




**Validation report form for post-registration changes for
CDM project activities
(Version 03.0)**

BASIC INFORMATION

Title and UNFCCC reference number of the project activity	Title: Solar PV based power generation by Voltas Green in Mauritius UNFCCC reference number: 10537
Process track	<input type="checkbox"/> Prior approval <input checked="" type="checkbox"/> Issuance <input type="checkbox"/> Renewal of crediting period
Version number of the validation report	02
Completion date of the validation report	13/04/2021
Type(s) of PRCs	<input checked="" type="checkbox"/> Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents ¹ <input checked="" type="checkbox"/> Corrections <input type="checkbox"/> Changes to the start date of the crediting period <input type="checkbox"/> Inclusion of a monitoring plan <input type="checkbox"/> Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines or other methodological regulatory documents <input type="checkbox"/> Changes to the project design <input type="checkbox"/> Changes specific to afforestation and reforestation project activities
Version number of PDD to which this report applies	04
Project participants	Voltas Green Limited
Host Party	Mauritius
Applied methodologies and standardized baselines	AMS I.D-Grid connected renewable electricity generation, Version 18.0, valid from 28/11/2014 Standardized baseline: NA
Mandatory sectoral scopes	Sectoral scope – 01 Energy industries (renewable - / non-renewable sources)
Conditional sectoral scopes, if applicable	NA
Name and UNFCCC reference number of	KBS Certification Services Private Limited (KBS) Ref. No. E-0051

¹ Other standards, methodologies, methodological tools and guidelines (to be) applied in accordance with the applied(selected) methodologies are collectively referred to as the other (applied) methodological regulatory documents).

the DOE	
Name, position and signature of the approver of the validation report	 Mr. Kaushal Goyal Managing Director

SECTION A. Executive summary

>>The project activity consists of a green field solar photovoltaic (PV) power plant with an installed capacity of less than 15MW. The electricity generated is exported supplied to the grid of the Central Electricity Board (CEB) under a power purchase agreement/06/. The project displaces power generation using fossil fuels and hence leads to a reduction in greenhouse gas emissions. Voltas Green Limited has developed the project. The Solar PV power project based on polycrystalline technology at Queen Victoria site, FUEL substation, District of Flacq, Mauritius.

The summary of proposed changes are summarized as follows:

Post Registration Changes	
Sl. No.	Corrections in the PDD
1.	Total aggregated installed capacity of 5 invertors has been corrected from 12.24 MW _{ac} to 13.75 MW _{ac} . The AC power export capacity shall remain 12.24 MW _{ac} .
2.	The word “tri vector” for meters have been removed.
3.	The accuracy class of the meters have been corrected from 0.5s to 0.2s which is more accurate and hence, acceptable.
Temporary deviation	
1.	The start date of the current monitoring period for the project activity is 25/11/2019. However, the billing cycle for the project starts from 01/11/2019. Therefore, the exact data for the monitoring period ‘25/11/2019 to 30/11/2019’ could not be produced by the PP based on the monthly invoices. Therefore, PP has demonstrated the approach which involves simply using the DGR values of export from 25/11/2019 to 30/11/2019 which is found to be conservative.

The scope of the validation is defined as an independent and objective review of the revised project design document, the project’s baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against the CDM Validation and Verification Standard (version 02) and Project Standard (version 02), Kyoto Protocol requirements and UNFCCC rules. The report is based on the assessment of the revised project design document undertaken through stakeholder consultations, application of standard auditing techniques including but not limited to desk review, follow up actions (e.g., remote audit, electronic (telephone or e-mail) interviews) and also the review of the applicable approved methodological and relevant tools, guidance and CDM decisions.

Validation methodology and process

The validation has been performed as described in the VVS version 02.0 and constitutes the following steps:

- Desk review of the revised PDD and the relevant documents
- Interviews
- Issuance of Validation Report for the post-registration changes

Validation criteria

The following CDM requirements have been considered:

- Article 12 of the Kyoto Protocol,
- Modalities and procedures for CDM (Marrakech Accords)
- Subsequent decisions by the COP/MOP and CDM Executive Board
- Host country criteria
- Criteria given to provide for consistent project operations, monitoring and reporting.

