VALIDATION REPORT

GÜN GÜNEŞ ENERJİSİ ELEKTRİK ÜRETİM SANAYİ VE TİCARET A.Ş.

ANTALYA SOLAR POWER PLANT

IN

TURKEY

PROJECT NUMBER:614

Organizational Unit:	Re Carbon Ltd.		
Project Title:	Antalya Solar Power Plant		
Project Number:	**Client:**		**Current PDD Version:**
614	Gün Güneş Enerjisi Elektrik Üretim Sanayi ve Ticaret A.Ş.		03
Date of First Issue:	**Date of Current Version:**	**Version Number:**	**Number of Pages:**
02/01/2023	22/02/2023	02	230

Summary:

Host Country: Turkey

Project is Reviewed Against:

☒ Kyoto Protocol ☒ UNFCCC CDM rules and regulations and associated documents

☒ Gold Standard rules and regulations ☐ Other (Please Specify)

Methodology: ACM0002 **Version:** 21.0

Average Annual Emission Reduction Estimate: 30,323 tCO_2e

Project Size: ☒ Large Scale ☐ Small Scale ☐ Micro Scale

Type of Crediting Period:	**Crediting Period Start Date:**
☒Renewable ☐ Fixed	01/01/2021
Project Developers:	Gün Güneş Enerjisi Elektrik Üretim Sanayi ve Ticaret A.Ş.

Validation Stages:

☒ Desk Review ☒ Site Visit (remote**)** ☒ Follow-up Interviews

☒ Resolution of Outstanding Issues

Validation Findings: During the validation 21 Corrective Action Requests and 01 Clarification Requests were raised, all of which were closed out before the issuance of this validation report. 00 Forward Action Requests were raised during the validation all of which shall be addressed during the initial verification of the proposed project activity.

In summary, it is Re Carbon Ltd.'s opinion that the project activity "Antalya Solar Power Plant" in Turkey, as described in the PDD, version 03, dated 17/02/2023, meets all relevant UNFCCC requirements for the CDM, GS and all relevant host Party criteria and correctly applies the baseline and monitoring methodology ACM0002, version 21.0. Hence, Re Carbon Ltd. requests the registration of the proposed project activity as a GS project activity.

Validation Team Leader:	Fikriye Seda ATABEK	**Indexing Terms:**
Validation Team Members:	Seza DANIŞOĞLU – Financial Expert	☒No distribution without permission of the client or responsible organizational unit

Approved By (Technical Reviewer):	**Name:**	**Signature:**	☐ Limited Distribution
	Sandeep KANDA		☐ Unrestricted Distribution

Abbreviations

BM : Build Margin
CAR : Corrective Action Request
CDM : Clean Development Mechanism
CER : Certified Emission Reduction(s)
CL : Clarification request
CM : Combined Margin
CO_2 : Carbon dioxide
CO_2e : Carbon dioxide equivalent
DNA : Designated National Authority
DOE : Designated Operational Entity
DR : Document Review
EF : Emission Factor
EIA : Environmental Impact Assessment
ER : Emission Reductions
ERPA : Emission Reduction Purchase Agreement
FAR : Forward Action Request
FSR : Feasibility Study Report
GHG : Greenhouse gas(es)
GS : Gold Standard
GS4GG: Gold Standard for Global Goals
GWP : Global Warming Potential
I : Interview
IPCC : Intergovernmental Panel on Climate Change
IRR : Internal Rate of Return
kWh : Kilo Watt Hour
LoA : Letter of approval
MoV : Means of Validation
MW : Mega Watt
MWh : Mega Watt Hour
NCV : Net Calorific Value
NGO : Non-governmental Organisation
ODA : Official Development Assistance
OM : Operating Margin
PDD : Project Design Document
PD : Project Developer(s)
tCO2e : Tonnes of CO2 equivalents
UNFCCC: United Nations Framework Convention on Climate Change

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1. EXECUTIVE SUMMARY – VALIDATION OPINION

Re Carbon Ltd. performed the validation of the “Antalya Solar Power Plant” in “Turkey” between 24/06/2022 and 02/01/2023. The validation was performed on the basis of UNFCCC criteria for the Clean Development Mechanism (CDM), Gold Standard for Global Goals (GS4GG) and Host Party criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

As a result of this validation, Re Carbon Ltd. concludes the following:

☒ The review of the project design documentation and the subsequent follow-up interviews have provided Re Carbon Ltd. with sufficient evidence to determine the fulfillment of all stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the CDM and Gold Standard for Global Goals. Therefore, Re Carbon Ltd. recommends the project for registration by the Gold Standard.

☐ The review of the project design documentation and the subsequent follow-up interviews have not provided Re Carbon Ltd. with sufficient evidence to determine the fulfillment of all stated criteria. Therefore, Re Carbon Ltd. do not recommend the project for registration by the Gold Standard and will inform the project developer(s) and the Gold Standard on this decision.

2. INTRODUCTION

2.1. Objective

Re Carbon Ltd. was appointed by "Gün Güneş Enerjisi Elektrik Üretim Sanayi ve Ticaret A.Ş." to perform the validation of the "Antalya Solar Power Plant" in Turkey through a contract, dated 08/07/2021. The objective of this validation activity is to have an independent third party for the assessment of the project design, and to ensure a thorough assessment of the proposed project activity against the applicable CDM and GS4GG requirements. In particular;

- the project's baseline is assessed against "ACM0002: Grid-connected electricity generation from renewable sources – Version 21.0"
- the project's monitoring plan is assessed against "ACM0002: Grid-connected electricity generation from renewable sources – Version 21.0"
- the project's additionality justification is assessed against "Tool for the demonstration and assessment of additionality – Version 7.0"
- the projects compliance with the requirements of Article 12 of the Kyoto Protocol, the CDM Modalities and Procedures as agreed in the Marrakech Accords under decision 3/CMP.1, the annexes to this decision, subsequent decisions and guidance made by COP/MOP & CDM Executive Board and other relevant rules, including the Host Country legislation and sustainability criteria
- CDM Validation and Verification Standard for project activities version 3.0
- CDM Project Standard for project activities version 3.0
- GS4GG version 1.2 and other relevant GS4GG requirements

Validation is a requirement for all GS projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of verified emission reductions (VERs).

2.2. Scope

The scope of the validation is the independent and objective review of the Project Design Document (PDD). The PDD is reviewed against the relevant criteria (see 2.1) and decisions by the CDM Executive Board, including the approved baseline and monitoring methodology. The validation was based on the guidance given in the CDM Validation and Verification Standard for project activities version 3.0, CDM Project Standard for project activities version 3.0, GS4GG version 1.2 and other relevant GS4GG requirements.

The validation team employed a risk-based approach to assess the completeness and accuracy of the claims and conservativeness of the assumptions in the PDD. The main focus of the validation team is to identify the significant risks for the project implementation and the generation of CERs. The validation is not meant to provide any consulting towards the project developers. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the project design.

The only purpose of the validation is its usage during the registration process as part of the GS project cycle. Therefore, Re Carbon Ltd. cannot be held liable by any party for decisions made or not made based on the validation opinion, that will go beyond that purpose.

2.3. GHG Project Description

Antalya Solar Power Plant is operated by Gün Güneş Enerjisi Elektrik Üretim Sanayi ve Ticaret A.Ş. The project activity is located in Büyükalan Neighbourhood in Akseki district of Antalya province in Turkey. The project activity includes PV panels (HT72-156M-BF-400 Bifacial with Transparent Backsheet type PV modules) having a module area of 182,153 m2. Total number of panels that will be installed in the scope of this project is 82,484. The installed capacity is 23.40 MWe total. The average annual generated energy of 46,736,532 kWh will be able to deliver a reduction in emissions of around 30,323 tCO2e (tons of carbon dioxide equivalent) per annum. The purpose of the project is to generate clean energy by solar power and providing the energy to the Turkish national grid.

In addition, plant load factor is the ratio between the actual energy generated by the plant to the maximum possible energy that can be generated with the plant working at its rated power. For a duration of an entire year is calculated as 22.8 %. Calculation is given below:

(46,736.532 MWh)/(23.4 MWe)*1/(365*24 hours)*100= 22.8 %

Start date of project activity is 16/12/2020 which corresponds to the date of PV module agreement. The crediting period is 5 years. First crediting period is between 01/01/2021 and 31/12/2025.The emission reduction calculations were validated by the VVB via a detailed review of the baseline calculation Excel Sheets.

2.4. Parties Involved

Gün Güneş Enerjisi Elektrik Üretim Sanayi ve Ticaret A.Ş. is the private entity project participant in the project and host country is Turkey.

3. METHODOLOGY

The validation of proposed GS project activity includes the following phases:

- Assessment whether the project design of the proposed GS project activity meets the relevant CDM and GS requirements, via a desk review of the PDD between 24/06/2022 and 02/01/2023.
- Assessment whether the applied methodology "ACM0002: Grid-connected electricity generation from renewable sources – Version 21.0", was applied correctly, including the baseline selection and monitoring plan.
- Assessment of the additionality argument of the project activity against the rules and guidance given in "Tool for the demonstration and assessment of additionality – Version 07.0"
- A remote site visit was conducted on 30/06/2022 in order to assess the implementation process of the project activity and to confirm stakeholders' comments.
- Assessment of data and calculation of greenhouse gas emission reductions.
- Issuance of the validation report
- Independent technical review (ITR)
- Approval of the validation report and request of registration

The Validation Protocol is used for the assessment of each requirement during the execution of validation activities and is given in Annex-1 of this validation report.

The Validation Protocol consists of two tables:

- Table 1 (GS-PDD-FORM, GS4GG and CDM Validation Requirements)
- Table 2 (Resolution of Corrective Action, Forward Action and Clarification Requests)

The usage description of Table-1 in the Validation Protocol is explained in Table 3-1 below:

Table 3-1: Explanation about Table-1 in the Validation Protocol

Question	Reference	MoV*	Findings, comments, references and document sources	Draft & Final Conclusion
The requirements related with the GS-PDD Form, GS4GG and CDM validation Standards and/ or Procedures	Gives reference to the legislation or documents where the relevant requirement is found	Explains how conformance with question is investigated. Examples of means of validation are Document Review (DR), Interview (I) and Not Applicable (NA)	Is used to elebarote and discuss the question and/or conformance to the question by giving related references and document sources based on which the finding is issued or evidence is checked	Either acceptable based on the evidence provided (OK), non-compliance with the requirement (CAR), further clarification (CL) due to insufficient, unclear or not transparent information, forward action request (FAR) that needs to be solved during the first verification

The usage description of Table-2 in the Validation Protocol is explained in Table 3-2 below:

Table 3-2: Explanation about Table-2 in the Validation Protocol

Draft Report Clarifications, Forward Action and Corrective Action Requests by Validation Team	Ref. to Questions in Table-1	Summary of Project Developers' Response	Validation Team Conclusion
The all CL, FAR and CARs determined during the draft validation report should be listed here	Gives reference to the checklist questions in Table-1 of Validation Protocol	Is used to summarize the responses by project developers regarding the non-conformities	Is used to summarize the responses by validation team and their conclusions

The Validation Protocol is written by the validation team in line with the descriptions above and all the CARs, CLs and FARs are listed in a transparent and clear manner.

3.1. Validation Team and ITR Selection

The appointment process of the validation team takes into account the technical area(s), sectoral scope(s), and the related host country experience required amongst team members for the accurate and thorough assessment of the project design. The relevant GS validation and previous ITR experiences are also assessed during the selection of the team members and the Independent Technical Reviewer (ITR), respectively. The validation team and ITR were assigned to this validation activity on 14/04/2020, taking all the above factors into consideration and as a result of a contract review process.

The validation team members and ITR are listed in Table 3-3 below:

Table 3-3: Validation team and ITR details

Name	Role	Host Country Experience	Scope Coverage	Technical Expertise	Financial Expertise	Involvement*
Fikriye Seda Atabek	Team Leader	☒	☒	☒	☐	DR, R, RA, A
Seza Danışoğlu	Financial Expert	☒	☐	☐	☒	DR, R
Sandeep Kanda	ITR	☒	☒	☒	☒	ITR

* Explanations for the abbreviations used for involvement types are as follows:

A : Administrative

DR : Desk Review

SV : Site Visit

RA : Remote Assessment[1]

R : Reporting

ITR : Independent Technical Review

1 A physical site visit was not executed due to pandemic. Instead of that, alternative means (such as a remote inspection) were executed by the Validation Team in order to carry out the same activities as in a physical on-site inspection by using information and communication technologies (ICT) tools. These include, but are not limited to the following: Teleconference/video or other online meetings, interviews with relevant stakeholders, local authorities, project participants, individuals responsible for data collection, end user and/or beneficiaries of the project, photographic evidence (e.g. project site and the equipment associated with the project) and/or video recordings, satellite images and (where available) checking related documents and/or other publicly available information.

3.2. Desk Review of the PDD and Additional Documents

The basis for the validation activity is the PDD version 01, dated 24/06/2022 which was submitted to the validation team on the same day. This PDD was revised several times due to the raised CARs and CLs, version 03 dated 17/02/2023 being the final version. The PDD was assessed against;

- ACM0002: Grid-connected electricity generation from renewable sources – Version 21.0
- Tool for the demonstration and assessment of additionality – Version 07.0
- Tool to calculate the emission factor for an electricity system – Version 07.0
- the Host Country criteria
- CDM Validation and Verification Standard for project activities version 3.0
- CDM Project Standard for project activities version 3.0
- GS4GG version 1.2 and other relevant GS4GG requirements
- and other relevant documents, rules and regulations listed in section 2.1 of this report

A list of all the documents that were reviewed can be found in Section 6 of this validation report.

3.3. Site Visit(s)

As a part of the validation activities an online (remote) site visit using remote audit techniques (by means of Information and Communication Technology (ICT)) was performed to the project activity site, details of which can be seen in the Table 3-4 below:

Table 3-4: Site visit details

Date	30/06/2022	
Location	Online	
Participant	**Company Name**	**Role in the Organization / Role in the Site Visit**
Hüseyin Güngör	Sarihaliller Village	Muhtar
Yunus Emre Kahveci	Gün Güneş Enerjisi	Plant Chief
Salih Nalinci	Gün Güneş Enerjisi	Technician
Remzi Gökçekli	Gün Güneş Enerjisi	Technician
Hasan Küçükbaş	Gün Güneş Enerjisi	Administrative
Fikriye Seda Atabek	Re Carbon Ltd.	Team Leader

Points Verified	**Source of Information**
To confirm rightness of project description, as per GS PDD and Passport including project components and location	Document review and remote audit interviews with the local stakeholders from Sarihaliller Village
To check the project development and operation	Document review and online site visit
To interview with the local stakeholders about the project and its impacts	Remote audit (online site visit) interviews with the local stakeholders from Sarihaliller Village

3.4. Reporting of Findings via the Validation Protocol

During the validation period, a Validation Protocol (attached in Annex 1 to this validation report) was used to submit the findings to the project developers.

As part of this validation report, please see "**Attachment to Validation Report / GS4GG Audit Techniques Template for Validation**" for details of Audit Techniques used and risk assessment.

In line with the "CDM Validation and Verification Standard", the team reports the non-conformities in the form of Corrective Action Requests (CARs), Clarification Requests (CLs) and Forward Action Requests (FARs). When and for which type of non-conformities CARs, CLs and FARs are raised is explained below:

- The Validation team raises a **CAR** if one of the following occurs:
  - The project developers have made mistakes that influences the ability of the project activity to achieve real, measurable additional emission reductions
  - The CDM and/or GS4GG requirements have not been met
  - There is a risk that emission reductions cannot be monitored or calculated.
- The Validation team raises a **CL** if information is insufficient or not clear or not transparent enough to determine whether the applicable CDM and/or GS requirements have been met.
- The Validation team raises a **FAR** during validation to highlight issues related to project implementation that require review during the first verification of the project activity.

According to these principles total of 21 CARs, 01 CLs and 00 FARs were raised, all of which are listed in the Validation Protocol.

3.5. Follow-Up Interviews

During the validation period follow-up interviews were executed by the validation team in order to further analyze the correctness and accurateness of the information provided. A list of individuals interviewed is given in Section 5 of this Validation Report.

3.6. Resolution of Outstanding Issues

All issues raised as CLs and CARs during this validation activity, were resolved during the written and oral communications between the Project developer(s) and Re Carbon Ltd. validation team members. For the resolution of these non-conformities, the project developer(s) modified the project design, rectified the PDD or provided adequate additional explanations or evidence that satisfy the concerns of the validation team members.

Concerns raised in the desk review, the on-site audit assessments and the follow up interviews and the responses provided for the raised concerns are documented in Annex 1 (Validation Protocol) to guarantee the transparency of the validation process.

The validation timeframe is given in detail in Table 3-5 below:

Table 3-5: Validation Timeframe

Activity	Timeline		Total Days
	From	To	
Desk Review	24/06/2022	27/06/2022	4
Review of PDD v1	27/06/2022	30/06/2022	4
Site Visit	30/06/2022	30/06/2022	1
Issuance of Validation Protocol v1	12/11/2022	12/11/2022	1
Review of PP initial set of responses	14/12/2022	14/12/2022	1
Issuance of Validation Protocol v2	-	-	
Review of PP second set of responses	-	-	
Closing of all CARs and CLs	01/02/2023	01/02/2023	1
Issuance of Validation Report v1	01/02/2023	01/02/2023	1
ITR Process	06/02/2023	24/02/2023	19
Issuance of Validation Report v2	24/02/2023	24/02/2023	1
Submission for Final Approval	24/02/2023	24/02/2023	1
Submission of Final Documents to the PD	27/02/2023	27/02/2023	1

Information or clarifications provided as a response to a CAR, CL or FAR could also lead to a new request. This can also be seen transparently in the Validation Protocol provided in Annex 1 of this Validation Report.

3.7. Internal Quality Control

As a final step of validation, the final documentation including the validation report and annexes must undergo an internal quality control by Re Carbon Ltd. This quality control is also referred to as the “Independent Technical Review” process.

The Independent Technical Review is performed by another Team Leader of RE-Carbon Ltd. who was not involved in the validation activities of this specific project activity. When the appointed Team Leader finalizes the Validation Report, the report is sent to the (for this project specifically appointed) Independent Technical Reviewer who reviews not only the validation report itself, but also all supporting documents such as the emission factor calculations, additionality justifications, relevant excel sheets etc.

Further CLs and CARs may be raised by the Independent Technical Reviewer during this review, in order to cover all the points that may need further clarification.

After all CLs and CARs are closed, the validation report is again reviewed and finally approved by the Team Leader, ITR and the Certification Manager, and the request for registration is submitted to the Project Developer along with the relevant documents.

4. VALIDATION FINDINGS

4.1. Participation Requirements

The project participants are Gün Güneş Enerjisi Elektrik Üretim Sanayi ve Ticaret A.Ş.and GTE Karbon Sürdürülebilir Enerji Eğitim Danışmanlık ve Tic. A.Ş., the former being the project owner and later the project developer.

Turkey is the host country. Turkey ratified the Kyoto Protocol on 5th February of 2009 and put in effect on 13th May 2009. Turkish National Focal Point to the UNFCCC is the Ministry of Environment and Forestry.

Through document review and interview during remote audit, Re Carbon Ltd. Confirmed that the project participants as listed in PDD are correct. It is also confirmed that no entities other than those authorized as project participant are included in the relevant sections of the PDD.

4.2. Project Design

The Project Design Document (PDD) complies with the guidance given in the "Gold Standard for the Global Goals Key Project Information & Project Design Document (PDD)", Version 1.2 issued by Gold Standard in 14/10/2020.

4.3. Project Description

Antalya Solar Power Plant is operated by Gün Güneş Enerjisi Elektrik Üretim Sanayi ve Ticaret A.Ş. The project activity is located in Büyükalan Neighbourhood in Akseki district of Antalya province in Turkey. The project activity includes PV panels (HT72-156M-BF-400 Bifacial with Transparent Backsheet type PV modules) having a module area of 182,153 m2. The installed capacity is 23.40 MWe total. The average annual generated energy of 46,736,532 kWh will be able to deliver a reduction in emissions of around 30,323 tCO2e (tons of carbon dioxide equivalent) per annum. The purpose of the project is to generate clean energy by solar power and providing the energy to the Turkish national grid.

Start date of project activity is 16/12/2020 which corresponds to the date of PV module agreement. The crediting period is 5 years. First crediting period is between 01/01/2021 and 31/12/2025.The emission reduction calculations were validated by the VVB via a detailed review of the baseline calculation Excel Sheets.

The generation license of the project confirming the capacity was issued by Energy Market Regulatory Authority (EMRA) on 03/11/2016.

Through document review and interview during remote audit, Re Carbon Ltd. Confirms that the description provided of the project is accurate, complete, and provides an understanding of the nature of the project.

4.4. Project Boundary

The project supplies electricity to the Turkish grid, which has been validated based on remote audit observation and the provisional acceptance protocols. All the units of the project activity

as well as the power plants connected to the grid are included in the project boundary in line with the requirements of the baseline methodology applied, ACM0002: -Grid-connected electricity generation from renewable sources- version 21.0. This includes the project site and all power plants connected physically to the Turkish national grid. There are no off-grid power plants in Turkish grid.

4.5. Determination of the Baseline Scenario

In line with ACM0002, version 21.0, if the project activity is the installation of a greenfield power plant, the baseline scenario is electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool 07: Tool to calculate the emission factor for an electricity system".

As the methodology directly states the baseline scenario, there is no need to carry out other analyses.

The project supplies electricity generated from solar panels to the national grid. Thus, the PDD correctly identifies baseline scenario comprised of electricity generation from grid-connected power plants in Turkey. The Combined Margin calculations as described in the "Tool to calculate emission factor of an electricity system" version 07.0 has been applied in the PDD.

Based on the validation team's local and sectoral knowledge, remote audit observations and by cross-checking the information with similar relevant projects, it is confirmed that the selected baseline scenario is the prevailing practice in the host country and in line with the host country regulations.

All the assumptions and data used by the PPs are listed in the PDD, including references and sources, all the references and documents used are relevant for establishing the baseline scenario and correctly quoted in the PDD, all relevant national and sectoral policies/regulations considered are listed in the PDD and the identified baseline scenario reasonably represented what would occur in the absence of the proposed project activity.

4.6. Application of the Selected Baseline and Monitoring Methodology or Standardized Baseline

Re Carbon Ltd. Has assessed the relevant information contained in the PDD, remote audit and evidence obtained against the application criteria listed in the methodology. The applicability of this methodology is justified as below:

- The proposed project activity (Antalya Solar Power Plant) is a greenfield, renewable electricity generation project, connected to the Turkish national grid
- The project activity is the installation of 23.4 MWe solar power plant
- The project does not involve capacity addition, a retrofit of (an) existing plant(s) or a replacement of (an) existing plant(s)
- Project activity does not involve switching from fossil fuels to renewable energy sources at the site of project activity
- The project does not involve combined heat and power generation activity

- The geographic and system boundaries for the Turkish national electricity grid can be clearly identified and information on the characteristics of the grid is available.

According to ACM0002 version 21.0, the latest approved tools shall be referenced in PDD like, “Tool to calculate the emission factor for an electricity system” (Version 7.0) and “Tool for the demonstration and assessment of additionality” (Version 7.0), which are the latest versions of the tools valid at the starting time and the above tools are applied to the PDD.

Re Carbon Ltd. Confirms that the selected baseline and monitoring methodology is applicable to the project activity and applies the latest version valid at the time of submitting the project activity for registration.

4.7. Additionality

The additionality of the project has been demonstrated using the “Tool for the Demonstration and Assessment of Additionality”, version 7.0.

In accordance with additionality tool, identification of alternatives, compliance with national regulations, investment analysis and common practice analysis have been checked by the validation team through document review, remote audit and interview. Re Carbon Ltd. Confirms that all data, rationales, assumptions and justifications presented in the PDD and documentation provided by PPs to support the demonstration of additionality are reliable and credible.

Further, detailed round of various discussions between the validation team and PP are documented under the validation protocol have been carried out to correctly apply the tool in the PDD and justify the additionality of the project. These CARs focused on the costs applied in the IRR calculations and the relevant documentary evidence, benchmark and common practice analysis.

4.7.1. Prior CDM consideration

The project cycle is regular as confirmed through GS Preliminary Review. Start date of the project is 16/12/2020, the date of Panel Agreement. First submission date is 24/09/2021, which is within one year of the project start date.

Table 4-1: Timeline of the project activity

Activity	Related Document	Comments
License	License Document	03/11/2016
Environmental Impact Assessment (Final)	EIA document	10/2017
Environmental Impact Assessment Approval	EIA Decision	29/10/2017
Preliminary Project Approval	Approval Document	31/12/2018
PV Module Agreement (start date)	Agreement	16/12/2020
First Index Protocol	Protocol	21/12/2020
Provisional Acceptance No.1 (commissioning date)	Acceptance	31/12/2020

Activity	Related Document	Comments
Main Meter Change Protocol	Protocol	05/04/2021
EPC Contract	Contract	13/04/2021
System Usage Agreement	Agreeement	25/08/2021
Connection Agreement	Agreeement	27/08/2021
Provisional Acceptance No.2	Acceptance	03/09/2021
First Submission to GS	GS Preliminary Review Document	24/09/2021
Provisional Acceptance No.3	Acceptance	15/10/2021
Provisional Acceptance No.4	Acceptance	26/11/2021
Provisional Acceptance No.5	Acceptance	24/12/2021

4.7.2. Project alternatives

The PP identifies following alternatives to the proposed project:

Alternative 1: Proposed project is not undertaken as a VER project activity

Alternative 2: Continuation of the current situation-supply of equal amount of electricity by the newly built grid connected power plants

The list of these alternatives is considered to be complete, viable and realistic and comply with all applicable legislation. The TEIAS statistics have been checked to validate the same.

All the alternatives are in compliance with the national laws and regulations:

- Electricity Market Law

- Law on Utilization of Renewable Energy Resources for the Purpose of Generating Electricity Energy

- Energy Efficiency Law

- Forest Law

- Environment Law

Re Carbon Ltd. Confirms that in the PDD, the identified alternatives are appropriate, credible and complete.

4.7.3. Investment analysis

“Tool for the demonstration and assessment of additionality”, Version 7 is used and Equity IRR is calculated for the financial analysis. Investment decision date has been determined to be the date of PV agreement, 16/12/2020, and the period of assessment including IRR and equity IRR calculations have been chosen accordingly.

Choice of approach

For the investment analysis, the Benchmark Analysis (Option III of Step 2 of Tool 07: Tool for the Demonstration and Assessment of Additionality) is selected in the PDD. The same is accepted since simple cost analysis (Option I) and investment comparison analysis (Option II) are not appropriate in line with the tool. The project accrues financial benefits with the sale of electricity

to the grid and the alternative baseline scenario of the proposed project is the continuation of the supply of electricity by the grid rather than a comparable investment project.

Hence Re Carbon Ltd. Confirms that the adoption of Benchmark analysis (Option III) is appropriate.

Benchmark selection

In line with the requirements of "Tool for the demonstration and assessment of additionality", the benchmark value is taken as figure defined by World Bank for similar project types have been used which has been given as 25% in the "Implementation Completion and Results Report" (Report No: ICR00004069, page 40). For the proposed project, in order to reach this equity IRR values, average electricity tariff must be above 18.57 $c/kWh in the absence of carbon revenue and assuming that initial investment figures are realized so that the investment will become reasonable. VVB confirm the choice of benchmark as appropriate.

Input parameters

PP has calculated project IRR for a 20-year period, which is conservative. All the input parameters used in the financial analysis are taken from approved and trustworthy documents and all references are shown to the validation team. Investment decision date has been determined to be the date of PV agreement, 16/12/2020, and the period of assessment including IRR and equity IRR calculations have been chosen accordingly.

Re Carbon Ltd. Compared the input parameters for the financial analysis included in the PDD and IRR spreadsheet with the parameters stated in the reference documents listed in below table and was able to confirm that the values applied are consistent with the values stated in the references. IRR input documents were valid at time of investment decision. The inputs considered for the IRR calculations have all been verified, as follows:

Parameter	Unit	Value	Reference Document	Date
Installed Capacity	Mwe	23.4	Electricity Generation License	03/11/2016
Annual Electricity Generation	kWh	46,736,532	Electricity Generation License	03/11/2016
Electricity sales tariff	$ Cents/kWh	13.3 (first 10 years) 4.57 (after 10 years)	Renewable Energy Law, https://rapor.epias.com.tr/rapor/xhtml/ptfSmfListeleme.xhtml	25/11/2020
Operation Period	Year	20	-	-
Equity Ratio	%	100	Declaration of PP	-
Capital Investment	USD	~23,377,404	Please see below cost breakdown	
Engineering, procuremen		~11,324,412	EPC Contract	13/04/2021

t, and construction				
PV Panels		~9,927,774	Estimated from the unit price in the Panel Sales Contract	16/12/2020
Operational Cost		~1,944,741	-	-

Calculation and conclusion

Equity IRR has been calculated as 10.76 % in the absence of the carbon revenue. The Benchmark is 25% and it does clearly exceed the resulting project IRR, thus rendering the project activity economically unattractive.

