations and expansion of the fossil fuel-based power plants in Indian grid. **The proposed project activity meets relevant applicability criteria:**

Applicability Conditions as per AMS.I.D. (Version 18)	Applicability to this Project Activity
This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass: (a) Supplying electricity to a national or a regional grid; or	The project activity involves the installation of a green-field solar project for renewable electricity generation. It is supplying electricity to its own manufacturing units via regional grid

¹⁴ <https://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-07-v7.0.pdf>

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

¹⁶ <https://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-21-v13.1.pdf>

<p>(b) Supplying electricity to an identified consumer facility via national/regional grid through a contractual arrangement such as wheeling.</p>	<p>through a contractual wheeling agreement. Hence it satisfies this applicability criteria</p>
<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 is the installation of a new solar power plant i.e. Greenfield plant. Hence, this applicability criterion is satisfied.</p>
<p>Hydro power plants with reservoirs 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 reservoir, 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>The project activity is a solar power project. Hence this criterion is not applicable to the project activity.</p>
<p>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, the capacity of the entire unit shall not exceed the limit of 15 MW.</p>	<p>The project has a total capacity of 10.43 MW DC. The unit has no non-renewable components or provision for future addition of a co-fired fossil fuel system. Thus, the project activity meets the applicability condition.</p>
<p>Combined heat and power (co-generation) systems are not eligible under this category.</p>	<p>The project activity does not involve cogeneration and hence it satisfies the applicability criteria</p>
<p>In the case of project activities that involve the capacity 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 distinct¹⁴ from the existing units.</p>	<p>This condition is not applicable to the project activity.</p>
<p>In the case of retrofit, rehabilitation or replacement, to qualify as a small-scale project, the total output of the retrofitted, rehabilitated or replacement power plant/unit shall not exceed the limit of 15 MW.</p>	<p>This condition is not applicable to the project activity.</p>

<p>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.</p>	<p>The project activity is the installation of a new grid connected 14.70 MW DC renewable solar power project. Hence this criterion is not applicable.</p>
<p>In case biomass is sourced from dedicated plantations, the applicability criteria in the tool “Project emissions from cultivation of biomass” shall apply.</p>	<p>The project activity is the installation of a new grid connected 14.70 MW DC renewable solar power project. Hence this criterion is not applicable.</p>

Additionally, the proposed project activity meets applicability criteria of the following tools:

TOOL 07: Tool to calculate the emission factor for an electricity system, Version 7.0¹⁷

“This tool may be applied to estimate 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 (eg. Demand-side energy efficiency projects)”. Refer to section B.4 of PSF for detailed calculation.

The project activity is a greenfield solar power generation plant and hence, according to the applied methodology, the baseline scenario is electricity delivered to the grid by the project activity that would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in “TOOL 07: Tool to calculate the emission factor for an electricity system”.

Tool 21: Demonstration of additionality of small-scale project activities, Version 13.1¹⁸

The use of the methodological tool “Demonstration of additionality of small-scale project activities” is not mandatory for project participants when proposing new methodologies. Project participants and coordinating/managing entities may propose alternative methods to demonstrate additionality for consideration by the Executive Board.

TOOL 27. Investment analysis, Version 11.0¹⁹

¹⁷ [am-tool-07-v7.0.pdf \(unfccc.int\)](#)

¹⁸ [EB105_repan_TOOL21 \(unfccc.int\)](#)

¹⁹ [EB112_repan02_TOOL27 \(v11.0\) \(unfccc.int\)](#)

This methodological tool is applicable to project activities that apply the methodological tool “Tool for the demonstration and assessment of additionality”, the methodological tool “Combined tool to identify the baseline scenario and demonstrate additionality”, or baseline and monitoring methodologies that use the investment analysis for the demonstration of additionality and/or the identification of the baseline scenario. Refer to section B.5 of PSF for details.

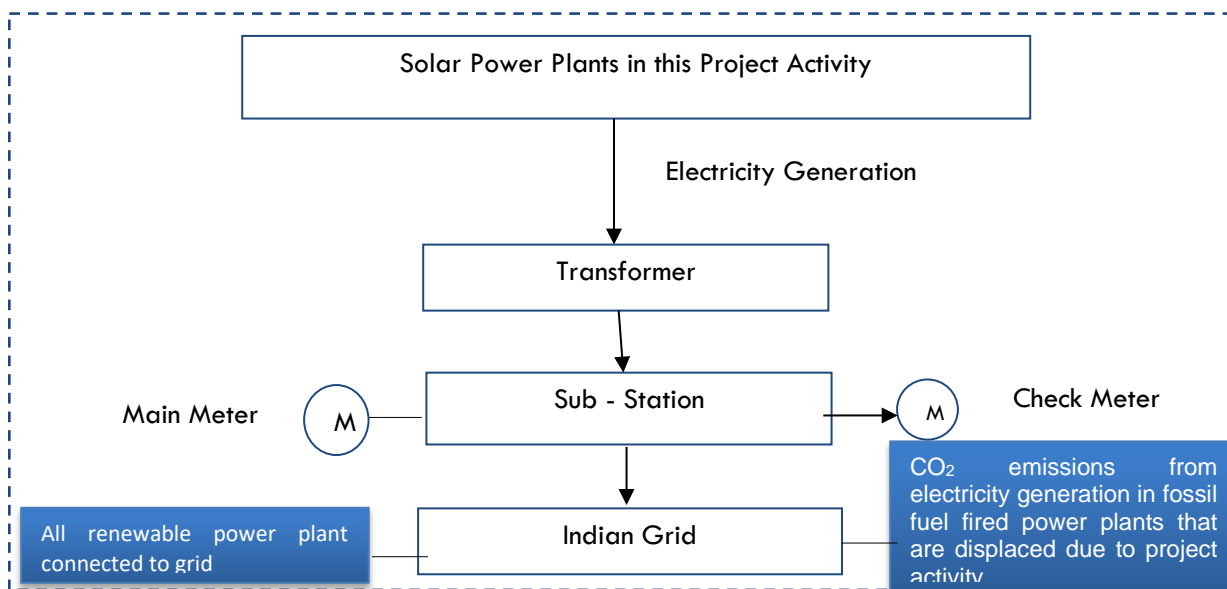
B.3. Project boundary, sources and greenhouse gases (GHGs)

>>

The project boundary includes the solar power project, sub-stations, grid, and all power plants connected to grid. The project activity will evacuate power to the Indian grid.

The project does not involve any other emissions sources not foreseen by the methodologies. The greenhouse gases and emission sources included in or excluded from the project boundary are shown in table below.

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



Source		GHG	Included?	Justification/Explanation
Baseline	CO ₂ emissions from electricity generation in fossil fuel fired power plants that are displaced due to project activity	CO ₂	Yes	The Major source of emissions in the baseline due to combustion of fossil fuels
		CH ₄	No	Excluded for simplification. This emission source is assumed to be very small
		N ₂ O	No	Excluded for simplification. This emission source is assumed to be very small
Project Activity	Solar energy projects under the project activity	CO ₂	No	The quantity of electricity delivered to the project plant/unit from the grid has been deducted from the quantity of electricity supplied by the project plant/unit to the grid when calculating the baseline emission, hence onsite electricity use in the project does not need to be considered as project emission
		CH ₄	No	Excluded for simplification. This emission source is assumed to be very small.
		N ₂ O	No	Excluded for simplification. This emission source is assumed to be very small

B.4. Establishment and description of the baseline scenario

>>

As per the approved consolidated Methodology AMS I.D (Version 18.0) para 22: “If the project activity is the installation of a Greenfield power plant, the baseline scenario is electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the “Tool to calculate the emission factor for an electricity system (Version 07.0)”.

The project activity involves setting up of solar project to harness the solar energy to produce electricity and supply to the grid. In the absence of the project activity, the equivalent amount of power would have been supplied by the Indian grid, which is fed mainly by fossil fuel fired plants.

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

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

Calculations for this combined margin must be based on data from an official source (where available) and made publicly 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 /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 ²⁰ , Oct 2021 published by Central Electricity Authority (CEA), Government of India
EF _{grid,OM,y}	0.9522 tCO ₂ /MWh	Operating margin CO ₂ emission factor for the project electricity system in year y	Calculated as the last 3 year (2018-19. 2019-20 and 2020-21) generation-weighted average, sourced from Baseline CO ₂ Emission Database, Version 17.0, March 2021 published by Central Electricity Authority (CEA), Government of India

²⁰ https://cea.nic.in/wp-content/uploads/tpecc/2022/02/User_Guide_ver_17_2021.pdf

EF _{grid, BM, y}	0.8653 tCO ₂ /MWh	Build margin CO ₂ emission factor for the project electricity system in year y	Baseline CO ₂ Emission Database, Version 17.0. Oct 2021 published by Central Electricity Authority (CEA), Government of India
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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 the Project shall be demonstrated by applying the following approach, consisting of two components:

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

The project is not enforced by law. 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.

Specify the methodology, activity requirement or product requirement that establishes deemed additionality for the proposed project (including the version number and the specific paragraph, if applicable).	This project follows the CDM approved methodology AMS-I.D. “Grid connected renewable electricity generation” (Version 18) ²¹ Selected methodology has been applied together with the “tool to calculate the emission factor for an electricity system, version 7” and “tool for Demonstration of additionality of small-scale project activities” version 13.1. These are the latest version of the methodology and related additionality & calculation tool.
Describe how the proposed project meets the criteria for deemed additionality.	1. Project without carbon revenue is not financially attractive as discussed in

²¹ <https://cdm.unfccc.int/methodologies/DB/W3TINZ7KKWCK7L8WTXFQQOFQQH4SBK>

	<p>investment analysis section below (benchmark and sensitivity analysis).</p> <ol style="list-style-type: none"> 2. Continuation of the current situation supply of equal amount of electricity by the newly built grid connected power plants. Continuation of the current situation is not considered as a realistic alternative due to increasing electricity demand therefore new power plants should be constructed which includes mainly thermal power plants. Implementation of the project is additional to the baseline scenario which is an alternative 2 above and therefore reduces the emissions. 3. The project activity comes under white category as per local regulation, thus there shall be no necessity of obtaining the Consent to Operate” for White category of industries. Since project activity falls under white category and the non-polluting nature of project fulfils the compliance to the local laws and regulations. The Project activity conforms to all the applicable laws and regulations in India: <ul style="list-style-type: none"> • Power generation using renewable energy is not a legal requirement or a mandatory option. • There are state and sectoral policies, framed primarily to encourage renewable power projects. • These policies have also been drafted realizing the extent of risks involved in the projects and to attract private investments. • The Indian Electricity Act, 2003 (May 2007 Amendment) does not influence the choice of fuel used for power generation. • There is no legal requirement on the choice of a particular technology for power delegation. • The both alternatives are in compliance with laws and regulations required. There is not any mandatory requirement to implement the project activity. • Common practice analysis is not applicable as the project activity is small scale. Hence, project is additional in this aspect.
--	---

The present project generates power using solar energy, which is a renewable, zero emission source of energy. Baseline considerations for the project are based on approved consolidated baseline.

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

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

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

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

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

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

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

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

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

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

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

Outcome of Sub-step 1a:

All the realistic alternatives for the project activity have been enlisted above.

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

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

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

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

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

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

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

- Power generation using renewable energy is not a legal requirement or a mandatory option.
- There are state and sectoral policies, framed primarily to encourage solar power projects.
- These policies have also been drafted realizing the extent of risks involved in the projects and to attract private investments.
- The Indian Electricity Act, 2003 (May 2007 Amendment) does not influence the choice of fuel used for power generation.
- There is no legal requirement on the choice of a particular technology for power generation.

