

المجلس العالمي للبصمة الكربونية  
GLOBAL CARBON COUNCIL



**Project  
Submission  
Form**

V4.0- 2022

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<b><u>INSTRUCTIONS FOR COMPLETING THIS FORM</u></b>	<b>ERROR! BOOKMARK NOT DEFINED.</b>
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<b>COVER PAGE- Project Submission Form (PSF)</b>								
<b>BASIC INFORMATION</b>								
<b>Title of the Project Activity as per LON/LOA</b>	<b>Biomass based thermal energy plant by BBMFIDPL</b>							
<b>PSF version number</b>	02							
<b>Date of completion / Updating of this form</b>	12/02/2023							
<b>Project Owner(s) as per LON/LOA</b> <small>(Shall be consistent with De-registered CDM Type B Projects)</small>	Bhole Baba Milk Food Industries(Dholpur) Private Limited Enen Green Services Private Limited							
<b>Country where the Project Activity is located</b>	India							
<b>GPS coordinates of the project site(s)</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Physical address</th> <th style="width: 33%;">Latitude*</th> <th style="width: 33%;">Longitude*</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Bhole Baba Dholpur, Rajasthan</td> <td style="text-align: center;">26.70055556° N (26° 42' 02" N)</td> <td style="text-align: center;">77.87472222° E (77° 52' 29" E)</td> </tr> </tbody> </table>		Physical address	Latitude*	Longitude*	Bhole Baba Dholpur, Rajasthan	26.70055556° N (26° 42' 02" N)	77.87472222° E (77° 52' 29" E)
	Physical address	Latitude*	Longitude*					
Bhole Baba Dholpur, Rajasthan	26.70055556° N (26° 42' 02" N)	77.87472222° E (77° 52' 29" E)						
<b>Eligible GCC Project Type as per the Project Standard</b> <small>(Tick applicable project type)</small>	<input type="checkbox"/> <b>Type A:</b> <input type="checkbox"/> Type A1 <input checked="" type="checkbox"/> Type A2 <input type="checkbox"/> Sub-Type 1 <input type="checkbox"/> Sub-Type 2 <input type="checkbox"/> Sub-Type 3							

	<input type="checkbox"/> Sub-Type 4 <input type="checkbox"/> Type A3  <input type="checkbox"/> <b>Type B – De-registered CDM Projects:<sup>1</sup></b> <input type="checkbox"/> Type B1 <input type="checkbox"/> Type B2
<b>Minimum compliance requirements</b>	<input checked="" type="checkbox"/> Real and Measurable GHG Reductions <input checked="" type="checkbox"/> National Sustainable Development Criteria (if any) <input checked="" type="checkbox"/> Apply credible baseline and monitoring methodologies <input checked="" type="checkbox"/> Additionality <input checked="" type="checkbox"/> Local Stakeholder Consultation Process <input checked="" type="checkbox"/> Global Stakeholder Consultation Process <input checked="" type="checkbox"/> No GHG Double Counting <input checked="" type="checkbox"/> Contributes to United Nations Sustainable Development Goal 13 (Climate Action)
<b>Choose optional and additional requirements</b> <small>(Tick applicable label categories)</small>	<input checked="" type="checkbox"/> Do-no-net-harm Safeguards to address Environmental Impacts <input checked="" type="checkbox"/> Do-no-net-harm Safeguards to address Social Impacts <input checked="" type="checkbox"/> Contributes to United Nations Sustainable Development Goals (in addition to Goal 13)
<b>Applied methodologies including version No.</b> <small>(Shall be approved by the GCC or the CDM)</small>	AMS I C- Thermal Energy generation with or without electricity, Version 22
<b>GHG Sectoral scope(s) linked to the applied methodology(ies)</b>	GHG-SS 1 (Energy (renewable/non-renewable sources))

<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	03.1	
	<input type="checkbox"/> Approved GCC Methodology (XXXXX)		
	<input checked="" type="checkbox"/> Program Definitions	03.1	
	<input checked="" type="checkbox"/> Environment and Social Safeguards Standard	03	
	<input checked="" type="checkbox"/> Project Sustainability Standard	03.1	
	<input checked="" type="checkbox"/> Instructions in Project Submission Form (PSF)-template	04	
	<input checked="" type="checkbox"/> Clarification No. 01	1.3	
	<input type="checkbox"/> Clarification No. 02		
	<input type="checkbox"/> Clarification No. 03		
	<input type="checkbox"/> Clarification No. 04		
	<input type="checkbox"/> Clarification No. 05		
	<input checked="" type="checkbox"/> Standard on avoidance of double counting	01	
	03.1 <input type="checkbox"/> Add rows if required		
0 <input checked="" type="checkbox"/> CDM Rules <sup>3</sup>	<input checked="" type="checkbox"/> Approved CDM Methodology (AMS-I.C.)	22.0	
	<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 type="checkbox"/> TOOL 07- Tool to calculate the emission factor for an electricity system	
	<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	04
	<input type="checkbox"/> TOOL 23- Additionality of first-of-its-kind project activities	
	<input type="checkbox"/> TOOL 24- Common practice	
	<input type="checkbox"/> TOOL 27- Investment analysis	
	<input type="checkbox"/> TOOL 32- Positive lists of technologies	
	<input type="checkbox"/> Guidelines for objective demonstration and assessment of barriers	
	<input checked="" type="checkbox"/> TOOL 03- Tool to calculate project or leakage CO2 emissions from fossil fuel combustion	03
	<input checked="" type="checkbox"/> TOOL 12- Project and leakage emissions from transportation of freight	13.1
	<input checked="" type="checkbox"/> TOOL 22- Leakage in biomass small-scale project activities	04
	<input checked="" type="checkbox"/> Add rows if required	
<b>Choose Third Party Project Verification by approved GCC Verifiers<sup>4</sup></b>	<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 type="checkbox"/> Social No-net-harm Label <b>(S<sup>+</sup>)</b>	

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

<p>(Tick applicable verification categories)</p>	<p><input checked="" type="checkbox"/> United Nations Sustainable Development Goals (<b>SDG+</b>)</p> <p><input type="checkbox"/> Bronze SDG Label</p> <p><input checked="" type="checkbox"/> Silver SDG Label</p> <p><input type="checkbox"/> Gold SDG Label</p> <p><input type="checkbox"/> Platinum SDG Label</p> <p><input type="checkbox"/> Diamond SDG Label</p> <p><input checked="" type="checkbox"/> CORSIA requirements (<b>C+</b>)</p> <p><input checked="" type="checkbox"/> Host Country Attestation on Double counting</p>
<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-</p>

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

<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.,




	<p>GHG program, either for compliance or voluntary purposes, the ACCs will be claimed only for the remaining crediting period (subject to a maximum of 10 years of crediting period including the periods under other programs and GCC program) for which carbon credits/ environmental attributes of compensating nature have not been issued by any other GHG/ non-GHG program.</p> <p><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 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 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 checked="" type="checkbox"/> Submit the proof for exclusion of CPA(s) from registered CDM-POA prior to the date of initial submission to the GCC Program; or</p>
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corporates/industries) for offsetting their GHG emissions

	<p><input checked="" 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 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 type="checkbox"/> We confirm that bundled projects or grouped projects shall have registered crediting period starting on or after 1 Jan 2016 for the grouped/aggregated project as a whole.</p>
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<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.

	<p><input 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 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 type="checkbox"/> We confirm that the Project Activity will be implemented in a country which is UN member state<sup>12</sup>.</p> <p>Provide details (if any) below for the boxes ticked above:</p>
	<p>The Project Owner(s) declares that:</p> <p><input checked="" type="checkbox"/> All the information provided in this document, including any supporting documents submitted to the GCC or its registry operator IHS Markit at any time, is true and correct.</p> <p><input checked="" type="checkbox"/> They understand that a failure by them to provide accurate information or data, or concealing facts and information, can be considered as negligence, fraud or willful misconduct. Therefore, they are aware that they are fully responsible for any liability that arises as a result of such actions.</p> <p>Provide details below for the boxes ticked above</p>
<p><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><i>Ruchika Sharma</i></p>  <p><b>Ruchika Sharma</b>  <b>Director of Enen Green Services Private Limited.</b>  <b>Date: 17-02-2023</b></p>

<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>

## 1. PROJECT SUBMISSION FORM

### Section A. Description of the Project Activity

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

The “Biomass Fuel Switch Project at Dholpur, Rajasthan, India” is to be implemented by Bhole Baba Milk Food Industries Private Limited. In order to reduce Carbon Dioxide (CO<sub>2</sub>) emissions associated with the utilization of rice husk for process of steam generation.

The project activity is a fuel switch from coal-based boiler, that supplied steam for plant process. The project activity uses twin drum fluidised bed boiler for steam generation, with auxiliary systems to produce steam that is used inside the industry for processing.

Prior to the project activity the coal used as a fuel in boiler, and supplied steam for plant process. After the implementation of the project activity, the purpose behind switching from coal-based boiler to biomass rice husk boiler was to reduce the greenhouse gas emissions

Name of the Entities	Commissioning Date	Capacity of the Boiler	Location
Bhole Baba Bhole Baba Milk Food Industries(Dholpur) Private Limited	01/01/2017	25 TPH	Bhole Baba Dholpur, Rajasthan
Eneen Green Services Private Limited	01/01/2017	25 TPH	Bhole Baba Dholpur, Rajasthan

The Project is categorized in the sectoral scope 1 – Energy Industries (renewable - / non-renewable sources) and realizes greenhouse gas emission reductions by replacing coal-based boilers with biomass-based boilers, thus directly reducing greenhouse gas emissions (CO<sub>2</sub>).

The utilization of rice husk is renewable and non-depleting in nature and produces 16.97<sup>(th)</sup> MW thermal of steam and thereby reducing 59,020 t CO<sub>2</sub>/Annum into the atmosphere.

The total emission reductions over entire crediting period is 5,90,200 t CO<sub>2</sub>/Annum. The Project contributions to the sustainable development of the local area. The following are indicators for sustainable development.

The following are indicators for sustainable development

1. Social well-being;
2. Economic well-being;

- 3. Environmental well-being
- 4. Technological well-being

**1. Social Well being**

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

**2. Environmental Well being**

The project activity reduces GHG emission into the atmosphere, thereby the technology is environmentally friendly initiative.

**3. Economic Well being**

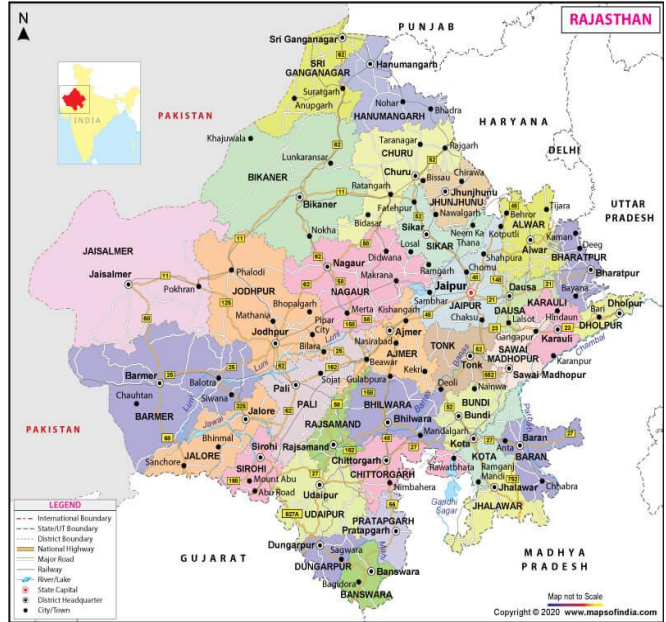
The project activity will provide employment opportunity to all the men and woman living in that area. There is considerable direct and indirect permanent and temporary employment opportunity, leading to economic well-being of the people living in and around the project site

**4. Technology Well being**

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

**A.2. Location of the Project Activity**

<b>Address and geodetic coordinates of the physical site of the Project Activity</b>		
<b>Physical address</b>	<b>Latitude*</b>	<b>Longitude*</b>
Bhole Baba Dholpur, Rajasthan	26.70055556° N (26° 42' 02" N)	77.87472222° E (77° 52' 29" E)



### A.3. Technologies/measures

The project activity uses twin drum fluidized bed combustion boiler for thermal energy generation. The boiler operates at pressure of 21 kg/cm<sup>2</sup> and at temperature of 216-degree C. The boiler can use both coal and rice husk as fuel. The collected Rice husk is stored in rice husk yard and is fed to the boiler through surge hoppers connected to rice husk bunkers. The boiler uses renewable biomass as a fuel source to produce process steam.

**Installed thermal energy generation capacity of project:**

Description	Unit	Detail
Quantity of steam generated	TPH	25
Temp of steam	Deg C	221
Pressure of steam	kg/cm <sup>2</sup>	21
Feed water temperature	Deg C	85

### 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	Bhole Baba Bhole Baba Milk Food Industries(Dholpur) Private Limited	No
India	Enen Green Services Private Limited	No

#### 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		
01/01/2017	31/12/2026	Bhole Baba Bhole Baba Milk Food Industries(Dholpur) Private Limited	For offsetting Greenhouse gases 59,020tCO <sub>2</sub> for 10-year period
01/01/2017	31/12/2026	Enen Green Services Private Limited	For offsetting Greenhouse gases 59,020tCO <sub>2</sub> for 10-year period

The project activity is neither registered nor seeking registration in any carbon offsetting program; hence the approved carbon credits (ACCs) from this project activity shall not be double counted. The project owner confirms that the ACC's generated from the project will not be double counted in any other mechanism.

#### A.6. Additional requirements for CORSIA

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

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

<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).

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

Methodology Title and reference: AMS-I.C.: Thermal energy production with or without electricity --- Version 22.0

Tool 03: "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion", version 03

Tool 12: "Project and leakage emissions from transportation of freight", version 01.1.0

Tool 21: Demonstration of additionality of small-scale project activities Version 13.1

Tool 22: Leakage in biomass small-scale project activities, version 04.013

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

The project activity is thermal energy production without electricity. The project activity would follow small-scale methodology AMS I.C. Ver. 22. The justification for the applicability of the chosen methodology to the project activity is explained in the table below.

