




**Validation report form for post-registration changes for
CDM project activities
(Version 02.0)**

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	Title: Double A Ethanol wastewater treatment plant UNFCCC reference number: 9394
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 on PRCs	01.1
Completion date of the validation report on PRCs	28/12/2017
Type(s) of PRCs	<input type="checkbox"/> Temporary deviations from the registered monitoring plan, applied methodologies or applied standardized baselines <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 checked="" type="checkbox"/> Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other applied standards or tools <input checked="" 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	Double A Ethanol Company Limited; Asian Development Bank, as Trustee of the Future Carbon Fund; Swedish Energy Agency
Host Party	Thailand
Applied methodologies and standardized baselines	ACM0014 – Treatment of Wastewater, version 05
Mandatory sectoral scopes linked to the applied methodology	13

Conditional sectoral scopes linked to the applied methodologies	NA ¹
Name and UNFCCC reference number of the DOE	Name: KBS Certification Services Pvt. Ltd. UNFCCC reference number: E-0051
Name, position and signature of the approver of the validation report on PRCs	 Kaushal Goyal Managing Director

¹ The project activity is selling the biogas to the nearby limekiln in the pulp mill for the heat generation i.e. co-firing in the boiler. Also PP is not claiming the emission reduction for the heat generation part, hence sectoral scope 1 is not applicable.

SECTION A. Executive summary

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The purpose of the project activity is to install anaerobic digesters which are able to produce and capture the methane rich biogas from the wastewater of the ethanol plant. The end use of biogas is proposed to be utilized for heat generation in the boiler of an adjacent limekiln where biogas would be co-fired in the boiler, displacing the use of Fuel oil (Bunker C) fuel for heat generation.

By installing an anaerobic digester system with biogas collection equipment and utilizing biogas to meet the energy demand for heat, the proposed project activity will substantially reduce greenhouse gas emissions into atmosphere in the following two ways:

- Reducing methane emitted from the open anaerobic lagoon wastewater treatment system; and;
- Reducing carbon dioxide emitted from the consumption of Fuel oil for heat generation;

However, as a conservative approach the emission reductions would be claimed only for the methane avoidance whereas fuel switch with biogas will not be considered for emission claim.

The project “Double A Ethanol wastewater treatment plant” – hereinafter referred as the “Project Activity” — is developed by Double A Ethanol Company Limited (aAE) for treating industrial wastewater from the aAE Ethanol plant - hereafter referred to as “Ethanol plant”. The construction of biogas plant was completed already. The commercial operation date (COD) of biogas plant was on 21/03/2014 as verified from document/06/. The wastewater generated by ethanol plant has been treated in the project activity since then.

The project is located in Prachinburi, Thailand. This is a Greenfield project activity.

KBS has been commissioned by “Double A Ethanol Company Limited.” to perform an independent verification of its registered CDM project, “Double A Ethanol wastewater treatment plant”, UNFCCC ref. no. 9394 for the reported GHG emission reductions for the given 2nd monitoring period 01/07/2016 up to 30/06/2017 (both dates included). During the verification, the auditing team observed Post registration changes. The changes are validated in this report.

The project applies for post registration changes with the following changes applied in the revised PDD /01/ as summarized below in accordance with the CDM PS for project activities version 01:

- a) Corrections in accordance with para 233 of CDM project standard for project activities/08/;
- b) Permanent changes to the registered monitoring plan in accordance with para 239 of CDM project standard for project activities/08/;
- c) Project design changes in accordance with para 242 (b) of CDM project standard for project activities/08/;

The scope of the validation is defined as an independent and objective review of the revised project design document /01/, 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 for project activities, version 01/09/ and CDM Project Standard for project activities, version 01/08/, 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., on site visit, 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 01.0 for project activities 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 fulfilment 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

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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, Technical Expert (TA 13.1)	IR	Sharma	Chetan Swaroop	Central Office	✓	✓	✓	✓
2.	Local Expert	EI	Phoolchareon	Siam	Central Office	✓	✓	✓	

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 13.1)	IR	Badaya	Rohit	Central office
2	Manager Technical & Certification	IR	Kandari	Sanjay	Central office
3	Authorizer	IR	Goyal	Kaushal	Central office

SECTION C. Means of validation

C.1. Desk/document review

>>The revised PDD and supporting background documents related to the project design and baseline were reviewed.

