



**Verified Carbon
Standard**

OFF GRID SOLAR PV PROJECT AT IAMGOLD ESSAKANE SA GOLD MINE



LGAI Technological Center S.A. (Applus+ Certification)

Project Title	Off grid Solar PV project at IAMGOLD Essakane SA Gold Mine
Report Title	Off grid Solar PV project at IAMGOLD Essakane SA Gold Mine
Version	04
Report ID	BELL_CDM_2021_BKF Essakane_VCS_GAP VAL_VER
Verification Period	01-June-2019 to 31-December-2020 (First and last date included)
Client	Essakane Solar S.A.S.
Pages	36
Date of Issue	26-November-2021 (Revised for VERRA Review)
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Summary:

GAP Validation: The main purpose of this project activity is to generate clean form of electricity through renewable solar energy source.

This is a small-scale project activity, which involves installation of 14.928 MWp greenfield solar PV plant by Essakane Solar S.A.S. at the Essakane gold mine, which is in the Sahel region of Burkina Faso about 330 km North-East from Ouagadougou.

Being owned by Essakane Solar S.A.S. project is a specific purpose vehicle owned by Total Eren as a majority shareholder (>90%) and the main objective of the project is to deliver clean, renewable energy-based electricity to IAMGOLD Essakane SA. It is done by adding capacity to the 11 fuel-powered engines existing before the Project implementation. The Project is replacing fuel consumption of the technology in use.

The project is registered under CDM mechanism (reference number: 10398). The present validation (gap validation) is under VCS mechanism and assessment of clause (Joint VCS PD & MR Clause: 1.1, 1.2, 1.3, 1.5, 1.6, 1.7, 1.9, 1.10, 1.12.1, 1.12.2, 1.12.3, 1.12.4, 1.13, 1.14, 1.15.1, 1.16, 1.17, 3.6 and 6) of the Joint VCS PD & MR. The same is in line with Para 3.19.5 of VCS standard version 4.1.

Verification: This is a small-scale project activity, which involves installation of 14.928 MWp greenfield solar PV plant by Essakane Solar S.A.S. at the Essakane gold mine, which is in the Sahel region of Burkina Faso about 330 km North-East from Ouagadougou. The power project has commissioned on 01-June-2018.

This is the first monitoring period under VCS and covers the activity from 01-June-2019 to 31-December-2020 (First and last date included). The project is registered under Clean Development Mechanism (CDM) of UNFCCC with 7 years crediting period (Renewable) (Reference No: 10398) on 05-May-2018. The Crediting period of the project under CDM started on 01-June-2018 and will end on 31-May-2025. The project has begun generating GHG emission reductions from commissioning. However, the crediting period for VCS chosen same as CDM and begin on 01-June-2018 and will end on 31-May-2025 (Renewable twice). The project proponent will also not claim GHG emission reductions under two schemes for the same period. The GHG credits from 01-June-2019 to 31-December-2020 will be claimed under VCS only. An undertaking from the project participant confirms that project will not claim any other scheme benefits for the concerned monitoring period.

Essakane Solar S.A.S. contracted LGAI Technological Center S.A. (Hereinafter referred as **Applus+ Certification**) to conduct the verification of the project “Off grid Solar PV project at IAMGOLD Essakane SA Gold Mine”. The scope of verification includes confirming the implementation of the monitoring plan and the application of methodology AMS-I.A: “Electricity generation by the user” (Version 16.0).

The verification consisted of three phases: a. Desk review of the project; b. Follow-up remote audit; c. Resolution of outstanding issues and issuance of the final verification report and opinion. The overall

verification, from Contract Review to Verification Report & Opinion, was conducted following APPLUS+ CERTIFICATION's internal quality procedures.

A risk-based approach has been followed to perform this verification activity. In the course of gap validation and verification, 05 Corrective Action request (CAR) and 00 Clarification Requests (CLs) were raised and successfully closed (Including GAP validation & verification) in Appendix 4. No FAR raised during this GAP Validation and verification. The review of the project description and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews and PP have provided Applus+ Certification with sufficient evidence to verify the fulfilment of the stated criteria of VCS.

The verification has been planned and organized to achieve a Reasonable Level of assurance as per the requirement of VCS. No sampling procedure applied for document verifications. The entire documents were checked to arrive at positive verification conclusions.

Verified GHG emission reductions and removals in this verification period:

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
01-June-2019 to 31-December-2019	11,016	0	0	11,016
01-January-2020 to 31-December-2020	18,748	0	0	18,748
Total	29,764	0	0	29,764

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1 INTRODUCTION

1.1 Objective

Essakane Solar S.A.S. has contracted LGAI Technological Center S.A. (Hereinafter referred as Applus+ Certification) to conduct the Gap Validation and verification of the project activity “Off grid Solar PV project at IAMGOLD Essakane SA Gold Mine” according to the requirements of the Verified Carbon Standard, version 4.1.

The objective of this gap validation and verification activity is to have an independent third party for the assessment of the VCS project design clause (Joint VCS PD & MR Clause: 1.1, 1.2, 1.3, 1.5, 1.6, 1.7, 1.9, 1.10, 1.12.1, 1.12.2, 1.12.3, 1.12.4, 1.13, 1.14, 1.15.1, 1.16, 1.17, 3.6 and 6) for the period 01-June-2019 to 31-December-2020 (inclusive both days) and to ensure a thorough assessment of the proposed project activity against the applicable CDM and VCS requirements. In particular;

- the project's baseline is assessed against “AMS-I.A: “Electricity generation by the user” (Version 16.0)”
- the project’s monitoring plan is assessed against “AMS-I.A: “Electricity generation by the user” (Version 16.0)AMS-I.A: “Electricity generation by the user” (Version 16.0)”
- the project’s 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 along with VCS guideline version 4.0 and standard version 4.1
- CDM Validation and Verification Standard for project activities, version 02
- CDM Project Standard for project activities, version 02
- CDM project cycle procedure for project activities, version 02
- VCS standard, version 4.1
- VCS guideline, version 4.0
- Gap Validation & verification 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 estimated verified emission reductions (VERs).

1.2 Scope and Criteria

The scope of the gap validation and verification is the independent and objective review of the Project Description clause (Joint VCS PD & MR Clause: 1.1, 1.2, 1.3, 1.5, 1.6, 1.7, 1.9, 1.10, 1.12.1, 1.12.2, 1.12.3, 1.12.4, 1.13, 1.14, 1.15.1, 1.16, 1.17, 3.6 and 6) & Joint PD & MR. The VCS Joint PD & MR are reviewed against the relevant criteria (see 1.1) and decisions by the CDM Executive Board and VCS executive board, including the approved baseline and monitoring methodology. The validation and verification was based on the guidance given in the CDM Project Standard for project activities, version 02.0, CDM Project Cycle Procedure for project activities, version 02.0, VCS programme guideline, version 04 and standard, version 4.1.

The assessment team has employed a risk-based approach to assess the completeness and accuracy of the claims and conservativeness of the assumptions in the Joint VCS PD & MR. The main focus of the assessment team is to identify the significant risks for the project implementation and the generation of VERs. The validation and verification 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 design and monitoring report combined.

The only purpose of the gap validation and verification is its usage during the registration /issuance process as part of the VCS project cycle. Therefore, LGAI Technological Center S.A. (Applus+ Certification) can't be held liable by any party for decisions made or not made based on the validation/verification opinion, which will go beyond that purpose.

