CP RENEWAL VALIDATION REPORT FOR AKÇAY 28.78 MW HYDROELECTRIC POWER PLANT PROJECT, TURKEY

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Summary:

Re Carbon Ltd. has performed the VCS crediting period (CP) renewal validation of the Akçay 28.78 MW Hydroelectric Power Plant Project, Turkey (Akçay HEPP) in Turkey between 12/03/2021 and 12/07/2021.

Akçay HEPP involves installation and operation of licensed hydro power project and the total capacity of the project is 28.78 MWe ((11.60 MWe x 2) + 5.58 MWe). During the second crediting period which is 10 years, the project is expected to reduce 35,901 tons of CO_2 annually.

The purpose of this validation activity is to determine whether the project complies with the applicable rules and regulations and to see whether the project still can be eligible to be a VCS project activity.

The scope of the validation is the independent and objective review of the VCS-PD against the relevant criteria. The main focus of the validation team is to identify whether the project is still eligible to be a VCS project activity, whether to check the baseline scenario is still valid, whether to check the emission reduction calculations are handled correctly and to whether to be able to continue with the generation of VCUs through the emission reduction.

The validation was performed on the basis of VCS criteria, Host Party criteria as well as the criteria of Clean Development Mechanism methodologies and tools. An online (remote) audit was performed on 15/03/2021. During the validation 03 CARs and 09 CLs were raised. All of which have resolved before the end of the validation.

The review of the Project Description (VCS-PD) 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 VCS requirements. Therefore, Re Carbon Ltd. recommends the renewal of CP of project by the VCS Program.

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1 INTRODUCTION

1.1 Objective

Re Carbon Ltd. has been appointed by “Akcay Hes Elektrik Üretim A.Ş.” to perform the crediting period (CP) renewal validation of the “Akçay 28.78 MW Hydroelectric Power Plant Project, Turkey” with the service agreement dated 09/03/2021. 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 VCS and CDM requirements. In particular;

- the project's baseline is assessed against “ACM0002 version 20.0: “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”
- the project’s monitoring plan is assessed against “ACM0002 version 20.0: “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”
-
- 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 version 2.0
- CDM Project Standard version 2.0
- CDM Project Cycle Procedure version 2.0
- VCS Version 4.1
- VCS Program Guide version 4.0

CP renewal validation is a requirement for all VCS projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of voluntary emission reductions (VERs).

1.2 Scope and Criteria

The scope of the validation is the independent and objective review of the VCS Project Description (PD). The PD is reviewed against the relevant criteria (see section 1.1) and decisions by the VCS Organization, 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 2.0, CDM Project Standard for project activities, version 2.0 and CDM Project Cycle Procedure for project activities, version 2.0 and VCS Version 4.1.

The validation team has employed a risk based approach to assess the completeness and accuracy of the claims and conservativeness of the assumptions in the PD. The main focus of the validation team is to identify whether the project is still eligible to be a VCS project activity, whether to check the baseline scenario is still valid, whether to check the emission reduction calculations are handled correctly and to whether to be able to continue with the generation of VCUs through the emission reduction. The validation is not meant to provide any consulting

towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the project further implementation.

The only purpose of crediting period renewal validation is its usage during the crediting period renewal process as part of the VCS project cycle. Therefore, Re Carbon Ltd. can't be held liable by any party for decisions made or not made based on the validation opinion, which will go beyond that purpose.

1.3 Level of Assurance

Level of assurance of the validation report is defined as reasonable based on the handled validation process through the document review, online (remote) audit and the interviews.

1.4 Summary Description of the Project

Akcay Hes Elektrik Üretim A.Ş. has installed a hydro power plant (Akcay HEPP) in Aegean Region of Turkey, within the province of Aydin, on the Akcay creek, Turkey. Akcay HEPP involves installation and operation of a licensed project. Akcay HEPP project entails the construction and operation of a 28.78 MW hydroelectric power plant, the construction of connection canals, and penstock. The project consists of hydro power plant with two turbines of 11.60 MW and one 5.58 MW capacity.

The project is in operation and started to produce electricity on 14/08/2009. The project fits in sectoral scope 1: Energy Industries -Renewable Energy category.

The electricity production of the proposed project is expected to be 76,170 MWh/year during the second crediting period. Since the project activity is a renewable energy project, it reduces greenhouse gases (GHGs) emissions that would have otherwise occurred in the absence of the project activity by avoiding electricity generation from fossil fuel sources. In the baseline scenario, the electricity delivered to the grid by the project would have otherwise been generated by the operation of grid-connected power plants. Since Turkey's grid mainly consists of thermal power plants, this would have resulted in GHG emissions. However, in the project scenario, the project will continue to generate electricity from hydro power and will result in emission reductions in parallel with its electricity generation figures. The average annual emission reductions of the proposed project for the crediting period are estimated to be 35,901 tonnes of CO_2e (tCO_2e). The emission reduction calculations were validated by the VVB via a detailed review of the baseline calculation Excel sheets.

2 VALIDATION PROCESS

Re Carbon Ltd. has performed the CP renewal validation of the "Akçay 28.78 MW Hydroelectric Power Plant Project, Turkey" between 12/03/2021 and 12/07/2021. The validation was performed on the basis of VCS criteria, UNFCCC criteria for the CDM and Host Party criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting as detailed in below.

2.1 Method and Criteria

The scope of the CP renewal validation is the independent and objective review of the VCS PD and the baseline calculations together with the supporting documents that are listed in section

2.2 of this report. This review is done according to rules and regulations set forth in the applied methodology, associated tools, program standards, guidelines and procedures.

During the review, the project's compliance with the host country's relevant laws and regulations are also assessed and deemed as appropriate. As the project is a hydro power plant, no sampling was deemed necessary and the validation process includes the whole project.

2.2 Document Review

The basis for the validation activity is the PD version 01, dated 11/03/2021 which was submitted to the validation team on the same day. This PD was revised several times due to the raised CARs and CLs, version 04 dated 26/07/2021 being the final version. The PD was assessed against;

- the project's baseline is assessed against "ACM0002-Version 20.0: "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" and
- Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period, Version 3.0.1
-
- 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 version 2.0
- CDM Project Standard version 2.0
- CDM Project Cycle Procedure version 2.0
- VCS Version 4.1
- VCS Program Guide version 4.0
- the Host Country criteria

The list of the documents which were reviewed during the CP renewal validation process is given in the Table 2-1 below:

Table 2-1: List of documents reviewed

Document Number	Document Name	Version	Date (dd/mm/yyyy)
D01	Revised PD	01	11/03/2021
D02	Revised PD	02	15/04/2021
D03	Revised PD	03	24/05/2021
D04	Registered PD	07	31/08/2009
D05	Validation Report	-	06/10/2009
D06	Initial Verification Report	1.1	04/09/2013
D07	ER Calculation Excel Spreadsheet	01	11/03/2021
D08	ER Calculation Excel Spreadsheet	02	15/04/2021

Document Number	Document Name	Version	Date (dd/mm/yyyy)
D09	ACM0002: Grid-connected electricity generation from renewable sources	20	29/11/2019
D10	CDM Validation and Verification Standard version	2.0	29/11/2018
D11	CDM Project Standard version	2.0	29/11/2018
D12	CDM Project Cycle Procedure version	2.0	29/11/2018
D13	VCS Standard	4.1	22/04/2021
D14	VCS Program Guide	4.0	19/09/2019
D17	National Emission factor of Turkey	-	01/09/2020
D18	CP Renewal Validation Service Agreement	-	09/03/2021
D19	Meters Test Reports	-	14/02/2013 11/05/2014 20/05/2020
D20	Photographic Evidences of Electricity Meters	-	-
D21	Social Security Records of PP Site Staff	-	-
D22	Training Records	-	11/02/2019 02/05/2019 09/05/2019 05/03/2020
D23	Letter by Osmaniye Village Head (Mukhtar) (About the Contact Details of PP Relevant Staff In case of Any Complaint)	-	31/05/2021
D24	Hazardous Waste Disposal Records	-	08/10/2020 17/12/2020
D25	Signed Letter by PP (About Proper Domestic Waste Disposal)	-	31/05/2021
D26	Waste Water Transfer and Disposal Records	-	02/02/2021
D27	Generation License (Last Amendment)		28/08/2019
D28	Feasibility Report		06/2017
D29	EIA Not Required Decision		17/09/2012
D30	Project's Google Screenshot	-	-
D31	Provisional Acceptance Protocol	-	14/08/2009
D32	Site Photos	-	15/03/2021
D33	Revised PD	04	26/07/2021
D34	ER Calculation Excel Spreadsheet	03	28/07/2021

2.3 Interviews

During the CP renewal validation period, follow-up interviews were realized by the validation team to further analyze the correctness and accurateness of the information provided.

The list of people who were interviewed during the CP renewal validation process is given in the Table 2-2 below:

Table 2-2: List of persons interviewed

Reference Number	Means of Interview[1]	Full Name	Title	Organization
I01	SV	Seçkin Demiryapan	Plant Manager	Akcay Hes Elektrik Üretim A.Ş.
I02	SV	Birol Ay	Mukhtar (Village Head)	Osmaniye Village
I03	SV	Özgür Ay	Villager	Osmaniye Village
I04	SV	Biray Ay	Villager	Osmaniye Village
I05	SV	Özcan Ay	Villager	Osmaniye Village
I06	SV	Ece Akay Demir	Consultant	GTE Karbon A.Ş.
I07	SV	Merve Aygenç	Consultant	GTE Karbon A.Ş.
I08	SV	Kemal Demirkol	Consultant	GTE Karbon A.Ş.

2.4 Site Inspections

As a part of the CP renewal validation activities, the physical site visit hadn't been performed due to COVID-19 outbreak but the following had been implemented and remote audit was handled on 15/03/2021 and through Zoom program, details of which can be seen in the Table 2-3 below:

Table 2-3: Remote Audit details

Date	15/03/2021	
Location	Remote audit through Zoom program	
Participant	**Company Name**	**Role in the Organization / Role in the Site Visit**
Seçkin Demiryapan	Akcay Hes Elektrik Üretim A.Ş.	Plant Manager
Birol Ay	Osmaniye Village	Muhtar (Village Head)
Özgür Ay	Osmaniye Village	Villager
Biray Ay	Osmaniye Village	Villager
Özcan Ay	Osmaniye Village	Villager
Fikriye Seda Atabek	Re Carbon Ltd.	Team Leader
Ece Akay Demir	GTE Karbon A.Ş.	Consultant
Merve Aygenç	GTE Karbon A.Ş.	Consultant
Kemal Demirkol	GTE Karbon A.Ş.	Consultant
Points Verified		**Source of Information**

[1] SV: Online Site visit; T: Telephone; E: E-mail

To check the project development and operation	Document review and remote audit
To interview with the local stakeholders about the project and its impacts	Remote audit and interviews with the local stakeholders from Osmaniye Village
To confirm rightness of project description, as per PD including project components and location	Document review, remote audit and interviews with the local stakeholders from Osmaniye Village

The project owner representatives and local stakeholders had been interviewed as in above during the remote audit using Zoom program and some photographic evidences like electricity meters, waste storage areas etc. have been taken along with the document review process to achieve the reasonable level of assurance during the CP renewal validation as detailed in other sections of the report.

2.5 Resolution of Findings

The crediting period renewal validation of the mentioned VCS project activity includes the following phases:

- Assessment whether the project design of the proposed VCS project activity meets the relevant VCS requirements, via a desk review of the PD between 12/03/2021 and 12/07/2021.
- Assessment of the stakeholders' comments and how these comments are implemented in the PD
- Assessment whether the applied methodology ACM0002-Version.20.0: "Consolidated baseline methodology for grid-connected electricity generation from renewable sources", has been applied correctly, including the baseline selection and monitoring plan.
-
- An remote audit was conducted on 15/03/2021 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 CP renewal

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 (Project Description and VCS validation requirements) and
- Table 2 (Resolution of Corrective Action, Forward Action and Clarification Requests)

The usage description of Table-1 in Validation Protocol is explained in Table 2-4 below:

Table 2-4: Explanation about Table-1 in Validation Protocol

Question	Reference	MoV*	Findings, comments, references and document sources	Draft & Final Conclusion
The requirements related with the VCS project description and validation	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 Validation Protocol is explained in Table 2-5 below:

Table 2-5: Explanation about Table-2 in Validation Protocol

Draft Report Clarifications, Forward Action and Corrective Action Requests by Validation Team	Ref. to Questions in Table-1	Summary of Project Participants' 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 participants regarding the non-conformities	Is used to summarize the responses by validation team and their conclusions

The Validation Protocol is fulfilled 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.

During the validation period, a Validation Protocol which is attached in Annex 1 to this validation report was used to submit the findings to the project participants.

