




**Validation report form for renewal of crediting period 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	Recovery and Utilization of Associated Gas at Pondok Tengah LPG Plant – PT. Yudistira Energy (6008)
Number and duration of the next crediting period	CP No.: 2 nd 01 January 2020 to 31 December 2026
Version number of the validation report for RCP	1
Completion date of the validation report for RCP	25/05/2019
Version number of PDD to which this report applies	4
Project participants	PT. Yudistira Energy Agrinergy Pte Ltd
Host Party	Indonesia
Applied methodologies and standardized baselines	AM0009: Recovery and utilization of gas from oil fields that would otherwise be flared or vented --- Version 7.0
Mandatory sectoral scopes linked to the applied methodologies	Sectoral scope: 10
Conditional sectoral scopes linked to the applied methodologies	NA
Estimated amount of annual average GHG emission reductions or GHG removals by sinks in the next crediting period	143,428 tCO ₂ e
Name and UNFCCC reference number of the DOE	EPIC Sustainability Services Private Limited (E-0062)
Name, position and signature of the approver of the validation report for RCP	 K. Sudheendra, Director and Head Operations

SECTION A. Executive summary

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Agrinergy Pte Ltd (hereinafter Project participant or PP) had engaged EPIC to perform validation of renewal of crediting period from 01 January 2020 to 31 December 2026 (Second crediting period) for the project activity titled "Recovery and Utilization of Associated Gas at Pondok Tengah LPG Plant – PT. Yudistira Energy" (hereinafter called "the project"). The proposed project activity, Recovery and Utilization of Associated Gas at Pondok Tengah LPG Plant – PT. Yudistira Energy, is the establishment and operation of a new LPG Plant to recover and utilise the associated gas which had been flared at Tambun and Pondok Tengah Gas Collection stations owned by Pertamina EP Station - Pertagas (Pertamina EP and Pertagas are subsidiaries of PT Pertamina, the state owned Oil & Gas Company), and also installation of new pipeline to connect Pondok Tengah- Pertamina EP Station with Yudistira's LPG Plant. The recovered gas is processed into LPG, Condensate and Lean Gas.

The purpose of the validation is to assess the validity of the original baseline and whether the emission reductions are in line with the valid version of the applicable methodology and, applicable standardized baseline if any. The validation consists of checking the project's baseline, the monitoring plan, and the project's compliance with relevant UNFCCC and host country criteria in order to confirm that the project design, baseline, monitoring plan and calculation of emission reductions as documented is sound and reasonable and meets the stated requirements and identified criteria.

This report summarizes the findings of the validation of the project, performed on the basis of UNFCCC criteria for CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to the Kyoto Protocol, the CDM rules and modalities as agreed in the Bonn Agreement, the Marrakech Accords and the CDM Executive Board's decisions. EPIC has employed a risk-based approach in the validation based on the recommendations in the Validation and Verification Standard for project activities version 2.0, EB101^{1/1} (hereinafter referred to as VVS-PA), focusing on validity of applied methodology, baseline, monitoring plan and emission reduction calculations as documented in the updated PDD version 4^{2/2}. The validation is not meant to provide any consulting towards the client. However, the stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

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	Interview(s)	Validation findings
1.	Team Leader	IR	Govindarao	Vishnu	EPIC, Central office, Bangalore	√	√	√	√
2.	Technical Expert	IR	Bender	Edward		√	√	√	√

B.2. Technical reviewer and approver of the validation report for RCP

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	Vijaya Raghavan	R	EPIC, Central office, Bangalore
2.	Technical Expert assisting TR	IR	Saiprasad	G	
3.	Approver	IR	Krishnachar	Sudheendra	

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

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As a first step, the validation team has reviewed the submitted PDD version 1.0^{/11/}, registered PDD^{/5/}, monitoring plan^{/5/}, initial validation report^{/5/}, previous verification reports and additional background documents submitted by the project participants. Based on the review, the validation team has issued corrective action requests/ clarification requests. As a result of these findings, the PP has revised the PDD version 4.0 (hereinafter referred to as updated PDD). The resolution of the findings by the validation is presented in Appendix 4 of this report.