1.3 Level of Assurance

☒ Reasonable level of assurance

☐ Limited level of assurance

APPLUS+ CERTIFICATION's verification approach is based on the understanding of the risks associated with reporting of GHG emission data and the controls in place to mitigate these. APPLUS+ CERTIFICATION planned and performed the gap validation and verification by obtaining evidence and other information and explanations that APPLUS+ CERTIFICATION considers necessary to give reasonable assurance that reported estimated GHG emission reductions are fairly stated. All documentary evidences were checked, a remote audit was conducted due to pandemic situation and technical details and metering/monitoring arrangement verified through photos/certificate shared by PP to arrive at a verification conclusion by the assessment team.

In our opinion, the estimated GHG emissions reductions were calculated correctly on the basis of the approved baseline and monitoring methodology AMS-I.A: "Electricity generation by the user" (Version 16.0) and the VCS standard, version 4.1.

1.4 Summary Description of the Project

The main purpose of this project activity is to generate clean form of electricity through renewable solar energy source.

This is a small-scale project activity, which involves installation of 14.928 MWp greenfield solar PV plant by Essakane Solar S.A.S. at the Essakane gold mine, which is in the Sahel region of Burkina Faso about 330 km North-East from Ouagadougou.

Being owned by Essakane Solar S.A.S. project is a specific purpose vehicle owned by Total Eren as a majority shareholder (>90%) and the main objective of the project is to deliver clean, renewable energy-based electricity to IAMGOLD Essakane SA. It is done by adding capacity to the 11 fuel-powered engines existing before the Project implementation. The Project is replacing fuel consumption of the technology in use.

The project is commissioned on 01-June-2018 i.e. effective start date of electricity production. The verification team has reviewed the commissioning certificates and Power Purchase Agreements (PPA) for conformation of the same.

The current monitoring period from 01-June-2019 to 31-December-2020 (First and last date included) involved the generation and supply of 37,217 MWh.

The project is a voluntary action being undertaken by project owner of the project activity. AERA GROUP SAS is acting as the other party for this project activity.

Assessment team checked the latitude and longitude of the project activity with CDM PDD & first CDM verification MR/Verification report. Moreover, assessment team also checked the same with Google earth software and found that the detail of latitude and longitude as mentioned in the Joint VCS PD & MR is correct. The detail is as below:

Essakane Solar S.A.S.	Latitude	Longitude
A	14°21'29.3" N	0°4'30.1" E
B	14°21'59.5" N	0°4'52.9" E
C	14°21'55.9" N	0°4'52.8" E
D	14°21'55.9" N	0°4'49.7" E
E	14°21'44.5" N	0°4'49.7" E
F	14°21'42.2" N	0°4'45.7" E
G	14°21'42.2" N	0°4'30.1" E

The above details are checked by the assessment team during the review of commissioning certificate. Same are found in-line with registered CDM PDD. The detail also forms the part of Joint VCS PD & MR and thus acceptable to the assessment team.

Assessment team checked the technical specification and details of the power plant from the registered CDM PDD & first CDM MR/verification report. The details are also checked from the manufacturer technical specification. The detail as mentioned in the Joint VCS PD & MR is correct. The detail is as follow:

Plant Capacity	14.928 MWp	
PV Module	Thin-film CdTe semiconductor	
Make	Wärtsilä	
Peak Power (W)	115 W	117.5 W
Rated voltage (Vmpp) (V)	69.3	70.1
Rated current (Impp) (A)	1.66	1.68
Efficiency (%)	16.0	16.3
Length (mm)	1,200	
Width (mm)	600	
Thickness (mm)	6.8	

Inverters

Parameter	Unit	Description
Manufacturer		ABB
Model		PVS980, -1909kVA-J
Maximum DC input power ($P_{PV,max}$)	kWp	3,055
Nominal AC output power (SN(AC))	kVA	1,909
Maximum AC output power (Smax (AC))	kVA	2,100
Output frequency range	Hz	50/60
Nominal output voltage	V	630
Maximum efficiency	%	98.8
Own consumption in operation	W	2,500
Own consumption in standby	W	225

Transformers

Parameter	Unit	Description
Manufacturer	-	ABB
Rated power	kVA	3818
High voltage	V	6600
Low voltage (no load)	V	630 (630)
Rated frequency	Hz	50

Assessment team confirms the commission date of the project activity by checking against the commission certificate. The detail is as below

Project Proponent	Capacity	Date of Commissioning	Purpose
Essakane Solar S.A.S.	14.928 MWp	01-June-2018	Off grid sale to IAMGOLD Essakane SA Gold Mine

No events or situations happened during the reported monitoring period which can alter the applicability of the applied methodology.

The metering arrangement of the energy meter is provided in the revised Joint VCS PD & MR and is in conjugation with the onsite practice and thus acceptable to the VVB.

Based on the documentary evidence of commissioning certificates and physical verification VVB concludes that the project was implemented as per the registered PDD. The project is registered under Clean Development Mechanism (CDM) of UNFCCC with 7 years crediting period (renewable) (Reference No: 10398) on 05-May-2018. The Crediting period of the project under CDM started on 01-June-2018 and will end on 31-May-2025. The project has begun generating GHG emission reductions from commissioning. The gap validation under VCS mechanism which includes assessment of clause Joint VCS PD & MR Clause: 1.1, 1.2, 1.3, 1.5, 1.6, 1.7, 1.9, 1.10, 1.12.1, 1.12.2, 1.12.3, 1.12.4, 1.13, 1.14, 1.15.1, 1.16, 1.17, 3.6 and 6 of VCS Joint PD & MR template. The same is in line with the para 3.19.5 of VCS Standard, v.4.1.

The project proponent will also not claim GHG emission reductions under two schemes for the same period. The GHG credits from 01-June-2019 to 31-December-2020 will be claimed under VCS only. An undertaking from the project participant confirms that project will not claim any other scheme benefits for the concerned monitoring period.

During the Current Monitoring Period from 01-June-2019 to 31-December-2020 (First and last date included) the project activity has supplied 37,217 MWh of electricity, and thus contributing to the GHG reductions 29,764 tCO_{2e}.

2 VALIDATION AND VERIFICATION PROCESS

2.1 Method and Criteria

Validation and Verification Scope: The scope is defined as an independent and objective review of the project design document (Joint VCS PD & MR Clause: 1.1, 1.2, 1.3, 1.5, 1.6, 1.7, 1.9, 1.10, 1.12.1, 1.12.2, 1.12.3, 1.12.4, 1.13, 1.14, 1.15.1, 1.16, 1.17, 3.6 and 6). The Joint VCS PD and MR is reviewed against the criteria stated in Article 12 of the Kyoto Protocol, the CDM modalities and procedures as agreed in the Marrakech Accords and the relevant decisions by the CDM Executive Board and VCS standard version 4.1 and guideline version 4.0, including the approved baseline and monitoring methodology AMS-I.A: "Electricity generation by the user" (Version 16.0).

The validation and verification were based on the requirements in the Validation and Verification Standard for project activities, version 02.0, Project standard for project activities, version 02.0, and VCS guideline version 4.0 and standard, version 4.1.

The validation and verification are 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 combined project description and the Monitoring report.

Validation and Verification Process: The project assessment is based on the Clean Development Mechanism Validation and Verification Standard for project activities, version 02.0 and VCS standard version 4.1 and guideline, version 4.0 and is conducted using standard auditing techniques to assess the correctness of the information provided by the project participants. Before the assessment begins, members of the team covering the technical scope(s), sectoral scope(s), and relevant host country experience for evaluating the VCS project activity are appointed.

Once the project is received by the assessment team, the members of the assessment team carried out:

- I. A desk review of the project design documentation (Joint VCS PD & MR Clause: 1.1, 1.2, 1.3, 1.5, 1.6, 1.7, 1.9, 1.10, 1.12.1, 1.12.2, 1.12.3, 1.12.4, 1.13, 1.14, 1.15.1, 1.16, 1.17, 3.6 and 6);
- II. Follow-up interviews with project stakeholders;
- III. The resolution of outstanding issues and the issuance of the final verification/ validation report and opinion.