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

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

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

Step 2: Investment analysis²²

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

Sub-step 2a: Determine appropriate analysis method

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

- Simple Cost Analysis
- Investment Comparison Analysis and

²² <https://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-27-v11.0.pdf>

- **Benchmark Analysis**

The Project activity envisages to export the power to Indian grid and the revenues from the sale of electricity would be generated in accordance with the terms and tariffs established in the Power Purchase Agreement (PPA). Thus, simple cost analysis (Option I) cannot be used as the analysis method as the sale of the units of generated electricity shall result in a revenue stream during the operations of the Project activity.

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

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

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

Choice of Benchmark:

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

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

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

As per paragraph 16 of Appendix A of the above-mentioned document, “In situations where an investment analysis is carried out in nominal terms, project owners can convert the real term values provided in the table below to nominal values by adding the inflation rate. The inflation rate shall be obtained from the inflation forecast of the central bank of the host 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”. For the concerned project activity, the inflation rate has been considered from the inflation forecast published by International monetary fund (IMF).

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

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

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

Where:

- Default value for Real Benchmark = 10.55 %
- Inflation Rate forecast for India, given by International Monetary Fund (IMF) as of April 2022 is 3.85 % for medium term. The inflation forecast from year 2021 to 2025 has been considered.

Benchmark estimation:

Putting the respective values in above formula for benchmark estimation provides equity IRR of 14.48% **as benchmark.**

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

For the proposed project, in order to reach this equity IRR values, average electricity tariff must be above in the absence of carbon revenue and assuming that initial investment figures are realized so that the investment will become reasonable. The Post Tax Equity IRR is evaluated for the entire lifetime of the project activity, i.e., 25 years. It is calculated based on the cash outflows from and cash inflows into the project activity.

Key Assumptions supporting financial projections are provided in excel spreadsheet to the GCC Verifier. Based on result of IRR excel spreadsheets, equity IRR is less than Benchmark.

Project does not use any ODA or government incentive; however, bank loan is used. Electricity tariff has been used as ₹3.29/kWh. Overall average annual generation from this bundled project activity has been taken as 20,048 MWh.

The input assumption and the IRR outcome can be referred in below

Input assumption for ASK Green Energy Private Limited-

Details of the project		Source
State where the project is situated	Maharashtra	As per DPR
Project Capacity (MW _{DC})	2.45	As per DPR
Project Capacity (MW _{AC})	2.00	As per DPR
Expected Date of Commissioning	30-Jun-21	As per DPR
Life of the plant (Yrs.)	25	As per DPR
Generation and sale of electricity		
PLF (%)	19.93%	As per Third Party Report in accordance to EB 48 Annex 11
Deration every year (%)	1.00%	As per industry practice

Tariff rate at the decision making (INR/kWh)	3.29	As per DPR
Operation and maintenance cost and Insurance		
O & M Expenses (INR Mn.)	1.16	As per DPR
Escalation from 3 year (%)	5.00%	As per DPR
O & M free for (Yr.)	-	As per DPR
Insurance (INR Mn.)	0.15	As per DPR
Financial parameters		
TOTAL COST (INR Mn.)	79.63	As per DPR
Loan Amount (INR Mn.)	55.74	As per DPR
Equity Investment (INR Mn.)	23.89	Calculated Value
Term loan		
Margin (%)	30.00%	As per DPR
Loan Amount (INR Mn.)	55.74	Calculated Value
Interest rate (%)	12.00%	As per DPR
Loan Tenure (Qtr.)	60	As per DPR
Moratorium Period (Qtr.)	-	As per DPR
Repayment Period (Qtr.)	60	Calculated Value
Repayment instalments value (INR Mn.)	1.240	Calculated Value
Book Depreciation (SLM Method)		
Land Cost (INR Mn.)	-	As per DPR
Gross Depreciable Value (INR Mn.)	79.63	Calculated Value
Salvage Value (%)	5.00%	As per DPR
Salvage value (INR Mn.)	3.98	As per DPR
Net Depreciable Value (INR Mn.)	75.64	Calculated Value
Residual Value (INR Mn.)	3.98	Calculated Value
IT Depreciation (WDV Method)		
IT Depreciation Rate (%)	40.00%	As Per Income Tax, Depreciation rates for power generating units
Income Tax		
Financial Year	FY 2020-21	
Income tax rate (%)	30.00%	Tax rates applicable to a domestic company
MAT (%)	15.00%	
Surcharge (%)	10.00%	
Education cess (%)	4.00%	
Final Tax rates		
Income tax rate (%)	34.32%	Calculated Value
MAT (%)	17.16%	Calculated Value

GST (%)	18.00%	Calculated Value
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Input assumption Ganesh Dall Industries

Details of the project		Source
State where the project is situated	Maharashtra	As per DPR
Project Capacity (MW _{DC})	2.45	As per DPR
Project Capacity (MW _{AC})	2.00	As per DPR
Expected Date of Commissioning	30-Jun-21	As per DPR
Life of the plant (Yrs.)	25	As per DPR
PLF (%)	19.98%	As per Third Party Report in accordance to EB 48 Annex 11
Deration every year (%)	1.00%	As per industry practice
Tariff rate at the decision making (INR/kWh)	3.29	As per DPR
Operation and maintenance cost and Insurance		
O & M Expenses (INR Mn.)	1.16	As per DPR
Escalation from 3 year (%)	5.00%	As per DPR
O & M free for (Yr.)	-	As per DPR
Insurance (INR Mn.)	0.14	As per DPR
Financial parameters		
TOTAL COST (INR Mn.)	79.63	As per DPR
Loan Amount (INR Mn.)	55.74	As per DPR
Equity Investment (INR Mn.)	23.89	Calculated Value
Term loan		
Margin (%)	30.00%	As per DPR
Loan Amount (INR Mn.)	55.74	Calculated Value
Interest rate (%)	12.00%	As per DPR
Loan Tenure (Qtr.)	60	As per DPR
Moratorium Period (Qtr.)	-	As per DPR
Repayment Period (Qtr.)	60	Calculated Value
Repayment instalments value (INR Mn.)	1.240	Calculated Value
Book Depreciation (SLM Method)		
Land Cost (INR Mn.)	-	As per DPR
Gross Depreciable Value (INR Mn.)	79.63	Calculated Value
Salvage Value (%)	5.00%	As per DPR
Salvage value (INR Mn.)	3.98	As per DPR
Net Depreciable Value (INR Mn.)	75.64	Calculated Value
Residual Value (INR Mn.)	3.98	Calculated Value
IT Depreciation (WDV Method)		

IT Depreciation Rate (%)	40.00%	As Per Income Tax , Depreciation rates for power generating units
Income Tax		
Financial Year	FY 2020-21	
Income tax rate (%)	30.00%	Tax rates applicable to a domestic company
MAT (%)	15.00%	
Surcharge (%)	10.00%	
Education cess (%)	4.00%	
Final Tax rates		
Income tax rate (%)	34.32%	Calculated Value
MAT (%)	17.16%	Calculated Value
GST (%)	18.00%	Calculated Value

Input assumption Ganga Mauli Solar Energy

Details of the project		Source
State where the project is situated	Maharashtra	As per DPR
Project Capacity (MW _{DC})	2.45	As per DPR
Project Capacity (MW _{AC})	2.00	As per DPR
Expected Date of Commissioning	30-Jun-21	As per DPR
Life of the plant (Yrs.)	25	As per DPR
PLF (%)	19.93%	As per Third Party Report in accordance to EB 48 Annex 11
Deration every year (%)	1.00%	As per industry practice
Tariff rate at the decision making (INR/kWh)	3.29	As per DPR
Operation and maintenance cost and Insurance		
O & M Expenses (INR Mn.)	1.16	As per DPR
Escalation from 3 year (%)	5.00%	As per DPR
O & M free for (Yr.)	-	As per DPR
Insurance (INR Mn.)	0.14	As per DPR
Financial parameters		
TOTAL COST (INR Mn.)	79.63	As per DPR
Loan Amount (INR Mn.)	55.74	As per DPR
Equity Investment (INR Mn.)	23.89	Calculated Value
Term loan		
Margin (%)	30.00%	As per DPR
Loan Amount (INR Mn.)	55.74	Calculated Value

Interest rate (%)	12.00%	As per DPR
Loan Tenure (Qtr.)	60	As per DPR
Moratorium Period (Qtr.)	-	As per DPR
Repayment Period (Qtr.)	60	Calculated Value
Repayment instalments value (INR Mn.)	1.240	Calculated Value
Book Depreciation (SLM Method)		
Land Cost (INR Mn.)	-	As per DPR
Gross Depreciable Value (INR Mn.)	79.63	Calculated Value
Salvage Value (%)	5.00%	As per DPR
Salvage value (INR Mn.)	3.98	As per DPR
Net Depreciable Value (INR Mn.)	75.64	Calculated Value
Residual Value (INR Mn.)	3.98	Calculated Value
IT Depreciation (WDV Method)		
IT Depreciation Rate (%)	40.00%	As Per Income Tax , Depreciation rates for power generating units
Income Tax		
Financial Year	FY 2020-21	
Income tax rate (%)	30.00%	Tax rates applicable to a domestic company
MAT (%)	15.00%	
Surcharge (%)	10.00%	
Education cess (%)	4.00%	
Final Tax rates		
Income tax rate (%)	34.32%	Calculated Value
MAT (%)	17.16%	Calculated Value
GST (%)	18.00%	Calculated Value

Input assumption for Kalika Ginning & Pressing Private Limited

Details of the project		Source
State where the project is situated	Maharashtra	As per DPR
Project Capacity (MW _{DC})	2.45	As per DPR
Project Capacity (MW _{AC})	2.00	As per DPR
Expected Date of Commissioning	30-Jun-21	As per DPR
Life of the plant (Yrs.)	25	As per DPR
PLF (%)	19.98%	As per Third Party Report in accordance to EB 48 Annex 11
Deration every year (%)	1.00%	As per industry practice

Tariff rate at the decision making (INR/kWh)	3.29	As per DPR
Operation and maintenance cost and Insurance		
O & M Expenses (INR Mn.)	1.16	As per DPR
Escalation from 3 year (%)	5.00%	As per DPR
O & M free for (Yr.)	-	As per DPR
Insurance (INR Mn.)	0.14	As per DPR
Financial parameters		
TOTAL COST (INR Mn.)	79.63	As per DPR
Loan Amount (INR Mn.)	-	As per DPR
Equity Investment (INR Mn.)	79.63	Calculated Value
Term loan		
Margin (%)	100.00%	As per DPR
Loan Amount (INR Mn.)	-	Calculated Value
Interest rate (%)	0.00%	As per DPR
Loan Tenure (Qtr.)	-	As per DPR
Moratorium Period (Qtr.)	-	As per DPR
Repayment Period (Qtr.)	-	Calculated Value
Repayment instalments value (INR Mn.)	-	Calculated Value
Book Depreciation (SLM Method)		
Land Cost (INR Mn.)	-	As per DPR
Gross Depreciable Value (INR Mn.)	79.63	Calculated Value
Salvage Value (%)	5.00%	As per DPR
Salvage value (INR Mn.)	3.98	As per DPR
Net Depreciable Value (INR Mn.)	75.64	Calculated Value
Residual Value (INR Mn.)	3.98	Calculated Value
IT Depreciation (WDV Method)		
IT Depreciation Rate (%)	40.00%	As Per Income Tax , Depreciation rates for power generating units
Income Tax		
Financial Year	FY 2020-21	
Income tax rate (%)	30.00%	Tax rates applicable to a domestic company
MAT (%)	15.00%	
Surcharge (%)	10.00%	
Education cess (%)	4.00%	
Final Tax rates		
Income tax rate (%)	34.32%	Calculated Value
MAT (%)	17.16%	Calculated Value
GST (%)	18.00%	Calculated Value