C.2. On-site inspection

Duration of on-site inspection: 11/03/2019				
No.	Activity performed on-site	Site location	Date	Team member
1.	<ul style="list-style-type: none"> - Project history - Remaining lifetime of equipment - Baseline study assumptions - Validity of the original baseline or its update - National legislation / sectoral policies and its impact on the project - Crediting period of the project - Application of methodologies - Roles & responsibilities of the project participants, changes from initial registration stage, if any and its compliance with the latest version of MoC statement - Notification of the intention to request a renewal of the crediting period to UNFCCC secretariat using CDM-RENN-FORM as per para 263 and 266 of PCP version 1.0 - Analysis of post registration changes proposed along with RCP, if applicable - Monitoring and measurement equipment and system - Estimated GHG Emission reductions and its calculation for the renewed period - Ex-ante parameters and its assessment in accordance with "Methodological tool: Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period". - Changes of monitoring parameters - Editorial issues of the revised PDD - FAR's (open issues), if any, from previous verification - Monitoring plan and its compliance with the applied valid version of the methodology 	Pondok Tengah LPG plan Huripjaya Village, West Java Province, Bekasi District, Indonesia	11/03/2019	Audit team

C.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	M	Harismanto	Manager – PT. Yudistira Energy	11/03/2019	<ul style="list-style-type: none"> -Validity of the original baseline or its update -National legislation / sectoral policies and its impact on the project 	Audit team
2.	Bambang	Aribowo	Operations - PT. Yudistira Energy		<ul style="list-style-type: none"> - Monitoring plan -Changes of monitoring parameters 	
3.	Ferry	Sasmita	Control room staff - PT. Yudistira Energy		<ul style="list-style-type: none"> -Monitoring and measurement equipment and system 	

					- Notification of the intention to request a renewal of the crediting period to UNFCCC secretariat using CDM-RENN-FORM as per para 263 and 266 of PCP version 1.0	
4.	Muhammad	Iqbal	Agrinergy Pte Ltd		- Validity of the original baseline or its update - National legislation / sectoral policies and its impact on the project - Crediting period of the project - Application of methodologies - Monitoring plan - CER calculation	Audit team

C.4. Sampling approach

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Not applicable

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

Area of validation findings	No. of CL	No. of CAR	No. of FAR
Compliance with PDD form	00	00	00
Application and selection of methodologies and standardized baselines	01	01	00
Validity of original baseline or its update	00	00	00
Estimated emission reductions or net anthropogenic removals	01	00	00
Validity of monitoring plan	01	01	00
Crediting period	00	00	00
Project participants	00	00	00
Post-registration changes	00	00	00
Others (please specify)	01	00	00
Total	04	02	00

SECTION D. Validation findings

D.1. Compliance with PDD form

Means of validation	As per the paragraph 403 of VVS 2.0/1/, the validation team has checked if PP used a later valid version of the PDD form for the updated PDD. The validation team is to determine whether information transferred to the later valid version of the PDD form is materially the same as that in the registered PDD. The validation team has determined whether PP has updated the PDD updating applicability section as per the latest version of the applied methodology, baseline section, calculation of emission reduction section, monitoring section and other relevant sections of the PDD in accordance with the requirements as per Project standard version 02.0, EB101 ^{13/} (hereinafter referred to as Project Standard).
Findings	No findings were raised in this section
Conclusion	The project design document uses the latest version of the PDD template ^{13/} version 10.1 (CDM-PDD-FORM) which is currently valid and applicable, and hence

	acceptable. All relevant sections of the PDD are revised as per paragraph 279 of the Project Standard (Version 02.0, EB101) and the instructions provided in the PDD template.
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D.2. Application and selection of methodologies and standardized baselines