In line with Re Carbon Ltd. internal terminology and VCS Version 4.1, the team reports the non-conformities in the forms 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 issued are explained below. The Validation team raises a **CAR** if one of the following occurs:

- The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions
- The CDM and/or VCS 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 VCS 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 second crediting period of the project activity

According to these principles total of 03 CARs and 09 CLs were raised all of which are listed in the Validation Protocol. There hasn't been any FARs raised during the CP renewal validation.

The appointment process of the validation team takes into account the technical area(s), sectoral scope(s), and relevant host country experience required amongst team members for

the accurate and thorough assessment of the project design. The relevant VCS validation and previous ITR experiences are also assessed during the selection of the team members and Independent Technical Reviewer (ITR), respectively. The validation team and ITR are assigned to this validation activity on 03/03/2021 taking all the above factors into consideration and as a result of the contract review process.

The validation team members and ITR are given in Table 2-6 below:

Table 2-6: CP renewal validation team and ITR details

Name	Role	Host Country Experience	Scope Coverage	Technical Expertise	Involvement*
Fikriye Seda Atabek	Team Leader	☒	☒	☒	A, DR, SV, R
Sandeep Kanda	ITR	☒	☒	☒	ITR

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

A : Administrative
DR : Desk Review
SV : Online Site Visit (remote audit)
R : Reporting
ITR : Independent Technical Review

2.5.1 Forward Action Requests

The Validation team raises a FAR during the CP renewal validation to highlight issues related to project implementation that require review during the first verification of the second crediting period of the project activity as explained in the Section 2.5.

According to these principles, there hasn't been any FARs raised during the CP renewal validation.

3 VALIDATION FINDINGS

3.1 Project Details

Akcay Hes Elektrik Üretim A.Ş. has installed a hydro power plant (Akcay HEPP) in Aegean Region of Turkey, within the province of Aydin, on the Akcay creek, Turkey. Akcay HEPP involves installation and operation of a licensed project. Akcay HEPP project entails the construction and operation of a 28.78 MW hydroelectric power plant, the construction of connection canals, and penstock. The project consists of hydro power plant with two turbines of 11.60 and one 5.58 MW. The project ownerships have been confirmed through the provided electricity generation licence and provisional acceptance document.

Implementation of the project consists of construction of the following main items: Penstock with length of 380.00 m.; Power house with Francis type turbines. In the power house, three vertical shaft Francis turbines are installed, among which two of them 11.60 MWe and one is 5.58 MWe (total capacity 28.78 MWe). The first-hand turbines which are used in the project are supplied from Hangzhou Yatai Hydro Equipment Completing Co., Ltd., China. The efficiency of the turbines is 93% and there are three generators attached to the facility. The net electricity production (delivered to the grid after losses and consumption in the plant) from the plant is estimated to be 76.170 GWh per annum during the second crediting period. Estimated CO2 reduction is 35,901 tonnes annually while it is calculated as 350,909 tonnes for the whole crediting period.

The project scale is “project” in line with VCS rules and requirements due to its total capacity (28.78 MWe) and since the project is a greenfield project activity, pre-project conditions are same with the baseline scenario as discussed in the Section 3.3.4 of the validation report. The installed capacity and the expected annual generation amount of the project have been checked through the provisional acceptance document dated as 14/09/2009 and the energy yield assessment report dated as 06/2017, respectively.

The project start date of the project activity is the initial date of selling of the produced electricity which is 14/08/2009 and the project is in compliance with the Turkish regulations. The crediting period of the project activity is renewable crediting period of 10 years 0 month which can be renewed one more time since this will be the second crediting period of the project.

The proposed project’s net GHG emission reductions or removals will neither be used for compliance with an emissions trading program or to meet binding limits on GHG emissions, nor for other forms of environmental credit. The project has neither been registered, nor is seeking registration under any other GHG programs other than VCS under VER scheme.

The project has been contributing to SDG-7 through net electricity generation by renewable source, SDG-8 through employment and SDG-13 through GHG emission reduction and such actual contributions will be checked during the second crediting period.

Besides that, there hasn’t been any stated commercially sensitive information by the PP at the time of CP renewal validation.

Through document review and interviews during the 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.

3.2 Safeguards

3.2.1 No Net Harm

There hadn't been any observed significant environmental impact of the project activity as indicated in the registered PD and revised PD for the second crediting period and this was also confirmed through the reviewed documents in as detailed in Section 3.2.3 of the report.

3.2.2 Local Stakeholder Consultation

There hadn't been any complaint raised by the interviewed local stakeholders during the remote audit as detailed in Sections 2.3 and 2.4 of the report.

The local stakeholders as stated in the Table 2-2 above were interviewed about the following issues and there hadn't been any complaint by the interviewed local stakeholders during the remote audit:

- Noise due to the project activity
- Impact on the aquatic life where the project had been constructed
- Sufficiency of local employment (The interviewed local stakeholders were pleased about the provided local employment opportunities by the PP)
- Waste management practices implemented by PP

It was also concluded that the grievance mechanism is in place and this was also confirmed by the interviewed local stakeholders during the remote audit. The documents showing the contact details of the relevant person within PP with the signature of Osmaniye Village Mukhtar (Village Head) and dated as 31/05/2021 were also provided to VVB.

CL-2 was raised to clarify the number of local personnel employed by the PP and CL-3 was raised to include details on communication methods with locals. Similarly, CL-9 was raised to provide evidence on PP contact details being available to locals. All these findings had been closed as detailed in Annex-1.

3.2.3 Environmental Impact

The EIA not necessary decision dated as 17/09/2012 by the Provincial Directorate of Environment and Urbanization was also provided by the PP.

Life line water control is handled by the State Hydraulic Works from Kemer Regulator. The project HEPP is located at the end of the 48 km long irrigation canal through which water is directed from the Kemer Dam and Regulator under State Hydraulic Works control. Therefore, there is no fish passage within the context of the project. All of the water that is discharged to the canal by DSI and delivered to the project is already left to the bed.

Besides that, the photos of waste storage areas and the hazardous waste records dated as 08/10/2020 and 17/12/2020 and the waste water storage tank photo have been provided by the PP. The signed letter by PP about proper disposal of domestic waste and dated as 31/05/2021also have been provided to VVB.

3.2.4 Public Comments

Public comment process hasn't been handled by PP since this is CP renewal validation process. However, the local stakeholder consultation details have been provided in the Section 3.2.2 of the report.

3.3 Application of Methodology

3.3.1 Title and Reference

The project activity was earlier registered using the methodology ACM0002 version 10. The PD has been updated using the latest approved version of the methodology ACM0002 version 20. The PPs have used the most recent version of the same methodology as the original registered PD, i.e., the version that is valid at the time of submission of the revised PD for the renewal of the crediting period.

The project activity applies approved consolidated baseline and monitoring methodology "ACM0002 version 20.0: "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" and the associated tools:

-
- Tool to calculate the emission factor for an electricity system, Version 07.0
- Tool to determine the remaining lifetime of equipment, Version 01
- Tool 11: Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period, Version 3.0.1

According to ACM0002 version 20.0, the latest approved tools shall be referenced in the PD like, "Tool to calculate the emission factor for an electricity system" (Version 07), "Tool to determine the remaining lifetime of equipment" (version 01), "Tool 11: Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period, Version 3.0.1" which are the latest versions of the mentioned tools valid at the starting time and the above tools are applied to the VCS-PD. Therefore, it could be concluded that the title, version and reference of the methodology including the associated tools are correct and valid.

3.3.2 Applicability

Re Carbon Ltd. has assessed the relevant information contained in the VCS-PD, 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 (Akçay HEPP) is a greenfield, renewable (hydro power) electricity generation project, connected to the Turkish national grid,
- The project activity is the installation of hydro 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.

Therefore, Re Carbon Ltd. confirms that the selected baseline and monitoring methodology is applicable to the project activity, and this version will be valid at the time of submitted of the project activity for CP renewal.

3.3.3 Project Boundary

As clearly defined in the revised PD, the project boundary encompasses the physical, geographical site of the renewable generation source. The hydro power plant with all installation is the project boundary and this had been validated during the remote audit.

The spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the VCS project power plant is connected to as clearly defined in the applied methodology.

As the project activity is connected to Turkish national grid, the baseline boundary is defined as the Turkish national grid. This includes the project site and all power plants connected physically to the Turkish national grid and there are no off-grid power plants in Turkish grid.

The baseline emission source is CO_2 and fossil fuels fired for electricity generation cause CO_2 emissions which is the main source. It is included to baseline calculation to find the displaced amount by the project activity. The other sources and gases are minor sources and excluded due to the simplification in line with the applied methodology.

The project activity is greenfield hydro power plant project, so there hasn't been any project emissions and sources, reservoirs and gas in line with the applied methodology.

As a result, Re Carbon Ltd. confirms that the project boundary and associated GHG sources have been clearly and correctly identified in the PD by the PP and will be valid during the second crediting period.

3.3.4 Baseline Scenario

The project activity was earlier registered using the methodology ACM0002 version 10. The PD has been updated using the latest approved version of the methodology ACM0002 version 20. All the applicability conditions of the methodology have been justified appropriately in the revised PD, version 03 and dated as 07/06/2021.

The PP has also included "Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period version 03.0.1" under the applicable tools list. The VVB has checked the application of the aforesaid tool and confirms that it has been correctly applied.

There has been no significant change in the relevant policies and circumstances, which would impact the baseline scenario since 06/10/2009 (date of initial validation) till date. The earlier registered PD takes into account all the relevant national and sectoral policies and circumstances that were applicable as on date. The discussion on the same has also been provided in the updated PD.

The project activity is supplying power to the Turkish national grid. Thus, the baseline scenario continues to remain same as earlier, as follows: "Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system".

Further, the emission factor has been updated and fixed ex-ante for the 2nd renewable crediting period. The procedures as defined in the "Tool to calculate the emission factor for an electricity system", version 07.0 have been followed. The grid emission factor

(EFgrid,CM,y) in the earlier registered PD was 0.645 tCO_2/MWh whereas the grid emission factor (EFgrid,CM,y) in the updated PD is 0.4607 tCO_2/MWh with 0.25 and 0.75 weightage factor given to OM and BM respectively.

The grid emission factor value corresponds to the latest official emission factor of Turkey that can be used in the projects depending on the project type has been published by the Ministry of Energy and Natural Resources. The same has been checked from the following link and the document available: https://enerjiapi.etkb.gov.tr/Media/Dizin/ETKB/Duyurular//0c6b62ea-bf2f-4fea-b9b3-28bc6f48ddf2_Bilgi_Formu_-_Web_Sitesi.pdf

VVB confirms that the Turkish National EF has been calculated to be in line with the the "Tool to calculate the emission factor for an electricity system", version 07.0.

No updates in policy and regulatory framework comparing with the initial validation process have been found in Turkey. Therefore, it can be concluded that the baseline scenario has not changed and continues to be the same as during the second crediting period.

3.3.5 Additionality

The project's additionality had been checked during the initial validation of the project activity and the project was found to be as additional by the relevant VVB at that time.

It is declared in PD section 3.5 that "The project is not being implemented to comply with any law or other regulatory framework. It is a voluntary project". Therefore, regulatory surplus has been demonstrated by PP.

Re Carbon Ltd. can also confirm that in Turkish legislation there is no law or any other regulation that mandates such power plants to be built, therefore project investment is voluntary and it can be concluded that regulatory surplus is demonstrated by PP appropriately.

CL-6 was issued regarding the regulatory surplus and this CL had been closed as detailed in Annex-1.

3.3.6 Quantification of GHG Emission Reductions and Removals

The emission reduction calculation estimations have been included in the PD in line with the latest approved version of the methodology ACM0002 version 20.0. The baseline emissions are calculated based on the combined emission factor multiplied by the expected net electricity generation, which amounts to 35,901 ton CO2 per annum.

Emission factor had been calculated in line with the selected methodology and the Ministry of Energy and Natural Resources document named as "Turkey's National Electricity Network Emission Factor Factsheet, EF of hydropower plants" as 0.4607 tCO2/MWh.

BEy = 76,170 MWh × 0.4607 tCO2e/MWh = 35,901 tCO2e

As the project does not have a reservoir area, and the power density is calculated to be zero, there are no project emissions or leakage emissions associated with the hydro power project. Thus, the emission reductions correspond to the baseline emissions and the project is expected to result in an average emission reduction of 35,901 tCO2e/year during the second crediting period.

ERy = BEy – PEy – Ley

LEy = 0 , PEy =0

ERy = BEy=35,901 tCO2e

CAR-1 and CL-7 were raised regarding the emission reduction calculations during the CP renewal validation and they had been closed as detailed in Annex-1.

3.3.7 Methodology Deviations

No methodology deviations have been applied to the project.

