

المجلس العالمي للبصمة الكربونية  
GLOBAL CARBON COUNCIL



**Project  
Submission  
Form**

V4.0- 2022

## CONTENTS

<b><u>SECTION A. DESCRIPTION OF THE PROJECT ACTIVITY</u></b>	<b>12</b>
A.1. PURPOSE AND GENERAL DESCRIPTION OF THE PROJECT ACTIVITY	12
A.2. LOCATION OF THE PROJECT ACTIVITY	13
A.3. TECHNOLOGIES/MEASURES	14
A.4. PROJECT OWNER(S)	16
A.5. DECLARATION OF INTENDED USE OF APPROVED CARBON CREDITS (ACCs) GENERATED BY THE PROJECT ACTIVITY	17
A.6. ADDITIONAL REQUIREMENTS FOR CORSIA	17
<b><u>SECTION B.APPLICATION OF SELECTED METHODOLOGY(IES)</u></b>	<b>17</b>
B.1. REFERENCE TO METHODOLOGY(IES) AND TOOLS APPLIED IN THE PROJECT	17
B.2. APPLICABILITY OF METHODOLOGY(IES) AND TOOLS APPLIED IN THE PROJECT	18
B.3. PROJECT BOUNDARY, SOURCES AND GREENHOUSE GASES (GHGs)	21
B.4. ESTABLISHMENT AND DESCRIPTION OF THE BASELINE SCENARIO	22
B.5. DEMONSTRATION OF ADDITIONALITY	24
B.6. ESTIMATION OF EMISSION REDUCTIONS	35
B.6.1. EXPLANATION OF METHODOLOGICAL CHOICES	35
B.6.2. DATA AND PARAMETERS FIXED <i>EX ANTE</i>	41
B.6.3. EX-ANTE CALCULATION OF EMISSION REDUCTIONS	43
B.6.4. SUMMARY OF EX ANTE ESTIMATES OF EMISSION REDUCTIONS	44
B.7. MONITORING PLAN	45
B.7.1. DATA AND PARAMETERS TO BE MONITORED <i>EX-POST</i>	45
B.7.2. DATA AND PARAMETERS TO BE MONITORED FOR E+/S+ ASSESSMENTS (NEGATIVE IMPACTS)	51
B.7.3. SAMPLING PLAN	52
B.7.4. OTHER ELEMENTS OF THE MONITORING PLAN	52
<b><u>SECTION C. START DATE, CREDITING PERIOD TYPE AND DURATION</u></b>	<b>54</b>
C.1. START DATE OF THE PROJECT ACTIVITY	54
C.2. EXPECTED OPERATIONAL LIFETIME OF THE PROJECT ACTIVITY	54
C.3. CREDITING PERIOD OF THE PROJECT ACTIVITY	54
C.3.1. START AND END DATE OF THE CREDITING PERIOD	54
C.3.2. DURATION OF CREDITING PERIOD	54
<b><u>SECTION D. ENVIRONMENTAL IMPACTS</u></b>	<b>54</b>
D.1. ANALYSIS OF ENVIRONMENTAL IMPACTS	54

<b>D.2. ENVIRONMENTAL IMPACT ASSESSMENT AND MANAGEMENT ACTION PLANS</b>	<b>55</b>
<b><u>SECTION E.ENVIRONMENTAL AND SOCIAL SAFEGUARDS</u></b>	<b><u>55</u></b>
<b>E.1. ENVIRONMENTAL SAFEGUARDS</b>	<b>56</b>
<b>E.2. SOCIAL SAFEGUARDS</b>	<b>65</b>
<b><u>SECTION F.UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS (SDG)</u></b>	<b><u>73</u></b>
<b><u>SECTION G. LOCAL STAKEHOLDER CONSULTATION</u></b>	<b><u>80</u></b>
<b>G.1. MODALITIES FOR LOCAL STAKEHOLDER CONSULTATION</b>	<b>80</b>
<b>G.2. SUMMARY OF COMMENTS RECEIVED</b>	<b>81</b>
<b>G.3. CONSIDERATION OF COMMENTS RECEIVED</b>	<b>82</b>
<b><u>SECTION H. APPROVAL AND AUTHORIZATION</u></b>	<b><u>82</u></b>
APPENDIX 1. CONTACT INFORMATION OF PROJECT OWNERS	83
APPENDIX 2. AFFIRMATION REGARDING PUBLIC FUNDING	83
APPENDIX 3. APPLICABILITY OF METHODOLOGY(IES)	83
APPENDIX 4. FURTHER BACKGROUND INFORMATION ON EX ANTE CALCULATION OF EMISSION REDUCTIONS	83
APPENDIX 5. FURTHER BACKGROUND INFORMATION ON MONITORING PLAN	83
APPENDIX 6. SUMMARY REPORT OF COMMENTS RECEIVED FROM LOCAL STAKEHOLDERS	83
APPENDIX 7. SUMMARY OF DE-REGISTERED CDM PROJECT OR PROJECTS FROM OTHER GHG / NON-GHG PROGRAMS (TYPE B)	84
Appendix 8. FURTHER INFORMATION ON DETERMINATION OF BUNDLE IN PROJECT ACTIVITY.	84
Appendix 9. PUBLIC DECLARATION FOR A2 (Sub Type 2 and 3), B1 & B2 PROJECTS ON NON CONTINUATION FROM CDM/GHG/NON-GHG PROGRAMS.>>	86

<b>COVER PAGE- Project Submission Form (PSF)</b>				
<i>Complete this form in accordance with the instructions attached at the end of this form.</i>				
<b>BASIC INFORMATION</b>				
<b>Title of the Project Activity as per LON/LOA</b>	<b>Renewable Green Power Project-India</b>			
<b>PSF version number</b>	01			
<b>Date of completion / Updating of this form</b>	21/12/2022			
<b>Project Owner(s) as per LON/LOA</b> <small>(Shall be consistent with De-registered CDM Type B Projects)</small>	<b>Infinite Environmental Solutions LLP</b>			
<b>Country where the Project Activity is located</b>	India			
<b>GPS coordinates of the project site(s)</b>	<b>SPV</b>	<b>LOCATION</b>	<b>LATTITUDE</b>	<b>LONGITUDE</b>
	LNB Renewable Energy Ltd.	Telangana	17.4765°N (17° 28' 35.4" N)	78.4548°E (78° 27' 17.3" E)
	Porwal Auto Components Limited	Madhya Pradesh	23.5125° N (23° 30' 45" N)	76.1216° E (76° 07' 18" E)
	YMA Renewable Energy Private Limited	Tamil Nadu	16.86° N (16°51'36.00"N)	81.35° E (81°20'60.00"E)
<b>Eligible GCC Project Type as per the Project Standard</b>	<input checked="" type="checkbox"/> <b>Type A:</b> <input type="checkbox"/> Type A1			

<p>(Tick applicable project type)</p>	<p><input checked="" type="checkbox"/> Type A2</p> <p><input checked="" type="checkbox"/> Sub-Type 1</p> <p><input type="checkbox"/> Sub-Type 2</p> <p><input type="checkbox"/> Sub-Type 3</p> <p><input type="checkbox"/> Sub-Type 4</p> <p><input type="checkbox"/> Type A3</p> <p><input type="checkbox"/> <b>Type B – De-registered CDM Projects:</b><sup>1</sup></p> <p><input type="checkbox"/> Type B1</p> <p><input type="checkbox"/> Type B2</p>
<p><b>Minimum compliance requirements</b></p>	<p><input checked="" type="checkbox"/> Real and Measurable GHG Reductions</p> <p><input checked="" type="checkbox"/> National Sustainable Development Criteria (if any)</p> <p><input checked="" type="checkbox"/> Apply credible baseline and monitoring methodologies</p> <p><input checked="" type="checkbox"/> Additionality</p> <p><input checked="" type="checkbox"/> Local Stakeholder Consultation Process</p> <p><input checked="" type="checkbox"/> Global Stakeholder Consultation Process</p> <p><input checked="" type="checkbox"/> No GHG Double Counting</p> <p><input checked="" type="checkbox"/> Contributes to United Nations Sustainable Development Goal 13 (Climate Action)</p>
<p><b>Choose optional and additional requirements</b></p> <p>(Tick applicable label categories)</p>	<p><input checked="" type="checkbox"/> Do-no-net-harm Safeguards to address Environmental Impacts</p> <p><input checked="" type="checkbox"/> Do-no-net-harm Safeguards to address Social Impacts</p> <p><input checked="" type="checkbox"/> Contributes to United Nations Sustainable Development Goals (in addition to Goal 13)</p>
<p><b>Applied methodologies including version No.</b></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><b>GHG Sectoral scope(s) linked to the applied methodology(ies)</b></p>	<p>Scope 1- Energy Industries (Renewable/Non-Renewable sources)</p>

<sup>1</sup> Owners of Type B projects shall fill in the form provided in Appendix 7.

<b>Applicable Rules and Requirements for Project Owners</b> (Tick applicable Rules and Requirements)	Rules and Requirements		Version	
	<input checked="" type="checkbox"/> ISO 14064-2			
<input checked="" type="checkbox"/> Applicable host country legal requirements /rules				
<input checked="" type="checkbox"/> GCC Rules and Requirements <sup>2</sup>	<input checked="" type="checkbox"/> Project Standard		3.1	
	<input type="checkbox"/> Approved GCC Methodology (XXXXX)			
	<input checked="" type="checkbox"/> Program Definitions			3.1
	<input checked="" type="checkbox"/> Environment and Social Safeguards Standard			3.0
	<input checked="" type="checkbox"/> Project Sustainability Standard			3.0
	<input checked="" type="checkbox"/> Instructions in Project Submission Form (PSF)-template			4.0
	<input checked="" type="checkbox"/> Clarification No. 01			1.3
	<input type="checkbox"/> Clarification No. 02			1.0
	<input type="checkbox"/> Clarification No. 03			1.0
	<input type="checkbox"/> Clarification No. 04			1.0
	<input type="checkbox"/> Clarification No. 05			1.0
	<input checked="" type="checkbox"/> Standard on avoidance of double counting			1.0
	<input type="checkbox"/> Add rows if required			
<input checked="" type="checkbox"/> CDM Rules <sup>3</sup>	<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			

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

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

	<input checked="" type="checkbox"/> TOOL 07- Tool to calculate the emission factor for an electricity system	7.0
	<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	13.1
	<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	
<p><b>Choose Third Party Project Verification by approved GCC Verifiers<sup>4</sup></b> (Tick applicable verification categories)</p>	<input checked="" type="checkbox"/> GHG emission reductions (i.e., Approved Carbon Credits <b>(ACCs)</b> ) <input checked="" type="checkbox"/> Environmental No-net-harm Label <b>(E<sup>+</sup>)</b> <input checked="" type="checkbox"/> Social No-net-harm Label <b>(S<sup>+</sup>)</b>  <input checked="" type="checkbox"/> United Nations Sustainable Development Goals <b>(SDG<sup>+</sup>)</b> <input type="checkbox"/> Bronze SDG Label <input checked="" type="checkbox"/> Silver SDG Label <input type="checkbox"/> Gold SDG Label <input type="checkbox"/> Platinum SDG Label <input type="checkbox"/> Diamond SDG Label	

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

	<input checked="" type="checkbox"/> CORSIA requirements (C <sup>+</sup> ) <input type="checkbox"/> Host Country Attestation on Double counting
<p><b>Declaration by the 'Authorized Project Owner<sup>5</sup> and focal point'</b></p> <p>(Tick all applicable statements<sup>6</sup>)</p>	<p>The Project Owner(s) declares that:</p> <p><b>Generic Requirements applicable to all Project Types:</b></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-GHG<sup>7</sup> 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 nature<sup>8</sup> by any other GHG/ non-GHG program, either for compliance or voluntary purposes, the ACCs will be claimed only for the remaining crediting period (subject to a maximum of 10 years of crediting period including the periods under other programs and GCC program) for which carbon credits/ environmental attributes of compensating nature have not been issued by any other GHG/ non-GHG program.</p> <p><b>Specific requirements applicable to respective Project Types:</b></p> <p><b><u>For Project Type A1:</u></b></p> <p><input type="checkbox"/> For Project Type A1, we confirm that the Project Activity is NOT registered as a GHG Project Activity in any other GHG/non-GHG program or any other</p>

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

<sup>6</sup> **Consequences in case of Non-compliance with declaration statements:**

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

<sup>7</sup> Non-GHG programs could be such as I-REC facilitating reliable energy claims with Renewable Energy Certificate (REC) schemes