Input assumption for Mankari Petroleum –

Details of the project		Source
State where the project is situated	Maharashtra	As per DPR
Project Capacity (MW _{DC})	2.45	As per DPR
Project Capacity (MW _{AC})	2.00	As per DPR
Expected Date of Commissioning	30-Jun-21	As per DPR
Life of the plant (Yrs.)	25	As per DPR
Generation and sale of electricity		
PLF (%)	19.93%	As per Third Party Report in accordance to EB 48 Annex 11
Deration every year (%)	1.00%	As per industry practice
Tariff rate at the decision making (INR/kWh)	3.29	As per DPR
Operation and maintenance cost and Insurance		
O & M Expenses (INR Mn.)	1.30	As per DPR
Escalation from 3 year (%)	5.00%	As per DPR
O & M free for (Yr.)	-	As per DPR
Insurance (INR Mn.)	0.14	As per DPR
Financial parameters		
TOTAL COST (INR Mn.)	79.63	As per DPR
Loan Amount (INR Mn.)	55.74	As per DPR
Equity Investment (INR Mn.)	23.89	Calculated Value
Term loan		
Margin (%)	30.00%	As per DPR
Loan Amount (INR Mn.)	55.74	Calculated Value
Interest rate (%)	12.00%	As per DPR
Loan Tenure (Qtr.)	60	As per DPR
Moratorium Period (Qtr.)	-	As per DPR
Repayment Period (Qtr.)	60	Calculated Value
Repayment instalments value (INR Mn.)	1.240	Calculated Value
Book Depreciation (SLM Method)		
Land Cost (INR Mn.)	-	As per DPR
Gross Depreciable Value (INR Mn.)	79.63	Calculated Value
Salvage Value (%)	5.00%	As per DPR
Salvage value (INR Mn.)	3.98	As per DPR
Net Depreciable Value (INR Mn.)	75.64	Calculated Value

Residual Value (INR Mn.)	3.98	Calculated Value
IT Depreciation (WDV Method)		
IT Depreciation Rate (%)	40.00%	As Per Income Tax , Depreciation rates for power generating units
Income Tax		
Financial Year	FY 2020-21	
Income tax rate (%)	30.00%	Tax rates applicable to a domestic company
MAT (%)	15.00%	
Surcharge (%)	10.00%	
Education cess (%)	4.00%	
Final Tax rates		
Income tax rate (%)	34.32%	Calculated Value
MAT (%)	17.16%	Calculated Value
GST (%)	18.00%	Calculated Value

Input assumption for Shri Satysai Baba Ventures Private Limited

Details of the project		Source
State where the project is situated	Maharashtra	As per DPR
Project Capacity (MW _{DC})	2.45	As per DPR
Project Capacity (MW _{AC})	2.00	As per DPR
Expected Date of Commissioning	30-Jun-21	As per DPR
Life of the plant (Yrs.)	25	As per DPR
Generation and sale of electricity		
PLF (%)	19.93%	As per Third Party Report in accordance to EB 48 Annex 11
Deration every year (%)	1.00%	As per industry practice
Tariff rate at the decision making (INR/kWh)	3.29	As per DPR
Operation and maintenance cost and Insurance		
O & M Expenses (INR Mn.)	1.16	As per DPR
Escalation from 3 year (%)	5.00%	As per DPR
O & M free for (Yr.)	-	As per DPR
Insurance (INR Mn.)	0.14	As per DPR
Financial parameters		
TOTAL COST (INR Mn.)	79.63	As per DPR

Loan Amount (INR Mn.)	-	As per DPR
Equity Investment (INR Mn.)	79.63	Calculated Value
Term loan		
Margin (%)	100.00%	As per DPR
Loan Amount (INR Mn.)	-	Calculated Value
Interest rate (%)	0.00%	As per DPR
Loan Tenure (Qtr.)	-	As per DPR
Moratorium Period (Qtr.)	-	As per DPR
Repayment Period (Qtr.)	-	Calculated Value
Repayment instalments value (INR Mn.)	-	Calculated Value
Book Depreciation (SLM Method)		
Land Cost (INR Mn.)	-	As per DPR
Gross Depreciable Value (INR Mn.)	79.63	Calculated Value
Salvage Value (%)	5.00%	As per DPR
Salvage value (INR Mn.)	3.98	As per DPR
Net Depreciable Value (INR Mn.)	75.64	Calculated Value
Residual Value (INR Mn.)	3.98	Calculated Value
IT Depreciation (WDV Method)		
IT Depreciation Rate (%)	40.00%	As Per Income Tax , Depreciation rates for power generating units
Income Tax		
Financial Year	FY 2020-21	
Income tax rate (%)	30.00%	Tax rates applicable to a domestic company
MAT (%)	15.00%	
Surcharge (%)	10.00%	
Education cess (%)	4.00%	
Final Tax rates		
Income tax rate (%)	34.32%	Calculated Value
MAT (%)	17.16%	Calculated Value
GST (%)	18.00%	Calculated Value

Final equity IRR and benchmark values are as following.

Final Equity IRR and Benchmark Values		
Investor Name	Equity IRR	Benchmark
ASK Green Energy Private Limited	9.65%	14.48%
Ganesh Dall Industries	9.71%	14.48%
Ganga Mauli Solar Energy	9.65%	14.48%
Kalika Ginning & Pressing Private Limited	9.66%	14.48%
Mankari Petroleum	9.65%	14.48%
Shri Satyasai Baba Infra Ventures Private Limited	9.61%	14.48%

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

Sub-step 2d: Sensitivity Analysis

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

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

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

Sensitivity Analysis	Equity IRR for: ASK Green Energy Private Limited				
	Variation %	-10%	Normal	10%	Variation required to reach benchmark
PLF		7.35%	9.65 %	12.20%	19.08%
O&M		10.09%	9.65 %	9.20 %	-127.20%
Project Cost		11.99%	9.65 %	7.95%	-18.56%
Tariff Rate		7.35%	9.65 %	12.20%	19.08%

Sensitivity Analysis	Equity IRR for: Ganesh Dall Industries				
	Variation %	-10%	Normal	10%	Variation required to reach benchmark
PLF		7.40%	9.71%	12.27%	18.80%
O&M		10.15%	9.71%	9.27%	-125.67%

Project Cost	12.06%	9.71%	8.00%	-18.34%
Tariff Rate	7.40%	9.71%	12.27%	18.80%

Sensitivity Analysis	Equity IRR for: Ganga Mauli Solar Energy			
Variation %	-10%	Normal	10%	Variation required to reach benchmark
PLF	7.35%	9.65%	12.20%	19.08%
O&M	10.09%	9.65%	9.20%	-127.20%
Project Cost	11.99%	9.65%	7.95%	-18.56%
Tariff Rate	7.35%	9.65%	12.20%	19.08%

Sensitivity Analysis	Equity IRR for: Kalika Ginning & Pressing Private Limited			
Variation %	-10%	Normal	10%	Variation required to reach benchmark
PLF	7.73%	9.66%	11.50%	27.67%
O&M	9.95%	9.66%	9.33%	-181.69%
Project Cost	11.35%	9.66%	8.25%	-24.87%
Tariff Rate	7.73%	9.66%	11.50%	27.67%

Sensitivity Analysis	Equity IRR for: Mankari Petroleum			
Variation %	-10%	Normal	10%	Variation required to reach benchmark
PLF	7.35%	9.65%	12.20%	19.08%
O&M	10.09%	9.65%	9.20%	-127.19%
Project Cost	11.99%	9.65%	7.95%	-18.56%
Tariff Rate	7.35%	9.65%	12.20%	19.08%

Sensitivity Analysis	Equity IRR for: Shri Satyasai Baba Infra Ventures Private Limited			
Variation %	-10%	Normal	10%	Variation required to reach benchmark
PLF	7.69%	9.61%	11.45%	27.97%
O&M	9.92%	9.61%	9.29%	-183.24%
Project Cost	11.30%	9.61%	8.21%	-25.08%
Tariff Rate	7.69%	9.61%	11.45%	27.97%

Outcome of Step 2:

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

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

Conclusion:

As described above, the project fulfils all necessary requirements of additionality specified in the 'Tool for the demonstration and assessment of additionality' v7.0.0. Hence, **the project is additional**

B.6. Estimation of emission reductions

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As per AMS I.D Version 18.0, the formula to calculate the emission reduction is:

$$ER_y = BE_y - PE_y - LE_y$$

Where:

- ER_y = Emission reductions in project year y (t CO₂)
- BE_y = Baseline Emissions in project year y (t CO₂)
- PE_y = Project emissions in project year y (t CO₂)
- LE_y = Leakage emissions in project year y (t CO₂)

As the project activity is a wind project, there is not any leakage emissions from the project activity. Hence, LE_y = 0

Therefore, Emission Reductions for this project activity are calculated as follows:

$$ER_y = BE_y - PE_y$$

B.6.1. Explanation of methodological choices

>>

As per the "Grid connected renewable electricity generation", Version 18.0.:

Baseline emissions include only CO₂ emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity. The methodology assumes that all project

electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants. The baseline emissions are to be calculated as follows:

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

Where:

BE_y = Baseline emissions in year y (tCO₂)

$EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the GCC project activity in project year (MWh)

$EF_{grid,y}$ = CO₂ emission factor for grid connected power generation in year (tCO₂/MWh)

As per methodology Emission factor ($EF_{grid,y}$) for grid connected power generation in year y (t CO₂/MWh) determined as per one of the four options below:

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

Or

- II. Latest available emission factor of the Grid in a country as approved by CDM standardized baseline.

Or

- III. Latest available emission factor of the Grid in a country as approved by its relevant National Authority or Designated National Authority (DNA) under CDM or UNFCCC focal point, in case DNA doesn't exist.

Or

- IV. Latest published Emission factor derived by International Energy Agency (IEA).
(This option can be used only if it is objectively demonstrated that options (i), (ii) and (iii) above are not available).

In this document to calculate emission factor ($EF_{grid,y}$) option 1 has been selected.

CO₂ Baseline Database for The Indian Power Sector, Version 17, October 2021 published by Central Electricity Authority (CEA), Government of India has been used for the calculation of emission reduction.'

As per Methodological tool: Tool to calculate the emission factor for an electricity system (Version 07.0, EB 100 Annex 4), following six steps have been followed:

Step 1: Identify the relevant electricity systems:

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

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

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

Step 5: Calculate the build margin (BM) emission factor:

Step 6: Calculate the combined margin (CM) emission factor.

Step 1: Identify the relevant electricity systems

As described in tool “For determining the electricity emission factors, identify the relevant project electricity system. Similarly, identify any connected electricity systems”. It also states that “If the DNA of the host country has published a delineation of the project electricity system and connected electricity systems, these delineations should be used”. Keeping this into consideration, the Central Electricity Authority (CEA), Government of India have India grid.

However, since August 2006, however, all regional grids except the southern Grid had been integrated and were operating in synchronous mode, i.e. at same frequency. Consequently, the Northern, Eastern, Western and North-Eastern grids were treated as a single grid named as NEWNE grid from FY 2007-08 onwards for the purpose of this CO₂ Baseline Database. As of 31 December 2013, the southern grid from FY 2007-08 onwards for the purpose of this CO₂ Baseline Database. As of 31 December 2013, the southern grid has also been synchronized with the INDIAN grid, hence forming one unified Indian Grid.

Since the project supplies electricity to the Indian grid, emissions generated due to the electricity generated by the Indian grid as per CM calculations will serve as the baseline for this project.

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

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

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

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

The Project owner has chosen only grid power plants in the calculation.

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

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

(a) Simple OM: or

(b) Simple adjusted OM: or

© Dispatch data analysis OM: or

(d) Average OM.

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

Share of Must-Run (Hydro/Nuclear) (% of Net generation)

	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
India	15.1%	14.6%	14.3%	14.5%	17.0%	16.5%

Data Source: *Central Electricity Authority (CEA) database Version 17.0, October 2021*²³

The above data clearly shows that the percentage of total grid generation by low-cost/ must-run plants (on the basis of average of five most recent years) for the Indian grid is less than 50 % of the total generation. Thus the Average OM method cannot be applied, as low cost/must run resources constitute less than 50% of total grid generation.