3.3.8 Monitoring Plan

According to ACM0002 version 20.0, one of the parameters required to be monitored is "net electricity supplied by the proposed project to the grid in year y, $EG_{facility,y}$ which will be continuously measured and recorded at least monthly.

Net electricity generation will be based on measured value of electricity export and import and recorded via meters sealed by TEIAS (the distribution and grid company) for billing purposes therefore no new additional protocol will be needed for monitoring emission reduction. According to meter reading protocols, the internal consumption of the facility was subtracted from the gross generation. EPIAS records will be used as the main source for the quantity of net electricity delivered to the grid, and it has been cross checked with the meter reading records (OSF forms) provided to the company by TEIAS.

The site electricity technicians and plant manager will be responsible for the electricity generated, gathering all relevant data and keeping the records.

There are two feeders and four electricity meters, for each feeder one main meter and one back up meter. All meters are inspected and sealed by TEIAS before the commissioning of the power plant in order to be protected from interference by any of the parties and the relevant information about the electricity meters including the serial numbers have been provided by the PP. Installation of the meters and data monitoring will be carried out according to the relevant regulation by TEIAS which will record the meter readings via EPIAS system and through remote reading. The main data source will be EPIAS data and TEIAS meter records will be used for cross checking purpose.

The details about the currently available electricity meter details are as follow as in the Table 3-1 below:

Table 3-1: Electricity meter details

Feeder No.	Model	Serial Number
1	EMH ITRON	Main Meter: 9276783 Back-up Meter: 84051667
2	EMH ITRON	Main Meter: 9276784 Back-up Meter: 84051668

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 "Regulation of Metering and Testing of Metering Systems". The meters will be calibrated by TEIAS when there is an inconsistency between main and back-up meters.

Other parameter to be monitored is installed capacity (Cap_{PJ}) of the project. The parameter is monitored once at each monitoring period by supplier information on the equipment and

turbine name plates. It has been validated during the CP renewal validation that the installed capacity is 28.78 MWe as declared in the PD through the provisional acceptance protocol, the turbine name plates' documents and remote audit observations.

CAR-3 and CL-8 were raised regarding the monitoring during the CP renewal validation and they had been closed as detailed in Annex-1.

Therefore, Re Carbon Ltd. can confirm that the list of parameters that need to be monitored ex post for the second crediting period is complete and consistent with the relevant applied methodology which is ACM0002 version 20.0.

By document review and remote audit observations, it is also confirmed by the validation team that the monitoring plan can be properly implemented, 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.

3.4 Non-Permanence Risk Analysis

N/A (The project is not an AFOLU project).

4 VALIDATION CONCLUSION

Re Carbon Ltd. has performed the CP renewal validation of the “Akçay 28.78 MW Hydroelectric Power Plant Project, Turkey” between 12/03/2021 and 12/07/2021. The validation was performed on the basis of VCS criteria, UNFCCC criteria for the CDM and Host Party criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The validation has been performed by a validation team consisting of “Fikriye Seda Atabek as team leader and Sandeep Kanda as an ITR”, and the project activity was checked against the applicable rules and regulations of CDM including CDM Validation and Verification Standard version 02, CDM Project Standard version 02, CDM Project Cycle Procedure version 02 and VCS Version 4.1.

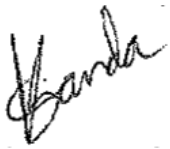
Re Carbon Ltd. hereby confirms that the proposed project activity “Akçay 28.78 MW Hydroelectric Power Plant Project, Turkey” has applied all relevant applicable guidance documents as the selected baseline and monitoring methodologies and the associated methodological tools have been applied correctly. Total emission reductions from the project are estimated to be on the average 35,901 tCO_2e per year over the selected 10 year crediting period. The emission reduction forecast has been checked and it is deemed likely that the stated amount is achieved given that the underlying assumptions do not change.

As a result, the CP renewal validation team assigned by the Re Carbon Ltd. concludes that the proposed Project Activity “Akçay 28.78 MW Hydroelectric Power Plant Project, Turkey”, as described in the PD, version 4 and dated as 26/07/2021:

- meets all relevant Host Country criteria;
- meets all relevant requirements of the VCS project activities [including VCS Version 4.1, 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 20.0;
- is likely to achieve estimated emission reductions;

Therefore, Re Carbon Ltd. requests the renewal of crediting period of the project activity.

Fikriye Seda ATABEK
Team Leader
24/01/2022



Sandeep KANDA
ITR
24/01/2022

Anıl SÖYLER
Certification Manager
24/01/2022

ANNEX 1: VALIDATION PROTOCOL

Table 1 – VCS Project Description and CDM Validation Requirements

Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
Cover Page and General Requirements					
1. Are all items in the box at the bottom of the cover page completed using Arial 10.5 pt, black, regular (non-italic) font?	VCS Std. Version 4.0	DR	Yes, they are in Arial 10 and regular font.	OK	OK
2. Are the followings provided at the cover page in a tabular format?	VCS Std. Version 4.0	DR	Yes, they have been provided at the cover page in the tabular format.	OK	OK
2.1. Name of the project?	VCS Std. Version 4.0	DR	Yes, it has been provided at the cover page in the tabular format.	OK	OK
2.2. Version number of the VCS PD?	VCS Std. Version 4.0	DR	Yes, it has been provided at the cover page in the tabular format.	OK	OK
2.3. The date of the document issued in DD-Month-YYYY format?	VCS Std. Version 4.0	DR	Yes, it has been provided at the cover page in the tabular format.	OK	OK
2.4. Individual or entity that prepared the document?	VCS Std. Version 4.0	DR	Yes, it has been provided at the cover page in the tabular format.	OK	OK
2.5. Physical address, telephone, email, website?	VCS Std. Version 4.0	DR	Yes, it has been provided at the cover page in the tabular format.	OK	OK
3. Is this box available on the title page of the final document?	VCS Std. Version 4.0	DR	Yes, the box has been provided at the cover page.	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 PD used as a basis for validation prepared in accordance with the latest template and guidance from the VCS?	VCS Std. Version 4.0	DR	Yes, it has been prepared by using the latest template.	OK	OK
5. Are the VCS PD and other documents required under the VCS Program in English?	VCS Std. Version 4.0	DR	Yes, they have been provided in English.	OK	OK
6. Is there “Table of Contents” in the PD?	VCS Std. Version 4.0	DR	Yes, Table of Content is available in the PD.	OK	OK
7. Is the project listed on VCS project pipeline? .)	Registration and Issuance Process Procedure Version 3.8 Section 3	DR	Yes, project is listed on VCS project registry.	OK	OK
1. **PROJECT DETAILS**					
1.1. **Summary Description of the Implementation Status of the Project**					
Does section 1.1 of the VCS PD include the following?	VCS Std. Version 4.0	DR	Please see in below.	OK	OK
1.1.1.1. A summary description of the technologies/measures to be implemented by the project.	VCS Std. Version 4.0	DR	a) Please provide reference for “76.915 GWh per annum”. b) Please provide reference for loan agreement (investment decision date). c) Please provide reference for construction start date. d) Please provide reference for VCS registration date.	CL-1	OK
1.1.1.2. The location of the project.	VCS Std.	DR	Location provided in PD	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
	Version 4.0				
1.1.1.3. An explanation of how the project is expected to generate GHG emission reductions or removals.	VCS Std. Version 4.0	DR	Yes, the explanation of how the project is expected to generate GHG emission reductions or removals has been provided.	OK	OK
1.1.1.4. A brief description of the scenario existing prior to the implementation of the project.	VCS Std. Version 4.0	DR	Yes the brief description of the scenario existing prior to the implementation of the project has been provided in Section 1.13 of the PD.	OK	OK
1.1.1.5. An estimate of annual average and total GHG emission reductions and removals.	VCS Std. Version 4.0	DR	Please state the estimate of annual average and total GHG emission reductions and removals in PD section 1.1.	CAR-1	OK
Is the purpose of the project activity described including how it contributes to the sustainable development of the Host Party?	CDM-PDD-FORM version 11.0 EB 101 Report Annex 1 §36c	DR	Yes, the purpose of the project activity has been provided.	OK	OK
Has the VCS PD been prepared in accordance with the latest guidelines for completing the VCS PD?	VCS Std. Version 4.0	DR	Yes, the PD has been prepared by using the latest template.	OK	OK
1.2. **Sectoral Scope and Project Type**					
Is this a grouped project?	VCS Std. Version 4.0	DR	No, this isn't a grouped project.	OK	OK
Is the technical area of the project activity specified?	VCS Std. Version 4.0	DR	Yes, the sectoral scope of the project activity has been specified.	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
Is the category of the project activity specified?	VCS Version 4.0	DR	Yes, the category of the project activity has been specified.	OK	OK
Is it justified how the proposed project activity conforms to the project category selected?	CDM-PDD-FORM Version 11.0 VCS Std. Version 4.0	DR	Yes, this justification has been provided in the category selected.	OK	OK
1.3. **Project Eligibility**					
Has it been described and justified how the project is eligible under the scope of the VCS Program?	VCS Version 4.0	DR	This is second CP so eligibility is not discussed once more. PD 1.3 states that 6 employees will be employed however 13 employees are seen in Social security records. Please clarify the duties of 13 employees and tabulate the received trainings in PD.	CL-2	OK
1.4. **Project Design**					
Has it been indicated whether the project has been designed to include one of the following?	VCS Version 4.0	DR	Please see below	OK	OK
1.4.1.1. A single installation of an activity	VCS Version 4.0	DR	Yes	OK	OK
1.4.1.2. Multiple project activity instances or	VCS Version 4.0	DR	N/A	OK	OK
1.4.1.3. Grouped project.	VCS Version 4.0	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
1.5. **Project Proponent**					
Are the contact information for the project proponent(s) provided?	VCS Std. Version 4.0	DR	Yes	OK	OK
1.6. **Other Entities Involved in The Project**					
Are the contact information and roles/responsibilities for any other entities involved in the development of the project provided?	VCS Std. Version 4.0	DR	N/A	OK	OK
1.7. **Ownership**					
Has the evidence of project ownership been provided in accordance with the VCS Program specifications on project ownership?	VCS Std. Version 4.0	DR	As per the license issued by Energy Market Regulatory Authority (EMRA), all legal rights of the project is given to AKÇAY HES ELEKTRIK URETIM A.S.	OK	OK
1.8. **Project Start Date**					
Is the project start date (the date on which the project began reducing or removing GHG emissions) indicated in day, month and year format?	VCS Version 4.0	DR	Yes, the project start date has been provided in the PD.	OK	OK
Is the starting date defined in accordance with the relevant guidance?	CDM-PDD-FORM Version 11.0	DR	Project start date is 14/08/2009 (The commissioning date of the project).	OK	OK
Does the VCS PD include a description on the following?	CDM-PDD-FORM	DR	Please see in 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
	Version 11.0				
1.8.3.1. how this starting date has been determined?	CDM-PDD-FORM Version 11.0	DR	Project start date is 14/08/2009 (The commissioning date of the project).	OK	OK
1.8.3.2. the evidence available to support this start date?	VCS Version 4.0 CDM-PDD-FORM Version 11.0	DR	Yes, the provisional acceptance Protocol has been provided.	OK	OK
1.9. **Project Crediting Period**					
Is the total crediting period including the day, month and year for the start and end dates and the total number of years indicated?	VCS Std. Version 4.0	DR	Project's second crediting period includes the dates of 14/08/2019 – 13/08/2029 (both dates included). The crediting period is 10 years.	OK	OK
1.10. **Project Scale and Estimated GHG Emission Reductions or Removals**					
Is the scale of the project (project or large project) indicated?	VCS Std. Version 4.0	DR	Yes, the scale of the project has been indicated as "project"	OK	"OK
Are the estimated annual GHG emission reductions or removals during the project crediting period indicated in a tabular format?	VCS Std. Version 4.0	DR	Yes, the estimated annual amount has been indicated in the tabular format.	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
1.11. **Description of the Project Activity**					
Does the proposed VCS project activity involve the alteration of an existing installation or process?	EB 101 Report Annex 2 §51	DR	N/A (This is a greenfield project.)	OK	OK
If the proposed project activity includes the alteration of an existing installation or process does the project description clearly state the differences resulting from the project activity compared to the pre-project situation?	EB 101 Report Annex 2 §51	DR	N/A (This is a greenfield project.)	OK	OK
Does the VCS PD include the following?	CDM-PDD-FORM Version 11.0	DR	Please see in below.	OK	OK
1.11.3.1. The scenario existing prior to the start of the project activity with a list of equipment and systems in operation at that time	CDM-PDD-FORM Version 11.0	DR	The scenario existing prior to the start of the project activity given in 1.13 of PD	OK	OK
1.11.3.2. The scope of activities/measures that are being implemented within the project activity, with a list of the equipment(s) and systems that will be installed and/or modified within the project activity;	CDM-PDD-FORM Version 11.0	DR	Yes, the list of equipment that will install within the project activity has been provided	OK	OK
1.11.3.3. The baseline scenario (if same as the scenario existing prior to implementation, then it	CDM-PDD-FORM Version	DR	Yes, baseline scenario has been defined.	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
should only be stated that both scenarios are the same)	11.0				
Does the description of the scenarios include the following:	CDM-PDD-FORM Version 11.0	DR	Please see in below.	OK	OK
1.11.4.1. A list and arrangement of the main manufacturing / production technologies, systems and equipment involved	VCS Std. Version 4.0 CDM-PDD-FORM Version 11.0	DR	Yes, the list is available.	OK	OK
1.11.4.2. The emission sources and GHGs involved in the project activity, according to the methodology used	VCS Std. Version 4.0 CDM-PDD-FORM Version 11.0	DR	The emission sources and GHGs involved in the project activity, are negligible	OK	OK
1.11.4.3. The description of the functions of the equipment that is being modified and/or installed under the project activity and its relation, if any, to other manufacturing/production equipment and systems outside the project boundary	VCS Std. Version 4.0 CDM-PDD-FORM Version 11.0	DR	N/A (There hasn't been any modifications and/or installed under the project activity)	OK	OK
Is the lifetime of the project activity(s) indicated?	VCS Std. Version 4.0	DR	The economic life of an HEPP in Turkey is assumed as 50 years. However, it is recommended to renew the equipment in every 20 years.	OK	OK
Has the appropriate and clear evidence been provided regarding the expected operational lifetime of	CDM-PDD-FORM Version	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
the project activity?	11.0				
1.12. **Project Location**					
Is the location and geographical boundary of the project activity clearly identified including:	CDM-PDD-FORM Version 11.0 VCS Std. Version 4.0	DR	Please see in below.	OK	OK
1.12.1.1. Host Party(ies)?	CDM-PDD-FORM Version 11.0 VCS Std. Version 4.0	DR	Stated correctly	OK	OK
1.12.1.2. Region/State/Province etc.?	CDM-PDD-FORM Version 11.0 VCS Std. Version 4.0	DR	Stated correctly	OK	OK
1.12.1.3. City/Town/Community etc.?	CDM-PDD-FORM Version 11.0 VCS Std. Version 4.0	DR	Stated correctly	OK	OK
1.12.1.4. a set of geodetic coordinates.	VCS Std. Version 4.0	DR	Please provide reference in PD for the provided coordinates.	CAR-2	OK
1.13. **Conditions Prior to Project**					