The prepared gap validation and verification report and other supporting documents then undergo an internal quality control at the HQ (Accredited office) before being submitted to the VCS executive board for registration and issuance of retroactive credits as per Para 3.19.5 of VCS standard version 4.1.

In order to ensure transparency, assumptions must be clear and stated explicitly and background material must also be referenced. LGAI Technological Center, S.A. (Applus+ Certification) has developed a specific checklist customized for the project. The checklist demonstrates, in a transparent manner, the project criteria (requirements), discussion on each criterion by the assessment team, and the results from validating/verifying the identified criteria.

Appointment of the assessment team

According to the sectoral scope / technical area and experience in the sectoral or national business environment, LGAI Technological Center S.A. (Applus+ Certification) has composed a project assessment team in accordance with the appointment rules in the internal Quality Management System of LGAI Technological Center S.A. (Applus+ Certification).

The composition of audit team shall be approved by the LGAI Technological Center S.A. (Applus+ Certification) ensuring that the required skills are covered by the team.

The four qualification levels for team members that are assigned by formal appointment rules are as presented below:

- Lead Auditor (LA).
- Auditor (A) / Auditor in Training (AiT).
- Technical Expert (TE).
- Technical Reviewer (TR).

The sectoral scope / technical area knowledge linked to the applied methodology/ies shall be covered by the assessment team.

Name	Role	SS Coverage	TA Coverage	Financial aspect	Host country experience
Dr. Atul Takarkhede	LA/TE	YES	YES	YES	YES
Mr. Denny Xue	TR	YES	YES	YES	NA

The complete list of CVs is included as Appendix 3 of this report.

Document review

The Joint VCS PD & MR submitted by the Client was reviewed against the approved methodology and other relevant criteria to verify the correctness, credibility, and interpretation of the presented information. Furthermore, a cross-check between information provided and information from other sources has been done. No sampling approach was required for undertaking the current verification since all monitored data was verified by the assessment team. A complete list of all documents and evidence material reviewed is included in this report below in appendix 1.

Follow-up interviews

A remote audit was conducted by LGAI Technological Center S.A. (Applus+ Certification) who performed interviews, telephone conferences with project stakeholders & document review to confirm selected information and to resolve issues identified in the document review. The detail is provided in this report in the below sections.

Resolution of Clarification and Corrective Action Request

The objective of this phase of the gap validation and verification was to resolve the requests for corrective actions and clarification and any other outstanding issues which need to be clarified for LGAI Technological Center S.A. (Applus+ Certification) positive conclusion on the project design and Monitoring report. The Corrective Action Requests and Clarification Requests raised by LGAI Technological Center S.A. (Applus+ Certification) were resolved during communications between the Client and Applus+ Certification to guarantee the transparency of the validation process, the concerns raised and responses given are summarized below in the appendix 2.

The final version of Joint VCS PD & MR submitted by project owner serve as the basis for the final assessment presented. Additional changes to the project during the gap validation and verification process are not considered to be significant with respect to the main CDM/VCS

objectives. The two CDM/VCS main objectives are the reduction of anthropogenic GHG emissions and the contribution of sustainable development to the host country.

Internal quality control

As final step of a gap validation and verification of the final documentation including the final Joint validation & verification report and the checklist have to undergo an internal quality control by the technical review committee, i.e. each report has to be finally approved either by the head of the technical review committee or the deputy. In case one of these two persons is part of the assessment team approval can only be given by the other one to avoid any conflict of Interest.

After confirmation of the project owners the positive validation/verification opinion and relevant documents are submitted to the VCS secretariat through the VCS web-platform.

2.2 Document Review

The verification is performed primarily as a review of documents submitted at various stages of assessments. The review is performed by assessment team using dedicated protocols. The assessment team cross checks the information provided in the documents (Joint VCS PD & MR, CDM PDD, MR, validation report, verification report) and information from sources other than those used, if available and also conducts independently background investigations.

Applus+ Certification conducted a desk review as under;

- a) A review of the data and information presented to verify their completeness.
- b) A review of the monitoring plan, the monitoring methodology including applicable tool(s) and, where applicable, the applied standardized baseline, paying particular attention to the frequency of measurements, the quality of metering equipment including calibration requirements, and the quality assurance and quality control procedures.

An evaluation of data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions.

2.3 Interviews

A remote audit was conducted for the project activity on 04-October-2021. No sampling procedures were adopted. Remote audit was conducted due to pandemic situation, restrictions on international travel and technical details and metering/monitoring systems verified through site photographs/nameplates & other documents shared by PP. All documents were crosschecked to ensure conservative estimation of emission reduction. The names of the persons interviewed (during remote audit through MS Team) are given below;

Organization	Name of Persons/Designation	Topics discussed	Team leader
Essakane Solar S.A.S./ AERA/ Total-EREN/ Wartsila	Gaïa Ludington (AERA) Gautier Moulin (Total-EREN) Kabore, Bernadin Yannick (Wartsila)	Project description / Implementation, Technical, Operation & Management, Monitoring, Calibration requirements, stakeholder engagement, data storage, QA/QC	Dr. Atul Takarkhede
	Emma Kantiono (Essakane Solar S.A.S.) Alexandre DUNOD (AERA)	stakeholder engagement, data storage, QA/QC, Management practices etc.	

During the remote audit, the PP representatives were questioned about the implementation of the project activity. Several topics like the verification of commissioning date, the generation, recording, and monitoring of the data were discussed. Various documents like the daily generation, invoices, on-site Photographs includes nameplates, monitoring meters, key technical specifications of the major equipments etc. provided to assessment team were verified to establish the current status and the implementation of the Project Activity.

2.4 Site Inspections

The verification team could not perform on-site inspection due to the ongoing COVID-19 pandemic taking into account the rules of relevant national and local authorities (local to the DOE offices as well as to locality of the site visits), World Health Organization (WHO) recommendations, policies of the DOE and other relevant travel restrictions and guidance (for example, a during such unprecedented circumstances, only that VVBs must achieve a reasonable level of assurance on all validations and verifications (per section 4.1.2 of the VCS Standard, v4.1). VVB has taken alternative measures to reach reasonable level of assurance and conducted remote audit through MS Teams with the site personal & consultant (refer section 2.3) to check the project design, implementation and monitoring of the project activity.

During interview, the implementation of project activity and monitoring procedure and systems in place was confirmed. Technical specification of the plant was verified through the onsite photographs/name plates of solar panels shared by PP and the same was cross checked with the CDM validation report & first CDM verification report. Further, assessment team has also checked through interviewing O&M personal and confirmed that the monitoring plan as described in the CDM PDD is actually practiced onsite.

After remote audit with O&M personals & PP and verifying the photographs of power plant, Single Line diagram of monitoring arrangement, verification team confirmed that monitoring procedure is followed as per registered CDM PDD and there is no change in technical specifications of plant since installation and all the meters are in accordance with registered CDM PDD. Furthermore, the project implementation was also verified during CDM verification.

A remote audit was conducted by the assessment team on 04-October-2021 to carry out the following;

- a. An assessment of the implementation and operation of the registered project activity as per the registered CDM PDD or any approved revised PDD and Joint VCS PD & MR;
- b. A review of information flow for generating, aggregating and reporting the monitoring parameters;
- c. Interviews with relevant personnel to determine whether the operational and data collection procedures are implemented in accordance with the monitoring plan in the Joint VCS PD & MR;
- d. A cross-check between information provided in the monitoring report and data from other sources such as plant logbooks, invoice slips, PPA agreement etc.;
- e. A check of the monitoring equipment and observations of monitoring practices against the requirements of the Joint VCS PD & MR the applied methodology including applicable tool(s), and, where applicable, the applied standardized baseline;
- f. A review of calculations and assumptions made in determining the GHG data and emission reductions;

An identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.