It is appropriate to carry out the IRR analysis for 20 years as it covers the crediting period.

The calculations were verified and found to be correct by Re Carbon Ltd. Similarly, the assumptions used in the calculations were deemed to be correct by Re Carbon.

Sensitivity analysis

Sensitivity analysis has been carried out for Investment Cost (±15%), O&M Costs (±15%), and electricity income (±15%). All the variables not included in sensitivity analysis, which constitute less than 20% do not have material impact on the analysis. Reasonable variations of the above stated parameters were checked as in below:

Fluctuating Indicators	Fluctuations			
	-15%	-10%	+10%	+15%
Investment Cost	14.50	13.13	8.79	7.92
O&M Costs	12.18	11.72	9.75	9.21
Electricity Income	10.76	8.16	13.36	14.65

Investment Costs

The validation team validated the IRR calculations to confirm that the IRR would not cross the benchmark when the investment costs are cut by 15%. With majority of the CAPEX being electromechanical costs, such a reduction is deemed not plausible because of its effect on project's technical capacity, provisioned electricity generation and sales revenue.

Electricity Income

According to local regulations, electricity price is determined daily according to Energy Market Regulatory Authority (EMRA) as defined in the regulations and there exists three tariffs during day, peak and night hours. Thermal power plants and HEPPs with storage facilities have flexibility to schedule their generation at peak hours when the tariff is high. However, solar power plants do not have storage facility therefore may not be able to benefit from high prices realized at when demand is high. According to EMRA figures, electricity tariff fluctuated between 4.3 $c/kWh and 8.6 $c/kWh between 01/04/2014 and 01/02/2016 whereas the weighted average of the tariff has been calculated as 6.2 $c/kWh in this period (Figure 5). The value does not provide any guarantee about the actual selling price as the control on generation period and

tariff is limited and it may not be possible to generate and sell electricity during peak tariff periods. Also, considering that fluctuation in solar power exist and fact that a part of the electricity can be sold through bilateral agreements to free consumers with a discount rate over market price, guarantee price has been taken as reference in investment analysis which also provides input for evaluation of financing institutions. Thus, it is an unrealistic forecast to expect a significant increase of the feed-in-tariff at least for the period of IRR calculations.

The electricity price after 10 years was calculated using average prices at the market. The average prices were taken from database of EPIAS (EPİAŞ RAPORLAMA PLATFORMU (epias.com.tr)).

Therefore, it is not probable to envision a continuous substantial increase for the electricity production that is served to the grid, in order to enhance the equity IRR upwards.

Outcome of Step 2: The proposed project activity is unlikely to be the most financially/economically attractive as indicated in the 'Tool for Demonstration and Assessment of Additionality' (Version 07.0.0), as per Sub Step 2c Para 42b. The additionality of the project activity has been assessed in above section through investment analysis and it is concluded that a financially more viable alternative to the project activity would have led to higher emissions.

It is seen that project is not the most attractive option. Therefore, the project is considered as additional to the baseline scenario.

In conclusion, Re Carbon confirms that this project activity is financially unattractive even after considering the possible fluctuation of the main parameters, and the above analysis is appropriate and in line with paragraph 96-102 of Validation and Verification Standard for Project Activities, version 02.

4.7.4. Barrier analysis

No barrier analysis is used for additionality justification.

4.7.5. Common practice analysis

The Methodological tool "Tool 24: Common Practice", version 03.1 has been applied.

For the common practice analysis, the geographical boundary is selected as the Turkish Electricity Grid to be in line with the methodology.

Following steps were followed in line with the tool:

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

The total capacity of the proposed project is 23.40 MWe. Therefore, the applicable output range is from 11.70 MWe to 35.10 MWe.

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

Applicable geographical area has been selected as the whole host country (Turkey) as per paragraph 1 of Guidelines on Common Practice version 03.1. Projects which apply the same measure as the proposed project have been determined and solar energy projects are selected

as the same energy source type of projects. All the selected plants deliver the same service which is the electricity generation. Applicable output range has been determined and all the power plants are taken from the latest available year 2018. General Directorate of Energy Affairs and EMRA Electricity Production License Database have been used as a main resource. Therefore, all the compared power plants have been operational before the implementation of the project activity.

The list of operational renewable energy projects started before 01/01/2021 as given by the General Directorate of Energy Affairs indicates that investments (counted as 286) is provided to VVB. However, there is no such a solar power plant which is in the range determined for Antalya Solar Power Plant. The common practice sheet has been re-worked by the validation team; compared with other registered projects and found to be correct.

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

Nall = 52

Step 4: within similar projects identified in Step 3, identify those that apply technologies that are different to the technology applied in the proposed project activity. Note their number N_diff

Ndiff=49

Step 5: calculate factor F=1-Ndiff/Nall representing the share of similar projects (penetration rate of the measure/technology) using a measure/technology similar to the measure/technology used in the proposed project activity that deliver the same output or capacity as the proposed project activity.

F=1-N_{diff}/N_{all} =1-(49/52) = 0.06 (< 0.200)

According to the Methodological tool on Common Practice, if the factor F is greater than 0.2 and Nall-Ndiff is greater than 3, then the proposed project is a “common practice”.

For the proposed project, F is less than 0.2, therefore, the proposed project is not common practice within the region.

Re Carbon could validate the conclusion of the PP that the Antalya Solar Power Plant is not a common practice in Turkey.

In summary, it is clearly demonstrated that the project is not a likely baseline scenario and the emission reductions are additional to what would have happened in absence of the project activity”.

4.8. Monitoring

According to ACM0002 version 21.0, the parameter to be monitored is “net electricity supplied by the proposed project to the grid in year y, $EG_{facility,y}$”. The data is continuously measured and recorded at least monthly. The net electricity amount supplied to the grid will be calculated by:

Net Electricity supplied to the grid by Project Activity = Total electricity exported by project activity – Total electricity imported by project activity

EPIAS records will be the main source of data and OSF forms will be used for cross-check.

Plant manager will be responsible for the electricity generated, gathering all relevant data and keeping the records. Generation data will be used to prepare monitoring reports.

There are two meters, main meter and the back-up meter for cross-checking. All meters are jointly inspected and sealed in order to be protected from interference by any of the parties. Installation of meter and data monitoring will be carried out according to the regulations by TEIAS. Data from metering devices will be recorded by TEIAS monthly (through remote reading).

All data will be kept for at least two years after the crediting period for QA/QC purposes. The calibration and maintenance of the meters will be carried out in line with the Bylaw on Metering and Metering Devices. Accordingly, the meters are calibrated and sealed by TEIAS before the commissioning of the power plant. The meters will be calibrated by TEIAS when there is an inconsistency between two devices.

Meters are in class of 0.5s, which means error interval for measuring is in +-0.5% range which is well acceptable according to regulations. Periodic calibration of the meters will be done every 10 years, again as per regulation.

Meters serial numbers have been verified via meter photos as:

	Main Meter	Spare Meter
Serial No.	80269583	42595585
Brand	MAKEL	Landis
Type	C520.AMT.2556	ZMG405CR4
Accuracy Class	0.5	0.05-5(10)
First Index Date	05/04/2021	21/12/2020

Re-consult Ltd. Can confirm that the list of parameters that need to be monitored ex post is complete and consistent with ACM0002 and that the monitoring plan is in compliance with the applied monitoring methodology.

By document review and interview with project owner, it is confirmed by the validation team that the monitoring plan can be properly implemented and all monitoring arrangements are feasible within the project design, and the means of implementation of the monitoring plan, including data management and quality assurance and quality control procedures, are sufficient to ensure that the emission reductions to be achieved by the project activity can be properly reported and verified.

Besides that, the VVB has checked the I-REC Registry (https://registry.irecservices.com/Public/ReportDevices/) and confirms that Antalya Solar Power Plant is not listed in IREC. Similarly, VCS project database

(http://vcsprojectdatabase.org/#/home) was checked and this project isn't available within VCS project database. Given that CDM projects are not applicable in Turkey, no domestic REC scheme is implemented yet and the project does not appear on I-REC and VCS registries, it could be confirmed that no RECs and other VER carbon credits are being issued for the project at the time of validation.

4.9. Calculation of Emission Factor and Emission Reductions

The emission reduction calculation estimations have been done in the PDD as per the latest approved version of the methodology ACM0002 version 21.0. The baseline emissions are calculated based on the emission coefficient multiplied by the expected net electricity generation, which amounts to 46,736,532 kWh per annum.

For calculation of the emission factor of Turkish Grid, "Tool 7: Tool to Calculate the Emission Factor for an Electricity System", version 7.0 has been used.

Publication of Turkish Ministry of Energy and Natural Resources which is indicating Turkey's National Electric Grid Emission Factor for the year of 2020 was used. Publication includes calculated Emission Factor values that are Operating Margin (OM), Growth Based Margin (Build Margin-BM) and Combined Margin (CM) Emission Factors, for the relevant year with usage of the IPCC's Clean Development Methodology Tool 07-V07.0.

According to this publication;

- Operating Margin-OM; 0.7424 tCO2/MWh
- Build Margin-BM; 0.3680 tCO2/MWh

According to the Tool for solar power generation project activities;

wOM = 0.75 and wBM = 0.25

Then:

- Efgrid,CM,y = 0.7424 tCO2/MWh * 0.75 + 0.3680 tCO2/MWh * 0.25 = 0.6488 tCO2/MWh

There are no project or leakage emissions associated with solar power projects. Thus, the emission reductions correspond to the baseline emissions. The project is expected to result in an average annual emission reduction of

Ery = Bey = Egy * Efgrid,CM, = 46,736.532 MWh/year * 0.6488 tCO2/MWh = 30,323 tCO2/year during the first renewable crediting period.

4.10. Environmental Impacts

The solar projects in Turkey are assessed for their environmental impacts by the Ministry of Environment and Urbanization. Based on the project documents submitted by the PP, the project has received "EIA Positive Decision" from Environmental Impact Assessment with notification dated 29/10/2017 (by Ministry of Environment and Urbanization).

Further the impacts, as presented in the PDD have been validated by the validation team and found appropriately described.

The project participants have carried out an analysis of the social, economic and environmental impacts following the GS4GG Safeguarding Principles and Requirements. All the safeguarding

principles are stated, and all the relevant assessment questions included pertaining to the safeguarding principles.

Since the project is a renewable solar power project, it is validated based on interviews, remote audit and expertise of the validation team that safeguarding principles are indicated appropriately.

Quality of Employment: Employment opportunities are envisaged with the coming of the project activity, and for positions, requiring specific skills (such as high voltage equipment) staff will either be trained, or certified staff will be recruited, by the PP. Besides that, the project owner is committed to the safe and healthy working conditions during all phases of the project. All the employees will be trained about health and safety issues during operational phase of the project.

Principle 9.4 Release of Pollutants - Water Quality and Quantity: Appropriate disposal of wastewater as required by the Law on Water Pollution Control will also be monitored via disposal evidences.

Principle 9.11 Endangered Species – Biodiversity: Ecosystem reports will be checked annually to ensure that the project creates no disturbance to the regional habitat.

Principle 9.5 Hazardous and Non-hazardous Waste -Waste Oil: Will be monitored via assessing disposal methods during site visits and checking waste oil disposal records.

Principle 4.2.2 Climate and Energy – Soil Condition: Monitored via assessing soil condition during site visits to make sure there is no erosion. Also solid waste will be collected and handled according to the Solid Waste Control Regulation. They will be collected and transferred to the municipality's solid waste storage facility, periodically.

Principle 3.4.3 Cultural Heritage, Indigenous Peoples, Displacement and Resettlement - Expropriation of the project site: Land acquisition will be checked once in the first verification.

The same has been validated during the remote audit by the team, including discussions with the interviewed stakeholders. These findings are also in line with the findings of the local stakeholder consultations and are also correctly presented in the PDD.

Therefore, through document review and interview during remote audit, Re Carbon Ltd. Confirms that the safeguarding principles assessment has been appropriately conducted for the project.

4.11. Local Stakeholder Comments

In line with the EIA Process requirements, the local stakeholder consultation was held on 09/02/2017 at Toros Dinlenme Tesisleri in Akseki, in city of Antalya which was validated based on documentary evidences verified by the validation team.

The comments of the local stakeholders were more of information seeking nature, which have been compiled and assessed appropriately by the PP. All the queries raised during the consultation process were satisfactorily answered. The conduct of local stakeholder consultation is found adequate. No changes were needed in the project design based on the comments received from the stakeholders.

The grievance mechanism was confirmed with the logbook maintained at the Village Mukhtar (Head) office.

There hasn't been any complaint by the interviewed local stakeholders about noise. Besides that, there hasn't been any complaint regarding the rehabilitation of the site access roads, the dust pollution during the construction activities and the observed adverse impact of project on the biodiversity and flora by the interviewed local stakeholders during the validation remote audit.

4.12. Sampling Plan

Not applicable.

4.13. GS4GG Safeguarding Principles and Requirements

The project participants have carried out an analysis of the social, economic and environmental impacts following the GS4GG Safeguarding Principles and Requirements, version 1.2. All the safeguarding principles are stated, and all the relevant assessment questions included pertaining to the safeguarding principles.

Principle 1 – Human rights: On 10/03/1954, Turkey accepted the European Convention on Human Rights. During the online site visit, people from nearby settlements and plant workers also were interviewed. No complaints were received from them about this subject. As a result, the project developer operates the project adhering to human rights. Re Carbon confirmed that no mitigation measure is required for this indicator.

Principle 2 – Gender equality: ILO Conventions 100, 111, 122 and 142 have all been ratified by Turkey. During the online site visit, people from nearby settlements and plant workers also were interviewed. No complaints were received from them about this subject. As a result, the project developer will operate the project adhering to gender equality and women's rights. Re Carbon confirmed that no mitigation measure is required for this indicator.

Principle 3 – Community health, safety and working conditions: Employees receive training (e.g. HSE, first-aid and so on) in regular basis. For Principle 3, training records will be monitored.

Principle 4 – Sites of Cultural and Historical Heritage, Principle 4.2 Forced Eviction and Displacement and Principle 4.3 Land Tenure and Other Rights, Principle 4.4 - Indigenous people: Re Carbon confirmed that the project includes no structures with historical, cultural, artistic, traditional or religious values or intangible forms of culture. Moreover, all expropriation activities have been finalized. Therefore, no mitigation measure is required for this indicator.

Principle 5 – Corruption: Turkey has accepted a number of anti-corruption conventions, including OECD and UN conventions. Re Carbon confirmed that no mitigation measure is required for this indicator.

Principle 6.1 Labour Rights, Principle 6.2 Negative Economic Consequences : ILO Conventions 29 and 105 on Forced and Compulsory Labor have been ratified by Turkey. Social security documents have been examined by the VVB. Also, during the online site visit, employees were

interviewed. The project does not cause any negative consequences after implementation. Re Carbon confirmed that no mitigation measure is required for this indicator.

Principle 7.1 Emissions, Principle 7.2 Energy Supply: Since the project is a solar power project, it is validated based on interviews, remote audit and expertise of the validation team, the project is expected to have a positive impact on Climate Change by reducing to use of fossil fuels. About the energy supply, the internal consumptions are read from the bi-directional electricity meters. Re Carbon confirmed that no mitigation measure is required for this indicator.

Principle Principle 8.1 Impact on Natural Water Patterns/Flows, Principle 8.2 Erosion and/or Water Body Instability : It is validated based on interviews, and the remote audit, the project does not affect the natural or pre-existing pattern of watercourses, ground-water and/or the watersheds. Re Carbon confirmed that no mitigation measure is required for this indicator.

Principle Principle 9.1 Landscape Modification and Soil, Principle 9.2 Vulnerability to Natural Disaster: Lands were registered as "non-qualified agricultural lands" based on the Project Introduction File. Moreover, it is validated based on the documents, seismic properties and geological situation took into consideration while the construction works took place. Re Carbon confirmed that no mitigation measure is required for this indicator.

Principle 9.3 Genetic Resources: The project activity is not relevant to the use of genetically modified organisms or GMOs since it is a renewable energy power plant. Re Carbon confirmed that no mitigation measure is required for this indicator.

Principle 9.4 Release of pollutants: Domestic solid wastes will be collected and handled according to the Solid Waste Control Regulation. Recyclables will be collected separately and send to the recycling facility, periodically. Domestic wastewater generated will be collected in a cesspool and then conveyed to the closest wastewater treatment system. Waste oil will be collected and disposed according to the Regulation on Waste Oil Control. Re Carbon confirmed that no mitigation measure is required for this indicator.

Principle 9.5 Hazardous and Non-hazardous Waste: Project is expected to create solid, and liquid wastes during its construction. Re Carbon confirmed that no mitigation measure is required for this indicator.

Principle 9.6 Pesticides & Fertilisers: The project is not relevant since it is a renewable energy project. Re Carbon confirmed that no mitigation measure is required for this indicator.

Principle 9.7 Harvesting of Forests: The closest forestry area is 35 km distant from the project area. Re Carbon confirmed that no mitigation measure is required for this indicator.

Principle 9.8 Food: The project is not relevant since it is a renewable energy project. Re Carbon confirmed that no mitigation measure is required for this indicator.

Principle 9.9 Animal husbandry: It is irrelevant to the Project. As a renewable energy power plant, the Project does not involve any animal husbandry. Re Carbon confirmed that no mitigation measure is required for this indicator.

Principle 9.10 High Conservation Value Areas and Critical Habitats: There are no national parks, natural parks, natural protection areas, wildlife protection areas as declared in accordance with the Turkish national legislation. Re Carbon confirmed that no mitigation measure is required for this indicator.

Principle 9.11 Endangered Species: No endemic, endangered and or threatened flora and fauna. Re Carbon confirmed that no mitigation measure is required for this indicator.

Therefore, through document review and interview during remote audit, Re Carbon Ltd. Confirms that the safeguarding principles assessment has been appropriately conducted.

5. LIST OF INDIVIDUALS INTERVIEWED

The list of individuals who were interviewed during the validation period is given in the Table 5-1 below:

Table 5-1: List of individuals interviewed

Reference Number	Means of Interview[2]	Full Name	Title	Organization
I01	SV	Hüseyin Güngör	Sarihaliller Village	Muhtar
I02	SV	Yunus Emre Kahveci	Gün Güneş Enerjisi	Plant Chief
I03	SV	Salih Nalinci	Gün Güneş Enerjisi	Technician
I04	SV	Remzi Gökçekli	Gün Güneş Enerjisi	Technician
I05	SV	Hasan Küçükbaş	Gün Güneş Enerjisi	Administrative
IO6	SV	Fikriye Seda Atabek	Re Carbon Ltd.	Team Leader

[2] SV: Site visit (Remote Assessment); T: Telephone; E: E-mail

6. LIST OF DOCUMENTS REVIEWED

The list of the documents which were reviewed during the validation period is given in Table 6-1 below:

Table 6-1: List of documents reviewed

Document Number	Document Name	Version	Date (dd/mm/yyyy)
D01	Project Design Document	01	24/06/2022
D02	Project Design Document	02	14/12/2022
D03	ER Calculation Excel Sheet	01	24/06/2022
D04	ER Calculation Excel Sheet	02	14/12/2022
D05	Common Practice Analysis Excel Sheet	01	24/06/2022
D06	IRR Excel Sheet	01	24/06/2022
D07	IRR Excel Sheet	02	14/12/2022
D08	Generation License	-	03/11/2016
D09	EIA Positive Decision	-	29/10/2017
D10	EPC Agreement	-	13/04/2021
D11	Feasibility	-	16/01/2015
D12	Meter Documents	-	05/04/2021, 21/12/2020
D13	Panel Agreement	-	16/12/2020
D14	Provisional Acceptance	-	31/12/2020, 03/09/2021, 15/10/2021, 26/11/2021, 24/12/2021
D15	ACM0002 - “Grid connected electricity generation from renewable sources” - Version 21.0	21.0	02/11/2022
D16	CDM Validation and Verification Standard version	3.0	09/09/2021
D17	CDM Project Standard	3.0	09/09/2021
D18	GS4GG Standard	-	-
D19	“Tool for the demonstration and assessment of additionality”	7	23/11/2012
D20	‘‘Tool to calculate the emission factor for an electricity system’’	7	31/08/2018
D21	Social Security Records	-	-
D22	Connection and system usage agreement	-	03/09/2021

Document Number	Document Name	Version	Date (dd/mm/yyyy)
D23	Expropriation Evidences	-	07/03/2017, 31/12/2018
D24	ODA-Declaration-Form	-	17/01/2020
D25	GS7800_GS4GG_Preliminary Review_Final Round	-	24/09/2021
D26	SDG Impact Tool	1	24/06/2022
D27	PV Module Datasheet	-	-
D28	World Bank Document for benchmark	-	19/06/2017-
D29	Preliminary Project Approval	-	-
D30	Logbook Evidences	-	01/02/2023
D31	Project Design Document	03	17/02/2023
D32	Common Practice Analysis Excel Sheet	02	17/02/2023
D33	IRR Excel Sheet	03	17/02/2023

7. VALIDATION TEAM AND ITR COMPETENCE

Mrs. Fikriye Seda ATABEK holds B.Sc. degree in “Chemical Engineering” and a M.Sc. degree in “Energy Science and Technology”. She is a lead auditor and trainer for ISO 50001 and since 2004 has been working in the fields of “Management systems”, “ISO 14064” and “Energy Management in Industry”. She has been involved in more than 100 GS and VCS projects as an ITR, Team Leader, Validator and Verifier. With re-carbon, Seda is a free-lance Team Leader, ITR and a TA 1.2, 2.1 & 3.1. expert. Seda is also a Regional Expert for Türkiye and China.

Prof. Dr. Seza DANISOGLU holds a B.Sc. degree in “Management” from Middle East Technical University/Ankara as well as a M.Sc. in “Business Statistics” and a Ph.D. in “Finance Degrees” from Texas Tech University in Lubbock. Seza an Assistant Professor of Finance with Middle East Technical University in Ankara. She conducts academic research in the areas of investments and banking, teaches courses in Financial Management, Financial Derivatives and Microeconomics and. Seza is also employed as a visiting professor by Texas Tech University during summer semesters. With re-carbon, Seza is a free-lance Financial Expert.

Mr. Sandeep KANDA holds a B.Sc. degree in “Mechanical Engineering”, a M.Sc. degree in “Energy Systems Engineering” from the Indian Institute of Technology/Bombay and a Post Graduate Diploma in “Industrial Safety & Environmental Management” from the National Institute of Industrial Engineering in India. He has more than ten years of work experience with auditing and consultancy firms, seven years thereof with Designated Operational Entities under the CDM. He is experienced in working on diversified areas of energy and environmental management, including policies, Clean Development Mechanism (CDM), Corporate Sustainability Reporting (CSR) Audits, energy audits, utility audits and product development. Sandeep has audited more than 30 CDM projects as an ITR, 40 projects as a Team Leader and 7 PoAs in various capacities, covering a broad range of sectoral scopes, such as Energy industries (renewable-/non-renewable), Energy distribution, Energy demand, Manufacturing industries, Chemical industries, Transport, Metal production, Waste handling & disposal and Agriculture. With re-carbon, Sandeep is a free-lance Team Leader, ITR and a TA 1.1, 1.2, 2.1, 3.1, 4.1, 9.1, 9.2, 13.1, 13.2 & 15.1 expert. Sandeep is also a Regional Expert for China, India, Indonesia Mexico, Nepal, Philippines, Tanzania, Thailand, Türkiye and Vietnam.

7.1. Appointment Certificates

CERTIFICATE OF APPOINTMENT

Within the scope and in strict accordance to the appointments indicated below, the bearer may:

- Participate in assessments conducted by re-carbon Ltd.
- Take the appointed positions within and outside of an assessment team
- Bring specific expertise to assessments

This Certificate of Appointment is valid unless there are changes in the related requirements for the qualification and appointment and/or the personnel's work agreement is terminated. There is no defined validity period for this Certificate. However, The Certificate may be updated, suspended or cancelled at any time, as a result of performance assessments and/or other reasons as defined above.

This Appointment Certificate is granted on the date of **01.08.2022** by:

Christian Johannes
(General Manager)

This Certificate of Appointment is given to

Mrs. Fikriye Seda Atabek

as a confirmation of compliance with re-carbon's internal qualification requirements for the following positions:

SECTORAL SCOPE	TECHNICAL AREA	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT
SS 01: Energy industries	TA 1.1: Thermal energy generation															
	TA 1.2: Renewable	08.02.2022	08.02.2022			08.02.2022	08.02.2022	08.02.2022	08.02.2022	08.02.2022	08.02.2022	08.02.2022	08.02.2022	08.02.2022	08.02.2022	08.02.2022
SS 03: Energy distribution	TA 3.1: Energy distribution	08.02.2022	08.02.2022			08.02.2022	08.02.2022	08.02.2022	08.02.2022	08.02.2022	08.02.2022	08.02.2022	08.02.2022	08.02.2022	08.02.2022	08.02.2022
SS 04: Energy demand	TA 4.1: Energy demand	08.02.2022	08.02.2022			08.02.2022	08.02.2022	08.02.2022	08.02.2022	08.02.2022	08.02.2022	08.02.2022	08.02.2022	08.02.2022	08.02.2022	08.02.2022
SS 13: Waste handling and disposal	TA 13.2: Solid waste and wastewater															
	TA 13.2: Manure															
SS 15: Agriculture	TA 15.1: Agriculture															

SECTORAL SCOPE	TECHNICAL AREA	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT
SS 01: Energy industries	TA 1.1: Thermal energy generation															
	TA 1.2: Renewable	07.07.2022	07.07.2022	07.07.2022	07.07.2022	07.07.2022										
SS 03: Energy distribution	TA 3.1: Energy distribution	07.07.2022	07.07.2022	07.07.2022	07.07.2022	07.07.2022										
SS 04: Energy demand	TA 4.1: Energy demand	07.07.2022	07.07.2022	07.07.2022	07.07.2022	07.07.2022										
SS 13: Waste handling and disposal	TA 13.2: Solid waste and wastewater															
	TA 13.2: Manure															
SS 15: Agriculture	TA 15.1: Agriculture															

COUNTRY EXPERTISE: Turkey, China

CERTIFICATE OF APPOINTMENT

Within the scope and in strict accordance to the appointments indicated below, the bearer may:

- Participate in assessments conducted by re-carbon Ltd.
- Take the appointed positions within and outside of an assessment team
- Bring specific expertise to assessments

This Certificate of Appointment is valid unless there are changes in the related requirements for the qualification and appointment and/or the personnel's work agreement is terminated. There is no defined validity period for this Certificate. However, The Certificate may be updated, suspended or cancelled at any time, as a result of performance assessments and/or other reasons as defined above.

This Appointment Certificate is granted on the date of **01.02.2022** by:

Christian Johannes
(General Manager)

This Certificate of Appointment is given to

Ass. Prof. Dr. Seza Danışoğlu (Financial Expert)

as a confirmation of compliance with re-carbon's internal qualification requirements for the following positions:

SECTORAL SCOPE	TECHNICAL AREA	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT
SS 01: Energy industries	TA 1.1: Thermal energy generation					01.02.2022					01.02.2022					01.02.2022
	TA 1.2: Renewables					01.02.2022					01.02.2022					01.02.2022
SS 02: Energy distribution	TA 2.1: Energy distribution					01.02.2022					01.02.2022					01.02.2022
SS 03: Energy demand	TA 3.1: Energy demand					01.02.2022					01.02.2022					01.02.2022
SS 10: Waste handling and disposal	TA 10.1: Solid waste and wastewater					01.02.2022					01.02.2022					01.02.2022
	TA 10.2: Manure					01.02.2022					01.02.2022					01.02.2022
SS 15: Agriculture	TA 15.1: Agriculture					01.02.2022					01.02.2022					01.02.2022

SECTORAL SCOPE	TECHNICAL AREA	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT
SS 01: Energy industries	TA 1.1: Thermal energy generation					26.05.2022										
	TA 1.2: Renewables					26.05.2022										
SS 02: Energy distribution	TA 2.1: Energy distribution					26.05.2022										
SS 03: Energy demand	TA 3.1: Energy demand					09.06.2022										
SS 10: Waste handling and disposal	TA 10.1: Solid waste and wastewater					09.06.2022										
	TA 10.2: Manure					09.06.2022										
SS 15: Agriculture	TA 15.1: Agriculture					26.05.2022										

COUNTRY EXPERTISE: N/A for Financial Experts

CERTIFICATE OF APPOINTMENT

Within the scope and in strict accordance to the appointments indicated below, the bearer may:

- Participate in assessments conducted by re-carbon Ltd.
- Take the appointed positions within and outside of an assessment team
- Bring specific expertise to assessments

This Certificate of Appointment is valid unless there are changes in the related requirements for the qualification and appointment and/or the personnel's work agreement is terminated. There is no defined validity period for this Certificate. However, The Certificate may be updated, suspended or cancelled at any time, as a result of performance assessments and/or other reasons as defined above.