- This methodology comprises renewable energy technologies that supply users i.e. residential, industrial or commercial facilities with thermal energy that displaces fossil fuel use. These units include technologies such as solar thermal water heaters and dryers, solar cookers, energy derived from renewable biomass and other technologies that provide thermal energy that displaces fossil fuel.
- The project activity produces steam with renewable biomass (rice husk) in the boiler. Hence it displaces usage of carbon intensive coal in the project activity, thereby reducing GHG emissions

Sr. No.	Applicability criteria as per AMS I.C. Ver. 22	Project Status
1	Biomass-based cogeneration and trigeneration systems are included in this category.	The project activity is steam generation alone by installing 25 TPH rice husk boiler. Hence it is not applicable
2	Emission reductions from a biomass cogeneration or trigeneration system can accrue from one of the following activities: a) Electricity supply to a grid; b) Electricity and/or thermal energy production for on-site consumption or for consumption by other facilities; c) Combination of (a) and (b).	Project activity is only steam generation and hence it is not included.
3	Project activities that seek to retrofit or modify an existing facility for renewable energy generation are included in this category.	The project is a retrofitting of existing system to use rice husk as fuel source



4	In the case of new facilities (Greenfield projects) and project activities involving capacity additions the relevant requirements related to determination of baseline scenario provided in the “General guidelines for SSC CDM methodologies” for Type-II and Type-III Greenfield/capacity expansion project activities also apply.	Not Applicable, as project activities does not involve capacity additions
5	The total installed/rated thermal energy generation capacity of the project equipment is equal to or less than 45 MW thermal (see paragraph 9 for the applicable limits for cogeneration and trigeneration project activities).	The total installed capacity of project equipment is 25 TPH.The steam generation from the boiler is 16.97 MW thermal. This is less than 45 MW thermal limit of the methodology and hence applicable.
6	For co-fired systems, the total installed thermal energy generation capacity of the project equipment, when using both fossil and renewable fuel, shall not exceed 45 MW thermal (see paragraph 9 for the applicable limits for cogeneration project activities)	The project activity is not co-firing and only rice husk is used. Hence this criteria is not applicable
7	<p>The following capacity limits apply for biomass cogeneration and trigeneration units:</p> <ul style="list-style-type: none"> <li>a) If the emission reductions of the project activity are on account of thermal and electrical energy production, the total installed thermal and electrical energy generation capacity of the project equipment shall not exceed 45 MW thermal. For the purpose of calculating the capacity limit the conversion factor of 1:3 shall be used for converting electrical energy to thermal energy (i.e. for renewable energy project activities, the installed capacity of 15 MW(e) is equivalent to 45 MW thermal output of the equipment or the plant);</li> <li>b) If the emission reductions of the project activity are solely on account of thermal energy production (i.e. no emission reductions accrue from the electricity component), the total installed thermal energy production capacity of the</li> </ul>	The project boiler produces only process steam and hence it is not applicable

	<p>project equipment shall not exceed 45 MW thermal;</p> <p>c) If the emission reductions of the project activity are solely on account of electrical energy production (i.e. no emission reductions accrue from the thermal energy component), the total installed electrical energy generation capacity of the project equipment shall not exceed 15 MW.</p>	
8	<p>The capacity limits specified in paragraphs 7 to 9 above apply to both new facilities and retrofit projects. In the case of project activities that involve the addition of renewable energy units at an existing renewable energy facility, the total capacity of the units added by the project shall comply with capacity limits specified in the paragraphs 7 to 9, and shall be physically distinct from the existing units.</p>	<p>The project activity is retrofit of 25 TPH , and there is no other renewable energy based boiler at the site. Hence it is not applicable</p>
9	<p>If solid biomass fuel (e.g. briquette) is used, it shall be demonstrated that it has been produced using solely renewable biomass and all project or leakage emissions associated with its production shall be taken into account in the emissions reduction calculation.</p>	<p>The briquettes are not used and only rice husk is used . Hence it is not applicable</p>
10	<p>Where the project participant is not the producer of the processed solid biomass fuel, the project participant and the producer are bound by a contract that shall enable the project participant to monitor the source of the renewable biomass to account for any emissions associated with solid biomass fuel production. Such a contract shall also ensure that there is no double-counting of emission reductions.</p>	<p>There is no production/processing involved in rice husk preparation by the producer. Contract will be provided on no double counting and leakage.</p>
11	<p>If electricity and/or thermal energy produced by the project activity is delivered to a third party i.e. another facility or facilities within the project boundary, a contract between the supplier and consumer(s) of the energy will have to be entered into that ensures there is no double-counting of emission reductions.</p>	<p>The thermal energy generated is used for plant process and hence it is not applicable</p>

12	<p>If the project activity recovers and utilizes biogas for producing electricity and/or thermal energy and applies this methodology on a standalone basis i.e. without using a Type III component of a SSC methodology, any incremental emissions occurring due to the implementation of the project activity (e.g. physical leakage of the anaerobic digester, emissions due to inefficiency of the flaring), shall be taken into account either as project or leakage emissions as per relevant procedures in the tool “Emissions from solid waste disposal sites” and/or “Project emissions from flaring”. In the event that the biomass fuel (solid/liquid/gas) is sourced from an existing CDM project, then the emissions associated with the production of the fuel shall be accounted with that project.</p>	<p>The project does not recover/utilize biogas.</p>
13	<p>If project equipment contains refrigerants, then the refrigerant used in the project case shall have no ozone depleting potential (ODP).</p>	<p>The project equipment does not contain refrigerants.</p>
14	<p>Charcoal based biomass energy generation project activities are eligible to apply the methodology only if the charcoal is produced from renewable biomass sources provided:</p> <ul style="list-style-type: none"> <li>a) Charcoal is produced in kilns equipped with methane recovery and destruction facility; or</li> <li>b) If charcoal is produced in kilns not equipped with a methane recovery and destruction facility, methane emissions from the production of charcoal shall be considered. These emissions shall be calculated as per the procedures defined in the approved methodology “AMS-III.K: Avoidance of methane release from charcoal production by shifting from traditional open-ended methods to mechanized charcoaling process”. Alternatively, conservative emission factor values from peer reviewed literature or from a registered</li> </ul>	<p>The project does not used Charcoal.</p>

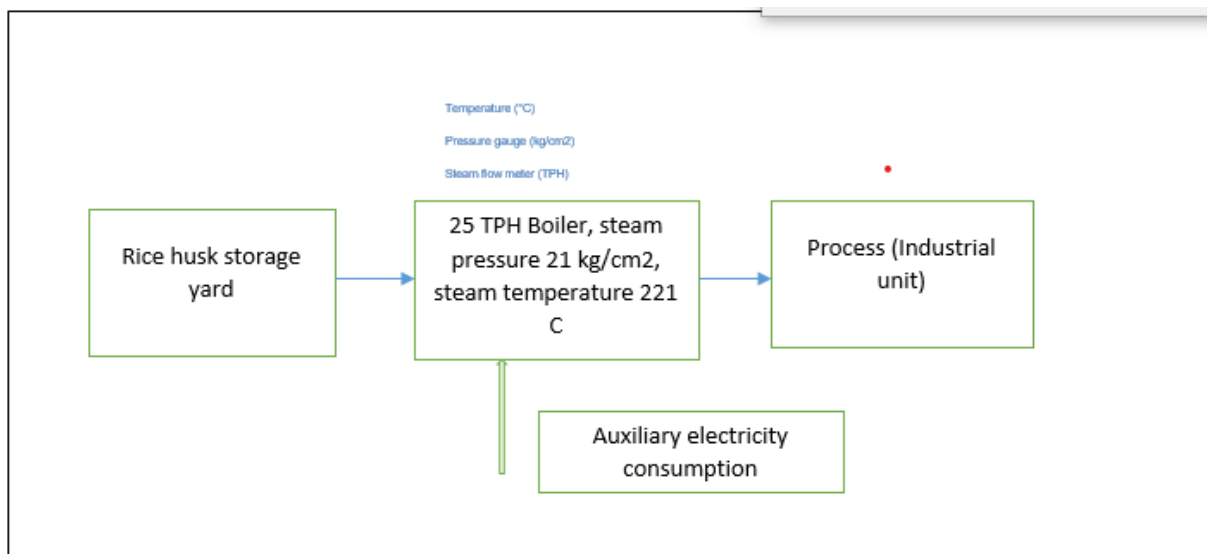
	CDM project activity can be used, provided that it can be demonstrated that the parameters from these are comparable e.g. source of biomass, characteristics of biomass such as moisture, carbon content, type of kiln, operating conditions such as ambient temperature.	
15	In cases where the project activity utilizes biomass, sourced from dedicated plantations, applicability conditions prescribed in the tool "Project emissions from cultivation of biomass" shall apply.	The project does not source biomass from dedicated plantations. Hence it is not applicable

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

>> The spatial extent of the project boundary encompasses:

According to AMS-I.C., the project boundary is "The physical, geographical site of the renewable energy generation". The project boundary encompasses the rice husk based Thermal system, the production line (consumer of heat) and the storage of rice husk

Please refer to Figure



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
<b>Baseline</b>	Source 1	CO <sub>2</sub>	Yes	Important emission source.
		CH <sub>4</sub>	No	Excluded for simplification. This is conservative
		N <sub>2</sub> O	No	Excluded for simplification. This is conservative.
		---	No	Excluded for simplification. This is conservative
	Source 2	CO <sub>2</sub>	No	It is assumed that CO <sub>2</sub> emissions from rice husk do not lead to changes of carbon pools.
		CH <sub>4</sub>	No	This emission source is assumed to be very small
		N <sub>2</sub> O	No	This emission source is assumed to be very small.
		---	No	This emission source is assumed to be very small.

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

Approved methodology AMS I.C. Version 22 has been applied to the project activity as it meets applicability criteria outlined in the methodology. Following paragraphs demonstrate selection of baseline scenario out of the various alternatives available to the project proponent.

##### Identification of alternative baseline scenarios:

The methodology as applied to the project activity involves the identification of alternative baseline scenarios that provide or produce electricity/ steam for in-house consumption. As per the approved methodology AMS I.C. version 22, para 29, the baseline scenario applicable to the project activity is as follows:

- a. The project activity of installing 25 TPH rice husk based boiler is used for thermal energy generation and for process steam requirement. The baseline scenario assessment with reference to the project activity is mentioned below

<b>Baseline Alternatives as per AMS I.C.</b>	<b>Discussion of alternative based on its realistic application</b>
--	---

<p>a) Electricity is imported from a grid and thermal energy is produced using fossil fuel;</p>	<p>In general , this scenario is realistic, as the needed auxiliary power for operation of plant will be from grid and thermal energy from fossil fuel based systems, Since the project activity is thermal energy generation, electricity component need not be considered in baseline assessment</p>
<p>b) Electricity is produced in an on-site captive power plant using fossil fuel (with a possibility of export to the grid) and thermal energy is produced using fossil fuel;</p>	<p>Not appropriate</p>
<p>c) A combination of (a) and (b);</p>	<p>Not appropriate</p>
<p>d) Electricity and thermal energy are produced in a cogeneration or trigeneration unit using fossil fuel (with a possibility of export of electricity to a grid/other facilities and/or thermal energy to other facilities);</p>	<p>Not appropriate</p>
<p>e) Electricity is imported from a grid and/or produced in an on-site captive power plant using fossil fuels (with a possibility of export to the grid); thermal energy is produced using biomass;</p>	<p>Applicable for electricity component as electricity can be imported from grid Since our project activity is thermal energy generation alone, auxiliary electricity consumption is minimal and need not be considered,</p> <p>Applicable for thermal component as well, but the thermal energy from biomass is financially less feasible when compared with conventional method as demonstrated in Investment analysis section,</p>
<p>f) Electricity is produced in an on-site captive power plant using biomass (with a possibility of export to a grid) and/or imported from a grid; thermal energy is produced using fossil fuel;</p>	<p>This scenario is not applicable for electricity component and applicable for thermal energy generation from fossil fuel in the baseline activity</p>

<p>g) Electricity and thermal energy are produced in a biomass fired cogeneration or trigeneration unit (without a possibility of export of electricity either to a grid or to other facilities and without a possibility of export of thermal energy to other facilities);</p>	<p>No cogeneration is involved ,</p>
<p>h) Electricity and/or thermal energy produced in a co-fired system;</p>	<p>No cofiring is involved</p>
<p>i) Electricity is imported from a grid and/or produced in a biomass fired cogeneration or trigeneration unit (without a possibility of export of electricity either to the grid or to other facilities); thermal energy is produced in a biomass fired cogeneration or trigeneration unit and/or a biomass fired boiler (without a possibility of export of thermal energy to other facilities);</p>	
<p>j) Electricity is imported from a grid and/or produced in an on-site captive power plant using fossil fuel and thermal energy is produced using electricity.</p>	<p>NA</p>

The identified baseline scenario for the project activity is thermal energy generation from fossil fuel and thermal energy generation from biomass based systems

S. No.	Scenario	Unit cost of process (Rs./GJ)
1	Baseline - Coal based plant	570.04
2	Project Activity – biomass-based plant	711.72

Therefore, based on the above Table, drawn post baseline analysis it may be concluded that the least cost option and therefore the most economically attractive alternative scenario is Alternative 2:

‘Fossil fuel-coal based steam generation’. In case of the project activity, levelized cost of steam is higher than that of coal-based steam generation and therefore not the least cost option.

Therefore, in the absence of the project activity, an equivalent amount of steam that is consumed for the production process would have been generated by a Fossil Fuel-coal based Boiler as per Alternative 2.

For this project activity, the baseline scenario, as described by the approved methodology AMS I C, Paragraph 24 is: For renewable energy technologies that displace technologies using fossil fuels, the simplified baseline is the fuel consumption of the technologies that would have been used in the absence of the project activity, times an emission factor for the fossil fuel displaced.