The review of the project design documentation and the subsequent follow-up interviews have provided KBS with sufficient evidence to determine the project’s fulfillment of all the stated criteria. In our opinion, the project meets all applicable UNFCCC requirements for the CDM.

SECTION B. Validation team, technical reviewer and approver

>>

B.1. Validation team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection/ Remote audit	Interviews	Validation findings
1.	Team Leader, Technical Expert (1.2), local expert	IR	Dey	Ms. Deboshmita	Central office	x	Remote audit	x	x
2.	Verifier-Trainee	IR	Malik	Ms. Ananya	Central office	x	Remote audit	x	x

B.2. Technical reviewer and approver of the validation report on PRCs

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical Reviewer (TA 1.2)	IR	Chaudhari	Mr. Tushar	Central office
2.	Manager (Technical & Certification)	IR	Chaudhari	Mr. Tushar	Central office
3.	Authorizer	IR	Goyal	Mr. Kaushal	Central office

SECTION C. Means of validation**C.1. Desk/document review**

>>A desk review is undertaken, involving but not limited to,

- A review of the data and information presented to verify their completeness;
- A review of the monitoring plan and monitoring methodology, paying 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.

The list of documents reviewed is included in the section 'Appendix 3' of this report.

C.2. On-site inspection

As a result of the COVID-19 pandemic, taking into account the CDM Executive Board announcement to relax mandatory site visits till 30 June 2021/14/, 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 requirement to self-isolate upon return from specific countries), A DOE may postpone site visits for onsite inspections required by the “CDM validation and verification standard for project activities (version 02.0) (VVS-PA)”/10/.

If the site visits cannot be postponed, a proper justification should be provided by the DOE why the site visits cannot be postponed, including the demonstration of a significant impact of delaying the site visits on the DOE, or project participants or coordinating/ managing entity (e.g. commitment/ timeline as per the validation or verification contract, CER delivery commitment by project participants) reliance on applicable force majeure provisions in the validation or verification contracts, if needed.

KBS has contractual commitment for the verification process with PP and therefore, due to contractual obligations, the site visit cannot be postponed for an indefinite period of time. On consideration of the health risks posed by the COVID- 19 pandemic along with the dynamic nature of travel restrictions (throughout India), it has been determined that the physical site visit cannot be conducted in the current circumstances. Since, the site visit cannot be postponed but is not conducted due to the pandemic, DOE has used other standard auditing techniques (recommended by CDM EB) for verification as referred to in sections 9.1.3 of the VVS for PA /10/.

Assessment team has used the following alternative means for its assessment and to justify that they are sufficient for the purpose of validation. Along with desk review, audit team has conducted remote audit interview as follows:

- A complete desk review of the revised PDD.
- Assessment team has performed Microsoft teams application interview with PP in order to check the changes in the project design.
- Cross checks between information provided by interviewed personnel (i.e. by checking sources) to ensure that no relevant information has been omitted.
- Cross-check evaluation, for information received from interviews, under the scope of all information and references provided in revised PDD and supporting documents.

Details of interviewees, topics covered and additional information presented in the below section “C.3 Interviews”.

Duration of on-site inspection: DD/MM/YYYY to DD/MM/YYYY				
No.	Activity performed on-site	Site location	Date	Team member
4.				
...				

C.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Chand	Phool	CDM Consultant	16/03/2021 (Microsoft teams application interview)	Corrections in PDD.	Deboshmita Dey (Team Leader, Technical Expert (1.2), local expert) and Ananya Malik (Verifier-trainee)
2.	Ungapan	Kartikay	O&M incharge, Voltas Green Limited			

C.4. Sampling approach

>> Not applicable.

C.5. Clarification requests (CLs), corrective action requests (CARs) and forward action requests (FARs) raised

Areas of validation findings	No. of CL	No. of CAR	No. of FAR
Compliance with PDD form	00	00	00
Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents	00	00	00
Corrections	00	00	00
Changes to the start date of the crediting period	00	00	00
Inclusion of a monitoring plan	00	00	00
Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines or other methodological regulatory documents	00	00	00
Changes to the project design	00	00	00
Changes specific to afforestation and reforestation project activities	00	00	00
Others (please specify)	00	00	00
Total	00	00	00

SECTION D. Validation findings

D.1. Compliance with PDD form

Means of validation	The validation team reviewed the PDD/1/ that was provided by PP as part of proposed PRC and compared them with the current valid templates/form for PDD/13/ as available at UNFCCC website and found that these were consistent.
Findings	No findings raised
Conclusion	The validation team confirms that the proposed post registration changes as included in the revised PDD/1/ were presented by using the registered PDD/2/ and inline with the latest valid version of CDM-PDD-FORM/13/ and is in compliance with the instructions contained therein.