This Appointment Certificate is granted on the date of **01.08.2022** by:

Christian Johannes
(General Manager)

This Certificate of Appointment is given to

Mr. Sandeep Kanda

as a confirmation of compliance with re-carbon's internal qualification requirements for the following positions:

SECTORAL SCOPE	TECHNICAL AREA	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT
SS 01: Energy industries	TA 1.1: Thermal energy generation	01.08.2022	01.08.2022	01.08.2022	01.08.2022	01.08.2022
	TA 1.2: Renewables	08.02.2022	08.02.2022	08.02.2022	08.02.2022	08.02.2022
SS 02: Energy distribution	TA 2.1: Energy distribution	08.02.2022	08.02.2022	08.02.2022	08.02.2022	08.02.2022
SS 03: Energy demand	TA 3.1: Energy demand	08.02.2022	08.02.2022	08.02.2022	08.02.2022	08.02.2022
SS 10: Waste handling and disposal	TA 10.2: Solid waste and wastewater	08.02.2022	08.02.2022	08.02.2022	08.02.2022	08.02.2022
	TA 10.3: Manure	08.02.2022	08.02.2022	08.02.2022	08.02.2022	08.02.2022
SS 15: Agriculture	TA 15.1: Agriculture	08.02.2022	08.02.2022	08.02.2022	08.02.2022	08.02.2022

SECTORAL SCOPE	TECHNICAL AREA	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT
SS 01: Energy industries	TA 1.1: Thermal energy generation	08.02.2022	08.02.2022	08.02.2022	08.02.2022	08.02.2022
	TA 1.2: Renewables	08.02.2022	08.02.2022	08.02.2022	08.02.2022	08.02.2022
SS 02: Energy distribution	TA 2.1: Energy distribution	08.02.2022	08.02.2022	08.02.2022	08.02.2022	08.02.2022
SS 03: Energy demand	TA 3.1: Energy demand	08.02.2022	08.02.2022	08.02.2022	08.02.2022	08.02.2022
SS 10: Waste handling and disposal	TA 10.2: Solid waste and wastewater	08.02.2022	08.02.2022	08.02.2022	08.02.2022	08.02.2022
	TA 10.3: Manure	08.02.2022	08.02.2022	08.02.2022	08.02.2022	08.02.2022
SS 15: Agriculture	TA 15.1: Agriculture	08.02.2022	08.02.2022	08.02.2022	08.02.2022	08.02.2022

SECTORAL SCOPE	TECHNICAL AREA	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT
SS 01: Energy industries	TA 1.1: Thermal energy generation	07.07.2022	07.07.2022	07.07.2022	07.07.2022	07.07.2022
	TA 1.2: Renewables	07.07.2022	07.07.2022	07.07.2022	07.07.2022	07.07.2022
SS 02: Energy distribution	TA 2.1: Energy distribution	07.07.2022	07.07.2022	07.07.2022	07.07.2022	07.07.2022
SS 03: Energy demand	TA 3.1: Energy demand	07.07.2022	07.07.2022	07.07.2022	07.07.2022	07.07.2022
SS 10: Waste handling and disposal	TA 10.2: Solid waste and wastewater	07.07.2022	07.07.2022	07.07.2022	07.07.2022	07.07.2022
	TA 10.3: Manure	07.07.2022	07.07.2022	07.07.2022	07.07.2022	07.07.2022
SS 15: Agriculture	TA 15.1: Agriculture	07.07.2022	07.07.2022	07.07.2022	07.07.2022	07.07.2022

VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT

VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT

COUNTRY EXPERTISE: China, India, Indonesia, Mexico, Nepal, Philippines, Tanzania, Thailand, Türkiye, Vietnam

8. VALIDATION OPINION

Re Carbon Ltd. performed the validation of the “Antalya Solar Power Plant” in “Turkey” between 24/06/2022 and 02/01/2023. The validation was performed on the basis of UNFCCC criteria for the CDM, Gold Standard for Global Goals (GS4GG) and Host Party criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The validation was performed by a validation team consisting of “Fikriye Seda Atabek as Team Leader, Seza Danışoğlu as Financial Expert and as Sandeep KANDA as ITR” and the project activity was checked against the applicable rules and regulations of CDM including CDM Validation and Verification Standard for project activities version 3.0, CDM Project Standard for project activities version 3.0, GS4GG version 1.2.

Re Carbon Ltd. hereby confirm that the proposed project activity “Antalya Solar Power Plant” in Turkey, applied all relevant EB-guidance as the selected baseline and monitoring methodologies and the associated methodological tools have been applied correctly. The total emission reductions from the project are estimated to be on the average of 30,323 tCO_2e per annum over the selected 5 year crediting period (GS-VERs). The emission reduction forecast was checked and it is deemed likely that the stated amount will be achieved, given that the underlying assumptions do not change.

As a result, the validation team assigned by Re Carbon Ltd. concludes that the proposed Project Activity “Antalya Solar Power Plant” in Turkey, as described in the PDD version 03 dated 17/02/2023.

- meets all relevant Host Country criteria;
- meets all relevant requirements of the GS4GG, UNFCCC for CDM project activities [including Article 12 of the Kyoto Protocol, the Modalities and Procedures for CDM (Marrakesh Accords) and the subsequent decisions and guidance by the COP/MOP and the CDM Executive Board];
- applies correctly the baseline and monitoring methodology ACM0002 version 21.0;
- its additionality is sufficiently justified in the PDD;
- is likely to achieve estimated emission reductions;

Therefore, Re Carbon Ltd. requests the registration of the proposed project activity as a GS project activity.

Fikriye Seda ATABEK	Sandeep KANDA	Esin TUNALI
Team Leader	ITR	Certification Manager
22/02/2023	24/02/2023	27/02/2023

ANNEX 1: VALIDATION PROTOCOL

Table 1 –GS-PDD-FORM, GS4GG and CDM Validation Requirements

Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
Cover Page-Key Project Information					
1. Has the following information been indicated in the cover page of the PDD?	GS-PDD-FORM Ver. 1.2	DR	Please delete guide box on cover page of PDD	CAR-1	OK
1.1. GS ID of the project activity	GS-PDD-FORM Ver. 1.2	DR	Please state GS ID, Time of first submission date and Date of design certification on cover page	CAR-2	OK
1.2. Title of the project activity	GS-PDD-FORM Ver. 1.2	DR	This is available	OK	OK
1.3. Time of first submission date	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-1.	CAR-2	OK
1.4. Date of design certification	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-1.	CAR-2	OK
1.5. Version number of the PDD	GS-PDD-FORM Ver. 1.2	DR	This is available	OK	OK
1.6. Completion date of version	GS-PDD-FORM Ver. 1.2	DR	This is available	OK	OK
1.7. Project developer	GS-PDD-FORM	DR	This is available	OK	OK

*DR= Document Review, I= Interview, SV= Site Visit

Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	Ver. 1.2				
1.8. Project representative	GS-PDD-FORM Ver. 1.2	DR	This is available	OK	OK
1.9. Project Participants and any communities involved	GS-PDD-FORM Ver. 1.2	DR	This is available	OK	OK
1.10. Host country (ies)	GS-PDD-FORM Ver. 1.2	DR	This is available as Turkey.	OK	OK
1.11. Activity requirements applied	GS-PDD-FORM Ver. 1.2	DR	This is available as RE Activity Requirements (GS4GG).	OK	OK
1.12. Scale of the project activity	GS-PDD-FORM Ver. 1.2	DR	This is available as Large Scale.	OK	OK
1.13. Other requirements applied	GS-PDD-FORM Ver. 1.2	DR	This is available	OK	OK
1.14. Methodology (ies) applied and version number	GS-PDD-FORM Ver. 1.2	DR	This is available as ACM0002 - “Grid connected electricity generation from renewable sources” - Version 20.	OK	OK
1.15. Product requirements applied	GS-PDD-FORM Ver. 1.2	DR	This is available as “GHG Emissions Reduction”.	OK	OK
1.16. Project cycle	GS-PDD-FORM Ver. 1.2	DR	This is available	OK	OK

*DR= Document Review, I= Interview, SV= Site Visit

Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
2. Has the estimated sustainable development contributions of the project activity been provided in the relevant tabular format?	GS-PDD-FORM Ver. 1.2	DR	Please use the 2020 EF of Turkey	CAR-3	OK
A. Description of Project					
A.1. Purpose and general description of project					
1. Is the scenario existing prior to the implementation of the project activity including, where applicable, the type of facility where the project activity will take place or replace, described in the PDD?	GS-PDD-FORM Ver. 1.2	DR	The project activity is a greenfield project activity. In PDD timeline, please remove “Expected” and write realized dates Please include other dates in timeline (construction agreement, feasibility, permissions, acceptance,)	CAR-4	OK
2. Is the baseline scenario described as identified in section B4 of the PDD? (If baseline scenario is the same with the scenario existing prior to the start of the project activity, then no need to repeat the description, but it shall be stated in the PDD that both scenarios are the same.)	GS-PDD-FORM Ver. 1.2	DR	Stated	OK	OK
3. Has the PDs provided an estimation of annual average and total GHG emission reductions for the chosen crediting period?	GS-PDD-FORM Ver. 1.2	DR	Stated	OK	OK

*DR= Document Review, I= Interview, SV= Site Visit

Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
4. Is the purpose of the project activity described including how it contributes to the sustainable development of the Host Party?	GS-PDD-FORM Ver. 1.2	DR	The purpose of the project activity is available in the Section A.1 of the PDD.	OK	OK
A.1.1. Eligibility of the project under Gold Standard					
A.1.1.1. Is it described how the project meets the eligibility criteria as per section 3.1.1 of GS4GG Principles & Requirements and the relevant activity requirements?	GS-PDD-FORM Ver. 1.2 GS4GG Principles & Requirements	DR	This is available in the PDD.	OK	OK
A.1.2. Legal ownership of products generated by the project and legal rights to alter use of resources required to service the project					
A.1.2.1. Is it justified that the project owner has full and uncontested legal ownership of the products that are generated under Gold Standard Certification and has legal rights concerning changes in use of resources required to service the	GS-PDD-FORM Ver. 1.2	DR	This information has been justified in the PDD.	OK	OK

*DR= Document Review, I= Interview, SV= Site Visit

Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
Project for e.g water rights, where applicable?					
A.2. Location of the project activity					
A.2.1. Is the location of the project activity clearly identified including:	GS-PDD-FORM Ver. 1.2	DR	Please see below.		
A.2.1.1. Host Party(ies)?	GS-PDD-FORM Ver. 1.2	DR	This has been indicated as “Turkey”.	OK	OK
A.2.1.2. Region/State/Province etc.	GS-PDD-FORM Ver. 1.2	DR	This has been indicated as “Akseki, Antalya”	OK	OK
A.2.1.3. City/Town/Community etc.	GS-PDD-FORM Ver. 1.2	DR	This has been indicated as “Akseki, Antalya”	OK	OK
A.2.1.4. Street name and number	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
A.2.1.5. A map	GS-PDD-FORM Ver. 1.2	DR	The map has been provided.	OK	OK
A.2.1.6. Details of physical location, including information allowing the unique identification of the project activity (e.g. geographic coordinates).	GS-PDD-FORM Ver. 1.2	DR	The project coordinates have been included.	OK	OK

*DR= Document Review, I= Interview, SV= Site Visit

Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
A.3. Technologies and/or measures					
A.3.1. Does PDD include the accurate and complete description of the proposed project activity and provide an understanding of the proposed GS project activity?	CDM Project Standard for Project activities §35	DR	Please provide reference for technical specification documents for modules	CAR-5	OK
A.3.2. Is the proposed GS project activity in existing facilities or utilizing existing equipment?	CDM Validation and Verification Standard for Project activities §51	DR	This is a greenfield project activity.	OK	OK
A.3.3. Does the proposed GS project activity involve the alteration of an existing installation or process?	CDM Validation and Verification Standard for Project activities §51	DR	N/A	OK	OK
A.3.4. If the proposed GS project activity is the alteration of an existing installation or process, does the project description clearly state the differences resulting	CDM Validation and Verification	DR	N/A	OK	OK

*DR= Document Review, I= Interview, SV= Site Visit

Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
from the project activity compared to the pre-project situation?	Standard for Project activities §51				
A.3.5. Have the technologies and measures to be employed and/or implemented by the project activity been described including a list of facilities, systems and equipment that will be installed and/or modified by the project activity?	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
A.3.6. Has the PD provided a list of facilities, systems and equipment in operation under the existing scenario prior to the implementation of the project activity?	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
A.3.7. Has the PD provided a list of facilities, systems and equipment in the baseline scenario, as established in section B.4 of the PDD?	GS-PDD-FORM Ver. 1.2	DR	This is available in the Section B.4 of the PDD.	OK	OK
A.3.8. Does the description clearly explain how the same types and levels of services provided by the project activity would have been provided in the baseline scenario?	GS-PDD-FORM Ver. 1.2 CDM Project Standard for Project activities §60	DR	This is available in the Section B.4 of the PDD.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
A.3.9. Has the PDs included information about the age and average lifetime of the equipment based on manufacturer's specifications and industry standards, and existing and forecast installed capacities, load factors and efficiencies, under section A.3 of the PDD?	GS-PDD-FORM Ver. 1.2 CDM Project Standard for Project activities §36e-iv	DR	This has been indicated as 25 years.	OK	OK
A.3.10. Is the information provided as to how the project contributes positively to three SDGs?	GS-PDD-FORM Ver. 1.2	DR	This is available in the PDD.	OK	OK
A.3.11. Has the energy and mass flows and balances of the systems and equipment included in the project activity, been given?	GS-PDD-FORM Ver. 1.2	DR	The project diagram has been given in the PDD.	OK	OK
A.3.12. Has the types and levels of services (normally in terms of mass or energy flows) provided by the systems and equipment that are being modified and/or installed under the project activity and their relation, if any, to other manufacturing/production equipment and systems outside the project boundary, been given?	GS-PDD-FORM Ver. 1.2	DR	They have been given in the PDD.	OK	OK
A.3.13. Has the PDs described the technology to be employed by the project activity to	CDM Project Standard	DR	Please see below.		

*DR= Document Review, I= Interview, SV= Site Visit

Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
enable the identification of the following:	for Project activities §36				
A.3.13.1. Project's title	CDM Project Standard for Project activities §36a	DR	This is available.	OK	OK
A.3.13.2. Project's sectoral scope	CDM Project Standard for Project activities §36b	DR	This is available.	OK	OK
A.3.13.3. Know-how to be used are transferred to the host Party(ies)	CDM Project Standard for Project activities §36h	DR	This is available.	OK	OK
A.4. Scale of the project					
A.4.1. Has the scale of the project defined (micro scale, small scale or others)?	GS-PDD-FORM	DR	This has been indicated as "large scale".	OK	OK

*DR= Document Review, I= Interview, SV= Site Visit

Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	Ver. 1.2				
A.4.2. Is the justification for the scale of the project provided referring to relevant activity requirement?	GS-PDD-FORM Ver. 1.2	DR	The justification has been provided.	OK	OK
A.5. Funding source of project					
A.5.1. Is the source of public and private funding sources for the project provided?	GS-PDD-FORM Ver. 1.2	DR	%100 equity is used for the project activity.	OK	OK
A.5.2. If the project activity receives public funding, has the PD provided information on Parties providing the public funding?	GS-PDD-FORM Ver. 1.2	DR	%100 equity is used for the project activity.	OK	OK
A.5.3. If the project activity receives public funding, has the PD attached in Appendix 2 of the PDD an affirmation obtained from Parties included in Appendix 1 that such funding does not result in a diversion of Official Development Assistance (ODA), is separate from, and is not counted towards the financial obligations of those Parties?	GS-PDD-FORM Ver. 1.2 CDM Project Standard for Project activities §38	DR	Please provide ODA declaration	CL-1	OK
B. Application of Approved Gold Standard Methodology (ies) and/or Demonstration of SDG Contributions					

*DR= Document Review, I= Interview, SV= Site Visit

Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.1. Reference of approved methodology(ies)					
B.1.1. Are the references including the reference number, title, and the version of the selected methodology(ies) given in the PDD?	GS-PDD-FORM Ver. 1.2	DR	These have been given in the PDD.	OK	OK
B.1.2. Are the references including the reference number, title, and the version of any tools and other methodologies to which the selected methodology(ies) refers to given in the PDD?	GS-PDD-FORM Ver. 1.2 CDM Project Standard for Project activities §54	DR	These have been given in the PDD.	OK	OK
B.2. Applicability of methodology(ies)					
B.2.1. Has the PDs justified the choice of the selected methodology(ies), if applicable, by showing that the project activity meets each applicability condition of the methodology(ies)?	GS-PDD-FORM Ver. 1.2 CDM Project Standard for Project activities §54 CDM Validation and	DR	The applicability conditions have been indicated in the PDD.	OK	OK

*DR= Document Review, I= Interview, SV= Site Visit

Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	Verification Standard for Project activities §67				
B.2.2. Does the project activity meet each of the applicability conditions of the tools or other methodology components referred to in the applied methodology?	CDM Validation and Verification Standard for Project activities §67	DR	The project activity meets all of the applicability conditions.	OK	OK
B.2.3. Has the PDs explained the documentation that has been used and provided the references to applicability of methodology?	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK
ACM 0002					
B.2.4. Is the type of proposed project activity defined?	ACM 0002 Version 21.0	DR	This is a large scale solar power type, greenfield, grid connected renewable electricity generation project.	OK	OK
B.2.5. If the proposed project activity is a hydro power plant project, does one of the following conditions conform to the proposed project activity?	ACM 0002 Version 21.0	DR	Please see below.	OK	OK

*DR= Document Review, I= Interview, SV= Site Visit

Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.2.5.1. Is the proposed project activity implemented in an existing single or multiple reservoirs, with no change in the volume of any of the reservoirs?	ACM 0002 Version 21.0	DR	N/A	OK	OK
B.2.5.2. Is the project activity implemented in an existing single or multiple reservoirs, where the volume of the reservoir(s) is increased and the power density calculated using equation (3), is greater than 4 W/m^2?	ACM 0002 Version 21.0	DR	N/A	OK	OK
B.2.5.3. Are the project activity results in new single or multiple reservoirs and the power density calculated using equation (3), is greater than 4 W/m^2?	ACM 0002 Version 21.0	DR	N/A	OK	OK
B.2.6. If the project activity is an integrated hydro power project, has the PDs demonstrated that water flow from upstream power plants/units spill directly to the downstream reservoir and that collectively constitute to the generation capacity of the integrated hydro power project?	ACM 0002 Version 21.0	DR	N/A	OK	OK
B.2.7. If the project activity is an integrated hydro power project, has the PDs provided an analysis of the water balance covering the water fed to power units, with all possible	ACM 0002 Version 21.0	DR	N/A	OK	OK

*DR= Document Review, I= Interview, SV= Site Visit

Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
combinations of reservoirs and without the construction of reservoirs?					
B.2.8. If the project activity is an integrated hydro power project involving multiple reservoirs, where the power density for any of the reservoirs calculated using equation (3) is lower than or equal to 4 W/m^2, do all the following conditions conform the project activity?	ACM 0002 Version 21.0	DR	N/A	OK	OK
B.2.8.1. The power density calculated using the total installed capacity of the integrated project, as per equation (4), is greater than 4 W/m^2;	ACM 0002 Version 21.0	DR	N/A	OK	OK
B.2.8.2. Water flow between reservoirs is not used by any other hydropower unit which is not a part of the project activity;	ACM 0002 Version 21.0	DR	N/A	OK	OK
B.2.8.3. Installed capacity of the power plant(s) with power density lower than or equal to 4 W/m^2 shall be:	ACM 0002 Version 21.0	DR	N/A	OK	OK
B.2.8.3.1. Lower than or equal to 15 MW; and	ACM 0002 Version 21.0	DR	N/A	OK	OK

*DR= Document Review, I= Interview, SV= Site Visit

Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.2.8.3.2. Less than 10 per cent of the total installed capacity of integrated hydro power project.	ACM 0002 Version 21.0	DR	N/A	OK	OK
ACM 0001					
B.2.9. Does the project activity include one of the following conditions?	ACM 0001 Version 19.0	DR	N/A	OK	OK
B.2.9.1. Install a new landfill gas (LFG) capture system in an existing or new (Greenfield) SWDS where no LFG capture system was or would have been installed prior to the implementation of the project activity; or	ACM 0001 Version 19.0	DR	N/A	OK	OK
B.2.9.2. Make an investment into an existing LFG capture system to increase the recovery rate or change the use of the captured LFG, provided that:	ACM 0001 Version 19.0	DR	N/A	OK	OK
B.2.9.2.1. The captured LFG was vented or flared and not used prior to the implementation of the project activity; and	ACM 0001 Version 19.0	DR	N/A	OK	OK
B.2.9.2.2. In the case of an existing active LFG capture system for which the amount of LFG cannot be collected separately from the	ACM 0001 Version 19.0	DR	N/A	OK	OK

*DR= Document Review, I= Interview, SV= Site Visit

Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
project system after the implementation of the project activity and its efficiency is not impacted on by the project system: historical data on the amount of LFG capture and flared is available;					
B.2.9.3. Flare the LFG and/or use the captured LFG in any (combination) of the following ways:	ACM 0001 Version 19.0	DR	N/A	OK	OK
B.2.9.3.1. Generating electricity;	ACM 0001 Version 19.0	DR	N/A	OK	OK
B.2.9.3.2. Generating heat in a boiler, air heater or kiln (brick firing only) or glass melting furnace; and/or	ACM 0001 Version 19.0	DR	N/A	OK	OK
B.2.9.3.3. Supplying the LFG to consumers through a natural gas distribution network;	ACM 0001 Version 19.0	DR	N/A	OK	OK
B.2.9.3.4. Supplying compressed/liquefied LFG to consumers using trucks;	ACM 0001 Version 19.0	DR	N/A	OK	OK
B.2.9.3.5. Supplying the LFG to consumers through a dedicated pipeline;	ACM 0001 Version 19.0	DR	N/A	OK	OK

*DR= Document Review, I= Interview, SV= Site Visit

Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.2.9.4. Do not reduce the amount of organic waste that would be recycled in the absence of the project activity.	ACM 0001 Version 19.0	DR	N/A	OK	OK
ACM 0022					
B.2.10. Does the project activity include a treatment of fresh waste, that would otherwise be disposed in a solid waste disposal site (SWDS)?	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.2.11. Does the project activity cover any combination of the following processes to treatment of fresh waste?	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.2.11.1. Composting process under aerobic conditions	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.2.11.2. Anaerobic digestion with biogas recovery and flaring and/or its use	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.2.11.3. Co-composting of wastewater in combination with solid waste	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.2.11.4. Anaerobic co-treatment of wastewater in combination with solid waste	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.2.11.5. Mechanical/thermal treatment process to produce refuse-derived fuel (RDF) or stabilized biomass (SB) that is produced within the project boundary and its use	ACM 0022 Version 3.0	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.2.11.6. Gasification process to produce syngas and its use	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.2.11.7. Incineration of fresh waste for the generation of thermal/electric energy	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.2.12. Are the following conditions applied to the project activity?	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.2.12.1.The project plant only treats fresh waste/wastewater for which emission reductions are claimed, except for cases involving composting, co-composting and anaerobic digestion	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.2.12.2.Neither the fresh waste nor the products from the project plant are stored on-site under anaerobic conditions	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.2.12.3. Any wastewater discharge resulting from the project activity is treated in accordance with applicable regulations	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.2.12.4. The project activity does not reduce the amount of waste that would be recycled in the absence of the project activity.	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.2.12.5. When applicable regulations mandate any waste treatment process implemented under the project activity, the rate of compliance with such	ACM 0022 Version 3.0	DR	N/A	OK	OK

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regulations for the treatment process is below 50 per cent					
B.2.13. Is the baseline scenario one of the following?	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.2.13.1.The disposal of the fresh waste in A SWDS with or without a partial LFG capture system (M2 or M3)?	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.2.13.2. In the case of co-composting or co-treatment of wastewater in an anaerobic digester, the treatment of organic wastewater in either an existing or new anaerobic lagoon or sludge pit without methane recovery (W1 or W4)	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.2.13.3. In the case of electricity generation, the electricity is generated in an existing/new captive fossil fuel fired power-only plant, captive cogeneration plant and/or the grid (P2, P4, or P6)	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.2.13.4. In the case of heat generation, the heat is generated in an existing/new fossil fuel fired cogeneration plant, boiler or air heater (H2 or H4)	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.2.14.	ACM 0022 Version 3.0				
AM0058					

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.2.15. Is this a project activity that introduce a primary district heating system to supply heat to residential and commercial consumers?	AM0058 Version 5.0	DR	N/A	OK	OK
B.2.16. If this is a project activity that introduce a primary district heating system to supply heat to residential and commercial consumers, does the heat come from one of the following?	AM0058 Version 5.0	DR	N/A	OK	OK
B.2.16.1. An existing grid connected thermal power plant with no steam extraction for heating purposes, other than that required for the operation of the power plant auxiliary systems, prior to the project activity;	AM0058 Version 5.0	DR	N/A	OK	OK
B.2.16.2. A new centralised heat only boiler(s); or	AM0058 Version 5.0	DR	N/A	OK	OK
B.2.16.3. A combination of both B.2.13.1 and B.2.13.2	AM0058 Version 5.0	DR	N/A	OK	OK
B.2.17. Does the project activity include any of below components?	AM0058 Version 5.0	DR	N/A	OK	OK
B.2.17.1. Heat supplied to the district heating system is predominantly used for heating and/or hot tap water supply for residential and/or commercial users. At the most 20 per cent of the	AM0058 Version 5.0	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
heat may be supplied to other users, such as for industrial production processes;					
B.2.17.2. For project activities in which a co-generation plant supplies heat to the district heating system:	AM0058 Version 5.0	DR	N/A	OK	OK
B.2.17.2.1. The power plant is fossil fuel fired;	AM0058 Version 5.0	DR	N/A	OK	OK
B.2.17.2.2. Only one type of fuel is used by the project's co-generation plant (a maximum of 1 per cent of auxiliary fuel may be used for start-up.). The same type of fossil fuel is fired in the power plant in the baseline and project scenarios;	AM0058 Version 5.0	DR	N/A	OK	OK
B.2.17.2.3. The project activity does not lead to an increase in the technical lifetime of the power plant and does not result in any major integrated production changes at the power plant, other than the modifications required for heat extraction for the district heating.	AM0058 Version 5.0	DR	N/A	OK	OK
B.2.17.3. Emission reductions resulting from heat supply to new residential areas, in cases where more than 50% of the annual heat production originates from heat-only boilers and less than 50% of heat comes from the power	AM0058 Version 5.0	DR	N/A	OK	OK

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plant within the primary district heating system;					
B.2.17.4. Emission reductions resulting from a decrease in heat losses due to the water losses or from demand-side measures (e.g. insulation of buildings, use of thermostatic valves, behavioural changes due to billing practices).	AM0058 Version 5.0	DR	N/A	OK	OK
AMS-I.D.					
B.2.18. Does the proposed project activity comprises renewable energy units such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass, supplying one of the following?	AMS I.D. Version 18.0 §2 §4 §7	DR	N/A	OK	OK
B.2.18.1. Electricity to a national or a regional grid, or	AMS I.D. Version 18.0 §2 §4 §7	DR	N/A	OK	OK
B.2.18.2. Electricity to an identified consumer facility via national/regional grid through a contractual arrangement such as wheeling?	AMS I.D. Version 20.0 §2 §4 §7	DR	N/A	OK	OK

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B.2.19. Does the new unit (proposed project activity) have both renewable and non-renewable components?	AMS I.D. Version 18.0 §6 §11	DR	N/A	OK	OK
B.2.20. Does the new unit co-fires fossil fuel?	AMS I.D. Version 18.0 §7	DR	N/A	OK	OK
B.2.21. Does the proposed project activity involve the addition of renewable energy generation units at an existing renewable power generation facility?	AMS I.D. Version 18.0 §8	DR	N/A	OK	OK
B.2.22. Is the project activity a retrofit, rehabilitation or a replacement?	AMS I.D. Version 18.0 §9	DR	N/A	OK	OK
B.2.23. If the proposed project activity is a hydro power plant project, does one of the following conditions conform to the proposed project activity?	AMS I.D. Version 18.0 §5	DR	N/A	OK	OK
B.2.23.1. Is the proposed project activity implemented in an existing reservoir, with no change in the volume of reservoir?	AMS I.D. Version 18.0 §5	DR	N/A	OK	OK