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



	<p>voluntary program and has not issued or will not issue credits under any other program.</p> <p><b><u>For Project Type A2 (Sub-Type 1):</u></b></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><b><u>For Project Type A2 (Sub-Type 2 or Sub-Type 3):</u></b></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 &amp; 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><b><u>For Project Type A2 (Sub-Type 4):</u></b></p> <p>For Project Type A2 Sub-Type 4, we confirm that the Project Activity has been included in a registered CDM-POA and we shall (tick at least one of the two options):</p> <p><input type="checkbox"/> Submit the proof for exclusion of CPA(s) from registered CDM-POA prior to the date of initial submission to the GCC Program; or</p> <p><input type="checkbox"/> Submit the proof of exclusion of CPA(s) from the registered CDM-PoA after the request for registration has been submitted to GCC Program but before the final decision is made by the GCC Steering Committee.</p> <p><b><u>For Project Type A3:</u></b></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><b><u>For Project Type B1 or B2:</u></b></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 &amp; 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><b>Requirements to avoid double counting:</b></p> <p>We intend to submit or have submitted a written attestation<sup>9</sup> (Host Country Letter of Authorization - HCLOA) from the host country's national focal point or focal point designee for CORSIA eligible units generated beyond 31 December 2020 at the following stages<sup>10</sup> (tick at least one of the three options):</p> <p><input type="checkbox"/> The initial submission for GSC; or</p> <p><input type="checkbox"/> Along with the submission for a request for registration (after Project Verification is completed); or</p> <p><input checked="" type="checkbox"/> Along with the submission for a request for the first or subsequent issuance of ACCs.</p> <p><b>Project specific requirements:</b></p> <p><b><u>CORSIA specific requirements:</u></b></p> <p><input checked="" type="checkbox"/> We confirm that bundled projects or grouped projects shall have registered crediting period starting on or after 1 Jan 2016 for the grouped/aggregated project as a whole.</p> <p><input checked="" type="checkbox"/> We confirm that the Project Activity meets all the requirement of the CORSIA Eligible Emissions Units<sup>11</sup> 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 state<sup>12</sup>.</p>
--	---

<sup>9</sup> In case of any change of Host Country Letter of Authorisation (HCLOA) the project owner shall inform the GCC operations team immediately

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

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

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

	<p>Provide details (if any) below for the boxes ticked above:</p> <p>The Project Owner(s) declares that:</p> <p><input checked="" type="checkbox"/> All the information provided in this document, including any supporting documents submitted to the GCC or its registry operator IHS Markit at any time, is true and correct.</p> <p>Provide details below for the boxes ticked above</p>
<p><b>Appendixes 1-9</b></p>	<p>Details about the Project Activity are provided in Appendixes 1 through 9 to this document.</p>
<p><b>Name, designation, date and signature of the Focal point (as per LON/LOA)</b></p>	<p><b>For Infinite Environmental solutions LLP</b></p>  <p><b>Mr. Jimmy Sah</b>  <b>Chief Operating Officer</b>  <b>Date: 21/12/2022</b></p>

**1. PROJECT SUBMISSION FORM**

## Section A. Description of the Project Activity

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

>>

The Project Activity is the installation of grid-connected bundled 6.55 MW solar and wind power plant/unit in Madhya Pradesh, Telangana and Tamil Nadu states of India. The electricity generated from Project Activity is connected to Indian grid in India there by displacing electricity from the regional grid electricity distribution system generated by fossil fuel-based power plants. The Project Activity involves generation of electricity using and wind power in Tamil Nadu, and solar power in Madhya Pradesh & Telangana states of India. In case of solar energy, in Telangana location the produced solar power is purchased by Indian grid, whereas in Madhya Pradesh location, the SPV has exercised the option of captive use of the energy generated from the plant. And in the Tamil Nadu location, the generated electricity using wind power is being purchased by third party (private).

The electricity generated by the Project Activity thus replaces the equivalent amount of electricity generated by the operation of existing/ grid connected power plants (mostly fossil fuel-based power plants) and by addition of new generation sources into the grid. The Project Activity thus reduces the anthropogenic emissions of greenhouse gases (GHGs) in to the atmosphere associated with the equivalent amount of electricity generation from the existing grid connected power plants (mostly fossil fuel) and by addition of new generation sources into the grid.

SPV/SPD	Location	Capacity (MW)	Commissioning date (COD)	Technology	Power Generation (MWh)	Emission reduction (tCO <sub>2</sub> /Annun)
LNB Renewable Energy Private Limited	Balanagar, District Hyderabad, Telangana	2	11/09/2021	Solar	4,293	3,994
Porwal Auto Components Limited	Kadodiya, District Ujjain, Madhya Pradesh	2.55	06/11/2017	Solar	3,821	3,555
YMA Renewable Energy Private Limited	Tuticorin, Tamil Nadu	2	30/03/2019	Wind	4,143	3,855

The Project Activity will replace anthropogenic emissions of greenhouse gases (GHG's) estimated to be approximately 11,404 tCO<sub>2</sub>e per year, there on displacing estimated average of 12,257 MWh/year amount of electricity from the generation-mix of power plants connected to the Indian grid, which is

mainly dominated by thermal/fossil fuel-based power plant. Project activity will mitigate the total GHG emission reductions of 114,050 tCO<sub>2</sub>e over the entire crediting period.

### Baseline Scenario

#### Sustainable Development Indicators

In addition to contribution to the sustainable environment by reducing the GHG emissions and reducing the dependency on fossil fuels, this project activity also contributing to the sustainable development though supporting the local community and local economy.

### Social well-being

The project activity provided / provides job opportunity to local people during erection, commissioning and maintenance of the solar and wind project. Frequency of visiting villages and nearby areas by skilled, technical and industrialist increase due to installation /site visit/operation and maintenance work related to wind plant. This directly and indirectly positively effects the economy of villages and nearby area.

### Environmental well-being

Solar and wind power is one of the cleanest renewable energy powers and does not involve any fossil fuel. There are no GHG emissions. The impact on land, water, air and soil is negligible. Thus, the project activity contributes to environmental well-being without causing any negative impact on the surrounding environment.

### Economic well-being

The project activity generates permanent and temporary employment opportunity within the vicinity of the project. The electricity supply in the nearby area improves which directly and indirectly improves the economy and life style of the area.

### Technological well-being

The project activity leads to the promotion and demonstrates the success of solar and wind projects in the region which further motivate more investors to invest in solar and wind power projects. Hence, the project activity leads to technological well-being.

## A.2. Location of the Project Activity

>>

### Address and geodetic coordinates of the physical site of the Project Activity-

SPV	LOCATION	LATTITUDE	LONGITUDE
LNB Renewable Energy Ltd.	Telangana	17.4765°N (17° 28' 35.4" N)	78.4548°E (78° 27' 17.3" E)
Porwal Auto Components Limited	Madhya Pradesh	23.5125° N (23° 30' 45" N)	76.1216° E (76° 07' 18" E)
YMA Renewable Energy Private Limited	Tamil Nadu	16.86° N (16°51'36.00"N)	81.35° E (81°20'60.00"E)



Figure 1: project Location

### A.3. Technologies/measures

>>

The project activity involves the installation of wind and Solar PV based electricity generation project. The total installed capacity of the project is 6.55 MW including Wind & Solar PV plant located in Madhya Pradesh, Telangana and Tamil Nadu states of 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 11,404 tCO<sub>2</sub>e per year, thereon displacing 12,257 MWh/year amount of electricity from the grid. The project activity aims to harness wind and solar energy through installation of Wind and Solar PV project with total installed capacity of 6.55 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.

The proposed wind will include the following project components:

- Wind Turbine Generators (WTGs);
- Generators
- Nacelle
- Tower
- Rotor Blades
- Pitch System

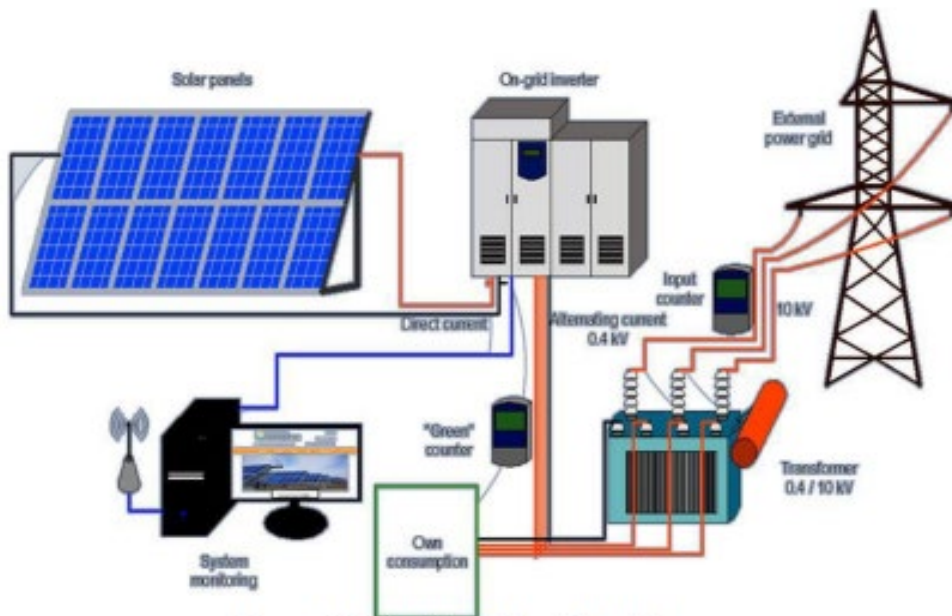


Figure 2: Solar Power Plant Flow Diagram

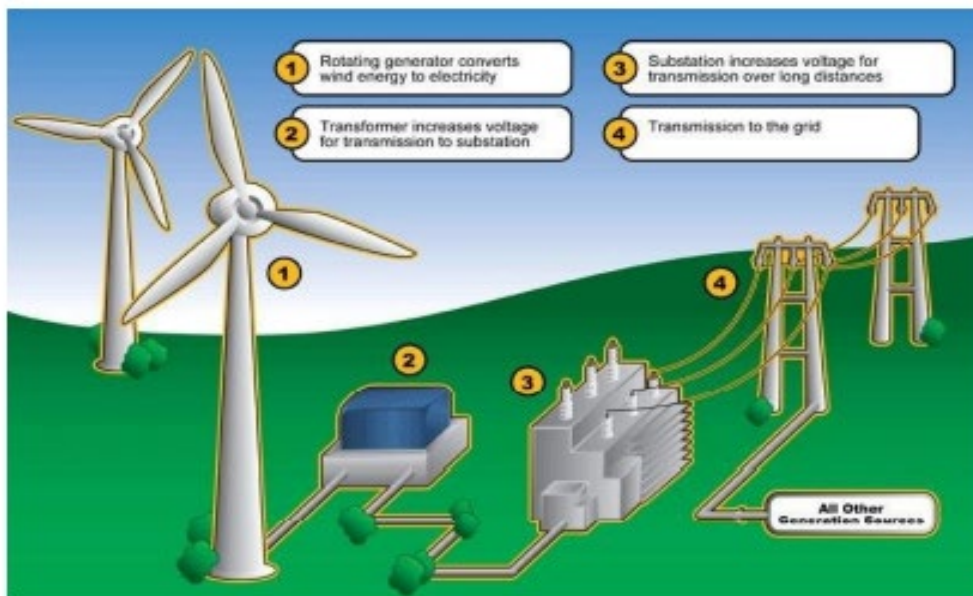


Figure 2: Plant Flow Diagram

#### A.4. Project Owner(s)



Location/ Country	Project Owner(s)	Where applicable <sup>13</sup> , indicate if the host country has provided approval (Yes/No)
India	Infinite Environmental Solutions LLP	Not Applicable

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

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

Period		Name of the Entities	Purpose and Quantity of ACCs to be supplied
From	To		
06/11/2017	05/11/2027	LNB Renewable Energy Private Limited	Offsetting for 10 Years of Crediting Period
		Porwal Auto Components Limited	
		YMA Renewable Energy Private Limited	

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

>>

Explained in Section E and F

### Section B. Application of selected methodology(ies)

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

<sup>13</sup> 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 CDM approved small scale methodology applicable to this project is AMS-I.D “Grid-connected renewable electricity generation”, Version – 18.0<sup>14</sup>

Following tools have been referred during the estimation of emission reduction calculations as per the methodology AMS-I.D, Version 18.0;

- Tool 07 - Tool to calculate the emission factor for an electricity system, Version-07.0<sup>15</sup>
- Tool 21 - Demonstration of additionality of small-scale project activities, Version-13.1<sup>16</sup>
- Tool 27 - Investment analysis, Version-11.0<sup>17</sup>

## 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 generates power through a renewable source of energy (solar & wind) and supplies it to the Indian grid. This electricity would, otherwise, have been generated through fossil fuel sources connected to Indian grid. The project activity meets the applicability conditions of the selected methodology. Choice of selected methodology has been justified by showing that the project activity meets each applicability conditions of the selected methodology in table below:

S.no	Methodological Applicability Criteria	Applicability to the Project Activity
1	<p>This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass:</p> <p>(a) Supplying electricity to a national or a regional grid; or</p> <p>(b) Supplying electricity to an identified consumer facility via national/regional grid through a contractual arrangement such as wheeling.</p>	<p>The project activity involves the installation of a green-field solar and wind project for renewable electricity generation. It would supply electricity to the Indian grid that is primarily dominated with fossil fuel fired generating units.</p> <p>Hence it satisfies this applicability criteria.</p>
2	<p>Illustration of respective situations under which each of the methodology (i.e. “AMS-I.D.: Grid connected renewable electricity generation”, “AMS-I.F.: Renewable electricity generation for captive use and mini-grid” and “AMS-I.A.: Electricity generation by the user) applies is included in the appendix.</p>	<p>The project activity would supply electricity to the Indian grid.</p> <p>Hence it satisfies this applicability criteria.</p>