Furthermore, the validation team used additional documentation by third parties like host party legislation, technical reports referring to the project design or to the basic conditions and technical data. The list of documents reviewed during the validation process is mentioned in the Appendix-3 of this report.

C.2. On-site inspection

The post-registration changes were observed during the site visit of verification of 2nd monitoring period. Hence, the activity performed during the verification is detailed below:

Duration of on-site inspection: 15/11/2017				
No.	Activity performed on-site	Site location	Date	Team member
1.	Implementation and Operation of the CDM project activity based on registered Monitoring Plan and physical features of the project activity as per registered PDD	304 Industrial Estate in Prachinburi, (Thailand)	15/11/2017	Chetan Swaroop Sharma (Team Leader, Technical Expert (TA 13.1)),

2.	Information flows for generating, aggregating and reporting the monitoring parameters	Plant location		Siam Phoolchareon (Local Expert)
3.	Competency of the operating personnel, monitoring personnel and calibrating agencies			
4.	Data collection procedures			
5.	Calibration performance and monitoring practices followed for monitoring equipment's used in the project activity			
6.	Quality Control and Quality Assurance procedures against the approved monitoring plan			
7.	Calculation and assumptions made in determining the GHG data and emission reductions			
8.	Compliance with CDM criterion and relevant guidance with respect to monitoring plan			
9.	Level of accuracy (Materiality) of the monitoring activity			

C.3. Interviews

The post-registration changes were observed during the site visit of verification of 2nd monitoring period. Hence, the activity performed during the verification is detailed below:

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Chanla	Prisna	Biogas Production Manager	15/11/2017	<ul style="list-style-type: none"> - General aspects of the project - Changes since validation - Remaining issues from validation - Quality management system - Involved personnel and responsibilities - Training and practice of the operational personnel - Implementation of the monitoring plan - Monitoring data management - Data uncertainty and residual risks - Procedural aspects of the Monitoring - Maintenance - Data analysis - Issues in the MR - ER calculation 	Chetan Swaroop Sharma (Team Leader, Technical Expert (TA 13.1)), Siam Phoolchareon (Local Expert)
2.	Khunkngsatian	Issara	Biogas Production Engineer			
3.	Khunikakorn	Ladaporn Kat	Project Manager, South pole (CDM Consultant)			
4.	Raya	Sirinut	Project Manager, South pole (CDM Consultant)			

C.4. Sampling approach

>>Not used.

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	-	02	-
Temporary deviations from the registered monitoring plan, applied methodologies or applied standardized baselines	-	-	-
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 applied standards or tools	-	-	-
Changes to the project design	01	-	-
Changes specific to afforestation and reforestation project activities	-	-	-
Others (please specify)	-	-	-
Total	01	02	00

SECTION D. Validation findings

D.1. Compliance with PDD form

Means of validation	The revised PDD (version 04, dated 18/12/2017)/01/ is filled in the template CDM - PDD, version 10.1 which is the valid version at the time of submission for request for PRC. The template has not been altered and no modifications have been made to the font, format, headings and logo. All the sections of the PDD are checked for the compliance with the "Instructions for filling out the project design document form for CDM project activities" provided in the PDD template.
Findings	CAR-01 and CAR-02 have been raised in this regard. Refer Appendix-4 for more details.
Conclusion	The following is confirmed: 1. The PDD/01/ is completed using the valid version of PDD at the time of submission and PP used appropriate type of template i.e., Large scale. 2. All the information has been correctly transferred from registered PDD /02/ (Version 03.1, dated 27/12/2012) to the current PDD (Version 04, dated 18/12/2017) /01/ which is filled in the latest PDD form available in UNFCCC website. Validation team confirms that the transfer of information from the old form to the new form is correct and materially the same as the information in the registered PDD /02/. 3. PDD is in compliance with the instruction provided in the template. 4. As per the requirement of PRC, both clean and track change copy of PDD is submitted for validation.