2.5 Resolution of Findings

The objective of this phase of the gap validation and verification was to resolve the requests for corrective actions and clarification and any other outstanding issues which need to be clarified for LGAI Technological Center S.A. (Applus+ Certification)'s positive conclusion on the project design and Monitoring report. The Corrective Action Requests and Clarification Requests raised by LGAI Technological Center S.A. (Applus+ Certification) were resolved during communications between the Client and LGAI Technological Center S.A. (Applus+ Certification) to guarantee the transparency of the validation process, the concerns raised and responses given are summarized below in the appendix 2.

The final Joint VCS PD & MR submitted by project proponent serves as the basis for the final assessment presented. Additional changes to the project during the validation and verification process are not considered to be significant with respect to the main CDM/VCS objectives. The

two CDM/VCS main objectives are the reduction of anthropogenic GHG emissions and the contribution of sustainable development to the host country.

Areas of validation and verification findings	No. of CL	No. of CAR	No. of FAR
Project design document and Monitoring report	00	02	00
Description of project activity	00	00	00
Application of selected baseline and monitoring methodology and selected standardized baseline			
- Applicability of methodology and standardized baseline	00	00	00
- Deviation from methodology	00	00	00
- Clarification on applicability of methodology, tool and/or standardized baseline	00	00	00
Project boundary	00	00	00
Establishment and description of baseline scenario	00	00	00
Demonstration of additionality	00	00	00
Emission reductions	00	01	00
Calibration details	00	00	
Monitoring plan	00	01	00
No Net harm assessment	00	00	
Local stakeholder Ongoing Communication	00	01	
Others (please specify)	00	00	00
Total	00	05	00

The list of findings and their resolution is presented in appendix 2 of this report.

2.5.1 Forward Action Requests

This is Gap validation & verification of the project activity and no FAR is raised. No FAR is pending from CDM Validation or first CDM verification as well.

3 VALIDATION FINDINGS

3.1 Project Details

This is a small-scale project activity, which involves installation of 14.928 MWp greenfield solar PV plant by Essakane Solar S.A.S. at the Essakane gold mine, which is in the Sahel region of Burkina Faso about 330 km North-East from Ouagadougou. Being owned by Essakane Solar S.A.S. project is a specific purpose vehicle owned by Total Eren as a majority shareholder (>90%) and the main objective of the project is to deliver clean, renewable energy-based electricity to IAMGOLD Essakane SA. It is done by adding capacity to the 11 fuel-powered engines existing before the Project implementation. The Project is replacing fuel consumption of the technology in use. The project is commissioned on 01/06/2018 i.e. effective start date of electricity production. The verification team has reviewed the commissioning certificates and Power Purchase Agreements (PPA) for conformation of the same. The technical specification of the plant verified through the photographs/name plates of the equipments provided by the PP and the same is also with the technical details provided by the manufacturer.

The project is implemented as per the description in the CDM PDD and thus no technical deviation is sought. Further, the applicability of the methodology, baseline and additionality as mentioned in the CDM PDD will not undergo any change and thus deemed appropriate for the project activity.

The assessment team conducted a remote audit with the PP representatives in order to verify the status of the project implementation of the monitoring plan. It has also been verified as per the guidelines in AMS-IA: "Electricity generation by the user" (Version 16.0) that the calculations for the GHG emission reductions are done in accordance with the aforesaid methodology/7/.

Assessment team has also checked the break down summary and found that the power plant undergone scheduled maintenance as per the guideline provided by the manufacturer which is acceptable to the assessment team. No unforeseen incident observed during the monitoring period which could alter the applicability of the methodology or might cause material errors in emission reductions. The assessment team also confirmed that the monitoring system for emission reduction calculation was in place and in accordance with the registered CDM PDD.

Geo coordinates checked on google earth and verification team conclude geo coordinates of project locations are consistent with Joint VCS PD & MR. Details are already provided in section 1.4 of this report.

Assessment team concludes the following:

- a) The implementation status of project activity was found to be in compliance with Joint VCS PD & MR and registered CDM PDD.
- b) DOE has conducted the remote audit of site to confirm the implementation status of the project.
- c) The commissioning date of the project activity was found to be accurately and consistently recorded.
- d) The actual operation of project activity was found to be in compliance with the Joint VCS PD & MR.

The emission reductions achieved during the current monitoring period are 29,764 tCO_{2e}.

Project Proponent

As per CDM registered PDD "Essakane Solar S.A.S." is the project proponent. In JOINT VCS PD & MR also the PP name is correctly mentioned as "Essakane Solar S.A.S.". The name of the person, address and phone number is assessed correct for VCS (gap validation and verification) purpose. Hence, Clause 1.5 as depicted in the Joint VCS PD & MR for gap validation is acceptable to the assessment team.

Project Start Date

The start date of the project is considered as the commissioning date of the power plant (as per the Commissioning certificate of the power plant) and the same is correct as per the definition

of start date of VCS. The emission reduction is claimed from the commissioning date which is correct as per the requirement of Para 3.19.5 of VCS standard version 4.1.

Project Crediting Period

The Project activity is commissioned on 01-June-2018 (Commissioning certificate is checked). However, PP have chosen crediting period same as CDM crediting period. This is in line with the clause 3.8 of VCS standard, Version 4.1. CDM crediting period is from 01-June-2018 to 31-May-2025 (Renewable). In CDM, the CERs are claimed from 01-June-2018 to 31-May-2019¹. Thus, project VCS crediting period shall be also a seven years (Renewable).

The start date of the VCS crediting period is considered as 01-June-2018. This is in line with Section 3.8.7 of VCS Standard, Version 4.1.

Project Scale and Estimated GHG Emission Reductions or Removals

The proposed project activity was categorized as “Project”, since the estimated average annual GHG emission reductions is 19,904 tCO₂e, which is lower than 300,000 tCO₂e per year as per the registered Joint VCS PD & MR.

Project Location

The project location (along with Latitude and longitude) of the project activity is checked by the assessment via Google earth software and found that the Geo-coordinates of power plant are matching with the actual coordinates. The geo-coordinates of the WEGs are provided in Section 4.1 of this report.

Conditions Prior to Project Initiation

Through reviewing the registered CDM PDD and validation report at UNFCCC website https://cdm.unfccc.int/Projects/DB/KBS_Cert1502356514.63/view, it is confirmed that the project is a Greenfield project. The project activity replaces the carbon intensive electricity. The proposed project activity effectively utilises renewable solar energy to generate electricity. Thereby the project activity reduces the dependence on fossil fuel-based generation units and as there are no associated emissions with this project it contributes to the reduction of greenhouse gases (GHG) emissions. Assessment team checked the same with O & M personnel during the remote audit and also cross checked with CDM PDD and validation report.

Compliance with Laws, Statutes and Other Regulatory Frameworks

The project is registered under CDM and UNFCCC (Registration ID -10398). The project is also approved by the DNA and a copy of the approval is available on the UNFCCC page. The project activity is not mandatory by any local or national laws. Same is confirmed from section B.3 of the registered CDM PDD.

¹ https://cdm.unfccc.int/Projects/DB/KBS_Cert1502356514.63/view

Ownership and other programs-

Right of use

The project activity is owned by “Essakane Solar S.A.S.”. The ownership of the project activity is verified through the following documents:

- Commissioning certificates
- CDM PDD
- Concession Agreement between PP & Ministry of energy

The project is not participating in other emission trading programs. The letter of undertaking has been furnished by project participant confirming that net GHG emission reductions or removals generated by the project will not be used for compliance with an emissions trading program or to meet binding limits on GHG emissions.