<sup>14</sup> [CDM: Grid connected renewable electricity generation --- Version 18.0 \(unfccc.int\)](#)

<sup>15</sup> [am-tool-07-v7.0.pdf \(unfccc.int\)](#)

<sup>16</sup> [EB105\\_repan\\_TOOL21 \(unfccc.int\)](#)

<sup>17</sup> [EB112\\_repan02\\_TOOL27 \(v11.0\) \(unfccc.int\)](#)

3	<p>This methodology is applicable to project activities that:</p> <ul style="list-style-type: none"> <li>(a) Install a Greenfield power plant;</li> <li>(b) Involve a capacity addition in (an) existing plant(s);</li> <li>(c) Involve a retrofit of (an) existing plant(s);</li> <li>(d) Involve a rehabilitation of (an) existing plant(s)/unit(s); or</li> <li>(e) Involve a replacement of (an) existing plant(s)/unit(s).</li> </ul>	<p>The project activity involves installation of new solar &amp; wind power projects at sites where there was no renewable energy power plant operating prior to the implementation of the project activity (Greenfield Plant). Hence, the criterion is applicable to the project activity.</p>
4	<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"> <li>(a) The project activity is implemented in an existing reservoir with no change in the volume of reservoir;</li> <li>(b) 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/m<sup>2</sup>;</li> <li>(c) 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/m<sup>2</sup>.</li> </ul>	<p>The project activity is a renewable solar &amp; wind energy based power project. Hence, the criterion is not applicable to the project activity.</p>
5	<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 6.55 (2+2+2.55) MW. The unit has no nonrenewable components or provision for future addition of a co-fired fossil fuel system. Thus, the project activity meets the applicability condition.</p>
6	<p>Combined heat and power (co-generation) systems are not eligible under this category.</p>	<p>The project activity does not involve cogeneration. Hence it satisfies the applicability criteria.</p>
7	<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 distinct from the existing units.</p>	<p>The project activity is a green field project hence it does not involve the addition of renewable energy generation units at an existing renewable power generation facility.</p>
8	<p>In the case of retrofit, rehabilitation or replacement, to qualify as a small-scale</p>	<p>The project activity is a green field project hence there is no retrofit or replacement.</p>

	project, the total output of the retrofitted, rehabilitated or replacement power plant/unit shall not exceed the limit of 15 MW.	Therefore, this criterion is not applicable to the project activity.
--	--	--

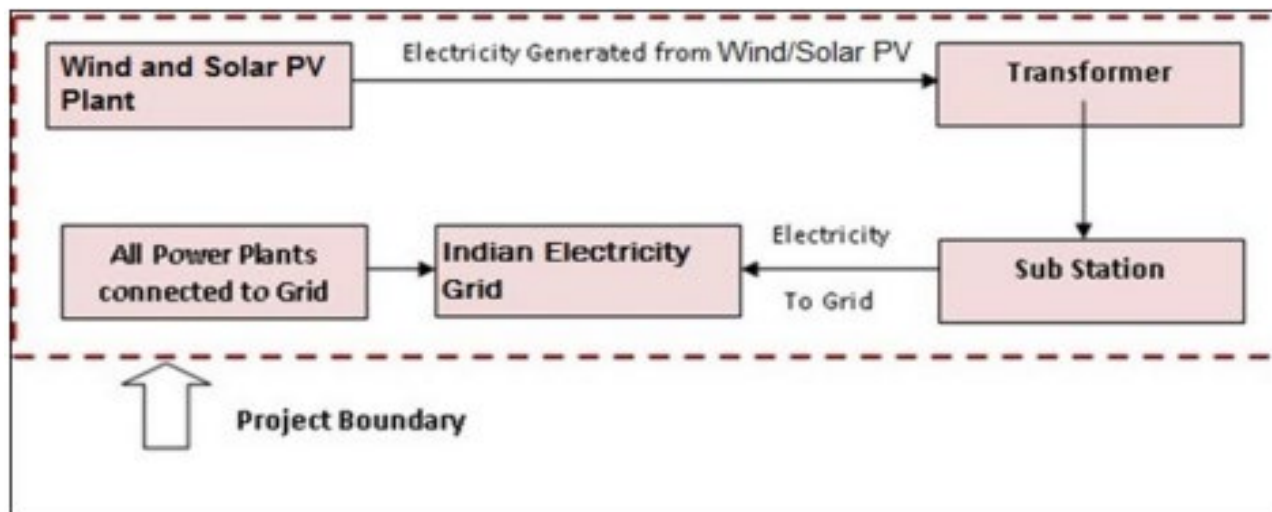
<b>In addition the above applicability conditions, the applicability conditions of tool referred in the methodology AMS-I.D, Version 18.0 has been referred here under:</b>	
<b>Tool 07: Tool to calculate the emission factor for an electricity system, Version 7.0</b>	
<p>This tool may be applied to estimate the OM, BM and/or CM when calculating baseline emissions for a project activity that substitutes grid electricity that is where a project activity supplies electricity to a grid or a project activity that results in savings of electricity that would have been provided by the grid (e.g., demand side energy efficiency projects).</p>	<p>The project activity is a greenfield wind and solar power generation plant and hence, according to the applied methodology, 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 “TOOL07: Tool to calculate the emission factor for an electricity system”.</p>
<p>Under this tool, the emission factor for the project electricity system can be calculated either for grid power plants only or, as an option, can include off-grid power plants. In the latter case, the conditions specified in “Appendix 2: Procedures related to off-grid power generation” should be met. Namely, the total capacity of off-grid power plants (in MW) should be at least 10 per cent of the total capacity of grid power plants in the electricity system; or the total electricity generation by off-grid power plants (in MWh) should be at least 10 per cent of the total electricity generation by grid power plants in the electricity system; and that factors which negatively affect the reliability and stability of the grid are primarily due to constraints in generation and not to other aspects such as transmission capacity.</p>	<p>Since the project activity is grid connected wind and solar power project, this condition is applicable and the emission factor has been calculated accordingly.</p>
<p>In case of CDM projects the tool is not applicable if the project electricity system is located partially or totally in an Annex I country.</p>	<p>The project activity is located in India, a non-Annex I country. Therefore, this criterion is not applicable for the project activity.</p>
<p>Under this tool, the value applied to the CO<sub>2</sub> emission factor of bio fuels is zero</p>	<p>The project activity is a grid connected wind and solar power project and therefore, this criterion is not applicable for the project activity</p>
<b>Tool 21: Demonstration of additionality of small-scale project activities, Version 13.1</b>	

<p>This methodological tool provides a general framework to demonstrate and assess the additionality of small-scale project activity and component project activity (CPA) of the programme of activities.</p>	<p>The project is the installation of wind and solar project having capacity of total 6.55 MW<sub>AC</sub> which is a small-scale project. Therefore, the tool is appropriately applied</p>
<p><b>Tool 27: Investment analysis, Version 11.0</b></p>	
<p>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”, the guidelines “Non-binding best practice examples to demonstrate additionality for SSC project activities”, or baseline and monitoring methodologies that use the investment analysis for the demonstration of additionality and/or the identification of the baseline scenario.</p>	<p>Project activity applies “Tool for the demonstration of additionality of small-scale project activities”. Hence this tool is applicable.</p>
<p>In case the applied approved baseline and monitoring methodology contains requirements for the investment analysis that are different from those described in this methodological tool, the requirements contained in the methodology shall prevail.</p>	<p>Applied methodology AMS-I.D version 18.0 doesn't specify any approach for the demonstration of Investment analysis. As per the methodology the additionality including investment analysis has been demonstrated as per the Tool 21: Demonstration of additionality of small-scale project activities” version 13.1 and Tool 27: Investment Analysis version 11.0 Hence Justified.</p>

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

>>

The project boundary includes the wind and solar power project, sub-stations, grid and all power plants connected to grid. The proposed project activity will evacuate power to the Indian grid. Therefore, the entire Indian grid and all connected power plants have been considered in the project boundary for the proposed project activity.



**Figure 3: Project Boundary**

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	Grid Connected Electricity Generation	CO <sub>2</sub>	Yes	Main Emission Source
		CH <sub>4</sub>	No	Minor Emission source
		N <sub>2</sub> O	No	Minor Emission source
Project	Greenfield Solar and wind Power Project activity	CO <sub>2</sub>	No	No CO <sub>2</sub> emissions are emitted from the project
		CH <sub>4</sub>	No	Project activity does not emit CH <sub>4</sub>
		N <sub>2</sub> O	No	Project activity does not emit N <sub>2</sub> O

#### B.4. Establishment and description of the baseline scenario

>>

As per the approved small scale methodology AMS I.D paragraph 19, *“the baseline scenario is that the electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid”*.

The project activity involved setting up of wind and solar project to harness the power of wind energy and 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 and by the addition of new generation sources. Hence, the baseline for the project activity is the equivalent amount of power from the Indian grid.

Baseline emissions include only CO<sub>2</sub> emissions from electricity generation in power plants that are displaced due to the project activity. The baseline emissions are the product of electrical energy baseline expressed in MWh of electricity produced by the renewable generating unit multiplied by the grid emission factor. The Emission Factor can be calculated in a transparent and conservative manner as follows:

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

OR

*(b) The weighted average emissions (in t CO<sub>2</sub>/MWh) of the current generation mix. The data of the year in which project generation occurs must be used.*

*Calculations must be based on data from an official source (where available) and made publicly available.*

**Option (a) has been considered to calculate the grid emission factor as per** the ‘Tool to calculate the emission factor for an electricity system Version 7.0’ as data is available from an official source and the detailed approach has been given in B.6.1 of PSF.

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

Parameter	Value	Nomenclature	Source
EF <sub>grid, CM, y</sub>	0.9305 tCO <sub>2</sub> /MWh	Combined margin CO <sub>2</sub> 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 <sub>2</sub> Emission Database, Version-17.0, October 2021 published by Central Electricity Authority (CEA), Government of India.
EF <sub>grid, OM, y</sub>	0.9522 tCO <sub>2</sub> /MWh	Operating margin CO <sub>2</sub> emission factor for the project electricity system in year y	Calculated as the last 3 years (2018-19, 2019-20 & 2020-21) generation-weighted average, sourced from Baseline CO <sub>2</sub> Emission Database, Version-17.0, October 2021 published by Central Electricity Authority (CEA), Government of India.
EF <sub>grid, BM, y</sub>	0.8653 tCO <sub>2</sub> /MWh	Build margin CO <sub>2</sub> emission factor for the project electricity system in year y	Baseline CO <sub>2</sub> Emission Database, Version-17.0. October 2021 published by Central Electricity Authority (CEA), Government of India.

The baseline case is in compliance with all applicable legal and regulatory requirements references.

### B.5. Demonstration of additionality

>>

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

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

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 of the GCC Project Standard.

<p>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).</p>	<p>This project follows the CDM approved small-scale methodology AMS-I.D. "Grid connected renewable electricity generation, Version 18".</p> <p>Selected methodology has been applied together with the "Tool to calculate the emission factor for an electricity system, Version 7.0" and "Tool for assessment and demonstration of additionality, Version 7.0". These are the latest version of the methodology and related additionality &amp; calculation tool.</p>
<p>Describe how the proposed project meets the criteria for deemed additionality.</p>	<ol style="list-style-type: none"> <li>1. Project without carbon revenue is not financially attractive as discussed in investment analysis section below (benchmark and sensitivity analysis).</li> <li>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.</li> <li>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.</li> </ol> <p>The Project activity confirms to all the applicable laws and regulations in India:</p> <ul style="list-style-type: none"> <li>✓ Power generation using renewable energy is not a legal requirement or a mandatory option.</li> <li>✓ There are state and sectoral policies, framed primarily to encourage renewable power projects.</li> <li>✓ These policies have also been drafted realizing the extent of</li> </ul>



	<p>risks involved in the projects and to attract private investments.</p> <ul style="list-style-type: none"> <li>✓ The Indian Electricity Act, 2003 (May 2007 Amendment) does not influence the choice of fuel used for power generation.</li> <li>✓ There is no legal requirement on the choice of a particular technology for power generation</li> <li>✓ The both alternatives are in compliance with laws and regulations required. There is no any mandatory requirement to implement the project activity.</li> </ul>
--	---

The present project generates power using wind and 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 energy generation 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 Wind power projects.
- These policies have also been drafted realizing the extent of risks involved in the projects and to attract private investments.
- The Indian Electricity Act, 2003 (May 2007 Amendment) does not influence the choice of fuel used for power generation.
- There is no legal requirement on the choice of a particular technology for power generation.

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

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

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

**Step 2: Investment analysis<sup>18</sup>**

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

---

<sup>18</sup> <https://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-27-v11.0.pdf>

investment analysis, loan conditions have been determined considering the average market rates/term sheets signed with the banks.