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

Means of validation	No such deviation is sought
Findings	NA
Conclusion	NA

D.3. Corrections

Means of validation	PP has updated the Global warming potential for CH ₄ (from 21 to 25) corresponding to the Ex-ante parameter "GWP _{CH₄} " fixed at registration of the CDM project activity as described in the registered PDD /02/. PP has documented the change in the revised PDD/01/. PP has also revised the ex-ante ER sheet /14/ accordingly. The Ex-ante emission reductions have been changed from 170,983 tCO ₂ e /02/ to 204,921 tCO ₂ e /01/. Further the PP has updated the project participant information on page 1, section A.4, Appendix 1 of the revised PDD /01/ as per the unfccc webpage https://cdm.unfccc.int/Projects/DB/RINA1356766119.2/view . PP has already
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	<p>informed the updated project participant information by revised MoC and corresponding LoA from Sweden has been taken as verified from UNFCCC webpage /15/.</p> <p>Validation team has checked the revised PDD /01/ and the revised ex-ante ER sheet /14/ and found OK.</p> <p>This change has been reported as correction and the revised PDD /01/ in clean and track change mode in the latest available form to fill the PDD for Large scale project activity has been submitted. The change is as per the para 233 of the project standard for project activities version 01 /08/.</p> <p>The changes are correctly reported in the revised PDD (version 04 dated 18/12/2017) /01/ and the revised ex-ante ER sheet /14/.</p>
Findings	No CAR/CL raised in this regard.
Conclusion	<p>The validation team confirms the below:</p> <ul style="list-style-type: none"> • PP has submitted the revised PDD in the latest format. • The changes are correctly applied in the revised PDD. • PP has revised the Ex-ante ER sheet and the change is correctly applied. • The correction does not affect the design of the project activity. • The change is as per the para 233 of the project standard for project activities version 01 /08/. <p>Hence, validation team accepts the correction reported in the revised PDD /01/.</p>

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

Means of validation	No change.
Findings	NA
Conclusion	NA

D.5. Inclusion of a monitoring plan

Means of validation	This section is not applicable as PP did not include monitoring plan.
Findings	NA
Conclusion	NA

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

Means of validation	<p>The validation team has conducted a site visit on 15/11/2017 /11/ and found that PP has installed two new en-closed flares under the project activity for the reliability of the biogas combustion in the project activity. The enclosed flares have been operating since September 2016 as verified from the on-site visit interview and document review /05/. Validation team has checked the technical detail /05/ of the installed two en-closed flares and found consistent with the information given under section A.3 of the revised PDD /01/.</p> <p>Because of this change, PP has revised the monitoring plan in compliance with the “Project emissions from flaring version 02.0.0” /12/ which was found OK by the validation team. PP has included an Ex-ante parameter “SPEC_{flare}” under the section B.6.2 of the revised PDD /01/ and also revised section B.6.1 of the revised PDD /01/ to be in compliance with the applied tool /12/ which was found OK by validation team. Validation team has checked the Manufacturer’s flare specifications /05/ along with Minimum and maximum inlet flow rate/operating temperature and found the revised PDD /01/ information OK and in compliance with the tool /12/.</p> <p>Validation team has also checked the revised PDD /01/ and found that with the additional installation of two enclosed flare system in the project, the project activity is still applicable under ACM0014 version 05 /04/. The justification on applicability condition of ACM0014 remains the same as per table B2.2 of the registered PDD /02/. The installation of additional en-closed flares only increases the reliability of the biogas combustion in the project activity and has no impact on the applicability and application of the applied methodology. Hence, there is no impact on the applicability of the applied methodology due to the actual change of installation of enclosed flare system.</p> <p>The GHG emission reductions will not be over-estimated as a result of these permanent changes. Further the installation of the enclosed flares will not impact the accuracy and completeness in the monitoring of the project activity compared with the requirements contained in the registered monitoring plan /02/. Instead the installation of enclosed flare system will provide higher combustion efficiency and increase safety issue in the project.</p> <p>The change is as per paragraph 239-240 of project standard for project activities Version 01 /08/.</p> <p>For this change, PP has submitted the revised PDD /01/ in clean and track change mode in the latest available form to fill the PDD for Large scale project activity and found OK.</p> <p>The changes are correctly reported in the revised PDD (version 04 dated 18/12/2017) /01/.</p>
Findings	No CAR/CL raised in this regard.
Conclusion	<p>The validation team confirms the below:</p> <ul style="list-style-type: none"> • PP has submitted the revised PDD in the latest format. • The changes are correctly applied in the revised PDD /01/. • All above changes incorporated by PP are in compliance with the para 239-240 of CDM PS for project activities, version 01 /08/. • The change in the monitoring plan does not impact the applicability of the methodology. • The change in the monitoring plan is in compliance with the applied tool “Project emissions from flaring” version 02.0.0. <p>Hence, validation team accepts the design change reported in the revised PDD /01/.</p>