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

Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
Initiation					
Are the conditions prior to project initiation provided?	VCS Std. Version 4.0	DR	Yes, the pre-project situation has been defined as baseline scenario.	OK	OK
Is it demonstrated that the project has not been implemented to generate GHG emissions for the purpose of their subsequent reduction, removal or destruction?	VCS Std. Version 4.0	DR	Yes	OK	OK
1.14. **Compliance with Laws, Statutes And Other Regulatory Frameworks**					
Does the VCS PD include identification of relevant local, regional and national laws, statutes and regulatory frameworks related to the project and demonstration of compliance with them?	VCS Std. Version 4.0	DR	Yes, these have been identified.	OK	OK
1.15. **Participation Under Other GHG Programs**					
Projects Registered (or seeking registration) Under Other GHG Program(s)					
1.15.1.1. Has it been indicated whether the project has been registered, or is seeking registration under any other GHG programs in the Section 1.15.1 of the PD?	VCS Std. Version 4.0	DR	It is stated that “The project doesn’t claim Green or White certificates or equivalents that may result in double counting as a result of carbon dioxide emission reduction purposes.” A search in Gs registry and IREC revelas that project is only registered to VCS	OK	OK
1.15.1.2. If the project has been registered under any other	VCS Std. Version 4.0	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
GHG program, has the registration number and the relevant details been provided in the Section 1.15.1 of the PD?					
Projects Rejected by Other GHG Programs					
1.15.2.1. Has it been indicated whether the project has been rejected by any other GHG programs in the Section 1.15.2 of the PD?	VCS Std. Version 4.0	DR	N/A	OK	OK
1.15.2.2. If the project has been rejected by any other GHG programs, has the relevant information, including the reason(s) for the rejection and justification of eligibility under the VCS Program been provided in the Section 1.15.2 of the PD?	VCS Std. Version 4.0	DR	N/A	OK	OK
1.15.2.2.1. the reductions or removals generated by the project have or will not be used in the emissions trading program	VCS Std. Version 4.0	DR	N/A	OK	OK
1.15.2.2.2. for the purpose of demonstrating compliance with the binding limits that are in place in that jurisdiction or sector	VCS Std. Version 4.0	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
1.16. **Other Forms of Environmental Credit**					
Emissions Trading Programs and Other Binding Limits					
1.16.1.1. Has it been indicated whether the project reduces through following?	VCS Std. Version 4.0	DR	N/A	OK	OK
1.16.1.1.1. GHG emissions from activities that are included in an emissions trading program or	VCS Std. Version 4.0	DR	N/A	OK	OK
1.16.1.1.2. Any other mechanism that includes GHG allowance trading, and include details about any such programs or mechanisms	VCS Std. Version 4.0	DR	N/A	OK	OK
Other Forms of Environmental Credit					
1.16.2.1. Has it been indicated whether the project(s) created other forms of environmental credit including renewable energy certificates?	VCS Std. Version 4.0	DR	N/A	OK	OK
1.16.2.2. If the project(s) created other forms of environmental credit (for example renewable energy certificates), has the PPs provided all relevant information about the GHG-	VCS Std. Version 4.0	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
related environmental credit and the related program?					
1.16.2.3. Have all other programs under which the project is eligible to participate (to create another form of GHG-related environmental credit) been listed?	VCS Std. Version 4.0	DR	N/A	OK	OK
1.17. **Additional Information Relevant to the Project**	**This section of the PD is not reviewed as the project is under validation for renewal of crediting period.**				
2. **SAFEGUARDS**					
2.1. **No Net Harm**					
Has any potential negative environmental and socio-economic impacts and the steps taken to mitigate them been summarized in the VCS PD?	VCS Std. Version 4.0	DR	No potential impacts stated in PD. Also in site visit no potential impacts determined and no complaints received from stakeholders	OK	OK
2.2. **Local Stakeholder Consultation**					
Does the process for and the outcomes from the local stakeholder consultation include the following?	VCS Std. Version 4.0	DR	a) Please provide evidence on LSC, Please state in PD dates and means of communication with stakeholders and comments received. b) Please explain the below: -procedures or methods used for engaging local stakeholders -procedures or methods used for documenting the outcomes	CL-3	OK

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

Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
			- mechanism for on-going communication -how comments are taken into account		
2.2.1.1. The procedures or methods used for engaging local stakeholders (e.g., dates of announcements or meetings, periods during which input was sought).	VCS Std. Version 4.0	DR	Provided	CL-3	OK
2.2.1.2. The procedures or methods used for documenting the outcomes of the local stakeholder consultation	VCS Std. Version 4.0	DR	Provided	CL-3	OK
2.2.1.3. The mechanism for on-going communication with local stakeholders	VCS Std. Version 4.0	DR	Please provide the relevant evidence that Mukhtar and residents of Osmaniye Village are informed about PP and VCS contact details.	CL-9	OK
2.2.1.4. How due account of all and any input received during the consultation has been taken.	VCS Std. Version 4.0	DR	Provided	CL-3	OK
2.2.1.5. The details on any updates to the project design or justify why updates are not appropriate	VCS Std. Version 4.0	DR	Provided	CL-3	OK
Is the invitation made in an open and transparent manner with use of appropriate means?	CDM-PDD-FORM Version 11.0	DR	N/A	OK	OK
Is it possible to conclude based on stakeholder meeting presentation	CDM-PDD-FORM	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
materials that project was described in an understandable manner to the local stakeholders?	Version 11.0				
Is the local stakeholder process completed before the validation?	VCS Std. Version 4.0	DR	N/A	OK	OK
2.3. **Environmental Impacts**					
Have the PPs carried out an analysis of the environmental impacts of the proposed project activity including transboundary impacts?	VCS Std. Version 4.0 EB101 Report Annex 1 §92	DR	EIA not required certificate dated September 2012 provided to DOE.	OK	OK
Has a summary of the analysis of the environmental impacts of the project activity and references to all related documentation, provided under PD?	CDM-PDD-FORM version 11.0 EB101 Report Annex 1 §92	DR	No environmental impacts stated Please provide explanation in PD about waste management activities on site and any records available for healthy disposal (waste water, MSW and hazardous waste, recycled waste.	CL-4	OK
Has the PPs provided all conclusions and references to all related documentation?	EB101 Report Annex 1 §92	DR	N/A	OK	OK
Do the procedures of the Host Party require the PPs to conduct an environmental impact assessment?	EB101 Report Annex 1	DR	EIA not required certificate dated September 2012 provided to DOE.	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
	§92 EB101 Report Annex 2 §126				
If the procedures of the Host Party require the PPs to conduct an environmental impact assessment, has the PPs conducted an environmental impact assessment in accordance with the Host Party's procedures?	EB101 Report Annex 1 §93 EB101 Report Annex 2 §127 §129	DR	EIA not required certificate dated September 2012 provided to DOE.	OK	OK
2.4. **Public Comments**					
Has it been demonstrated in the VCS PD how due account of all and any comments received during the public comment period had been taken?	VCS Std. Version 4.0	DR	a) Please provide evidence on public comment period. b) Please state in the Section 2.4 of the PD the dates and means of communication with the local stakeholders. c) Please clarify in the Section 2.4 of the PD if there are any updates to the project design or demonstrate the insignificance or irrelevance of the comments.	CL-5	OK
Have the details on any updates to the project design or demonstrate the insignificance or irrelevance of comments been included in the VCS	VCS Std. Version 4.0		Please see CL-5.	CL-5	OK

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

Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
PD?					
3. **APPLICATION of METHODOLOGY**					
3.1. **Title and Reference of Methodology**					
Does the project apply the correct and valid version of the approved methodology and referred tools at the time of submission for crediting period renewal?	VCS Std. Version 4.0	DR	The approved methodology with the correct and valid version has been included in the PD.	OK	OK
Does the VCS PD indicate the title and version of the methodology and the related tool(s) correctly?	VCS Std. Version 4.0	DR	The approved tools with the correct and valid version has been included in the PD.	OK	OK
3.2. **Applicability of Methodology**					
Is the choice of the methodology justified by showing that the proposed project activity meets all the applicability conditions of the methodology?	VCS Std. Version 4.0 CDM-PDD-FORM version 11.0 EB 101 Report Annex 1 §54 EB 101 Report Annex 2	DR	Yes, applicability is discussed correctly.	OK	OK

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
	§67				
Does the project activity meet each of the applicability conditions of the tools or other methodology components referred to in the applied methodology?	VCS Std. Version 4.0 EB 101 Report Annex 2 §67	DR	Yes	OK	OK
ACM 0002					
Is the type of proposed project activity defined? • ○ ○ ○ ○ ○ • •	ACM 0002 Version 20.0	Dr	Project is hydropower plant project.	OK	OK
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 20.0	DR		OK	OK
3.2.4.1. Is the proposed project activity implemented in an existing single or multiple	ACM 0002 Version	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
reservoirs, with no change in the volume of any of the reservoirs?	20.0				
3.2.4.2. 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/m2?	ACM 0002 Version 20.0	DR	N/A	OK	OK
3.2.4.3. Is the project activity results in new single or multiple reservoirs and the power density calculated using equation (3), is greater than 4 W/m2?	ACM 0002 Version 20.0	DR	Power density is zero	OK	OK
If the project activity is an integrated hydro power project, has the PPs 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 20.0	DR	N/A	OK	OK
If the project activity is an integrated hydro power project, has the PPs provided an analysis of the water balance covering the water fed to power units, with all possible combinations of reservoirs and without the construction of reservoirs?	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
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/m2, do all the following conditions conform the project activity?	ACM 0002 Version 20.0	DR	N/A	OK	OK
3.2.7.1. The power density calculated using the total installed capacity of the integrated project, as per equation (4), is greater than 4 W/m2;	ACM 0002 Version 20.0	DR	N/A	OK	OK
3.2.7.2. Water flow between reservoirs is not used by any other hydropower unit which is not a part of the project activity;	ACM 0002 Version 20.0	DR	N/A	OK	OK
3.2.7.3. Installed capacity of the power plant(s) with power density lower than or equal to 4 W/m2 shall be:	ACM 0002 Version 20.0	DR	N/A	OK	OK
3.2.7.3.1. Lower than or equal to 15 MW; and	ACM 0002 Version 20.0	DR	N/A	OK	OK
3.2.7.3.2. Less than 10 per cent of the total installed capacity of integrated	ACM 0002 Version	DR	N/A	OK	OK