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B.2.23.2. Is the project activity implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per the definitions given in the project emissions section, is greater than 4 W/m^2?	AMS I.D. Version 18.0 §5	DR	N/A	OK	OK
B.2.23.3. Is the project activity results in new reservoirs and the power density of the power plant, as per the definitions given in the project emissions section, is greater than 4 W/m^2?	AMS I.D. Version 18.0 §5	DR	N/A	OK	OK
AMS I.C.					
B.2.24. Does the proposed project activity comprise renewable energy technologies that supply users (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.)	AMS I.C. Version 21 §2	DR	N/A	OK	OK
B.2.25. Is the proposed project activity a biomass based co-generation or trigeneration system? (Cogeneration means the simultaneous generation of heat and electrical energy in one process.	AMS I.C. Version 21 §3 §22-a §22-b	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
Trigeneration means the simultaneous generation of electrical energy and thermal energy in the form of cooling and heating in one process.)					
B.2.26. If the proposed project activity is a biomass based co-generation system, does the proposed project activity produce heat and power in separate element processes? (For example heat from a boiler and electricity from an engine. If so, these type of project activities do not fit under the definition of co-generation project.)	AMS I.C. Version 21 §22-a	DR	N/A	OK	OK
B.2.27. If the proposed project activity is a biomass based trigeneration system, does the proposed project activity produce electrical energy and thermal energy in separate element processes? (Thermal energy means either heating (e.g. steam or hot water or hot air) or cooling (e.g. chilled water), or both. For example, thermal energy from a boiler and electricity from a biogas engine) do not fit under the definition of trigeneration.)	AMS I.C. Version 21 §22-b §22-d	DR	N/A	OK	OK
B.2.28. If the proposed project activity is a biomass based co-generation system, does the emission reductions accrue from one of the following activities?	AMS I.C. Version 21 §4	DR	N/A	OK	OK
B.2.28.1. Electricity supply to a grid	AMS I.C. Version 21 §4-a	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.2.28.2. Electricity and/or thermal energy (steam or heat) production for on-site consumption or for consumption by other facilities,	AMS I.C. Version 21 §4-b	DR	N/A	OK	OK
B.2.28.3. Combination of both	AMS I.C. Version 21 §4-c	DR	N/A	OK	OK
B.2.29. If the proposed project activity is a biomass based co-generation or trigeneration system, is the total capacity of the project activity remain under the below stated limits?	AMS I.C. Version 21 §9	DR	N/A	OK	OK
B.2.29.1. 45 MW thermal if the project activity includes emission reductions from both the thermal and electrical energy components (For the purpose of calculating this 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 maximal installed capacity limit of 15 MW(e) is equivalent to 45 MW thermal output of the equipment or the plant.))	AMS I.C. Version 21 §9-a	DR	N/A	OK	OK
B.2.29.2. 45 MW thermal if the emission reductions are solely on account of thermal energy production (i.e. no emission reductions accrue from the electricity component)	AMS I.C. Version 21 §9-b	DR	N/A	OK	OK
B.2.29.3. 15 MW if the emission reductions are solely on account of electrical	AMS I.C. Version 21	DR	N/A	OK	OK

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energy production (i.e. no emission reductions accrue from the thermal energy component),	§9-c				
B.2.30. Is the total installed/rated thermal energy generation capacity of the project equipment equal to or less than 45 MW thermal? (Thermal energy generation capacity shall be manufacturer's rated thermal energy output, or if that rating is not available the capacity shall be determined by taking the difference between enthalpy of total output (for example steam or hot air or chilled water in kcal/kg or kcal/m3) leaving the project equipment and the total enthalpy of input (for example feed water or air in kcal/kg or kcal/m3) entering the project equipment. For boilers, condensate return (if any) must be incorporated into enthalpy of the feed.)	AMS I.C. Version 21 §7	DR	N/A	OK	OK
B.2.31. Is the project activity a co-fired system? (A co-fired system uses both fossil and renewable fuels, for example the simultaneous combustion of both biomass residues and fossil fuels in a single boiler. Fossil fuel may be used during a period of time when the biomass is not available and due justifications are provided.)	AMS I.C. Version 21 §8 §22-e	DR	N/A	OK	OK
B.2.32. If the proposed project activity is a co-fired system, does the total installed thermal energy generation capacity of the project equipment, when using both fossil and renewable fuel, exceed 45 MW thermal?	AMS I.C. Version 21 §8	DR	N/A	OK	OK

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B.2.33. Does the project activity involve the addition of renewable energy units at an existing renewable energy facility?	AMS I.C. Version 21 §10	DR	N/A	OK	OK
B.2.34. If the project activity involve the addition of renewable energy units at an existing renewable energy facility, does the total capacity of the units added remain under the limits (45 MW thermal or 15 MWelecrical) and are the units added physically distinct from the existing units? (The same capacity limits 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 below and shall be physically distinct from the existing units. Physically distinct units are those that are capable of producing thermal/electrical energy without the operation of existing units, and that do not directly affect the mechanical, thermal, or electrical characteristics of the existing facility. For example, the addition of a steam turbine to an existing combustion turbine to create a combined cycle unit would not be considered “physically distinct”.)	AMS I.C. Version 21 §10	DR	N/A	OK	OK
B.2.35. If the project activity uses solid biomass fuel, (e.g. briquette), is it demonstrated	AMS I.C. Version 21 §11 §17	DR	N/A	OK	OK

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that it has been produced using solely renewable biomass? (In cases where the project activity utilizes biomass, sourced from dedicated plantations, applicability conditions prescribed in the latest applicable version of tool "Project emissions from cultivation of biomass" shall apply.)					
B.2.36. If the producer of the solid biomass fuel is not a project participant, are the project participant and the producer 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.)	AMS I.C. Version 21 §12	DR	N/A	OK	OK
B.2.37. If the electricity and/or steam/heat produced by the project activity is delivered to a third party, is there a contract between the supplier and consumer(s) of the energy will have to that ensures there is no double-counting of emission reductions?	AMS I.C. Version 21 §13	DR	N/A	OK	OK
B.2.38. If the project activity recovers and utilizes biogas for power/heat production, does it apply this methodology on a stand alone basis?	AMS I.C. Version 21 §14	DR	N/A	OK	OK

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B.2.39. If the project activity recovers and utilizes biogas for power/heat production and applies this methodology on a stand alone basis, has the PPs taken into account any incremental emissions occurring due to the implementation of the project activity, as project or leakage emissions? (Some examples of incremental emissions occurring due to the implementation could be physical leakage of the anaerobic digester, emissions due to inefficiency of the flaring. In such cases, relevant procedures in the tool "Emissions from solid waste disposal sites" and/or "Project emissions from flaring" should be taken into account. 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 existing project.)	AMS I.C. Version 21 §14	DR	N/A	OK	OK
B.2.40. If project equipment contains refrigerants, is the refrigerant used in the project case any ozone depleting potential? (The refrigerant used in the project case shall have no ozone depleting potential (ODP).)	AMS I.C. Version 21 §15	DR	N/A	OK	OK
B.2.41. If the proposed project activity is a charcoal based biomass energy	AMS I.C. Version 21	DR	N/A	OK	OK

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generation, is the charchoal produced from renewable biomass sources?	§16				
B.2.42. If the proposed project activity is a charcoal based biomass energy generation, is the charcoal produced in kilns equipped with methane recovery and destruction facility?	AMS I.C. Version 21 §16-a	DR	N/A	OK	OK
B.2.43. If charcoal is produced in kilns not equipped with a methane recovery and destruction facility, has the PPs considered the methane emissions from the production of charcoal? (These emissions shall be calculated as per the procedures defined in the latest applicable version of 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 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.)	AMS I.C. Version 21 §16-b	DR	N/A	OK	OK
AMS-II.G					
B.2.44. Does the proposed project activity comprise efficiency improvements in thermal applications of non-renewable	AMS II.G. Version 12.0	DR	N/A	OK	OK

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biomass. Examples of applicable technologies and measures include the introduction of high efficiency biomass fired project devices (cookstoves or ovens or dryers) to replace the existing devices and/or energy efficiency improvements in existing biomass fired cookstoves or ovens or dryers? (AMS II.G. is **not applicable** to Greenfield applications)	§2				
B.2.45. Does the project involve cookstoves, if so, is the introduction of single pot or multi pot portable or in-situ cookstoves with rated efficiency of at least 20 per cent?	AMS II.G. Version 12.0 §3	DR	N/A	OK	OK
B.2.46. Is the certificate issued by third party or test results for the cookstove efficiency submitted?	AMS II.G. Version 12.0 §3	DR	N/A	OK	OK
B.2.47. The aggregate energy savings of a single project activity shall not exceed the equivalent of 60 GWh per year or 180 GWh thermal per year in fuel input.	AMS II.G. Version 12.0 §4	DR	N/A	OK	OK
B.2.48. Has non-renewable biomass been used in the project region since 31 December 1989, established using survey methods or referring to published literature, official reports or statistics?	AMS II.G. Version 12.0 §5	DR	N/A	OK	OK

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B.2.49. For cases where the biomass is sourced from renewable sources, the project participants should use a corresponding Type I methodology.	AMS II.G. Version 12.0 §6	DR	N/A	OK	OK
B.2.50. Does the PDD explain the proposed method for distribution of project devices including the method to avoid double counting of emission reductions such as unique identifications of product and end-user locations (e.g., programme logo)?	AMS II.G. Version 12.0 §7	DR	N/A	OK	OK
B.2.51. Does the PDD also explain how the proposed procedures prevent double counting of emission reductions, for example to avoid that project stove manufacturers, wholesale providers or others claim credit for emission reductions from the project devices?	AMS II.G. Version 12.0 §8	DR	N/A	OK	OK
The Gold Standard Methodology for Emission Reductions from Safe Drinking Water Supply (SDWS)					
B.2.52. Does the project activity introduce a new, or rehabilitate an existing, zero-emission or low-emission technology to supply safe drinking water?	SDWS Version 1.0 §2.1.1	DR	N/A	OK	OK
B.2.53. Eligible household water treatment technologies (HWT), institutional water treatment technologies (IWT), and	SDWS Version 1.0 §2.2.1a	DR	N/A	OK	OK

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community level water treatment technologies (CWT) include bleach/chlorine, water filter (ceramic, sand, composite, membrane, etc.), UV disinfection, etc.					
B.2.54. Eligible community water supply technologies (CWS) include new installation of new borehole hand-pumps, borehole hand-pumps rehabilitation, solar powered drinking water pumps, etc. Water pumps powered by fossil-fuel engines are not eligible, with the exception of backup fossil–fuel engines that are used for no more than 10% of operating hours (parameter SWDS 33).	SDWS Version 1.0 §2.2.1b	DR	N/A	OK	OK
B.2.55. All projects involving CWT and CWS technologies must also include ongoing maintenance and repair of the project technology	SDWS Version 1.0 §2.2.1c	DR	N/A	OK	OK
B.2.56. Where the project involves the rehabilitation of an existing technology, the project developer shall provide evidence that the existing technology is non-operational and that there is no planned maintenance or repair for at least 3 months after the date it became non-operational (parameter SWDS 2).	SDWS Version 1.0 §2.2.1d	DR	N/A	OK	OK
B.2.57. This methodology allows for project activities to include safe water	SDWS Version 1.0	DR	N/A	OK	OK

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treatment and/or supply technologies implemented for end-users in households, and/or commercial premises such as shops or institutional premises including half or full day/boarding schools, prisons, army camps & refugee camps.	§2.2.1e				
B.2.58. In cases where the safe water is retrieved at the CWT or CWS location, the water in its improved form shall be available within a distance of 1 km or less from the end-users, as demonstrated by satellite imaging or GPS coordinates of each CWT or CWS location. Alternatively, as a proxy, a total collection time of 30 minutes or less for a round trip, including queuing, using the travel modes of walking or pedaling may be demonstrated (parameter SDWS 1).	SDWS Version 1.0 §2.2.1f	DR	N/A	OK	OK
B.2.59. Project technology performance level (HWT and IWT): It shall be demonstrated based on report of laboratory testing or official notification that the project technology or equipment achieves either (i) the performance target classification 3-star or 2-star level, meaning "Comprehensive Protection," as per the WHO International Scheme to Evaluate	SDWS Version 1.0 §2.2.1g	DR	N/A	OK	OK

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Household Water Treatment Technologies (World Health Organization, 2011) or (ii) compliance with the national standard or guideline for household drinking water treatment technology; if no national guideline or standard is available, then the project technology shall comply with the WHO International Scheme requirements as per (i) (parameter SDWS 2).					
B.2.60. Project technology performance level (CWT and CWS): For each individual CWT or CWS, it shall be demonstrated at the start of each crediting period with water quality testing reports that the water directly supplied by the project water technology/source achieves both: i. microbial quality in line with either (i) national standards or guidelines for microbial quality of drinking water, or in the absence of such requirements, (ii) the guideline values for verification of microbial quality from the Guidelines for drinking-water quality (Table 7.10, WHO, 2017) 10; and ii. compliance with (i) national standards or guidelines on priority chemical contamination and physical and aesthetic aspects, or in the absence of such requirements, (ii) international standards	SDWS Version 1.0 §2.2.1h	DR	N/A	OK	OK

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or guidelines on priority chemical contamination and physical and aesthetic aspects. (parameter SWDS 3)					
B.2.61. The project must conduct annual water hygiene education campaigns for the end-users. (parameter SDWS 20).	SDWS Version 1.0 §2.2.1i	DR	N/A	OK	OK
B.2.62. A project applying this methodology may make SDG claims if relevant monitoring parameter(s) is included in the monitoring plan to demonstrate and confirm the project's contributions to SDGs. See parameter SDWS 19	SDWS Version 1.0 §2.2.1j	DR	N/A	OK	OK
B.2.63. Project shall document the national, regional and local regulatory framework for provision of safe drinking water in the project boundary (parameter SDWS 4). The project shall not undermine or conflict with any national, sub-national and local regulations or guidance for safe drinking water supply, operation and maintenance, including any tariff requirements.	SDWS Version 1.0 §2.3.1	DR	N/A	OK	OK
B.2.64. If the expected technical life of project technology (parameter SDWS 7) is shorter than the crediting period, describe measures to ensure that end users are provided replacement systems of comparable quality at the end of the expected technical life (for	SDWS Version 1.0 §2.3.2	DR	N/A	OK	OK

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example, replace with comparable or better technology, retrofit with performance guarantee, etc.). This applies both for new technology and rehabilitated.					
B.2.65. All CWT and CWS projects must include ongoing maintenance and repair of the project technology. The PDD must describe the maintenance and repair plan, including the system for logging/documenting of technology operation and maintenance events including periods of downtime. The log of operation and maintenance shall be required during the monitoring period to demonstrate project technology operation	SDWS Version 1.0 §2.3.3	DR	N/A	OK	OK
The Gold Standard Revised Consolidated Baseline Methodology for GHG Emission Reductions from Manure Management Systems and Municipal Solid Waste					
B.2.66. Does the proposed project activity involve the following?	MMS & MSW version 1.0	DR	N/A	OK	OK
B.2.66.1. Manure management on one or multiple livestock farms where the existing anaerobic manure	MMS & MSW version 1.0	DR	N/A	OK	OK

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treatment system, within the project boundary, is replaced by one or a combination of more than one animal waste management systems (AWMSs) that result in less GHG emissions compared to the existing system					
B.2.67. Does the proposed project activity involve manure management project under the following conditions?	MMS & MSW version 1.0	DR	N/A	OK	OK
B.2.67.1. Farms where livestock populations, comprising of cattle, buffalo, swine, sheep, goats, and/or poultry, is managed under confined conditions;	MMS & MSW version 1.0	DR	N/A	OK	OK
B.2.67.2. Farms where manure is not discharged into natural water resources (e.g. rivers or estuaries);	MMS & MSW version 1.0	DR	N/A	OK	OK
B.2.67.3. In case of anaerobic lagoons treatments systems, the depth of the lagoons used for manure management under the baseline scenario should be at least 1 meter;	MMS & MSW version 1.0	DR	N/A	OK	OK
B.2.67.4. The annual average ambient temperature at the site where the anaerobic manure treatment facility in the baseline existed is higher than 5°C;	MMS & MSW version 1.0	DR	N/A	OK	OK

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B.2.67.5. In the baseline case, the minimum retention time of manure waste in the anaerobic treatment system is greater than 1 month;	MMS & MSW version 1.0	DR	N/A	OK	OK
B.2.67.6. The AWMS(s) in the project case results in no leakage of manure waste into ground water, e.g. the lagoon should have a non-permeable layer at the lagoon bottom;	MMS & MSW version 1.0	DR	N/A	OK	OK
B.2.67.7. If residues are stored in between collection activities, storage tanks shall comprise outdoor open equipments;	MMS & MSW version 1.0	DR	N/A	OK	OK
B.2.67.8. If the manure/ treated residue is used as fertilizer in the baseline, project proponents must ensure that this end use remains the same throughout the project activity;	MMS & MSW version 1.0	DR	N/A	OK	OK
B.2.67.9. In case residual waste from the digestion is handled aerobically and/or submitted to soil application, the proper conditions and procedures (not resulting in methane emissions) for storage and transportation and soil application must be ensured.	MMS & MSW version 1.0	DR	N/A	OK	OK
B.2.67.10. In case of co-digestion, for one or more sources of substrates, it cannot be demonstrated that the organic	MMS & MSW version 1.0	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
matter would otherwise have been left to decay anaerobically, baseline emissions related to such organic matter shall be accounted for as zero, whereas project emissions shall be calculated according to the procedures presented in this methodology for all co-digested substrates;					
B.2.67.11. Has the legally binding declaration been provided by the other parties involved that they will not claim VERs from the improved animal waste treatment practices other than the Central Treatment Plant managing person/entity?	MMS & MSW version 1.0	DR	N/A	OK	OK
B.2.67.12. If the project activity involves co-digestion of MSW, have the applicability conditions referred in the Table-2 of the latest applicable version of ACM0022 been met?	MMS & MSW version 1.0	DR	N/A	OK	OK
B.3. Project boundary					
B.3.1. Has the PD described the emission sources and GHGs included in the project boundary for the purpose of calculating project emissions and baseline emissions, in the tabular format?	GS-PDD-FORM Ver. 1.2	DR	Yes	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.3.2. Has the PD presented a flow diagram of the project boundary, physically delineating the project activity, based on the description provided in section A.3 of the PDD?	GS-PDD-FORM Ver. 1.2	DR	The flow diagram has been provided in the PDD.	OK	OK
B.3.3. Has the PD included in the flow diagram the equipment, systems and flows of mass and energy described in section A.3 of the PDD, and indicated in the diagram the emission sources and GHGs included in the project boundary and the data and parameters to be monitored?	GS-PDD-FORM Ver. 1.2	DR	These are available in the flow diagram.	OK	OK
B.3.4. Does the selected methodology allow the PDs to choose whether a source or gas is to be included in the project boundary?	CDM Project Standard for Project activities §58	DR	The applied methodology allows this.	OK	OK
B.3.5. If the selected methodology allows the project developers to choose whether a source or gas is to be included in the project boundary, do the project developers explain and justify their choices?	CDM Project Standard for Project activities §58	DR	The project developers explain and justify their choices.	OK	OK
B.3.6. Have all sources and GHGs necessary for the calculation of emissions been included within the project boundary?	CDM Validation and	DR	These are available.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	Verification Standard for Project activities§69				
B.3.7. Does the PDD correctly describe the project boundary and the physical delineation of the proposed project activity?	CDM Project Standard for Project activities §57	DR	The project boundary has been indicated correctly.	OK	OK
B.3.8. Has the selected methodology been correctly applied with respect to project boundary?	CDM Validation and Verification Standard for Project activities §63a				
ACM 0002					
B.3.9. Is the spatial extent of the project boundary identified correctly?	ACM 0002 Version 21.0	DR	The spatial extent of the project boundary has been identified correctly.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.3.10. Are the greenhouse gases and emission sources included in or excluded from the project boundary given in the tabular form as per the guidance given in Table-2 of ACM 0002?	ACM 0002 Version 21.0	DR	The tabular form has been indicated in the PDD.	OK	OK
ACM 0001					
B.3.11. Does the project boundary include the following as applicable?	ACM 0001 Version 19.0	DR	N/A	OK	OK
B.3.11.1. Sites where the LFG is flared or used (e.g. flare, power plant, boiler, air heater, glass melting furnace, kiln, natural gas distribution network, dedicated pipeline or biogas processing facility);	ACM 0001 Version 19.0	DR	N/A	OK	OK
B.3.11.2. Captive power plant(s) (including emergency diesel generators) or power generation sources connected to the grid, which are supplying electricity to the project activity;	ACM 0001 Version 19.0	DR	N/A	OK	OK
B.3.11.3. Captive power plant(s) (including emergency diesel generators) or power generation sources connected to the grid, which are supplying electricity in the baseline that is displaced by electricity generated by captured LFG in the project activity;	ACM 0001 Version 19.0	DR	N/A	OK	OK

*DR= Document Review, I= Interview, SV= Site Visit

Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.3.11.4. Heat generation equipment or sources which are supplying heat in the baseline that is displaced by heat generated by captured LFG in the project activity; and	ACM 0001 Version 19.0	DR	N/A	OK	OK
B.3.11.5. The transportation of the compressed/liquefied LFG from the biogas processing facility to consumers.	ACM 0001 Version 19.0	DR	N/A	OK	OK
ACM 0022					
B.3.12. Does the spatial extent of the project been defined as the following?	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.3.12.1. SWDS where the waste is disposed of in the baseline, anaerobic lagoons or sludge pits treating organic wastewater in the baseline, and the site of the alternative waste treatment process(es)	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.3.12.2. On-site electricity and/or heat generation and use, on-site fuel use and the wastewater treatment plant used to treat the wastewater by-products of the alternative waste treatment process(es).	ACM 0022 Version 3.0	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.3.13. If the project provides electricity to a grid, does the spatial extent of the project boundary include those plants connected to the energy system to which the plant is connected?	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.3.14. If the upgraded biogas is fed to a natural gas distribution system within the context of the project activity, does the natural gas distribution system been included in the boundary?	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.3.15. Has emission sources been included in or excluded from the project boundary as listed in Table 3 of the methodology?	ACM 0022 Version 3.0	DR	N/A	OK	OK
AM0058					
B.3.16. Does the physical delineation of the project boundary include the following?	AM0058 Version 5.0	DR	N/A	OK	OK
B.3.16.1. For project activities in which a power plant supplies heat to the district heating network, the site of the power plant, including the heat extraction unit(s) and all interrelated production units to account for emissions resulting from changes in power generation and consumption due to the project activity;	AM0058 Version 5.0	DR	N/A	OK	OK
B.3.16.2. The heat-only boilers that supply heat to the district heating system;	AM0058 Version 5.0	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.3.16.3. The district heating system, including pipes, sub-stations and buildings that are or will be connected to the district heating system.	AM0058 Version 5.0	DR	N/A	OK	OK
B.3.17. Has it been illustrated by PD how the project boundary is defined and where the points to measure heat supplied to buildings (Qe and Qn) should be located in line with the Figure-1 in AM0058?	AM0058 Version 5.0	DR	N/A	OK	OK
B.3.18. Are the emissions sources included in or excluded from the project boundary indicated in the PDD in line with the Table-2 of the methodology?	AM0058 Version 5.0	DR	N/A	OK	OK
AMS-I.D.					
B.3.19. Is the spatial extent of the project boundary identified correctly?	AMS I.D. Version 20.0 §18	DR	N/A	OK	OK
AMS I.C.					
B.3.20. Does the spatial extent of the project boundary encompass the following?	AMS I.C. Version 21 §24	DR	N/A	OK	OK
B.3.20.1. All plants generating electricity and/or thermal energy located at the project site, whether fired with	AMS I.C. Version 21 §24-a	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
biomass, fossil fuels or a combination of both					
B.3.20.2. All power plants connected physically to the electricity system (grid) that the project plant is connected to	AMS I.C. Version 21 §24-b	DR	N/A	OK	OK
B.3.20.3. Industrial, commercial or residential facility, or facilities, consuming energy generated by the system and the processes or equipment affected by the project activity	AMS I.C. Version 21 §24-c	DR	N/A	OK	OK
B.3.20.4. The processing plant of biomass residues, for project activities using solid biomass fuel (e.g. briquette), unless all associated emissions are accounted for as leakage emissions or are part of an independently registered CDM project;	AMS I.C. Version 21 §24-d	DR	N/A	OK	OK
B.3.20.5. The geographic boundaries of the dedicated plantations if the feedstock is biomass produced in dedicated plantations;	AMS I.C. Version 21 §24-e	DR	N/A	OK	OK
B.3.20.6. The transportation itineraries, if the biomass is transported over distances greater than 200 kilometres, unless all associated emissions are accounted for as leakage emissions;	AMS I.C. Version 21 §24-f	DR	N/A	OK	OK
B.3.20.7. The site of the anaerobic digester in the case of project activity that	AMS I.C.	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
recovers and utilizes biogas for producing electricity and/or thermal energy and applies this methodology on a stand-alone basis, i.e. without using a Type III component of a SSC methodology.	Version 21 §24-g				
AMS-II.G					
B.3.21. The project boundary is the physical, geographical site of the efficient devices that utilize biomass	AMS II.G. Version 12.0 §15	DR	N/A	OK	OK
The Gold Standard Methodology for Emission Reductions from Safe Drinking Water Supply					
B.3.22. The project boundary includes: a. the physical, geographical sites of the low- or zero-greenhouse gas emitting technologies to treat/supply safe drinking water installed by the project activity, b. any back-up engines or other equipment using fossil-fuel related to the low greenhouse gas emitting technologies, c. the electricity grid, in the case electricity is used by the project, and d. the household, commercial and institutional buildings where the end	SDWS. Version 1.0 §3.1.1	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
users of safe water provided by the project are located					
The Gold Standard Revised Consolidated Baseline Methodology for GHG Emission Reductions from Manure Management Systems and Municipal Solid Waste					
B.3.23. Does the spatial extent of the project boundary include the following as applicable?	MMS & MSW version 1.0	DR	N/A	OK	OK
B.3.23.1. The site of the AWMS(s)) and /or solid waste disposal site (if applicable),	MMS & MSW version 1.0	DR	N/A	OK	OK
B.3.23.2. Treatment facility and/ or central treatment facility including the storage tanks (if applicable)	MMS & MSW version 1.0	DR	N/A	OK	OK
B.3.23.3. The site where the residual waste from biological treatment or products from those treatments, like slurry, are handled, disposed, submitted to soil application, or treated thermally/mechanically	MMS & MSW version 1.0	DR	N/A	OK	OK
B.3.23.4. Onsite flare or energy and/or heat generation equipment and the power/heat source	MMS & MSW version 1.0	DR	N/A	OK	OK
B.3.23.5. The road itineraries and/or piping system between the manure collection points	MMS & MSW version 1.0	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.3.23.6. Waste/ residue transportation (if applicable),	MMS & MSW version 1.0	DR	N/A	OK	OK
B.3.23.7. The central treatment plant and sold waste disposal site (if applicable)	MMS & MSW version 1.0	DR	N/A	OK	OK
B.3.24. Are the emissions sources included in or excluded from the project boundary indicated in the PDD in line with the Table-2 of the methodology?	MMS & MSW version 1.0	DR	N/A	OK	OK
B.3.25. Has the clear diagrammatic representation of the project scenario been provided by PD showing the following?	MMS & MSW version 1.0	DR	N/A	OK	OK
B.3.25.1. All the manure waste treatments steps as well as its final disposal	MMS & MSW version 1.0	DR	N/A	OK	OK
B.3.25.2. The final use of methane, if any is captured, and also the auxiliary energy used to run project treatments steps	MMS & MSW version 1.0	DR	N/A	OK	OK
B.3.25.3. The fraction of volatile solids degraded within the project boundary in the pre-project situation before disposal.	MMS & MSW version 1.0	DR	N/A	OK	OK
B.3.26. Has the precise location of the farm(s) been identified by PD including the following?	MMS & MSW version 1.0	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.3.26.1. Co-ordinates of farm(s) using global positioning system	MMS & MSW version 1.0	DR	N/A	OK	OK
B.3.26.2. The road distances of the itineraries between them and the manure central treatment plant using information from official sources	MMS & MSW version 1.0	DR	N/A	OK	OK
B.4. Establishment and description of the baseline scenario					
B.4.1. Does the approved methodology that is selected by the proposed GS project prescribe the baseline scenario and hence no further analysis is required? •	CDM Validation and Verification Standard for Project activities §94 CDM Project Standard for Project activities §59	DR	The applied methodology prescribes the baseline scenario.	OK	OK
B.4.2. Does the PDD identify the baseline for the proposed GS project, defined as the scenario that reasonably represents the anthropogenic emissions by sources of	CDM Validation and Verification	DR	This is available.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
GHGs that would occur in the absence of the proposed GS project?	Standard for Project activities §75 CDM Project Standard for Project activities §61				
B.4.3. If the methodology requires use of the tools to identify the baseline scenario, have all those been applied?	CDM Validation and Verification Standard for Project activities §77	DR	All the tools have been applied.	OK	OK
B.4.4. Are there relevant national and/or sectoral policies to identify the baseline scenario?	CDM Validation and Verification Standard for Project activities §81 CDM Project	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	Standard for Project activities §64				
B.4.5. If there are relevant national and/or sectoral policies to identify the baseline scenario, have those been considered correctly in the PDD?	CDM Validation and Verification Standard for Project activities §83d	DR	N/A	OK	OK
B.4.6. Are there relevant circumstances to identify the baseline scenario?	CDM Validation and Verification Standard for Project activities §81	DR	N/A	OK	OK
B.4.7. Does the methodology require several alternative scenarios to be considered in the identification of the most reasonable baseline scenario?	CDM Validation and Verification Standard	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	for Project activities §78				
B.4.8. If the methodology requires several alternative scenarios to be considered in the identification of the most reasonable baseline scenario, are all credible scenarios that are in the PDD and are supplementary to those required by the methodology reasonable in the context of the proposed GS project?	CDM Validation and Verification Standard for Project activities §78	DR	N/A	OK	OK
B.4.9. If the proposed project activity includes several different facilities, technologies, outputs or services, do the alternative scenarios for each of them be identified separately?	CDM TOOL01 Tool for the demonstration and assessment of additionality	DR	N/A	OK	OK
B.4.10. If the alternative scenarios for each of them be identified separately, are the realistic combinations of these be considered as possible alternative scenarios to the proposed project activity?	CDM TOOL01 Tool for the demonstra	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	tion and assessment of additionality				
B.4.11. Does the list of alternative scenarios given in the PDD include the following?	CDM Validation and Verification Standard for Project activities §93	DR	Please see below.		
B.4.11.1. The project activity is undertaken without being registered as a GS project	CDM Validation and Verification Standard for Project activities §93a	DR	N/A	OK	OK
B.4.11.2. All plausible alternatives	CDM Validation and Verification Standard for Project	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	activities §93b				
B.4.11.3. Comply with all applicable and enforced legislation	CDM Validation and Verification Standard for Project activities §93c	DR	N/A	OK	OK
B.4.12. Has the PD explained how the baseline scenario is established in accordance with the selected methodology(ies)?	GS-PDD-FORM Ver. 1.2 CDM Project Standard for Project activities §59	DR	This is available.	OK	OK
B.4.13. Where the procedure in the selected methodology(ies) involves several steps, has the PDs described how each step is applied and transparently documented the outcome of each step?	GS-PDD-FORM Ver. 1.2 CDM Project Standard for Project activities §59	DR	This is available.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.4.14. Has the PD provided and explained all data used to establish the baseline scenario (variables, parameters, data sources, etc.)?	GS-PDD-FORM Ver. 1.2	DR	All data have been provided and explained.	OK	OK
B.4.15. Is the identified baseline scenario reasonably supported by correct and verifiable references, assumptions, calculations and ratinonales?	GS-PDD-FORM Ver. 1.2	DR	The baseline scenario is supported by all of these ones.	OK	OK
B.4.16. Has a transparent description of the baseline scenario been provided including the technology(ies) that would be employed and/or the activities that would take place in the absence of the project activity?	GS-PDD-FORM Ver. 1.2 CDM Validation and Verification Standard for Project activities §80	DR	A transparent description of the baseline scenario has been given.	OK	OK
B.4.17. Has the selected methodology been correctly applied with respect to baseline identification?	CDM Validation and Verification Standard for Project activities §63b	DR	The selected methodology has been applied correctly.	OK	OK
ACM 0002					