D.7. Changes to the project design

Means of validation	The validation team has conducted a site visit on 15/11/2017 /11/ and found that PP has installed two new en-closed flares under the project activity for the reliability of the biogas combustion in the project activity. The enclosed flares have been operating since September 2016 as verified from the on-site visit interview and document review /05/. The specifications of the enclosed flares are provided in section A.3 of the revised PDD /01/ correctly. Validation team has raised CL-01 in this regard and successfully closed.											
	Validation team has checked the technical detail /05/ of the installed two en-closed flares and found consistent with the information given under section A.3 of the revised PDD /01/.											
	The change is as per paragraph 242 (b) of project standard for project activities Version 01 i.e. "Addition of component or extension of technology" /08/. The actual changes do not adversely impact any of these:											
	(a) The applicability and application of the applied methodology i.e. "ACM0014 ver. 5 - Treatment of wastewater"; (b) The compliance of the monitoring plan with the applied methodologies; (c) The level of accuracy and completeness in the monitoring of the project activity compared with the requirements contained in the registered monitoring plan; (d) The additionality of the project activity; (e) The scale of the project activity.											
	The justification for each of above criteria is given below:											
	<table><tr><th>The impact of actual change</th><th>PP Justification</th><th>Validation team justification</th></tr><tr><td>(a) The applicability and application of the applied methodologies with which the project activity has been registered;</td><td><p>The scenario of the project is still in compliance with scenario 1 as per Table B2.1. There is no change in baseline situation. The wastewater is treated the anaerobic digester of the project activity. The effluent treated is sent to open lagoons. The sludge generated by the project is utilised in the plantation area under aerobic condition. The biogas generated by the biogas system is utilised in limekiln. The excess biogas is flared in open and enclosed flare systems.</p><p>With the additional installation of enclosed flare system in the project, the project activity is still applicable under ACM0014 version 05. The justification on applicability condition of ACM0014 remains the same as per table B2.2.</p><p>Hence, there is no impact due to the actual change of installation of enclosed flare system.</p></td><td><p>Validation team has checked the registered PDD /02/ and found that with the additional installation of two enclosed flare system in the project, the project activity is still applicable under ACM0014 version 05. The justification on applicability condition of ACM0014 remains the same as per table B2.2 of the registered PDD /02/. The installation of additional en-closed flares only increases the reliability of the biogas combustion in the project activity and has no impact on the applicability and application of the applied methodology.</p><p>Hence, there is no impact due to the actual change of installation of enclosed flare system.</p></td></tr><tr><td>(b) The compliance of the monitoring plan with the applied methodologies and, where applicable, the applied</td><td>By operating enclosed flare, the monitoring plan is still in compliance with the applied methodology and tool: "Project</td><td>The monitoring plan is still in compliance with the applied methodology /04/ and</td></tr></table>	The impact of actual change	PP Justification	Validation team justification	(a) The applicability and application of the applied methodologies with which the project activity has been registered;	<p>The scenario of the project is still in compliance with scenario 1 as per Table B2.1. There is no change in baseline situation. The wastewater is treated the anaerobic digester of the project activity. The effluent treated is sent to open lagoons. The sludge generated by the project is utilised in the plantation area under aerobic condition. The biogas generated by the biogas system is utilised in limekiln. The excess biogas is flared in open and enclosed flare systems.</p> <p>With the additional installation of enclosed flare system in the project, the project activity is still applicable under ACM0014 version 05. The justification on applicability condition of ACM0014 remains the same as per table B2.2.</p> <p>Hence, there is no impact due to the actual change of installation of enclosed flare system.</p>	<p>Validation team has checked the registered PDD /02/ and found that with the additional installation of two enclosed flare system in the project, the project activity is still applicable under ACM0014 version 05. The justification on applicability condition of ACM0014 remains the same as per table B2.2 of the registered PDD /02/. The installation of additional en-closed flares only increases the reliability of the biogas combustion in the project activity and has no impact on the applicability and application of the applied methodology.</p> <p>Hence, there is no impact due to the actual change of installation of enclosed flare system.</p>	(b) The compliance of the monitoring plan with the applied methodologies and, where applicable, the applied	By operating enclosed flare, the monitoring plan is still in compliance with the applied methodology and tool: "Project	The monitoring plan is still in compliance with the applied methodology /04/ and		
The impact of actual change	PP Justification	Validation team justification										
(a) The applicability and application of the applied methodologies with which the project activity has been registered;	<p>The scenario of the project is still in compliance with scenario 1 as per Table B2.1. There is no change in baseline situation. The wastewater is treated the anaerobic digester of the project activity. The effluent treated is sent to open lagoons. The sludge generated by the project is utilised in the plantation area under aerobic condition. The biogas generated by the biogas system is utilised in limekiln. The excess biogas is flared in open and enclosed flare systems.</p> <p>With the additional installation of enclosed flare system in the project, the project activity is still applicable under ACM0014 version 05. The justification on applicability condition of ACM0014 remains the same as per table B2.2.</p> <p>Hence, there is no impact due to the actual change of installation of enclosed flare system.</p>	<p>Validation team has checked the registered PDD /02/ and found that with the additional installation of two enclosed flare system in the project, the project activity is still applicable under ACM0014 version 05. The justification on applicability condition of ACM0014 remains the same as per table B2.2 of the registered PDD /02/. The installation of additional en-closed flares only increases the reliability of the biogas combustion in the project activity and has no impact on the applicability and application of the applied methodology.</p> <p>Hence, there is no impact due to the actual change of installation of enclosed flare system.</p>										
(b) The compliance of the monitoring plan with the applied methodologies and, where applicable, the applied	By operating enclosed flare, the monitoring plan is still in compliance with the applied methodology and tool: "Project	The monitoring plan is still in compliance with the applied methodology /04/ and										