The baseline emissions are calculated as follows:

$$BE_{thermal,CO_2,y} = \left( \frac{EG_{thermal,y}}{\eta_{BL,thermal}} \right) \times EF_{FF,CO_2} \quad \text{Equation (1)}$$

Where:

$BE_{thermal,CO_2,y}$	=	Baseline emissions from thermal energy displaced by the project activity during the year y (t CO <sub>2</sub> )
$EG_{thermal,y}$	=	Net quantity of thermal energy supplied by the project activity during the year y (TJ)
$EF_{FF,CO_2}$	=	CO <sub>2</sub> emission factor of the fossil fuel that would have been used in the baseline plant obtained from reliable local or national data if available, alternatively, IPCC default emission factors can be used (t CO <sub>2</sub> /TJ)
$\eta_{BL,thermal}$	=	Efficiency of the plant using fossil fuel that would have been used in the absence of the project activity

Determination of the baseline emissions have been provided in section B.6.3 of this PSF.

## B.5. Demonstration of additionality

As the project activity is a small scale project therefore Tool 21: tool to Demonstration of additionality of small-scale project activities, Version 13.1, is referred here for evaluate additionality of the project activity

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

#### **Outcome of Step 0:**

The project activity is not a first of its kind initiative

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



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

#### **Outcome of Step 1a**

The identification of baseline scenario alternatives with respect to the project activity are

1. Thermal Energy generation from fossil fuel based systems
2. Thermal energy generation from biomass based systems, but less feasible as the project is financially less attractive.

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

#### **National and sectoral policies and circumstances:**

As per the Government of India Policies and circumstances, a facility may qualify to be termed as cogeneration facility if it satisfies certain operating and efficiency standards which are explained below.

Any industries (Captive) the utilizes coal must demonstrate that the achievable thermal efficiency for power generation using coal as fuel should be around 35% while the boiler efficiency for steam generation observed in Indian industries is about 90%, the efficiency. There are no policies sectoral/national that limits the usage of coal in the CPP or in boilers to produce heat and power. Hence the boiler with coal as a fuel source is consistent with mandatory laws and regulations. In case of biomass,

#### **Biomass promotional policy of Government:**

Ministry of New and Renewable Energy, Govt. of India has notified a Scheme on Biomass Energy and Co-Generation (non-bagasse) in Industry with the following objectives:

1. To encourage the deployment of biomass energy systems in industry for meeting thermal and electrical energy requirements.
2. To promote decentralized / distributed power generation through supply of surplus power to the grid.
3. To conserve the use of fossil fuels for captive requirements in industry.
4. To bring about reduction in greenhouse gas emissions in industry
5. To create awareness about the potential and benefits of alternative modes of energy generation in industry.
- 6.

Hence the identified baseline scenarios are consistent with mandatory laws and regulations in India.

#### **Outcome of Step 1b:**

Thus, the identification of baseline as per step 1(b) is thermal energy generation from coal based system and thermal energy generation from biomass based system.

### **Step 2: Investment Analysis**

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

As per “Tool for the demonstration and assessment of additionality” (version 07.0.0), for financial analysis of the project, the following three options are available:

Option I: Simple Cost Analysis

Option II: Investment Comparison Analysis

Option III: Benchmark Analysis

As per the tool, PP has to determine whether to apply simple cost analysis, investment comparison analysis or benchmark analysis.

Option I: Simple cost analysis is applied only in cases where there is no revenue generation apart from GCC benefits. The project activity produces steam that is used in plant processing. Hence simple cost analysis cannot be used.

Option III: As per guidance 19 of Annex 5 of EB 62, benchmark analysis is applied where baseline does not require any investment. Since the alternatives identified here require investment to be, this is not suitable analysis.

Option II: As per guidance 19 of Annex 5 of EB 62, an investment comparison analysis is applied where the baseline leaves the project participant no other choice than to make an investment for steam generation from the boiler. The investment comparison analysis by the PP is given below:

**Outcome of step 2a:**

The investment comparison analysis is chosen.

**Sub-step 2b: Option II. Apply investment comparison analysis**

Identify the financial indicator, such as IRR, NPV, cost benefit ratio, or unit cost of service (e.g. Levelised cost of electricity production in INR/kWh or Levelised cost of delivered heat in INR/GJ) most suitable for the project type and decision-making context.

As the electricity is consumed for captive demand in the plant, there is no sale of electricity so there is no financial revenue streams from the investment options. Financial indicator such as IRR, NPV, cost benefit ratio take the financial revenue streams into consideration therefore these financial indicators cannot be used for carrying out investment comparison analysis.

Whereas, LCOE determines the cost of energy produced, Levelised cost of energy (Rs/GJ) is an economic metric that enables to compare different competing energy technologies such as gas, coal, nuclear, solar, hydro, and wind. It can also be applied to compare and contrast different investment scenarios.

**LCOE calculation approach, LCOE is the cost to generate a defined amount of energy, hence the NPV of lifetime generation costs is divided by the NPV of the lifetime generated energy**

**Outcome of step 2b:**

Levelized cost of delivered heat in Rs./GJ) is used as a financial indicator which is an appropriate indicator for the project type and in the context of investment decision

**Sub-step 2c: Calculation and comparison of financial indicators (only applicable to Options II and III):**

The calculation and comparison of the unit cost of energy generation for both the alternatives identified above.

The unit cost of generation for each alternative has been calculated as below:

= Total annual cost (expenditure) of energy generation (INR) / total energy generated in year (GJ)

**Data inputs/ assumptions:**

**Biomass based thermal plant**

**Cost of the project activity**

Parameter	Unit	Value
cost of boiler	CRORE	0.95
cost of Balance of boiler plant	CRORE	0.38
cost of Fuel, material, ash handling system	LAKH	1.5
Total Project Cost	(INR Mn.)	13.45

**1.2 Plant specifications and fuel characteristics**

<b>Fuel</b>		
Fuel Consumption (RICE HUSK)	(kg/hr)	5113
<b>Steam generation</b>		
Quantity of steam generated	TPH	25
Temp of steam	Deg C	221
Pressure of steam	kg/cm2	21
Feed water temperature	Deg C	85
Average Steam flow rate(TPH)		22

Plant Load Factor (KW)		115
<b>Boiler</b>		
Efficiency of biomass based boiler	%	80%
Working Days in a year	No. of Days	335
Run hrs in a year	hrs	8000
cost of boiler	CRORE	0.95
cost of Balance of boiler plant	CRORE	0.38
cost of Fuel, material, ash handling system	LAKH	1.5
O and M	LAKH	20
Total Project Cost	(INR Mn.)	15.45
Quantity of steam generated	TPH	25
Temp of steam	Deg C	221
Pressure of steam	kg/cm2	21
Feed water temperature	Deg C	85
Efficiency of biomass based boiler	%	80%
Run hrs in a year	hrs	8040
Enthalpy of steam (@ 21 kg/cm2)	kJ/kg	2799
Enthalpy of feed water (@85 Deg C)	kJ/kg	355.503
Net Energy output of boiler at rated capacity	kJ/kg	2443.497
Total Thermal Ouput of the boiler	kJ/hr	61087425
Thermal output from the boiler	MWth	16.97

### Inputs for financial Analysis

Details of the project	BIOMASS	Source
State where the project is situated	RAJASTAN	
Operating days	335	As per DPR
Expected Date of Commissioning	January/17	As per DPR
Life of the plant (Yrs.)	15	
Generation and sale of electricity		
Average Steam flow rate(kg/hr)	25,000	As per DPR
Plant Load Factor (%)	80.00%	

Inlet Temperature (deg C)	85	As per DPR
Steam pressure (kg/cm2 (g))	21.00	As per DPR
Enthalpy of feed water @ 85 deg C (kJ/kg)	355.50	Estimated using the steam tables, refer 'Thermal Output' worksheet
Enthalpy of steam @ rated 21 kg/cm2	2,799.00	Estimated using the steam tables, refer 'Thermal Output' worksheet
Enthalpy In(kj/hr)	8,887,575	Calculated Value
Enthalpy out(kj/hr)	69,975,000	Calculated Value
Net heat output (TJ/h)	0.0611	Calculated Value
Efficiency of Boiler (%)	80.00%	As per DPR
Heat Input (TJ/Year)	0.0764	Calculated Value
Total Heat Input (TJ/Year)	491	Calculated Value
Net thermal energy output (TJ/Year)	393	Calculated Value
Calorific value of fuel	biomass	
NCV of Biomass fuel mix (kcal/kg)	3,000	client value
NCV of Biomass fuel mix (kj/kg)	12,552	Calculated from unit conversion (1 kcal = 4.184 kj)
<b>Fuel Consumption</b>		
Fuel Consumption (kg/hr)	4,867	Calculated Value
Fuel Consumption (TPD)	116.80	Calculated Value
Annual Fuel Requirement (t/TJ)	80	Calculated Value
Annual Fuel Requirement (t)	39,129	Calculated Value
<b>Cost of Fuel</b>		
Average Cost of Fuel (INR/kg)	5.00	<u>biomass bill copy</u>
Yearly Price Escalation	7%	
Operation and maintenance cost		

O & M Expenses (%)	4%	@ 4% of capital cost as per APERC tariff order 2004, <a href="http://www.aperc.gov.in/assets/uploads/files/2dc6c-order_rp_84_2003.pdf">http://www.aperc.gov.in/assets/uploads/files/2dc6c-order_rp_84_2003.pdf</a> , pg. 36
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### Financial parameters

TOTAL PROJECT COST (INR Mn.)	13.45	As per DPR
Loan Amount (INR Mn.)	-	No Loan Availed
Equity Investment (INR Mn.)	15.45	Calculated Value
Book Depreciation (SLM Method)		
Depreciation Rate till 12 year (%)	5.83%	As per CERC order page 17
Depreciation Rate 13th year onwards (%)	2.51%	As per CERC order page 17
Salvage Value (%)	10.00%	Calculated Value
Salvage value (INR Mn.)	1.55	Calculated Value
IT Depreciation (SLM Method)		
IT Depreciation Available every year (%)	40.00%	As per Income Tax act
Income Tax		
Financial Year	FY 2016-17	
Income tax rate (%)	30.00%	Tax rates applicable to a domestic company
MAT (%)	18.50%	
Surcharge (%)	12.00%	Tax rates applicable to a domestic company
Education cess (%)	3.00%	
Final Tax rates		
Income tax rate (%)	34.61%	Calculated Value
MAT (%)	21.34%	Calculated Value

**The LCOE of rice husk based thermal generation unit is 734.87/ Gal of Energy**

### Coal based plant

#### 2.1 Total project cost

For conservative analysis, the project cost of coal based plant is taken same as that of biomass based plant. The boiler used in the project activity is multifuel boiler and is capable of using coal as fuel. Also, only coal fired boiler are generally cheaper than biomass / multifuel boiler as later one

require conveyor system, travelling / pulsating grate, larger furnace area etc. Thus, this assumption is realistic and conservative.

## 2.2 Plant specifications and fuel characteristics

For conservative analysis, the plant specification of coal based cogeneration plant is taken same as that of biomass based plant. Only the coal calorific value and landed price are specific.

1	<b>NCV of coal</b>	4500 kcal/kg
2	<b>Landed cost coal</b>	6 Rs./kg

Based on the excel worksheet financial model, the Levelised cost of coal based plant is **570.04** Rs./GJ.

S. No.	Scenario	Unit cost of process (Rs./GJ)
1	Baseline - Coal based plant	587.97
2	Project Activity – biomass-based plant	734.87

### Outcome of step 2c:

Thus it can be concluded that the baseline for the project activity based on Levelised cost of energy generation is coal based plant.

### Sub-step 2d: Sensitivity analysis (only applicable to Options II and III)

As per guidance 20 of Annex 5 of EB 62, according to the investment analysis guidance, only variables, including the initial investment cost, that constitute more than 20% of either total project costs or total project revenues should be subjected to reasonable variation in a range of +10% to -10% (all parameters varied need not necessarily be subjected to both negative and positive variations of the same magnitude), the following parameters are subjected for the sensitivity analysis

<b>Parameters that are sensitive to breach the benchmark:</b>
---

1. The Boiler efficiency is assumed as per the Technical specification from the supplier
2. Fuel cost is volatile parameter and it is subject to escalation over the life of project.
3. NCV of biomass-The plant steam generation depends on NCV of the fuel
4. O and M Cost-Required for the operation and maintenance of the project
5. Project cost

**Unit cost of energy generation using the project (Rs./GJ)**

**Outcome of Step 2d:**

<b>Sensitivity analysis results</b>								
	Boiler efficiency		Fuel cost		NCV of fuel		O&M cost	
	-10%	10%	-10%	10%	-10%	10%	-10%	10%
Biomass plant	734.93	734.86	661.44	808.35	816.51	668.12	734.87	734.92
Coal plant	588.03	587.96	734.90	646.76	734.90	534.57	587.97	587.97

From the sensitivity analysis, it is clear that Levelised cost of energy generation for Biomass based plant is higher than the coal based plant. Thus, project activity is not economically most attractive alternative and is additional.

**Outcome of Step 2:**

The proposed project activity is unlikely to be the most financially/economically attractive without GCC revenue.

**B.6. Estimation of emission reductions**

**B.6.1. Explanation of methodological choices**

The steam used in the productive process in the project developer’s facility (Milk Food Industries) is currently being produced through burning of coal. The technology used in this project activity aims to generate the steam/heat needed for the operation of this Milk Food Industries using rice husk as fuel. Therefore, coal-based boiler switched by rice husk boilers to produce renewable energy.

This project activity involves only fuel switch in the steam generation. The calculations of emission reductions are shown in section B.6.3.



The Methodology AMS-I.C. is applicable to the proposed project activity, as it is applicable to renewable energy technologies that supply individual households or users with thermal energy that displaces fossil fuels.

**Baseline Emissions:**

As this project activity comprises a renewable energy technology that displaces a technology using fossil fuel, the simplified baseline is the fuel consumption of the technology that would have been used in the absence of the project activity (i.e. boiler burning coal) times an emission coefficient for the fossil fuel displaced. The IPCC default values for emission coefficients are used (i.e. IPCC 2006).