D.2. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents

Means of validation	<p>The start date of the current monitoring period for the project activity is 25/11/2019. However, the billing cycle for the project starts from 01/11/2019. Therefore, the exact data for the monitoring period '25/11/2019 to 30/11/2019' could not be produced by the PP based on the monthly invoices. Therefore, PP has demonstrated the approach which involves simply using the DGR values of export from 25/11/2019 to 30/11/2019 which is found to be conservative. The approach is in compliance with the para 231 (b) of CDM PS, version 02/16/.</p> <p>Also, PP has used full import data as per invoice raised for import for November, 2019 in order to have a conservative approach which is found to be acceptable by the assessment team.</p>
Findings	No finding raised.
Conclusion	The temporary deviation applied by the PP is in accordance with the para 231 (b) of CDM PS, version 02.

D.3. Corrections

Means of validation	<p>The following corrections are proposed in the revised PDD, which is summarized as follows:</p> <table border="1"> <thead> <tr> <th colspan="2">Post Registration Changes</th></tr> <tr> <th>S. No.</th><th>Corrections in the revised PDD</th></tr> </thead> <tbody> <tr> <td>1.</td><td>Total aggregated installed capacity of 5 invertors has been corrected from 12.24 MW_{ac} to 13.75 MW_{ac}. As per the registered PDD, there were 5 invertors each of 2750 kV, the aggregate of which comes out to be 13.75 MW_{ac} and not 12.24 MW_{ac}. The AC power export capacity</td></tr> </tbody> </table>	Post Registration Changes		S. No.	Corrections in the revised PDD	1.	Total aggregated installed capacity of 5 invertors has been corrected from 12.24 MW _{ac} to 13.75 MW _{ac} . As per the registered PDD, there were 5 invertors each of 2750 kV, the aggregate of which comes out to be 13.75 MW _{ac} and not 12.24 MW _{ac} . The AC power export capacity
Post Registration Changes							
S. No.	Corrections in the revised PDD						
1.	Total aggregated installed capacity of 5 invertors has been corrected from 12.24 MW _{ac} to 13.75 MW _{ac} . As per the registered PDD, there were 5 invertors each of 2750 kV, the aggregate of which comes out to be 13.75 MW _{ac} and not 12.24 MW _{ac} . The AC power export capacity						

		shall remain 12.24 MW _{ac} .
	2.	The word “tri vector” for meters have been removed as per the current implementation status of meters.
	3.	The accuracy class of the meters have been corrected from 0.5s to 0.2s which is more accurate and hence, acceptable.
	The assessment team confirms that the corrected information is the reflection of actual project information and does not affect any provision of the applied methodology in any manner, as a result, is in accordance with the applied methodology.	
Findings	No findings raised.	
Conclusion	<p>Based on the review of PDD and interview with PP, the validation team has accepted all the proposed corrections in the PDD in accordance with requirements of VVS for project activities (version 02.0). The assessment team confirms that the corrected information is an accurate reflection of actual project information and are in accordance with the applied methodology, the monitoring plan.</p> <p>The validation team confirms</p> <ul style="list-style-type: none"> ✓ The corrected information is an accurate reflection of actual project information; ✓ The corrected information is in accordance with the applied methodology and registered monitoring plan. ✓ the proposed revision points have been described, and an assessment has been provided to substantiate the reasons for each of the proposed revision points of the registered PDD, using objective evidence; ✓ the proposed revision of the PDD ensures that the level of accuracy and completeness in the monitoring and verification process is not reduced as a result of the revisions; ✓ the proposed revision of the monitoring plan is in accordance with the approved monitoring methodology (AMS I.D, Version 18.0) applicable to the project whilst ensuring the conservativeness of the emission reductions calculation; ✓ the information included in the latest PDD template is materially the same as the information in the registered PDD. The changes that are subject of the request for approval are in track change. 	