	standardized baselines;	emissions from flaring". The monitoring parameter of enclosed flare system, which is relevant to flare efficiency, is included in the revised monitoring plan as well.	<p>also the tool "Project emissions from flaring version 02.0.0" /12/.</p> <p>PP has revised the monitoring plan in compliance with the tool /12/ which was found OK by the validation team.</p> <p>PP has included an Ex-ante parameter "SPEC_{flare}" under the section B.6.2 of the revised PDD /01/ in compliance with the tool /12/ which was found OK by validation team.</p> <p>Validation team has checked the Manufacturer's flare specifications /05/ along with Minimum and maximum inlet flow rate/operating temperature and found the revised PDD /01/ information OK.</p>
	(c) The level of accuracy and completeness in the monitoring of the project activity compared with the requirements contained in the registered monitoring plan;	As mentioned above, the installation of enclosed flare system will provide higher combustion efficiency and increase safety issue in the project. There is no impact on the level of accuracy and completeness.	<p>The installation of the enclosed flares will not impact the accuracy and completeness in the monitoring of the project activity compared with the requirements contained in the registered monitoring plan /02/.</p> <p>Instead the installation of enclosed flare system will provide higher combustion efficiency and increase safety issue in the project.</p>
	(d) The additionality of the project activity;	The installation of enclosed flare system has no impact to the additionality of the project activity. The project proponent has to invest more on flaring system part in the project without any additional revenue sources. Therefore, this additional system has no impact to the additionality of the project.	The justification given by the PP seems ok and acceptable to the validation team. Validation team has checked the registered PDD /02/ and found PP response OK.
	(e) The scale of the project activity	There is no change in scale of project activity.	There is no impact on the scale of the project activity because of the

	changes.
	<p>For this change, PP has submitted the revised PDD /01/ in clean and track change mode in the latest available form to fill the PDD for Large scale project activity and found OK.</p> <p>The changes are correctly reported in the revised PDD (version 04 dated 18/12/2017) /01/.</p>
Findings	CL-01 has been raised in this regard and successfully closed. Refer Appendix 4 of this report for more details.
Conclusion	<p>The validation team confirms the below:</p> <ul style="list-style-type: none"> • PP has submitted the revised PDD in the latest format. • The changes are correctly applied in the revised PDD /01/. • All above changes incorporated by PP are in compliance with the para 242 (b) of CDM PS for project activities, version 01 /08/. • The change in the project design does not adversely impact the following: <ul style="list-style-type: none"> ○ The applicability and application of the applied methodology. ○ The compliance of the monitoring plan with the applied methodology. ○ The level of accuracy and completeness in the monitoring of the project activity compared with the requirements contained in the registered monitoring plan ○ The additionality of the project activity ○ The scale of the project activity <p>Hence, validation team accepts the design change reported in the revised PDD /01/.</p>

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

Means of validation	It is not afforestation or reforestation project activity.
Findings	NA
Conclusion	NA