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
hydro power project.	20.0				
ACM 0001					
Does the project activity include one of the following conditions?	ACM 0001 Version 19.0	DR	N/A	OK	OK
3.2.8.1. 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
3.2.8.2. 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
3.2.8.3. 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
3.2.8.4. In the case of an existing active LFG capture system for which the amount of LFG cannot be collected separately from the project system after the implementation of the project activity and its efficiency is not impacted on by the	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
project system: historical data on the amount of LFG capture and flared is available;					
3.2.8.5. 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
3.2.8.6. Generating electricity;	ACM 0001 Version 19.0	DR	N/A	OK	OK
3.2.8.7. 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
3.2.8.8. Supplying the LFG to consumers through a natural gas distribution network;	ACM 0001 Version 19.0	DR	N/A	OK	OK
3.2.8.9. Supplying compressed/liquefied LFG to consumers using trucks;	ACM 0001 Version 19.0	DR	N/A	OK	OK
3.2.8.10. Supplying the LFG to consumers through a dedicated pipeline;	ACM 0001 Version 19.0	DR	N/A	OK	OK
3.2.8.11. 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

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
• • • •					
AM0058					
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
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
3.2.10.1. 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
3.2.10.2. A new centralised heat only boiler(s); or	AM0058 Version 5.0	DR	N/A	OK	OK
3.2.10.3. A combination of both 3.2.10.1 and 3.2.10.2	AM0058 Version 5.0	DR	N/A	OK	OK
Does the project activity include any of below components?	AM0058 Version 5.0	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
3.2.11.1. 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 heat may be supplied to other users, such as for industrial production processes;	AM0058 Version 5.0	DR	N/A	OK	OK
3.2.11.2. 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
3.2.11.3. The power plant is fossil fuel fired;	AM0058 Version 5.0	DR	N/A	OK	OK
3.2.11.4. 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
3.2.11.5. 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

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
3.2.11.6. 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 plant within the primary district heating system;	AM0058 Version 5.0	DR	N/A	OK	OK
3.2.11.7. 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.					
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

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

Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
•					
3.2.12.1. Electricity to a national or a regional grid, or	AMS I.D. Version 18.0 §2 §4 §7	DR	N/A	OK	OK
3.2.12.2. Electricity to an identified consumer facility via national/regional grid through a contractual arrangement such as wheeling?	AMS I.D. Version 18.0 §2 §4 §7	DR	N/A	OK	OK
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
Does the new unit co-fires fossil fuel?	AMS I.D. Version 18.0 §6 §7	DR	N/A	OK	OK
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
Is the project activity a retrofit, rehabilitation or a replacement?	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
	§9				
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
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
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
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/m2?	AMS I.D. Version 18.0 §5	DR	N/A	OK	OK
AMS I.C.					
Does the proposed project activity comprise renewable energy technologies that supply users (residential, industrial or commercial facilities) with thermal energy that	AMS I.C. Version 21	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
displaces fossil fuel use?	§2				
Is the proposed project activity a biomass based co-generation or trigeneration system?	AMS I.C. Version 21 §3 §22-a §22-b	DR	N/A	OK	OK
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?	AMS I.C. Version 21 §22-a	DR	N/A	OK	OK
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?	AMS I.C. Version 21 §22-b §22-d	DR	N/A	OK	OK
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
3.2.25.1. Electricity supply to a grid	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
	§4-a				
3.2.25.2. 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
3.2.25.3. Combination of both	AMS I.C. Version 21 §4-c	DR	N/A	OK	OK
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
3.2.26.1. 45 MW thermal if the project activity includes emission reductions from both the thermal and electrical energy components	AMS I.C. Version 21 §9-a	DR	N/A	OK	OK
3.2.26.2. 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
3.2.26.3. 15 MW if the emission reductions are solely on account of electrical energy production (i.e. no emission reductions accrue from the thermal energy component),	AMS I.C. Version 21 §9-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
Is the total installed/rated thermal energy generation capacity of the project equipment equal to or less than 45 MW thermal?	AMS I.C. Version 21 §7	DR	N/A	OK	OK
Is the project activity a co-fired system?	AMS I.C. Version 21 §8 §22-e	DR	N/A	OK	OK
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
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
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?	AMS I.C. Version 21 §10	DR	N/A	OK	OK

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
If the project activity uses solid biomass fuel, (e.g. briquette), is it demonstrated that it has been produced using solely renewable biomass?	AMS I.C. Version 21 §11 §17	DR	N/A	OK	OK
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?	AMS I.C. Version 21 §12	DR	N/A	OK	OK
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
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
If the project activity recovers and utilizes biogas for power/heat	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
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?	Version 21 §14				
If project equipment contains refrigerants, is the refrigerant used in the project case any ozone depleting potential?	AMS I.C. Version 21 §15	DR	N/A	OK	OK
If the proposed project activity is a charcoal based biomass energy generation, is the charchoal produced from renewable biomass sources?	AMS I.C. Version 21 §16	DR	N/A	OK	OK
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
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?	AMS I.C. Version 21 §16-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
3.3. **Project Boundary**					
Is the diagram or map of the project boundary, showing clearly the physical locations of the various installations or management activities taking place as part of the project activity given?	VCS Std. Version 4.0	DR	Yes, the simple diagram showing clearly the physical locations of the various installations has been provided in the PD.	OK	OK
Has the PP 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?	VCS Std. Version 4.0 CDM-PDD-FORM Version 11.0	DR	tabular format provided	OK	OK
Has the PP presented a flow diagram of the project boundary, physically delineating the project activity, based on the description provided in section 1.8 of the PD?	CDM-PDD-FORM Version 11.0	DR	Yes, the simple diagram showing clearly the physical locations of the various installations has been provided in the PD.	OK	OK
Has the PP included in the flow diagram the equipment, systems and flows of mass and energy described in PD	CDM-PDD-FORM Version 11.0 VCS Std. Version 4.0	DR	Yes, the simple diagram showing clearly the physical locations of the various installations has been provided in the PD.	OK	OK
Has it been indicated in the diagram the emission sources and GHGs included in the project boundary?	CDM-PDD-FORM Version 11.0 VCS Std. Version 4.0	DR	N/A	OK	OK

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
Does the selected methodology allow the PPs to choose whether a source or gas is to be included in the project boundary?	EB 101 Report Annex 1 §58	DR	Yes and gases are correctly selected	OK	OK
If the selected methodology allows the project participants to choose whether a source or gas is to be included in the project boundary, do the project participants explain and justify their choices?	EB 101 Report Annex 1 §58	DR	Yes and gases are correctly selected	OK	OK
Have all sources and GHGs necessary for the calculation of emissions been included within the project boundary?	EB 101 Report Annex 2 §69	DR	Yes and gases are correctly selected	OK	OK
Does the PD correctly describe the project boundary and the physical delineation of the proposed project activity?	EB 101 Report Annex 1 §57	DR	Yes	OK	OK
Has the selected methodology been correctly applied with respect to project boundary?	EB 101 Report Annex 2 §63a	DR	Yes	OK	OK
ACM 0002					
Is the spatial extent of the project boundary identified correctly?	ACM 0002 Version 20.0	DR	Yes	OK	OK
Are the greenhouse gases and emission sources included in or	ACM 0002	DR	Yes	OK	OK

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
excluded from the project boundary given in the tabular form as per the guidance given in Table-2 of ACM 0002?	Version 20.0				
ACM 0001					
Does the project boundary include the following as applicable?	ACM 0001 Version 19.0	DR	N/A	OK	OK
3.3.13.1. 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
3.3.13.2. 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
3.3.13.3. 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
3.3.13.4. Heat generation equipment or sources which are supplying heat in the	ACM 0001 Version	DR	N/A	OK	OK

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
baseline that is displaced by heat generated by captured LFG in the project activity; and	19.0				
3.3.13.5. The transportation of the compressed/liquefied LFG from the biogas processing facility to consumers.	ACM 0001 Version 19.0	DR	N/A	OK	OK
AM0058					
Does the physical delineation of the project boundary include the following?	AM0058 Version 5.0	DR	N/A	OK	OK
3.3.14.1. 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
3.3.14.2. The heat-only boilers that supply heat to the district heating system;	AM0058 Version 5.0	DR	N/A	OK	OK
3.3.14.3. 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
Has it been illustrated by PP how the project boundary is defined and where the points to measure heat	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
supplied to buildings (Qe and Qn) should be located in line with the Figure-1 in AM0058?					
Are the emissions sources included in or excluded from the project boundary indicated in the PD in line with the Table-2 of the methodology?	AM0058 Version 5.0	DR	N/A	OK	OK
AMS-I.D.					
Is the spatial extent of the project boundary identified correctly?	AMS I.D. Version 18.0 §18	DR	N/A	OK	OK
AMS I.C.					
Does the spatial extent of the project boundary encompass the following?	AMS I.C. Version 21 §24	DR	N/A	OK	OK
3.3.18.1. All plants generating electricity and/or thermal energy located at the project site, whether fired with biomass, fossil fuels or a combination of both	AMS I.C. Version 21 §24-a	DR	N/A	OK	OK
3.3.18.2. 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
3.3.18.3. Industrial, commercial or residential facility, or facilities,	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
consuming energy generated by the system and the processes or equipment affected by the project activity	Version 21 §24-c				
3.3.18.4. 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
3.3.18.5. 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
3.3.18.6. 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
3.3.18.7. The site of the anaerobic digester in the case of project activity that 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.	AMS I.C. Version 21 §24-g	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
3.4. **Baseline Scenario**					
Does the approved methodology that is selected by the proposed project activity prescribe the baseline scenario and hence no further analysis is required? • •	EB 101 Report Annex 2 §94 EB 101 Report Annex 1 §59	DR	Methodology and PD states the baseline scenario as "the electricity delivered to the grid by the project activity that otherwise would have been generated by the operation of grid-connected power plants and by the addition of new generation sources".	OK	OK
Does the PD identify the baseline for the proposed project activity, defined as the scenario that reasonably represents the anthropogenic emissions by sources of GHGs that would occur in the absence of the proposed project activity?	EB 101 Report Annex 2 §75 EB 101 Report Annex 1 §61	DR	Yes, the baseline scenario has been identified.	OK	OK
If the methodology requires use of the tools to identify the baseline scenario, have all those been applied?	EB 101 Report Annex 2 §77	DR	N/A	OK	OK
Are there relevant national and/or sectoral policies to identify the baseline scenario?	EB 101 Report Annex 2 §81 EB 101 Report Annex 1 §64	DR	N/A	OK	OK

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
If there are relevant national and/or sectoral policies to identify the baseline scenario, have those been considered correctly in the PDD?	EB 101 Report Annex 2 §83d	DR	N/A	OK	OK
Are there relevant circumstances to identify the baseline scenario?	EB 101 Report Annex 2 §81	DR	N/A	OK	OK
Does the methodology require several alternative scenarios to be considered in the identification of the most reasonable baseline scenario?	EB 101 Report Annex 2 §78	DR	N/A	OK	OK
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 PD and are supplementary to those required by the methodology reasonable in the context of the proposed project activity?	EB 101 Report Annex 2 §78	DR	N/A	OK	OK
If the proposed project activity includes several different facilities, technologies, outputs or services, do the alternative scenarios for each of them be identified separately?	EB70 Report Annex 8	DR	N/A	OK	OK
If the alternative scenarios for each of them be identified separately, are the realistic combinations of these be considered as possible	EB70 Report Annex 8	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
alternative scenarios to the proposed project activity?					
Does the list of alternative scenarios given in the PD include the following?	EB 101 Report Annex 2 §93	DR	N/A	OK	OK
3.4.11.1. The project activity is undertaken without being registered as a CDM project activity	EB 101 Report Annex 2 §93a	DR	N/A	OK	OK
3.4.11.2. All plausible alternatives	EB 101 Report Annex 2 §93b	DR	N/A	OK	OK
3.4.11.3. Comply with all applicable and enforced legislation	EB 101 Report Annex 2 §93c	DR	N/A	OK	OK
Has the PP explained how the baseline scenario is established in accordance with the selected methodology(ies)?	CDM-PDD-FORM Version 11.0 EB93 Report Annex 4 §62	DR	Yes, this has been explained.	OK	OK
Where the procedure in the selected methodology(ies) involves several steps, has the PPs described how	VCS Std. Version 4.0	DR	Yes	OK	OK

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
each step is applied and transparently documented the outcome of each step?	CDM-PDD-FORM version 11.0 EB 101 Report Annex 1 §59				
Has the PP provided and explained all data used to establish the baseline scenario (variables, parameters, data sources, etc.)?	CDM-PDD-FORM version 11.0	DR	N/A	OK	OK
Is the identified baseline scenario reasonably supported by correct and verifiable references, assumptions, calculations and ratinonales?	VCS Std. Version 4.0 CDM-PDD-FORM version 11.0	DR	Yes	OK	OK
Has the selected methodology been correctly applied with respect to baseline identification?	CDM-PDD-FORM version 11.0 EB 101 Report Annex 2 §80	DR	Yes, the baseline identification has been correctly applied with the selected methodology.	OK	OK
ACM 0002					