Other forms of environmental credit sought or received and eligible to be sought or received:

Project has been registered with UNFCCC under Clean Development Mechanism program. Registration reference number is 10398. Project Proponent has submitted undertaking for not availing other forms of environmental credit for the same crediting period under consideration. In CDM, the CERs are claimed from 01-June-2018 to 31-May-2019. The PP is registering in the VCS program with the crediting period effective from 01-June-2018. And PP also confirmed that the project will not claim CERs for the period when the VCU are claimed under VCS.

PP also submitted undertaking for Project neither has any intends to generate any form of GHG related environmental credit for neither GHG emission reductions nor removals claimed under the VCS program.

Participation under other GHG programs:

The project is registered under CDM and UNFCCC (Registration ID -10398). The project is also approved by the DNA and a copy of the approval is available on the UNFCCC page. Project Proponent has submitted undertaking that they will not claim same GHG emission reductions of the project from CDM and VCS. PP would not use net GHG emission reductions by the projects for compliance with emission trading program to meet binding limits on GHG emissions.

Rejection by other GHG programs:

The project has not been rejected by other GHG programs.

Additional information relevant to the project, including:

- Eligibility criteria for grouped projects

Not applicable to the project activity.

Leakage management for AFOLU projects

Not applicable to the project activity.

Commercially sensitive information

No commercially sensitive information has been excluded from the public version of the project description.

Conclusion:

In view of the assessment of Joint VCS PD & MR and supporting documents as listed in Appendix 1 of this report, the validation team is able to confirm that the description contained in the Joint VCS PD & MR of the project activity provides the reader with a clear understanding of the precise nature of the project activity and the technical aspects of its implementation. Consequently, APPLUS+ CERTIFICATION confirms that the project description of the project contained in the Joint VCS PD & MR to be complete and accurate. The JOINT VCS PD & MR complies with the relevant forms and guidance for completing the Joint VCS PD & MR.

3.2 Participation under Other GHG Programs

The present project activity is registered under CDM mechanism (UN reference number: 10398). The project can be traced via link

https://cdm.unfccc.int/Projects/DB/KBS_Cert1502356514.63/view

The gap validation is performed for the project activity as per Para 3.19.5 of VCS standard version 4.1. As per the requirement of this template following are the observation of the assessment team:

1. The project is registered under CDM mechanism and UN reference number of the project is 10398. The project title is "Off grid Solar PV project at IAMGOLD Essakane SA Gold Mine".
2. The project is eligible under Para 3.19.5 of VCS standard, version 4.1.
3. Assessment team adopted a step wise procedure to assess the respective clause required for gap validation under VCS vide Para 3.19.5 of VCS standard, version 4.1.

Summary Description of the Project

Clause 1.1: This is a small-scale project activity, which involves installation of 14.928 MWp greenfield solar PV plant by Essakane Solar S.A.S. at the Essakane gold mine, which is in the Sahel region of Burkina Faso about 330 km North-East from Ouagadougou. Being owned by Essakane Solar S.A.S. project is a specific purpose vehicle owned by Total Eren as a majority shareholder (>90%) and the main objective of the project is to deliver clean, renewable energy-based electricity to IAMGOLD Essakane SA. It is done by adding capacity to the 11 fuel-powered engines existing before the Project implementation. The Project is replacing fuel consumption of the technology in use. The project is commissioned on 01/06/2018 i.e. effective start date of electricity production. The verification team has reviewed the commissioning certificates and Power Purchase Agreements (PPA) for conformation of the same. The technical specification of the plant verified through the photographs/name plates of the equipments provided by the PP and the same is also with the technical details provided by the manufacturer.

The project is implemented as per the description in the CDM PDD and thus no technical deviation is sought. Further, the applicability of the methodology, baseline and additionality as mentioned in the CDM PDD will not undergo any change and thus deemed appropriate for the project activity.

The assessment team conducted a remote audit with the PP representatives in order to verify the status of the project implementation of the monitoring plan. It has also been verified as per the guidelines in AMS I.A: "Electricity generation by the user" (Version 16.0) that the calculations for the GHG emission reductions are done in accordance with the aforesaid methodology/7/.

Assessment team has also checked the break down summary and found that the power plant undergone scheduled maintenance as per the guideline provided by the manufacturer which is acceptable to the assessment team. No unforeseen incident observed during the monitoring period which could alter the applicability of the methodology or might cause material errors in emission reductions. The assessment team also confirmed that the monitoring system for emission reduction calculation was in place and in accordance with the registered CDM PDD.

Geo coordinates checked on google earth and verification team conclude geo coordinates of project locations are consistent with Joint VCS PD & MR. Details are already provided in section 1.4 of this report.

Assessment team concludes the following:

- a) The implementation status of project activity was found to be in compliance with Joint VCS PD & MR and registered CDM PDD.
- b) DOE has conducted the remote audit of site to confirm the implementation status of the project.
- c) The commissioning date of the project activity was found to be accurately and consistently recorded.
- d) The actual operation of project activity was found to be in compliance with the Joint VCS PD & MR.

The emission reductions achieved during the current monitoring period are 29,764 tCO₂e.

Sectoral Scope and Project Type

Clause 1.2: According to the categorisation system of the Clean Development Mechanism, which is part of Green House Gas (GHG) program that has been approved by the VCS board, the project is categorised as:

Type I: Renewable energy projects

Category: AMS-I.A: "Electricity generation by the user" (Version 16.0). Assessment team checked the type and category of the project activity and found that the project is eligible under Type I and renewable category of project. Hence the project is eligible under Clause 1.2 of Joint VCS PD & MR.

Project Eligibility

Clause 1.3: The project registered under CDM and UNFCCC (Registration ID-10398). Thus, eligible for gap validation under VCS standard Version 4.1.

Project Proponent

Clause 1.5: As per CDM registered PDD “Essakane Solar S.A.S” is the project proponent. In VCS PD also the PP name is correctly mentioned as “Essakane Solar S.A.S.”. The name of the person, address and phone number is assessed correct for VCS (gap validation and verification) purpose. Hence, Clause 1.5 as depicted in the JOINT VCS PD & MR for gap validation is acceptable to the assessment team.

Other Entities Involved in the Project

Clause 1.6: In JOINT VCS PD & MR, the Other Entities Involved name is mentioned as “EKI Energy Services Limited”. The name of the person, address and phone number is assessed correct for VCS (combined validation and verification) purpose. Hence, Clause 1.6 as depicted in the JOINT VCS PD & MR for gap validation is acceptable to the assessment team

Ownership

Clause 1.7: The project activity is owned by “Essakane Solar S.A.S.”. The ownership of the project activity is verified through the following documents:

- Commissioning certificates
- CDM PDD
- Concession Agreement between PP & Ministry of energy

The project is not participating in other emission trading programs. The letter of undertaking has been furnished by project participant confirming that net GHG emission reductions or removals generated by the project will not be used for compliance with an emissions trading program or to meet binding limits on GHG emissions.

Project Start Date

Clause 1.8: The start date of the project is considered as the commissioning date of the power plant (as per the Commissioning certificate of the power plant) and the same is correct as per the definition of start date of VCS. The emission reduction is claimed from the commissioning date which is correct as per the requirement of Para 3.19.5 of VCS standard version 4.1.

Project Crediting Period

Clause 1.9: The Project activity is commissioned on 01-June-2018 (Commissioning certificate is checked). However, PP have chosen crediting period same as CDM crediting period. This is in line with the clause 3.8 of VCS standard, Version 4.1. CDM crediting period is from 01-June-2018 to 31-May-2025 (Renewable). In CDM, the CERs are claimed from 01-June-2018 to 31-May-2019². Thus, project VCS crediting period shall be also a seven years (Renewable).