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.4.18. If the project activity involves the installation of a greenfield power plant, is the baseline scenario identified appropriately in accordance with the ACM 0002?	ACM 0002 Version 21.0	DR	The baseline scenario has been identified appropriately.	OK	OK
B.4.19. If the project activity involves capacity addition to existing grid-connected renewable power plant/unit, is the baseline scenario identified appropriately in accordance with the ACM0002?	ACM 0002 Version 21.0	DR	N/A	OK	OK
B.4.20. If the proposed project activity is a capacity addtion, retrofit, rehabilitation or replacement, have the existing plant/unit started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion, retrofit or rehabilitation of the plant has been undertaken between the start of this minimum historical reference period and the implementation of the project activity?	ACM 0002 Version 21.0	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.4.21. If the project activity is the retrofit or replacement of existing grid-connected renewable power plant/unit, is the point of time at which the generation facility would likely be replaced or retrofitted ($DATE_{Baseline\ Retrofit}$) defined?	ACM 0002 Version 21.0	DR	N/A	OK	OK
B.4.22. If the project activity is the retrofit or replacement of existing grid-connected renewable power plant/unit, is the baseline scenario identified following the step-wise procedure in accordance with the ACM0002?	ACM 0002 Version 21.0	DR	N/A	OK	OK
B.4.23. Are the realistic and credible alternative baseline scenarios for power generation appropriately identified following the Step 1 of the "Combined tool to identify the baseline scenario and demonstrate additionality"?	ACM 0002 Version 21.0	DR	N/A	OK	OK
B.4.24. Is "the proposed project activity undertaken without being registered as a CDM project activity" listed as one of the alternatives?	CDM TOOL01 Tool for the demonstration and assessment of additionality	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	CDM Validation and Verification Standard for Project activities §93a ACM 0002 Version 21.0				
B.4.25. Has "other realistic and credible alternative scenario(s) to the proposed CDM project activity scenario that deliver outputs services or services with comparable quality, properties and application areas" been listed as an alternative?	CDM TOOL01 Tool for the demonstration and assessment of additionality CDM Validation and Verification Standard for Project activities §93b	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	ACM 0002 Version 21.0				
B.4.26. Has "continuation of the current situation (no project activity or other alternatives undertaken" been listed as an alternative?	CDM TOOL01 Tool for the demonstration and assessment of additionality ACM 0002 Version 21.0	DR	N/A	OK	OK
B.4.27. If the barrier analysis is used, is the Step 2 of the latest applicable version of "Combined tool to identify the baseline scenario and demonstrate additionality" applied appropriately?	ACM 0002 Version 21.0	DR	N/A	OK	OK
B.4.28. If more than one alternative is remaining after Step 2 and if the remaining alternatives include scenarios P1 and P3, is the Investment Comparison as per step 3 of the "Combined tool to identify the baseline scenario and demonstrate additionality" applied appropriately?	ACM 0002 Version 21.0	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.4.29. If more than one alternative is remaining after Step 2 and if the remaining alternatives include scenarios P1 and P2, is the Benchmark Analysis as per step 2b of the "Tool for the demonstration and assessment of additionality" applied appropriately?	ACM 0002 Version 21.0	DR	N/A	OK	OK
ACM 0001					
B.4.30. Has the most plausible baseline scenario been determined according to the simplified procedures or the procedures according to the latest applicable version of the "Combined tool to identify the baseline scenario and demonstrate additionality"?	ACM 0001 Version 19.0	DR	N/A	OK	OK
ACM 0022					
B.4.31. Is the baseline scenario identified and is the additionality demonstrated using "Tool02: Combined tool to identify the baseline scenario and demonstrate additionality"	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.4.32. For the treatment of the fresh waste, are the alternatives or combinations of these alternatives considered?	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.4.33. For the treatment of the wastewater, are the alternatives or combinations of these alternatives considered?	ACM 0022 Version 3.0	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.4.34. For electricity generation, are the alternatives or combinations of these alternatives considered?	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.4.35. For heat generation, are the alternatives or combinations of these alternatives considered?	ACM 0022 Version 3.0	DR	N/A	OK	OK
AM0058					
B.4.36. Is the most plausible baseline scenario "no implementation of primary district heating system (continuation of current practice)"?	AM0058 Version 5.0	DR	N/A	OK	OK
AMS I.D.					
B.4.37. If the project activity is greenfield power plant, is the baseline scenario identified as "the electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid?	AMS I.D. Version 18.0 §19	DR	N/A	OK	OK
B.4.38. If the project activity involves retrofits, rehabilitations or replacements of an existing facility, is baseline scenario identified appropriately in accordance with AMS I.D.?	AMS I.D. Version 18.0 §20	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.4.39. Have the PDs demonstrated the remaining lifetime of the equipment replaced according to the requirements described in the general guidelines to SSC CDM methodologies?	AMS I.D. Version 18.0 §21	DR	N/A	OK	OK
B.4.40. If the project activity involves capacity addition to existing grid-connected renewable energy power plant/unit,, is baseline scenario identified appropriately in accordance with AMS I.D.?	AMS I.D. Version 18.0 §21	DR	N/A	OK	OK
B.4.41. Have the PDs explained and documented the quantities and types of biomass and the biomass to fossil fuel ratio (in case of co-fired system) to be used during the crediting period in the PDD?	AMS I.D. Version 18.0 §44	DR	N/A	OK	OK
AMS I.C.					
B.4.42. If the project activity is a renewable energy technology that displaces technologies using fossil fuels, is the baseline scenario identified appropriately in accordance with AMS I.C.? (The simplified baseline is the fuel consumption of the technologies that would have been used in the absence	AMS I.C. Version 21 §24	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
of the project activity, times an emission factor for the fossil fuel displaced.)					
B.4.43. If the project activity is implemented on existing facilities, are the baseline calculations based on operational data on energy use (e.g. electricity, fossil fuel) and plant output (e.g. steam/chilling/electricity thermal and/or electrical energy) using one of the following? (Existing facilities are those that have been in operation for at least three years immediately prior to the start date of the project activity. In the case of project activities that export thermal and/or electrical energy to other facilities, historical data from the recipient plants is also required.)	AMS I.C. Version 21 §25 §26	DR	N/A	OK	OK
B.4.43.1. Most recent three years operational data immediately prior to the start date of the project activity in case of existing facilities which has more than three years of operation history;	AMS I.C. Version 21 §26-a	DR	N/A	OK	OK
B.4.43.2. A minimum of most recent one year data in case of existing facilities which has more than three years of operation history but do not have three years operational data; or	AMS I.C. Version 21 §26-b	DR	N/A	OK	OK
B.4.43.3. A performance test/measurement campaign carried out prior to the implementation of the project	AMS I.C. Version 21 §26-c	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
activity in case of existing facilities which has more than three years of operation history but do not have operational data/information such as efficiency, energy consumption and output or the available data is not reliable due to various factors such as the use of imprecise or non-calibrated measuring equipment. (In this case, the project proponent may follow the relevant provisions from the latest applicable version of "Tool to determine baseline efficiency of thermal and electricity systems".)					
B.4.44. If the project activity is implemented in existing faclities where the additionality is demonstrated based on a baseline scenario that is not the continuation of the current practice, has the PPs chosen the baseline emission factor as the lower of the following two choices?	AMS I.C. Version 21 §28	DR	N/A	OK	OK
B.4.44.1. The emission factor of the fossil fuel that would have been used in the absence of the project activity;	AMS I.C. Version 21 §28-a	DR	N/A	OK	OK
B.4.44.2. The emission factor of the fossil fuel that was used prior to the implementation of the project activity.	AMS I.C. Version 21 §28-b	DR	N/A	OK	OK
B.4.45. If the proposed project activity is producing both heat and thermal	AMS I.C. Version 21 §29	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
energy, is the baseline scenario determined as one of the following?					
B.4.45.1. Electricity is imported from a grid and thermal energy (steam/heat) is produced using fossil fuel	AMS I.C. Version 21 §29-a	DR	N/A	OK	OK
B.4.45.2. 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	AMS I.C. Version 21 §29-b	DR	N/A	OK	OK
B.4.45.3. A combination of 3.4.39.1 and 3.4.39.2	AMS I.C. Version 21 §29-c	DR	N/A	OK	OK
B.4.45.4. 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 facility and/or thermal energy to other facilities);	AMS I.C. Version 21 §29-d	DR	N/A	OK	OK
B.4.45.5. 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); steam/heat is produced using biomass	AMS I.C. Version 21 §29-e	DR	N/A	OK	OK
B.4.45.6. 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;	AMS I.C. Version 21 §29-f	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
thermal energy is produced using fossil fuel					
B.4.45.7. 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) (This scenario applies to a project activity that installs a new grid connected biomass cogeneration or trigeneration system that produces surplus electricity, and this surplus electricity is exported to a grid. All the services provided in pre-project scenario baseline i.e., energy supply (process heat, cooling, chilled water and electricity) is maintained at the same level or improved during the crediting period. This shall be demonstrated using the most recent three years of historical data.)	AMS I.C. Version 21 §29-g §30	DR	N/A	OK	OK
B.4.45.8. Electricity and/or thermal energy produced in a co-fired system	AMS I.C. Version 21 §29-h	DR	N/A	OK	OK
B.4.45.9. 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	AMS I.C. Version 21 §29-i §31	DR	N/A	OK	OK

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cogeneration or trigeneration unit and/or a biomass fired boiler (without a possibility of export of thermal energy to other facilities) (This scenario applies to a project activity that installs a new biomass cogeneration or trigeneration system that displaces electricity which otherwise would have been imported from a grid. It shall be demonstrated using the three most recent years of historical data that electricity imported from the grid is more than captive electricity generated using biomass. All the services provided in pre-project scenario i.e. energy supply (process heat and electricity) are maintained at the same level or improved during the crediting period.)					
B.4.45.10. 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.	AMS I.C. Version 21 §29-j	DR	N/A	OK	OK
B.4.46. If the project activity seeks to retrofit or modify an existing facility for renewable energy generation, is the baseline scenario determined according to the methodology? (In the absence of the CDM project activity, the existing facility would continue to provide thermal energy BL thermal retrofit y EGBL,thermal,retrofit,y at historical average levels EGHY,thermal,retrofit,y until the time at	AMS I.C. Version 21 §58 §59	DR	N/A	OK	OK

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which the thermal energy facility would be likely to be replaced or retrofitted in the absence of the CDM project activity (DATEBaselineRetrofit). 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.) The value of EGBL,thermal,retrofit,y must be calculated according to equation (12) given in the methodology.)					
AMS-II.G					
B.4.47. Is the baseline scenario the projected use of fossil fuels to meet similar thermal energy needs as those provided by the project devices?	AMS II.G. Version 12.0 §23	DR	N/A	OK	OK
The Gold Standard Methodology for Emission Reductions from Safe Drinking Water Supply					
B.4.48. For users that boil unsafe water for drinking in the pre-project scenario, the general baseline scenario is that users would have boiled water for drinking in the absence of the project activity	SDWS. Version 1.0 §3.4.1	DR	N/A	OK	OK
B.4.49. For household end-users currently drinking unsafe water, the principles of suppressed demand are applied, such that the general baseline scenario is assumed to be that users would have boiled water for drinking in the absence	SDWS. Version 1.0 §3.4.2	DR	N/A	OK	OK

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of the project activity. The suppressed demand baseline does not apply to a large-scale project. A large-scale project can only account the users that boil water in the pre-project scenario. The suppressed demand baseline may be applied for institutional end-users, except where the institution is connected to a public distribution network (PDN) that supplies safe drinking water – unless justified that supplied water quality doesn't meet safe water definition (parameter SDWS 12).					
B.4.50. For the case of end-users currently drinking unsafe water because e.g., energy poverty barriers result in less than the minimum required amount of safe drinking water, the principles of suppressed demand are applied and the baseline is set as a proxy technology (water boiling of an adequate quantity of drinking water) based on the standard of living achieved by peers (adequate supply of safe drinking water). Projects applying the suppressed demand baseline shall take into account any general rules or guidelines for suppressed demand published by the Gold Standard at the	SDWS. Version 1.0 §3.4.3	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
time of registration and crediting period renewal, as applicable					
B.4.51. Each Project or VPA shall determine the applicable baseline scenario for fuel, technology and end-user group as applicable. Refer to TPDDTEC for guidelines on baseline scenario selection and justification. Each project or VPA shall document the following pre-project conditions that define the specific baseline scenario of the end-user group(s) of the project or VPA: **Pre-project practices of boiling water or drinking unsafe water (suppressed demand):** Document the drinking water sources and/or treatment technologies available and used in the project boundary. **Efficiency of water boiling systems:** Document the baseline stove or water boiling technologies and technologies' thermal efficiency used in the project boundary. **Baseline fuels:** Document the baseline cooking fuels used and/or fuels used for water boiling in the project boundary	SDWS. Version 1.0 §3.5.1	DR	N/A	OK	OK
The Gold Standard Revised Consolidated Baseline Methodology for GHG Emission Reductions from					

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
Manure Management Systems and Municipal Solid Waste					
B.4.52. In case of project with managing the manure in the existing facilities, have the complete set of existing/possible manure management systems listed in the 2006 IPCC Guidelines for National Greenhouse Gas Inventories (Volume 4, Chapter 10, Table 10.17) been taken into consideration by PD?	MMS & MSW version 1.0	DR	N/A	OK	OK
B.4.53. In case of project with managing the manure in the greenfield facilities, has the baseline scenario been determined as an uncovered anaerobic lagoon?	MMS & MSW version 1.0	DR	N/A	OK	OK
B.4.54. If the baseline scenario has been determined as an uncovered anaerobic lagoon, have the several anaerobic lagoon design options for the particular manure stream that meet the relevant regulations and take into consideration local conditions (e.g. environmental legislation, ground water table, land requirement, temperature) been defined?	MMS & MSW version 1.0	DR	N/A	OK	OK
B.4.55. If the baseline scenario has been determined as an uncovered anaerobic lagoon, do the design specifications include average depth and surface area	MMS & MSW version 1.0	DR	N/A	OK	OK

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of the anaerobic lagoon, residence time of the organic matter, as well as any other key parameters?					
B.4.56. In case of project with managing the manure for electricity generation, has the following baseline alternatives been considered by PD?	MMS & MSW version 1.0	DR	N/A	OK	OK
B.4.56.1. Electricity generation from biogas, undertaken without being registered as GS project activity;	MMS & MSW version 1.0	DR	N/A	OK	OK
B.4.56.2. Electricity generation in existing or new renewable based captive power plant(s);	MMS & MSW version 1.0	DR	N/A	OK	OK
B.4.56.3. Electricity generation in existing and/or new grid-connected power plant;	MMS & MSW version 1.0	DR	N/A	OK	OK
B.4.56.4. Electricity generation in an off-grid fossil fuel fired captive power plant;	MMS & MSW version 1.0	DR	N/A	OK	OK
B.4.56.5. Electricity generation in existing and/or new grid-connected power plant and fossil fuel fired captive power plant(s).	MMS & MSW version 1.0	DR	N/A	OK	OK
B.4.57. In case of project with managing the manure for heat generation, has the following baseline alternatives been considered by PD?	MMS & MSW version 1.0	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.4.57.1. Heat generation from biogas undertaken without being registered as GS project activity;	MMS & MSW version 1.0	DR	N/A	OK	OK
B.4.57.2. Heat generation in existing or new fossil fuel fired cogeneration plant(s);	MMS & MSW version 1.0	DR	N/A	OK	OK
B.4.57.3. Heat generation in existing or new renewable based cogeneration plant(s);	MMS & MSW version 1.0	DR	N/A	OK	OK
B.4.57.4. Heat generation in existing or new on-site or off-site fossil fuel based boiler(s) or air heater(s);	MMS & MSW version 1.0	DR	N/A	OK	OK
B.4.57.5. Heat generation in existing or new on-site or off-site renewable energy based boiler(s) or air heater(s);	MMS & MSW version 1.0	DR	N/A	OK	OK
B.4.57.6. Any other source, such as district heat; and	MMS & MSW version 1.0	DR	N/A	OK	OK
B.4.57.7. Other heat generation technologies (e.g. heat pumps or solar energy).	MMS & MSW version 1.0	DR	N/A	OK	OK
B.4.58. In case of project with the treatment of the fresh waste, has the following alternatives or combinations of these alternatives been considered by PD?	MMS & MSW version 1.0	DR	N/A	OK	OK
B.4.59. The project activity without being registered as a GS project activity (i.e. any (combination) of the waste treatment options; Composting, Co-composting or anaerobic digestion);	MMS & MSW version 1.0	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.4.60. Disposal of the fresh waste in a SWDS with a partial capture of the LFG and flaring of the captured LFG;	MMS & MSW version 1.0	DR	N/A	OK	OK
B.4.61. Disposal of the fresh waste in a SWDS without a LFG capture system;	MMS & MSW version 1.0	DR	N/A	OK	OK
B.4.61.1. Part of the fresh fraction of the solid waste is recycled and not disposed in the SWDS;	MMS & MSW version 1.0	DR	N/A	OK	OK
B.4.61.2. Part of the fresh fraction of the solid waste is treated aerobically and not disposed in the SWDS;	MMS & MSW version 1.0	DR	N/A	OK	OK
B.4.61.3. Part of the organic fraction of the solid waste is incinerated and not disposed in the SWDS;	MMS & MSW version 1.0	DR	N/A	OK	OK
B.4.61.4. : Part of the organic fraction of the solid waste is gasified and not disposed in the SWDS;	MMS & MSW version 1.0	DR	N/A	OK	OK
B.4.61.5. Part of the organic fraction of the solid waste is treated in an anaerobic digester and not disposed in the SWDS;	MMS & MSW version 1.0	DR	N/A	OK	OK
B.4.61.6. Part of the organic fraction of the solid waste is mechanically or thermally treated to produce RDF/SB and not disposed in the SWDS.	MMS & MSW version 1.0	DR	N/A	OK	OK
B.4.62. In case of project with the treatment of the fresh waste, has the baseline scenario been determined as the one of	MMS & MSW version 1.0	DR	N/A	OK	OK

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the following among the most plausible baseline scenario alternatives?					
B.4.63. Disposal of the fresh waste in a SWDS with a partial capture of the LFG and flaring of the captured LFG;	MMS & MSW version 1.0	DR	N/A	OK	OK
B.4.64. Disposal of the fresh waste in a SWDS without a LFG capture system;	MMS & MSW version 1.0	DR	N/A	OK	OK
B.5. Demonstration of additionality					
• The percentage share of total installed capacity of the specific technology in the total installed grid connected power generation capacity in the host country is equal to or less than two per cent; or • The total installed capacity of the technology in the host country is less than or equal to 50 MW.)If the proposed project activity is a type of project activity which is deemed automatically additional, as defined by the applied approved methodology or standardized baseline, the methodology or standardized baseline that establish automatic additionality for the proposed project activity (including the version number and the specific paragraph, if applicable) must be specified and how the proposed project activity meets the criteria for automatic additionality in the relevant	GS-PDD-FORM Ver. 1.2 CDM TOOL01 Tool for the demonstration and assessment of additionality ACM 0002 Version 21.0	DR	Investment Analysis and Common Practice Analysis have been clearly stated.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
methodology or standardized baselines must be defined.)					
B.5.1. Prior consideration of CDM					
B.5.1.1. In case of retroactive projects and all projects undergoing Design Changes to include new technologies/measures, has the prior consideration been demonstrated by submission timeline?	GS-PDD-FORM Ver. 1.2	DR	Please demonstrate prior consideration and include relevant dates in timeline and provide evidences Please discuss if time of first submission is within one year of the project start date	CAR-6	OK
B.5.1.2. In case of retroactive projects, has the time of first submission is within one year of the project start date?	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-6.	CAR-6	OK
B.5.1.3. In case of projects undergoing design changes, has the request for design change approval is within one year design change start date?	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
B.5.1.4. Is the start date of the proposed project activity prior to the date of publication of the PDD for the global stakeholder consultation?	CDM Project Standard for Project activities §31	DR	Yes	OK	OK

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B.5.1.5. If the start date of a proposed CDM project activity, is prior to the date of publication of the PDD for the global stakeholder consultation, have the PDs demonstrated that the CDM benefits were considered necessary in the decision to undertake the project as a proposed CDM project activity?	CDM Project Standard for Project activities §31	DR	Yes	OK	OK
B.5.1.6. If the project was not published and the starting date is on or after 2nd August 2008, have there been list of prior consideration notifications from the UNFCCC website and communication between the project proponent, the Secretariat and the host Party DNA regarding the commencement of a new project activity? (If such notification has not been provided by the project developers in accordance with the Project cycle procedure, the validation team shall determine that the CDM was not seriously considered in the decision to implement the project activity.)	CDM Project Standard for Project activities §32 CDM Validation and Verification Standard for Project activities §41	DR	Yes	OK	OK
B.5.1.7. For the project activities with a starting date before 2nd August 2008 and prior to the date of	CDM Project	DR	N/A	OK	OK

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publication of the PDD for global stakeholder consultation, did PDs have an awareness of the CDM prior to the project activity start date, and that the benefits of the CDM were a decisive factor in the decision to proceed with the project?	Standard for Project activities §33a CDM Validation and Verification Standard for Project activities §42a				
B.5.1.8. For the project activities with a starting date before 2nd August 2008 and prior to the date of publication of the PDD for global stakeholder consultation, was there enough evidence presented to prove that PDs were taking continuing and real actions to secure CDM status for the project in parallel with its implementation?	CDM Project Standard for Project activities §33b CDM Validation and Verification Standard for Project activities §42b	DR	N/A	OK	OK

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B.5.1.9. In case of significant gap in the project development history, can a clear conclusion on prior CDM consideration be made? •	CDM Validation and Verification Standard for Project activities §44	DR	N/A	OK	OK
Sub-Step 1a: Definition of alternatives	CDM TOOL01 Tool for the demonstration and assessment of additionality				
Sub-Step 1b: Consistency with mandatory laws and regulations	CDM TOOL01 Tool for the demonstration and assessment of				

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	additionality				
B.5.1.10. Has the analysis of compliance of the defined alternatives with the mandatory laws and regulations carried out appropriately?	CDM TOOL01 Tool for the demonstration and assessment of additionality	DR	The analysis of compliance has been carried out appropriately.	OK	OK
Step 2: Investment analysis	CDM TOOL01 Tool for the demonstration and assessment of additionality				
B.5.1.11. Are the input values used in all investment analysis valid, consistent and applicable at the time of the investment decision taken by the PD?	CDM TOOL27: Investment analysis	DR	a)Please show evidence for capital investment ~ 5,255,339 USD b)Please show evidence for Market price after 10th years in PDD and explain.	CAR-7	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	CDM Validation and Verification Standard for Project activities §96		c)In PDD and IRR indicate the actual years (2019, 2020, etc) over which the project is going to be implemented. d)Please indicate the date for the TL/€ exchange rate that is given in Cell D21 of the Worksheet "Cash Flow". e)The choice of the investment/assessment period is appropriate; however, this choice has not been justified/explained in the PDD. f)All relevant costs are included in the calculation of the IRR. However, there is no explanation of how the operating costs are calculated. g)Please expand the table of IRR inputs in the PDD to include "CONSTRUCTION WORKS, Equipment (Electrification + Cabling), PV Panels, Other (Design & Consultancy, Transport, Project Development Cost ETC.), Depreciation years, Opex, Transmission Loss Factor, Exchange Ratio" h)Table 4 shall also include reference document and date of reference document, Please note that all IRR inputs shall be applicable as of start date		

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B.5.1.12. Are all the listed input values been consistently applied in all calculations?	CDM TOOL27: Investment analysis	DR	Yes, all listed input values have been applied consistently.	OK	OK
B.5.1.13. Do the PDs rely on values from Feasibility Study Report (FSR) that are approved by national authorities for proposed project activities?	CDM Validation and Verification Standard for Project activities §101	DR	Yes, the PPs rely on values from an FSR that is approved by the national authorities.	OK	OK
B.5.1.14. If PDs rely on FSR,					
B.5.1.14.1. Is it possible to conclude that in the period of time between the finalization of the FSR and the investment decision input values would not have materially changed?	CDM Validation and Verification Standard for Project activities §101a	DR	Yes, it is possible to assume that during the period between the finalization of the FSR and the investment decision, the input values would not have changed materially.	OK	OK
B.5.1.14.2. Are the values used in the PDD and associated annexes fully consistent with the FSR?	CDM Validation and Verification Standard for Project activities	DR	Yes, the values used in the PDD and all annexes are fully consistent with the FSR.	OK	OK

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	§101b, §101c				
B.5.1.15. Is the plant load factor defined ex-ante in the PDD appropriately?	Guidelines for the reporting and validation of plant load factors	DR	N/A	OK	OK
Sub-step 2a: Determine appropriate analysis method	CDM TOOL01 Tool for the demonstration and assessment of additionality				
B.5.1.16. Has the PDD described the selection process of investment analysis method (simple cost, investment comparison and benchmark analysis) for the proposed project activity?	CDM TOOL01 Tool for the demonstration and assessment of	DR	Yes, the PDD describes the investment analysis method on page 14. Benchmark analysis is selected.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	additionality				
B.5.1.17. Is the choice of the investment analysis method appropriate to the proposed project activity?	CDM TOOL01 Tool for the demonstration and assessment of additionality CDM TOOL27: Investment analysis	DR	Yes, since there are revenues to be generated and there are no other investment projects available for comparison purposes, the Benchmark Analysis is the appropriate methodology.	OK	OK
Sub-step 2b: Option I-Simple cost analysis	CDM TOOL01 Tool for the demonstration and assessment of additionality				
B.5.1.18. Have all costs associated with the project activity and the alternatives identified in Step 1 been documented?	CDM TOOL01 Tool for the	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	demonstration and assessment of additionality				
B.5.1.19. Has it been demonstrated and supported by valid evidence that at least one of the alternatives defined in Step 1 is less costly than the proposed project activity?	CDM TOOL01 Tool for the demonstration and assessment of additionality	DR	N/A	OK	OK
Sub-step 2b: Option II-Apply investment comparison analysis	CDM TOOL01 Tool for the demonstration and assessment of additionality				