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

For the simple OM, the emissions factor can be calculated using either of the following data vintages.

- a) Ex-ante options: If the ex-ante option is chosen, the emission factor is determined once at the validation stage, thus no monitoring and recalculation of the emission factor during the crediting period is required.

Or

- b) Ex-post option: If the ex-post option is chosen, the emission factor is determined for the year in which the project activity displaces grid electricity, requiring the emissions factor to be updated annually during monitoring.

PP has chosen ex-ante option for calculation of Simple OM emission factor using a 3 years' generation-weighted average, based on the most recent data available at the time of submission of PSF for validation.

OM determined at validation stage will be the same throughout the crediting period. There will be no requirement to monitor & recalculate the emission factor during the crediting period.

Step 4: Calculate the operating margin emission factor ($EF_{grid, OM\ Simple,y}$) according to the

²³ https://cea.nic.in/wp-content/uploads/tpe_cc/2022/02/User_Guide_ver_17_2021.pdf

selected method

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

Net Generation in operating Margin (GWh) (Incl. Imports)			
	2018-19	2019-20	2020-21
Indian Grid	9,95,957	9,65,009	9,58,218

Simple Operating Margin (t CO ₂ /MWh) (incl. imports)			
	2018-19	2019-20	2020-21
Indian Grid	0.9603	0.9555	0.9405

Weighted Generation Operating Margin	
Indian Grid	0.9522

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

As per CDM 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 owner can choose between one of the following two options:

- a) **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 project verification. For the second crediting period, the build margin emission factor should be updated based on the most recent information available on units already built at the time of submission of the request for renewal of the crediting period to the GCC Verifier. For the third crediting period, the build margin emission factor calculated for the second crediting period should be used. This option does not require monitoring the emission factor during the crediting period.
- b) **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.

Note: In GCC there is fixed crediting period for 10 years, No renewal (2nd or 3rd) of crediting period will be there. So BM is fixed for the entire crediting period.

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

Build Margin (tCO ₂ /MWh) (not adjusted for imports)	
Year	2020-21
Indian Grid	0.8653

Step 6: Calculate the combined margin (CM) emission factor (EF_{grid,CM,y})

As per CDM Methodological tool “Tool to calculate the emission factor for an electricity system” (Version 07.0, EB 100, Annex 4) para 81:-

The calculation of the combined margin (CM) emission factor (EF_{grid,CM,y}) is based on one of the following methods:

- a) Weighted average CM: or
- b) Simplified CM.

PP has chosen option (a) i.e. weighted average CM to calculate the combined margin emission factor for the project activity.

The combined margin emissions factor is calculated as follows:

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

Where;

- EF_{grid,CM,y} = Build margin CO₂ emission factor in year y (t CO₂/ MWh)
 EF_{grid,OM,y} = Operating margin CO₂ emission factor in year y (t CO₂/MWh)
 W_{OM} = Weighting of operating margin emissions factor (per cent)
 W_{BM} = Weighting of build margin emissions factor (per cent)

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

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

Therefore,

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

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

Baseline emission factor (EF_y):

The baseline emission factor is calculated using the combined margin approach as described in Step 6 above:

Therefore, $EF_y = EF_{\text{grid,CM,y}} = 0.9305 \text{ tCO}_2/\text{MWh}$

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, October 2021 published by Central Electricity Authority ²⁴ (CEA), Government of India.
Value(s) of monitored parameter	0.9522
Measurement/ Monitoring equipment (if applicable)	NA
Measuring/reading/ recording frequency (if applicable)	NA
Calculation method (if applicable)	Calculated as the last 3 year (2018-19, 2019-20 and 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
QA/QC procedures	NA
Purpose of data	To calculate baseline emissions
Additional comments	This parameter is fixed ex-ante for the entire crediting period.

²⁴ https://cea.nic.in/wp-content/uploads/tpe_cc/2022/02/User_Guide_ver_17_2021.pdf

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, October 2021 published by Central Electricity Authority (CEA), Government of India.
Value(s) of monitored parameter	0.8653
Measurement/Monitoring equipment (if applicable)	NA
Measuring/reading/recording frequency (if applicable)	NA
Calculation method (if applicable)	The build margin emissions factor is the generation-weighted average emission factor (t CO ₂ /MWh) of all power units m during the most recent year, sourced from Baseline CO ₂ Emission Database, Version 17.0 October 2021 published by Central Electricity Authority (CEA), Government of India
QA/QC procedures	NA
Purpose of data	To calculate baseline emissions
Additional comments	This parameter is fixed ex-ante for the entire crediting period.

Data / Parameter:	EF_{grid, CM, y}
Methodology reference	AMS-I.D. (version 18)
Data unit	tCO ₂ /MWh
Description	Combined Margin CO ₂ emission factor in the year y
Measured/calculated/default	Calculated
Data source	CO ₂ Emission Database, Version 17.0, October 2021 published by Central Electricity Authority (CEA), Government of India.
Value(s) of monitored parameter	0.9305
Measurement/Monitoring equipment (if applicable)	NA

Measuring/reading/recording frequency (if applicable)	NA
Calculation method (if applicable)	<p>The combined margin emissions factor is calculated as follows:</p> $EF_{\text{grid,CM},y} = EF_{\text{grid,OM},y} \times W_{\text{OM}} + EF_{\text{grid,BM},y} \times W_{\text{BM}}$ <p>Where:</p> <p>$EF_{\text{grid,BM},y}$ = Build margin CO₂ emission factor in year y (tCO₂/MWh). $EF_{\text{grid,OM},y}$ = Operating margin CO₂ emission factor in year y (tCO₂/MWh). W_{OM} = Weighting of operating margin emissions factor (%) = 75% W_{BM} = Weighting of build margin emissions factor (%) = 25%</p>
QA/QC procedures	NA
Purpose of data	To calculate baseline emissions
Additional comments	This parameter is fixed ex-ante for the entire crediting period.

B.6.3. Ex-ante calculation of emission reductions

>>

Formula used to calculate the net emission reduction for the project activity is

$$ER_y = BE_y - PE_y$$

Where,

ER_y = Emission Reduction in year y (t CO₂)

BE_y = Baseline emission year y (t CO₂)

PE_y = Project emissions year y (t CO₂)

LE_y = Leakage emissions in year y (t CO₂)

Baseline Emission (BE_y)

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

$$BE_y = EG_{pj,y} * EF_{\text{grid,CM},y}$$

Where,

$EG_{pj,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the project activity in year y (MWh)

As per the applied methodology A.M.S-1.D V18.0, no project emissions considered in the project activity.

Hence, project emissions $PE_y = 0 \text{ t CO}_2\text{e}$

Leakage emissions $LE_y = 0 \text{ tCO}_2\text{e}$

Therefore, $ER_y = BE_y$

Annual Baseline emission:

SPV	Capacity (MW) AC	PLF (%)	Net Generation (MWh/year)	Baseline Emission factor (tCO ₂ /MWh)	Baseline emissions (tCO ₂ e/year)	Emission reductions (tCO ₂ e/year)
ASK Green Energy Private Limited	2	19.93%	3491.74	0.9305	3249.06	3249.06
Ganesh Dall Industries	2	19.98%	3500.50	0.9305	3257.21	3257.21
Ganga Mauli Solar Energy	2	19.93%	3491.74	0.9305	3249.06	3249.06
Kalika Ginning & Pressing Private Limited	2	19.98%	3500.50	0.9305	3257.21	3257.21
Mankari Petroleum	2	19.93%	3491.74	0.9305	3249.06	3249.06
Shri Satyasai Baba Infra Ventures Private Limited	2	19.93%	3491.74	0.9305	3249.06	3249.06
Total	12		20967.00		19510.00	19510.00

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

>>

Year	Baseline emissions (t CO ₂ e)	Project emissions (t CO ₂ e)	Leakage (t CO ₂ e)	Emission reductions (t CO ₂ e)
Year 1	19,510	0	0	19,510
Year 2	19,315	0	0	19,315
Year 3	19,122	0	0	19,122
Year 4	18,930	0	0	18,930
Year 5	18,741	0	0	18,741
Year 6	18,554	0	0	18,554
Year 7	18,368	0	0	18,368
Year 8	18,184	0	0	18,184
Year 9	18,003	0	0	18,003
Year 10	17,823	0	0	17,823
Total	1,86,548	0	0	1,86,548
Total number of crediting years	10 Years			
Annual average over the crediting period	18,654	0	0	18,654

B.7. Monitoring plan

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

>>

Data / Parameter Table 2.

Data / Parameter:	EG_{PJ,y}
Methodology reference	AMS-I.D. (version 18)
Data unit	MWh
Description	Quantity of Net electricity generation supplied by the project plant/unit to the grid in year y
Measured/calculated/default	Calculated

Data source	Credit note/ JMR/B Form reports/ monthly generation report from state electricity board/DISCOM	
Value(s) of monitored parameter applied with basis	20,048	
Measurement/ Monitoring equipment		
	Type of meter(s)	Electronic Tri-vector and Bidirectional Energy Meters
	Location of meter(s)	Substation
	Accuracy of meter(s)	0.2s or 0.5s
	Serial number of meter(s)	To be confirmed during issuance time as per records
	Calibration frequency	Once in five years
	Date of Calibration/ validity	To be confirmed during verification
	Reference No. of Calibration Certificates	To be confirmed during verification
	Calibration Status	To be confirmed during verification
Frequency of Measuring/reading	Continuous measurement	
Recording frequency	Monthly recording	
Calculation method (if applicable)	Electricity exported/imported to the grid is in kWh. However, for the calculation purpose electricity exported is converted in MWh. $EG_{PJ,y} = EG_{Export} - EG_{Import}$	
QA/QC procedures	<p>The meters is 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 utility and GCC Project owner do not have any control on it. The calibration of all the meters is planned to be is carried out in-line with the National standard which recommends at least once in 5-year calibration. Faulty meters will be duly replaced. The meters will be of accuracy class 0.2s or 0.5s.</p> <p>The net electricity supplied/exported to the grid can be obtained from the record of Monthly Joint Meter Reading / Monthly energy export record provided by the utility / Bill of Supply/ Invoice based on Monthly Generation Report.</p> <p>In absence or delay in the meter calibration appropriate Guidelines will be applied appropriately to confirm the conservativeness of metering.</p>	
Purpose of data	To calculate baseline emissions	
Additional comments	-	

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

Data / Parameter:	Employment	
Purpose:	SDG 8.5. By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value.	
Describe the related environment /social/ SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.	The project creates long-term and short-term job opportunities during construction and operation period.	
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 people working (Permanent + Part time) for the operation of the project
	Frequency of monitoring	Yearly
	Legal /regulatory / corporate limits (if any)	There is no legal requirement from local authority to create permanent employment from the project activity
	QA/QC	The records for the number of employees will be provided during each monitoring period
Remarks	NA	

Data / Parameter:	Climate Action	
Purpose:	To justify SDG Goal 13 – Take urgent action to combat climate change and its impacts	
Describe the related environment /social/ SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.	The solar power project does not cause any CO2 emissions in the project scenario. 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.	

Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate “harmless” condition or demonstrate Impact on SDG		
	Parameter to be monitored	Emission reductions achieved per year
	Frequency of monitoring	Yearly
	Legal /regulatory / corporate limits (if any)	The Air (Prevention & Control of Pollution) Act 1981 stipulates thresholds for both ambient air quality as well as stack emissions.
	QA/QC	Reduction of Greenhouse gases results in clean environment.
Remarks	NA	

Data / Parameter:	Affordable and Clean Energy	
Purpose:	To justify the SDG – 7, Affordable and Clean Energy.	
Describe the related environment /social/ SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.	The project utilizes renewable solar resource to generate electricity which will replace the electricity generated by fossil fuel plants.	
Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate “harmless” condition or demonstrate Impact on SDG		
	Parameter to be monitored	Net generation of electricity from Renewable (Solar)
	Frequency of monitoring	Yearly
	Legal /regulatory / corporate limits (if any)	Energy Conservation Act 2001.
	QA/QC	NA
Remarks	The project activity is replacing the electricity of fossil fuel-based power plants which could have been generated in the absence of Project Activity.	