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
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 20.0	DR	Methodology and PD states the baseline scenario as "the electricity delivered to the grid by the project activity that otherwise would have been generated by the operation of grid-connected power plants and by the addition of new generation sources".	OK	OK
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 20.0	DR	N/A	OK	OK
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 20.0	DR	N/A	OK	OK
If the project activity is the retrofit or replacement of existing grid-connected renewable power plant/unit, is the point of time at	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
which the generation facility would likely be replaced or retrofitted ($DATE_{Baseline\ Retrofit}$) defined?					
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 20.0	DR	N/A	OK	OK
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 20.0	DR	N/A	OK	OK
Is "the proposed project activity undertaken without being registered as a CDM project activity" listed as one of the alternatives?	EB70 Report Annex 8 EB 101 Report Annex 2 §93a ACM 0002 Version 20.0	DR	N/A	OK	OK
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	EB70 Report Annex 8 EB 101 Report	DR	N/A	OK	OK

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
areas" been listed as an alternative?	Annex 2 §93b ACM 0002 Version 20.0				
Has "continuation of the current situation (no project activity or other alternatives undertaken" been listed as an alternative?	EB70 Report Annex 8 ACM 0002 Version 20.0	DR	N/A	OK	OK
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 20.0	DR	N/A	OK	OK
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 20.0	DR	N/A	OK	OK
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"	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
	applied appropriately?					
	ACM 0001					
a) b) c)	Has the 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
	AM0058					
	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.					
	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

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
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
Have the PPs 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
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
Have the PPs 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.					
If the project activity is a renewable energy technology that displaces technologies using fossil fuels, is the baseline scenario identified	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
appropriately in accordance with AMS I.C.?	§24				
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?	AMS I.C. Version 21 §25 §26	DR	N/A	OK	OK
3.4.37.1. 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
3.4.37.2. 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
3.4.37.3. 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	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
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.					
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
3.4.38.1. 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
3.4.38.2. 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
If the proposed project activity is producing both heat and thermal energy, is the baseline scenario determined as one of the following?	AMS I.C. Version 21 §29	DR	N/A	OK	OK
3.4.39.1. 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

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
3.4.39.2. 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
3.4.39.3. A combination of 3.4.39.1 and 3.4.39.2	AMS I.C. Version 21 §29-c	DR	N/A	OK	OK
3.4.39.4. 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 facilities and/or thermal energy to other facilities);	AMS I.C. Version 21 §29-d	DR	N/A	OK	OK
3.4.39.5. 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
3.4.39.6. 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; thermal energy is produced using fossil fuel	AMS I.C. Version 21 §29-f	DR	N/A	OK	OK
3.4.39.7. Electricity and thermal energy are produced in a	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
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)	Version 21 §29-g §30				
3.4.39.8. Electricity and/or thermal energy produced in a co-fired system	AMS I.C. Version 21 §29-h	DR	N/A	OK	OK
3.4.39.9. 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 cogeneration or trigeneration unit and/or a biomass fired boiler (without a possibility of export of thermal energy to other facilities)	AMS I.C. Version 21 §29-i §31	DR	N/A	OK	OK
3.4.39.10. Electricity is imported from a grid and/or produced in an on-site captive power plant using fossil fuel and thermal	AMS I.C. Version 21 §29-j	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 produced using electricity.					
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?	AMS I.C. Version 21 §58 §59	DR	N/A	OK	OK
3.5. **Additionality**	**This section of the PD is not reviewed as the project is under validation for renewal of crediting period but please check the regulatory surplus as in below.**				
Has the regulatory surplus been demonstrated in accordance with the latest applicable requirements set out in the VCS Program available at the time of crediing period renewal process?	VCS Std. Version 4.0 Validation and Verification Manual Version 3.2	DR	Please confirm in the Section 3.5 of the PD that project is not being implemented to comply with any law or other regulatory framework.	CL-6	OK
3.6. **Methodology Deviations**					
If there are deviations from the methodology, has the PPs provided and justified the methodology deviations?	VCS Std. Version 4.0	DR	The most current version of ACM0002 has been used which is ver 20.0.	OK	OK
If there are deviations from the methodology, has the evidence been provided on the following?	VCS Std. Version 4.0	DR	N/A	OK	OK
3.6.2.1. The deviation will not	VCS Std.	DR	N/A	OK	OK

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
negatively impact the conservativeness of the quantification of GHG emission reductions or removals.	Version 4.0				
3.6.2.2. The deviation relates only to the criteria and procedures for monitoring or measurement, and does not relate to any other part of the methodology	VCS Std. Version 4.0	DR	N/A	OK	OK
4. **QUANTIFICATION of GHG EMISSION REDUCTIONS and REMOVALS**					
4.1. **Baseline Emissions**					
Do the steps taken and equations applied to calculate baseline emissions comply with the requirements of the selected baseline and monitoring methodology including applicable tool(s)?	VCS Std. Version 4.0 CDM-PDD-FORM Version 11.0	DR	Equations are provided in PD, they are correct	OK	Ok
Is it explained and clearly stated how the procedures in the approved methodology to calculate baseline emissions are applied by the PPs?	VCS Std. Version 4.0 CDM-PDD-FORM Version 11.0	DR	Selections explained	OK	OK
4.2. **Project Emissions**					
Do the steps taken and equations applied to calculate project	VCS Std. Version 4.0	DR	Equations are provided in PD, they are correct	OK	Ok

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
emissions comply with the requirements of the selected baseline and monitoring methodology including applicable tool(s)?	CDM-PDD-FORM Version 11.0				
Is it explained and clearly stated how the procedures in the approved methodology to calculate project emissions are applied by the PPs?	VCS Std. Version 4.0 CDM-PDD-FORM Version 11.0	DR	a) Please provide reference for number “28,780,000” in PD calculation. b) Please provide reference for reservoir area.	CL-7	OK
Has the PPs explained and justified all relevant methodological choices including the following?	CDM-PDD-FORM Version 11.0 EB101 Report Annex 1 §72	DR	N/A	OK	OK
4.2.3.1. Where the methodology(ies) or standardized baseline(s) include different scenarios or cases, indicate and justify which scenario or case applies to the project activity	CDM-PDD-FORM version 11.0 EB101 Report Annex 1 §72	DR	N/A	OK	OK
4.2.3.2. Where the methodology(ies) or standardized baseline(s)	CDM-PDD-FORM	DR	N/A	OK	OK

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
provide different options to choose from , indicate and justify which option is chosen for the project activity	version 11.0 EB101 Report Annex 1 §72				
4.2.3.3. Where the methodology(ies) or standardized baseline(s) allow different default values, indicate and justify which of the default values have been chosen for the project activity.	CDM-PDD-FORM Version 11.0	DR	N/A	OK	OK
4.3. **Leakage**					
Do the steps taken and equations applied to calculate leakage comply with the requirements of the selected baseline and monitoring methodology including applicable tool(s)?	VCS Std. Version 4.0 CDM-PDD-FORM Version 11.0	DR	N/A	OK	OK
Is it explained and clearly stated how the procedures in the approved methodology to calculate leakages are applied by the PPs?	VCS Std. Version 4.0 CDM-PDD-FORM Version 11.0	DR	N/A	OK	OK
4.4. **Summary of GHG Emission Reductions**					

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
and Removals					
Have the project proponents included the description of the procedure for quantification of the net GHG emission reductions and removals including all relevant equations?	VCS Std. Version 4.0	DR	Yes	OK	OK
Are the ex-ante calculation (estimate) of baseline emissions/removals, project emissions/removals, leakage emissions and net emission reductions and removals provided in a tabular format?	VCS Std. Version 4.0	DR	Yes	OK	OK
Has it been documented how each equation is applied in a manner that enables the reader to reproduce the calculation?	VCS Std. Version 4.0	DR	Yes	OK	OK
Are the example calculations for all key equations provided to allow the reader to reproduce the calculation of estimated net GHG emission reductions or removals?	VCS Std. Version 4.0	DR	Yes	OK	OK
ACM 0002					
Are baseline emissions calculated using equation (11) given in the methodology?	ACM 0002 Version 20.0	DR	Yes	OK	OK
Is the quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y ($EG_{PJ,y}$) calculated	ACM 0002 Version 20.0	DR	Yes	OK	OK

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
using equations (12), (13), (14), (15) or (16) given in the methodology depending on the project type and relevant requirements? • • ➢ ➢ ➢					
When the methodology offers options for approaches in calculations, is it documented in the PD which option is applied?	ACM 0002 Version 17.0	DR	Yes	OK	OK
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 20.0	DR	N/A	OK	OK
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
4.4.9.1. Is it ensured that the existing plant started commercial operation prior to the start of a minimum historical reference period of	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
five years, used for the calculation of baseline emissions?					
4.4.9.2. Is it defined in the baseline emission section that no capacity addition, 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 20.0	DR	N/A	OK	OK
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 20.0	DR	Yes	OK	OK
Where project emissions are taken as “0”, has the PP made proper justification?	ACM 0002 Version 20.0	DR	Yes	OK	OK
Are the emission reductions calculated using equation (17) given in the methodology?	ACM 0002 Version 20.0	DR	Yes	OK	OK
ACM 0001					
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
•					

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
• • •					
Are the project emissions calculated using relevant equations from equation (22) to equation (25) in the methodology?	ACM 0001 Version 19.0	DR	N/A	OK	OK
Are the emission reductions calculated using equation (26) in the methodology?	ACM 0001 Version 19.0	DR	N/A	OK	OK
AM0058					
Are the baseline emissions calculated using equation (1) in the methodology?	AM0058 Version 5.0	DR	N/A	OK	OK
Are the baseline emissions from heat generation calculated using equation (2) in the methodology?	AM0058 Version 5.0	DR	N/A	OK	OK
Is the CO2 emission factor for heat supply in the baseline calculated using equation (3) in the methodology?	AM0058 Version 5.0	DR	N/A	OK	OK
Is the emission factor for new users calculated using equation (4) in the methodology?	AM0058 Version 5.0	DR	N/A	OK	OK
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

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
Are the project emissions calculated using latest applicable version of "Tool To Calculate Project or Leakage CO2 Emissions From Fossil Fuel Combustion" and the relevant principles defined in the methodology? • •	AM0058 Version 5.0	DR	N/A	OK	OK
Are the leakage emissions calculated using equation (7) and equation (8) in the methodology?	AM0058 Version 5.0	DR	N/A	OK	OK
Are the emission reductions calculated using equation (9) in the methodology?	AM0058 Version 5.0	DR	N/A	OK	OK
AMS I.C.					
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

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
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
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
Is the emission factor of electricity determined according to the following?	AMS I.C. Version 21 §36	DR	N/A	OK	OK
4.4.27.1. For project activities that displace on-site captive electricity and/or displace grid electricity import and/or supply electricity to a grid, does the electricity emission factor reflect the emissions intensity of the captive power plant and the grid of the baseline scenario?	AMS I.C. Version 21 §36	DR	N/A	OK	OK
4.4.27.2. 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	AMS I.C. Version 21 §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
emission factor of the grid calculated as per the procedures detailed in AMS-I.D or AMS-I.F?					
4.4.27.3. 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
Are the baseline emissions for electricity and thermal energy produced in a baseline cogeneration or trigeneration unit using fossil fuel calculated using equation (4) given in the methodology?	AMS I.C. Version 21 §39	DR	N/A	OK	OK
In the case of an existing baseline cogeneration or trigeneration plant, is the efficiency of the baseline units determined by adopting one of the following criteria with the exclusion of cogeneration plants?	AMS I.C. Version 21 §40	DR	N/A	OK	OK
4.4.29.1. 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
4.4.29.2. 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	AMS I.C. Version 21 §26	DR	N/A	OK	OK

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
have three years operational data; or					
4.4.29.3. 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 project proponent may follow the relevant provisions from the "Tool to determine baseline efficiency of thermal and electricity systems".	AMS I.C. Version 21 §26 §32	DR	N/A	OK	OK
4.4.29.4. 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	AMS I.C. Version 21 §43	DR	N/A	OK	OK

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
following criteria?					
4.4.29.5. 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
4.4.29.6. 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
4.4.29.7. Highest efficiency from referenced literature values or default efficiency of 100%.	AMS I.C. Version 21 §43-c	DR	N/A	OK	OK
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, 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
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, are the	AMS I.C. Version 21 §32 §45	DR	N/A	OK	OK