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B.5.1.20. Has the PDs identified a financial indicator (such as IRR, NPV, cost benefit ratio, or unit cost of service (e.g., levelized cost of electricity production in $/kWh or levelized cost of delivered heat in $/G)) which is most suitable for the project type and decision-making context regarding the investment comparison analysis?	CDM TOOL01 Tool for the demonstration and assessment of additionality	DR	N/A	OK	OK
Sub-step 2b: Option III. Apply benchmark analysis	CDM TOOL01 Tool for the demonstration and assessment of additionality				
B.5.1.21. Has the PDs identified a financial indicator (such as IRR) which is most suitable for the project type and decision-making context including the alternatives for the benchmark analysis?	CDM TOOL01 Tool for the demonstration and assessment of	DR	Yes, the PPs have identified Equity IRR as the most suitable financial indicator (PDD, page 14).	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	additionality CDM TOOL27: Investment analysis CDM Validation and Verification Standard for Project activities §99a				
B.5.1.22. Has a pre-tax benchmark been applied?	CDM TOOL27: Investment analysis	DR	No. The PPs use an Equity IRR and by definition, it is an after-tax benchmark.	OK	OK
B.5.1.23. If post tax benchmark is applied, has actual interest payable been taken into account in the calculation of income tax?	CDM TOOL27: Investment analysis	DR	No. The project is 100% equity-financed. Therefore, there is no interest payable to take into account.	OK	OK
If the project developer has applied investment comparison or benchmark analysis	CDM TOOL01 Tool for the demonstration and assessment of				

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	additionality				
B.5.1.24. If the benchmark is based on parameters that are standard in the market, is the cost of equity determined appropriately? Guideline either by:	CDM TOOL27: Investment analysis	DR		OK	OK
B.5.1.24.1. selecting the values provided in the latest applicable version of Appendix of Investment Analysis Tool? or	CDM TOOL27: Investment analysis	DR	The benchmark cost of equity is determined based on the World Bank "Implementation Completion and Results Report (Report No: ICR00004069, page 40) as indicated on page 14 of the PDD).	OK	OK
B.5.1.24.2. by calculating the cost of equity using Capital Asset Pricing Model (CAPM)?	CDM TOOL27: Investment analysis	DR	N/A	OK	OK
B.5.1.25. If the benchmark based on parameters that are standard in the market, has the cost of debt been calculated as the cost of financing in the capital markets (e.g. commercial lending rates and guarantees required for the country and the type of project activity concerned), based on documented evidence from financial institutions with regard to the cost of debt financing of comparable projects?	CDM TOOL27: Investment analysis CDM TOOL01 Tool for the demonstration and assessment of	DR	N/A	OK	OK

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	additionality				
B.5.1.26. Has the discount rates and benchmarks been derived and supported appropriately?	CDM TOOL01 Tool for the demonstration and assessment of additionality	DR	Yes, the benchmark cost of equity is supported by the World Bank document. Please see B.5.1.25.	OK	OK
If the company's internal benchmark has been used for the expected return on equity: (Only applicable to benchmark analysis)	CDM TOOL27: Investment analysis				
B.5.1.27. Has it been demonstrated that there is only one possible project developer?	CDM TOOL27: Investment analysis	DR	N/A	OK	OK
B.5.1.28. Has it been demonstrated that same benchmark values are used for similar projects with similar risks, developed by the same company or, if the company is brand new, would have been used for similar projects in the same sector in the country/region?	CDM TOOL27: Investment analysis	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.5.1.29. If the company's expected return on equity is used as a benchmark, does the percentage of debt financing and equity financing reflect the long-term debt/equity finance structure of the legal entity owning the assets of the project activity?	CDM TOOL27: Investment analysis	DR	N/A	OK	OK
B.5.1.30. If the company's expected return on equity is used as a benchmark, has the cost of debt been based on the weighted average cost of debt financing of the legal entity owning the project activity?	CDM TOOL27: Investment analysis	DR	N/A	OK	OK
B.5.1.31. In case of loans, is the weighted average cost of outstanding long-term debt used as a benchmark?	CDM TOOL27: Investment analysis	DR	N/A	OK	OK
B.5.1.32. In case of bonds, is the weighted average yield of the bonds used as a benchmark?	CDM TOOL27: Investment analysis	DR	N/A	OK	OK
B.5.1.33. In case of bonds, are the key parameters of the bond including the time of maturity, yield, registration issuance in the financial system and set-up in the market documented?	CDM TOOL27: Investment analysis	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.5.1.34. In case of debt financing from a parent company, is the transfer of capital to the legal entity documented? (Along with the contract of lending between the parent company and the legal entity owning the assets of the project activity and/or the parameters of the corporate bonds (including the time of maturity, yield, registration issuance in the financial system and set-up in the market. This option is only valid for corporate bonds issued in the host country of the project activity.)	CDM TOOL27: Investment analysis	DR	N/A	OK	OK
B.5.1.35. In case of loans from a financial institution, is the contract of lending between the financial institution and the legal entity owning the assets of the project activity, or, in absence of the contract, a letter from the bank stating its intention to award the loan and the key terms for the loan documented and supported by the appropriate evidence?	CDM TOOL27: Investment analysis	DR	N/A	OK	OK
Sub-step 2c: Calculation and comparison of financial indicators (Only applicable to investment comparison and benchmark analysis)	CDM TOOL01 Tool for the demonstra				

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	tion and assessment of additionality				
B.5.1.36. Has the period of assessment including IRR and equity IRR calculations been chosen appropriately?	CDM TOOL27: Investment analysis	DR	Yes, the choice of the investment/assessment period is appropriate.	OK	OK
B.5.1.37. Have the PDs justified the period of assessment in the context of the underlying project activity?	CDM TOOL27: Investment analysis	DR	No. Please see the answer to B.5.1.38.	OK	OK
B.5.1.38. In case IRR assessment period doesn't cover the technical lifetime of the project, does the cash flow in the final year include a fair value of the project activity assets at the end of the assessment period?	CDM TOOL27: Investment analysis	DR	Yes, the cash flow at the end of the project's life includes a fair value of the project assets.	OK	OK
B.5.1.39. Has the fair value of the project activity assets been calculated in accordance with local accounting regulations where available, or international best practice?	CDM TOOL27: Investment analysis	DR	Yes, the fair value of project assets is calculated in accordance with international best practices.	OK	OK
B.5.1.40. Do the fair value calculations include both the book value of the asset and the reasonable expectation of the potential profit or loss on the realization of the assets?	CDM TOOL27: Investment analysis	DR	Yes, the calculations recognize the potential profit based on the fair value of project assets.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.5.1.41. Have all relevant costs been included for the calculation of IRR or other relevant financial indicator? (Including, for example, the investment cost, the operations and maintenance/rehabilitation costs), and revenues (excluding CER revenues, but possibly including inter alia subsidies/fiscal incentives, ODA, etc, where applicable), and, (as appropriate, non-market cost and benefits in the case of public investors if this is standard practice for the selection of public investments in the host country.The IRR calculation may include the cost of major maintenance and/or rehabilitation if these are expected to be incurred during the period of assessment.)	CDM TOOL01 Tool for the demonstration and assessment of additionality CDM TOOL27: Investment analysis	DR	Yes, all relevant costs are included in the calculation of the IRR.	OK	OK
B.5.1.42. In case of project IRR, has the cost of financing expenditures (i.e. loan repayments and interest) been included?	CDM TOOL27: Investment analysis	DR	N/A	OK	OK
B.5.1.43. Has the depreciation, and other non-cash items related to the project activity, (those deducted in estimating gross profits on which tax is calculated) been added back to net profits in the calculation of the financial indicator (e.g. IRR, NPV)?	CDM TOOL27: Investment analysis	DR	Yes, depreciation is added back to net profits while calculating the project's cash flows.	OK	OK
B.5.1.44. In case of using post-tax bencmark, has taxes been included as an expense in the IRR/NPV calculation?	CDM TOOL27:	DR	Yes, taxes are included as an expense in the calculation of Equity IRR.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	Investment analysis				
B.5.1.45. In case any risk premiums are applied in determination of the benchmark, are the same risks associated with the project type or activity, too?	CDM Validation and Verification Standard for Project activities §100b CDM TOOL01 Tool for the demonstration and assessment of additionality	DR	N/A	OK	OK
B.5.1.46. In the equity IRR, has the cost of debt (loan, bond etc.) been considered as the net cash outflow?	CDM TOOL27: Investment analysis	DR	No. The project is 100% equity-financed. Therefore, there is no cost of debt to be considered as a net cash outflow.	OK	OK
B.5.1.47. In cases where an investment analysis is carried out in nominal terms and the available IRR benchmarks are in real terms, have PDs converted the real term values	CDM TOOL27: Investment analysis	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
of benchmarks to nominal values by adding the inflation rate?					
B.5.1.48. Has it been demonstrated that proposed project activity isn't economically or financially feasible without the revenue from CDM?	CDM TOOL01 Tool for the demonstration and assessment of additionality CDM Validation and Verification Standard for Project activities §96b	DR	Yes, the initial set of calculations demonstrate that the proposed project activity is not economically feasible since the Equity IRR is below the benchmark.	OK	OK
ACM0002					
B.5.1.49. If the proposed project is integrated hydro power project, has the following been considered for the purpose of investment analysis?	ACM 0002 Version 21.0	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.5.1.49.1. Investment associated with the CDM project activity, i.e. construction of a new reservoir and new power plants/units and	ACM 0002 Version 21.0	DR	N/A	OK	OK
B.5.1.49.2. Revenue due to net electricity generation ($EG_{PJ,y}$) as determined using equation (10) in ACM 0002	ACM 0002 Version 21.0	DR	N/A	OK	OK
AM0058					
B.5.1.50. Does the economic investment analysis explicitly state the following parameters?	AM0058 Version 5.0	DR	N/A	OK	OK
B.5.1.50.1. Investment requirements (including break-up into major equipment costs, required construction work, and installation);	AM0058 Version 5.0	DR	N/A	OK	OK
B.5.1.50.2. Current price of each relevant fuel;	AM0058 Version 5.0	DR	N/A	OK	OK
B.5.1.50.3. Decreased revenues from decrease in electricity exported to the grid;	AM0058 Version 5.0	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.5.1.50.4. Changes in operating costs (including handling/treatment costs for fuel);	AM0058 Version 5.0	DR	N/A	OK	OK
B.5.1.50.5. Changes in the operation and maintenance costs, e.g. of slag and ash disposal, environmental pollution fees etc.;	AM0058 Version 5.0	DR	N/A	OK	OK
B.5.1.50.6. Revenues from sell of heat to users and industrial consumers.	AM0058 Version 5.0				
AMS-II.G					
B.5.1.51. For the specific case of this methodology, additionality is demonstrated using which one of the options 1/2/3?	AMS II.G. Version 12.0 §16	DR	N/A	OK	OK
B.5.1.52. If Option 1 (Positive list) is chosen: Demonstrate ex ante that the penetration of high efficiency biomass fired devices (e.g., energy efficient cookstoves) is equal to or less than 5 per cent of the technologies/measures providing similar services in the region in order to be considered as automatically additional.	AMS II.G. Version 12.0 §17	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.5.1.53. The penetration shall be determined using one of the following options: (a) Official statistics or reports, relevant industry association reports or peer-reviewed literature; (b) Results of a sampling survey conducted by project participants or a third party as per the latest version of "Standard: Sampling and surveys for CDM project activities and programme of activities" covering technologies/measures providing similar services as the project technology/measure;	AMS II.G. Version 12.0 §18	DR	N/A	OK	OK
B.5.1.54. The region/applicable geographical area to determine the penetration should be the entire host country. If the project participants opt to limit the applicable geographical area to a specific geographical area (such as province, region, etc.) within the host country, then they shall provide justification on the essential distinction between the identified specific geographical area and rest of the host country.	AMS II.G. Version 12.0 §19	DR	N/A	OK	OK
B.5.1.55. To determine the penetration using the above paragraph, the most recent data available at the time of submission of the CDM-PDD or CDM-	AMS II.G. Version 12.0	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
CPA-DD for validation/inclusion, shall be used, and the data vintage used shall not include data older than three years prior to: (a) the start date of the CDM project activity; or (b) the start of validation/inclusion, whichever is earlier.	§20				
B.5.1.56. If Option 2 is chosen: Demonstrate additionality by applying the "TOOL21: Demonstration of additionality of SSC project activities".	AMS II.G. Version 12.0 §21	DR	N/A	OK	OK
B.5.1.57. If Option 3 is chosen: Demonstrate additionality by applying the "TOOL19: Demonstration of additionality of microscale project activities".	AMS II.G. Version 12.0 §22	DR	N/A	OK	OK
The Gold Standard Methodology for Emission Reductions from Safe Drinking Water Supply					
B.5.1.58. The project developer shall demonstrate that the project could not or would not take place without carbon finance. Possible reasons for the need for carbon finance may be that the initial investment or the on-going marketing, distribution, quality control, manufacturing and	SDWS. Version 1.0 §3.3.1	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
maintenance costs are unaffordable for the target population.					
B.5.1.59. The project developer shall demonstrate additionality by conforming to additionality requirements of one of the options below, a. Applicable GS4GG Activity Requirements; b. CDM Tool 01 - Tool for the Demonstration and Assessment of Additionality; c. CDM Tool 19- Demonstration of additionality of microscale project activities; (not applicable to Gold Standard microscale projects) d. CDM Tool 21 – Demonstration of additionality of small-scale project activities; (applicable to small-scale projects only) e. An approved Gold Standard VER additionality tool	SDWS. Version 1.0 §3.3.2	DR	N/A	OK	OK
The Gold Standard Revised Consolidated Baseline Methodology for GHG Emission Reductions from Manure Management Systems and Municipal Solid Waste					
B.5.1.60. In case the project with managing the manure for greenfield facilities, has an economic assessment of the	MMS & MSW version 1.0	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
identified lagoon design option been carried out as per step 3 (investment analysis) of the latest applicable version of the "Combined tool to identify the baseline scenario and demonstrate additionality"?					
B.5.1.61. In case the project with managing the manure for greenfield facilities, has the least cost anaerobic lagoon design option from the options identified been chosen by PD?	MMS & MSW version 1.0	DR	N/A	OK	OK
B.5.1.62. In case the project with managing the manure for greenfield facilities with several anaerobic lagoon design options and with comparably low cost exist, has the one with the lowest lagoon depth as the baseline lagoon design been chosen?	MMS & MSW version 1.0	DR	N/A	OK	OK
B.5.1.63. In case the project with managing the manure for greenfield facilities, has the following been documented explicitly by PD?	MMS & MSW version 1.0	DR	N/A	OK	OK
B.5.1.63.1. Land cost;	MMS & MSW version 1.0	DR	N/A	OK	OK
B.5.1.63.2. Engineering, procurement and construction cost;	MMS & MSW version 1.0	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.5.1.63.3. Labour cost;	MMS & MSW version 1.0	DR	N/A	OK	OK
B.5.1.63.4. Operation and maintenance cost;	MMS & MSW version 1.0	DR	N/A	OK	OK
B.5.1.63.5. Administration cost;	MMS & MSW version 1.0	DR	N/A	OK	OK
B.5.1.63.6. Fuel cost;	MMS & MSW version 1.0	DR	N/A	OK	OK
B.5.1.63.7. Capital cost and interest;	MMS & MSW version 1.0	DR	N/A	OK	OK
B.5.1.63.8. Revenue from electricity sales;	MMS & MSW version 1.0	DR	N/A	OK	OK
B.5.1.63.9. All other costs of implementing the technology of each lagoon design option;	MMS & MSW version 1.0	DR	N/A	OK	OK
B.5.1.63.10. All revenues generated by the implementation of the proposed technology (including energy savings due to captive use of biogas as fuel for either electricity or heat generation at the project site, revenue on account of avoided water consumption, fossil fuel replacement, sale of	MMS & MSW version 1.0	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
concentrated solids as fertilizers, subsidies/fiscal incentives etc.).					
Sub-step 2d: Sensitivity analysis (Only applicable to investment comparison and benchmark analysis)	CDM TOOL01 Tool for the demonstration and assessment of additionality				
B.5.1.64. Has a sensitivity analysis showing whether the conclusion regarding the financial/economic attractiveness is robust to reasonable variations in the critical assumptions, been included in the PDD?	CDM TOOL01 Tool for the demonstration and assessment of additionality CDM TOOL27: Investment analysis	DR	Yes, a sensitivity analysis that looks at scenarios where key inputs change within the ∓15% range is presented.	OK	OK
B.5.1.65. Has the range of variations selected been justified in the context of the project?	CDM TOOL27: Investment analysis	DR	Yes, the range of variations and their applicability are discussed on page 16 of the PDD.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
Step-3: Barrier analysis	CDM TOOL01 Tool for the demonstration and assessment of additionality				
B.5.1.66. Have the PDs used and referred the "Guidelines for Objective Demonstration and Assessment of Barriers"?	Guidelines for objective demonstration and assessment of barriers	DR	N/A	OK	OK
Sub-step 3a: Identify barriers that would prevent the implementation of the proposed project activity					
B.5.1.67. Has the PDs established realistic and credible barriers that would prevent the implementation of the proposed CDM project activity? •	CDM TOOL01 Tool for the demonstration and assessment of	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	additionality ACM 0002 Version 20.0				
Sub-step 3b: Show that the identified barriers would not prevent the implementation of at least one of the alternatives (except the proposed project activity)	CDM TOOL01 Tool for the demonstration and assessment of additionality				
B.5.1.68. Has the identified barriers that would prevent the implementation of the proposed project activity, but not the implementation of at least one of the alternatives in particular the identified baseline scenario, been supported by the clear and valid evidence?	CDM TOOL01 Tool for the demonstration and assessment of additionality CDM Validation and	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	Verification Standard for Project activities §103 Guidelines for objective demonstration and assessment of barriers				
B.5.1.69. Is it demonstrated and supported by proper evidence how the CDM alleviates each of the identified barriers to a level that the project is not prevented anymore from occurring by any of the barriers?	Guidelines for objective demonstration and assessment of barriers CDM TOOL01 Tool for the demonstration and assessment of additionality	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
Investment, technological and other barriers					
B.5.1.70. In case of investment barriers, is it demonstrated in the PDD that the financing of the project was assured only due to the benefit of the CDM?	Guidelines for objective demonstration and assessment of barriers	DR	N/A	OK	OK
B.5.1.71. Can any of the indicated barriers be eliminated by additional financial investments into the proposed project activity?	Guidelines for objective demonstration and assessment of barriers	DR	N/A	OK	OK
B.5.1.72. While demonstrating barriers related to the lack of access to capital, technologies and skilled labour, do the PDs provide information on the nature of the companies and entities involved in the financing and implementation of the project?	Guidelines for objective demonstration and assessment of barriers	DR	N/A	OK	OK
Barriers due to prevailing practice					

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.5.1.73. In case PDs claim that project activity is "first-of-its-kind" have those claims been substantiated and supported by proper evidence?	CDM TOOL01 Tool for the demonstration and assessment of additionality CDM TOOL23 Additionality of first-of-its-kind project Activities §12	DR	N/A	OK	OK
Step-4: Common practice analysis					
B.5.1.74. If the project is not "first-of-its-kind", have PDs applied the common practice analysis appropriately?	CDM TOOL01 Tool for the demonstration and assessment of	DR	Yes	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	additionality CDM Validation and Verification Standard for Project activities §108 CDM TOOL24 Common practice				
B.5.1.75. Is the selection of the assessment region explained and justified completely and correctly?	CDM Validation and Verification Standard for Project activities §108a CDM TOOL24 Common practice §9	DR	This has been explained and justified correctly.	OK	OK
Sub-step 4a: The proposed project activity(ies) applies measure(s) that are listed below **(Questions from B.5.1.76 to B.5.1.82 are applicable)**	CDM TOOL01 Tool for the				

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
• **Fuel and feedstock switch** • **Switch of technology with or without change of energy source (including energy efficiency improvement as well as use of renewable energies);** • **Methane destruction** • **Methane formation avoidance**	demonstration and assessment of additionality CDM TOOL24 Common practice §10				
B.5.1.76. Have all projects within an applicable output range (+/-50%) been included into the common practice analysis?	CDM TOOL24 Common practice §13	DR	All projects have been included.	OK	OK
B.5.1.77. Have the similar projects (both CDM and non-CDM) been identified?	CDM TOOL24 Common practice §14	DR	The similar projects have been applied.	OK	OK
B.5.1.78. If the similar projects have been identified, are the following conditions fullfilled?	CDM TOOL24 Common practice §14	DR	Please see below.		
B.5.1.78.1. Are the projects located in the applicable geographical area?	CDM TOOL24	DR	The projects are located in the applicable area.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	Common practice §14				
B.5.1.78.2. Are the projects applied the same measure as the proposed project activity?	CDM TOOL24 Common practice §14	DR	The projects are applied the same measure.	OK	OK
B.5.1.78.3. Do the projects use the same energy source/fuel and feedstock as the proposed project activity, if a technology switch measure is implemented by the proposed project activity?	CDM TOOL24 Common practice §14	DR	The projects use the same energy source.	OK	OK
B.5.1.78.4. Do the plants in which the projects have been implemented produce goods or services with comparable quality, properties and applications areas (e.g. clinker) as the proposed project plant?	CDM TOOL24 Common practice §14	DR	The plants have been implemented as the proposed project plant.	OK	OK
B.5.1.78.5. Are the capacity or output of the projects within the applicable capacity or output range calculated in Question B.5.1.77?	CDM TOOL24 Common practice §14	DR	The capacities of the projects have been given in the PDD.	OK	OK
B.5.1.78.6. Do the projects start commercial operation before the PDD published for global stakeholder consultation or before the start	CDM TOOL24	DR	The projects start the commercial operation before the PDD published.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
date of proposed project activity, whichever is earlier for the proposed project activity?	Common practice §14				
B.5.1.79. Within the projects identified in Question B.5.1.77, have the following project activities been identified?	CDM TOOL24 Common practice §15	DR	Please see below.		
B.5.1.79.1. Non registered CDM project activities	CDM TOOL24 Common practice §15	DR	These ones have been identified.	OK	OK
B.5.1.79.2. Project activities not submitted for registration	CDM TOOL24 Common practice §15	DR	These ones have been identified.	OK	OK
B.5.1.79.3. Project activities not undergoing validation	CDM TOOL24 Common practice §15	DR	These ones have been identified.	OK	OK
B.5.1.80. Within similar projects identified in Question B.5.1.77, have the projects applying technologies that are different to the technology applied in the proposed project activity been identified?	CDM TOOL24 Common practice §16	DR	These ones have been identified.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	CDM TOOL01 Tool for the demonstration and assessment of additionality CDM Validation and Verification Standard for Project activities §108c				
B.5.1.81. Has the factor (F=1-Ndiff / Nall) been calculated correctly?	CDM TOOL24 Common practice §17	DR	Yes	OK	OK
B.5.1.82. Based on an analysis provided in the PDD, is it possible to conclude that the proposed project activity is not common practice?	CDM TOOL24 Common practice §18	DR	According to “Tool for Common practice”, Version 03.1, if the factor F is greater than 0.2 and Nall-Ndiff is greater than 3, then the proposed project is a “common practice”.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
Sub-step 4b: The proposed project activity(ies) doesn't apply any of the measures that are listed in Sub-step 4a above **(Questions B.5.1.83 and B.5.1.84 are applicable):**					
B.5.1.83. Has the PDs provided an analysis of any other activities that are operational and that are similar to the proposed project activity in the PDD?	CDM TOOL01 Tool for the demonstration and assessment of additionality CDM Validation and Verification Standard for Project activities §109b	DR	This is available.	OK	OK
B.5.1.84. If similar activities have been identified, has it been demonstrated that there are essential distinctions between them and proposed project activity, which demonstrate the necessity of the CDM benefits?	CDM TOOL01 Tool for the demonstration and	DR	This is available.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	assessment of additionality CDM Validation and Verification Standard for Project activities §109c				
In all cases to check additionality at the final stage					
B.5.1.85. Has the selected methodology been correctly applied with respect to additionality?	CDM Validation and Verification Standard for Project activities §63d	DR	The applied methodology has been applied correctly with respect to additionality.	OK	OK
B.5.1.86. As a result, has the PDs demonstrated that the project activity is additional in accordance with the selected methodology(ies) and tool(s)?	GS-PDD-FORM Ver. 1.2 CDM Validation and Verification	DR	The PDs has demonstrated that the project activity is additional.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	Standard for Project activities §88				
B.6. Sustainable Development Goals (SDG) outcomes					
Has the PDs specified the relevant SDG target for each of three SDGs addressed by the project?	GS-PDD-FORM Ver. 1.2	DR	Three SDGs have been addressed but please provide the SDG Impact Tool.	CAR-8	OK
B.6.1. Explanation of methodological choices/approaches for estimating the SDG Impact					
B.6.1.1. Have PDs explained how the methods or methodological steps in the selected methodology(ies), for calculating baseline and project outcomes are applied?	GS-PDD-FORM Ver. 1.2	DR	Please see below.		
B.6.1.1.1. Baseline	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK
B.6.1.1.2. Project	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK
B.6.1.1.3. Leakage	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.6.1.1.4. Net benefit	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK
B.6.1.2. Has the PDs clearly stated which equations will be used in calculating net benefit?	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK
B.6.1.3. Has the PDs explained and justified all relevant methodological choices including the following?	GS-PDD-FORM Ver. 1.2 CDM Project Standard for Project activities §72	DR	Please see below.		
B.6.1.3.1. Where the methodology(ies) include different scenarios or cases, indicate and justify which scenario or case applies to the project activity	GS-PDD-FORM Ver. 1.2 CDM Project Standard for Project activities §72	DR	N/A	OK	OK
B.6.1.3.2. Where the methodology(ies) provide different options to choose from , indicate and justify	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
which option is chosen for the project activity	CDM Project Standard for Project activities §72				
B.6.1.3.3. Where the methodology(ies) allow different default values, indicate and justify which of the default values have been chosen for the project activity.	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
B.6.2. Data and parameters fixed ex ante					
B.6.2.1. Have the PDs included a compilation of information on the data and parameters that are **not monitored** during the crediting period but are determined before the registration and remain fixed throughout the crediting period under section B.6.3 of the PDD?	GS-PDD-FORM Ver. 1.2	DR	These are available in the PDD.	OK	OK
B.6.2.2. Are the data that are calculated with the equations provided in the selected methodology(ies) or default values specified in the methodology(ies) included in the compilation?	GS-PDD-FORM Ver. 1.2	DR	Yes	OK	OK