**Baseline emissions for retrofit project activities as per AMS I-C,**

1. For project activities that seek to retrofit or modify an existing facility for renewable energy generation, the baseline scenario is the following:
2. In the absence of the CDM project activity, the existing facility would continue to provide thermal energy  $EG_{BL,thermal,retrofit,y}$  at historical average levels  $EG_{HY,thermal,retrofit,y}$ , until the time at which the thermal energy facility would be likely to be replaced or retrofitted in the absence of the CDM project activity ( $DATE_{BaselineRetrofit}$ ). From that point of time onwards, the baseline scenario is assumed to correspond to the project activity, and baseline thermal energy production is assumed to equal project thermal energy production and no emission reductions are assumed to occur.

$$EG_{BL,thermal,retrofit,y} = \text{MAX}(EG_{HY,thermal,retrofit,y}, EG_{estimated,thermal,y}) \text{ until } DATE_{BaselineRetrofit \text{ of } it} \tag{Equation 2}$$

Where:

- $EG_{BL,thermal,retrofit,y}$  = Thermal energy production by an existing facility in the absence of the project activity in year y (TJ)
- $EG_{HY,thermal,retrofit,y}$  = Average of historical thermal energy levels delivered by the existing facility, spanning all data from the most recent available year (or month, week or other time period) to the time at which the facility was constructed, retrofitted, or modified in a manner that significantly affected output (i.e. by five per cent or more) (TJ)

$EG_{estimated,thermal,y}$  = Estimated thermal energy that would have been produced by the existing units under the observed availability of renewable resources in year y (TJ)

$DATE_{BaselineRetrofit}$  = Date at which the existing generation facility is likely to be replaced or retrofitted in the absence of the CDM project activity

3. The requirements concerning demonstration of the remaining lifetime of the replaced equipment shall be met as described in the “General guidelines for SSC CDM methodologies”. If the remaining lifetime of the affected systems increases due to the project activity, the crediting period shall be limited to the estimated remaining lifetime, i.e. the time when the affected systems would have been replaced in the absence of the project activity.
4. In order to estimate the point in time when the existing equipment would need to be replaced in the absence of the project activity ( $DATE_{BaselineRetrofit}$ ), project participants may follow the procedures described in the “General guidelines for SSC CDM methodologies”.

As per the “Tool to determine remaining lifetime of the equipment”, Version 1, option c,

Option (c): Use default values In this option, project participants may use the following default values for the technical lifetime and determine the remaining lifetime as the difference of the technical lifetime and the operational time.

This option can only be applied if: (i) The project participants can demonstrate that the equipment has been operated and maintained according to the recommendations of the equipment supplier;

**Boiler inspector certificate, provided one states the boiler is in good operating condition and hydraulically tested as per the boiler Act 1923, of India.**

(ii) There are no periodic replacement schedules or scheduled replacement practices specific to the industrial facility, that require early replacement of equipment before the expiry of the technical lifetime; and

**There is no replacement in major component within the lifetime**

(iii) The equipment has no design fault or defect and did not have any industrial accident due to which the equipment cannot operate at rated performance levels. Documentation supporting these conditions should be provided, for example information on the operational history of the equipment. The operational time shall be determined based on the operational history of the equipment from the date of its first

commissioning. In case of relocated equipment (equipment which was already in operation at another site and which is transferred to the site of the project activity where it continues to operate), the operation history at the previous site(s) should be considered when establishing the operational time. For the technical lifetime, the following default values apply

**There is no design default and the project boiler operates at rated performance. There is no accident happened at project site and the operational lifetime of the boiler is 8 years as per the plant log book records of the Project proponent from the initial date of commissioning and the technical life time as per the tool is 25 years.**

**Hence the boiler has remaining lifetime of the equipment is 17 years, in which there will be no change in the energy generation.**

5. For project activities that seek to retrofit or modify an existing facility to enhance the energy conversion efficiency, the baseline emissions  $BE_{retrofit,CO_2,y}$  then correspond to the difference of the thermal energy supplied by the project activity and the baseline thermal energy supplied in the case of modified or retrofit facilities multiplied by the emission factor of the fuel that would have been used to generate the incremental energy:

$$BE_{retrofit,CO_2,y} = (EG_{thermal,retrofit,y} - EG_{BL,thermal,retrofit,y}) \times EF_{FF,CO_2} \quad \text{Equation (3)}$$

Where:

$BE_{retrofit,CO_2,y}$	=	Baseline emissions from the incremental thermal energy supplied due to retrofit (t CO <sub>2</sub> )
$EG_{thermal,retrofit,y}$	=	Thermal energy supplied by the project activity (after retrofit) in year y (TJ)
$EG_{BL,thermal,retrofit,y}$	=	Thermal energy production by an existing facility in the absence of the project activity (before retrofit) in year y (TJ)
$EF_{FF,CO_2}$	=	CO <sub>2</sub> emission factor of the fossil fuel that would have been used in the baseline plant to generate the incremental energy obtained from reliable local or national data if available, alternatively, IPCC default emission factors can be used (t CO <sub>2</sub> /TJ)

In case of our project activity, the Energy generated in the baseline and in the absence of project activity is same and it is not a energy efficiency measure. Hence the difference is zero. For project activities that seek to retrofit or modify an existing facility for the purpose of fuel switch from fossil fuels to biomass in heat generation equipment, the baseline emissions shall be calculated as per equation (2).

6. **Baseline** For thermal energy produced using fossil fuels and/or grid electricity the baseline emissions are calculated as follows:

$$BE_{thermal,CO_2,y} = \left( \frac{EG_{thermal,y}}{\eta_{BL,thermal}} \right) \times EF_{FF,CO_2} \quad \text{Equation (4)}$$

Where:

- $BE_{thermal,CO_2,y}$  = Baseline emissions from thermal energy displaced by the project activity during the year y (t CO<sub>2</sub>)
- $EG_{thermal,y}$  = Net quantity of thermal energy supplied by the project activity during the year y (TJ)
- $EF_{FF,CO_2}$  = CO<sub>2</sub> emission factor of the fossil fuel that would have been used in the baseline plant obtained from reliable local or national data if available, alternatively, IPCC default emission factors can be used (t CO<sub>2</sub>/TJ)
- $\eta_{BL,thermal}$  = Efficiency of the plant using fossil fuel that would have been used in the absence of the project activity determined as per paragraph **Error! Reference source not found.** or **Error! Reference source not found.** **Error! Reference source not found.**

### Project emissions:

Project emissions shall be calculated using the following equation:

$$PE_y = PE_{FF,y} + PE_{Ec,y} + PE_{Geo,y} + PE_{ref,y} + PE_{Biomass,y} \quad \text{Equation (5)}$$

Where:

- $PE_y$  = Project emissions from the project activity during the year y (t CO<sub>2</sub>)
- $PE_{FF,y}$  = Project emissions from fossil fuel consumption during the year y (t CO<sub>2</sub>)
- $PE_{Ec,y}$  = Project emissions from electricity consumption during the year y (t CO<sub>2</sub>)
- $PE_{Geo,y}$  = Project emissions from a geothermal project activity in year y (t CO<sub>2</sub>)
- $PE_{ref,y}$  = Project emissions from use of refrigerant in project activity in year y (t CO<sub>2</sub>)
- $PE_{Biomass,y}$  = Project emissions associated with biomass and biomass residues in year y (t CO<sub>2e</sub>)

### Project Emission from fossil fuel consumption:

There shall be no usage of fossil fuel in the rice-based boiler. Therefore, emissions from fossil fuel usage in the rice husk-based Boiler shall be zero.

As per para 66 of the methodology, CO<sub>2</sub> emissions from on-site combustion of fossil fuels (PEFF,y) shall be calculated using the latest version of the Tool-03, Tool to calculate project or leakage CO<sub>2</sub> emissions from fossil fuel combustion” version 3.

As per Baseline Methodology Procedure of the “Tool to calculated project or leakage CO<sub>2</sub> emissions from fossil fuel combustion” Version 03, the CO<sub>2</sub> emission from fossil fuel combustion in process j are calculated based on the quantity of fuels combusted and the CO<sub>2</sub> emission coefficient of those fuels as follow.

$$PEFC_{j,y} = \sum_i F_{Ci,j,y} \times COEF_{i,j}$$

Where:

PEFC<sub>j,y</sub> The CO<sub>2</sub> emissions from fossil fuel combustion in process j during the year y (tCO<sub>2</sub>/yr);

F<sub>Ci,j,y</sub> The quantity of fuel type i combusted in process j during the year y (mass or volume unit/yr);

COEF<sub>i,j</sub> The CO<sub>2</sub> emission coefficient of fuel type i in year y (tCO<sub>2</sub>/mass or volume unit) i the fuel types combusted in process j during the year y

The CO<sub>2</sub> emission coefficient COEF<sub>i,y</sub> is calculated based on option B provided in the tool. Option A has been ruled out due to non-availability of data particularly weighted average mass fraction of carbon in fuel and weighted average density of fuel type used in project activity. The calculation for COEF<sub>i,y</sub> is based on the net calorific value and CO<sub>2</sub> emission factor of the fuel type i, as follows:

CO<sub>2</sub> emissions from fossil fuel combustion in process j are calculated based on the quantity of fuels combusted and the CO<sub>2</sub> emission coefficient of those fuels, as follows:

$$COEF_{i,j} = NCV_{i,y} \times EFCO_{2,i,y}$$

Where:

COEF<sub>i,j</sub> = The CO<sub>2</sub> emission coefficient of fuel type i in year y (tCO<sub>2</sub>/mass or volume unit)

NCV<sub>i,y</sub> = The weighted average net calorific value of the fuel type i in year y (GJ/mass or volume unit)

EFCO<sub>2,i,y</sub> = The weighted average CO<sub>2</sub> emission factor of fuel type i in year y (tCO<sub>2</sub>/GJ) i The fuel types combusted in process j during the year y

**The proje owner does not propose to use coal. The project activity utilize rice husk as fuel in boiler. Therefore the project emissions is negligible**

### **Project Leakage:**

As per the methodology AMS-I.C. version 22 para 79” If the energy generating equipment currently being utilised is transferred from outside the boundary to the project activity, leakage is to be considered.” the existing equipment is not transferred to another activity, thus leakage is neglected.

CO2 emissions from collection/processing/transportation of biomass residues to the project site are considered as leakage.

- CO2 emissions from collection/processing/transportation of biomass residues to the project site:

Based on the methodology AMS-I.C version22, leakage attributed to transportation to the project site shall be considered if biomass residues are transported over a distance of more than 200 kilometers to the project site due to the implementation of the project activity, otherwise it can be neglected. In the project activity, biomass is expected to be transported over a distance of less than 200km, as such, leakage is neglected.

**Emission reduction:**

As per the methodology AMS-I.C small scale methodology – Thermal energy production with or without electricity Version 22.0

$$ER_y = BE_y - PE_y - LE_y \tag{Equation (6)}$$

Where,

- $ER_y$  = Emission reductions in year  $y$  (t CO<sub>2</sub>e)
- $BE_y$  = Baseline emissions in year  $y$  (t CO<sub>2</sub>e)
- $PE_y$  = Project emissions in year  $y$  (t CO<sub>2</sub>)
- $LE_y$  = Leakage emissions in year  $y$  (t CO<sub>2</sub>)

Quantity of thermal energy supplied by the boiler	$EG_{thermal,y}$	491.322		
Efficiency of the baseline boiler that would have been used in absence of the project activity	$\eta_{BL,thermal}$	80%		
CO2 emission factor of the fossil fuel that would have been used in the baseline plant	$EFF_{CO2}$	96100.000	kg/TJ	IPCC Default value from 2006 Guidelines, Volume 2, Chapter 2, Table 2.3
		96.100	tCO <sub>2</sub> /TJ	1 Tonne=1000kg

<b>Baseline Emissions for boiler for the year y</b>	<b>BE<sub>thermal,CO<sub>2</sub></sub><sub>y</sub></b>	<b>59,020</b>	<b>tCO<sub>2</sub> / yr</b>	
<b>Project emission</b>		<b>0</b>	<b>tCO<sub>2</sub>/yr</b>	
<b>Emission Reduction</b>		<b>59,020</b>	<b>tCO<sub>2</sub>/yr</b>	

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

**Data / Parameter Table 1.**

<b>Data / Parameter:</b>	<b><math>\eta_{BL,thermal}</math></b>								
Methodology reference	AMS-I.C.								
Data unit	%								
Description	Efficiency of the plant using fossil fuel that would have been used in the absence of the project activity								
Measured/calculated/default	Calculated								
Data source	Datasheet								
Value(s) of monitored parameter	80%								
Measurement/ Monitoring equipment (if applicable)	<table border="1"> <tr> <td>Type of meter</td> <td>Not Applicable</td> </tr> <tr> <td>Location of meter</td> <td>Not Applicable</td> </tr> <tr> <td>Accuracy of meter</td> <td>Not Applicable</td> </tr> <tr> <td>Serial number of meters</td> <td>Not Applicable</td> </tr> </table>	Type of meter	Not Applicable	Location of meter	Not Applicable	Accuracy of meter	Not Applicable	Serial number of meters	Not Applicable
Type of meter	Not Applicable								
Location of meter	Not Applicable								
Accuracy of meter	Not Applicable								
Serial number of meters	Not Applicable								
Calculation method (if applicable)	Total thermal energy extracted divided by the thermal energy value of the fuel use.								
QA/QC procedures	Not Applicable								
Purpose of data	For the calculation of emission reduction								

Additional comments	This parameter is fixed ex-ante for the entire crediting period.
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<b>Data / Parameter:</b>	<b>EF<sub>FF,CO2</sub></b>								
Methodology reference	AMS-I.C.								
Data unit	t CO <sub>2</sub> /TJ								
Description	CO <sub>2</sub> emission factor of the Coal								
Measured/calculated /default	Default								
Data source	IPCC report								
Value(s) of monitored parameter	96.1								
Measurement/ Monitoring equipment (if applicable)	<table border="1"> <tr> <td>Type of meter</td> <td>Not Applicable</td> </tr> <tr> <td>Location of meter</td> <td>Not Applicable</td> </tr> <tr> <td>Accuracy of meter</td> <td>Not Applicable</td> </tr> <tr> <td>Serial number of meters</td> <td>Not Applicable</td> </tr> </table>	Type of meter	Not Applicable	Location of meter	Not Applicable	Accuracy of meter	Not Applicable	Serial number of meters	Not Applicable
Type of meter	Not Applicable								
Location of meter	Not Applicable								
Accuracy of meter	Not Applicable								
Serial number of meters	Not Applicable								
Calculation method (if applicable)	As per the “Tool to calculate project or leakage CO <sub>2</sub> emissions from fossil fuel combustion”								
QA/QC procedures	Not Applicable								
Purpose of data	For the calculation of emission reduction								
Additional comments	This parameter is fixed ex-ante for the entire crediting period.								

