




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

Complete this form in accordance with the instructions attached at the end of this form.

BASIC INFORMATION

Title and UNFCCC reference number of the project activity	Project 9425 : Biogas Recovery and Utilization project in Tay Ninh Province, Vietnam
Process track	<input checked="" type="checkbox"/> Prior approval <input type="checkbox"/> Issuance <input type="checkbox"/> Renewal of crediting period
Version number of the validation report	2.1
Completion date of the validation report	01/10/2021
Type(s) of PRCs	<input type="checkbox"/> Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents ¹ <input type="checkbox"/> Corrections <input type="checkbox"/> Changes to the start date of the crediting period <input type="checkbox"/> Inclusion of a monitoring plan <input checked="" 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	7.0
Project participants	MIWON VIETNAM Co., Ltd
Host Party	Vietnam
Applied methodologies and standardized baselines	AMS-III.H. ver. 16 - Methane recovery in wastewater treatment AMS-I.C. ver. 19 - Thermal energy production with or without electricity AMS-III.I. ver. 8 - Avoidance of methane production in wastewater treatment through replacement of anaerobic systems by aerobic systems
Mandatory sectoral scopes	1 : Energy industries (renewable - / non-renewable sources)

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).

	13 : Waste handling and disposal
Conditional sectoral scopes, if applicable	N/A
Name and UNFCCC reference number of the DOE	Korean Standards Association / E-0039
Name, position and signature of the approver of the validation report	<p>JinSung Park Executive Director of Certification Division</p> 

SECTION A. Executive summary

>> Korean Standards Association (KSA) has contracted with Miwon VietNam Co.,Ltd to carry out validation of post-registration changes for registered CDM project activity “Biogas recovery and Utilization project in Tay Ninh Province, Vietnam (ref.9425)”. The project activity is to change wastewater treatment system from open lagoon to anaerobic digester, and generated biogas is utilized as boiler fuel, replacing baseline fossil fuel.

The scope of validation is to assess the claims and assumptions made in the revised & proposed PDD version 7.0^{/2/} against CDM project standard for project activities version 2.0^{/6/}, CDM validation and verification standard for project activities version 2.0^{/7/}, applied methodologies^{/3//4//5/} and other applicable references for CDM project activities. The changes in the revised & proposed PDD version 7.0^{/2/} was assessed via reviewing the submitted evidences by the PPs and other related sources of information.

The proposed post-registration changes include permanent changes to the registered monitoring plan. As per the section 8.4 and Appendix of project standard for project activities version 2.0, issuance track may be chosen by project participant, but the PP requested KSA to proceed under prior-approval track. The validation of post-registration change in the revised PDD version 7.0 is an independent assessment and is being submitted as a approval request via prior-approval track to the CDM EB as per CDM requirements and procedures. Validation team confirms that the proposed post-registration changes comply with all the relevant CDM requirements of the applied methodologies and all other applicable tools and guidance.

This report includes KSA’s validation opinion on all the changes from the registered PDD version 6.1^{/3/} to the revised & proposed PDD version 7.0.

SECTION B. Validation team, technical reviewer and approver

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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	Interviews	Validation findings
1.	Team Leader	IR	CHOI	SeungKeun	KSA	V	V	V	V
2.	Validator	IR	PARK	SeongYong	KSA	V	V	V	V

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	IR	SOHN	Kyull	KSA
2.	Technical Expert	IR	CHO	YoungKwon	KSA
3.	Approver	IR	PARK	JinSung	KSA

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

>> The desk review for the validation of post-registration change was conducted primarily as a review of registered PDD version 6.1^{1/} and revised & proposed PDD version 7.0 dated 03/09/2021^{2/}. And the supplementary documents were also reviewed to cross-check information provided in the revised & proposed PDD.

A complete list of supplementary documents reviewed and referenced is listed in 'Appendix 3' of this report.

C.2. On-site inspection

Duration of on-site inspection: 22/06/2018 to 23/06/2018				
No.	Activity performed on-site	Site location	Date	Team member
1.	Inspection against actual project implementation status	Miwon Vietnam	22/06/2018	SeungKeun CHOI SeongYong PARK
2	Monitoring system	Miwon Vietnam	23/06/2018	SeungKeun CHOI SeongYong PARK

C.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Lim	EunHyuk	Daesang Corporation	22/06/2018 23/06/2018	Project implementation	SeungKeun CHOI SeongYong PARK
2	Roh	HyunSeok	Daesang Corporation	22/06/2018 23/06/2018	Monitoring system	SeungKeun CHOI SeongYong PARK
3	Shin	KwangSoo	Korea Research Institute on Climate Change (Consultant)	22/06/2018 23/06/2018	PRC	SeungKeun CHOI SeongYong PARK

C.4. Sampling approach

>> No sampling approach was adapted throughout validation process.