D.4. Changes to the start date of the crediting period

Means of validation	Not applicable.
Findings	Not applicable.
Conclusion	Not applicable.

D.5. Inclusion of a monitoring plan

Means of validation	Not applicable.
Findings	Not applicable.
Conclusion	Not applicable.

D.6. Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines or other methodological regulatory documents

Means of validation	Not applicable.
Findings	Not applicable.
Conclusion	Not applicable.

D.7. Changes to the project design

Means of validation	Not applicable.
Findings	Not applicable.
Conclusion	Not applicable.

D.8. Changes specific to afforestation and reforestation project activities

Means of validation	Not applicable.
Findings	Not applicable.
Conclusion	Not applicable.

SECTION E. Internal quality control

>> The draft validation report prepared by team leader is reviewed by an independent technical reviewer (having competence of relevant technical area himself/herself or through an independent technical area expert) to confirm the internal procedures established by KBS are duly followed and the validation report/opinion is reached in an objective manner and complies with the applicable CDM requirements.

The independent technical reviewer may approve or reject the draft validation report. The findings may be identified even at this stage, which needs to be satisfactorily resolved, before the request for PRC is submitted to UNFCCC. The final decision is taken by the Manager Technical and Certification. The technical reviewer and Manager (Technical & Certification) can be same person.

The final decision is authorized by Managing Director, KBS once the report is approved by the Manager (Technical & Certification).

SECTION F. Validation opinion

>>KBS Certification Services Pvt. Ltd. has been contracted by 'Voltas Green Limited' to undertake independent validation of the post registration changes of the CDM Project activity "Solar PV based power generation by Voltas Green in Mauritius" and UNFCCC Reference Number 10537 to ensure that the post registration changes meet all relevant requirements of the UNFCCC for CDM project activities including CDM VVS.

Validation methodology and process:

The validation has been performed as described in the VVS, version 02.0, and consists of the following steps:

- Review of the Registered PDD, version 03 dated 04/11/2019
- Review of the Revised PDD, Version 04 dated 22/03/2021
- Remote audit Interviews
- Preparation of the Validation Report

It is DOE's opinion that the revised documentation submitted is conforming to the requirements for Post Registration Changes as stipulated in the Clean Development Mechanism Validation and Verification Standard and thus DOE is recommending the approval of the post registration changes

Appendix 1. Abbreviations

Abbreviations	Full texts
ACM	Approved Consolidated Methodology
BE	Baseline Emissions
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM AS	CDM Accreditation Standard
CDM EB	CDM Executive Board
CERs	Certified Emission Reductions
CL	Clarification Request
CO ₂ e	Carbon dioxide equivalent
COP	Conference of Parties
DNA	Designated National Authority
DOE	Designated Operational Entity
EF	Emission Factor
EI	External Individuals
ERs	Emission Reductions
FAR	Forward Action Request
GHGs	Greenhouse Gas(es)
ISO	International Organization of Standardization
IPCC	Intergovernmental Panel on Climate Change
IR	Internal Resource
KP	Kyoto Protocol
kWh	Kilo Watt Hour
LE	Leakage Emissions
MR	Monitoring Report
MP	Monitoring Plan
MW	Mega Watt
MWh	Mega Watt Hour
O & M	Operation and Maintenance
PE	Project Emissions
PDD	Project Design Document
PS	Project Standard
PCP	Project Cycle Procedure
QA/QC	Quality Assurance/Quality Control
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation & Verification Standard

Appendix 2. Competence of team members and technical reviewers

Personnel Name:		Ms. Deboshmita Dey	
Qualified to work as:			
Team Leader	<input checked="" type="checkbox"/>	Technical Expert	<input checked="" type="checkbox"/>
Validator/Verifier	<input checked="" type="checkbox"/>	Financial Expert	<input type="checkbox"/>

Technical Reviewer	<input type="checkbox"/>	Local Expert (India, Mauritius)	<input checked="" type="checkbox"/>
Area(s) of Technical Expertise			
Sectoral Scope	Technical Area		
Energy industries (renewable/non-renewable sources)	TA 1.2: Energy generation from renewable energy sources		
Waste Handling and Disposal	TA 13.1 Waste Handling and Disposal		
Approved by (Manager C & T)	Sanjay Kandari		
Approval date:	14/01/2021		