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

>>

Data / Parameter:	Solid Waste Pollution 1. Hazardous wastes 2. E - Waste 3. End-of-life.																																		
Purpose:	To mitigate/reduce an environmental impact identified as Harmful in the risk assessment and to develop a Program of Risk Management Actions plan to address the risk of PRMA 02																																		
Describe the related environment /social/SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.	Damaged solar PV modules at site might have negative environmental impacts if not managed well after their end-of-life. e-waste pollution is anticipated through the operation of the project.																																		
Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate “harmless” condition or demonstrate Impact on SDG	<table border="1" data-bbox="500 779 1425 1098"> <tr> <td data-bbox="500 779 808 877">Parameter to be monitored</td> <td colspan="6" data-bbox="808 779 1425 877">Solid Waste which gets generated and stored/disposed.</td> </tr> <tr> <td data-bbox="500 877 808 940">Frequency of monitoring</td> <td colspan="6" data-bbox="808 877 1425 940">Yearly</td> </tr> <tr> <td data-bbox="500 940 808 1035">Legal /regulatory / corporate limits (if any)</td> <td colspan="6" data-bbox="808 940 1425 1035">Hazardous and Other Wastes (Management and Transboundary Movement) Amendment Rules, 2016.</td> </tr> <tr> <td data-bbox="500 1035 808 1098">QA/QC</td> <td colspan="6" data-bbox="808 1035 1425 1098">The details of Solid waste to be disposed will be maintained in records for future verification.</td> </tr> </table>							Parameter to be monitored	Solid Waste which gets generated and stored/disposed.						Frequency of monitoring	Yearly						Legal /regulatory / corporate limits (if any)	Hazardous and Other Wastes (Management and Transboundary Movement) Amendment Rules, 2016.						QA/QC	The details of Solid waste to be disposed will be maintained in records for future verification.					
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QA/QC	The details of Solid waste to be disposed will be maintained in records for future verification.																																		
Program of Risk Management Actions to mitigate risk related to aspect (if any for aspects assessed to be harmful)	<table border="1" data-bbox="500 1157 1425 1507"> <thead> <tr> <th data-bbox="500 1157 586 1272">S.No.</th> <th data-bbox="586 1157 691 1272">Action and targets</th> <th data-bbox="691 1157 857 1272">Responsibility</th> <th data-bbox="857 1157 1008 1272">Resource Requirement</th> <th data-bbox="1008 1157 1138 1272">Target to be Achieved by <i>(insert date)</i></th> <th data-bbox="1138 1157 1300 1272">Key Performance Indicators (KPI)</th> <th data-bbox="1300 1157 1425 1272">Targets achieved on <i>(insert date)</i></th> </tr> </thead> <tbody> <tr> <td data-bbox="500 1272 586 1434">1</td> <td data-bbox="586 1272 691 1434">Solid Waste shall be stored and disposed-off.</td> <td data-bbox="691 1272 857 1434">Aditya Green Energy Private Limited</td> <td data-bbox="857 1272 1008 1434">01</td> <td data-bbox="1008 1272 1138 1434">As per National law/regulations.</td> <td data-bbox="1138 1272 1300 1434">Quantity of Solid waste handled safely.</td> <td data-bbox="1300 1272 1425 1434">To be monitored .</td> </tr> <tr> <td colspan="7" data-bbox="500 1434 1425 1507">Date of Closing the Program:</td> </tr> </tbody> </table>							S.No.	Action and targets	Responsibility	Resource Requirement	Target to be Achieved by <i>(insert date)</i>	Key Performance Indicators (KPI)	Targets achieved on <i>(insert date)</i>	1	Solid Waste shall be stored and disposed-off.	Aditya Green Energy Private Limited	01	As per National law/regulations.	Quantity of Solid waste handled safely.	To be monitored .	Date of Closing the Program:													
S.No.	Action and targets	Responsibility	Resource Requirement	Target to be Achieved by <i>(insert date)</i>	Key Performance Indicators (KPI)	Targets achieved on <i>(insert date)</i>																													
1	Solid Waste shall be stored and disposed-off.	Aditya Green Energy Private Limited	01	As per National law/regulations.	Quantity of Solid waste handled safely.	To be monitored .																													
Date of Closing the Program:																																			

B.7.3. Sampling plan

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Not Applicable

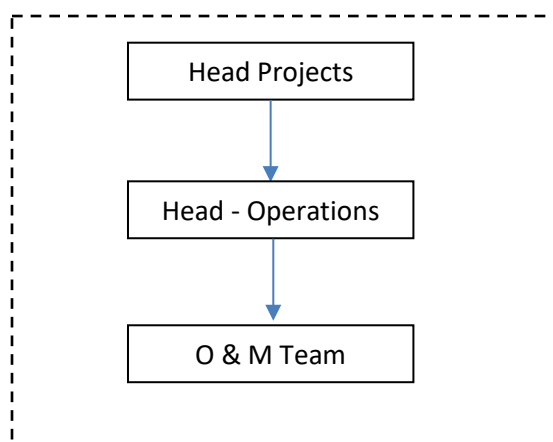
B.7.4. Other elements of the monitoring plan

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

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

Organizational Structure for Monitoring



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

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

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

Data Measurement:

The billing meters (Main Meter/Check meter) are installed at the project site for each SPV, Readings of meters shall be taken on monthly basis by authorized officer. Based on the Meter Reading Statement to PP, invoices will be raised.

Data collection and archiving:

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

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

Personnel Training:

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

Section C. Start date, crediting period type and duration

C.1. Start date of the Project Activity

>>

Start date of the project activity is the earliest date of interconnection with the grid.

The project is commissioned, and the start date is 24/07/2021. Further commissioning certificate will be provided at the time of validation. (The start date of operation of the Bundled Project shall be the earliest date among all of the bundles.)

C.2. Expected operational lifetime of the Project Activity

>>

25 Years

C.3. Crediting period of the Project Activity

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

>>

Crediting Period Start date: 24/07/2021

Crediting Period End date: 23/07/2031

C.3.2. Duration of crediting period

>>

10 Years

Section D. Environmental impacts

D.1. Analysis of environmental impacts

>>

The project activity does not involve any major construction activity. It primarily requires the installation of the solar PV panels, interfacing the generators with the State Electricity Board by setting up HT transmission lines and installation of other accessories. The report on “Developmental impacts and Sustainable Governance Aspects of Renewable Energy Projects” prepared by MNRE dated September 2013. This report clearly mentioned that solar PV project activity operations do not result in direct air pollution, noise pollution.

Thus, there is not any significant impact due to implementation of project activity on air, water, soil quality and ambience are envisaged due to the project activity.

D.2. Environmental impact assessment and management action plans

>>

The guidelines on Environmental Impact Assessment have been published by Ministry of Environment, Forests and Climate Change (MoEFCC), Government of India (GOI) under Environmental Impact Assessment notification 14/09/2006. Further amendments to the notification have been done on 14/07/2018. As per notification:

“The following projects or activities shall require prior environmental clearance from the concerned regulatory authority, which shall herein after 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 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 given in the Schedule, after expansion or modernization:
3. Any change in product- mix in manufacturing unit included in Schedule beyond the specified range.”

As the solar energy projects are not listed in any of the categories in the Schedule, the project is considered environmentally safe and as per regulations in 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 document has been made to comply with the requirements of Azure Power Eris Pvt. Ltd.,

Environmental and Social commitment, Environment & social safeguard standard (version 02) of GCC, Health and Safety (EHS) Guidelines of Azure Power Eris Pvt. Ltd. as well as applicable local and national regulations.

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.

Hence, as per below assessment, the solar power project is not likely to have significant adverse environmental and social impacts during the construction and operation period of the project activity.

E.1. Environmental safeguards

>>

Impact of Project Activity on		Information on Impacts, Do-No-Harm Risk Assessment and Establishing Safeguards								Project Owner's Conclusion		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 monitoring and of	Ex- Ante scoring of the environmental impact (as per scoring matrix Appendix-02)			
<p>Environmental Aspects on the identified categories²⁵ 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 operating principles, then the</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</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</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 of harmful. The frequency of monitoring to be specified as well including the data source.</p>	<p>-1 0 +1</p>	<p>Confirm the score of environmental impact of the project with respect to the aspect and its monitored value in relation to legal /regulatory limits (if any) including basis of conclusion.</p>	<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>	

²⁵ sourced from the CDM SD Tool and the sample reports are available (<https://www4.unfccc.int/sites/sdcmicrosite/Pages/SD-Reports.aspx>)

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

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											reductions cannot be quantified and therefore this parameter will not be scored.	
<i>NO_x emissions (EA02)</i>	Not Applicable	The Air (Prevention & Control of Pollution) Act 1981	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable.	With reference to the CPCB modified B29012/ESS(CP A)/2015-16; dated March 07, 2016 (Appendix A) solar power project falls in White category and it is mentioned in the notification that there shall be no necessity of obtaining the Consent to Operate" for White category of industries. However, the in the baseline scenario (grid) some of the fossil fuel power plants may have emitted NOx emissions, on which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and therefore this parameter will not be scored.	
<i>CO₂ emissions (EA03)</i>	The solar power project does not cause any CO2 emissions in the project scenario. 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	The Air (Prevention & Control of Pollution) Act 1981 stipulates thresholds for both ambient	Not Applicable as no emissions occur in the project scenario and therefore is not	Not Applicable. No Action Required	Not Applicable. No Action Required	Not Applicable	Not Applicable	The generated electricity by the project activity will be continuously measured and the related CO2 emission reduction will be calculated according to the underlying	+1	With reference to the CPCB modified direction No. B29012/ESS(CP A)/2015-16; dated March 07, 2016 (Appendix A) solar power project falls in White category and it is mentioned		

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		emission factor as mentioned in the PSF	air quality as well as stack emissions.	expected to or does not cause any harm.					methodology A.M.S-1. D version 18.0.		in the notification that there shall be no necessity of obtaining the Consent to Operate" for White category of industries. However, in the baseline scenario (grid) some of the fossil fuel power plants may have emitted CO2 emissions, which has been calculated by the combined margin emission factor as mentioned in the PSF. Therefore, emission reductions are expected to be reduced which will be regularly monitored and verified ex-post and therefore is eligible to be scored.	
CO emissions (EA04)	Not Applicable	The Air (Prevention & Control of Pollution) Act 1981	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	With reference to the CPCB modified direction No. B29012/ESS(CP A)/2015-16; dated March 07, 2016 (Appendix A) solar power project falls in White category and it is mentioned in the notification that there shall be no necessity of obtaining the Consent to Operate" for White category of industries. However, in the baseline scenario (grid) some of the fossil fuel power	

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											plants may have emitted CO emissions, on which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and therefore this parameter will not be scored.	
<i>Suspended particulate matter (SPM) emissions (EA05)</i>	Not Applicable	The Air (Prevention & Control of Pollution) Act 1981	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	With reference to the CPCB modified direction No. B29012/ESS(CP A)/2015-16; dated March 07, 2016 (Appendix A) solar power project falls in White category and it is mentioned in the notification that there shall be no necessity of obtaining the Consent to Operate" for White category of industries. However, in the baseline scenario (grid) some of the fossil fuel power plants may have emitted SPM emissions, on which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and therefore this parameter will not be scored.	
<i>Fly ash generation (EA06)</i>	Not Applicable	The Air (Prevention & Control of Pollution) Act 1981	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	With reference to the CPCB modified direction	