*DR= Document Review, I= Interview, SV= Site Visit

Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.6.2.3. Are the following information regarding the data and parameters specified correctly?	GS-PDD-FORM Ver. 1.2	DR	Please see below.		
B.6.2.3.1. Relevant SDG indicator	GS-PDD-FORM Ver. 1.2	DR	This is available for each parameter.	OK	OK
B.6.2.3.2. Data/parameter	GS-PDD-FORM Ver. 1.2	DR	This is available for each parameter.	OK	OK
B.6.2.3.3. Data/parameter unit	GS-PDD-FORM Ver. 1.2	DR	This is available for each parameter.	OK	OK
B.6.2.3.4. Description of the data/parameter	GS-PDD-FORM Ver. 1.2	DR	This is available for each parameter.	OK	OK
B.6.2.3.5. Source of data	GS-PDD-FORM Ver. 1.2	DR	This is available for each parameter.	OK	OK
B.6.2.4. Values applied to data/parameter	GS-PDD-FORM Ver. 1.2	DR	In baseline excel column L please revise title “Estimation of electricity generation” or the data OM-BM coefficients weights are wrong in excel Please delete power density sheet Please update B.6.2	CAR-9	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.6.2.5. Where applied values have been measured, are the following included in the PDD?	GS-PDD-FORM Ver. 1.2	DR	Please see below.		
B.6.2.5.1. The equipment used	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
B.6.2.5.2. The standards used	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
B.6.2.5.3. Responsible person/entity having undertaken the measurement	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
B.6.2.5.4. The date of measurement(s)	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
B.6.2.5.5. The frequency of measurement(s)	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
B.6.2.5.6. The measurement results	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
B.6.2.6. 1Has the purpose of data been chosen as one of the following for each data/parameter?	GS-PDD-FORM Ver. 1.2	DR	Please see below.		
B.6.2.6.1. Calculation of baseline;	GS-PDD-FORM	DR	This is available for each parameter.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	Ver. 1.2				
B.6.2.6.2. Calculation of project;	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
B.6.2.6.3. Calculation of leakage.	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
B.6.3. Ex ante estimation of SDG impact					
B.6.3.1. Do the steps taken and equations applied to calculate following comply with the requirements of the selected baseline and monitoring methodology including applicable tool(s)?	CDM Project Standard for Project activities §71 CDM Validation and Verification Standard for Project activities §110	DR	Please see below.	OK	OK
B.6.3.1.1. project outcome	CDM Project Standard for Project activities §71 CDM	DR	This is available.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	Validation and Verification Standard for Project activities §110				
B.6.3.1.2. baseline outcome	CDM Project Standard for Project activities §71 CDM Validation and Verification Standard for Project activities §110	DR	This is available.	OK	OK
B.6.3.1.3. leakage	CDM Project Standard for Project activities §71 CDM Validation and Verification Standard	DR	This is available.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	for Project activities §110				
B.6.3.1.4. Net outcomes	CDM Project Standard for Project activities §71 CDM Validation and Verification Standard for Project activities §110	DR	This is available.	OK	OK
B.6.3.2. Where the methodology allows for selection between options for equations or parameters, has adequate justification been provided in the PDD?	CDM Validation and Verification Standard for Project activities §111	DR	N/A	OK	OK
B.6.3.3. Has the PDs used the values contained in the tables in section B.6.2 of the PDD for data and parameters available before registration?	GS-PDD-FORM Ver. 1.2	DR	The emission factor value has been used to calculate estimated emission reduction values.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.6.3.4. Has the PDs used the estimates contained in the table in section B.6 of the PDD for the data/parameters not available before registration and monitored during the crediting period?	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
B.6.3.5. If any of these estimates has been determined by a sampling approach, has the PD provided a description of the sampling efforts undertaken in accordance with the "Standard for sampling and surveys for CDM project activities and programme of activities"?	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
B.6.3.6. Has the PDs provided a sample calculation for each equation used?	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
B.6.3.7. Have the PDs provided a sample calculation for each equation used, substituting the values used in the equations?	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
B.6.3.8. Is it explained and clearly stated how the procedures in the approved methodology or standardized baseline(s) to calculate emissions like project emissions, baseline emissions and leakages are applied by the PDs?	CDM Validation and Verification Standard for Project activities §112	DR	This has been explained and clearly stated in the PDD.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.6.3.9. Has the selected methodology or standardized baseline(s) been correctly and transparently applied with respect to algorithms and/or formulae used to determine emission reductions?	CDM Validation and Verification Standard for Project activities §63c	DR	The selected methodology has been applied correctly.	OK	OK
B.6.4. Summary of the ex-ante estimates of each SDG impact					
B.6.4.1. fHave the PDs summarized the results of the ex-ante calculation of emission reductions for all years of the crediting period, using the tabular format?	GS-PDD-FORM Ver. 1.2				
ACM 0002					
B.6.4.2. Are baseline emissions calculated using equation (11) given in the methodology?	ACM 0002 Version 21.0	DR	The relevant equation has been used.	OK	OK
B.6.4.3. Is the quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the project activity in year y ($EG_{PJ,y}$) calculated using equations (12), (13), (14), (15) or (16) given in the methodology	ACM 0002 Version 21.0	DR	The relevant equation has been used.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
depending on the project type and relevant requirements? ➢					
B.6.4.4. When the methodology offers options for approaches in calculations, is "which option applied" documented in the PDD?	ACM 0002 Version 21.0	DR	N/A	OK	OK
B.6.4.5. In the case of retrofits or replacements, has the point in time when the existing equipment would need to be replaced/retrofitted in the absence of the project chosen in a conservative manner?	ACM 0002 Version 21.0	DR	N/A	OK	OK
B.6.4.6. In the case of capacity additions, retrofits, rehabilitations or replacements (except for wind, solar, wave or tidal power capacity addition projects)	ACM 0002 Version 20.0	DR	N/A	OK	OK
B.6.4.6.1. Is it ensured that the existing plant started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions?	ACM 0002 Version 20.0	DR	N/A	OK	OK
B.6.4.6.2. Is it defined in the baseline emission section that no capacity addition, retrofit or rehabilitation	ACM 0002 Version 20.0	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
of the plant has been undertaken between the start of this minimum historical reference period and the implementation of the project activity?					
B.6.4.7. Are the project emissions calculated properly using equations (1), (2), (3), (4), (5), (6), (7), (8), (9) or (10) given in the methodology depending on the project type and the power density value?	ACM 0002 Version 21.0	DR	These equations have been used.	OK	OK
B.6.4.8. Where project emissions are taken as "0", has the PD made proper justification?	ACM 0002 Version 21.0	DR	The proper justification has been made.	OK	OK
B.6.4.9. Are the emission reductions calculated using equation (17) given in the methodology?	ACM 0002 Version 21.0	DR	The proper equation has been used.	OK	OK
ACM 0001					
B.6.4.10. Are the baseline emissions calculated using relevant equations from equation (1) to equation (21) in the methodology? •	ACM 0001 Version 19.0	DR	N/A	OK	OK
B.6.4.11. Are the project emissions calculated using relevant equations from	ACM 0001 Version 19.0	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
equation (22) to equation (25) in the methodology?					
B.6.4.12. Are the emission reductions calculated using equation (26) in the methodology?	ACM 0001 Version 19.0	DR	N/A	OK	OK
ACM 0022					
B.6.4.13. Are the baseline emissions determined according to equation (1) in the methodology?	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.6.4.14. Do the baseline emissions comprise the following sources?	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.6.4.14.1. Methane emissions from the SWDS in the absence of the project activity;	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.6.4.14.2. Methane emissions from the treatment of organic wastewater in the absence of the project activity;	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.6.4.14.3. Energy generated or electricity consumed by the grid in the absence of the project activity;	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.6.4.14.4. Natural gas used from the natural gas network in the absence of the project activity	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.6.4.15. Are the baseline emissions of methane from the SWDS determined using the latest applicable version of methodological tool Tool 04: “Emissions from solid	ACM 0022 Version 3.0	DR	N/A	OK	OK

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	Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	waste disposal sites" and all relevant requirements in the methodology?					
B.6.4.16.	If applicable, has the baseline under a suppressed demand scenario been applied in line with all relevant requirements in the methodology?	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.6.4.17.	Are the baseline emissions from organic wastewater calculated using Equation 3 and other relevant equations in the methodology?	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.6.4.18.	Are the baseline emissions from generation of energy calculated using Equation 13 and other relevant equations in the methodology?	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.6.4.19.	Are the baseline emissions associated with natural gas use (BENG,y) calculated using Equation 16 and other relevant equations in the methodology?	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.6.4.20.	Are the project emissions in year y calculated for each alternative waste treatment option implemented in the project activity calculated using Equation 17 in the methodology?	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.6.4.21.	Are the project emissions associated with composting or co-composting (PECOMP,y) calculated according to the latest applicable version of methodological tool Tool13: "Project	ACM 0022 Version 3.0	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
and leakage emissions from composting"?					
B.6.4.22. Are the project emissions from anaerobic digestion ($PE_{AD,y}$) calculated according to the latest applicable version of methodological tool Tool14: "Project and leakage emissions from anaerobic digesters"?	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.6.4.23. Are the project emissions from gasification ($PE_{GAS,y}$) calculated using Equation 18 in the methodology?	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.6.4.24. Are the project emissions associated with mechanical or thermal production of RDF/SB ($PE_{RDF\_SB,y}$) calculated using Equation 19 in the methodology?	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.6.4.25. Are the project emissions from incineration ($PE_{INC,y}$) calculated using Equation 20 in the methodology?	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.6.4.26. Are the project emissions from electricity consumption due to waste treatment process implemented under the project activity ($PE_{EC,t,y}$) calculated using the latest applicable version of Tool 05: "Baseline, project and/or leakage emissions from electricity consumption and	ACM 0022 Version 3.0	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
monitoring of electricity generation".					
B.6.4.27. Are the project emissions from fossil fuel combustion associated with waste treatment process implemented under the project activity ($PE_{FC,t,y}$) calculated using the latest applicable version of Tool 03: "Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion"?	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.6.4.28. Are the project emissions from combustion within the project boundary ($PE_{COM,c,y}$) calculated using Equation 21 in the methodology?	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.6.4.29. Are the project emissions of CO_2 from combustion within the project boundary ($PE_{COM\_CO2,c,y}$) calculated using Option 1, 2 or 3, whichever is applicable, in the methodology?	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.6.4.30. Are the project emissions of CH_4 and N_2O from combustion within the project boundary ($PE_{COM\_CH4,N2O,c,y}$) calculated using Option 1 or 2, whichever is applicable, in the methodology?	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.6.4.31. If the wastewater discharge generated by the project activityis treated using an aerobic treatment process, are the project emissions	ACM 0022 Version 3.0	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
from wastewater discharge management ($PE_{ww,t,y}$) calculated according to the latest applicable version of procedure "Project emissions from anaerobic digestion"?					
B.6.4.32. If the project activity generates wastewater discharge that is treated anaerobically (other than in an anaerobic digester that is part of the project activity), stored anaerobically or released untreated, are the emissions from wastewater discharge management ($PE_{ww,t,y}$) calculated using Equation 28, Equation 29 and Equation 30 in the methodology?	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.6.4.33. Are the leakage emissions calculated using Equation 32 in the methodology?	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.6.4.34. Are the leakage emissions associated with composting ($LE_{COMP,y}$) calculated according to the latest applicable version of the methodological tool Tool 13: "Project and leakage emissions from composting"?	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.6.4.35. Are the leakage emissions associated with anaerobic digestion of waste	ACM 0022 Version 3.0	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
($LE_{AD,y}$) calculated according to the latest applicable version of the methodological tool Tool 14: "Project and leakage emissions from anaerobic digesters"?					
B.6.4.36. Are the leakage emissions associated with RDF/SB ($LE_{RDF\_SB,y}$) calculated using Equation 33 and other relevant equations in the methodology?	ACM 0022 Version 3.0	DR	N/A	OK	OK
B.6.4.37. Are the emission reductions calculated using Equation 36 in the methodology?	ACM 0022 Version 3.0	DR	N/A	OK	OK
AM0058					
B.6.4.38. Are the baseline emissions calculated using equation (1) in the methodology?	AM0058 Version 5.0	DR	N/A	OK	OK
B.6.4.39. Are the baseline emissions from heat generation calculated using equation (2) in the methodology?	AM0058 Version 5.0	DR	N/A	OK	OK
B.6.4.40. Is the CO_2 emission factor for heat supply in the baseline calculated using equation (3) in the methodology?	AM0058 Version 5.0	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.6.4.41. Is the emission factor for new users calculated using equation (4) in the methodology?	AM0058 Version 5.0	DR	N/A	OK	OK
B.6.4.42. Are the baseline emissions from the power generation calculated using equation (5) and equation (6) in the methodology?	AM0058 Version 5.0	DR	N/A	OK	OK
B.6.4.43. Are the project emissions calculated using latest applicable version of "Tool To Calculate Project or Leakage CO_2 Emissions From Fossil Fuel Combustion" and the relevant principles defined in the methodology?	AM0058 Version 5.0	DR	N/A	OK	OK
B.6.4.44. Are the leakage emissions calculated using equation (7) and equation (8) in the methodology?	AM0058 Version 5.0	DR	N/A	OK	OK
B.6.4.45. Are the emission reductions calculated using equation (9) in the methodology?	AM0058 Version 5.0				
AMS I.D.					
B.6.4.46. Are baseline emissions calculated using equation (1) given in the methodology?	AMS I.D. Version 18.0 §22	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.6.4.47. Is the emission factor calculated using one of the following options:	AMS I.D. Version 18.0 §23	DR	N/A	OK	OK
B.6.4.47.1. A combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the "Tool to calculate the Emission Factor for an electricity system	AMS I.D. Version 18.0 §23	DR	N/A	OK	OK
B.6.4.47.2. The weighted average emissions (in t CO2/MWh) of the current generation mix.	AMS I.D. Version 18.0 §23	DR	N/A	OK	OK
B.6.4.48. Have the calculations been based on data from an official source (where available) and made publicly available?	AMS I.D. Version 18.0 §24	DR	N/A	OK	OK
B.6.4.49. In case of green field power plant, is the generated electricity as a result of project activity calculated using equation (2) given in the methodology?	AMS I.D. Version 18.0 §26	DR	N/A	OK	OK
B.6.4.50. In case of capacity addition in wind, solar, wave or tidal power plants, are the baseline emissions calculated using equation (3) given in the methodology?	AMS I.D. Version 18.0 §27	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.6.4.51. In case of capacity addition in hydro or geothermal power plants, have the requirements defined in Section 5.5.1.3 of the methodology been followed?	AMS I.D. Version 18.0 §28	DR	N/A	OK	OK
B.6.4.52. In case of capacity addition to biomass power plants, are the baseline emissions calculated using equations (4) and (5) given in the methodology?	AMS I.D. Version 18.0 §29 §30	DR	N/A	OK	OK
B.6.4.53. In case of retrofit, rehabilitation or replacement in hydro, solar, wind, geothermal, wave and tidal plants, are the baseline emissions calculated using equation (6) given in the methodology?	AMS I.D. Version 18.0 §31	DR	N/A	OK	OK
B.6.4.54. In case of retrofit, rehabilitation or replacement in biomass plants, are the baseline emissions calculated using equations (7) and (8) given in the methodology?	AMS I.D. Version 18.0 §32	DR	N/A	OK	OK
B.6.4.55. In case of retrofit, rehabilitation or replacement, have the PDs used among the following two time spans of historical data to determine EGhistorical?	AMS I.D. Version 18.0 §33 §35 §36	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.6.4.55.1. The three last calendar years (five calendar years for hydro project) prior to the implementation of the project activity	AMS I.D. Version 18.0 §35	DR	N/A	OK	OK
B.6.4.55.2. The time period from the calendar year following DATEhist, up to the last calendar year prior to the implementation of the project, as long as this time span includes at least three calendar years (five calendar years for hydro project), where DATEhist is latest point in time between:	AMS I.D. Version 18.0 §35	DR	N/A	OK	OK
B.6.4.55.2.1. The commercial commissioning of the plant/unit;	AMS I.D. Version 18.0 §35	DR	N/A	OK	OK
B.6.4.55.2.2. If applicable: the last capacity addition to the plant/unit; or	AMS I.D. Version 18.0 §35	DR	N/A	OK	OK
B.6.4.55.2.3. If applicable: the last retrofit of the plant/unit	AMS I.D. Version 18.0 §35	DR	N/A	OK	OK
B.6.4.56. In case of retrofit, rehabilitation or replacement, have PDs followed the latest applicable version of “Tool to determine the remaining lifetime of	AMS I.D. Version 18.0 §37 §38	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
equipment" to estimate DATEBaselineRetrofit?					
B.6.4.57. Where the project emissions are taken as "0", have the PDs made proper justification?	AMS I.D. Version 18.0 §39	DR	N/A	OK	OK
B.6.4.58. If the proposed project activity is a geothermal power plant or a hydropower plant, have the project emissions been considered following the procedure described in most recent version of ACM0002?	AMS I.D. Version 18.0 §39	DR	N/A	OK	OK
B.6.4.59. If necessary, have the PDs calculated the CO_2 emissions from on-site consumption of fossil fuels due to the project activity using the latest applicable version of the "Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion?	AMS I.D. Version 18.0 §40	DR	N/A	OK	OK
B.6.4.60. In case biomass is sourced from dedicated plantations, have the procedures in the tool "Project emissions from cultivation of biomass" been followed to calculate project emissions?	AMS I.D. Version 18.0 §41	DR	N/A	OK	OK
B.6.4.61. Has the general guidance on leakage in biomass project activities been followed to quantify leakages	AMS I.D. Version 18.0	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
pertaining to the use of biomass residues?	§42				
B.6.4.62. Are the emission reductions calculated using equation (9) given in the methodology?	AMS I.D. Version 18.0 §43	DR	N/A	OK	OK
AMS I.C.					
B.6.4.63. Are the baseline emissions for electricity produced in captive plants calculated using equation (1) given in the methodology?	AMS I.C. Version 21 §32	DR	N/A	OK	OK
B.6.4.64. Are the baseline emissions for supply of electricity to and/or displacement of electricity from a grid calculated using equation (2) given in the methodology?	AMS I.C. Version 21 §33	DR	N/A	OK	OK
B.6.4.65. Are the baseline emissions for thermal energy produced using fossil fuels and/or grid electricity calculated using equation (3) given in the methodology?	AMS I.C. Version 21 §34 §35	DR	N/A	OK	OK
B.6.4.66. Is the emission factor of electricity determined according to the following?	AMS I.C. Version 21 §36	DR	N/A	OK	OK
B.6.4.66.1. For project activities that displace on-site captive electricity and/or displace grid electricity import and/or supply electricity to a grid,	AMS I.C. Version 21 §36	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
does the electricity emission factor reflect the emissions intensity of the captive power plant and the grid of the baseline scenario?					
B.6.4.66.2. For project activities that do not displace captive electricity generated by an existing plant but displace grid electricity import and/or supply electricity to a grid, does the emission factor of the grid calculated as per the procedures detailed in AMS-I.D or AMS-I.F?	AMS I.C. Version 21 §37	DR	N/A	OK	OK
B.6.4.66.3. For new facilities, has the emission factor of electricity taken as the most conservative (lowest) emission factor of the two power sources (captive power plant and grid)?	AMS I.C. Version 21 §38	DR	N/A	OK	OK
B.6.4.67. Are the baseline emissions for electricity and thermal energy produced in a baseline cogeneration or trigeneration unit using fossil fuel (case 19 (d)) in the methodology) calculated using equation (4) given in the methodology?	AMS I.C. Version 21 §39	DR	N/A	OK	OK
B.6.4.68. In the case of an existing baseline cogeneration or trigeneration plant,	AMS I.C. Version 21	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
is the efficiency of the baseline units determined by adopting one of the following criteria with the exclusion of cogeneration plants?	§40				
B.6.4.68.1. Most recent three years operational data immediately prior to the start date of the project activity in case of existing facilities which has more than three years of operation history;	AMS I.C. Version 21 §26	DR	N/A	OK	OK
B.6.4.68.2. A minimum of most recent one year data in case of existing facilities which has more than three years of operation history but do not have three years operational data; or	AMS I.C. Version 21 §26	DR	N/A	OK	OK
B.6.4.68.3. A performance test/ measurement campaign carried out prior to the implementation of the project activity in case of existing facilities which has more than three years of operation history but do not have operational data/information such as efficiency, energy consumption and output or the available data is not reliable due to various factors such as the use of imprecise or non-calibrated measuring equipment. The	AMS I.C. Version 21 §26 §32	DR	N/A	OK	OK

*DR= Document Review, I= Interview, SV= Site Visit

Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
project proponent may follow the relevant provisions from the "Tool to determine baseline efficiency of thermal and electricity systems".					
B.6.4.68.4. For household or commercial applications/systems, whose maximum output capacity is less than 45 kW thermal and where it can be demonstrated that the metering of thermal energy output is not plausible, as in the case of cooking stoves, gasifiers, driers, water heaters etc., is the efficiency of the baseline units determined by adopting one of the following criteria?	AMS I.C. Version 21 §43	DR	N/A	OK	OK
B.6.4.68.5. Highest measured operational efficiency over the full range of operating conditions of a representative sample of units with similar specifications, using baseline fuel	AMS I.C. Version 21 §43-a	DR	N/A	OK	OK
B.6.4.68.6. Highest of the efficiency values provided by two or more manufacturers for units with similar specifications using the baseline fuel	AMS I.C. Version 21 §43-b	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.6.4.68.7. Highest efficiency from referenced literature values or default efficiency of 100%.	AMS I.C. Version 21 §43-c	DR	N/A	OK	OK
B.6.4.69. For the cases where electricity is imported from a grid and/or produced in an on-site captive power plant using fossil fuel thermal energy is produced using biomass, (28(e)) in the methodology are the baseline emissions from production of electricity calculated in line with the paragraphs 29 and 30 of the methodology?	AMS I.C. Version 21 §44	DR	N/A	OK	OK
B.6.4.70. For the cases where the 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, (28f)) in the methodology) are the baseline emissions from the production of thermal energy using fossil fuel calculated using equation (1) given in the methodology?	AMS I.C. Version 21 §32 §45	DR	N/A	OK	OK
B.6.4.71. For the cases where electricity and thermal energy are produced in a biomass fired cogeneration unit (28(g)) in the methodology and for	AMS I.C. Version 21 §30 §46	DR	N/A	OK	OK

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	Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	the cases where electricity is imported from a grid and/or produced in a biomass fired cogeneration unit; steam/heat is produced in a biomass fired cogeneration unit and/or a biomass fired boiler, (28(i)) in the methodology are the baseline emissions from the additional production of electricity that displaces grid electricity import and/or supply electricity to the grid, calculated using as per the procedures detailed in AMS-I.D or AMS-I.F as applicable?					
B.6.4.72.	For the cases where the electricity and/or thermal energy produced in a co-fired system (28(h)) in the methodology and other project activities where the baseline is a co-fired system, are the baseline emissions determined based on three years average historical data on the relative share of fossil fuel and biomass in the baseline fuel mix using equation (5) given in the methodology?	AMS I.C. Version 21 §47	DR	N/A	OK	OK
B.6.4.73.	For the cases where the electricity is imported from a grid and/or	AMS I.C. Version 21	DR	N/A	OK	OK

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	Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	produced in an on-site captive power plant using fossil fuel and thermal energy is produced using electricity, are the baseline emissions calculated using equation (6) given in the methodology?	§48				
B.6.4.74.	For the cases where the 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, are the baseline electricity related emissions (BEgrid,y) calculated using equation (2) given in the methodology?	AMS I.C. Version 21 §49	DR	N/A	OK	OK
B.6.4.75.	For the cases where the 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, are the baseline emissions (BEcaptelec,y) from electricity obtained from captive power plant(s), calculated using equation (1) given in the methodology?	AMS I.C. Version 21 §50	DR	N/A	OK	OK
B.6.4.76.	For the cases where the electricity is imported from a grid and/or produced in an on-site captive power plant using fossil fuel and	AMS I.C. Version 21 §51	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
thermal energy is produced using electricity, are the baseline emissions associated with the electricity consumed, whether it is from captive power plants and/or power from the grid, to produce chilled water within the project boundary are determined using equation (7) given in the methodology?					
B.6.4.77. For the cases where the 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, is the baseline scenario chiller COP (COPc,i) determined in the following manner?	AMS I.C. Version 21 §51-a	DR	N/A	OK	OK
B.6.4.77.1. If the baseline scenario is an existing chiller or chillers, then the COP shall be based on existing chiller performance data as specified in paragraph 25 of the methodology	AMS I.C. Version 20 §51-a-i	DR	N/A	OK	OK
B.6.4.77.2. If the baseline scenario is a chiller or chillers that would have been built (i.e. not existing chillers), the COP shall be determined as the highest COP full load	AMS I.C. Version 21 §51-a-ii	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
performance value provided by two or more manufacturers for chillers commonly sold in the project country for the indicated commercial application;					
B.6.4.77.3. For the cases where the 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, is the cooling output of each baseline scenario chiller calculated using equation (8) given in the methodology?	AMS I.C. Version 21 §51-b	DR	N/A	OK	OK
B.6.4.78. For project activities with water heating systems, that use electricity, are the baseline emissions determined using equation (9) given in the methodology?	AMS I.C. Version 21 §52	DR	N/A	OK	OK
B.6.4.79. For the cases where project activities involve the addition of renewable energy units at an existing renewable energy production facility, are the existing units considered in the determination of baseline emissions, project emissions, and/or leakage, as relevant?	AMS I.C. Version 21 §53	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.6.4.80. In the cases where project activities involve the addition of new energy production units at an existing facility has the net increase in thermal energy been calculated using equations (10) and (11) given in the methodology?	AMS I.C. Version 21 §54 §55 §56 §57	DR	N/A	OK	OK
B.6.4.81. If the project activity seeks to retrofit or modify an existing facility to enhance the energy conversion efficiency, is the thermal energy production by an existing facility calculated using equation (12) given in the methodology?	AMS I.C. Version 21 §59	DR	N/A	OK	OK
B.6.4.82. If the project activity seeks to retrofit or modify an existing facility to enhance the energy conversion efficiency, are the baseline emissions from the incremental thermal energy supplied due to retrofit calculated using equation (13) given in the methodology?	AMS I.C. Version 21 §60	DR	N/A	OK	OK
B.6.4.83. If the project activity seeks to retrofit or modify an existing facility to enhance the energy conversion efficiency, are the requirements concerning the demonstration of the remaining lifetime of the replaced	AMS I.C. Version 21 §61 §62	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
equipment met as described in the "General Guidelines for SSC CDM methodologies"?					
B.6.4.84. In case of the 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, are the baseline emissions calculated using equation (2) given in the methodology?	AMS I.C. Version 21 §63	DR	N/A	OK	OK
B.6.4.85. In case of household or commercial applications/systems, whose maximum output capacity is less than 45 kW thermal and where it can be demonstrated that the metering of thermal energy output is not plausible, as in the case of biomass stoves, gasifiers, driers, water heaters etc., are the baseline emissions calculated as per equation (14) given in the methodology?	AMS I.C. Version 21 §64	DR	N/A	OK	OK
B.6.4.86. If applicable, are the quantities and types of biomass and the biomass to fossil fuel ratio (in the case of co-fired systems) to be used during the crediting period explained and documented transparently in the PDD?	AMS I.C. Version 21 §65	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.6.4.87. If applicable, have the ex-ante estimation of biomass and the biomass to fossil fuel ratio quantities been provided for the selection of the baseline scenario?	AMS I.C. Version 21 §65	DR	N/A	OK	OK
B.6.4.88. If applicable, is the project emissions calculated using equation (15) in the methodology?	AMS I.C. Version 21 §66	DR	N/A	OK	OK
B.6.4.89. If applicable, are the project emissions from on-site consumption of fossil fuels calculated using the latest version of the "Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion"?	AMS I.C. Version 21 §67	DR	N/A	OK	OK
B.6.4.90. If applicable, are the project emissions resulting from the electricity consumption by the project activity calculated using the latest version of the "Tool to calculate baseline, project and/or leakage emissions from electricity consumption"?	AMS I.C. Version 21 §68	DR	N/A	OK	OK
B.6.4.91. In case of geothermal project activities, have the Project Owners accounted for the following emission sources, where applicable?	AMS I.C. Version 21 §69	DR	N/A	OK	OK
B.6.4.91.1. Fugitive emissions of carbon dioxide and methane due to	AMS I.C. Version 21 §69	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
release of non-condensable gases from produced steam					
B.6.4.91.2. Carbon dioxide emissions resulting from combustion of fossil fuels related to the operation of the geothermal power plant	AMS I.C. Version 21 §69	DR	N/A	OK	OK
B.6.4.92. In case of geothermal project activities, are the project emissions calculated using equations (16), (17) and (18) given in the methodology?	AMS I.C. Version 21 §70 §71 §72	DR	N/A	OK	OK
B.6.4.93. In case of trigeneration project activities, are the project emissions calculated using equations (19) and (20) and the options given in the methodology?	AMS I.C. Version 21 §73 §74 §75	DR	N/A	OK	OK
B.6.4.94. In cases where the project activity utilizes biomass sourced from dedicated plantations, are the project emissions from biomass cultivation calculated according to the latest version of "Project emissions from cultivation of biomass" tool?	AMS I.C. Version 21 §76	DR	N/A	OK	OK
B.6.4.95. In cases where the energy generating equipment currently being utilised is transferred from outside the boundary to the project activity, is the leakage considered?	AMS I.C. Version 21 §77 §80	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.6.4.96. In cases where the collection /processing /transportation of biomass residues is outside the project boundary and due to the implementation of the project activity biomass residues are transported over a distance of 200 kilometres, are the CO_2 emissions from the collection, processing and transportation of biomass residues to the project site calculated using the latest version of tool "Project and leakage emissions from transportation of freight"?	AMS I.C. Version 21 §78	DR	N/A	OK	OK
B.6.4.97. In case of biomass project activities, are the leakage emissions on account of the diversion of biomass residues from other uses calculated in line with the latest version of "General guidance on leakage in biomass project activities"?	AMS I.C. Version 21 §80	DR	N/A	OK	OK
B.6.4.98. Have the Project Owners calculated the emission reductions using equation (21) given in the methodology?	AMS I.C. Version 21 §81	DR	N/A	OK	OK
AMS-II.G					