² https://cdm.unfccc.int/Projects/DB/KBS_Cert1502356514.63/view

The start date of the VCS crediting period is considered as 01-June-2018. This is in line with Section 3.8.7 of VCS Standard, Version 4.1.

Project Scale and Estimated GHG Emission Reductions or Removals

Clause 1.10: The proposed project activity was categorized as “Project”, since the estimated average annual GHG emission reductions is 19,904 tCO₂e, which is lower than 300,000 tCO₂e per year as per the registered CDM PDD/Joint VCS PD & MR.

Project Location

Clause 1.12: The project location (along with Latitude and longitude) of the project activity is checked by the assessment via Google earth software and found that the Geo-coordinates of power plant are matching with the actual coordinates. The geo-coordinates of the WEGs are provided in Section 4.1 of this report.

Conditions Prior to Project Initiation

Clause 1.13: Through reviewing the registered CDM PDD and validation report at UNFCCC website https://cdm.unfccc.int/Projects/DB/KBS_Cert1502356514.63/view, it is confirmed that the project is a Greenfield project. The project activity replaces the carbon intensive electricity. The proposed project activity effectively utilises renewable solar energy to generate electricity. Thereby the project activity reduces the dependence on fossil fuel-based generation units and as there are no associated emissions with this project it contributes to the reduction of greenhouse gases (GHG) emissions. Assessment team checked the same with O & M personnel during the remote audit and also cross checked with CDM PDD and validation report.

Compliance with Laws, Statutes and Other Regulatory Frameworks

Clause 1.14: The project is registered under CDM and UNFCCC (Registration ID -10398). The project is also approved by the DNA and a copy of the approval is available on the UNFCCC page. The project activity is not mandatory by any local or national laws. Same is confirmed from section B.3 of the registered CDM PDD.

Projects Registered (or seeking registration) under Other GHG Program(s)

Clause 1.15.1: The project is registered under CDM and UNFCCC (Registration ID -10398). The project is also approved by the DNA and a copy of the approval is available on the UNFCCC page. Further, project is not rejected by any other GHG programs. Project Proponent has submitted undertaking that they will not claim same GHG emission reductions of the project from CDM and VCS. PP would not use net GHG emission reductions by the projects for compliance with emission trading program to meet binding limits on GHG emissions. Thus clause 1.15.1 as depicted in the JOINT VCS PD & MR for gap validation is acceptable to the assessment team.

Other Forms of Credit

Clause 1.16: Project has been registered with UNFCCC under Clean Development Mechanism program. Registration reference number is 10398. Project Proponent has submitted undertaking for not availing other forms of environmental credit for the same crediting period under consideration. In CDM, the CERs are claimed from 01-June-2018 to 31-May-2019. The PP is registering in the VCS program with the crediting period effective from 01-June-2018. And PP also confirmed that the project will not claim CERs for the period when the VCU are claimed under VCS.

PP also submitted undertaking for Project neither has any intends to generate any form of GHG related environmental credit for neither GHG emission reductions nor removals claimed under the VCS program.

Methodology Deviations

Clause 3.6: No methodology deviation is applied in the JOINT VCS PD & MR. Thus, clause 3.6 as depicted in the JOINT VCS PD & MR for gap validation is acceptable to the assessment team.

Conclusion:

The project activity has fulfilled the all clause for GAP Validation and thus the project is eligible to participate under the VCS Program.

3.3 Safeguards

3.3.1 No Net Harm

PP has identified potential negative environmental and socio-economic impacts, for the various aspects and provided mitigation measures along with responsible entity. Same is found appropriate and thus acceptable to assessment team.

3.3.2 Local Stakeholder Consultation

Local stakeholder consultation has been conducted at the time of project registration. For ongoing stakeholder's communication, any grievance received is analysed at the headquarters in the Zogona district of Ouagadougou or in the Ouagadougou, or at the information centers of the Health, Safety and Sustainable Development Department. Depending on the geographical location of the request, mail is forwarded either to the Corporate Affairs Department (requests at the national level), or to the SSDD Department (requests at the regional level). The grievances are analysed weekly basis and resolution is done by the concerned departments. There is well written procedure/SOP for the grievance handling. During the remote audit, same was confirmed. During current monitoring period there are no grievances received related to the solar power plant. Thus, assessment team is of the opinion that the ongoing stakeholder mechanism is adequate and appropriate. Moreover, CAR 03 was raised regarding the ongoing stakeholder's consultation same and after submission of satisfactory response the CAR was closed.

3.3.3 Environmental Impact

Not applicable being GAP Validation & Verification project.

3.3.4 Public Comments

Project was under pipeline and open for the Global comments on VERRA website from 03-September-2021 to 03-October-2021. During this GSP period no comments were received. Same was checked from the VERRA project webpage³.

3.3.5 AFOLU-Specific Safeguards

Not applicable.

3.4 Application of Methodology

3.4.1 Title and Reference

Type I: Renewable energy projects

Category: AMS-IA: “Electricity generation by the user” (Version 16.0). Assessment team checked the type and category of the project activity and found that the project is eligible under Type I and renewable category of project.

3.4.2 Applicability

Not applicable being GAP Validation & Verification project.

3.4.3 Project Boundary

Not applicable being GAP Validation & Verification project.

3.4.4 Baseline Scenario

Not applicable being GAP Validation & Verification project.

3.4.5 Additionality

Not applicable being GAP Validation & Verification project.

3.4.6 Quantification of GHG Emission Reductions and Removals

Not applicable being GAP Validation & Verification project.

³ <https://registry.terra.org/app/projectDetail/VCS/2434>

3.4.7 Methodology Deviations

The project activity used AMS-I.A: “Electricity generation by the user” (Version 16.0)., which is as per the registered CDM PDD and thus no deviation is sought regarding the methodology. The project complies with all the requirements of the methodology and thus deviation to the methodology is not a requirement for the present monitoring period.

3.4.8 Monitoring Plan

Not applicable being GAP Validation & Verification project.

3.5 Non-Permanence Risk Analysis

No.	Risk that could lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk level	Justification	
NA	NA	NA	NA	NA

4 VERIFICATION FINDINGS

4.1 Accuracy of GHG Emission Reduction and Removal Calculations

Means of verification	The verification team assessed whether the data and calculations of GHG emission reductions achieved resulting from the Joint VCS PD & MR. The verification team has checked whether calculations of baseline GHG emissions, project GHG emissions and leakage GHG emissions have been carried out in accordance with the formulae and methods described in the monitoring plan of the MR.
Findings	CAR 04 was raised during the verification process and closed successfully. Please refer Appendix 2 of this report for the detail closure of the CAR.
Conclusion	Ex-ante Parameter: EF_{CO2, default} (CO₂ emission factor) & I (Average technical distribution losses) are mentioned as ex-ante fixed parameter. Assessment team checked the values, source of data, choice of data, purpose of the data mentioned in the MR from the registered CDM PDD and confirms that the similar approach was considered for the VCS Gap validation & verification also. The value for EF_{CO2, default} i.e. Default emission factor, derived from diesel generation units and taken from registered CDM PDD. The default value in turn is used for baseline calculation as per the formula given in the registered CDM PDD for the Gap validation & verification. The