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	-	-	-
Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents	-	-	-
Corrections	-	-	-
Changes to the start date of the crediting period	-	-	-
Inclusion of a monitoring plan	-	-	-
Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines or other methodological regulatory documents	-	1	-
Changes to the project design	-	-	-
Changes specific to afforestation and reforestation project activities	-	-	-
Others (please specify)	-	-	-
Total	0	1	0

SECTION D. Validation findings**D.1. Compliance with PDD form**

Means of validation	At first, validation team visited UNFCCC CDM website to figure out latest version of CDM PDD template. Then, validation team compared registered PDD and revised PDD to determine description in the revised PDD has been materially same with original.
Findings	Registered PDD ^{1/} was prepared on PDD template version 4.1, and PP prepared revised PDD on PDD template ver.11, which is latest version. In addition, description and information in original PDD is correctly transferred and materially same with revised PDD.
Conclusion	Validation team confirmed that revised PDD was appropriately prepared with latest template, complying with relevant instruction.

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

Means of validation	No temporary deviations are claimed by the PP
Findings	N/A
Conclusion	N/A

D.3. Corrections

Means of validation	No corrections on registered PDD are claimed by the PP
Findings	N/A
Conclusion	N/A

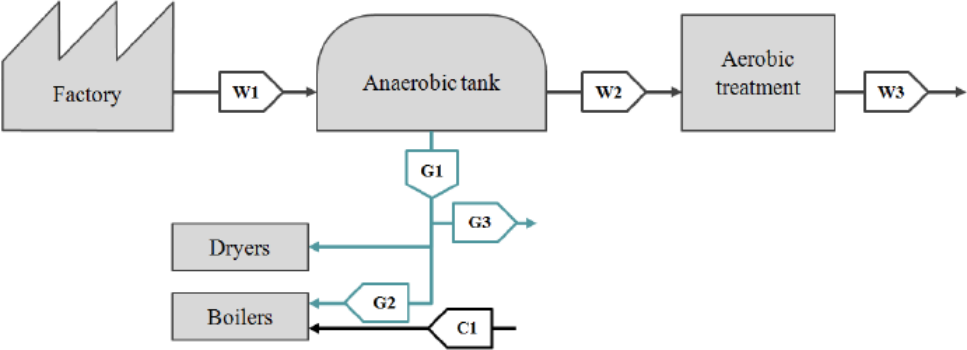
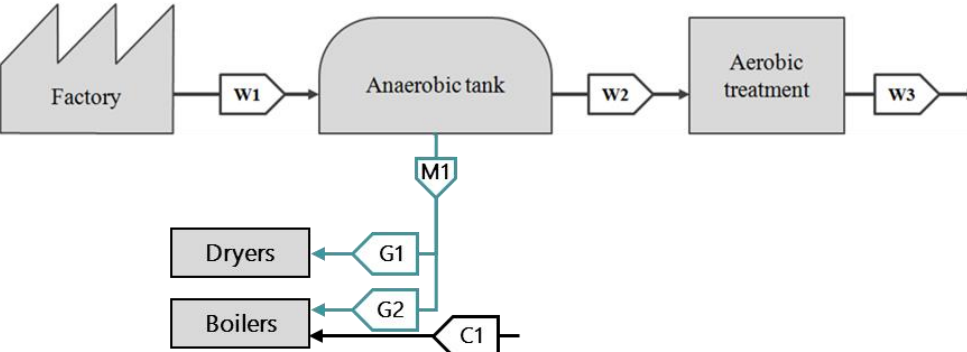
D.4. Changes to the start date of the crediting period

Means of validation	Start date of the crediting period has been changed and approved before this validation process. Initial crediting period was 01/07/2013-30/06/2023, and changed period is now 01/07/2014-30/06/2024.
Findings	N/A
Conclusion	N/A

D.5. Inclusion of a monitoring plan

Means of validation	Monitoring plan was already included in the registered PDD
Findings	N/A
Conclusion	N/A