### **Sub-step 2a: Determine appropriate analysis method**

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

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

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

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

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

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

#### **Choice of Benchmark:**

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

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

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

As per paragraph 16 of Appendix A of the above-mentioned document, “In situations where an investment analysis is carried out in nominal terms, project owners can convert the real term values provided in the table below to nominal values by adding the inflation rate. The inflation rate shall be obtained from the inflation forecast of the central bank of the host c of the crediting period. If this

information is not available, the target inflation rate of the central bank shall be used. If this information is also not available, then the average forecasted inflation rate for the host country published by the IMF (International Monetary Fund World Economic Outlook) or the World Bank for the next five years after the start of the project activity shall be used". For the concerned project activity, the inflation rate has been considered from the inflation forecast published by 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 as per RBI (Reserve Bank of India

SPV/SPD	DEFAULT VALUE	INFLATION RATE	EQUITY BENCHMARK
LNB Renewable Energy Private Limited	10.55%	4.12%	15.10%
Porwal Auto Components Limited	10.55%	4.36%	15.37%
YMA Renewable Energy Private Limited	10.55%	4.10%	15.08%

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

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.

Internal Rate of Return (IRR) of the project has been calculated as based on the parameters given above without considering the carbon revenue. Project does not use any ODA or government incentive; however, bank loan is used.

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

Parameters for IRR calculation of Renewable Green power Project-India, 6.55 MW are;

➤ **LNB Renewable Energy Private Limited (2MW)**

Details of the project		Source
State where the project is situated	Telangana	
Capacity in (MW)	2.0	As per DPR
Total Capacity (MW)	2.0	As per DPR
Decision making date	17-Nov-19	As per Board Resolutions
Expected Date of commissioning	11-Sep-21	As per DPR

<b>Generation and sale of electricity</b>		
<b>PLF (%)</b>	25.17%	As per DPR
<b>Total Annual generation (kWh)</b>	4,409,784	Calculated Value
<b>Degradation %</b>	0.6%	As per DPR
<b>Tariff rate at the decision making (INR/kWh)</b>	3.23	As per DPR
<b>Operation and maintenance cost and Insurance</b>		
<b>O &amp; M Expenses (INR Mn.)</b>	1.42	As per DPR
<b>Escalation in the operational expenses (%)</b>	5.00%	As per DPR
<b>O &amp; M free for (Yr.)</b>	0	As per DPR
<b>Insurance (INR Mn.)</b>	0.20	As per DPR
<b>Financial parameters</b>		
<b>TOTAL COST (INR Mn.)</b>	91.45	As per DPR
<b>Equity Investment (INR Mn.)</b>	27.44	
<b>Loan Amount (INR Mn.)</b>	64.02	
<b>Term loan</b>		
<b>Margin (%)</b>	30.00%	As per DPR
<b>Loan Amount (INR Mn.)</b>	64.02	Calculated Value
<b>Interest rate (%)</b>	9.50%	As per DPR
<b>Loan Tenure (Qtr.)</b>	64	As per DPR
<b>Moratorium Period (Qtr.)</b>	4	As per DPR
<b>Repayment Period (Qtr.)</b>	60	Calculated Value
<b>Repayment instalments value (INR Mn.)</b>	1.07	Calculated Value

<b>1st instalment from (Qtr. end)</b>	June/22	Considered from the next Quarter End
<b>Working Capital</b>		
<b>No. of Days Receivables</b>	60	As per CERC Order
<b>O&amp;M Expenses (Days)</b>	30	As per CERC Order
<b>Interest on Working Capital Debt</b>	10.25%	As per CERC Order
<b>Book Depreciation (SLM Method)</b>		
<b>Land Cost (INR Mn.)</b>	-	Calculated Value
<b>Gross Depreciable Value (INR Mn.)</b>	91.45	Calculated Value
<b>Salvage Value (%)</b>	5.00%	Industrial Practice
<b>Salvage value (INR Mn.)</b>	4.57	Calculated Value
<b>Net Depreciable Value (INR Mn.)</b>	86.88	Calculated Value
<b>Residual Value (INR Mn.)</b>	4.57	Calculated Value
<b>IT Depreciation (SLM Method)</b>		

<b>IT Depreciation Rate (%)</b>	7.69%	As Per Income Tax , Depreciation rates for power generating units
<b>Income Tax</b>		
<b>Financial Year</b>	FY 2019-20	
<b>Corporate Tax</b>	25.00%	Tax rates applicable to a domestic company
<b>MAT</b>	18.50%	
<b>GST</b>	18.00%	As Per GST Rule
<b>Surcharge</b>	12.00%	Tax rates applicable to a domestic company
<b>Education Cess</b>	4.00%	
<b>Final Tax rates</b>		
<b>Income tax rate (%)</b>	29.12%	Calculated Value
<b>MAT (%)</b>	21.55%	Calculated Value
<b>GST</b>	18%	

➤ **Porwal Auto Components Limited (2.55MW)**

<b>Details of the project</b>		Source
<b>State where the project is situated</b>	Madhya Pradesh	
<b>Total Capacity in AC (MW)</b>	2.55	Commissioning Report
<b>Total Capacity in DC (MW)</b>	3.0	Commissioning Report
<b>Expected Date of Commissioning</b>	31-Dec-17	Commissioning Report
<b>Life of the plant (Yrs.)</b>	25	As per PPA
<b>Generation and sale of electricity</b>		

<b>PLF (%)</b>	17.65%	Calculated Value
<b>Total Annual generation (kWh)</b>	3,942,657	Calculated Value
<b>Annual degradation from 2nd year onwards (%)</b>	1.00%	AS per Industry Practice
<b>Electricity Saving(INR/kWh)</b>	5.00	As per Power Intensive Industries
<b>Escalation in Tariff (%)</b>	4%	Assumed
<b>Operation and maintenance cost and Insurance</b>		
<b>O &amp; M Expenses (INR Mn.)</b>	1.65	As per Feasibility Report
<b>Escalation in the operational expenses (%)</b>	5.72%	As per Financial Appraisal Report
<b>O &amp; M free for (Yr.)</b>	-	

<b>Insurance (INR Mn.)</b>	0.26	
<b>Financial parameters</b>		
<b>TOTAL COST (INR Mn.)</b>	147.90	As per Financial Appraisal Report
<b>Equity Investment (INR Mn.)</b>	44.37	As per Financial Appraisal Report
<b>Loan Amount (INR Mn.)</b>	103.53	As per Financial Appraisal Report
<b>Term loan</b>		
<b>Margin (%)</b>	30.00%	As per Financial Appraisal Report
<b>Loan Amount (INR Mn.)</b>	103.53	As per Financial Appraisal Report
<b>Interest rate (%)</b>	10.00%	As per Financial Appraisal Report
<b>Loan Tenure (Qtr.)</b>	28	As per Financial Appraisal Report
<b>Moratorium Period (Qtr.)</b>	-	As per Financial Appraisal Report
<b>Repayment Period (Qtr.)</b>	28	Calculated Value
<b>Repayment instalments value (INR Mn.)</b>	3.698	Calculated Value
<b>1st instalment from (Qtr. end)</b>	31-Mar-18	Considered from the next Quarter End
<b>Working Capital</b>		
<b>No. of Days Receivables</b>	60	As per Financial Appraisal Report
<b>O&amp;M Expenses (Days)</b>	30	As per Financial Appraisal Report
<b>Interest on Working Capital Debt</b>	11.50%	As per Financial Appraisal Report
<b>Book Depreciation (SLM Method)</b>		
<b>Land Cost (INR Mn.)</b>	-	Calculated Value
<b>Gross Depreciable Value (INR Mn.)</b>	147.90	Calculated Value

<b>Salvage Value (%)</b>	10.00%	As per CERC
<b>Salvage value (INR Mn.)</b>	14.79	Calculated Value
<b>Net Depreciable Value (INR Mn.)</b>	133.11	Calculated Value
<b>Residual Value (INR Mn.)</b>	14.79	Calculated Value
<b>IT Depreciation (SLM Method)</b>		
<b>IT Depreciation Rate (%)</b>	7.69%	As Per Income Tax , Depreciation rates for power generating units
<b>Income Tax</b>		
<b>Financial Year</b>	FY 2015-16	
<b>Income tax rate (%)</b>	30.00%	Tax rates applicable to a domestic company
<b>MAT (%)</b>	18.50%	
<b>Surcharge (%)</b>	12.00%	
<b>Health and Education Cess (%)</b>	3.00%	
<b>Final Tax rates</b>		
<b>Income tax rate (%)</b>	34.61%	Calculated Value
<b>MAT (%)</b>	21.34%	Calculated Value
<b>GST (%)</b>	18.00%	

➤ **YMA Renewable Energy Private Limited (2MW)**

<b>Details of the project</b>		Source
<b>State where the project is situated</b>	Tamil Nadu	
<b>Capacity in MW</b>	2.0	As per DPR
<b>No. of WTGs</b>	1.0	As per DPR
<b>TOTAL CAPACITY OF PLANT (MW)</b>	2.0	As per DPR
<b>Expected Date of Commissioning</b>	31-Mar-19	As per DPR
<b>Life of the plant (Yrs.)</b>	20	As per DPR
<b>Generation and sale of electricity</b>		
<b>PLF (%)</b>	23.65%	As per DPR
<b>Total Annual generation (kWh)</b>	4,143,480	Calculated Value
<b>Line Losses (%)</b>	4.50%	Assumed
<b>Net Generation (kWh)</b>	3,957,023	Calculated Value
<b>Electricity Rate (INR/kWh)</b>	5.85	Assumed by Management
<b>RKVAH Charges</b>	0.25	Lastest Electricity Bill
<b>Self Generation Tax</b>	0.10	Lastest Electricity Bill
<b>Net Electricity Saving per unit</b>	5.50	Calculated Value
<b>Escalation in Tariff (%)</b>	3%	Assumed by Management
<b>Operation and maintenance cost and Insurance</b>		



<b>O &amp; M Expenses (INR Mn.)</b>	2.95	As per DPR
<b>Escalation in the operational expenses (%)</b>	5.72%	As per DPR
<b>O &amp; M free for (Yr.)</b>	0	As per DPR
<b>O&amp;M Charges SS (INR Mn.)</b>	0.2950	As per DPR
<b>Escalation (%)</b>	5.72%	As per DPR
<b>Insurance (INR Mn.)</b>	0.25	As per DPR
<b>Other Expenses</b>		
<b>Wheeling Charges (INR Mn.)</b>	0.02	Lastest Electricity Bill
<b>Transmission Charges (INR Mn.)</b>	1.1086	Lastest Electricity Bill
<b>Scheduling charges (INR Mn.)</b>	0.0292	Lastest Electricity Bill
<b>System Operating Charger (INR Mn.)</b>	0.0123	Lastest Electricity Bill
<b>TOTAL Expenses</b>	1.17	Calculated Value
<b>Financial parameters</b>		
<b>TOTAL COST (INR Mn.)</b>	142.50	As per DPR
<b>Equity Investment (INR Mn.)</b>	57.00	As per DPR
<b>Loan Amount (INR Mn.)</b>	85.50	As per DPR
<b>Term loan</b>		
<b>Margin (%)</b>	40.00%	As per DPR
<b>Loan Amount (INR Mn.)</b>	85.50	As per DPR
<b>Interest rate (%)</b>	10.50%	As per DPR
<b>Loan Tenure (Qtr.)</b>	28	As per DPR
<b>Moratorium Period (Qtr.)</b>	-	As per DPR
<b>Repayment Period (Qtr.)</b>	28	As per DPR
<b>Repayment instalments value (INR Mn.)</b>	3.05	Calculated Value
<b>1st instalment from (Qtr. end)</b>	30-Jun-19	Considered from the next Quarter End
<b>Working Capital</b>		
<b>No. of Days Receivables</b>	60	As per DPR
<b>O&amp;M Expenses (Days)</b>	30	As per DPR
<b>Interest on Working Capital Debt</b>	11.50%	As per DPR
<b>Book Depreciation (SLM Method)</b>		
<b>Land Cost (INR Mn.)</b>	0.30	Calculated Value
<b>Gross Depreciable Value (INR Mn.)</b>	142.20	Calculated Value
<b>Salvage Value (%)</b>	5.00%	Industrial Practice
<b>Salvage value (INR Mn.)</b>	7.11	Calculated Value
<b>Net Depreciable Value (INR Mn.)</b>	135.09	Calculated Value

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.