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
baseline emissions from the production of thermal energy using fossil fuel calculated using equation (1) given in the methodology?					
For the cases where electricity and thermal energy are produced in a biomass fired cogeneration unit and for 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, 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?	AMS I.C. Version 21 §30 §46	DR	N/A	OK	OK
For the cases where the electricity and/or thermal energy produced in a co-fired system 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

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

Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
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 calculated using equation (6) given in the methodology?	AMS I.C. Version 21 §48	DR	N/A	OK	OK
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
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
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 associated with the electricity	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
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?					
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
4.4.38.1. 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
4.4.38.2. 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 performance value provided by two or more manufacturers for chillers commonly sold in the project country for the indicated commercial application;	AMS I.C. Version 21 §51-a-ii	DR	N/A	OK	OK
4.4.38.3. For the cases where the electricity is imported from a grid and/or produced in an on-	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
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?	§51-b				
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
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
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
If the project activity seeks to retrofit or modify an existing facility to	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
enhance the energy conversion efficiency, is the thermal energy production by an existing facility calculated using equation (12) given in the methodology?	Version 21 §59				
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
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 equipment met as described in the "General Guidelines for SSC CDM methodologies"?	AMS I.C. Version 21 §61 §62	DR	N/A	OK	OK
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
In case of household or commercial applications/systems, whose maximum output capacity is less than 45 kW thermal and where it can	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
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?	§64				
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 CDM-PDD?	AMS I.C. Version 21 §65	DR	N/A	OK	OK
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
If applicable, is the project emissions calculated using equation (15) in the methodology?	AMS I.C. Version 21 §66	DR	N/A	OK	OK
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 CO2 emissions from fossil fuel combustion"*?	AMS I.C. Version 21 §67	DR	N/A	OK	OK
If applicable, are the project emissions resulting from the electricity consumption by the project activity calculated using the latest	AMS I.C. Version 21 §68	DR	N/A	OK	OK

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
version of the "*Tool to calculate baseline, project and/or leakage emissions from electricity consumption*"?					
In case of geothermal project activities, have the PPs accounted for the following emission sources, where applicable?	AMS I.C. Version 21 §69	DR	N/A	OK	OK
4.4.52.1. Fugitive emissions of carbon dioxide and methane due to release of non-condensable gases from produced steam	AMS I.C. Version 21 §69	DR	N/A	OK	OK
4.4.52.2. 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
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
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
In cases where the project activity utilizes biomass sourced from dedicated plantations, are the project	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
emissions from biomass cultivation calculated according to the latest version of “Project emissions from cultivation of biomass” tool?	§76				
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
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 CO2 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
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
Have the PPs calculated the emission reductions using equation (21) given in the methodology?	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
	§81				
AMS I.D.					
Are baseline emissions calculated using equation (1) given in the methodology?	AMS I.D. Version 18.0 §22	DR	N/A	OK	OK
Is the emission factor calculated using one of the following options:	AMS I.D. Version 18.0 §23	DR	N/A	OK	OK
4.4.61.1. 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
4.4.61.2. 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
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
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
In case of capacity addition in wind, solar, wave or tidal power plants, are the baseline emissions calculated	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
using equation (3) given in the methodology?	§27				
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
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
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
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
In case of retrofit, rehabilitation or replacement, have the PPs 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
4.4.69.1. The three last calendar years (five calendar years for	AMS I.D. Version	DR	N/A	OK	OK

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
hydro project) prior to the implementation of the project activity	18.0 §35				
4.4.69.2. 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
4.4.69.2.1. The commercial commissioning of the plant/unit;	AMS I.D. Version 18.0 §35	DR	N/A	OK	OK
4.4.69.2.2. If applicable: the last capacity addition to the plant/unit; or	AMS I.D. Version 18.0 §35	DR	N/A	OK	OK
4.4.69.2.3. If applicable: the last retrofit of the plant/unit	AMS I.D. Version 18.0 §35	DR	N/A	OK	OK
In case of retrofit, rehabilitation or replacement, have PPs followed the latest applicable version of "Tool to determine the remaining lifetime of equipment" to estimate DATEBaselineRetrofit? DATEBaselineRetrofit is the point in time when the existing equipment would need to be replaced/retrofitted in the absence of the project	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
activity. The point in time when the existing equipment would need to be replaced/retrofitted in the absence of the project activity should be chosen in a conservative manner that is, if a range is identified, the earliest date should be chosen.					
Where the project emissions are taken as “0” have the PPs made proper justification?	AMS I.D. Version 18.0 §39	DR	N/A	OK	OK
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
If necessary, have the PPs calculated the CO2 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 CO2 emissions from fossil fuel combustion?	AMS I.D. Version 18.0 §40	DR	N/A	OK	OK
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
Has the general guidance on leakage in biomass project activities been followed to quantify leakages pertaining to the use of biomass	AMS I.D. Version 18.0 §42	DR	N/A	OK	OK

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
residues?					
Are the emission reductions calculated using equation (9) given in the methodology?	AMS I.D. Version 18.0 §43	DR	N/A	OK	OK
5. **MONITORING**					
5.1. **Data and Parameters That Are Available At Validation**					
Are all data sources and assumptions for the ex-ante values, appropriate and correct?	VCS Std. Version 4.0 CDM-PDD-FORM Version 11.0	DR	Yes, official CM has been published so CM is changed at second CP	OK	OK
Are all ex-ante values applicable to the proposed VCS project activity?	VCS Std. Version 4.0 CDM-PDD-FORM Version 11.0	DR	Yes, official CM has been published so CM is changed at second CP	OK	OK
Are all ex-ante values resulting in an accurate or otherwise conservative estimate of the emission reductions?	CDM-PDD-FORM Version 11.0	DR	Yes	OK	OK
Are the ex-ante data and parameters correct?	CDM-PDD-FORM Version 11.0	DR	Yes	OK	OK
Are the units of the data and parameters specified correctly?	VCS Std. Version 4.0	DR	Yes	OK	OK

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
	CDM-PDD-FORM Version 11.0				
Are the description of data and parameters given correctly?	VCS Std. Version 4.0 CDM-PDD-FORM Version 11.0	DR	Yes	OK	OK
Is the choice of the source of data explained and justified?	VCS Std. Version 4.0 CDM-PDD-FORM Version 11.0	DR	Yes	OK	OK
Are the applied actual values provided correctly?	VCS Std. Version 4.0 CDM-PDD-FORM Version 11.0	DR	Yes	OK	OK
Is the choice of data explained and justified?	VCS Std. Version 4.0 CDM-PDD-FORM Version 11.0	DR	Yes	OK	OK
Where values have been measured, has a description of the measurement methods and procedures (e.g. which standards have been used) been included?	VCS Std. Version 4.0 CDM-PDD-FORM Version 11.0	DR	N/A	OK	OK

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
Where values have been measured, are the following included in the VCS PD?	VCS Std. Version 4.0 CDM-PDD-FORM Version 11.0	DR	N/A	OK	OK
5.1.11.1. The equipment used	VCS Std. Version 4.0 CDM-PDD-FORM Version 11.0	DR	N/A	OK	OK
5.1.11.2. responsible person/entity having undertaken the measurement	VCS Std. Version 4.0 CDM-PDD-FORM Version 11.0	DR	N/A	OK	OK
5.1.11.3. the date of measurement(s)	VCS Std. Version 4.0 CDM-PDD-FORM Version 11.0	DR	N/A	OK	OK
5.1.11.4. the frequency of measurement(s)	VCS Std. Version 4.0 CDM-PDD-FORM Version 11.0	DR	N/A	OK	OK
5.1.11.5. the measurement results?	VCS Std. Version 4.0 CDM-PDD-FORM	DR	N/A	OK	OK

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
	Version 11.0				
5.2. **Data and Parameters Monitored**					
In the data/parameter tabular formats for monitoring, has the name of the each data/parameter been included?	VCS Std. Version 4.0 CDM-PDD-FORM Version 11.0 AM0058 Version 5.0	DR	Please refer below	OK	OK
Has the unit of the each data/parameter been included?	VCS Std. Version 4.0 CDM-PDD-FORM Version 11.0	DR	Included	OK	OK
Has the description of the each data/parameter been included?	VCS Std. Version 4.0 CDM-PDD-FORM Version 11.0	DR	Included	OK	OK
Has the source of the each data/parameter been included?	VCS Std. Version 4.0 CDM-PDD-FORM Version 11.0	DR	Included	OK	OK
Where several sources of data/parameters are used, is the	VCS Std. Version 4.0	DR	N/A	OK	OK

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
choice of data sources explained and justified?	CDM-PDD-FORM Version 11.0				
Has the frequency of monitoring/recording been included?	VCS Std. Version 4.0	DR	Continuous measurement / Monthly recording	OK	OK
Are the applied actual values provided correctly?	VCS Std. Version 4.0 CDM-PDD-FORM Version 11.0	DR	provided correctly	OK	OK
Has the measurement methods and procedures been included?	VCS Std. Version 4.0 CDM-PDD-FORM Version 11.0	DR	Included	OK	OK
Has the PPs included which measurement equipment is used for monitoring?	VCS Std. Version 4.0 CDM-PDD-FORM Version 11.0	DR	a) Electricity meter details the Sections 5.2 and 5.3 don't match with documents provided. b) Please include details of main and spare meters and their change and test dates in tabular format and indicate current meters in PD.	CAR-3	OK
Has the PPs included how the measurement is undertaken?	VCS Std. Version 4.0 CDM-PDD-FORM Version 11.0	DR	Included	OK	OK
Have the PPs included description of calibration procedures for the monitoring equipment?	VCS Std. Version 4.0 CDM-PDD-FORM	DR	Please provide details on calibration including frequency, accuracy and uncertainty of the calibration, calibrating agency/person, the relevant national/international standards, procedures in place	CL-8	OK

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
	Version 11.0		on how to deal with erroneous measurements and equipment faults in the Section 5.2 of the PD.		
Has the accuracy level of the measurement method included?	VCS Std. Version 4.0 CDM-PDD-FORM Version 11.0	DR	Please refer above	OK	OK
Has the responsible person/entity and the interval for the measurements included?	VCS Std. Version 4.0 CDM-PDD-FORM Version 11.0	DR	Please refer above	OK	OK
If applicable, has the calculation method been included?	VCS Std. Version 4.0	DR	N/A	OK	OK
If the data and parameters monitored in Section 5.2 of the PD are to be determined by a sampling approach, has the PP 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-PDD-FORM version 11.0 EB105 Report Annex 1 §29 §30 §31 §32 §33	DR	N/A	OK	OK

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
(• • •					
If the sampling approach is used by the PPs, does the sampling plan present a reasonable approach for obtaining unbiased, reliable estimates of the variables?	EB86 Report Annex 4 §40a	DR	N/A	OK	OK
If the sampling approach is used by the PPs, are the elements of objectives and reliability requirements complete?	EB86 Report Annex 4 §40a-i	DR	N/A	OK	OK
If the sampling approach is used by the PPs, do the requirements specified agree with those stated in the appropriate standards?	EB86 Report Annex 4 §40a-i	DR	N/A	OK	OK
If the sampling approach is used by the PPs, is the population in the sampling plan clearly defined?	EB86 Report Annex 4 §40b	DR	N/A	OK	OK
If the sampling approach is used by the PPs, is the proposed sampling approach clear?	EB86 Report Annex 4	DR	N/A	OK	OK

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
	§40c				
If the sampling approach is used by the PPs, does the sampling approach comply with the description of the population?	EB86 Report Annex 4 §40c-ii	DR	N/A	OK	OK
If the sampling approach is used by the PPs, is the proposed sample size adequate to achieve the minimum confidence/precision requirements?	EB86 Report Annex 4 §40d	DR	N/A	OK	OK
If the sampling approach is used by the PPs, is the ex-ante estimate of the population variance needed for the calculation of the sample size adequately justified?	EB86 Report Annex 4 §40d	DR	N/A	OK	OK
If the sampling approach is used by the PPs, is the sample representative of the population?	EB86 Report Annex 4 §40e	DR	N/A	OK	OK
If the sampling approach is used by the PPs, is it identified how the sampling frame would be kept?	EB86 Report Annex 4 §40e-ii	DR	N/A	OK	OK
If the sampling approach is used by the PPs, are the methods of data collection clear and unambiguous?	EB86 Report Annex 4 §40f-i	DR	N/A	OK	OK
If the sampling approach is used by the PPs, are the procedures for the	EB86 Report	DR	N/A	OK	OK