<b>Data / Parameter:</b>	<b>EF<sub>CO2,F</sub></b>
Methodology reference	AMS-I.C.
Data unit	tCO <sub>2</sub> /MWh
Description	Default carbon di-oxide emission factor for freight transport activit
Measured/calculated /default	Default
Data source	Based on the methodological tool “Project and leakage emissions from



	road transportation of freight.”(Version 01.0.0)	
Value(s) of monitored parameter	<b>Vehicle Class</b>	
	Light vehicles	245
	Heavy vehicles	129
Measurement/ Monitoring equipment (if applicable)		
	Type of meter	Not Applicable
	Location of meter	Not Applicable
	Accuracy of meter	Not Applicable
	Serial number of meters	Not Applicable
Calculation method (if applicable)	Not Applicable	
QA/QC procedures	Not Applicable	
Purpose of data	For the calculation of emission reduction	
Additional comments	This parameter is fixed ex-ante for the entire crediting period.	

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

Emission reductions are calculated as follows:

$$ER_y = BE_y - PE_y - LE_y \quad \text{Equation (7)}$$

Where:

- $ER_y$  = Emission reductions in year  $y$  (t CO<sub>2</sub>e)
- $BE_y$  = Baseline emissions in year  $y$  (t CO<sub>2</sub>e)
- $PE_y$  = Project emissions in year  $y$  (t CO<sub>2</sub>)
- $LE_y$  = Leakage emissions in year  $y$  (t CO<sub>2</sub>)

### Baseline Emission

For thermal energy produced using fossil fuels and/or grid electricity the baseline emissions are calculated as follows:

$$BE_{thermal,CO_2,y} = \left( \frac{EG_{thermal,y}}{\eta_{BL,thermal}} \right) \times EF_{FF,CO_2} \quad \text{Equation (8)}$$

Where:

- $BE_{thermal,CO_2,y}$  = Baseline emissions from thermal energy displaced by the project activity during the year y (t CO<sub>2</sub>)
- $EG_{thermal,y}$  = Net quantity of thermal energy supplied by the project activity during the year y (TJ)
- $EF_{FF,CO_2}$  = CO<sub>2</sub> emission factor of the fossil fuel that would have been used in the baseline plant obtained from reliable local or national data if available, alternatively, IPCC default emission factors can be used (t CO<sub>2</sub>/TJ)
- $\eta_{BL,thermal}$  = Efficiency of the plant using fossil fuel that would have been used in the absence of the project activity determined as per paragraph **Error! Reference source not found.** or **Error! Reference source not found.** **Error! Reference source not found.**

Where:  $BE_{thermalCO_2y} = BE_y$

$$BE_{thermal,CO_2,y} = BE_y$$

$$EF_{FF,CO_2} = 96.1$$

$$EG_{thermal,y} = 491.332$$

$$\eta_{BL,thermal} = 80\%$$

$$BE_y = (491.322/80\%) * 96.1$$

$$BE_y = 59,020 \text{ t CO}_2$$

### Leakage Emission

As per para 79 of the methodology, there is no energy generating equipment currently being utilised is transferred from outside the boundary to the project activity, hence leakage emission considered is zero. Therefore, LEY = 0

### Project Emission

In general scenario the GCC project owner will use biomass only. If any fossil fuel like coal is used then the emission for burning of fossil fuel will be accounted as project emission. For ex ante emission reduction calculation no fossil fuel burning has been taken into account.

Therefore,  $PE_y = FC_{iy} (\text{Quantity of Fossil Fuel}) \times EFFF (\text{Emission Factor of Fossil Fuel})$

$$PE_y = 0 \times E_{FF}$$

$$PE_y = 0$$

### Emission reductions

Emission reductions are calculated as follows:

$$ER_y = BE_y - PE_y - LE_y \quad \text{Equation (9)}$$

$$ER_y = 59,020 - 0 - 0$$

$$ER_y = 59,020$$

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

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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	59,020	0	0	59,020
Year 2	59,020	0	0	59,020
Year 3	59,020	0	0	59,020
Year 4	59,020	0	0	59,020
Year 5	59,020	0	0	59,020
Year 6	59,020	0	0	59,020
Year 7	59,020	0	0	59,020
Year 8	59,020	0	0	59,020
Year 9	59,020	0	0	59,020
Year 10	59,020	0	0	59,020
<b>Total</b>	590,200	0	0	590,200
<b>Total number of crediting years</b>	10 Years			
<b>Annual average over the crediting period</b>	<b>59,020</b>			<b>59,020</b>

### B.7. Monitoring plan

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

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**Data / Parameter Table 2.**

<b>Data / Parameter:</b>	<b>B<sub>biomass,y</sub></b>	
Methodology reference	AMS-I.C	
Data unit	Mass or volume	
Description	Net quantity of biomass consumed in year y	
Measured/calculated /default	Measured	
Data source	Plant Record	
Value(s) of monitored parameter	5113 kg/hour	
Measurement/ Monitoring equipment		
	Type of meter	Weighing machine
	Location of meter	Confirmed during verification
	Accuracy of meter	Confirmed during verification
	Serial number of meter	Confirmed during verification
	Calibration frequency	Confirmed during verification
	Date of Calibration/ validity	Confirmed during verification
	Reference No. of Calibration Certificate	Confirmed during verification
	Calibration Status	Confirmed during verification
Frequency of Measuring/reading/	<p><u>Monitoring:</u> The quantity of the biomass consumed will be measured using weigh bridge.</p> <p><u>Data Type:</u> Measured and archived</p> <p><u>Archiving Procedure:</u> Electronic</p> <p><u>Responsibility:</u> Stores in-charge will be responsible for maintaining the records of the biomass consumed in project. Stock in charge will maintain a inventory recording the opening and closing balance annually.</p> <p><u>Cross-check:</u> Cross checking the measurements using mass/energy balance.</p>	
Recording frequency	Continuously and estimate using annual mass/energy balance	
Calculation method (if applicable)	<p>Sum of quantities of rice husk consumption in a monitoring period</p> <p>The moisture content in order to determine the quantity of dry biomass will be determined by reputed laboratory.</p>	
QA/QC procedures	<p>Weigh bridge used will be calibrated by an external agency once in a year.</p> <p>Cross-check the measurements with an annual energy balance that is based on purchased quantities (e.g. with sales receipts) and stock changes.</p>	

Purpose of data	Not Applicable
Additional comments	Not Applicable

<b>Data / Parameter:</b>	<b>NCV<sub>k</sub></b>
Methodology reference	AMS-I.C
Data unit	kcal/kg
Description	Net Calorific Value of biomass type k
Measured/calculated/default	Measured
Data source	Lab analysis report of NCV
Value(s) of monitored parameter	3200
Measurement/Monitoring equipment	Calorimetry - third party lab analysis.
Measuring/reading/recording frequency	Once in the first year of the crediting period
Calculation method (if applicable)	Calorimetry
QA/QC procedures	If the measurement results differ significantly from previous measurements or other relevant data sources, conduct additional measurements
Purpose of data	emissions reduction calculations
Additional comments	NA

<b>Data / Parameter:</b>	<b>T</b>
Methodology reference	AMS-I.C
Data unit	°C
Description	Temperature of steam generated
Measured/calculated/default	Measured using calibrated meters
Data source	Plant records
Value(s) of monitored parameter	216

Measurement/ Monitoring equipment		
	Type of meter	<b>Temperature gauge</b>
	Location of meter	Not Applicable
	Accuracy of meter	Confirmed during verification
	Serial number of meter	Confirmed during verification
	Calibration frequency	Confirmed during verification
	Date of Calibration/ validity	Confirmed during verification
	Reference No. of Calibration Certificate	Confirmed during verification
	Calibration Status	Confirmed during verification
Frequency of Measuring/reading/	Continuous monitoring, integrated hourly and at least monthly recording	
Recording frequency	Hourly	
Calculation method (if applicable)	NA	
QA/QC procedures	Calibration shall be as per the relevant paragraphs of the "General guidelines for SSC CDM methodologies"	
Purpose of data	Calculation of baseline emission	
Additional comments	NA	

<b>Data / Parameter:</b>	<b>Pressure</b>	
Methodology reference	AMS-I.C	
Data unit	kg/cm <sup>2</sup>	
Description	Pressure of flowing exhaust steam at the outlet	
Measured/calculated /default	Measured	
Data source	Plant records	
Value(s) of monitored parameter	21	
Measurement/ Monitoring equipment	Pressure gauge	
	Type of meter	Pressure gauge
	Location of meter	Steam outlet
	Accuracy of meter	1%
	Serial number of meter	SPG-01/DT-01
	Calibration frequency	Annually
	Date of Calibration/ validity	
	Reference No. of Calibration Certificate	
Calibration Status	Calibrated	

Measuring/reading/recording frequency	Continuous monitoring with monthly recording
Calculation method (if applicable)	Direct reading from Pressure gauge
QA/QC procedures	Calibration shall be as per the relevant paragraphs of the “General guidelines for SSC CDM methodologies”
Purpose of data	NA
Additional comments	NA

<b>Data / Parameter:</b>	$Q_{c,i}$
Methodology reference	AMS-I.C
Data unit	Ton/year
Description	Quantity of fossil fuel combusted in the project in year y
Measured/calculated/default	Measured
Data source	Plant records
Value(s) of monitored parameter	0
Measurement/Monitoring equipment	weigh bridge for coal and level gauge for diesel
Measuring/reading/recording frequency	Continuous measurement with monthly recording/ compilation
Calculation method (if applicable)	NA
QA/QC procedures	NA
Purpose of data	NA
Additional comments	NA

<b>Data / Parameter:</b>	$PE_{FF,y}$
Methodology reference	AMS-I.C
Data unit	tCO <sub>2</sub> /yr

Description	Project emissions from fossil fuel combustion in year y	
Measured/calculated /default	Calculated based on Plant records & Invoices of fossil fuel consumption	
Data source	Plant Record	
Value(s) of monitored parameter applied with basis	0	
Measurement/ Monitoring equipment		
	Type of meter(s)	Not applicable
	Location of meter(s)	Not applicable
	Accuracy of meter(s)	Not applicable
	Serial number of meter(s)	Not applicable
	Calibration frequency	Not applicable
	Date of Calibration/ validity	Not applicable
	Reference No. of Calibration Certificates	Not applicable
Calibration Status	Not applicable	
Frequency of Measuring/reading	Determine once in the first year of the crediting period	
Recording frequency	One year	
Calculation method (if applicable)	$PE_{FF,y} = \text{Quantity of fossil fuel} * \text{Emission Factor}$	
QA/QC procedures	N/A	
Purpose of data	Project emission calculation	
Additional comments	N/A	

<b>Data / Parameter:</b>	<b>EG<sub>thermal,y</sub> (SDG-7)</b>
Methodology reference	AMS-I.C
Data unit	TJ
Description	Net quality of thermal energy supplied by the project activity during the year y
Measured/calculated /default	Calculated
Data source	Plant Record
Value(s) of monitored parameter applied with basis	XXXXX (Average annual generation for 10 years)



Measurement/ Monitoring equipment		
	Type of meter(s)	Not applicable
	Location of meter(s)	Not applicable
	Accuracy of meter(s)	Not applicable
	Serial number of meter(s)	Not applicable
	Calibration frequency	Not applicable
	Date of Calibration/ validity	Not applicable
	Reference No. of Calibration Certificates	Not applicable
	Calibration Status	Not applicable
Frequency of Measuring/reading	N/A	
Recording frequency	N/A	
Calculation method (if applicable)	Heat generation is determined as the difference of the enthalpy of the steam and the sum of the enthalpies of the feed-fluid. The respective enthalpies determined based on the mass (or volume) flows, the temperatures, the Steam tables is used to calculate the enthalpy as a function of temperature	
QA/QC procedures	N/A	
Purpose of data	To calculate baseline emission	
Additional comments	N/A	

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

<b>Data / Parameter:</b>	<b>SDG 13</b>
Purpose:	Take urgent action to combat climate change and its impacts (same parameter is used to monitor EA03)
Describe the related environment /social/ SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.	Mitigation of climate change. Reduction global warming

Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate “harmless” condition or demonstrate Impact on SDG		
	Parameter to be monitored	GHG emission reductions (tCO2/year)
	Frequency of monitoring	Annual
	Legal /regulatory / corporate limits (if any)	N/A
	QA/QC	Reduction of Greenhouse gases results in clean environment
Remarks	Data will be archived in paper & electronically for a period of 2 years beyond the end of crediting period or of the last issuance of credits for this project activity, whichever occurs later.	