#### ➤ LNB Renewable Energy Private Limited

Variation %	-10%	Normal	10%
PLF	6.48%	9.37%	13.07%
O&M	9.91%	9.37%	8.84%
Project Cost	12.92%	9.37%	7.16%
Tariff Rate	6.48%	9.37%	13.07%

#### ➤ Porwal Auto Components Limited

Variation %	-10%	Normal	10%
PLF	10.56%	12.28%	14.05%
O&M	12.47%	12.28%	12.09%
Project Cost	14.03%	12.28%	10.89%
Tariff Rate	10.56%	12.28%	14.05%

#### ➤ YMA Renewable Energy Private Limited

Variation %	-10%	Normal	10%
PLF	8.63%	10.80%	12.99%
O&M	11.09%	10.80%	10.50%
Project Cost	12.77%	10.80%	9.24%
Tariff Rate	8.63%	10.80%	12.99%

#### 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.

SPV/SPD	IRR	EQUITY BENCHMARK
LNB Renewable Energy Private Limited	9.37%	15.10%
Porwal Auto Components Limited	12.28%	15.37%
YMA Renewable Energy Private Limited	10.80%	15.08%

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

### Step 3: Barrier analysis

Barrier analysis has not been used.

### Step 4: Common practice analysis

As the project capacity is less than 15 MW for Type I, it lies under small scale and hence CPA not required.

## B.6. Estimation of emission reductions

### B.6.1. Explanation of methodological choices

>>

As per the paragraph 43 of the methodology AMS-I. D Version 18.0 emission reductions are calculated as follows

$$ER_y = BE_y - PE_y$$

Where,

$ER_y$  = Emission reductions in year y (t CO<sub>2</sub>e/yr)

$BE_y$  = Baseline emissions in year y (t CO<sub>2</sub>e/yr)

$PE_y$  = Project emissions in year y (t CO<sub>2</sub>e/yr)

### Baseline Emissions ( $BE_y$ )

As per the approved consolidated Methodology AMS-I. D Version 18.0 paragraph 22, that Baseline emissions include only CO<sub>2</sub> 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:

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

Where,

**BE<sub>y</sub>** = Baseline emissions in year y (t CO<sub>2</sub>/yr)

**EG<sub>PJ,y</sub>** = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr)

**EF<sub>grid,CM,y</sub>** = Combined margin CO<sub>2</sub> 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 CO<sub>2</sub>/MWh).

As per para 26 of AMS-I. D Version 18.0 when the project activity is installation of Greenfield power plant, then:

$$EG_{PJ,y} = EG_{facility,y}$$

Where,

**EG<sub>PJ,y</sub>** = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr)

**EG<sub>facility,y</sub>** = Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh/yr)

<b>Electricity generation (Average entire crediting period after degradation) EG<sub>pj,y</sub> (MWh/yr)</b>	12,257
<b>Combined margin CO<sub>2</sub> emission factor for grid (tCO<sub>2</sub>/MWh)</b>	0.9305

As per the methodology combined margin grid emission factor has been calculated as per the “Tool to calculate the grid emission factor for an Electricity System” version 7.0.

CO<sub>2</sub> Baseline Database for the Indian Power Sector, Version 17, October 2021<sup>19</sup> published by Central Electricity Authority (CEA), Government of India has been used for the calculation of emission reduction.

As per the "Tool to calculate the emission factor for an electricity system" Version 7.0, the following steps have been followed

---

<sup>19</sup> [https://cea.nic.in/wp-content/uploads/baseline/2022/02/database\\_17\\_.zip](https://cea.nic.in/wp-content/uploads/baseline/2022/02/database_17_.zip)

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

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

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

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

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

CO<sub>2</sub> BASELINE DATABASE, OCTOBER 2021

**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 ( $EF_{\text{grid,OM,y}}$ ) is based on one of the following methods, which are described under Step 4:

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

The data required to calculate Simple adjusted OM and Dispatch data analysis OM is not possible due to lack of availability of data to project developers. The choice of other two options for calculating operating margin emission factor depends on generation of electricity from low-cost/ must –run sources. In the context of the methodology low cost/must run resources typically include hydro, geothermal, 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<sup>20</sup>]**

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 CO<sub>2</sub> emissions per unit net electricity generation (tCO<sub>2</sub>/MWh) of all generating power plants serving this system, not including low-cost/must-run power plants/units.

For the simple OM, the simple adjusted OM and the average 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.

Project owner 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.

<sup>20</sup> [Amt für Umweltschutz \(cea.nic.in\)](http://amt.fur.umweltschutz(cea.nic.in))

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 ( $EF_{grid,OM \text{ Simple},y}$ ) according to the selected method**

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

Net Generation in operating Margin (GWh) (Incl. Imports)			
	2018-19	2019-20	2020-21
Indian Grid	995,957	965,009	958,218

Simple Operating Margin (t CO <sub>2</sub> /MWh) (incl. imports)			
	2017-18	2018-19	2019-20
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.

Option 1 as described above is chosen by Project Owner 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.

<b>Build Margin (tCO<sub>2</sub>/MWh) (not adjusted for imports)</b>	
Year	<b>2020-21</b>
Indian Grid (Value)	<b>0.8653</b>

**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.

Project Owner 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:

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

Where,

$EF_{grid,BM,y}$  = Build margin CO<sub>2</sub> emission factor in year y (t CO<sub>2</sub>/ MWh)

$EF_{grid,OM,y}$  = Operating margin CO<sub>2</sub> emission factor in year y (t CO<sub>2</sub>/MWh)

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

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

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

For project activities  $W_{OM} = 0.75$  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 and wind energy, the above weightage has been considered for OM and BM.

Therefore,

$$\begin{aligned} EF_{grid,CM,y} &= 0.9522 \times 0.75 + 0.8653 \times 0.25 \\ &= \mathbf{0.9305 \text{ t CO}_2/\text{MWh}} \end{aligned}$$

**Baseline emission factor ( $EF_y$ ):**

The baseline emission factor is calculated using the combined margin approach as described in above step. Therefore,



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

### Project Emissions

As per the approved consolidated Methodology AMS-I. D (Version 18.0) para 39: “For most renewable energy power generation project activities,  $PE_y = 0$ .”

As the project activity is the installation of a new grid-connected solar and wind power generation and does not involve any project emissions thus,

$$PE_y = 0 \text{ tCO}_2/\text{year}$$

### Leakage Emissions

This project activity is a grid connected solar and wind power generation. As there is no energy generating equipment being transferred from another activity to this project activity, there is no leakage emission from the project activity. Hence,

$$LE_y = 0 \text{ tCO}_2/\text{year}$$

Hence, Emission reductions will be calculated as per the below equation

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

## B.6.2. Data and parameters fixed ex ante

>>

**Data / Parameter Table 1**

Data / Parameter:	$EF_{grid,OM,y}$
Methodology reference	AMS-I.D: Grid connected renewable electricity generation, Version 18.0
Data unit	tCO <sub>2</sub> /MWh
Description	Operating Margin CO <sub>2</sub> emission factor in the year y of Indian grid
Measured/calculated /default	Calculated
Data source	CO <sub>2</sub> Emission Database, Version-17.0, October 2021 published by Central Electricity Authority (CEA), Government of India.
Value(s) of monitored parameter	0.9522
Measurement/ Monitoring equipment (if applicable)	NA

Calculation method (if applicable)	Calculated as the last 3 years (2018-19, 2019-20 and 2020-21) generation-weighted average, sourced from Baseline CO <sub>2</sub> 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	The parameter is fixed ex-ante for the entire crediting period.

<b>Data / Parameter:</b>	<b>EF<sub>grid,BM,y</sub></b>
Methodology reference	AMS-I.D: Grid connected renewable electricity generation, Version 18.0
Data unit	tCO <sub>2</sub> /MWh
Description	Build Margin CO <sub>2</sub> emission factor in the year y of Indian grid
Measured/calculated/default	Calculated
Data source	CO <sub>2</sub> 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
Calculation method (if applicable)	Calculated as the last 3 year (2018-19, 2019-20 and 2020-21) generation-weighted average, sourced from Baseline CO <sub>2</sub> 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	The parameter is fixed ex-ante for the entire crediting period.

<b>Data / Parameter:</b>	<b>EF<sub>grid,CM,y</sub></b>
Methodology reference	AMS-I.D: Grid connected renewable electricity generation, Version 18.0
Data unit	tCO <sub>2</sub> /MWh
Description	Combined Margin CO <sub>2</sub> emission factor in the year y of Indian grid
Measured/calculated/default	Calculated
Data source	CO <sub>2</sub> 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
Calculation method (if applicable)	<p>The combined margin emissions factor is calculated as follows:</p> $EF_{grid,CM,y} = EF_{grid,OM,y} \times W_{OM} + EF_{grid,BM,y} \times W_{BM}$ <p>Where;</p> <p><math>EF_{grid,BM,y}</math> = Build margin CO<sub>2</sub> emission factor in year y (tCO<sub>2</sub>/MWh).  <math>EF_{grid,OM,y}</math> = Operating margin CO<sub>2</sub> emission factor in year y (tCO<sub>2</sub>/MWh).  <math>W_{OM}</math> = Weighting of operating margin emissions factor (%) = 75%  <math>W_{BM}</math> = Weighting of build margin emissions factor (%) = 25%</p>
QA/QC procedures	NA
Purpose of data	To calculate baseline emissions
Additional comments	The parameter is fixed ex-ante for the entire crediting period.

### B.6.3. Ex-ante calculation of emission reductions

>>

The ex-ante emission reductions (ER<sub>y</sub>) for the project activity are calculated as follows;

$$ER_y = BE_y - PE_y - LE_y$$

Where,

$ER_y$  = Emission Reduction in year y (t CO<sub>2</sub>)

$BE_y$  = Baseline emission year y (t CO<sub>2</sub>)

$PE_y$  = Project emissions year y (t CO<sub>2</sub>)

$LE_y$  = Leakage emissions year y (t CO<sub>2</sub>)

#### Baseline Emission (BE<sub>y</sub>)

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.

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

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 project activity is the installation of a Greenfield power plant, hence  $EG_{PJ, y} = EG_{facility, y}$   
The notation of same parameters  $EG_{PJ, y}$  can be  $EG_{facility, y}$  as project activity is installation of a greenfield power plant.

$EG_{facility, y}$  = Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh).

As per the approved consolidated Methodology AMS-I.D, Version 18.0: “For most renewable energy power generation project activities,  $PE_y = 0$ ”.

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

Therefore,  $ER_y = BE_y$

Annual Emission Reduction table:

SPV/SPD	Capacity (MW)	PLF (%)	Net Generation (MWh/year)	Baseline Emission factor (tCO <sub>2</sub> /MWh)	Baseline emissions (tCO <sub>2</sub> e/year)	Emission reductions (tCO <sub>2</sub> e/year)
LNB Renewable Energy Ltd.	2.0	25.17%	4,293	0.9304	3,994	3,994
Porwal Auto Components Limited	2.55	17.65%	3,821	0.9304	3,555	3,555
YMA Renewable Energy Private Limited	2.0	23.65%	4,143	0.9304	3,855	3,855
	<b>6.55</b>		<b>12,257</b>		<b>11,404</b>	<b>11,404</b>

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

>>

Year	Baseline emissions (t CO <sub>2</sub> e)	Project emissions (t CO <sub>2</sub> e)	Leakage (t CO <sub>2</sub> e)	Emission reductions (t CO <sub>2</sub> e)
Year 1	11,404	0	0	11,404
Year 2	11,404	0	0	11,404
Year 3	11,404	0	0	11,404
Year 4	11,404	0	0	11,404
Year 5	11,404	0	0	11,404
Year 6	11,404	0	0	11,404

Year 7	11,404	0	0	11,404
Year 8	11,404	0	0	11,404
Year 9	11,404	0	0	11,404
Year 10	11,404	0	0	11,404
<b>Total</b>	<b>114,040</b>	<b>0</b>	<b>0</b>	<b>114,040</b>
<b>Total number of crediting years</b>	10 Years			
<b>Annual average over the crediting period</b>	<b>11,404</b>	<b>11,404</b>	<b>11,404</b>	<b>11,404</b>

## B.7. Monitoring plan

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

>>

**Data / Parameter Table 1.**

<b>Data / Parameter:</b>	<b>EG<sub>facility,y</sub></b>
Methodology reference	AMS-I.D: Grid connected renewable electricity generation, Version 18.0
Data unit	MWh/Year
Description	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y
Measured/calculated/default	Measured and calculated
Data source	Credit note/ JMR/Form B reports/ monthly generation report from state electricity board/DISCOM
Value(s) of monitored parameter applied with basis	12,257

Measurement/ Monitoring equipment		
	Type of meter	Energy Meter
	Location of meter	Substation
	Accuracy of meter	0.2s or 0.5s
	Serial number of meter	To be confirmed during issuance time as per records.
	Calibration frequency	Once in 5 years
	Date of Calibration/ validity	To be conformed during issuance
	Reference No. of Calibration Certificate	To be conformed during issuance
	Calibration Status	To be conformed during issuance
Frequency of Measuring/reading	Monthly	
Recording frequency	Monthly	
Calculation method (if applicable)	<p>The net electricity generation is calculated based on Export – Import to the meters connected at the project switchyard/sub-station. The generation details are directly submitted to RLDC (Regional Load Dispatch Center) by online mechanism. Based on this RLDC provides the JMR/REA Statement. The RLDC also publishes the weekly DSM/UI reports.</p> <p>So, the Actual Power obtained from JMR/REA statement for a particular month can be crosschecked with the DSM reports (i.e., by combining the actual power from the weekly DSM report for a particular month). The REA statement issued by WRPC contains the information of the Scheduled Power, Actual Power, and the Deviation between actual &amp; scheduled power.</p> <p>Thus, value of net electricity supplied is directly sources from the JMR/REA statement. Hence the actual value obtained in the JMR/REA statement is the value calculated based on the (export – import) value. The same has been used for the ER Calculations. The calculation of net electricity generation is in the hand of electricity board/CEA and Project Owner has no role to play in the same.</p>	
QA/QC procedures	<p>The calibration of all the meters will be undertaken at required intervals (at least once in five years) and faulty meters will be duly replaced immediately. The meters will be of accuracy class 0.2s or 0.5s.</p> <p>The meter(s) shall be calibrated and maintained by the state utility as per their own schedule, and this frequency of meter calibration is not within the control of the Project Owner. Calibration of electricity meters is carried out in-line with the Nation standard which recommends at least once in 5-year calibration or whenever abnormal difference/inconsistency is observed between main meter and check meter.</p>	
Purpose of data	To calculate baseline emissions.	