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

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

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			Control) Rules 2000 amended in 2010)								project activity during operational phase as there is no major equipment in solar project which generates noise	
Environment - Land	<i>Solid waste Pollution from Plastics (EL-01)</i>	Not Applicable	Plastic Waste (Management and Handling) Rules, 2016	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	Not Applicable	Not Applicable	No significant plastic waste is expected from the project activity during operational phase Hence, this parameter will not be scored.	
	<i>Solid waste Pollution from Hazardous wastes(EL 02)</i>	Damaged solar PV modules at site might have negative environmental impacts if not managed well	Hazardous and Other Wastes (Management and Transboundary Movement) Amendment Rules, 2016	Not Applicable	Harmless	No Action Required	Not Applicable	The damaged solar PV modules shall be stored and disposed-off as per the national/local law	The details of damaged and returned solar PV modules will be maintained in records for future verification. Refer B.7.2	+1	As per MoEF&CC notification dated 01.03.2019 (G.S.R. 178(E)) the Occupier (developer) is not required to obtain authorization under Hazardous and Other Wastes (Management and Transboundary Movement) Amendment, Rules, 2019 if they are exempted from obtaining consent under Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981. However, Project Owner should ensure (through ESMS) proper disposal of Hazardous Waste (DG oil, if DG is installed) through actual user, waste collector or operator of the disposal facility, in	

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											accordance with the Central Pollution Control Board guidelines. Moreover, though not covered under the rule, the broken part of the solar plant is recommended to be sent back to the manufacture or an authorized recycler.	
<i>Solid waste Pollution from Bio-medical wastes (EL03)</i>	Not Applicable	Bio-medical Waste Management Rules, 2016	Not Applicable	No Action Required	No Action Required	Not Applicable	No Action Required	Not Applicable	Not Applicable	No significant bio-medical waste will be generated from the project activity. Hence, this parameter will not be scored.		
<i>Solid waste Pollution from E-wastes (EL04)</i>	e-waste pollution is anticipated through the operation of the project.	E-waste (Management and Handling) Rules	Not Applicable	Harmless	No Action Required	Records all electrical & electronics waste of projects and filling of return.	Project Owner is responsible to maintain records and filling of returns as per applicable law and as stated by Aditya Green Energy Private Limited Scrap Disposal Policy.	The details of damaged and returned solar PV modules will be maintained in records for future verification. Refer B.7.2	+1	Project Owner is responsible to maintain records of returned equipment's as per applicable law and have no significant impact.		
<i>Solid waste Pollution from Batteries (EL05)</i>	The project does not deploy batteries for storage as this project is grid connected. No solid waste pollution from batteries is anticipated	Batteries (Management and Handling) Rules	Not Applicable	Not Applicable	-	-	-	Not Applicable	Not Applicable	NA		
<i>Solid waste Pollution from end of life</i>	Solar PV modules at site might have negative environmental impacts if not managed well after their end-of-life	Solid Waste Management Rules, 2016	-	Harmless	-	Solid waste from the project activity must be disposed	Project Owner is responsible to maintain records and	The operational lifetime of the project is 25 years. PP will ensure proper disposal at	+1	Project Owner is responsible to maintain records and dispose all products after		

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	<i>products/ equipment (EL06)</i>						as applicable law and as mentioned in Environment and Social Impact Assessment .	dispose all products after end of lifecycle as per applicable law Solid Waste Management Rules, 2016	end of life.During its operational if any equipment is replaced it would be disposed off as per the rules. A logbook for the same will be maintained		ending lifecycle as per applicable law. A self-attested declaration mentioning that the equipment waste from the end of project life will be disposed as per Solid Waste Management Rules, 2016 will be submitted	
	<i>Soil Pollution from Chemicals (including Pesticides, heavy metals, lead, mercury) (EL07)</i>	Not Applicable	In India, there are no comprehensive soil quality regulations and standards to ascertain the seriousness of contamination	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	Not Applicable	NA	No significant soil pollution from chemicals during operation phase of the project activity However, in the baseline scenario (grid) some of the fossil fuel power plants may have emitted soil emissions, on which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and therefore this parameter will not be scored.	
	<i>land use change (change from cropland /forest land to project land) (EL08)</i>	Land use change of the project site may have negative impact if the land was a forestry or agricultural land previously.	IFC Performance Standard 5 Land Acquisition and Involuntary Resettlement	-	NA	No Action Required	Not Applicable	Not Applicable	Not Applicable	NA	The project does not involve diversion of any forest or any agricultural land. Therefore, ensuring minimal impact on ecology during the construction and operation phase of the project.	
Environment - Water	<i>Reliability/ accessibility of water supply (EW01)</i>	Not Applicable	The Water (Prevention & Control of Pollution) Act 1974	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	Not Applicable	NA	Supply water from local body will be used and necessary approval to be obtained.	

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												However, the in the baseline scenario (grid) some of the fossil fuel power plants may have emitted accessibility of water emissions, on which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and therefore this parameter will not be scored.	
<i>Water Consumption from ground and other sources (EW02)</i>	Not Applicable	Permission for abstraction of Ground water under Environmental (Protection) Act 1986	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	Not Applicable	Not Applicable	NA		No ground water will be consumed in all sites of the project activity & necessary permission to be obtained from concerned local authority in case use ground water in future. However, in the baseline scenario (grid) some of the fossil fuel power plants may have emitted water consumption emissions, on which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and therefore this parameter will not be scored.	
<i>Generation of wastewater (EW03)</i>	Not Applicable	The Water (Prevention & Control of	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	No Action Required	Not Applicable	Not Applicable		There is no significant effect as provisions of septic tank and soak pits will be	

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

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											some of the fossil fuel power plants may have generation of waste water or its treatment on which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and therefore this parameter will not be scored.	
<i>Pollution of Surface, Ground and/or Bodies of water (EW05)</i>	Not Applicable	The Water (Prevention & Control of Pollution) Act 1974	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	Not Applicable	Not Applicable	NA	<p>There is no significant effect as provisions of septic tank and soak pits will be provided onsite for treatment and disposal of sewage, thereby minimizing the impacts of wastewater discharge. Planning of toilets, soak pits and septic tanks, waste collection areas should be away from natural drainage channels.</p> <p>However, in the baseline scenario (grid) some of the fossil fuel power plants may have emissions polluting the surface water on which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and</p>	

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											therefore this parameter will not be scored.	
	<i>Discharge of harmful chemicals like marine pollutants / toxic waste (EW06)</i>	Not Applicable	Costal Regulation Zone	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	No Action Required	Not Applicable	The project is not located in the CRZ boundary defined in the CRZ Notification 2019. So, there is no marine environment nearby the project site, hence data is not available and can't be quantified and therefore this parameter will not be scored	
Environment – Natural Resources	<i>Conserving mineral resources (ENR01)</i>	Not Applicable	In India, there are no conserving mineral resources regulations and standards to ascertain	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	Not Applicable	NA	This is solar project activity and does not use any natural mineral, therefore this parameter will not be scored.	
	<i>Protecting/enhancing plant life (ENR02)</i>	Not Applicable	In India, there are no comprehensive regulations and standards to ascertain for protecting plant life	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	Not Applicable	NA	The project activity has been implemented in barren land and no trees have been removed from the site due to project activity, therefore this parameter will not be scored.	
	<i>Protecting/enhancing species diversity (ENR03)</i>	Not Applicable	In India, there are no comprehensive regulations and	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	Not Applicable	NA	The project activity has been implemented in barren land and no trees have been removed from the site due to project	

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			standards to ascertain for protecting plant life								activity, therefore this parameter will not be scored.	
<i>Protecting/enhancing forests (ENR04)</i>	Not Applicable		The Forest (Conservation) Act 1980 & 1981	Not Applicable	No Action Required	No Action Required	Not Applicable	No Action Required	Not Applicable	NA	No forest land has been used for the project activity.	
<i>Protecting/enhancing other depletable natural resources (ENR05)</i>	Not Applicable		National Forest Policy (Revised) 1988	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	Not Applicable	NA	The project activity has been implemented in barren land and no trees have been removed from the site due to project activity or no other natural resource has been used to operate project activity therefore this parameter will not be scored.	
<i>Conserving energy (ENR06)</i>	Not Applicable		Energy Conservation Act 2001	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	Not Applicable	NA	All efficient products & instruments have been used in the project activity, hence no significant impact due to this. therefore, this parameter will not be scored	
<i>Replacing fossil fuels with renewable sources of energy (ENR07)</i>	The project utilizes renewable solar resource to generate electricity which will replace the electricity generated by fossil fuel plants.		Energy Conservation Act 2001	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	Continuous measuring for electricity generation will be done	+1	The project is expected to supply an average of 20,048 MWh per year renewable electricity to grid.	
<i>Replacing ODS with non-ODS</i>	Not Applicable		In India, there are no comprehensive	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	Not Applicable	NA	No impact Therefore this parameter will not be scored.	

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	refrigerants (ENR08)		nsive regulation s and standards to ODS & non ODS									
<p>Note: If the score is: (a) zero or greater, the overall impact is neutral or positive and there is no net harm; and (b) less than zero, the overall impact is negative and there is net harm to Environment. Score is obtained after adding the individual scores in each of the rows in the last column of the above table.</p>												
Net Score:		+5										
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 (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 (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 / Management Controls	Monitoring parameter and frequency of monitoring (as per scoring matrix Appendix-02)	Ex- Ante scoring of social impact of the project	Ex- Ante description and justification/explanation of the scoring of social impact of the project	Verification Process Will the Project Activity cause any harm?
Social Aspects on the identified categories²⁶ 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 source during normal and abnormal/emergency conditions that may result from constructing and operating of the Project Activity within or outside the project boundary, over which the project Owner(s) has/have control</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</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</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 or 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</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</i>

²⁶ 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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					to cause any harm (is safe) and shall be indicated as Harmless , project having positive impact on society wrt. To the BAU / baseline scenario must also mark their aspect as "harmless"	harm and shall be indicated as Harmful				basis of conclusion	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.
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 12 (c) and Paragraph 13 (f)	Paragraph 23		Paragraph 24 and Paragraph 26 (a) (ii)
Social - Jobs	Long-term jobs (> 10 year) created/lost (SJ01)	The project creates long term job opportunities during operation.	There is no legal requirement from local authority to create permanent employment from the project activity	Not Applicable	-	-	Not Applicable	Number of people employed by the project will be monitored through checking payroll records or the social insurance	+1	There is no mandatory law to generate permanent employment from the project activity, However, project Owner has decided to provide training to the local people & generate employment for local people.	
	New short-term jobs (< 1 year) created/lost (SJ02)	The project creates short term job opportunities during construction.	There is no legal requirement from local authority to create permanent employment from the project activity	Not Applicable	-	-	Not Applicable	Local labor force will be employed during construction period.	+1	There is no mandatory law to generate permanent employment from the project activity, However, project Owner has	

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										decided to provide training to the local people & generate employment for local people.	
	<i>Sources of income generation increased / reduced (SJ03)</i>	Not Applicable	There is no legal requirement from local authority to create permanent employment from the project activity	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	NA	
	<i>Avoiding discrimination when hiring people from different race, gender, ethnics, religion, marginalized groups, people with disabilities (SJ04) (human rights)</i>	Not Applicable	IFC Performance Standard-2: Labour and Working conditions	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	Not Applicable	The project will not make employment decisions based on personal characteristics unrelated to inherent job requirements. The project will base the employment relationship on the principle of equal opportunity and fair treatment and will not discriminate with respect to any aspects of the employment	

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										relationship . The project will take measures to prevent and address harassment, intimidation, and/or exploitation, especially regarding women. Therefore this parameter will not be scored.	
Social - Health & Safety	<i>Disease prevention (SHS01)</i>	Not Applicable	The Factories Act, 1948	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	It should be ensured that proper and adequate number of toilets is constructed for the Labor's so that hygienic conditions prevail in the site area. Therefore this parameter will not be scored.	
	<i>Occupational health hazards (SHS02)</i>	Not Applicable	EHS policy of Project Owner	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	Not Applicable	The project owner will provide regular safety training to their workers about the accident hazards and risk	