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	<p>During on-site assessment, validation team inspected actual project implementation status, especially focused on monitoring aspect. Validation team figured out difference between monitoring system in the registered PDD and actual project site. Then, validation team requested PP to revised monitoring plan in the PDD reflecting identified differences.</p>
Findings	<p><u>(1) changes to location of measuring equipments</u></p> <p>In the registered(original) PDD^{/1/}, PP has planned to install biogas vent pipeline for emergency situation, but validation team found that vent line was not actually installed. In this reason, monitoring parameters ($BG_{vent,y}$ and $PE_{vent,y}$) are not needed anymore. Validation team interviewed chief of the factory, then identified that installation of emergency venting line is not mandatory in the host county. As a cross-check manner, validation team reviewed similar registered CDM project^{/10/} in the same host country. The PDD^{/10/} also describes that venting is not mandatory in the host county.</p>  <p style="text-align: center;">Figure 1. Monitoring diagram in the registered PDD</p> <p>As shown above figure 1, PP was planned to install three(3) gas flowmeters at G1, G2, and G3, with gas analyzer at G1. However, vent line has not been installed, so G3 has not been installed. Applied methodology AMS-III.H. (ver.16)^{/3/} paragraph 9 describes that if vent gases are channeled to storage bags, project emissions from venting gases do not have to be considered. So, $PE_{vent,y}$ is not required parameter in the applied methodologies, but defined in the original PDD by reflecting actual project design. In this reason, validation team concluded that this change does not impact on application of methodologies.</p> <p>Moreover, validation team reviewed monitored data^{/8/} of gas flowmeters and found that amount of gas flow at G1 is not accurately measured nor recorded because straight line before & after G1 is not secured enough. So, PP changed location of gas flowmeter of G1 to prior to dryers. Finally, monitoring diagram in the revised PDD was changed as shown below:</p> 

	<p style="text-align: center;">Figure 2. revised monitoring diagram</p> <p>Total amount of biogas captured by the project activity would be determined as sum of G1 and G2, with methane contents measured at M1. Validation team inspected project site and confirmed type and location of measuring equipments.</p> <p>Besides, equation numbers in original PDD are changed because equation (10) related to $PE_{vent,y}$ was removed.</p> <p><u>(2) changes to calibration frequency</u> Revising of monitoring system, PP also changed calibration frequency for measuring devices reflecting latest version of local regulation. Validation team reviewed applied regulation Decision 23/2013/TTBKHCN^{9/} issued by Ministry of Science and Technology of Viet Nam, and confirmed it.</p> <p><u>(3) Changes to monitoring organization</u> Last major change is organizational structure described in page 50, B.7.3 of original PDD. LIG system, consulting firm, was constructed to carry out monitoring activity and preparing issuance process, but now the company does not provide CDM consulting service anymore. In this reason, PP changed that headquarter of Miwon Vietnam Co., Ltd participated in the monitoring activity. So, organizational structure in B.7.3 of the PDD was changed.</p> <p>CAR 01 was raised and closed at this section.</p>
Conclusion	<p>Validation team concluded that permanent changes to the registered monitoring plan:</p> <ul style="list-style-type: none"> (1) still comply with relevant CDM requirements such as CDM PS PA, VVS PA, and applied methodologies. (2) do not reduce the level of accuracy of the monitoring compared with the requirements contained in the registered monitoring plan (3) is not likely to lead to a reduction in the accuracy of the calculation of emission reductions. (4) do not impact on estimated emission reductions because venting line was considered for emergency situation, so $PE_{vent,y}$ would be 0 in most cases.

D.7. Changes to the project design

Means of validation	<p>No project design was changed</p> <p>Vent for emergency situation has not been installed, but it is very short PVC pipeline with simple valve part, so changes to investment cost is negligible. In addition, existence of vent is not related to applied technology for the registered project – wastewater treatment and biogas capture. Lastly, it is only for emergency exhaust of biogas, so no estimated emission reduction is also changed. In this reason, validation team assessed the PRC as changes to monitoring plan, not to project design.</p>
Findings	N/A
Conclusion	N/A

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

Means of validation	N/A
Findings	N/A
Conclusion	N/A

SECTION E. Internal quality control

>> After validation team prepared draft validation report for PRC, KSA staff designated another validator to carry out internal technical review. Reflecting comments from technical reviewer, validation team revised validation report.

SECTION F. Validation opinion

>> Korean Standards Association (KSA) has performed the validation of the post registration changes for registered project "Biogas recovery and Utilization project in Tay Ninh Province, Vietnam(ref.9425)". This validation has been performed on the basis of the UNFCCC criteria, the approved methodologies and the relevant EB guidance and meeting reports.

The review of the revised technical information and monitoring plan, and the subsequent follow-up interviews have provided Korean Standard Association (KSA) with sufficient evidence to determine the fulfillment of stated criteria. As a result of the assessment, KSA can confirm the proposed revised PDD;

- Reflects actual monitoring system including type and location of measuring equipments;
- Determines concrete calibration requirements applied to each devices;
- Reflects actual organizational structure for monitoring activity; and
- Still maintain level of accuracy to calculate emission reductions.