	value used for emission reduction calculation for the present verification is as below (The values are same as per the registered CDM PDD as confirmed by the assessment team during the desk review of registered CDM PDD): $EF_{CO_2, \text{ default}} = 0.8 \text{ kg CO}_2/\text{kWh}$ $I = 0.$ Baseline Emissions: The baseline Emissions for a given year is calculated by multiplying the energy baseline with the emission factor. Formula Used: - $BE_{CO_2,y} = E_{BL,y} \times EF_{CO_2}$ Where: $BE_{CO_2,y}$ Emissions in the baseline in year, y; tCO₂ $E_{BL,y}$ Annual energy baseline in year, y; kWh EF_{CO_2} CO₂ emission factor; tCO₂/kWh For EF_{CO_2}, default value of 0.8 kg CO₂-e/kWh, which is taken from registered PDD. Monitored Parameter: As per registered CDM PDD, EG_y is the only monitoring parameter. EG_y: Annual net output of the solar photovoltaic power plant The parameter is a calculated using the difference of export and import value measured from the electricity meter. The primary source of data of the parameter is joint meter readings which provide input values i.e. export & import, used for calculation of $EG_y = E_{BL,y}$. Electricity export and import is measured via electricity meters installed onsite and the value of export and import forms the part of Monthly electricity generation reports. The meter reading is taken/downloaded during a fixed billing cycle of every month by Wartsila O&M and IAMGOLD ESSKANE. Assessment team checked all the values of the electricity exported and electricity imported from the monthly electricity Generation reports. The net electricity exported to the grid is then calculated from the difference of export and import value. During the Current Monitoring Period the project activity has supplied 37,217 MWh of electricity, and thus contributing to the GHG reductions 29,764 tCO₂e. All the parameters are monitored and recorded as per the monitoring plan in the CDM PDD/ Joint VCS PD & MR. The verification team has crosschecked the revised emission reduction sheet and monitoring report data with the JMR sheet and invoice and found all the values are matching. PE_y = As per AMS I.A: "Electricity generation by the user" (Version 16.0), Project emission is zero as per the requirement of the methodology and registered CDM PDD.
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	As the project activity involved solar power generation, project, project emissions (PE_y) are taken as zero. Leakage: As per AMS I.A: "Electricity generation by the user" (Version 16.0), Leakage emissions are not considered for the project activity. Assessment team confirmed that the GHG emission reductions and removals have been quantified correctly in line with the registered CDM PDD/Joint VCS PD & MR. Verification team also confirms that the monitoring has been carried out in accordance with the monitoring plan contained in the registered CDM PDD/Joint VCS PD & MR.
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4.2 Quality of Evidence to Determine GHG Emission Reductions and Removals

Means of verification	The verification team checked the break down log for the monitoring period. During the verification remote audit and document review, the energy meters are also checked. The Calibration requirements of the monitoring meters are also checked.
Findings	CAR 05 was raised during the gap validation & verification process which was closed successfully. Please refer Appendix 2 of this report for the detail closure of the CAR.
Conclusion	The monitoring meters of the project plan involves bi-directional meters of Schneider Electric PowerLogic PM8240 meter of accuracy class 0.2s (active energy) and class 0.5s (reactive energy) at the two delivery points namely Wartsila 1 (BA904 outgoing feeder; Buyer meter: 1706B040-02 & Seller meter: 1706B060-02) and Wartsila 2 (BA0911 outgoing feeder; buyer meter: 1706B257-02 & Seller meter: 1706B032-02). These meters record several parameters including electricity exported & imported. These electricity meters are being used by Essakane Solar S.A.S. & IAMGOLD Essakane SA to obtain the value of export and import and hence Net electricity supplied is calculated based on these values. Reconciliation of measurement results between Essakane Solar and IAMGOLD takes place monthly before electricity invoicing is done. As per PowerLogic PM8000 Series manual, "all meters are tested and verified at the factory in accordance with International Electrotechnical Commission (IEC) and American National Standards Institute (ANSI) standards. These digital power meters typically do not require re-calibration". Same has been checked and confirmed from the CDM Validation report & CDM first verification report as well during remote audit with technical team of Wartsila that the meters do not require any calibration. These meters were Tested and calibrated before installation. PP has submitted test reports for the same. This is in line with the registered CDM PDD/CDM validation report/CDM first verification report. During remote audit & document review it was also observed that PP have installed online monitoring meters at the transformer's point and same are connected with SCADA system.

	Thus, verification team concluded that monitoring system is in accordance with the registered CDM PDD & Joint VCS PD & MR. It is reported that the data will be kept for 2 years following the end of the crediting period or till the last issuance of VERs for the project activity whichever occurs later. The responsibilities and authorities of project management, data handling and recording, measurement methods and QA/QC procedure have been systematically established and formalized and the same was verified during remote audit. Comparison of actual and estimate emission reductions achieved: Assessment team checked the calculation of estimated VER vs. Actual VER. As per the JOINT VCS PD & MR the amount of VERs annually is 19,904 tCO₂e. The days involved in present monitoring period are 580. Therefore, on pro-rata basis, the estimated VERs for the monitoring period is 31,628 tCO₂e. Actual VERs obtained for the monitoring period is 29,764 tCO₂e and thus the actual VER is 5.9% lower than the estimated VERs. The generation of electricity depends upon many other climatic conditions, like availability of sun, radiations etc. which are not within the control of the project participant. Hence, it is acceptable. Also, during the remote audit assessment team confirmed that there is no change in project design as per the detailed mentioned in the registered documents. Thus, assessment team concluded that the evidences are sufficient in quantity, and appropriate for the quality, to determine the GHG reductions and removals.
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5 VALIDATION AND VERIFICATION CONCLUSION

Applus+ Certification, contracted by Essakane Solar S.A.S., has performed the independent Gap validation and verification of the emission reductions for the VCS project activity “Off grid Solar PV project at IAMGOLD Essakane SA Gold Mine” in Burkina Faso for the monitoring period 01-June-2019 to 31-December-2020 reported in the Joint VCS PD & MR.

The management of the project participant/owner is responsible for the preparation of the GHG emissions data and the reported/estimated GHG emissions reductions on the basis set out within the project’s Monitoring Plan in the CDM PDD/Joint VCS PD & MR and the approved methodology AMS I.A: “Electricity generation by the user” (Version 16.0).

Applus+ Certification’s verification approach is based on the understanding of the risks associated with reporting of GHG emission data and the controls in place to mitigate these. Applus+ Certification planned and performed the verification by obtaining evidence and other information and explanations that Applus+ Certification considered necessary to give reasonable assurance that reported GHG emission reductions are fairly stated.

Our GAP Validation & Verification approach was based on the requirements as defined under the Kyoto Protocol, Marrakesh accord, as well as those defined by the CDM Executive Board and VCS Standard version 4.1. Our approach is risk-based, drawing on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these. The verification can confirm that:

- the project is operated as planned and described in the project document;
- The project fulfills the requirements of the GAP validation vide Para 3.19.5 of VCS standard version 4.1;
- the monitoring plan is as per the applied methodology;
- the monitoring process in Joint VCS PD & MR
- the development and maintenance of records and reporting procedures are in accordance with the monitoring plan
- the installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately
- the monitoring system is in place and generates GHG emission reductions data;
- the GHG emission reductions are calculated without material misstatements.
- No limitation observed for the present verification

Verification period: From 01-June-2019 to 31-December-2020 (inclusive of both days)

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
01-June-2019 to 31-December-2019	11,016	0	0	11,016
01-January-2020 to 31-December-2020	18,748	0	0	18,748
Total	29,764	0	0	29,764