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										related to specific works and preventive measures for avoiding accidents at site Therefore this parameter will not be scored.	
	<i>Reducing / increasing accidents /Incidents/fatality (SHS03)</i>	Not Applicable	The Factories Act, 1948 & EHS policy of Project Owner	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	The project owner will provide regular safety training to their workers about the accident hazards and risk related to specific works and preventive measures for avoiding accidents at site Therefore this parameter will not be scored.	
	<i>Reducing / increasing crime (SHS04)</i>	Not Applicable	Crime comes under law & order of local government authority and there is no legal requirement from local authority to project owner to liable to reduce crime.	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	Project activity will increase local employment so there is no chance to increase crime in the local area due to the solar power projects. Therefore,	

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										<p>this parameter will not be scored.</p>	
	<p><i>Reducing / increasing food wastage (SHS05)</i></p>	<p>Not Applicable</p>	<p>THE COMPULSORY FOOD WASTE REDUCTION BILL, 2018</p>	<p>Not Applicable</p>	<p>No Action Required</p>	<p>No Action Required</p>	<p>Not Applicable</p>	<p>Not Applicable</p>	<p>NA</p>	<p>Use a 2-bin system so that food waste and recyclables viz. paper, plastic, glass, scrap metal waste etc. are segregated and stored in designated waste bins/containers. Therefore this parameter will not be scored.</p>	
	<p><i>Reducing / increasing indoor air pollution (SHS06)</i></p>	<p>Not Applicable</p>	<p>The Air (Prevention & Control of Pollution) Act 1981</p>	<p>Not Applicable</p>	<p>No Action Required</p>	<p>No Action Required</p>	<p>Not Applicable</p>	<p>Not Applicable</p>	<p>NA</p>	<p>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</p>	

Project Submission Form

										Consent to Operate" for White category of industries, hence it can be assumed that no chance of increasing air pollution from project activity. Therefore this parameter will not be scored.	
	<i>Efficiency of health services (SHS07)</i>	Not Applicable	No regulation available local	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	Health services are limited to villages falling under project activity. Project Owner shall conduct health camp in all villages as per their CSR commitment throughout the operation time of the project activity. Therefore this parameter will not be scored.	
	<i>Sanitation and</i>	Not Applicable	Hazardous and Other Wastes	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	As per MoEF&CC	

Project Submission Form

	<p>waste management (SHS08)</p>		<p>(Management and Transboundary Movement) Amendment Rules, 2016</p>						<p>notification dated 01.03.2019 (G.S.R. 178(E)) the Occupier (developer) is not required to obtain authorization under Hazardous and Other Wastes (Management and Transboundary Movement) Amendment, Rules, 2019 if they are exempted from obtaining consent under Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981.</p> <p>However, Project Owner should ensure proper disposal of Hazardous Waste (DG oil, if DG is installed) through actual user, waste</p>	
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Project Submission Form

										<p>collector or operator of the disposal facility, in accordance with the Central Pollution Control Board guidelines. Septic tank and soak pits will be provided onsite for treatment and disposal of sewage, thereby minimizing the impacts of wastewater discharge. Planning of toilets, soak pits and septic tanks, waste collection areas should be away from natural drainage channels Therefore this parameter will not be scored.</p>	
	<p><i>Other health and safety issues (SHS09)</i></p>	<p>Not Applicable</p>	<p>EHS policy of Project Owner</p>	<p>Not Applicable</p>	<p>No Action Required</p>	<p>No Action Required</p>	<p>Not Applicable</p>	<p>Not Applicable</p>	<p>NA</p>	<p>All health & safety issue at project sites to be mitigate as per EHS policy of Project</p>	

Project Submission Form

										Owner and local regulation. Therefore, this parameter will not be scored.	
Social - Education	<i>specialized training / education to local personnel (SE01)</i>	The project owner provides job related training according to the positions	There is no legal requirement from local authority to provide training to local people	Not Applicable	-	-	Not Applicable	Training records/evidence for the training would be maintained by the project owner	+1	The project Owner will provide regular safety training to their workers about the accident hazards and risk related to specific works and preventive measures for avoiding accidents at site.	
	<i>Educational services improved or not (SE02)</i>	Not Applicable	CSR policy of Project Owner	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	Project Owner should take initiative for Promotion of education, including special education and employment enhancing vocation skills especially among children, women, elderly and the differently abled and livelihood enhancement projects	

Project Submission Form

<p><i>Project-related knowledge dissemination effective or not (SE03)</i></p>	<p>Not Applicable</p>	<p>CSR policy of Project Owner</p>	<p>Not Applicable</p>	<p>No Action Required</p>	<p>No Action Required</p>	<p>Not Applicable</p>	<p>Not Applicable</p>	<p>NA</p>	<p>Stakeholder consultation meeting was done before starting of project work where project owner was informed about the project and taken their comments. Further meeting can be planned in future as per stakeholder request. Therefore this parameter will not be scored.</p>	
<p><i>Other educational issues (SE04)</i></p>	<p>Not Applicable</p>	<p>CSR policy and Project Owner</p>	<p>Not Applicable</p>	<p>No Action Required</p>	<p>No Action Required</p>	<p>Not Applicable</p>	<p>Not Applicable</p>	<p>NA</p>	<p>Project Owner should take initiative for Promotion of education, including special education and employment enhancing vocation skills especially among children, women, elderly and the differently abled and</p>	

Project Submission Form

										livelihood enhancement projects Therefore this parameter will not be scored.	
Social - Welfare	<i>Improving/deteriorating working conditions (SW01)</i>	Not Applicable	EHS policy of Project Owner	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	There is no chance of deteriorating working conditions as Project Owner will maintain high working culture for their employee with complying EHS guideline & local regulation Therefore this parameter will not be scored.	
	<i>Community and rural welfare (indigenous people and communities) (SW02)</i>	Not Applicable	CSR policy of Project Owner	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	In the stakeholder meeting, the local communities were of the opinion that apart from the economic opportunities, the local community should also benefit from the project in terms of community development activities. Some of	

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										the key areas for development activities identified included medical infrastructure, access to education and trainings for youth and women within the village. This can be done by collaborating with local NGOs working on these areas Therefore this parameter will not be scored.	
<i>Poverty alleviation (more people above poverty level) (SW03)</i>	Not Applicable	No local regulation	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	The objective of the company policy of Project Owner is to assist project sites to reduce poverty and enhance economic growth, human well-being, and development effectiveness by addressing the gender disparities		

Project Submission Form

											and inequalities that are barriers to development, and by assisting member countries in formulating and implementing their gender and development goals. Therefore this parameter will not be scored.	
	<i>Improving / deteriorating wealth distribution / generation of income and assets (SW04)</i>	Not Applicable	No regulation local	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	Local community might choose to work during the construction of access roads and other project components and as security guards for the plant. Therefore this parameter will not be scored.		
	<i>Increase / or / deteriorating municipal revenues (SW05)</i>	Not Applicable	No regulation local	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	Projects is not falling under municipal areas, hence same will not be applicable. Therefore this parameter		

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											will not be scored.	
	<i>Women's empowerment (SW06)</i> <i>(human rights)</i>	Not Applicable	No regulation local	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	Project Owner will take initiative for Promoting gender equality, empowering women, and such other facilities for senior citizens and measures for reducing inequalities faced by socially and economically backward groups etc. Therefore this parameter will not be scored.		
	<i>Reduced / increased traffic congestion (SW07)</i>	Not Applicable	No regulation local	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	NA	Adequate training on traffic and road safety operations will be imparted to the drivers of project vehicles. Road safety awareness programs will be organized in coordination with local		

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										<p>authorities to sensitize target groups viz. school children, commuters on traffic safety rules and signage during construction & operation phase of the project Therefore this parameter will not be scored</p>	
	<p><i>Exploitation of Child labour</i> (human rights) (SW08)</p>	Not Applicable	IFC Performance Standard-2: Labour and Working conditions	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	Not Applicable	<p>The project will not employ children in any manner that is economically exploitative or is likely to be hazardous or to interfere with the child's education, or to be harmful to the child in any way. National laws related to employment of minors are to be followed. No person under the age of 14 is to be</p>	

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										allowed to work on the site according to Indian Child Labour Law. Therefore, this parameter will not be scored.	
<i>Minimum wage protection (human rights) (SW09)</i>	Not Applicable	Centralized HR policy of Project owner	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Project owner should ensure that all the contracted workers are provided with condition of services, rate of wages, holidays, hours of work as stipulated in the rules as per applicability and tenure of service, by the deputed contractor. Therefore, this parameter will not be scored.	
<i>Abuse at work place.(with specific reference to women and people</i>	Not Applicable	EHS policy of project owner	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Project owner should ensure that all the contracted workers are provided with	

Project Submission Form

	<i>with special disabilities / challenges</i> <i>(human rights)</i> <i>(SW10)</i>									condition of services, rate of wages, holidays, hours of work as stipulated in the rules as per applicability and tenure of service, by the deputed contractor. Therefore, this parameter will not be scored.	
	<i>Other social welfare issues</i> <i>(SW11)</i>	Not Applicable	EHS policy of project owner	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	Not Applicable	Project owner should ensure that all the contracted workers are provided with condition of services, rate of wages, holidays, hours of work as stipulated in the rules as per applicability and tenure of service, by the deputed contractor. Therefore, this parameter will not be scored.	
	<i>Avoidance of human</i>	Not Applicable	EHS policy of project owner	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	Not Applicable	Project owner should	

Project Submission Form

<p><i>trafficking and forced labour</i></p> <p><i>(human rights)</i></p> <p><i>(SW12)</i></p>									<p>ensure that all the contracted workers are provided with condition of services, rate of wages, holidays, hours of work as stipulated in the rules as per applicability and tenure of service, by the deputed contractor. Therefore, this parameter will not be scored.</p>	
<p><i>Avoidance of forced eviction and/or partial physical or economic displacement of IPLCs</i></p> <p><i>(human rights)</i></p> <p><i>(CW13)</i></p>	<p>Not Applicable</p>	<p>Land Acquisition Act 1894 (Amended in 1984) and The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013</p>	<p>Not Applicable</p>	<p>No Action Required</p>	<p>No Action Required</p>	<p>Not Applicable</p>	<p>Not Applicable</p>	<p>Not Applicable</p>	<p>Land for the project is being procured on willing seller willing buyer basis. Land is primarily a barren land and no habitat is present on the site.. Hence, project does not involve any involuntary displacement. Therefore this parameter will not be scored</p>	

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	Provisions of resettlement and human settlement displacement <i>(human rights)</i> <i>(CW14)</i>	Not Applicable	Land Acquisition Act 1894 (Amended in 1984) and The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Land for the project is being procured on willing seller willing buyer basis. Land is primarily a barren land and no habitat is present on the site.. Hence, project does not involve any involuntary displacement. Therefore this parameter will not be scored	
Net Score:			+3									
Project Owner's Conclusion in PSF:			The Project Owner confirms that the Project Activity will not cause any net harm to society.									
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 ofr guidance.	Define project-level targets/actions in line with nee 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	NA	NA	NA	NA	NA	NA	NA		
Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture	NA	NA	NA	NA	NA	NA	NA		

Project Submission Form

Goal 3. Ensure healthy lives and promote well-being for all at all ages	NA	NA	NA	NA	NA	NA	NA		
Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	NA	NA	NA	NA	NA	NA	NA		
Goal 5. Achieve gender equality and empower all women and girls	NA	NA	NA	NA	NA	NA	NA		
Goal 6. Ensure availability and sustainable management of water and sanitation for all	NA	NA	NA	NA	NA	NA	NA		
Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all	7.2 By 2030, increase substantially the share of renewable energy in the global energy mix. 7.a By 2030, enhance international cooperation to facilitate access to clean energy research	Yes	7.2.1 Renewable energy share in the total energy consumption	Net generation 20,048 MWh (average) Annually	7.2.1 Renewable energy share in the total energy consumption	Contribute renewable energy share in total grid energy consumption	The net electricity supplied to the grid by the project activity is continuously monitored through energy meter (main and check meter) installed at the substation. The meters remain under the custody of state utility		