Additional comments	Data will be archived electronically for a period of 2 years beyond the end of crediting period.
---------------------	--

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

<b>Data / Parameter:</b>	<b>CO<sub>2</sub> emissions (EA03)</b>	
Purpose:	<i>To monitor an environmental impact assessment identified as positive in the E+</i>	
Describe the related environment /social/ SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.	CO <sub>2</sub> emissions reductions per year	
Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate “harmless” condition or demonstrate Impact on SDG		
	Parameter to be monitored	CO <sub>2</sub> emission reductions (tCO <sub>2</sub> /year)
	Frequency of monitoring	Continuously measured and monthly recorded
	Legal /regulatory / corporate limits (if any)	-
	QA/QC	Monitored data will be stored and archived till the end of the crediting period
Remarks	The Monitored Data to be kept for a minimum of two years after the end of the crediting period or the last issuance whichever is later.	

<b>Data / Parameter:</b>	<b>Replacing fossil fuels with renewable sources of energy (ENR07)</b>	
Purpose:	<i>To monitor an environmental impact assessment identified as positive in the E+</i>	
Describe the related environment /social/ SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.	Net quantity of renewable energy generated from the power plant, which otherwise would have been generated from the combustion of fossil fuels.	

Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate “harmless” condition or demonstrate Impact on SDG		
	Parameter to be monitored	Replacing fossil fuels with renewable sources of energy
	Frequency of monitoring	The generated electricity from the project activity will be monitored continuously and recorded monthly as described in above section (EG <sub>facility,y</sub> )
	Legal /regulatory / corporate limits (if any)	Energy Conservation Act 2001
	QA/QC	Refer the parameter EG <sub>facility,y</sub> .
Remarks	Data will be archived electronically for a period of 2 years beyond the end of crediting period.	

<b>Data / Parameter:</b>	<b>Long-term jobs (&gt; 1 year) created (SJ01)</b>	
Purpose:	<i>To monitor an environmental social assessment identified as positive in S+.</i>	
Describe the related environment /social/ SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.	Long term job opportunities created during the operation of the project activity.	
Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate “harmless” condition or demonstrate Impact on SDG		
	Parameter to be monitored	Employment records
	Frequency of monitoring	Annual
	Legal /regulatory / corporate limits (if any)	Employment is in compliance with the Labour Act
	QA/QC	Records will be maintained and archived till the end of the crediting period
Remarks	Data will be archived electronically for a period of 2 years beyond the end of crediting period.	

<b>Data / Parameter:</b>	<b>New short-term jobs (&lt; 1 year) created (SJ02)</b>	
Purpose:	<i>To monitor an environmental social assessment identified as positive in S+.</i>	



Describe the related environment /social/ SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.	Short term job opportunities created during the operation of the project activity.											
Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate “harmless” condition or demonstrate Impact on SDG	<table border="1"> <tr> <td colspan="2" data-bbox="500 516 1414 558"></td> </tr> <tr> <td data-bbox="500 558 808 621">Parameter to be monitored</td> <td data-bbox="816 558 1414 621">Employment records</td> </tr> <tr> <td data-bbox="500 621 808 684">Frequency of monitoring</td> <td data-bbox="816 621 1414 684">Annual</td> </tr> <tr> <td data-bbox="500 684 808 747">Legal /regulatory / corporate limits (if any)</td> <td data-bbox="816 684 1414 747">Employment is in compliance with the Labour Act</td> </tr> <tr> <td data-bbox="500 747 808 810">QA/QC</td> <td data-bbox="816 747 1414 810">Records will be maintained and archived till the end of the crediting period</td> </tr> </table>				Parameter to be monitored	Employment records	Frequency of monitoring	Annual	Legal /regulatory / corporate limits (if any)	Employment is in compliance with the Labour Act	QA/QC	Records will be maintained and archived till the end of the crediting period
Parameter to be monitored	Employment records											
Frequency of monitoring	Annual											
Legal /regulatory / corporate limits (if any)	Employment is in compliance with the Labour Act											
QA/QC	Records will be maintained and archived till the end of the crediting period											
Remarks	Data will be archived electronically for a period of 2 years beyond the end of crediting period.											

<b>Data / Parameter:</b>	<b>Employment (SDG 8)</b>											
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	<table border="1"> <tr> <td colspan="2" data-bbox="500 1390 1414 1432"></td> </tr> <tr> <td data-bbox="500 1432 808 1495">Parameter to be monitored</td> <td data-bbox="816 1432 1414 1495">Number of people working (Permanent + Part time) for the operation of the project</td> </tr> <tr> <td data-bbox="500 1495 808 1558">Frequency of monitoring</td> <td data-bbox="816 1495 1414 1558">Yearly</td> </tr> <tr> <td data-bbox="500 1558 808 1652">Legal /regulatory / corporate limits (if any)</td> <td data-bbox="816 1558 1414 1652">There is no legal requirement from local authority to create permanent employment from the project activity</td> </tr> <tr> <td data-bbox="500 1652 808 1715">QA/QC</td> <td data-bbox="816 1652 1414 1715">The records for the number of employees will be provided during each monitoring period</td> </tr> </table>				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
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											

<b>Data / Parameter:</b>	<b>Climate Action (SDG 13)</b>	
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 and wind power project does not cause any CO <sub>2</sub> emissions in the project scenario. However, in the baseline scenario (grid) some of the fossil fuel power plants may have emitted CO <sub>2</sub> 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	

<b>Data / Parameter:</b>	<b>Affordable and Clean Energy (SDG 7)</b>	
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 and wind 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 and wind)
	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)**

>>

<b>Data / Parameter:</b>	<b>Solid Waste Pollution</b> <ol style="list-style-type: none"> <li>1. <b>Hazardous wastes</b></li> <li>2. <b>E - Waste</b></li> <li>3. <b>End-of-life.</b></li> </ol>																										
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																											
	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.																									
Program of Risk Management Actions to mitigate risk related to aspect (if any for aspects assessed to be harmful)	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">S.No.</th> <th style="width: 20%;">Action and targets</th> <th style="width: 20%;">Responsibility</th> <th style="width: 10%;">Resource Requirement</th> <th style="width: 10%;">Target to be Achieved by <i>(insert date)</i></th> <th style="width: 10%;">Key Performance Indicators (KPI)</th> <th style="width: 10%;">Targets achieved on <i>(insert date)</i></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td>Soild Waste shall be stored and disposed d-off.</td> <td style="text-align: center;"><b>Infinite Environmental Solutions LLP</b></td> <td style="text-align: center;">01</td> <td>As per National law/regulations.</td> <td>Quantity of Solid waste handled safely.</td> <td>To be monitored .</td> </tr> <tr> <td colspan="7" style="background-color: #e0e0e0;">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	Soild Waste shall be stored and disposed d-off.	<b>Infinite Environmental Solutions LLP</b>	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	Soild Waste shall be stored and disposed d-off.	<b>Infinite Environmental Solutions LLP</b>	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

>>

No sampling plan is required

### B.7.4. Other elements of the monitoring plan

>>

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

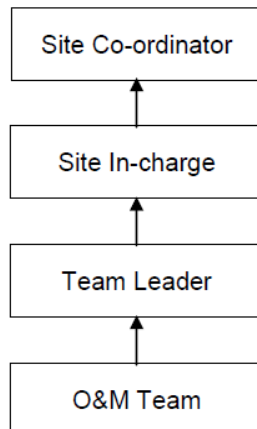
The authority and responsibility for registration, monitoring, measurement, reporting and reviewing of the data rests with the project participants. The following structure is proposed for data monitoring, collection, data archiving and calibration of equipment for this project activity. The team comprises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

#### **Organizational Structure for Monitoring**

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

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

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



### **Data collection and archiving**

Export & Import readings from main & check meter are collected under the supervision authorized representative of Project owner. 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.

Both the main and check meter of the project are found within the acceptable limits of accuracy functioning properly.

### **Mismatch in Monitoring Period and the Billing Period**

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

$$D = (A/B)*C$$

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

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

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

The calculated value after apportioning would be used for calculation of emission reductions during that period.

### **Emergency preparedness**

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

### **Personnel Training**

In order to ensure a proper functioning of the project activity and a properly monitoring of emission reductions, the staff 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**

>>

As per the paragraph 38 of the project standard, version-3.1, start of commercial operations has been considered as the start date. Hence project commissioning date (COD), on which project is connected to grid and started generating power and exporting to the grid there by started generating GHG emission reductions is considered as start date. The start date for this project is the earliest commissioning date among all the SPVs involved in the project activity i.e., 06/11/2017

### **C.2. Expected operational lifetime of the Project Activity**

>>

25 Years 00 Months.

### **C.3. Crediting period of the Project Activity**

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

>>

Crediting Period Start Date – 06/11/2017

Crediting Period End Date – 05/11/2027

#### **C.3.2. Duration of crediting period**

>>

10 Years 00 Months.

## **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 wind & solar 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 and wind project activity operations do not result in direct air pollution, noise pollution. Thus, there is no 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 and wind 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**

>>

## 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 <i>(positive or negative)</i>	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 <sup>rd</sup> 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)	Ex- Ante description and justification/explanation of the scoring of the environmental impact	Verification Process
<p><b>Environmental Aspects on the identified categories</b><sup>21</sup> 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 <b>Not Applicable</b></p>	<p>If environmental impacts exist but are expected to be in compliance with applicable national regulatory /stricter voluntary corporate requirements and will be within legal/voluntary corporate limits by way of plant design and</p>	<p>If negative environmental impacts exist that will not be in compliance with the applicable national legal/regulatory requirements or are likely to exceed legal limits, then the Project Activity is likely to cause harm</p>	<p>Describe the operational controls and best practices, focusing on how to implement and operate the Project Activity, to reduce the risk of impacts that have been identified as <b>'Harmful'</b> at least to a level that is in compliance with applicable legal/regulatory requirements or industry best practice or stricter voluntary corporate requirements</p>	<p>Describe the Program of Risk Management Actions (refer to Table 3), focusing on additional actions (e.g., installation of pollution control equipment) that will be adopted to reduce or eliminate the risk of impacts that have been identified as <b>Harmful</b>.</p>	<p>Describe the monitoring approach and the parameters (KPI) to be monitored for each impact irrespective of whether it is harmless or harmful. The frequency of monitoring to be specified as well including the data source.</p>	<p>-1 0 +1</p>	<p>Confirm the score of environmental impact of the project with respect to the aspect and its monitored value in relation to legal /regulatory limits (if any) including basis of conclusion.</p>	<p>Describe how the GCC Verifier has assessed that the impact of the Project Activity against the particular aspect and in case of "harmful impacts" how has the project adopted Risk Mitigation Action Plans to mitigate the risks of negative environmental impacts to levels that are unlikely to cause any harm as well as the net positive impacts of the project with respect to the most likely baseline alternative.</p>

<sup>21</sup> sourced from the CDM SD Tool and the sample reports are available ( <https://www4.unfccc.int/sites/sdcmicrosite/Pages/SD-Reports.aspx> )



Project Submission Form

					operating principles, then the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as <b>Harmless</b> /If the project has a positive impact on the environment mark it as "harmless" as well.	(may be un-safe) and shall be indicated as <b>Harmful</b>						
<b>Reference to paragraphs of Environmental and Social Safeguards Standard</b>		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)
<b>Environment - Air</b>	SO <sub>x</sub> emissions (EA01)	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	Not Applicable	0	Not Applicable	
	NO <sub>x</sub> emissions (EA02)	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	Not Applicable	0	Not Applicable	
	CO <sub>2</sub> emissions (EA03)	The project reduces the CO <sub>2</sub> emissions from entering into atmosphere by generating power from solar and wind energy which would have been otherwise generated from the Fossil fuel based power plants in the absence of project activity which has been calculated by the	The Air (Prevention & Control of Pollution) Act 1981 stipulates thresholds for both ambient air quality	Not Applicable as no emissions occur in the project scenario and therefore is not expected to or does	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 CO <sub>2</sub> emission reduction will be calculated according to the underlying methodology	+1	With reference to the CPCB modified direction No. B29012/ESS(C P A)/2015-16; dated March 07, 2016 (Appendix A) solar and wind power project falls in White category	-