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

<b>Data / Parameter:</b>	<b>Educational services improved or not</b>
Purpose:	<i>To demonstrate positive impacts of aspects wrt baseline scenario / BAU / pre-existing scenario and to demonstrate that they do not cause any net harm to environment / society or have an impact on SDG as per selected indicators.</i>

Describe the related environment /social/ SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.	The employees will receive on job training as per training needs. It imparts a positive impact by helping employees in all-round development. Technical and Non-Technical trainings provided to employees as per the training needs											
Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate “harmless” condition or demonstrate Impact on SDG	<table border="1"> <tr> <td colspan="2" data-bbox="508 516 1414 558"></td> </tr> <tr> <td data-bbox="508 558 808 621">Parameter to be monitored</td> <td data-bbox="816 558 1414 621">Number of trainings</td> </tr> <tr> <td data-bbox="508 621 808 684">Frequency of monitoring</td> <td data-bbox="816 621 1414 684">Annual</td> </tr> <tr> <td data-bbox="508 684 808 747">Legal /regulatory / corporate limits (if any)</td> <td data-bbox="816 684 1414 747">-</td> </tr> <tr> <td data-bbox="508 747 808 810">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	Number of trainings	Frequency of monitoring	Annual	Legal /regulatory / corporate limits (if any)	-	QA/QC	Records will be maintained and archived till the end of the crediting period
Parameter to be monitored	Number of trainings											
Frequency of monitoring	Annual											
Legal /regulatory / corporate limits (if any)	-											
QA/QC	Records will be maintained and archived till the end of the crediting period											
Remarks												

<b>Data / Parameter:</b>	<b>New short-term jobs (&lt; 1 year) created</b>											
Purpose:	<i>To demonstrate positive impacts of aspects wrt baseline scenario / BAU / pre-existing scenario and to demonstrate that they do not cause any net harm to environment / society or have an impact on SDG as per selected indicators.</i>											
Describe the related environment /social/ SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.	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="508 1409 1414 1451"></td> </tr> <tr> <td data-bbox="508 1451 808 1514">Parameter to be monitored</td> <td data-bbox="816 1451 1414 1514">Employment records</td> </tr> <tr> <td data-bbox="508 1514 808 1577">Frequency of monitoring</td> <td data-bbox="816 1514 1414 1577">Annual</td> </tr> <tr> <td data-bbox="508 1577 808 1640">Legal /regulatory / corporate limits (if any)</td> <td data-bbox="816 1577 1414 1640">Employment is in compliance with the Labour Act</td> </tr> <tr> <td data-bbox="508 1640 808 1703">QA/QC</td> <td data-bbox="816 1640 1414 1703">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												

<b>Data / Parameter:</b>	<b>Long-term jobs (&gt; 10 year) created</b>								
Purpose:	<i>To demonstrate positive impacts of aspects wrt baseline scenario / BAU / pre-existing scenario and to demonstrate that they do not cause any net harm to environment / society or have an impact on SDG as per selected indicators.</i>								
Describe the related environment /social/ SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.	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	<table border="1"> <tr> <td>Parameter to be monitored</td> <td>Employment records</td> </tr> <tr> <td>Frequency of monitoring</td> <td>Annual</td> </tr> <tr> <td>Legal /regulatory / corporate limits (if any)</td> <td>Employment is in compliance with the Labour Act</td> </tr> <tr> <td>QA/QC</td> <td>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									

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

<b>Data / Parameter:</b>	<b>Suspended particulate matter (SPM) emissions (EA05)</b>
Purpose:	To demonstrate compliance of Environment aspects to legal/regulatory/corporate requirements or to demonstrate that they do not cause any net harm to environment/society or have an impact on SDG as per selected indicators.
Describe the related environment /social/ SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.	Suspended particulate matter (SPM) may create Air pollution. 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 <b>(EA05)</b> .

Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate “harmless” condition or demonstrate Impact on SDG							
	Parameter to be monitored	SPM from project operation					
	Frequency of monitoring	6 Month					
	Legal /regulatory / corporate limits (if any)	The Air (Prevention & Control of Pollution) Act 1981					
	QA/QC	Reduction of Greenhouse gases results in clean environment					
Program of Risk Management Actions to mitigate risk related to aspect (if any for aspects assessed to be harmful)	<b>S.No.</b>	<b>Action and targets</b>	<b>Responsibility</b>	<b>Resource Requirement</b>	<b>Target to be Achieved by (insert date)</b>	<b>Key Performance Indicators (KPI)</b>	<b>Targets achieved on (insert date)</b>
	1	Suspend particulate matter (SPM) may create Air pollution to reduce the effect as per the The Air (Prevention & Control of Pollution ) Act 1981	Project owner	1	01/01/2017	Air Pollution monitoring system	End of the project life
	Date of Closing the Program:						

**B.7.3. Sampling plan**

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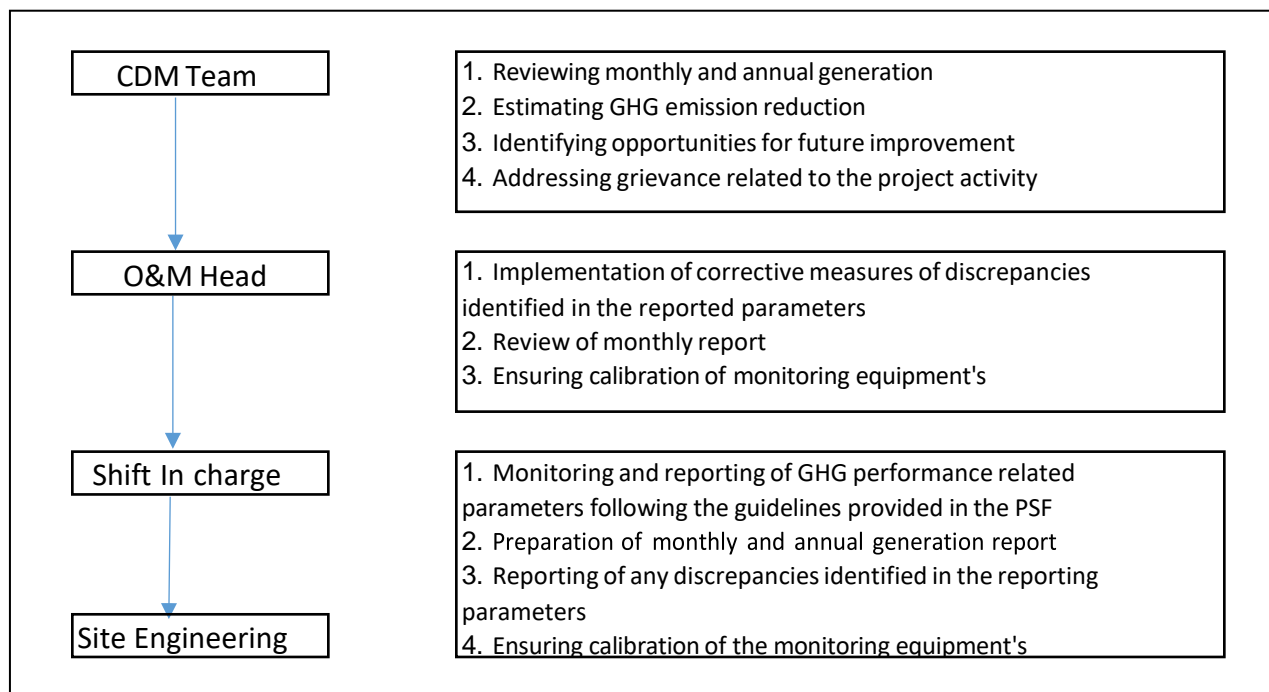
**B.7.4. Other elements of the monitoring plan**

The monitoring plan is developed in accordance with the modalities and procedures for CDM project activities and is proposed for biomass based thermal generation project being implemented. The monitoring plan, which will be implemented by the project owner describes about the monitoring

organization, parameters to be monitored, monitoring practices, quality assurance, quality control procedures, data storage and archiving.

This section details the steps taken to monitor the GHG emissions reductions from the project.

The Monitoring Plan for this project has been developed to ensure that from the start, the project is well organized in terms of the collection and archiving of complete and reliable data.



### 1. Organization and Management

Prior to the start of the crediting period, clear roles and responsibilities will be assigned to all staff involved in the in project activities. The project developers will have an appointed person-in-charge on-site, who will be responsible for monitoring the project emission reductions and data management. All staff involved in the collection of data and records will be coordinated by this person.

### 2. Data Monitoring and Collection and Quality Assurance and Quality Control (QA&QC)

Monitoring is conducted according to option (b) "(i) Metering the thermal and/or electrical energy produced". Data monitored for activity purposes will be recorded at the appropriate frequency by the project developer. A person-in-charge will be responsible for managing the collection, storage, and archiving of all pertinent data and records. All such data will be archived electronically, and regularly backed-up. All data required for verification and issuance will be retained for at least two years following the end of the crediting period or the last issuance of project ACC, whichever occurs later. For quality assurance, data and records will be cross-checked by the designated person-in-charge prior to storage and archiving to identify possible errors or omissions. Data will thus have been checked for anomalies or other monitoring issues prior to being forwarded to will perform a regular final check of the data and analyse project performance prior to any verification.

Procedures will be developed to deal with possible monitoring data adjustments and uncertainties, such as cases of missing or incorrect data, in addition to emergencies.

### **3. Maintenance and Calibration of Monitoring Equipment**

All equipment will be calibrated and maintained in accordance with manufacturers' recommendations to ensure measurement accuracy. Records of calibration and maintenance will be retained as part of the monitoring system.

### **4. Staff training**

Training is conducted on site to ensure that staff is capable to perform their designated tasks at high standards. This will include specific training before the start of crediting period and further as necessary to warrant that they understand the importance of complete and accurate data and records for monitoring. In addition to this, qualified personnel will be designated to handle and operate monitoring equipment at the project site.

### **5. Emergency Preparedness**

In case of equipment malfunction or breakdown, prompt corrective actions will be carried out to minimise the impact upon the project activity. Repairs will be carried out according to the manufacturer's recommendations. Procedures will be developed to deal with possible monitoring data adjustments and uncertainties, in addition to emergencies.

## **Section C. Start date, crediting period type and duration**

### **C.1. Start date of the Project Activity**

Start date of the project activity is 01/01/2017

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

Expectation operational lifetime of the project activity is 20 years

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

Crediting period of the project activity is 10 years

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

Start date : 01/01/2017

End date: 31/12/2026

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

10 years and 00 months

## Section D. Environmental impacts

### D.1. Analysis of environmental impacts

The project activity involves the use of renewable biomass as fuel for thermal energy generation and displacement of fossil fuels. There is no adverse impact by the project activity on air, water and soil. It has only positive impacts in terms of GHG emission reduction.

### D.2. Environmental impact assessment and management action plans

There are no negative environmental and/or socio-economic impacts due to the project. The project activity does not involve any major construction activity. It primarily requires the installation of boiler and turbine within the project premises, interfacing the generators with the State Electricity Board by setting up HT transmission lines and installation of other accessories.

As per LIST OF PROJECTS OR ACTIVITIES REQUIRING PRIOR ENVIRONMENTAL CLEARANCE<sup>14</sup> thermal power projects Thermal Power plants up to 15MW based on biomass are exempt. Our project activity is biomass-based steam generation for captive use. Therefore, EIA is not required

Thus there are no any significant impacts due to implementation of project activity on air, water, soil quality and ambience are envisaged due to the project activity.

## Section E. Environmental and social safeguards

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<https://tspcb.cgg.gov.in/Environment/List%20of%20Projects%20requiring%20EC%20as%20per%20Schedule%20to%20EIA%20Notification.pdf>



### E.1. Environmental safeguards

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Impact of Project Activity on		Information on Impacts, Do-No-Harm Risk Assessment and Establishing Safeguards								Project Owner's Conclusion		
		Description of Impact <i>(positive or negative)</i>	Legal/voluntary corporate requirement / regulatory/voluntary corporate threshold Limits	Do-No-Harm Risk Assessment <i>(choose which ever is applicable)</i>			Risk Mitigation Action Plans for aspects marked as Harmful		Performance indicator for monitoring of impact		Ex-ante scoring of environmental impact	Explanation of the Conclusion
				Not Applicable	Harmless	Harmful	Operational Controls	Program of Risk Management Actions	Monitoring parameter frequency monitoring and of	Ex- Ante scoring of the environmental impact (as per scoring matrix Appendix-02)		
<p><b>Environmental Aspects on the identified categories</b><sup>15</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 operating principles, then the Project Activity is unlikely to cause any harm (is safe) 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 (may be un-safe) and shall be indicated as <b>Harmful</b></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>	

<sup>15</sup> sourced from the CDM SD Tool and the sample reports are available ( <https://www4.unfccc.int/sites/sdcmicrosite/Pages/SD-Reports.aspx> )

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					shall be indicated as <b>Harmless</b> /If the project has a positive impact on the environment mark it as "harmless" as well.						
<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	
<b>Environment – Air</b>	SO <sub>x</sub> emissions (EA01)	Emission of SO <sub>x</sub> from biomass fired boiler is negligible. Hence, environmental impact can be neglected.	The Air (Prevention & Control of Pollution) Act 1981	Not Applicable	Harmless	Not Applicable	Not Applicable	Not Applicable	Stack will be used for monitoring and will be measured at an interval of 6 months.	0	As per the MoEF notification, biomass power plants with installed capacity up to 15MW are exempt from EIA. Hence, it is assessed to be "harmless".
	NO <sub>x</sub> emissions (EA02)	Combustion of biomass generate small quantity of NO <sub>x</sub> as compared to the coal based thermal power plant. Hence, environmental impact can be neglected.	The Air (Prevention & Control of Pollution) Act 1981	Not Applicable	Harmless	Not Applicable	Not Applicable	Not Applicable	Stack will be used for monitoring and will be measured at an interval of 6 months.	0	As per the MoEF notification, biomass power plants with installed capacity up to 15MW are exempt from EIA. Hence, it is assessed to be "harmless".
	CO <sub>2</sub> emissions (EA03)	The project does not cause any emissions in the project scenario.	The Air (Prevention & Control of Pollution) Act 1981	Not Applicable	Harmless	Not Applicable. No Action Required	Not Applicable	Not Applicable	The CO <sub>2</sub> emission reduction due to use of rice husk instead of burning coal.  The amount of carbon dioxide saved from releasing into atmosphere is proportional to the steam generation using the biomass. In the Project Measurement	+1	Therefore, emission reductions are expected to be reduced which will be regularly monitored and verified ex-post and therefore is eligible to be scored.