SECTION E. Internal quality control

>>Following the completion of the assessment process and a recommendation by the assessment team, the validation opinion prepared by Team Leader is independently reviewed by internal Technical Reviewer. TR reviews if all the KBS procedures have been followed and all conclusions are justified in accordance with applicable standards, procedures, guidance and CDM decisions. The TR either is qualified for the technical area within the CDM sectoral scope(s) applicable to project activity or is supported by qualified independent technical expert at this stage

The Technical Reviewer will either accept or reject the recommendation made by the assessment team. The findings can be raised at this stage and PP must resolve them within agreed timeline

The opinion recommended by Technical Reviewer will be confirmed by Manager Technical & Certification and finally authorized by the Managing Director on behalf of KBS as final validation opinion.

SECTION F. Validation opinion

>>KBS Certification Services Pvt. Ltd. has been contracted by 'Double A Ethanol Company Limited.' to undertake independent validation of the post registration changes of the CDM Project activity "Double A Ethanol wastewater treatment plant" and UNFCCC Reference Number 9394 as described in the revised PDD, version 04, dated 18/12/2017 to ensure that the post registration changes meet all relevant requirements of the UNFCCC for CDM project activities including CDM validation and verification standard for project activities, Version 01.0. The request is to perform the independent and objective validation on PDD for the post registration changes.

Validation methodology and process:

The validation has been performed as described in the CDM validation and verification standard for project activities, Version 01.0, and consists of the following steps:

- Review of the Registered PDD, version 3.1 dated 27/12/2012
- Desk review of the revised PDD, version 4.0 dated 18/12/2017, and the relevant documents
- Interviews/site visit

- Preparation of the Validation Report, version 01, dated 27/12/2017

The validation team confirms that the revised PDD has been submitted in the new format and is materially the same as the information in the registered PDD.

The validation team also confirms that ex-ante ER sheet has been revised /14/ only because of the correction i.e. change of GWP_{CH_4} . There is no other change in the estimated emission reduction because of these post-registration changes.

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

Appendix 1. Abbreviations

Abbreviations	Full texts
BE	Baseline Emissions
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CL	Clarification request
COP	Conference of Parties
DOE	Designated Operational Entity
DR	Document Review
EB	Executive Board
ERs	Emission Reductions
FAR	Forward Action Request
GHG	Greenhouse gas(es)
KBS	KBS Certification Services Pvt. Ltd.
KP	Kyoto Protocol
LE	Leakage Emissions
MOP	Meeting of Parties
MoC	Modalities of Communication
MoV	Means of Verification
MP	Monitoring Plan
PA	Project Activity
PDD	Project Design Document
PE	Project Emissions
PP	Project Participant
PS	Project Standard
PCP	Project Cycle Procedure
QA/QC	Quality Assurance/Quality Control
T&C	Technical & Certification
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation & Verification Standard

Appendix 2. Competence of team members and technical reviewers

Personnel Name:		Chetan Swaroop Sharma	
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		
	TA 1.2: Energy generation from renewable energy sources		
Energy Demand	TA 3.1. Energy demand		
Waste handling and disposal	TA 13.1. Solid waste and wastewater		
	TA 13.2. Manure		

Approved by (Manager C & T)	Sanjay Kandari
Approval date:	01/05/2017

Personnel Name:		SIAM PHOOLCHAROEN	
Qualified to work as:			
Team Leader	<input type="checkbox"/>	Technical Expert	<input type="checkbox"/>
Validator/Verifier	<input type="checkbox"/>	Financial Expert	<input type="checkbox"/>
Technical Reviewer	<input type="checkbox"/>	Local Expert (Thailand)	<input checked="" type="checkbox"/>
Area(s) of Technical Expertise			
Sectoral Scope		Technical Area	
NA		NA	
Approved by (Manager C & T)		Sanjay Kandari	
Approval date:		11/11/2016	

Personnel Name:		Rohit Badaya	
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 1.2: Energy generation from renewable energy sources		
	TA 1.1: Thermal energy generation from fossil fuels and biomass including thermal electricity from solar		
Energy demand	TA 3.1. Energy Demand		
Waste Handling and Disposal	TA 13.1 Waste Handling and Disposal TA 13.2 Manure		
Approval date:		16/10/2017	

Personnel Name:		Sanjay Kandari	
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 TA 13.2 Manure		
Approved by (Manager C & T)		Akhilesh Joshi	