Project Submission Form

	combined margin emission factor as mentioned in the PSF	as well as stack emissions.	not cause any harm.						ACM0002 version 20.		and it is mentioned in the notification that there shall be no necessity of obtaining the Consent to Operate” for White category of industries. However, in the baseline scenario (grid) some of the fossil fuel power plants may have emitted CO <sub>2</sub> 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	Not Applicable	Not Applicable	Not Applicable	-	-	-	-	Not Applicable	0	Not Applicable	
Suspended particulate matter (SPM) emissions (EA05)	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	-	Not Applicable	0	Not Applicable	
Fly ash generation (EA06)	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	-	Not Applicable	0	Not Applicable	
Non-Methane Volatile Organic	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	-	Not Applicable	0	Not Applicable	

Project Submission Form

	Compounds (NMVOCs) (EA07)											
	Odor (EA08)	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	Not Applicable	0	Not Applicable	
	Noise Pollution (EA09)	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	Not Applicable	0	Not Applicable	
	Others (EA10)	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	Not Applicable	0	Not Applicable	
	Add more rows if required and corresponding notation with EA as prefix)	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	Not Applicable	0	Not Applicable	
		Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	Not Applicable	0	Not Applicable	
<b>Environment - Land</b>	Solid waste Pollution from Plastics (EL-01)	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	Not Applicable	0	Not Applicable	
	Solid waste Pollution from Hazardous wastes (EL02)	Damaged solar PV modules at site might have negative environmental impacts if not managed well	Hazardous and Other Wastes (Management and Transboundary Movement) Amendment	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	

Project Submission Form

			nt Rules, 2016								<p>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 (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 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.</p>
--	--	--	-------------------	--	--	--	--	--	--	--	---

Project Submission Form

	<i>Solid waste Pollution from Bio-medical wastes (EL03)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	Not Applicable	0	Not Applicable	
	<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 sites and filling of return.	Project Owner is responsible to maintain records and filling of returns as per applicable law and as stated by company 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>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	Not Applicable	0	Not Applicable	
	<i>Solid waste Pollution from end-of-life products/ equipment (EL06)</i>	Solar PV modules at site might have negative environmental impacts if not managed well after their end-of-life	Solid Waste Management Rules, 2016	-	Harmless	-	Solid waste from the project activity must be disposed as applicable law and as mentioned in Environment and Social Impact Assessment.	Project Owner is responsible to maintain records and dispose all products after end of lifecycle as per applicable law  Solid Waste Management Rules, 2016	The operational lifetime of the project is 25 years. PP will ensure proper disposal at 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	+1	Project Owner is responsible to maintain records and dispose all products after 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	-

Project Submission Form

											Management Rules, 2016 will be submitted	
	<i>Soil Pollution from Chemicals (including Pesticides, heavy metals, lead, mercury) (EL07)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	Not Applicable	0	Not Applicable	
	<i>land use change (change from cropland /forest land to project land) (EL08)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	Not Applicable	0	Not Applicable	
	<i>Others (EL09)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	Not Applicable	0	Not Applicable	
	<i>Add more rows if required</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	Not Applicable	0	Not Applicable	
		Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	Not Applicable	0	Not Applicable	
<b>Environment - Water</b>	<i>Reliability/ accessibility of water supply (EW01)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	Not Applicable	0	Not Applicable	
	<i>Water Consumption from ground and other sources (EW02)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	Not Applicable	0	Not Applicable	
	<i>Generation of</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	Not Applicable	0	Not Applicable	

Project Submission Form

	wastewater (EW03)											
	Wastewater discharge without/with insufficient treatment (EW04)	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	Not Applicable	0	Not Applicable	
	Pollution of Surface, Ground and/or Bodies of water (EW05)	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	Not Applicable	0	Not Applicable	
	Discharge of harmful chemicals like marine pollutants / toxic waste (EW06)	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	Not Applicable	0	Not Applicable	
	Others (EW07)	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	Not Applicable	0	Not Applicable	
	Add more rows if required	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	Not Applicable	0	Not Applicable	
<b>Environment – Natural Resources</b>	Conserving mineral resources (ENR01)	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	Not Applicable	0	Not Applicable	
	Protecting/enhancing plant life (ENR02)	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	Not Applicable	0	Not Applicable	

Project Submission Form

<i>Protecting/enhancing species diversity (ENR03)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	Not Applicable	0	Not Applicable	
<i>Protecting/enhancing forests (ENR04)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	Not Applicable	0	Not Applicable	
<i>Protecting/enhancing other depletable natural resources (ENR05)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	Not Applicable	0	Not Applicable	
<i>Conserving energy (ENR06)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	Not Applicable	0	Not Applicable	
<i>Replacing fossil fuels with renewable sources of energy (ENR07)</i>	The project utilizes renewable solar and wind 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 12,527 MWh per year renewable electricity to grid.	-
<i>Replacing ODS with non-ODS refrigerants (ENR08)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	Not Applicable	0	Not Applicable	
<i>Others (ENR09)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	Not Applicable	0	Not Applicable	
<i>Add more rows if required</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-	-	-	Not Applicable	0	Not Applicable	
<b>Net Score: +5</b>											



<b>Project Owner's Conclusion in PSF:</b>		The Project Owner confirms that the Project Activity will not cause any net harm to Environment.
<b>GCC Project Verifier's Opinion:</b>		

## E.2. Social 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 <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 <sup>rd</sup> Party Audit
			Not Applicable	Harmless	Harmful					

## Project Submission Form

Social Aspects on the identified categories <sup>22</sup> indicated below.	Indicators for social impacts	Describe and identify actual and anticipated impacts on society and stakeholders, both positive or negative, from all sources during normal and abnormal/emergency conditions that may result from constructing and operating of the Project Activity within or outside the project boundary, over which the project Owner(s) has/have control	Describe the applicable national regulatory requirements / legal limits or organizational policies or industry best practices related to the identified risks of social impacts	If no social impacts are anticipated, then the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as <b>Not Applicable</b>	If social impacts exist but are expected to be in compliance with applicable national regulatory requirements/ stricter voluntary corporate limits by way of plant design and operating principles then the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as <b>Harmless</b> , project having positive impact on society. To the BAU / baseline scenario must also mark their aspect as "harmless"	If negative social impacts exist that will not be in compliance with the applicable national legal/ regulatory requirements or are likely to exceed legal limits, then the Project Activity is likely to cause harm and shall be indicated as <b>Harmful</b>	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 <b>Harmful</b> .	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	-1 0 +1	Confirm the score of the social impacts of the project with respect to the aspect and its monitored value in relation to legal/regulatory limits (if any) including basis of conclusion	Describe how the GCC Verifier has assessed that the impact of Project Activity on social aspects (based on monitored parameters, quantitative or qualitative) and in case of "harmful" aspects how has the project owner adopted Risk Mitigation Action / management actions plans and policies to mitigate the risks of negative social impacts to levels that are unlikely to cause any harm.  Also describe the positive impacts of the project on the society as compared to the baseline alternative or BAU scenario.
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 activity generates long term job opportunities during the operation the project activity.	The project has ensured to meet the criteria and requirement defined in applicable Indian labor laws.	-	Harmless  As the impact is positive in nature	-	-	No of Permanent Jobs to be monitored on annual basis.  Ex-Ante 10 permanent jobs will be created.	+1	The project is unlikely to cause any harm.	-
	New short-term jobs (< 1 year) created/ lost (SJ02)	The project activity generates short term job opportunities during the operation the project activity.	Host country minimal wage requirements.	-	Harmless  As the impact is positive in nature	-	-	No of Seasonal/ Contractual/ Temporary Jobs to be monitored on annual basis.	+1	The project is unlikely to cause any harm.	-

<sup>22</sup> sourced from the CDM SD Tool and the sample reports are available ( <https://www4.unfccc.int/sites/sdcmicrosite/Pages/SD-Reports.aspx> )

Project Submission Form

	<i>Sources of income generation increased / reduced (SJ03)</i>	N/A	N/A	N/A	N/A	-	-	N/A	0	N/A	
	<i>Avoiding discrimination when hiring people from different race, gender, ethnics, religion, marginalized groups, people with disabilities (SJ04)  (Human rights)</i>	N/A	N/A	N/A	N/A	-	-	N/A	0	N/A	
<b>Social - Health &amp; Safety</b>	<i>Disease prevention (SHS01)</i>	N/A	N/A	N/A	N/A	-	-	N/A	0	N/A	
	<i>Occupational health hazards (SHS02)</i>	N/A	N/A	N/A	N/A	-	-	N/A	0	N/A	
	<i>Reducing / increasing accidents</i>	N/A	N/A	N/A	N/A	-	-	N/A	0	N/A	

Project Submission Form

	<i>/Incident s/fatality (SHS03)</i>										
	<i>Reducing / increasing crime (SHS04)</i>	N/A	N/A	N/A	N/A	-	-	N/A	0	N/A	
	<i>Reducing / increasing food wastage (SHS05)</i>	N/A	N/A	N/A	N/A	-	-	N/A	0	N/A	
	<i>Reducing / increasing indoor air pollution (SHS06)</i>	N/A	N/A	N/A	N/A	-	-	N/A	0	N/A	
	<i>Efficiency of health services (SHS07)</i>	N/A	N/A	N/A	N/A	-	-	N/A	0	N/A	
	<i>Sanitation and waste management (SHS08)</i>	N/A	N/A	N/A	N/A	-	-	N/A	0	N/A	
	<i>Other health and safety issues (SHS09)</i>	N/A	N/A	N/A	N/A	-	-	N/A	0	N/A	
	<i>Add more rows if required</i>										
<b>Social - Education</b>	<i>specialized training / education to local</i>	N/A	N/A	N/A	N/A	-	-	N/A	0	N/A	-

Project Submission Form

	<i>personnel (SE01)</i>										
	<i>Educational services improved or not (SE02)</i>	N/A	N/A	N/A	N/A	-	-	N/A	0	N/A	
	<i>Project-related knowledge dissemination effective or not (SE03)</i>	N/A	N/A	N/A	N/A	-	-	N/A	0	N/A	
	<i>Other educational issues (SE03)</i>	N/A	N/A	N/A	N/A	-	-	N/A	0	N/A	
	<i>Add more rows if required (SE04)</i>	N/A	N/A	N/A	N/A	-	-	N/A	0	N/A	
<b>Social - Welfare</b>	<i>Improving/deteriorating working conditions (SW01)</i>	N/A	N/A	N/A	N/A	-	-	N/A	0	N/A	
	<i>Community and rural welfare (indigenous people and</i>	N/A	N/A	N/A	N/A	-	-	N/A	0	N/A	

Project Submission Form

	<i>communities</i> (SW02)										
	<i>Poverty alleviation (more people above poverty level)</i> (SW03)	N/A	N/A	N/A	N/A	-	-	N/A	0	N/A	
	<i>Improving / deteriorating wealth distribution/generation of income and assets</i> (SW04)	N/A	N/A	N/A	N/A	-	-	N/A	0	N/A	
	<i>Increase d or / deteriorating municipal revenues</i> (SW05)	N/A	N/A	N/A	N/A	-	-	N/A	0	N/A	
	<i>Women's empowerment</i> (SW06) <i>(Human rights)</i>	N/A	N/A	N/A	N/A	-	-	N/A	0	N/A	
	<i>Reduced / increase d traffic congestion</i> (SW07)	N/A	N/A	N/A	N/A	-	-	N/A	0	N/A	
	<i>Exploitation of</i>	N/A	N/A	N/A	N/A	-	-	N/A	0	N/A	

Project Submission Form

---

<i>Child labour</i> <i>(Human rights)</i> <i>(SW08)</i>											
<i>Minimum wage protection</i> <i>(Human rights)</i> <i>(SW09)</i>	N/A	N/A	N/A	N/A	-	-	N/A	0	N/A		
<i>Abuse at workplace. (With specific reference to women and people with special disabilities / challenges)</i> <i>(Human rights)</i> <i>(SW10)</i>	N/A	N/A	N/A	N/A	-	-	N/A	0	N/A		
<i>Other social welfare issues</i> <i>(SW11)</i>	N/A	N/A	N/A	N/A	-	-	N/A	0	N/A		
<i>Avoidance of human trafficking and</i>	N/A	N/A	N/A	N/A	-	-	N/A	0	N/A		

Project Submission Form

	<i>forced labour</i> <i>(Human rights)</i> <i>(SW12)</i>										
	<i>Avoidance of forced eviction and/or partial physical or economic displacement of IPLCs</i> <i>(Human rights)</i> <i>(CW13)</i>	N/A	N/A	N/A	N/A	-	-	N/A	0	N/A	
	<i>Provisions of resettlement and human settlement displacement</i> <i>(Human rights)</i> <i>(CW14)</i>	N/A	N/A	N/A	N/A	-	-	N/A	0	N/A	
	<i>Add more rows if required</i>										
<b>Net Score:</b>		+2									
<b>Project Owner's Conclusion in PSF:</b>		The Project Owner confirms that the Project Activity will not cause any net harm to society.									