Hence, KSA requests the revision of registered PDD for "Biogas recovery and Utilization project in Tay Ninh Province, Vietnam(ref.9425)".

Appendix 1. Abbreviations

Abbreviations	Full texts
KSA	Korean Standards Association
PA	Project Activities
PDD	Project Design Document
PP	Project Participant
PRC	Post-Registration Change
PS	Clean Development Mechanism Project Standard
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Clean Development Mechanism Validation and Verification Standard

Appendix 2. Competence of team members and technical reviewers

<h1>KSA</h1>	
<h2>CDM Validator/Verifier Certificate</h2>	
Seung-Keun Choi	
Certificate No. : CDM-015	
Technical Area : 1.2, 3.1, 13.1, 13.2	
Korean Standards Association hereby certifies that the above person is qualified by KSA's Qualification requirements to conduct validation and verification for CDM and GHG project.	
<u>VALID FROM</u>	<u>VALID UNTIL</u>
2021.01.07.	2024.01.06
<u>PRESIDENT OF KSA</u>	
	
KOREAN STANDARDS ASSOCIATION	
Digital Transformation Center, 5, Teheran-ro 69-gil, Gangnam-gu, Seoul	

KSA

CDM Validator/Verifier Certificate

SeongYong Park

Certificate No. : CDM-014

Technical Area : 1.1, 1.2, 4.1, 9.2, 13.1, 15.1

Korean Standards Association hereby certifies that the above person is qualified by KSA's Qualification requirements to conduct validation and verification for CDM and GHG project.

VALID FROM

2021.01.07.

VALID UNTIL

2024.01.06.

PRESIDENT OF KSA



KOREAN STANDARDS ASSOCIATION

Digital Transformation Center, 5, Teheran-ro 69-gil, Gangnam-gu, Seoul

KSA

CDM Validator/Verifier Certificate

Kyull Sohn

Certificate No. : CDM-001

Technical Area : 1.1, 1.2, 2.1, 3.1, 13.1, 13.2

Korean Standards Association hereby certifies that the above person is qualified by KSA's Qualification requirements to conduct validation and verification for CDM and GHG project.

VALID FROM

2021.01.07.

VALID UNTIL

2024.01.06.

PRESIDENT OF KSA



KOREAN STANDARDS ASSOCIATION

DT Center, 5, Teheran-ro 69-gil, Gangnam-gu, Seoul

KSA

CDM Validator/Verifier Certificate

Young-Kwon Cho

Certificate No. : CDM-022

Technical Area :1.2, 4.1, 5.1, 13.1, 14.1

Korean Standards Association hereby certifies that the above person is qualified by KSA's Qualification requirements to conduct validation and verification for CDM and GHG project.

VALID FROM

2021.01.07.

VALID UNTIL

2024.01.06

PRESIDENT OF KSA



KOREAN STANDARDS ASSOCIATION

Digital Transformation Center, 5, Teheran-ro 69-gil, Gangnam-gu, Seoul

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1	Project participant	Registered PDD	Ver.6.1	Project Participant
2	Project Participant	Proposed PDD for PRC	Ver.7.0	Project Participant
3	UNFCCC	AMS-III.H.	version 16	Others
4	UNFCCC	AMS-III.I.	version 08	Others
5	UNFCCC	AMS-I.C.	version 19	Others
6	UNFCCC	CDM Project Standard for Project Activities	Ver.2.0	Others
7	UNFCCC	CDM Validation and Verification Standard for Project Activities	Ver.2.0	Others
8	Project Participant	Monitoring record from April to June of 2018		Project Participant
9	The Ministry of Science and Technology	23/2013/TT-BKHCN	26/09/2013	Other
10	Tung Lam Company Limited	Registered PDD Biogas recovery and utilization at Tung Lam Ethanol Factory (ref.9369)	Ver.5, 28/12/2012	Others

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

Table 1. CLs from this validation

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

Table 2. CARs from this validation

CAR ID	01	Section no.	D.6	Date: 22/06/2018
Description of CAR				
PDD describes that BG _{burnt} and BG _{boiler} would be measured by gas flowmeters, but actual status not in line with the monitoring plan				
Project participant response				Date: 07/01/2021
PP installed a new gas flowmeter and started collecting data. According to the flowmeter, callibration frequency was corrected as per the Ministry of Science and Technology in Vietnam.				
Documentation provided by project participant				
Revised PDD				
DOE assessment				Date: 13/01/2021
KSA reviewed revised PDD and confirmed description is as checked by VT during on-site assessment				

Table 3. FARs from this validation

FAR ID	xx	Section no.		Date: DD/MM/YYYY
Description of FAR				
N/A				
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		