Approval date:	11/12/2015
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Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1.	PP	Revised PDD in clean and track change	Version 04, dated 18/12/2017	PP
2.	PP	Registered PDD	Version 03.1, dated 27/12/2012	Publically available
3.	RINA	Validation Report	Version 1.2 dated 29/12/2012	Publically available
4.	UNFCCC	CDM Methodology: ACM0014 – Treatment of Wastewater	Version 05	Publically available
5.	Technology supplier (Napatr Service (2004) Co, Ltd.)	Manufacturer's flare specifications for newly installed two en-closed flares along with testing results, control line diagram, single line diagram, operation and maintenance procedure, troubleshooting etc.	-	Double A Ethanol Company Limited.
6.	PP	Performance acceptance certificate to support commissioning of the project	-	PP
7.	UNFCCC	PDD Form (CDM-PDD)	Version 10.1	Publically available
8.	UNFCCC	CDM Project Standard for project activities	Version 01.0	Publically available
9.	UNFCCC	CDM Validation and Verification Standard for project activities	Version 01.0	Publically available
10.	UNFCCC	Glossary "CDM terms"	Version 09.1	Publically available
11.	PP	Photographic evidence taken during site visit	Dated 15/11/2017	PP
12.	UNFCCC	Project emissions from flaring https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-06-v2.0.pdf	Version 02.0.0	Publically available
13.	PP	Biogas generation and flaring data for the year 2014-2016	-	PP
14.	PP	Revised Ex-ante ER sheet	Version 04, dated 18/12/2017	PP
15.	UNFCCC	https://cdm.unfccc.int/Projects/DB/RINA1356766119.2/view	-	UNFCCC

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

Table 1. CLs from this validation

CL ID	01	Section no.		Date:	24/11/2017
Description of CL					
As per the tool "Project emissions from flaring" Version 02.0.0, PP need to provide Minimum and maximum inlet flow rate/operating temperature as per Manufacturer's flare specifications (corresponding to the monitoring parameter "SPECflare") for the determination of the flare efficiency. In the revised PDD corresponding to the proposed PRC only single values of the flow rate and operating temperature have been provided.					
Project participant response					Date: 18/12/2017
The following parameters as per the tool "Project emission from flaring" version 02 have been included in the revised PDD;					
<ul style="list-style-type: none"> - Minimum and maximum of inlet flow rate are 0 Nm³/hr and 500 Nm³/hr, respectively. - Minimum and maximum of operating temperature are 500 °C and 1,100 °C, respectively. 					
Those parameters are determined as per the specification recommended by the manufacturer as Att – P2.1.					
Documentation provided by project participant					
Att-P2.1 Specification of enclosed flare Revised PDD					
DOE assessment					Date: 26/12/2017
Corrections have been done in the revised PDD /01/ and found OK. Validation team has checked the Manufacturer's flare specifications /05/ for Minimum and maximum inlet flow rate/operating temperature and found the corrections OK. Hence this CL is closed.					

Table 2. CARs from this validation

CAR ID	01	Section no.		Date:	24/11/2017
Description of CAR					
From the review of the revised PDD corresponding to the proposed PRC/01/, validation team has found that PP has deleted the document history which is part of the PDD filling form/06/.					
Project participant response					Date: 18/12/2017
Document information has been added into the revised PDD.					
Documentation provided by project participant					
Revised PDD					
DOE assessment					Date: 26/12/2017
Corrections have been done in the revised PDD /01/ and found consistent with the PDD filling form /06/. Hence this CAR is closed.					

CAR ID	02	Section no.		Date:	24/11/2017
Description of CAR					
PP need to fill section A.6 of the Revised PDD /01/ as per the PDD filling form /06/.					
Project participant response					Date: 18/12/2017
This section is not applicable to the existing registered CDM project. The project activity has been registered as CDM project since 31/12/2012. The additional information has been included in the revised PDD.					
Documentation provided by project participant					
Revised PDD					
DOE assessment					Date: 26/12/2017
Corrections have been done in the revised PDD /01/ and found OK. Hence this CAR is closed.					

Table 3. FARs from this validation

No FAR from this validation.

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

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Document information

Version	Date	Description
02.0	31October2017	Revision to align with the requirements in the “CDM validation and verification standard for project activities” (version 01.0).
01.0	23March 2015	Initial publication.
Decision Class: Regulatory		
Document Type: Form		
Business Function: Registration		
Keywords: post-registration change, project activities, validation report		