<b>GCC Project Verifier's Opinion:</b>	
--	--

## 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><b>Describe UN SDG targets and indicators</b></p> <p>See: <a href="https://unstats.un.org/sdgs/indicators/indicators-list/">https://unstats.un.org/sdgs/indicators/indicators-list/</a></p>	<p>Describe the UN-level target(s) and corresponding indicator no(s)</p>	<p>Has the host country declared the SDG to be a national priority? Indicate Yes or No</p>	<p>Define project-level SDGs by suitably modifying and customizing UN/ Country-level SDGs to the project scope or creating a new indicator(s). Refer to previous column for guidance.</p>	<p>Define project-level targets/actions in line with the project level indicators chosen. Define the target date by which the project Activity is expected to achieve the project-level SDG target(s).</p>	<p>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</p>	<p>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</p>	<p>Describe how the GCC Verifier has verified the claims that the project is likely to achieve the identified Project level SDGs target(s).</p>	<p>Describe whether the project-level SDG target(s) is likely to be achieved by the target date (Yes or no)</p>

Project Submission Form

<b>Goal 1: End poverty in all its forms everywhere</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Goal 3. Ensure healthy lives and promote well-being for all at all ages</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Goal 5. Achieve gender equality and empower all women and girls</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Goal 6. Ensure availability and sustainable management of water and sanitation for all</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Goal 7. Ensure access to affordable, reliable, sustainable, and modern energy for all</b>	7.2 By 2030, increase substantially the share of renewable energy in the global energy	Yes	Quantity of net electricity supplied to the grid by project activity in year y	Net generation 12,527 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		

Project Submission Form

---

	<p>mix. 7.a By 2030, enhance international cooperation to facilitate access to clean energy research 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</p>						<p>and check meter) installed at the substation. The meters remain under the custody of state utility</p>		
--	--	--	--	--	--	--	---	--	--

Project Submission Form

	<p>supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support</p>								
<p><b>Goal 8. Promote sustained, inclusive, and sustainable economic growth, full and productive employment and decent work for all</b></p>	<p>8.5 By 2030, achieve full and productive employment and decent work for all</p>	<p>Yes</p>	<p>Project activity supports creation of short term and long-term job opportunities during the construction and operation of the project activity.  Supports economic productivity through technology up gradation and innovation through training of labour in high intensive sector.</p>	<p>Project creates new employment and generates income for people during Under Construction Phase and During Operational of the project.</p>	<p>Project creates new employment and generates income for during the project lifetime.</p>	<p>1. Employment per the national labour and company law. 2. Maintains company HR policy to create standard operating procedures</p>	<p>Project owner monitors the implantation of the policies and employee grievances if any through the separate HR manager</p>		

Project Submission Form

	<p>women and men, including for young people and persons with disabilities, and equal pay for work of equal value</p> <p>8.8</p> <p>Protect labor rights and promote safe and secure working environments for all workers, including migrant workers.</p>		<p>Project protects labour rights and promotes safe and secure working environments.</p> <p>Supports a transition to a low-carbon society through employment training for former fossil fuel industry employees</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>(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>and site in charge.</p> <p>Quantity of employment will be monitored through employment records.</p>		
<p><b>Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation</b></p>	NA	NA	NA	NA	NA	NA	NA	NA	NA

Project Submission Form

<b>Goal 10. Reduce inequality within and among countries</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Goal 11. Make cities and human settlements inclusive, safe, resilient, and sustainable</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Goal 12. Ensure sustainable consumption and production patterns</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Goal 13. Take urgent action to combat climate change and its impacts</b>	13.2 Integrate climate change measures into national policies, strategies and planning  13.2.2 Total greenhouse gas emissions per year	Yes	Emission reductions achieved per year	11,404 tCO <sub>2</sub> e (Average) per year	13.2.2 Total greenhouse gas emissions per year	Emission reduction achieved per year	Electricity produced by the renewable generating unit multiplied by an emission factor		
<b>Goal 14. Conserve and sustainably use the oceans, seas, and marine resources for sustainable development</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Goal 15. Protect, restore, and promote sustainable use of terrestrial</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA

Project Submission Form

ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss									
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	NA	NA
Goal 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>SUMMARY</b>							<b>Targeted</b>	<b>Likely to be Achieved</b>	
Total Number of SDGs							+3	+3	
Certification label (Bronze, Silver, Gold, Platinum, or Diamond) for the ACCs as defined in the PSF							Silver	Silver	

## Section G. Local stakeholder consultation

### G.1. MODALITIES FOR LOCAL STAKEHOLDER CONSULTATION

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

To comply with the prerequisite requirements of the GCC project standard a survey was conducted in the project area among the local stakeholders to get their opinion and feedback on the development of the solar and wind Project in the region. Stakeholder feedback survey is conducted during the following dates:

<b>Project</b>	<b>LSC Meeting Dates</b>
<b>LNB Renewable Energy Private Limited (Solar)</b>	<b>10/06/2021</b>
<b>Porwal Auto Components Limited (Solar)</b>	<b>06/19/2017</b>
<b>YMA Renewable Energy Private Limited (Wind)</b>	<b>28/01/2019</b>

Project owner invited the local stakeholders for the meeting through public notice. Following stakeholder were invited:

1. Local villagers,
2. Community members,
3. O&M operators and employees,
4. Local government bodies,

Questionnaires were distributed to collect comments from Government officials, Social Organizations and local residents, and all questionnaires have been recollected.

PO representatives arranged the meeting and started it by welcoming all the stakeholders. He informed about the project activity and various projects in the area which are being undertaken and how the area has been benefitted by operation of power projects. He further explained about various benefits drawn for the stakeholders due to implementation of this project. On project specific case he explained the whole process right from inception of the project till the current execution levels and



future proposed steps and expected commissioning. He shared the long-term vision of the company regarding various activities to be developed in parallel to the project implementation.

He explained how such solar and wind energy projects help in providing clean energy and thereby help in mitigating impacts due to global warming. Further, he explained the impacts of these projects which lead to providing clean energy, increase in employment opportunities both long term and short term, increased income and thereby leading to improvement in living standard of the people.

He also explained how the project participants proposes to set up a Grievance procedure where any comment/suggestion could be provided.

## 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 landfill site, 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:

S.no	Stakeholder Concerns	Response
1	You are claiming the job preference will be given to local people. But recently we requested job for one of the local person. But the job is not provided yet.	Currently there is no opening available for the skill category. As and when the requirement comes, first preference will be given to local person.
2	What is the life time of the project? What will happen to modules after the lifetime?	The life time of the solar and wind power plant is about 25 years. After the lifetime, the end used material will be disposed as per the regulatory requirements.
3	Any additional CSR activities will be conducted to our village?	You can provide your requirements to the site in charge through village representative. The activities will be undertaken based on the priority and fund availability
4	Is there any vacancy in the solar and wind plant?	Currently there is no vacancy available at the plant. However, you can provide your CV to the plant in-charge. If any vacancy arises in the future, the first preference will be given to qualified

		people from the local area.
--	--	-----------------------------

### G.3. CONSIDERATION OF COMMENTS RECEIVED

>>

All comments raised during local stakeholder consultation have been considered and corresponding precaution measures and corrective actions (if any) have been proposed to ensure all issues during the meeting and are properly addressed.

### 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.

## APPENDIX 1. CONTACT INFORMATION OF PROJECT OWNERS

<b>Project Owner name (as per LON/LOA)</b>	Infinite Environmental Solutions LLP
<b>Country</b>	India
<b>Address</b>	119-20, Milinda Manor, RNT Marg, Indore, India.
<b>Telephone</b>	+91-9644130430
<b>Fax</b>	-
<b>E-mail</b>	<a href="mailto:jimmy@infisolutions.org">jimmy@infisolutions.org</a>
<b>Website</b>	<a href="http://infisolutions.org">http://infisolutions.org</a>
<b>Contact person</b>	Jimmy Sah

## APPENDIX 2. AFFIRMATION REGARDING PUBLIC FUNDING

>>

Infinite Environmental Solutions LLP declares that there would be no divergence of Official Development Assistance (ODA) in any of the project activity. This would be confirmed through undertaking / declaration from the project owner.

## APPENDIX 3. APPLICABILITY OF METHODOLOGY(IES)

>>

Refer section B of the PSF.

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

>>

Refer section B.6.1

## APPENDIX 5. FURTHER BACKGROUND INFORMATION ON MONITORING PLAN

>>

Refer section B.7

## APPENDIX 6. SUMMARY REPORT OF COMMENTS RECEIVED FROM LOCAL STAKEHOLDERS

>>

Refer section G.2

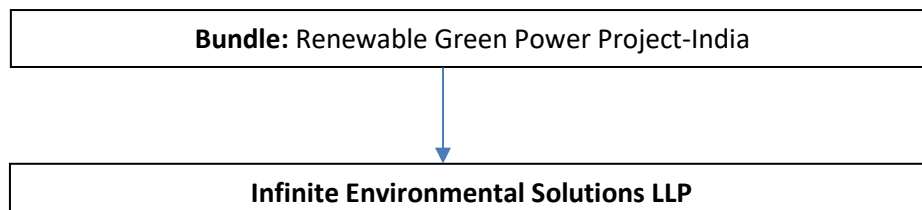
## APPENDIX 7. SUMMARY OF DE-REGISTERED CDM PROJECT OR PROJECTS FROM OTHER GHG / NON-GHG PROGRAMS (TYPE B)

>>

Not Applicable as the project falls under Category A2.

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

>>



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)
			Renewable Green Power Project-India
Similarity in Technological Considerations	Technology	Paragraph 11 (i)	Wind and 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

Project Submission Form

	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)		NA
	Supplying electricity to the different grids/ captive Purposes		Supplying Electricity to the Indian grid for captive purpose.
	Project capacity		Total project capacity 6.55 MW
	Legal ownership of bundles		The Letter of Authorization states that there is only one legal owner Infinite Environmental Solutions LLP to act on behalf of all the project owners and has authority to manage the project and will have the ownership of ACCs
<b>Similarity in Environmental or Methodological Considerations</b>	Application of same methodology (or approved combinations where cross effects are addressed)	Paragraph 11 (iii) i	AMS-I.D, Version 18.0
	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.>>**

Not Applicable

## DOCUMENT HISTORY

Version	Date	Comment
V 4.0	27/09/2022	<ul style="list-style-type: none"> <li>▪ Revised version released on approval by Steering Committee as per GCC Program Process.</li> <li>▪ Revised version contains following changes:               <ul style="list-style-type: none"> <li>○ Introduced A3 type projects A2 project sub-types.</li> <li>○ Included revised Declaration by the 'Authorized Project Owner and focal point' on GCC requirements.</li> <li>○ Included modified format for E+/S+/ SDG assessment.</li> <li>○ Revised instructions for filling in the PSF.</li> <li>○ Editorial changes to the document.</li> </ul> </li> </ul>
V 3.2	31/12/2020	<ul style="list-style-type: none"> <li>▪ The name of GCC Program's emission units has been changed from "Approved Carbon Reductions" or ACRs to "Approved Carbon Credits" or ACCs.</li> </ul>
V 3.1	17/08/2020	<ul style="list-style-type: none"> <li>▪ Editorial revisions made               <ul style="list-style-type: none"> <li>○ Revised Table in section B.7.2 on Monitoring-program of risk management actions</li> <li>○ Revised Table in section E.1 on Environmental Safeguards</li> <li>○ Revised Table in section E.1 on Social Safeguards</li> <li>○ Revised Table in section F on United Nations Sustainable Development Goals (SDG)</li> </ul> </li> </ul>
V 3.0	05/07/2020	<ul style="list-style-type: none"> <li>▪ Revised version released on approval by Steering Committee as per GCC Program Process.</li> <li>▪ Revised version contains following changes:               <ul style="list-style-type: none"> <li>○ Change of name from Global Carbon Trust (GCT) to Global Carbon Council (GCC).</li> <li>○ Considered and addressed comments raised by Steering Committee:                   <ul style="list-style-type: none"> <li>➤ during physical meeting (SCM 01, dated 29 Oct 2019, Doha Qatar); and</li> <li>➤ electronic consultations EC01-Round 01 (15.09.2019 – 25.09.2019), EC01-Round 02 (27.03.2020 – 27.06.2020).</li> </ul> </li> <li>○ Feedback from Technical Advisory Board (TAB) of ICAO on GCC submission for approval under CORSIA<sup>23</sup>;</li> </ul> </li> </ul>

<sup>23</sup>See ICAO recommendation for conditional approval of GCC at [https://www.icao.int/environmental-protection/CORSIA/Documents/TAB/Excerpt\\_TAB\\_Report\\_Jan\\_2020\\_final.pdf](https://www.icao.int/environmental-protection/CORSIA/Documents/TAB/Excerpt_TAB_Report_Jan_2020_final.pdf)

Project Submission Form

---

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



المجلس العالمي للبصمة الكربونية  
GLOBAL CARBON COUNCIL

A member of