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.6.4.99. Are emission reductionss calculated using equation (1) and (2) given in the methodology?	AMS II.G. Version 12.0 §24	DR	N/A	OK	OK
B.6.4.100. Is the emission factor of the fossil fuels projected to be used to substitute non-renewable woody biomass by similar consumers, either the default regional values provided in table 2 of the methodology or applying equation (3) of the methodology?	AMS II.G. Version 12.0 §25, 26	DR	N/A	OK	OK
B.6.4.101. Is the fraction of non renewable biomass (fNRB) fixed ex nate or would be determined ex post?	AMS II.G. Version 12.0 §27	DR	N/A	OK	OK
B.6.4.102. How are the biomass savings computed using the options provided in the methodology?	AMS II.G. Version 12.0 §28	DR	N/A	OK	OK
B.6.4.103. Are the biomass savings computed following option 1 (Thermal Energy Output (TEO)) applying equation (4) and (5) of the methodology?	AMS II.G. Version 12.0 §29, 30	DR	N/A	OK	OK
B.6.4.104. Are the biomass savings computed following option 2 (Kitchen Performance Test (KPT)) applying equation (6) of the methodology?	AMS II.G. Version 12.0 §31	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.6.4.105. Are the biomass savings computed following option 3 (Water Boiling Test (WBT)) applying equation (7) or (8) of the methodology?	AMS II.G. Version 12.0 §32	DR	N/A	OK	OK
B.6.4.106. Are the biomass savings computed following option 4 (Controlled Cooking Test (CCT)) applying equation (9) of the methodology?	AMS II.G. Version 12.0 §33	DR	N/A	OK	OK
B.6.4.107. Does the calculation account for more than one device per household?	AMS II.G. Version 12.0 §34	DR	N/A	OK	OK
B.6.4.108. If the baseline or project fuel is charcoal, is the quantity of woody biomass determined by using a default wood to charcoal conversion factor of 6 kg of firewood (wet basis) per kg of charcoal (dry basis credible conversion factor) or based on credible local conversion factor?	AMS II.G. Version 12.0 §35	DR	N/A	OK	OK
B.6.4.109. Is the lifetime of each type pf project device documented in the PDD based on manufacturer's specification?	AMS II.G. Version 12.0 §36	DR	N/A	OK	OK
B.6.4.110. Is it indicated as to how the loss in efficiency of the project devices i in each batch j due to aging shall be accounted during the monitoring period?	AMS II.G. Version 12.0 §37	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.6.4.111. Is it indicated as to how leakage related to the non-renewable woody biomass saved by the project activity shall be assessed?	AMS II.G. Version 12.0 §41	DR	N/A	OK	OK
B.6.4.112. Project activities switching from baseline device using firewood to efficient project device using charcoal or switching from firewood to efficient project device using processed biomass (briquette, pellets, and woodchips) shall take into account the leakage effects related to the charcoal or processed biomass production.	AMS II.G. Version 12.0 §42	DR	N/A	OK	OK
The Gold Standard Methodology for Emission Reductions from Safe Drinking Water Supply					
B.6.4.113. Is the baseline emission factor determined using equation (1) given in the methodology?	SDWS Version 1.0 §3.6.1	DR	N/A	OK	OK
B.6.4.114. Is the specific energy required to boil water for the baseline technology accounts for the stove efficiency following equation (2) of the methodology?	SDWS Version 1.0 §3.6.2	DR	N/A	OK	OK
B.6.4.115. Are the baseline emissions determined using equation (3) given in the methodology?	SDWS Version 1.0 §3.6.3	DR	N/A	OK	OK
B.6.4.116. Is the quantity of safe drinking water provided by the project is calculated	SDWS Version 1.0	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
using one of two methods provided in the methodology?	§3.6.4-8				
B.6.4.117. Are the project emissions determined using equation (8) to (10) given in the methodology	SDWS Version 1.0 §3.7	DR	N/A	OK	OK
B.6.4.118. Are the leakage emissions properly accounted as given in the methodology	SDWS Version 1.0 §3.8	DR	N/A	OK	OK
The Gold Standard Revised Consolidated Baseline Methodology for GHG Emission Reductions from Manure Management Systems and Municipal Solid Waste					
B.6.4.119. Are the baseline emissions calculated using equation (1) in the methodology?	MMS & MSW version 1.0	DR	N/A	OK	OK
B.6.4.120. Are the baseline emissions from animal waste treatment calculated using equation (2) in the methodology?	MMS & MSW version 1.0	DR	N/A	OK	OK
B.6.4.121. Are the baseline emissions from baseline CH4 emissions from manure treatment using equation (3) in the methodology?	MMS & MSW version 1.0	DR	N/A	OK	OK
B.6.4.122. Has $VS_{LT,y}$ been determined using the options available in the methodolgy?	MMS & MSW version 1.0	DR	N/A	OK	OK
B.6.4.123. Has LT (NL_T) been determined using the options available in the methodolgy?	MMS & MSW version 1.0	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.6.4.124. Has the baseline emissions associated with electricity generation (BEEC,y) be calculated using the latest applicable version of "Tool to calculate baseline, project and/or leakage emissions from electricity consumption"? •	MMS & MSW version 1.0	DR	N/A	OK	OK
B.6.4.125. Are the baseline emissions associated with heat generation ($BE_{HG,y}$) calculated using equation (11) in the methodology?	MMS & MSW version 1.0	DR	N/A	OK	OK
B.6.4.126. Are the project emissions calculated properly using equations (12) to (21), where relevant, in the methodology?	MMS & MSW version 1.0	DR	N/A	OK	OK
B.6.4.127. Are the leakage emissions calculated properly using equations (22) to (32), where relevant, in the methodology?	MMS & MSW version 1.0	DR	N/A	OK	OK
B.6.4.128. Are the emission reductions calculated properly using equations (33) and (34) in the methodology?	MMS & MSW version 1.0	DR	N/A	OK	OK
B.7. Monitoring Plan					
B.7.1. Data and parameters to be monitored					
B.7.1.1. In the data/parameter tabular formats for monitoring, has the	GS-PDD-FORM	DR	This is available for each parameter.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
name of each relevant SDG indicator been included?	Ver. 1.2				
B.7.1.2. In the data/parameter tabular formats for monitoring, has the name of each data/parameter been included?	GS-PDD-FORM Ver. 1.2	DR	This is available for each parameter.	OK	OK
B.7.1.3. Has the unit of each data/parameter been included?	GS-PDD-FORM Ver. 1.2	DR	This is available for each parameter.	OK	OK
B.7.1.4. Has the description of each data/parameter been included?	GS-PDD-FORM Ver. 1.2	DR	This is available for each parameter.	OK	OK
B.7.1.5. Has the source of each data/parameter been included?	GS-PDD-FORM Ver. 1.2	DR	Please define main source and cross check source instead of saying “Metering devices used in power plants & monthly generation records” in B.7.1 SDG7 and SDG13 Please state date of first index protocol in PDD	CAR-10	OK
B.7.1.6. Where several sources of data/parameters are used, is the choice of data/parameter sources explained and justified?	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
B.7.1.7. Has the applied value of each data/parameter been included?	GS-PDD-FORM Ver. 1.2	DR	This is available for each parameter.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.7.1.8. Has the measurement methods and procedures been included?)	GS-PDD-FORM Ver. 1.2	DR	This is available for each parameter.	OK	OK
B.7.1.9. Has the PDs included which measurement equipment is used for monitoring?	GS-PDD-FORM Ver. 1.2	DR	This is available for each parameter.	OK	OK
B.7.1.10. Have the PDs included description of calibration procedures for the monitoring equipment including the following?	GS-PDD-FORM Ver. 1.2	DR	Please see below.		
B.7.1.10.1. Frequency of the calibration	GS-PDD-FORM Ver. 1.2 CDM Project Standard for Project activities §81c ACM 0002 Version 20	DR	This is available as 10 years.	OK	OK
B.7.1.10.2. Accuracy of the calibration	CDM Project Standard for Project activities §81b	DR	This is available.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.7.1.10.3. Uncertainty of the calibration	CDM Project Standard for Project activities §81b	DR	This is available.	OK	OK
B.7.1.10.4. Calibrating agency/person	CDM Project Standard for Project activities §81c	DR	This is available.	OK	OK
B.7.1.10.5. The relevant national/ international standards	CDM Project Standard for Project activities §81c	DR	This is available.	OK	OK
B.7.1.11. Has the accuracy level of the measurement method included?	CDM Project Standard for Project activities §81b	DR	This is available.	OK	OK
B.7.1.12. Has the responsible person/entity for the measurements included?	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.7.1.13. Has the interval for the measurements included?	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK
B.7.1.14. Has the monitoring frequency for each data/parameter been included?	GS-PDD-FORM Ver. 1.2	DR	This is available for each parameter.	OK	OK
B.7.1.15. Has the QA/QC procedures of each data/parameter been included?	GS-PDD-FORM Ver. 1.2 CDM Project Standard for Project activities §81a ACM 0002 Version 21.0	DR	This is available for each parameter.	OK	OK
B.7.1.16. Has the purpose of data/parameter been chosen as one of the following for each data/parameter?	GS-PDD-FORM Ver. 1.2	DR	Please see below.		
B.7.1.16.1. Calculation of baseline outcome;	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK
B.7.1.16.2. Calculation of project outcome;	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.7.1.16.3. Calculation of leakage.	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK
B.7.1.17. Have the PDs developed and described the monitoring plan for the proposed project activity in accordance with the selected methodology(ies) and all other applicable rules and requirements?	CDM Project Standard for Project activities §78 CDM Validation and Verification Standard for Project activities §117	DR	The monitoring plan has been indicated accordingly.	OK	OK
B.7.1.18. Does the monitoring plan include all data, parameters and related information required by the selected methodology(ies)?	CDM project standard for project activities §81 CDM Validation and Verification Standard for Project	DR	The monitoring plan includes all data and parameters.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	activities §118a-ii ACM 0002 Version 21.0				
B.7.1.19. Are the monitoring arrangements described in the monitoring plan feasible within the project design?	CDM Validation and Verification Standard for Project activities §118b	DR	It is feasible.	OK	OK
AM0058					
B.7.1.20. Is the heat supplied to final consumers measured at each sub-station as part of the monitoring plan?	AM0058 Version 5.0	DR	N/A	OK	OK
ACM0022					
B.7.1.21. Are the necessary monitoring parameters included based on Section 6.1 of the methodology?	ACM0022 Version 3.0	DR	N/A	OK	OK
The Gold Standard Methodology for Emission Reductions from Safe Drinking Water Supply					
B.7.1.22. Please add questions		DR	N/A	OK	OK

*DR= Document Review, I= Interview, SV= Site Visit

Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.7.2. Sampling plan					
B.7.2.1. Are the data and parameters monitored in section B.7.1 of the PDD determined by a sampling approach?	GS-PDD-FORM Ver. 1.2 CDM validation and verification standard for project activities §29e CDM Guideline: Sampling and surveys for CDM project activities and programmes of activities	DR	N/A	OK	OK
B.7.2.2. If the data and parameters monitored in section B.7.1 of the PDD are to be determined by a sampling approach, has the PD	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK

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	Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	provided a description of the sampling plan in accordance with the recommended outline for a sampling plan in the latest applicable version of "Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities"?	CDM Standard: Sampling and surveys for CDM project activities and programmes of activities §29 §30 §31 §32 §33				
B.7.2.3.	If the sampling approach is used by the PDs, does the sampling plan present a reasonable approach for obtaining unbiased, reliable estimates of the variables?	CDM Guideline: Sampling and surveys for CDM project activities and programmes of activities §40a	DR	N/A	OK	OK
B.7.2.4.	If the sampling approach is used by the PDs, are the elements of	CDM Guideline:	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
objectives and reliability requirements complete?	Sampling and surveys for CDM project activities and programmes of activities §40a-i				
B.7.2.5. If the sampling approach is used by the PDs, do the requirements specified agree with those stated in the appropriate standards?	CDM Guideline: Sampling and surveys for CDM project activities and programmes of activities §40a-i	DR	N/A	OK	OK
B.7.2.6. If the sampling approach is used by the PDs, is the population in the sampling plan clearly defined?	CDM Guideline: Sampling and surveys for	DR	N/A	OK	OK

*DR= Document Review, I= Interview, SV= Site Visit

Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	CDM project activities and programmes of activities §40b				
B.7.2.7. If the sampling approach is used by the PDs, is the proposed sampling approach clear?	CDM Guideline: Sampling and surveys for CDM project activities and programmes of activities §40c	DR	N/A	OK	OK
B.7.2.8. If the sampling approach is used by the PDs, does the sampling approach comply with the description of the population?	CDM Guideline: Sampling and surveys for CDM project activities	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	and programmes of activities §40c-ii				
B.7.2.9. If the sampling approach is used by the PDs, is the proposed sample size adequate to achieve the minimum confidence/precision requirements?	CDM Guideline: Sampling and surveys for CDM project activities and programmes of activities §40d	DR	N/A	OK	OK
B.7.2.10. If the sampling approach is used by the PDs, is the ex-ante estimate of the population variance needed for the calculation of the sample size adequately justified?	CDM Guideline: Sampling and surveys for CDM project activities and programmes of	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	activities §40d				
B.7.2.11. If the sampling approach is used by the PDs, is the sample representative of the population?	CDM Guideline: Sampling and surveys for CDM project activities and programmes of activities §40e	DR	N/A	OK	OK
B.7.2.12. If the sampling approach is used by the PDs, is it identified how the sampling frame would be kept?	CDM Guideline: Sampling and surveys for CDM project activities and programmes of activities §40e-ii	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.7.2.13. If the sampling approach is used by the PDs, are the methods of data collection clear and unambiguous?	CDM Guideline: Sampling and surveys for CDM project activities and programmes of activities §40f-i	DR	N/A	OK	OK
B.7.2.14. If the sampling approach is used by the PDs, are the procedures for the data measurements defined appropriately and clearly?	CDM Guideline: Sampling and surveys for CDM project activities and programmes of activities §40g	DR	N/A	OK	OK
B.7.2.15. If the sampling approach is used by the PDs, do the procedures for	CDM Guideline: Sampling	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
measurements adequately provide for minimizing non-sampling errors?	and surveys for CDM project activities and programmes of activities §40g				
B.7.2.16. If the sampling approach is used by the PDs, is the quality control and assurance strategy adequate?	CDM Guideline: Sampling and surveys for CDM project activities and programmes of activities §40g-i	DR	N/A	OK	OK
B.7.2.17. If the sampling approach is used by the PDs, are the proposed skill sets, qualifications and experience of the personnel to be engaged to conduct sampling adequate?	CDM Guideline: Sampling and surveys for CDM	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	project activities and programmes of activities §40h-i				
B.7.3. Other elements of monitoring plan					
B.7.3.1. Has the operational and management structure been given in the monitoring plan to monitor emission reductions and any leakage generated by the project activity?	GS-PDD-FORM Ver. 1.2 CDM project standard for project activities §82a	DR	The operational and management structure has been given in the monitoring plan.	OK	OK
B.7.3.2. Has the PD clearly indicated the responsibilities and institutional arrangements for data collection and archiving?	GS-PDD-FORM Ver. 1.2 CDM project standard for project activities §82c	DR	The responsibilities have been indicated accordingly.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
C. Duration and crediting period					
C.1. Duration of project					
C.1.1. Start date of project					
C.1.1.1. Has the start date of the project, in the format of DD/MM/YYYY been stated under section C.1.1 of the PDD?	GS-PDD-FORM Ver. 1.2 GS4GG Principles & Requirements Ver. 1.2 CDM project standard for project activities §85	DR	Please revise date in C.1.1	CAR-11	OK
C.1.1.2. Has the PD described how this date has been determined?	GS-PDD-FORM Ver. 1.2 CDM project standard for project activities §85	DR	Yes	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
C.1.1.3. Has the PD provided evidence to support this date?	GS-PDD-FORM Ver. 1.2 CDM project standard for project activities §85	DR	Yes	OK	OK
C.1.2. Expected operational lifetime of project					
C.1.2.1. Is the expected operational lifetime of the project activity stated in years and months under section C.1.2 of the PDD?	GS-PDD-FORM Ver. 1.2 CDM project standard for project activities §86	DR	This is available.	OK	OK
C.2. Crediting period of project					
C.2.1. Start date of crediting period					
C.2.1.1. Is the start date of the crediting period of the project activity given in DD/MM/YYYY format?	GS-PDD-FORM	DR	Yes	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	Ver. 1.2				
C.2.1.2. Have the PDs determined only one start date for the crediting period, even in cases of phased implementation of the proposed project activity?	CDM project standard for project activities §89	DR	Yes	OK	OK
C.2.1.3. Has the PDs used any qualifications to the start date, such as "expected"?	CDM project standard for project activities §90	DR	Yes	OK	OK
C.2.2. Total length of crediting period					
C.2.2.1. Is the length of the crediting period of the proposed project activity stated in years and months under section C.2.3 of the PDD?	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK
D. Summary of Safeguarding Principles and Gender Sensitive Assessment					
D.1. Safeguarding principles that will be monitored					
D.1.1. Has the safeguarding principles that will be monitored been summarized including the mitigation measures	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK

*DR= Document Review, I= Interview, SV= Site Visit

Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
added to the monitoring plan? Have the PDs carried out an analysis of the social, economic and environmental impacts following the GS4GG Safeguarding Principles and Requirements?					
D.1.2. Are all the safeguarding principles stated?	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK
D.1.3. Are all the relevant assessment questions included pertaining to the safeguarding principles?	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK
D.1.4. Is the relevance of the principle cited correctly (Yes/potentially/no)?	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK
D.1.5. Is proper justification for the safeguarding principle indicated?	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK
D.2. Assessment that project complies with 'gender sensitive' requirements					
D.2.1. Has the evidence been provided that the project concept and design cover the overall societal context from a gender perspective?	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK
D.2.2. Does the project reflect the key issues and requirements of Gender Sensitive design and implementation as outlined in the Gender Policy?	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
D.2.3. Has it been explained how the project align with existing country policies, strategies and best practices?	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK
D.2.4. Has an expert been involved for the Gender Safeguarding Principles & Requirements, where required?	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK
D.2.5. Has it been explained how the project address the questions raised in the Gold Standard Safeguarding Principles & Requirements document?	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK
D.2.6. Does the project apply the Gold Standard Stakeholder Consultation & Engagement Procedure, Requirements & Guidelines?	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK
E. Summary of Local Stakeholder Consultation					
E.1. Summary of stakeholder mitigation measures					
E.1.1. Has the PD described the process by which comments from stakeholders have been invited for the project?	GS-PDD-FORM Ver. 1.2	DR	Please explain the current grievance mechanism, grievance logbook etc.	CAR-12	OK
E.1.2. Has the PD conducted the stakeholder consultation in accordance with GS4GG Stakeholder Consultation Requirements and Guidelines?	GS-PDD-FORM Ver. 1.2	DR	Yes	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
E.1.3. Has the PD demonstrated how due steps/actions were taken to appropriately engage stakeholders and solicit comment?	CDM project standard for project activities §94	DR	Yes	OK	OK
E.1.4. Has the PD invited local stakeholders to provide comments in an open and transparent manner, in a way that facilitates comments to be received from local stakeholders and allows for a reasonable time for comments to be submitted?	CDM project standard for project activities §99 CDM validation and verification standard for project activities §132	DR	Yes	OK	OK
E.1.5. Has the PDs described the proposed project in a manner that allows the stakeholders to understand the project activity, taking into account confidentiality provisions of the applicable CDM M&Ps and requirements?	CDM project standard for project activities §101	DR	Yes	OK	OK
E.1.6. Has the PD identified the stakeholders that have made comments?	GS-PDD-FORM	DR	Yes	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	Ver. 1.2				
E.1.7. Has the PD provided a summary of the stakeholder comments in a complete and clear manner?	CDM project standard for project activities §105 CDM validation and verification standard for project activities §132f	DR	Yes	OK	OK
E.1.8. Has the PDs provided information demonstrating that all comments received have been considered?	CDM project standard for project activities §107	DR	Yes	OK	OK
E.1.9. Is the process on how the PDs taken into account of all comments received described in the PDD?	CDM project standard for project activities §107 CDM validation	DR	Yes	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	and verification standard for project activities §132g				
E.2. Final continuous input / grievance mechanism					
E.2.1. Has the relevant methods and all details of chosen methods been provided in the related tabular format?	GS-PDD-FORM Ver. 1.2	DR	Yes	OK	OK
E.2.2. Has the following been provided as the mandatory methods as part of the final continuous input / grievance mechanism	GS-PDD-FORM Ver. 1.2	DR	Yes	OK	OK
E.2.2.1. Continuous input / grievance expression process book	GS-PDD-FORM Ver. 1.2	DR	Yes	OK	OK
E.2.2.2. GS contact	GS-PDD-FORM Ver. 1.2	DR	Yes	OK	OK
F. Other Requirements					
F.1. Forward action requests (FARs) identified during preliminary GS review and/or LSC review					

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
F.1.1. Are there any FARs from the preliminary GS review and/or LSC review stages?	CDM validation and verification standard for project activities §36	DR	Please provide preliminary review and if there is any FAR in that, please discuss in PDD the current situation	CAR-13	OK
Appendix-1 Safeguarding principles assessment					
5. Has the safeguarding principles assessment been completed for each principle using the relevant tabular format?	GS-PDD-FORM Ver. 1.2	DR	Yes	OK	OK
6. Has the justification of relevance for the related safeguarding principles assessment been provided?	GS-PDD-FORM Ver. 1.2	DR	Yes	OK	OK
7. If the respond is yes for the justification of relevance, has all relevant requirements from the GS4GG Safeguarding Principles and Requirements document been included in the tabular format?	GS-PDD-FORM Ver. 1.2	DR	Yes	OK	OK
8. If the respond is no or potentially for the justification of relevance, has this been justified clearly and adequately?	GS-PDD-FORM	DR	Yes	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	Ver. 1.2				
9. Is the contact information of PPs provided in Appendix 2?	GS-PDD-FORM Ver. 1.2	DR	Yes	OK	OK
10. In case of land use and forest projects, has the additional information been provided in Appendix-3?	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
11. If applicable, is the summary of the approved design changes been provided?	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK

*DR= Document Review, I= Interview, SV= Site Visit

Table 2 – Resolution of Corrective Action, Forward Action and Clarification Requests

Draft Report Clarifications, Forward Action and Corrective Action Requests by Validation Team	Ref. to Checklist Questions in Table-1	Summary of Project Developers' Response	Validation Team Conclusion
CAR-1 Please delete guide box on cover page of PDD	1	The guide box has been deleted.	Review 1: Ok closed (Revised).
CAR-2 Please state GS ID, Time of first submission date and Date of design certification on cover page	1	The project has not been design certified yet. Other than that, the information has been added on the cover page.	Review 1: Ok closed (Added).
CAR-3 Please use the 2020 EF of Turkey	2	The EF has been revised as 2020 value.	Review 1: Ok closed (Revised).
CAR-4 The project activity is a greenfield project activity. In PDD timeline, please remove "Expected" and write realized dates Please include other dates in timeline (construction agreement, feasibility, permissions, acceptance,)	A.1	The timeline has been revised.	Review 1: Ok closed (Added).

* CAR= Corrective Action Request, FAR= Forward Action Request, CL= Clarification Request

Draft Report Clarifications, Forward Action and Corrective Action Requests by Validation Team	Ref. to Checklist Questions in Table-1	Summary of Project Developers' Response	Validation Team Conclusion
CAR-5 Please provide reference for technical specification documents for modules	A.3.1	Technical properties of the modules have been revised and the reference has been provided.	Review 1: Ok closed (Added).
CAR-6 Please demonstrate prior consideration and include relevant dates in timeline and provide evidences Please discuss if time of first submission is within one year of the project start date	B.5.1	Prior consideration has been provided with evidence.	Review 1: Ok closed (Added).
CAR-7 a)Please show evidence for capital investment ~ 5,255,339 USD b)Please show evidence for Market price after 10th years in PDD and explain. c)In PDD and IRR indicate the actual years (2019, 2020, etc) over which the project is going to be implemented.	B.5.1.11	a) Detailed calculations of capital investment has been provided in the Excel sheet. b) Market price after 10 years has been explained in PDD. c) The actual years have been indicated over operation years and cash flow. d) Exchange rates have been provided with corresponding dates. e) The choice of investment period has been explained under Section B.5 Investment analysis.	Review 1: Ok closed (Revised).

* CAR= Corrective Action Request, FAR= Forward Action Request, CL= Clarification Request

Draft Report Clarifications, Forward Action and Corrective Action Requests by Validation Team	Ref. to Checklist Questions in Table-1	Summary of Project Developers' Response	Validation Team Conclusion
d)Please indicate the date for the TL/€ exchange rate that is given in Cell D21 of the Worksheet "Cash Flow". e)The choice of the investment/assessment period is appropriate; however, this choice has not been justified/explained in the PDD. f)All relevant costs are included in the calculation of the IRR. However, there is no explanation of how the operating costs are calculated. g)Please expand the table of IRR inputs in the PDD to include "CONSTRUCTION WORKS, Equipment (Electrification + Cabling), PV Panels, Other (Design & Consultancy, Transport, Project Development Cost ETC.), Depreciation years, Opex, Transmission Loss Factor, Exchange Ratio" h)Table 4 shall also include reference document and date of reference document, Please note that all IRR inputs shall be applicable as of start date		f) Operational cost calculations have been explained in the "Operational" tab of the Excel sheet. g) The table has been expanded. h) Dates of references have been provided.	
CAR-8	B.6	The Table under Section B.6 has been revised. SDG Impact Tool has been provided.	Review 1: Ok closed (Provided).

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Draft Report Clarifications, Forward Action and Corrective Action Requests by Validation Team	Ref. to Checklist Questions in Table-1	Summary of Project Developers' Response	Validation Team Conclusion
Three SDGs have been addressed but please provide the SDG Impact Tool.			
CAR-9 In baseline excel column L please revise title "Estimation of electricity generation" or the data OM-BM coefficients weights are wrong in excel Please delete power density sheet Please update B.6.2	B.6.2.4	The data in Column L have been revised. The coefficients have been revised according to 2020 EF of Türkiye. Power density tab has been deleted. Section B.6.2 has been updated.	Review 1: Ok closed (Provided).
CAR-10 Please define main source and cross check source instead of saying "Metering devices used in power plants & monthly generation records" in B.7.1 SDG7 and SDG13 Please state date of first index protocol in PDD	B.7.1	The main and cross-check sources have been defined in Section B.7.1. First index dates have been provided under SDG 7 table.	Review 1: Ok closed (Provided).
CAR-11 Please revise date in C.1.1	C.1.1	The dates have been revised.	Review 1: Ok closed (Revised).

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Draft Report Clarifications, Forward Action and Corrective Action Requests by Validation Team	Ref. to Checklist Questions in Table-1	Summary of Project Developers' Response	Validation Team Conclusion
CAR-12 Please explain the current grievance mechanism, grievance logbook etc.	E.1	Current grievance mechanism has been explained in Section E.2.	Review 1: Ok closed (Explained).
CAR-13 Please provide preliminary review and if there is any FAR in that, please discuss in PDD the current situation	F.1	Preliminary review has been provided and FAR has been discussed in PDD under Section E.1.	Review 1: Ok closed (Explained).
CAR-14 The number of panels to be installed as part of the project activity are not cited in section A.3 of the PDD.	ITR	Number of panels has been provided.	Review 1: Ok closed (Added).
CAR-15 Below paragraph is related to sensitivity analyses but given in Sub-step 2c of PDD. Acceptable IRR values for energy investments in Turkey are, given the present economic uncertainty, are expected at yields in excess of 15% per annum. Considering the market price risk, it can be concluded the extension will make the investment more feasible however, it will still be below the benchmark IRR.	ITR	Paragraph has been moved to the relevant section.	Review 1: Ok closed (Revised).
CAR-16 The plant load factor is not cited in PDD.	ITR	Plant load factor has been provided in Section A.3.	Review 1: Ok closed (Added).

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Draft Report Clarifications, Forward Action and Corrective Action Requests by Validation Team	Ref. to Checklist Questions in Table-1	Summary of Project Developers' Response	Validation Team Conclusion
CAR-17 The source of the data (name of reference document) in the investment analysis is missing in PDD.	ITR	Source of data and date of sources have been indicated in the investment analysis table.	Review 1: Ok closed (Added).
CAR-18 In PDD please clarify the different tariff adopted after 10 years (also it being different as in case of Arisu)	ITR	Different tariff has been indicated as 4.57 in the PDD and now consistent with Arisu SPP. "Within the scope of the Renewable Energy Resources Support Mechanism, the price specified in the law, which is constant in the first 10 years, has been taken into consideration. After the first 10 years, an average of the market clearing prices of the 3 past years has been taken to estimate the electricity price."	Review 1: Ok closed (Revised).
CAR-19 The table 7 presented for common practice analysis in the PDD is to be revisited for the inclusion of a column citing the source (hydro, wind, solar etc.) With reference to point step 2 (c) the value of Nall is to be checked and corrected. The comma and decimal notation is to be checked and corrected in Table 7 With reference to earlier point check and correct value of Ndiff following step 3 and step 4.	ITR	The column showing the source type has been added.	Review 1: Ok closed (Added).
CAR-20	ITR	Parameters from safeguarding principles assessment have been included in Section B.7.1.	Review 1: Ok closed (Added).

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Draft Report Clarifications, Forward Action and Corrective Action Requests by Validation Team	Ref. to Checklist Questions in Table-1	Summary of Project Developers' Response	Validation Team Conclusion
The parameters to be monitored originating from safeguarding principles assessment are not included in PDD.			
CAR-21 The benchmark suitability is to be further augmented rather than giving reference to tariff value (text) as in PDD.	ITR	Benchmark suitability has been further justified in the PDD.	Review 1: Ok closed (Added).
CL-1 Please provide ODA declaration	A.5.3	ODA declaration has been provided.	Review 1: Ok closed (Provided).

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