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
data measurements defined appropriately and clearly?	Annex 4 §40g				
If the sampling approach is used by the PPs, do the procedures for measurements adequately provide for minimizing non-sampling errors?	EB86 Report Annex 4 §40g	DR	N/A	OK	OK
If the sampling approach is used by the PPs, is the quality control and assurance strategy adequate?	EB86 Report Annex 4 §40g-i	DR	N/A	OK	OK
If the sampling approach is used by the PPs, are the proposed skill sets, qualifications and experience of the personnel to be engaged to conduct sampling adequate?	EB86 Report Annex 4 §40h-i	DR	N/A	OK	OK
5.3. **Monitoring Plan**					
Are the organizational structure, responsibilities and competencies of the personnel that will be carrying out monitoring activities identified?	VCS Std. Version 4.0	DR	Responsibilities explained	OK	OK
Are the methods for generating, recording, storing, aggregating, collating and reporting data on monitored parameters described?	VCS Std. Version 4.0	DR	Responsibilities explained	OK	OK
Are the policies for oversight and accountability of monitoring activities described?	VCS Std. Version 4.0	DR	N/A	OK	OK
Are the procedures for handling internal auditing and non-conformities described?	VCS Std.	DR	N/A	OK	OK

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
	Version 4.0				
If the sampling approaches used in the monitoring plan, has the following been included?	VCS Std. Version 4.0	DR	N/A	OK	OK
5.3.5.1. target precision levels	VCS Std. Version 4.0	DR	N/A	OK	OK
5.3.5.2. sample sizes	VCS Std. Version 4.0	DR	N/A	OK	OK
5.3.5.3. sample site locations	VCS Std. Version 4.0	DR	N/A	OK	OK
5.3.5.4. stratification	VCS Std. Version 4.0	DR	N/A	OK	OK
5.3.5.5. and frequency of measurement	VCS Std. Version 4.0	DR	N/A	OK	OK
5.3.5.6. QA/QC procedures.	VCS Std. Version 4.0	DR	N/A	OK	OK
Have the PPs 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?	EB93 Report Annex 4 §75 EB93 Report Annex 5 §117	DR	Yes	OK	OK

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
Does the monitoring plan include all data, parameters and related information required by the selected methodology(ies)?	EB93 Report Annex 4 §76 EB93 Report Annex 5 §118a-ii ACM 0002 Version 17.0	DR	Yes	OK	OK
Are the monitoring arrangements described in the monitoring plan feasible within the project design?	EB93 Report Annex 5 §118b	DR	Yes	OK	OK
Is the operational and management structure for the monitoring of emission reductions or any leakage emissions described in the monitoring plan?	CDM-PDD-FORM Version 11.0	DR	Yes	OK	OK
Does the monitoring plan clearly indicate the responsibilities and internal arrangements for data collection and archiving?	CDM-PDD-FORM Version 11.0 EB101 Report Annex 1 §82c	DR	Yes	OK	OK
Does the monitoring plan reflect good monitoring practices appropriate to the type of project activity?	CDM-PDD-FORM Version 11.0	DR	Yes	OK	OK
Are measurements conducted with	CDM-PDD-	DR	Yes	OK	OK

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Question	Reference	Means of validation*	Findings, comments, references and document sources	Draft opinion	Final opinion
according to relevant industry or national/international standards?	FORM Version 11.0				
Where appropriate, are the line diagrams to display the GHG data collection and management system been included?	VCS Std. Version 4.0	DR	Yes	OK	OK
Annex-1 Baseline information					
1.If any further background information regarding the application of the baseline methodology is provided, is this information correct and supported by the appropriate evidence?	VCS Std. Version 4.0 CDM-PDD-FORM Version 11.0	DR	N/A	OK	OK
Annex-2 Monitoring information					
1.If any further background information regarding the application of the monitoring methodology is provided, is this information correct and supported by the appropriate evidence?	VCS Std. Version 4.0 CDM-PDD-FORM Version 11.0	DR	N/A	OK	OK

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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 Participants' Response	Validation Team Conclusion
CAR-1 Please state the estimate of annual average and total GHG emission reductions and removals in PD section 1.1.	1.1.1.5	Values are now added to Section 1.1. of PD. Response to Review -1: Number revised.	Review-1: Please revise number 350,909 tonnes in the Section 1.1 of the MR. Review-2: Ok Closed (Number corrected).
CAR-2 Please provide reference in PD for the provided coordinates.	1.12.1.4	The coordinates changed and reference given.	Review-1: Ok Closed (The feasibility has been provided and coordinates corrected).
CAR-3 a) Electricity meter details the Sections 5.2 and 5.3 don't match with documents provided. b) Please include details of main and spare meters and their change and test dates in tabular format and indicate current meters in PD.	5.2.9	a) Meter info has been revised in Section 5.2. and 5.3. b) Index and test protocols provided.	Review-1: a-b) Ok Closed (Meters info ans test dates have been correctly added).
CL-1 a) Please provide reference for "76.915 GWh per annum". b) Please provide reference for loan agreement (investment decision date). c) Please provide reference for construction start date. d) Please provide reference for VCS	1.1.1.1	a) Annual estimated generation has been revised as 76.17 GWh regarding the generation values between 2012 -2016. (Please see feasibility report, page 4 of pdf). Whole PD has been revised in terms of generation and emission reduction values. b) Document provided. Please also see https://registry.verra.org/app/projectDetail/VCS/117	Review-1: a) Ok Closed (The feasibility has been provided). b) d) Ok Closed (The ocuments not available but these dates have been checked in first validation).

* 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 Participants' Response	Validation Team Conclusion
registration date.		4 c) d) There has been more than 10 years and it is really hard to find the documents requested. Those dates are already validated in the first crediting period.	c) Ok Closed (The registry link has been provided).
CL-2 PD 1.3 states that 6 employees will be employed however 13 employees are seen in Social security records. Please clarify the duties of 13 employees and tabulate the received trainings in PD.	1.3.1	6 people were planned to be employed before the project implementation. The number is now 10 (3 of them quitted). It is added to Section 1.3. of PD. The trainings will be tabulated in the first MR of the second crediting period. PD only includes the statement which indicates that required trainings will be given in the second crediting period, too.	Review-1: Ok Closed (The number of personnel has been clarifed and corrected).
CL-3 a) Please provide evidence on LSC, Please state in PD dates and means of communication with stakeholders and comments received. b) Please explain the below: - The procedures or methods used for engaging local stakeholders - The rocedures or methods used for documenting the outcomes - mechanism for on-going communication - how comments are taken into account	2.2.1	a) This was also validated in the first crediting period. b) All of them are already explained under Section 2.	Review-1: a-b) Ok Closed (More clarification added to section 2.4).
CL-4 Please provide explanation in PD about waste management activities on site and any records available for healthy disposal (waste water, MSW and hazardous waste,	2.3.2	There is no monitoring parameter for wastes in previous PD. Yet, it can be sad that the wastes are managed according to the national regulations. The records are also shared under "waste" folder.	Review-1: Ok Closed (Waste disposal evidences provided).

* 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 Participants' Response	Validation Team Conclusion
recycled waste.			
CL-5 a) Please provide evidence on public comment period. b) Please state in the Section 2.4 of the PD the dates and means of communication with the local stakeholders. c) Please clarify in the Section 2.4 of the PD if there are any updates to the project design or demonstrate the insignificance or irrelevance of the comments.	2.4.1	a) This was also validated in the first crediting period. b) This was also validated in the first crediting period. c) There is no change in design. Other comments have been considered such as employment, etc.	Review-1: a-b-c) Ok Closed (More clarification added to section 2.4).
CL-6 Please confirm in the Section 3.5 of the PD that project is not being implemented to comply with any law or other regulatory framework.	3.5.1	Explanation added to Section 3.5.	Review-1: Ok Closed (The statement added).
CL-7 a) Please provide reference for number "28,780,000" in PD calculation. b) Please provide reference for reservoir area.	4.2.2	a) According to the generation licence, project's installed capacity is 28.78 MWe which is also 28,780,000 W. b) Google Earth screenshot is shared to prove there is no reservoir area.	Review-1: a) Ok Closed (licence provided). b) Ok Closed (Google Earth screenshot is shared to prove there is no reservoir area).
CL-8 Please provide details on calibration including frequency, accuracy and uncertainty of the calibration, calibrating agency/person, the relevant national/international standards,	5.2.11	Added to "QA/QA procedure" part in Section 5.2.	Review-1: Ok Closed (The details on calibration has been 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 Participants' Response	Validation Team Conclusion
procedures in place on how to deal with erroneous measurements and equipment faults in the Section 5.2 of the PD.			
CL-9 Please provide the relevant evidence that Mukhtar and residents of Osmaniye Village are informed about PP and VCS contact details.	2.2.1.3	Document provided.	Review-1: Ok Closed (Document provided).

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

ANNEX 2: VALIDATION TEAM AND ITR COMPETENCE

Fikriye Seda ATABEK, B.Sc. in Chemical Engineering has completed her M.Sc. degree in Istanbul Technical University in Energy Science and Technology. She is a lead auditor and trainer for ISO 50001 and has been working about management systems, ISO 14064 and energy management in industry since 2004. She has been involved in more than 80 GS and VCS projects as a team leader/validator/verifier especially in the energy sector. She has been working as contracted voluntary market projects' team leader/validator/verifier and CDM validator/verifier in the context of Re Carbon.

Sandeep KANDA holds a degree in Mechanical Engineering, Masters in Energy systems engineering from Indian Institute of Technology – Bombay and Post Graduate Diploma in Industrial Safety & Environmental Management from 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 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. As CDM auditor and technical reviewer for TÜV Süd, he has audited more than 30 CDM projects as technical reviewer; 40 projects as lead auditor and 7 PoAs in various capacities; covering a broad range of sectoral scopes, such as Energy industries (renewable - / non-renewable sources), Energy distribution, Energy demand, Manufacturing industries, Chemical industries, Transport, Metal production, Waste handling & disposal and Agriculture. He has been working as a contracted team leader, technical reviewer, TA 1.1 and renewable energy expert in the context of Re Carbon.

Annex 2-1: Appointment Certificates

Re Carbon Gözetim Denetim ve Belgelendirme Ltd. Şti. Prof. Dr. Aziz Sancar Cad. 27/6 TR / 06690 Çankaya-Ankara Tel.: 0090-312-287 6122 Fax: 0090-312-287 3373	**Certificate of Appointment** Carbon Division	re-carbon Page: 1/1

This Certificate of Appointment is given to **Mrs. Fikriye Seda ATABEK** as a confirmation of compliance with internal qualification requirements as follows:

Clean Development Mechanism				
Validator	**Verifier**	**Team leader**	**Technical reviewer**	**Technical Expert**
08-02-2021	08-02-2021	N/A	N/A	05-05-2017

Verified Carbon Standard, Gold Standard, World Commission on Dams, Social Carbon				
Validator	**Verifier**	**Team leader**	**Technical reviewer**	**Technical Expert**
08-02-2021	08-02-2021	08-02-2021	08-02-2021	08-02-2021

Speciality	**Regional (Country) expertise**	**Financial expertise**	**Technical area**
N/A	Turkey	N/A	1.2, 2.1 and 3.1

Within the scope and in strict accordance to the appointment indicated above, the bearer can:

1. Participate in the assessments conducted by Re Carbon Ltd.
2. Take the roles within and outside of the assessment team
3. Bring specific expertise to the 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 and 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 the performance assessments and/or other reasons as defined above.

APPOINTMENT IS GRANTED BY			
Mr. Anıl SOYLER	Certification Manager	08-02-2021	
Name	**Position**	**Date**	**Signature**

Re Carbon Gözetim Denetim ve Belgelendirme Ltd. Şti. Prof. Dr. Aziz Sancar Cad. 27/3 TR / 06690 Çankaya-Ankara Tel.: 0090-312-287 5122 Fax: 0090-312-287 3373	**Certificate of Appointment** Carbon Division	re-carbon Page: 1/1

This Certificate of Appointment is given to **Mr. Sandeep KANDA** as a confirmation of compliance with internal qualification requirements as follows:

Clean Development Mechanism				
Validator	Verifier	Team leader	Technical reviewer	Technical Expert
08-02-2021	08-02-2021	08-02-2021	08-02-2021	08-02-2021

Verified Carbon Standard, Gold Standard, World Commission on Dams, Social Carbon				
Validator	Verifier	Team leader	Technical reviewer	Technical Expert
08-02-2021	08-02-2021	08-02-2021	08-02-2021	08-02-2021

Speciality	Regional (Country) expertise	Financial expertise	Technical area
N/A	India, Vietnam, Nepal and Turkey	N/A	1.1, 1.2, 2.1, 3.1, 4.1, 9.1, 9.2, 13.1, 13.2 & 15.1

Within the scope and in strict accordance to the appointment indicated above, the bearer can:

1. Participate in the assessments conducted by Re Carbon Ltd.
2. Take the roles within and outside of the assessment team
3. Bring specific expertise to the 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 and 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 the performance assessments and/or other reasons as defined above.

APPOINTMENT IS GRANTED BY			
Mr. Anıl SÖYLER	Certification Manager	08-02-2021	
Name	Position	Date	Signature

F-C-053 / 31.03.2021 - 01