Personnel Name:	Ms. Ananya Malik		
Qualified to work as:			
Team Leader (Trainee)	<input type="checkbox"/>	Technical Expert	<input type="checkbox"/>
Validator/Verifier- Trainee	<input checked="" type="checkbox"/>	Financial Expert	<input type="checkbox"/>
Technical Reviewer	<input type="checkbox"/>	Local Expert	<input type="checkbox"/>
Area(s) of Technical Expertise			
Sectoral Scope	Technical Area		
-	-		
Approved by (Manager C & T)	Sanjay Kandari		
Approval date:	07/12/2020		

Personnel Name:	Tushar Eknath Chaudhari		
Qualified to work as:			
Team Leader	<input checked="" type="checkbox"/>	Technical Expert	<input checked="" type="checkbox"/>
Validator/Verifier	<input checked="" type="checkbox"/>	Financial Expert	<input checked="" type="checkbox"/>
Technical Reviewer	<input checked="" type="checkbox"/>	Local Expert (India)	<input checked="" type="checkbox"/>
Area(s) of Technical Expertise			
Sectoral Scope	Technical Area		
Energy Industries (renewable/non-renewable sources)	TA 1.1: Thermal energy generation from fossil fuels and biomass including thermal electricity from solar		
Energy industries (renewable/non-renewable sources)	TA 1.2: Energy generation from renewable energy sources		
Energy demand	TA 3.1. Energy Demand		
Waste Handling and Disposal	TA 13.1 Waste Handling and Disposal		
Approved by	Manager Competency & Training		
Approval date:	02/09/2020		

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1.	PP	Revised PDD, Version 04	Dated 22/03/2021	PP
2.	PP	Registered PDD, Version 03	Dated 04/11/2019	UNFCCC website
3.	KBS Certification Services Pvt. Ltd.	Validation Report	Dated 22/11/2019	UNFCCC website
4.	CEB Mauritius and PP	Purchase Agreement between Voltas Green Ltd. and Central Electricity Board, Mauritius	Dated 16/12/2016	PP
5.	PP	Commissioning certificate	dated 12/12/2018	PP
6.	PP	Name plates of the equipments, Photographic evidence of the equipments including solar panels, transformers, energy meters etc.	-	PP
7.	CEB	CO ₂ baseline database for Mauritius Power Sector https://www.ceb.mu/	July 2018	Web link
8.	UNFCCC	Project webpage	https://cdm.unfccc.int/Projects/DB/KBS_Cert1574421069.55/view	Web link
9.	UNFCCC	AMS I.D-Grid connected renewable electricity generation, Version 18.0, valid from 28/11/2014	-	UNFCCC
10.	UNFCCC	CDM Validation and Verification Standard for PA	version 02	UNFCCC
11.	UNFCCC	Clean development mechanism project standard for PA	version 02	UNFCCC
12.	UNFCCC	Guidelines for Application of materiality in verifications version 2.0	-	Publicly Available
13.	UNFCCC	PDD Form, version 11	-	UNFCCC
14.	UNFCCC Secretariat	CDM Executive Board announcement to relax mandatory site visits by designated operational entities (DOEs) for an extended period till 30 June, 2021 due to the continuing COVID-19 pandemic	CDM EB 108 th meeting report	UNFCCC Secretariat

Appendix 4. Clarification requests, corrective action requests and forward action requests

Table 1. CLs from this validation

No CLs raised.

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

Table 2. CARs from this validation

No CARs raised.

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

Table 3. FARs from this validation

No FARs raised.

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

- - - - -

Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
03.0	31 May 2019	Revision to: <ul style="list-style-type: none">• Ensure consistency with version 02.0 of the “CDM validation and verification standard for project activities” (CDM-EB93-A05-STAN);• Make editorial improvements.
02.0	31 October 2017	Revision to align with the requirements in the “CDM validation and verification standard for project activities” (version 01.0).
01.0	23 March 2015	Initial publication.
Decision Class: Regulatory Document Type: Form Business Function: Registration Keywords: post-registration change, project activities, validation report		