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									devices having good accuracy and procured from reputed manufacturers have been installed at site for the purpose of monitoring the various parameters of the project.		
<i>CO emissions (EA04)</i>	Both coal based or biomass based boiler emit some amount of CO. As biomass is a carbon neutral fuel, CO generation from biomass can be neglected. Apart from that, plant used to operate boiler at optimum combustion efficiency, which leads to lower emission of CO.	The Air (Prevention & Control of Pollution) Act 1981.	Not Applicable	Harmless	Not Applicable	Not Applicable	Not Applicable	Harmless As rice husk is carbon neutral fuel hence not applicable, low emissions occur in the project scenario and therefore is not expected to or does not cause harm compared to coal. This parameter is harmless and hence no scoring is done for this.	0		As rice husk is carbon neutral fuel hence not applicable, low emissions occur in the project scenario and therefore is not expected to or does not cause harm compared to coal. This parameter is harmless and hence no scoring is done for this.
<i>Suspended particulate matter (SPM) emissions (EA05)</i>	Generation of SPM is common for both biomass fired boiler and coal fired boiler. However, as per the MoEF notification, biomass power plants with installed capacity up to 15MW are Exempt from EIA. The project does not cause any emissions in the project scenario	The Air (Prevention & Control of Pollution) Act 1981	Not Applicable	Harmless	Not Applicable	Not Applicable	Not Applicable	Stack will be used for monitoring and will be measured at an interval of 6 months.	+1		As per the MoEF notification, biomass power plants with installed capacity up to 15MW are exempt from EIA. As per the Consent To Operate, the project comes under orange category. There are SPM emissions which are below the standard value therefore it will be positively scored.
<i>Fly ash generation (EA06)</i>	Fly ash is generated as a residue of biomass combustion and is disposed as per the PCB Regulation.  Emission of fly ash is very less and can be ignored.	The Air (Prevention & Control of Pollution) Act 1981	Not Applicable	Harmless	Not Applicable	Not Applicable	Not Applicable	Follows PCB regulations and can also be measured by the measuring efficiency of ESP by calculating the	0		Fly ash is generated as a residue of biomass combustion and is Disposed as per the PCB regulation. This parameter is harmless and hence no

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									inlet and outlet SPM.		scoring is done for this.
<i>Non-Methane Volatile Organic Compounds (NMVOCs) (EA07)</i>	The project does not cause any emissions in the project scenario.	The permissible limit defined in the environment clearance shall be adhered.	Not Applicable	Harmless	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	0	As fossil fuel power plants (predominantly, coal) in the baseline scenario also release NMVOCs during operation and the project owner has also to fulfil the conditions, as per the environment clearance, the impact due to release of NMVOCs on environment is considered as zero. Hence, it is scored 0
<i>Odor (EA08)</i>	The project does not cause any emissions in the project scenario.	The Air (Prevention & Control of Pollution) Act 1981	Not Applicable	Harmless	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	0	As the project does not cause any odor emissions. Hence, it is scored 0.
<i>Noise Pollution (EA09)</i>	Noise will be generated during the operation of turbine and generators involved in the project activity. However, similar noise is also felt during the operation of baseline fossil fuel power plants.	The Noise Pollution (Regulation and Control) Rules, 2000	Not Applicable	Harmless	Not Applicable	Not Applicable	Not Applicable	The persons exposed to high noise generating equipment shall use protective Equipment (PPE) like ear plugs/ear muffs etc.		0	No significant noise pollution is involved when compared with the baseline power plants. Hence, this parameter is not scored. Hence, it is scored 0
<i>Others (EA10)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
<i>Add more rows if required</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

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	<i>and corresponding notation with EA as prefix)</i>											
<b>Environment – Land</b>	<i>Solid waste Pollution from Plastics (EL-01)</i>	Not Applicable	Plastic Waste (Management and Handling) Rules, 2016	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	No Action Required	Not Applicable	No significant plastic waste is expected from the project activity during operational phase Hence, this parameter will not be scored.	
	<i>Solid waste Pollution from Hazardous wastes (EL02)</i>	Not Applicable	Hazardous and Other Wastes (Management and Transboundary Movement) Amendment Rules, 2016	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	No hazardous waste used in project activity and hence not scored	
	<i>Solid waste Pollution from Bio-medical wastes (EL03)</i>	Not Applicable	Bio-medical Waste Management Rules, 2016	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	No significant bio-medical waste will be generated from the project activity. Hence, this parameter will not be scored.	
	<i>Solid waste Pollution from E-wastes (EL04)</i>	The project does not produce e-waste pollution is anticipated through the operation of the project.	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	No significant Solid waste Pollution from E-wastes will be generated from the project activity. Hence, this parameter will not be scored.	
	<i>Solid waste Pollution from</i>	The project does not deploy batteries for storage as this project is grid connected. No solid	Batteries (Management and Handling) Rules	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	

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	<i>Batteries (EL05)</i>	waste pollution from batteries is anticipated									
	<i>Solid waste Pollution from end-of-life products/equipment (EL06)</i>	Not Applicable	Solid Waste Management Rules, 2016	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	<i>Soil Pollution from Chemicals (including Pesticides, heavy metals, lead, mercury) (EL07)</i>	Not Applicable	Not Applicable	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	No Action Required	Not Applicable	No significant soil pollution from chemicals during operation phase of the project activity
	<i>land use change (change from cropland/forest land to project land) (EL08)</i>	Not applicable	Not applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not applicable
	<i>Others (EL09)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	<i>Add more rows if required</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
<b>Environment – Water</b>	<i>Reliability/ accessibility of water supply (EW01)</i>	Not Applicable	The Water (Prevention & Control of Pollution) Act 1974	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	No significant Reliability/ accessibility of water supply during operation phase of the project activity.

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<i>Water Consumption from ground and other sources (EW02)</i>	Not Applicable	Permission for abstraction of Ground water under Environmental (Protection) Act 1986	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	No ground water will be consumed in all sites of the project activity & necessary permission to be obtained from concerned local authority in case use ground water in future.
<i>Generation of wastewater (EW03)</i>	Not Applicable	The Water (Prevention & Control of Pollution) Act 1974	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	There is no significant effect as provisions of septic tank and soak pits will be provided onsite for treatment and disposal of sewage, thereby minimizing the impacts of wastewater discharge.
<i>Wastewater discharge without/with insufficient treatment (EW04)</i>	Not Applicable	The Water (Prevention & Control of Pollution) Act 1974	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
<i>Pollution of Surface, Ground and/or Bodies of water (EW05)</i>	Not Applicable	The Water (Prevention & Control of Pollution) Act 1974	Not Applicable	No Action Required	No Action Required	Not Applicable	Not Applicable	No Action Required	Not Applicable	Not Applicable	No significant Pollution of Surface, Ground and/or Bodies of water during operation phase of the project activity
<i>Discharge of harmful chemicals like marine pollutants / toxic waste (EW06)</i>	Not Applicable	Costal Regulation Zone (CRZ) 2019	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
<i>Others (EW07)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

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	<i>Add more rows if required</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
<b>Environment – Natural Resources</b>	<i>Conserving mineral resources (ENR01)</i>	As the project uses rice husk as a fuel, significant amount of coal (which is the most common mineral of India) is saved by this project activity.	In India, there is no government regulation for using mineral.	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	<i>Protecting/enhancing plant life (ENR02)</i>	Not Applicable	In India, there are no comprehensive regulations and standards to ascertain for species diversity	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	No significant effect on species diversity is anticipated
	<i>Protecting/enhancing species diversity (ENR03)</i>	No significant effect on Forests is anticipated.	The Forest (Conservation) Act 1980 & 1981	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	<i>Protecting/enhancing forests (ENR04)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	<i>Protecting/enhancing other depletable natural resources (ENR05)</i>	Plant has installed energy efficient boiler and auxiliary to conserving energy.	Energy Conservation Act 2001	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable



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	<i>Conserving energy (ENR06)</i>	No significant effect on species diversity anticipated.	In India, there are no comprehensive regulations and standards to ascertain for species diversity	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	<i>Replacing fossil fuels with renewable sources of energy (ENR07)</i>	The project utilizes renewable biomass to generate thermal energy which will replace the thermal energy generated by fossil fuel	No legal standard available.	Since the Impact is positive and cause no harm to the environment further Risk assessment is Not Applicable	Harmless	Not Applicable	Not Applicable	Not Applicable	Considering the occurrence of emission reductions through the steam generation from the Biomass project. This parameter will be monitored through the monthly steam generation from the proposed Biomass Project. Monthly	+1	The project activity is unlikely to cause any harm related to this indicator. Hence this parameter is scored
	<i>Replacing ODS with non-ODS refrigerants (ENR08)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	<i>Others (ENR09)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	<i>Add more rows if required</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
<b>Net Score:</b>			<b>+3</b>	<b>+3</b>							

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<b>Project Owner's Conclusion in PSF:</b>	Yes	The Project Owner confirms that the Project Activity will not cause any net harm to Environment.
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**E.2. Social Safeguards**

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Impact of Project Activity on	Information on Impacts, Do-No-Harm Risk Assessment and Establishing Safeguards					Project Owner's Conclusion	
	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

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				Not Applicable	Harmless	Harmful	Operational/ Management Controls	Monitoring parameter and frequency of monitoring (as per scoring matrix Appendix-02)	Ex- Ante scoring of social impact of the project	Ex- Ante description and justification/explanation of the scoring of social impact of the project
<b>Social Aspects on the identified categories<sup>16</sup> indicated below.</b>	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
<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 12 (c) and Paragraph 13 (f)	Paragraph 23	
<b>Social - Jobs</b>	Long-term jobs (> 10 year) created/ lost (SJ01)	The project activity generates long term job opportunities during the operation the project activity.	Host country minimal wage requirements.  Regulations on Minimum Wage for Employees working by Labor Contract <sup>17</sup> .	Not Applicable	Harmless  As the impact is positive in nature	Not Applicable	Not Applicable	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.

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

<sup>17</sup> <https://thukyluat.vn/vb/decree-90-2019-nd-cp-2019-based-minimum-wages-applied-to-employees-under-labour-contracts-68a65.html#VanBanTA>

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	<i>New short-term jobs (&lt; 1 year) created/ lost (SJ02)</i>	The project activity generates short term job opportunities during the operation the project activity.	Host country minimal wage requirements.  Regulations on Minimum Wage for Employees working by Labor Contract.	Not Applicable	Harmless  As the impact is positive in nature	Not Applicable	Not Applicable	No of Seasonal/ Contractual/ Temporary Jobs to be monitored on annual basis.	+1	The project is unlikely to cause any harm.
	<i>Sources of income generation increased / reduced (SJ03)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	<i>Avoiding discrimination when hiring people from different race, gender, ethnics, religion, marginalized groups, people with disabilities (SJ04)  (Human rights)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
<b>Social - Health &amp; Safety</b>	<i>Disease prevention (SHS01)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	<i>Occupational health hazards (SHS02)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

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<i>Reducing / increasing accidents / Incident s/fatality (SHS03)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
<i>Reducing / increasing crime (SHS04)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
<i>Reducing / increasing food wastage (SHS05)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
<i>Reducing / increasing indoor air pollution (SHS06)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
<i>Efficiency of health services (SHS07)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
<i>Sanitation and waste management (SHS08)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
<i>Other health and safety issues (SHS09)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

Project Submission Form

	<i>Add more rows if required</i>									
<b>Social - Education</b>	<i>specialized training/ education to local personnel (SE01)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	<i>Educational services improved or not (SE02)</i>	The employees will receive on job training as per training needs. It imparts a positive impact by helping employees in all-round development.	None	Not Applicable	Harmless It is a positive impact.	Not Applicable	Not Applicable	No. of Trainings	+1	This is a positive impact.
	<i>Project-related knowledge dissemination effective or not (SE03)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	<i>Other educational issues (SE03)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	<i>Add more rows if required (SE04)</i>									
<b>Social - Welfare</b>	<i>Improving/deteriorating working conditions (SW01)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	<i>Community and rural</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

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	<i>welfare (indigenous people and communities)</i> (SW02)									
	<i>Poverty alleviation (more people above poverty level)</i> (SW03)	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	<i>Improving / deteriorating wealth distribution / generation of income and assets</i> (SW04)	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	<i>Increase / or / deteriorating municipal revenues</i> (SW05)	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	<i>Women's empowerment</i> (SW06) (Human rights)	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	<i>Reduced / increased traffic</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

Project Submission Form

	<i>congestion (SW07)</i>									
	<i>Exploitation of Child labour (Human rights) (SW08)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	<i>Minimum wage protection (Human rights) (SW09)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	<i>Abuse at workplace. (With specific reference to women and people with special disabilities / challenges) (Human rights) (SW10)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	<i>Other social welfare issues (SW11)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	<i>Avoidance of human trafficking and</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable



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	<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>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	<i>Provisions of resettlement and human settlement displacement</i> <i>(Human rights)</i> <i>(CW14)</i>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	<i>Add more rows if required</i>									
<b>Net Score:</b>			<b>+3</b>							

<b>Project Owner's Conclusion in PSF:</b>	The Project Owner confirms that the Project Activity will not cause any net harm to society.
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## Section F. United Nations Sustainable Development Goals (SDG)

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UN-level SDGs	UN-level Target	Declared Country-level SDG	Defining Project-level SDGs			
			Project-level SDGs	Project-level Targets/Actions	Contribution of Project-level Actions to SDG Targets	Monitoring
<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 need 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>

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<b>Goal 1: End poverty in all its forms everywhere</b>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
<b>Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture</b>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
<b>Goal 3. Ensure healthy lives and promote well-being for all at all ages</b>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
<b>Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all</b>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
<b>Goal 5. Achieve gender equality and empower all women and girls</b>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
<b>Goal 6. Ensure availability and sustainable management of water and sanitation for all</b>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
<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 mix. 7.a By 2030, enhance international cooperation to	Yes	7.2.1 Renewable energy share in the total energy consumption	The project activity includes installation of 25 TPH of renewable energy capacity that will deliver	7.2.1 Renewable energy share in the total energy consumption  7.a.1 International	The biomass steam boiler contributes directly to achieve the SDG target, because the project activity delivers renewable energy, which would otherwise	The net thermal energy supplied to the boiler by the project activity is continuously monitored through temperature and pressure installed at the custody of utility