APPENDIX 1: DOCUMENTS REVIEWED OR REFERENCED

S. No	Title of Document	Version	Date
1.	JOINT VCS PD & MR (Initial) JOINT VCS PD & MR (Final)	version 01.0 version 03.0	08-March-2021 05-October-2021
2.	ER spread-sheet (Initial) ER spread-sheet (Final)	version 01 version 02	08-March-2021 05-October-2021
3.	Invoice/Bills for the complete monitoring period	-	-
4.	Monthly Joint Meter Readings for complete monitoring period	-	-
5.	Applied Methodology - AMS I.A: "Electricity generation by the user"	Version 16.0	-
6.	Remote audit records / Photograph of site/Name plates	-	04-October-2021
7.	Commissioning Certificates of the Solar power plant	-	-
8.	Initial Testing and calibration certificates for online monitoring meters	-	-
9.	Power Purchase Agreements for the project activity	-	-
10.	Concession agreement between PP & Ministry of Energy, Burkina Faso	-	28-April-2017
11.	Grievance record & grievance redressal SOP	-	-
12.	VCS Standard	Version 4.1	-
13.	VCS Program Guide	Version 4.0	-
14.	Letter of declaration dated from PP regarding not having created or sought any other form of environmental credit for the same period and double counting	-	09-April-2021
15.	Technical specifications by technology supplier	-	-
16.	Registered CDM PDD/Validation Report/First Verification MR/Verification Report https://cdm.unfccc.int/Projects/DB/KBS_Cert150235651_4.63/view	-	-
17.	Break Down Summary of Plant	-	-

APPENDIX 2: CORRECTIVE ACTION REQUESTS, CLARIFICATION REQUESTS AND FORWARD ACTION REQUESTS (CAR/CL/FAR)

Remaining FAR from previous verification

FAR ID	XX	Section no.		Date : DD/MM/YYYY
Description of FAR				
There is no FAR from the validation/previous verifications of the project activity				
Project participant response				Date :DD/MM/YYYY
NA				
Documentation provided by project participant				
NA				
DOE assessment				Date: DD/MM/YYYY
NA				

CL from this validation/verification

CL ID	XX	Section no.	-	Date: DD/MM/YYYY
Description of CL				
-				
Project participant response				Date: DD/MM/YYYY
-				
Documentation provided by project participant				
-				
DOE assessment				Date: DD/MM/YYYY
-				

CAR from this validation/verification

Validation Findings:

CAR ID	01	Section no.	3.1	Date: 04-October-2021
Description of CAR				
During review of monitoring report DOE found that the date format is not inline with the guidelines to complete Joint Project Description & Monitoring Report as DD-Month-YYYY. Corrective action is sought.				
Project participant response				Date: 05-October-2021
Dates corrected to right format				
Documentation provided by project participant				
Joint project description & Monitoring report v2				
DOE assessment				Date: 05-October-2021
PP have submitted revised Joint VCS PD & MR with date format inline with the guidelines to complete Joint Project Description & Monitoring Report and found correct. CAR thus closed.				

CAR ID	02	Section no.	3.2	Date: 04-October-2021
Description of CAR				
VCS PD provided reference of UNFCCC Registration in Section 1.15. Thus, PP requested to provide copy of undertaking in effect of no double counting of CDM & VCS emission reductions achieved. Also CDM CER issuance history till date missing under the section. Corrective action is sought.				
Project participant response				Date: 05-October-2021
CDM CER issuance history added.				
Documentation provided by project participant				
Essakane written declaration VCS				
DOE assessment				Date: 05-October-2021
PP have submitted undertaking for avoiding the double counting of the emission reductions achieved from the project activity. Further, PP have also included CER issuance history under CDM mechanism and found correct. CAR closed.				

VERIFICATION FINDINGS

CAR ID	03	Section no.	3.3.2	Date: 04-October-2021
Description of CAR				
Ongoing stakeholder communication mode and details of any grievances recorded during this MP are missing in the section 2.2 of the Joint PD & MR inline with the VCS Standard, Version 04. Corrective action sought.				
Further, PP is requested to provide supporting documents of ongoing communication with local stakeholders as per requirement of Para 3.16.3 and 3.16.4 of the VCS standard V.4.0.				
Moreover, PP requested to details of the GSP period and comments received during GSP for the project activity.				
Project participant response				Date: 05-October-2021
Paragraph on grievance mechanism added to joint PD & MR				
Documentation provided by project participant				
Joint project description & Monitoring report v2 and COM-PRO191-V Procedure gestion des demandes externes				
DOE assessment				Date: 05-October-2021
PP have submitted revised Joint VCS PD & MR with the ongoing local stakeholders mechanism along with the records of the grievances during this MP. Project was under pipeline and open for the Global comments on VERRA website from 03-September-2021 to 03-October-2021. During this GSP period no comments were received. Same was checked from the VERRA project webpage. CAR thus closed.				

CAR ID	04	Section no.	4.1	Date: 04-October-2021
Description of CAR				
During review of the ER sheet, vintage wise roundup of baseline emission found missing. Further, Comparison of actual emission reductions and estimated found missing in Joint PD & MR, Section 6.5. Corrective action is sought.				
Project participant response				Date: 05-October-2021
Roundup of baseline emission added in ER sheet. Value corrected throughout report. Comparison of actual emission reduction and estimated added to joint PD & MR				
Documentation provided by project participant				

CAR ID	04	Section no.	4.1	Date: 04-October-2021
Description of CAR				
Joint project description & Monitoring report v2				
DOE assessment				Date: 05-October-2021
PP have submitted revised ER sheet with rounddown of baseline emissions appropriately. Further, comparison of estimated Vs actual emission reductions achieved is also now included in revised ER sheet and revised Joint VCS PD & MR. CAR closed.				

CAR ID	05	Section no.	4.2	Date: 04-October-2021
Description of CAR				
Detailed Information of metering equipment/energy meter are missing in Joint VS PD & MR. Corrective action sought.				
Project participant response				Date: 05-October-2021
Information and ID's of the metering equipment added to part 6.1				
Documentation provided by project participant				
Calibration report document				
DOE assessment				Date: 05-October-2021
PP have included details of the monitoring equipments in revised Joint VS PD & MR and same are found correct. CAR closed.				

FAR from this validation/verification

FAR ID	XX	Section No.		Date : DD/MM/YYYY
Description of FAR				
There is no FAR from this verification				
Project participant response				Date : DD/MM/YYYY
NA				
Documentation provided by project participant				
NA				
DOE assessment				Date: DD/MM/YYYY
NA				

APPENDIX 3: COMPETENCE OF TEAM MEMBERS AND TECHNICAL REVIEWERS

1. **Dr. Atul Takarkhede**, counts with 11 years of experience in field of Environmental Auditing, consulting and accreditation. He is an Expert in ISO 9001-14001, CO₂/GHG Reporting, Carbon Foot Print, Energy, Water and Waste Management Reporting for organizations environmental performance. His professional portfolio is mainly related with carrying out EIA, conducting QA/QC of EIA Reports; Conducting Environmental/water Audits; NABET requirements appliance. Furthermore, he counts with solid experience on CDM-VCS-GS consultancy and auditing. He has Ph.D. (Environmental Science) from Institute of Science, RTM Nagpur University, Nagpur, and he has already published different technical reports related to environmental science. Currently he is associated with True Quality Certifications Private Limited and is empaneled with APPLUS certification to carry out GHG audit.
2. **Mr. Denny Xue**, has a Bachelor's Degree on Thermal Energy Engineering and Master's Degree on Environmental Engineering. He has more than 10 years of experience on CDM project development. Before he joined Applus+ LGAI, he has been worked for Shanghai Chuanji Investment and Management which is a CDM consultancy company as a project manager for CDM project development. He is working with Applus+ since 2011 carrying out Validation and verification for CDM/GS/VCS project under scope 1 and 13 as auditor, lead auditor, technical expert and technical reviewer.

APPENDIX 4: ABBREVIATIONS

Abbreviations	Full texts
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction(s)
CL	Clarification request
CMS	Central Monitoring system
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
DNA	Designated National Authority
DOE	Designated Operational Entity
DR	Document Review
EF	Emission Factor
EIA	Environmental Impact Assessment
ER	Emission Reductions
FAR	Forward Action Request
GHG	Greenhouse gas(es)
GWP	Global Warming potential
PP	Project Participant