Project Submission Form

	<p>and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology. 7.b By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed</p>								
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Project Submission Form

	countries , small island developing States, and land-locked developing countries , in accordance with their respective programmes of support								
Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	<p>8.5</p> <p>By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value</p>	Yes	<p>Project creates new employment and generates income for during the project lifetime.</p>	<p>Project creates new employment and generates income for people during Under Construction Phase and During Operational of the project.</p> <p>Through Project activity economic development has been achieved in the project location by creating opportunities to the other allied services and indirect employment.</p> <p>Refer section B.7.1</p>	<p>Project creates new employment and generates income for no of people during the project lifetime. 15 Long term jobs and 10 short term jobs will be provided</p>	<p>1. Employment per the national labour and company law.</p> <p>2. Maintains company HR policy to create standard operating procedures (SOPs) to follow and maintain safe and secure work environment</p> <p>3. Paying the wages as per the minimum wages act of the country.</p>	<p>Project owner monitors the implantation of the policies and employee grievances if any through the separate HR manager and site in charge.</p> <p>Quantity of employment will be monitored through employment records.</p>		

Project Submission Form

	8.8 Protect labor rights and promote safe and secure working environments for all workers, including migrant workers.								
Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Target 9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial	Yes	9.4.1 CO2 emission per unit of value added	-	CO2 emission per unit of value added (tCO ₂ /m ²)	The project helps adaptation of clean energy technologies by implementing a solar power plant.	The net electricity supplied to the grid by the project activity is continuously monitored through energy meter (main and check meter) installed at the substation. CO2 emission reductions realized by the project activity will represent the added value.		

Project Submission Form

	processes, with all countries taking action in accordance with their respective capabilities								
Goal 10. Reduce inequality within and among countries	NA	NA	NA	NA	NA	NA	NA		
Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable	NA	NA	NA	NA	NA	NA	NA		
Goal 12. Ensure sustainable consumption and production patterns	NA	NA	NA	NA	NA	NA	NA		
Goal 13. Take urgent action to combat climate change and its impacts	13.2 Integrate climate change measures into national policies, strategies and planning 13.2.2 Total greenhouse gas emissions per year	Yes	SDG 13	18,654 tCO ₂ e (Average) per year	SDG 13	Emission reduction achieved per year	Electricity produced by the renewable generating unit multiplied by an emission factor		

Project Submission Form

Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development	NA	NA	NA	NA	NA	NA	NA		
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	NA	NA	NA	NA	NA	NA	NA		
Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	NA	NA	NA	NA	NA	NA	NA		
Goal 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development	NA	NA	NA	NA	NA	NA	NA		
SUMMARY						Targeted		Likely to be Achieved	

Project Submission Form

Total Number of SDGs	4	4
Certification label (Bronze, Silver, Gold, Platinum, or Diamond) for the ACCs as defined in the PSF	Gold	Gold

Section G. Local stakeholder consultation

G.1. MODALITIES FOR LOCAL STAKEHOLDER CONSULTATION

>>

- a) The scope of local stakeholder consultation: Awareness about Climate Change; Project and Sustainable Development Goals
- b) The local stakeholder meeting conducted on 24/03/2021. Where all local stakeholder were invited to give the feedback and any concern on the project activity.
- c) The group of stakeholders invited:
 - Land Lesser and Land Aggregator
 - Local Laborer and Grazers
 - Vulnerable social groups such as women, BPL and Schedule Class
 - Regulatory Authorities at district levels, Sarpanch, ward member and Gram Sewak of Panchayats (where the project site and AoI falls).
 - Local Communities in Area of Interest villages
- d) The means for inviting stakeholders' participation.

Most of the stakeholders were given private phone calls followed by official letters and Invitation posters where possible. Especially the nearby village heads were asked to inform the locals about the project and the meeting.

- e) Agenda of Meeting:
 - Introduction of the project
 - Brief of Climate Change and Certification Process
 - Social No-net-harm Label
 - Environmental No-net-harm Label
 - Sustainable Development Goals and project benefits to the local stakeholders
- f) A local stakeholder meeting was organized before the project implementation began at project site.

A presentation about the project was given to stakeholders, which focused on the non-technical specifications of the project, its environmental affects, climate change issue and the climate change benefits of the project. Representatives of project owner also explained the benefits due to project like new employment generation and CSR activitie. conducted by the Project Owner. 50 questionnaires were distributed to collect comments from Government officials, Social Organizations and residents, and all questionnaires have been recollected.

The following questions were asked in the questionnaires:

- Are you aware of the project?
- In your opinion, what are the pros and cons of the project?
- What's your concern over the project?
- Do you support the implementation of the project?
- Any other comments.

G.2. SUMMARY OF COMMENTS RECEIVED

>>

All stakeholders interviewed are supportive to the implementation of the project, believing that the Project will help mitigate the air pollutions by reducing GHG, improve the community environment and promote local economic development. Local stakeholders also have raised their concerns about environmental and social impacts of the project during construction and operation period. Comments are summarized below.

Stakeholder concerns	Response
Environmental Impact	
The project shall use open space as project site to avoid forest occupation and vegetation destruction	The project site selected by the project owner locates inside the private land which has been purchased through a sale deed. The area of cultivation in this region is considerably low owing to the lack of adequate water and any irrigation facilities. Highly unpredictable pattern of rain coupled with frequent droughts often leads to poor farm yield/ productivity.
Construction waste shall be properly collected and disposed	Part of the construction waste will be recycled by the project, the rest will be collected and disposed in the landfill site
Social Impact	
Benefits from the Project in terms of employment and development of infrastructure and the overall community, especially medical services. In addition to this, preference to the local community in contractor and employment opportunities from the project.	The proposed project will enhance the economy of the local area It will provide employment opportunity to local community during construction period. Monetary gains, education, health, sanitation, water conservation, plantation and improvement in general environment through community development

	plan. The PP will provide some Corporate Social Responsibility's (CSR) activity in the locality to improvement livelihoods standard of villagers
The local communities were of the opinion that apart from the economic opportunities, the local community should also benefit from the Project in terms of community development activities.	The key areas for development activities identified included medical infrastructure and life skill trainings for youth and women within the village. This can be done by collaborating with local NGOs working on these areas
Local area has adequate workforce in unskilled category as mostly working population of the local area are cultivators/agriculture laborer	The employment of local laborer will positively influence the project operations, in strengthening project relations with the local community and building a positive rapport.
Some key areas of intervention for CSR activities have been highlighted earlier under 'Local Gram Panchayat' heading of this table.	The CSR activities focused on education and health, among others will also be targeted at the neighboring villages and the immediate local community which will lead to improvement in livelihood.
What is the benefit of Solar energy?	Solar energy is a clean and pollution free energy generation source which will reduce the equivalent amount of energy that would have been supplied by the fossil fuel-based power plants which emit the GHG gases into the atmosphere.

G.3. CONSIDERATION OF COMMENTS RECEIVED

>>

All comments raised during local stakeholder consultation have been considered in EIA report and corresponding precaution measures and corrective actions (if any) have been proposed to ensure all issues during construction and operation of the project are properly addressed.

The ESIA study aimed to identify and evaluate potential environmental impacts associated with all aspects of the project. The conclusion and recommendations of this study are result of on-site inspections, the evaluation of impacts identified by specialists, and the process of stakeholder consultation. The impacts due to the project is site specific and reversible owing to the construction activities and availability of land which is suitable for establishing the project due to land use and lack of rainfall.

The project is assessed to generate limited environmental and social impacts owing to construction related activity which will not extend beyond Solar Footprints, procurement of private land based on 'willing buyer-willing seller' for project development. Mitigation measures for potential impacts on various environmental and socio-economic have been specified through:

- Follow up of best practice of compensation, stakeholder engagement, and grievance management.
- Planning & designing of Solar Power plant, site preparation and access route, construction, drainage, traffic movement etc.
- Application of standards for Health and Safety.

Section H. Approval and authorization

>>

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

APPENDIX 1. CONTACT INFORMATION OF PROJECT OWNERS

Project Owner name (as per LON/LOA)	Aditya Green Energy Private Limited
Country	India
Address	21/22,Shahu Complex, Near Telephone Bhawan,Latur,Maharashtra-413512,India.
Telephone	+91-9503056606
Fax	NA
E-mail	mail@adityagreenenergy.com
Website	http://www.adityagreenenergy.com/contactus.html
Contact person	Vipul K Joisher

APPENDIX 2. AFFIRMATION REGARDING PUBLIC FUNDING

>>

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)

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Refer to section B.6.1.

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

>>

Refer to section B.6.2.

APPENDIX 5. FURTHER BACKGROUND INFORMATION ON MONITORING PLAN

>>

Refer to section B.7

APPENDIX 6. SUMMARY REPORT OF COMMENTS RECEIVED FROM LOCAL STAKEHOLDERS

>>

Refer to section G.2


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

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Not Applicable as project category is A2

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

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Bundle: 14.70 MW bundled solar power project by Aditya Green Energy Pvt. Ltd.

Aditya Green Energy Private Limited

Project Submission Form

Level-1 analysis - Consideration of key aspects for developing Homogeneous Bundles:			
Requirements of paragraphs 10-11 of Clarification No.1		Reference	Similar Bundles/Activities (color coded)
			14.70 MW bundled solar power project by Aditya Green Energy Pvt. Ltd.
Similarity in Technological Considerations	Technology	Paragraph 11 (i)	Solar power
	Methodology		AMS I.D (Version 18.0)
	Cross-effects exist or not		No cross effects exist
	Same output of each activity (e.g., heat or power or cogeneration);	Paragraph 12 (b)	Electricity
Similarity in Economic and Policy Considerations	Additionality approach (investment or barrier analysis as stipulated by the applicable methodology)	Paragraph 11 (ii)	Investment analysis
	All the activities within the bundle should have same barrier(s).	Paragraph 12 (d) (iii)	Does not apply barrier analysis. Not applicable.
	Investment analysis method and financial indicator (e.g., post tax project or equity IRR, or pre-tax project or equity IRR, NPV, etc.)	Paragraph 11 (ii)	Equity IRR
	Comparable key input values (which constitute more than 20% of total project investment costs and total project revenues, which is applicable as per the specific project situation) (Key differentiating parameter between bundles)		NA
	Same investment decision year		The investment decisions for activities is within one year of each other.
	Same investment benchmark applicable for additionality analysis (e.g., Cost of Equity, weighed average cost of capital).		Refer page no.26 of PSF Step 2: Investment analysis
Different land costs at two different locations (Key differentiating parameter between bundles)	Supplying electricity to the different grids/ captive Purposes		NA
	Project capacity		Captive use and extra generation Exported to national Grid
	Legal ownership of bundles		Total project capacity 14.70 MW DC
			The Letter of Authorization states that there is only one legal owner Aditya Green Energy Private Limited to act on behalf of all the project owners and has

			authority to manage the project and will have the ownership of ACCs
Similarity in Environmental or Methodological Considerations	Application of same methodology (or approved combinations where cross effects are addressed)	Paragraph 11 (iii) i	ACM0002
	Same baseline approach and the outcome	Paragraph 11 (iii) ii	The baseline for all the activities in the bundle is national electricity grid.
	Same monitoring approach and parameters for the part included for GHG	Paragraph 11 (iii) iii	All projects in this category have same monitoring approach and measurement parameters.

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

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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 CORSIA²⁷;

²⁷See ICAO recommendation for conditional approval of GCC at https://www.icao.int/environmental-protection/CORSIA/Documents/TAB/Excerpt_TAB_Report_Jan_2020_final.pdf

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

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