Project Submission Form

	<p>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.</p> <p>7.b By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support</p>			<p>zero emission annually. Quantity of net biomass supplied to boiler by project activity in year will replace equivalent amount of coal feed to the boiler.</p> <p>16.97 MW thermal of energy generation</p>	<p>financial flows to developing countries in support of clean energy research and development and renewable energy production, including in hybrid systems</p> <p>7.b.1 Installed renewable energy-generating capacity in developing countries (in watts per capita)</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 women and men, including for young people and persons with disabilities,</p>	<p>Yes</p>	<p>Project activity supports creation of short term and long term job opportunities during the 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 25 no of people during the project lifetime.</p>	<p>Project creates new employment and generates income for 25 no of people during the</p>	<p>8.5.2 Employment per the national labour and company law.</p> <p>8.8.2 Maintains company HR policy to create standard operating procedures (SOPs) to</p>	<p>Project owner monitors the implantation of the policies and employee grievances if any through the separate HR manager and site in charge.</p>

Project Submission Form

	and equal pay for work of equal value  8.8 Protect labor rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment			Through Project activity economic development has been achieved in the project location by creating opportunities to the other allied services and indirect employment.	project lifetime. 15 Long term jobs and 10 short term jobs will be provided	follow and maintain safe and secure work environment and by paying the wages as per the minimum wages act of the country.	Quantity of employment will be monitored through employment records.
<b>Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation</b>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
<b>Goal 10. Reduce inequality within and among countries</b>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
<b>Goal 11. Make cities and human settlements inclusive, safe, resilient, and sustainable</b>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
<b>Goal 12. Ensure sustainable consumption and production patterns</b>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
<b>Goal 13. Take urgent action to combat climate change and its impacts</b>	13.2 Integrate climate change measures into national	Yes	Emission reductions achieved per year	The project activity through implementation of 25TDP of Biomass	13.2 Integrate climate change measures into national	Emission reduction achieved per year	Quantity of steam produced by the boiler its temperature and pressure will be monitored. Quantity of thermal

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	policies, strategies and planning  Indicator1 3.2.2: Total greenhouse gas emissions per year.			based energy generation unit will result in reduction 59,020tCO <sub>2</sub> /year	policies, strategies and planning		energy generated is multiplied with emission
<b>Goal 14. Conserve and sustainably use the oceans, seas, and marine resources for sustainable development</b>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
<b>Goal 15. Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss</b>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
<b>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</b>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
<b>Goal 17. Strengthen the means of implementation and revitalize the global partnership for</b>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

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sustainable development							
<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		Diamind

## Section G. Local stakeholder consultation

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

The local stakeholders were identified and informed about the proposed project activity by notice and verbal invitation in nearby local villages and by sending individual invitation describing briefing the scope, nature and description of the project. On project specific case, it was 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. Explanation was given on how such thermal energy projects by using biomass help in providing clean energy and thereby help in mitigating impacts due to Global Warming and about the employment opportunities.

Meeting Location	Invitation Date	Meeting Date
Dholpur, Rajasthan	10/08/2016	10/09/2016

BBMFIDPL adopted an approach of contacting the persons personally through personalized invitations. The local stakeholders were then invited to submit their opinion and comments.

A local stakeholder meeting was also organized by BBMFIDPL management, inviting representatives from local community. The meeting was conducted at 10/09/2016 at the plant premises. The minutes of meeting were made and kept for further reference.

Following stakeholder were invited:

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

The stakeholders attended the consultation are:

### 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.

The details of the comments / queries by various stakeholders and their reply are presented below:



<b>Stakeholder concerns</b>	<b>Response</b>
Does this project require new skills and how are you going to provide it?	The engineers and technicians to be employed for the project will undergo enhancement of skill through appropriate training as required for the type of activity to be performed.
How would locals be employed by the company??	Employment opportunities are available in both technical and non-technical areas. For technical jobs qualified persons have been employed, however for non-technical jobs like security and transportation, construction preference has been for employment of local persons.
Can we use the ash in paddy field?	This ash can be used as fertilizer for agriculture

### G.3. CONSIDERATION OF COMMENTS RECEIVED

>> All the queries received from stakeholders are responded by the PP representative. Please refer above. No negative comments received from any of the stakeholders.

### Section H. Approval and authorization

>> Host country approval is not required. Hence, not applicable

**APPENDIX 1. CONTACT INFORMATION OF PROJECT OWNERS**

<b>Project Owner name (as per LON/LOA)</b>	Enen Green Service Private Limited
<b>Country</b>	India
<b>Address</b>	506,T4,RPS Savana, Sector 88, Faridabad
<b>Telephone</b>	9953935506
<b>Fax</b>	NA
<b>E-mail</b>	enengreen@gmail.com
<b>Website</b>	
<b>Contact person</b>	Ruchika Tiwari

<b>Project Owner name (as per LON/LOA)</b>	Bhole Baba Milk Food Industries (Dholpur Private Limited)
<b>Country</b>	India
<b>Address</b>	M-23,22 A7 24 Mezzanine Floor Hemkunt Chamber, 89 Nehru Place, New Delhi-110019
<b>Telephone</b>	9953935506
<b>Fax</b>	NA
<b>E-mail</b>	enengreen@gmail.com
<b>Website</b>	
<b>Contact person</b>	Madhukar Anand Singh

**APPENDIX 2. AFFIRMATION REGARDING PUBLIC FUNDING**

Not applicable

**APPENDIX 3. APPLICABILITY OF METHODOLOGY(IES)**

Refer to Section B.6.1

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

Refer to Section B.6.2

### APPENDIX 5. FURTHER BACKGROUND INFORMATION ON MONITORING PLAN

Refer to Section B.7

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

Refer to Section G.2

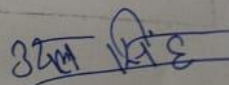
		OCCUPATION	SEX (M/F)	SIGNATURE	REMARK
2	S.C. Rajpur	RAJPUR	M	[Signature]	the selected location for site work is green house production - Project locality
3	Uttam Chakraborty	HR	M	[Signature]	Reduce CO2 emission.
4	Rajon Mohan Shorif	Production Manager	M	[Signature]	Consumption of less mass instead of natural source of energy/fuel
5	Ajinkya Sitaram	PM	M	[Signature]	उत्पादन के लिए सड़क
6	Rajneesh Chandra	Owner	M	[Signature]	Good for environment.
7	P. K. Singh	Plant Manager	M	[Signature]	होना ही है पर 30%
8	Iskhan Mohammad	Boiler	M	[Signature]	Good project to environment & reduce CO2
9	N.K. Sharma	P & A	M	[Signature]	परिष्कार के दिन अभी है।
10	एश्वर चंद्र (अश्वर चंद्र)	Boiler operator	M	[Signature]	Good for production.
11	Kamal Gupta	MANAGER	M	[Signature]	परिष्कार के लिए उत्तम है।
12	अश्वर चंद्र	MANAGER	M	[Signature]	परिष्कार के लिए उत्तम है।
13	अश्वर चंद्र (अश्वर चंद्र)	MANAGER	M	[Signature]	परिष्कार के लिए उत्तम है।
14	अश्वर चंद्र (अश्वर चंद्र)	MANAGER	M	[Signature]	परिष्कार के लिए उत्तम है।
15	Harmish Chand	MANAGER	M	[Signature]	परिष्कार के लिए उत्तम है।
16	Laksh Singh	Plant Operator	M	[Signature]	परिष्कार के लिए उत्तम है।
17	Ravindra Sharma	MANAGER	M	[Signature]	परिष्कार के लिए उत्तम है।
18	Surendra Kumar	MANAGER	M	[Signature]	परिष्कार के लिए उत्तम है।
19	Jalim Bhat	B. MIT	M	[Signature]	परिष्कार के लिए उत्तम है।
20	अश्वर चंद्र	B. MIT	M	[Signature]	परिष्कार के लिए उत्तम है।

Local Stakeholder Feedback Form	
व्यक्ति का नाम	हरिश चन्द्र
गाँव	कानीपूरा
फोन नंबर	
क्या आप परियोजना से अवगत हैं?	हाँ
क्या परियोजना का निर्माण और संचालन स्थानीय रोजगार में योगदान प्रदान करता है?	हाँ
क्या परियोजना गतिविधि स्थानीय गांवों को प्रभावित करने वाले किसी प्रकार का खतरनाक अपशिष्ट उत्पन्न करती है?	नहीं
क्या परियोजना निर्माण मिट्टी की गुणवत्ता या मिट्टी के कटाव को प्रभावित करता है?	नहीं
क्या परियोजना निर्माण भूजल की गुणवत्ता और मात्रा को प्रभावित करता है?	हाँ
क्या परियोजना निर्माण और संचालन से वायु प्रदूषण होता है?	नहीं
क्या परियोजना संचालन ध्वनि प्रदूषण और छाया झिलमिलाहट समस्या का कारण बनता है?	नहीं
क्या परियोजना निर्माण का स्थानीय आबादी या पशु या पौधों की प्रजातियों पर कोई नकारात्मक प्रभाव पड़ता है?	नहीं
क्या परियोजना विकासकर्ता स्थानीय समुदाय के लिए किसी सामाजिक विकास गतिविधियों में योगदान देता है?	हाँ
आपको परियोजना के बारे में क्या पसंद है?	प्रदूषण मुक्त
आपको परियोजना के बारे में क्या पसंद नहीं है?	माल सार्वजनिक
कोई अन्य प्रश्न/टिप्पणियां	—

हरिश चन्द्र  
Signature

Local Stakeholder Feedback Form	
व्यक्ति का नाम	S.C Raipur
गाँव	Jhil Kalwa
फोन नंबर	
क्या आप परियोजना से अवगत हैं?	हाँ
क्या परियोजना का निर्माण और संचालन स्थानीय रोजगार में योगदान प्रदान करता है?	हाँ
क्या परियोजना गतिविधि स्थानीय गांवों को प्रभावित करने वाले किसी प्रकार का खतरनाक अपशिष्ट उत्पन्न करती है?	नहीं
क्या परियोजना निर्माण मिट्टी की गुणवत्ता या मिट्टी के कटाव को प्रभावित करता है?	नहीं
क्या परियोजना निर्माण भूजल की गुणवत्ता और मात्रा को प्रभावित करता है?	नहीं
क्या परियोजना निर्माण और संचालन से वायु प्रदूषण होता है?	नहीं
क्या परियोजना संचालन ध्वनि प्रदूषण और छाया झिलमिलाहट समस्या का कारण बनता है?	नहीं
क्या परियोजना निर्माण का स्थानीय आबादी या पशु या पौधों की जातियों पर कोई नकारात्मक प्रभाव पड़ता है?	नहीं
क्या परियोजना विकासकर्ता स्थानीय समुदाय के लिए किसी सामाजिक विकास गतिविधियों में योगदान देता है?	हाँ
आपको परियोजना के बारे में क्या पसंद है?	प्रदूषण मुक्त
आपको परियोजना के बारे में क्या पसंद नहीं है?	शुद्ध सड़क है
किसी अन्य प्रश्न/टिप्पणियां	हूँ

Local Stakeholder Feedback Form	
व्यक्ति का नाम	अदल सिंह
गाँव	
फोन नंबर	
क्या आप परियोजना से अवगत हैं?	हाँ
क्या परियोजना का निर्माण और संचालन स्थानीय रोजगार में योगदान प्रदान करता है?	हाँ
क्या परियोजना गतिविधि स्थानीय गांवों को प्रभावित करने वाले किसी प्रकार का खतरनाक अपशिष्ट उत्पन्न करती है?	नहीं
क्या परियोजना निर्माण मिट्टी की गुणवत्ता या मिट्टी के कटाव को प्रभावित करता है?	नहीं
क्या परियोजना निर्माण भूजल की गुणवत्ता और मात्रा को प्रभावित करता है?	नहीं
क्या परियोजना निर्माण और संचालन से वायु प्रदूषण होता है?	नहीं
क्या परियोजना संचालन ध्वनि प्रदूषण और छाया झिलमिलाहट समस्या का कारण बनता है?	नहीं
क्या परियोजना निर्माण का स्थानीय आबादी या पशु या पौधों की प्रजातियों पर कोई नकारात्मक प्रभाव पड़ता है?	नहीं
क्या परियोजना विकासकर्ता स्थानीय समुदाय के लिए किसी सामाजिक विकास गतिविधियों में योगदान देता है?	हाँ
आपको परियोजना के बारे में क्या पसंद है?	प्रदूषण मुक्त
आपको परियोजना के बारे में क्या पसंद नहीं है?	सब सही है
कोई अन्य प्रश्न/टिप्पणियां	—

  
 Signature

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

>>Not applicable

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

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



<b>Crediting Period(s)</b>	<b>Crediting period(s)</b>		<b>Period</b> (start & end dates)	<b>ERs as per registered PDD/MR/Project documents</b>	<b>Credits issued</b>	
	Crediting Period (Shall start on or after 1 Jan 2016)	Fixed 10 year				
		Renewable (7 years, with 2 approved renewals)	1 <sup>st</sup>			
			2 <sup>nd</sup>			
			3 <sup>rd</sup>			
	Period for which Credits have been issued					
	Period for which Credits have been requested but not issued					-
	Period for which Credits have never been requested for issuance (No monitoring reports submitted)					-
Period for which Credits have never been requested for issuance prior to CDM de-registration					-	
Remaining Crediting period, after de-registration, for which Credits have not been issued by the program , subject to a ceiling of 10 years as allowed under the GCC Program					-	

<b>Details of Previous Issuance Requests</b>	<b>Issuance Request</b>	<b>Period</b> (start & end dates)	<b>ERs as per registered PDD</b>	<b>Quantity of Credits requested to be issued</b>	<b>Quantity of Credits issued</b>
	1 <sup>st</sup>				
	2 <sup>nd</sup>				
	3 <sup>rd</sup>				
	4 <sup>th</sup>				
	5 <sup>th</sup>				
	Add rows .....				
	<b>Total</b>				
	<b>List any open issues in the Validation and last Verification Report (e.g., FARs, if any) and how they have been addressed</b>				
<b>Any other relevant information that has not been reported in the registered documents and that may have adverse impacts on the environmental integrity of the Project Activity</b>					
<b>Provide the list of all the registered documents related to this project, as available on the program’s website and the corresponding URLs.</b>					

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

**>>Not Applicablle**

**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>18</sup>;</li> </ul> </li> </ul>

<sup>18</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)

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

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GLOBAL CARBON COUNCIL

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