Means of validation	As per paragraph 404 b) of VVS 2.0, the validation team has checked whether PP have used the valid version of the approved methodology ^{/4/} (AM0009, version 7.0) ^{/7/} (hereinafter referred to as applied meth) applied in the original PDD, relevant tools and have demonstrated the project to be in line with the applicable conditions specified therein.
Findings	A CAR (02) was raised in this section as detailed in Appendix 4
Conclusion	<p>The updated PDD applies the valid version of the methodology, "Recovery and utilization of gas from oil fields that would otherwise be flared or vented" AM0009: version 7.0.</p> <p>The validation team has concluded that PP has used the valid version of the applied methodology, relevant tools and the project to be in line with the applicable conditions specified therein.</p>

D.3. Validity of original baseline or its update

Means of validation	The validation has checked whether the following steps stipulated in the methodological tool “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period”, version 03.0.1, were applied by the project activity:- Step 1: Assess the validity of the current baseline for the next crediting period Step 2: Update the current baseline and the data and parameters											
Findings	One CAR (CAR 01) is raised in this section											
Conclusion	<p><u>Step 1: Assess the validity of the current baseline for the next crediting period</u></p> <p>As per section B, 4 of the PDD, the alternative scenarios to the baseline were first identified:</p> <p>Identified plausible alternative scenarios for each component are summarized below:</p> <table><tr><td>For the associated gas</td><td>G2 G6</td><td>Flaring of the associated gas and/or gas-lift gas at the oil production site. Recovery, transportation, processing of the associated gas and/or gas-lift gas and distribution of products thereof to end-users without being registered as a CDM project activity.</td></tr><tr><td>For Oil and gas infrastructure</td><td>P1 P4</td><td>Construction of a processing plant for the purpose of processing the recovered gas, in the same way as in the project activity, without being registered as a CDM project activity. Continuation of the operation of the existing oil and gas infrastructure without processing of any recovered associated gas and/or gas-lift gas and without any other significant changes.</td></tr><tr><td>For the use of gas-lift</td><td></td><td>Not applicable to the project since no gas-lift system is used under the project activity.</td></tr></table> <p>Out of the 4 combinations, the combination of G2 & P1 and G6 & P4 are considered as not realistic and impossible because the scenarios contradict each other, thus there are only two identified realistic combinations as described which are: G2 and</p>			For the associated gas	G2 G6	Flaring of the associated gas and/or gas-lift gas at the oil production site. Recovery, transportation, processing of the associated gas and/or gas-lift gas and distribution of products thereof to end-users without being registered as a CDM project activity.	For Oil and gas infrastructure	P1 P4	Construction of a processing plant for the purpose of processing the recovered gas, in the same way as in the project activity, without being registered as a CDM project activity. Continuation of the operation of the existing oil and gas infrastructure without processing of any recovered associated gas and/or gas-lift gas and without any other significant changes.	For the use of gas-lift		Not applicable to the project since no gas-lift system is used under the project activity.
For the associated gas	G2 G6	Flaring of the associated gas and/or gas-lift gas at the oil production site. Recovery, transportation, processing of the associated gas and/or gas-lift gas and distribution of products thereof to end-users without being registered as a CDM project activity.										
For Oil and gas infrastructure	P1 P4	Construction of a processing plant for the purpose of processing the recovered gas, in the same way as in the project activity, without being registered as a CDM project activity. Continuation of the operation of the existing oil and gas infrastructure without processing of any recovered associated gas and/or gas-lift gas and without any other significant changes.										
For the use of gas-lift		Not applicable to the project since no gas-lift system is used under the project activity.										

P4, G6 and P1

The validity of the current baseline is assessed using the following sub-steps:

Step 1.1: Assess compliance of the current baseline with relevant mandatory national and/sectoral policies

There remains no legislation in Indonesia which prohibits the flaring of associated gas and/or gas lift. There has been no significant change in the relevant national and/or sectoral policies since the date of registered PDD till now. Hence, it was concluded that the current baseline was complied with all relevant national and sectoral policies.

Step 1.2: Assess the impact of circumstances

There have been no changes to the availability of new fuels or raw materials, not electricity or fuel prices which will impact baseline emissions. Further there has been no change in the operation and implementation of the project.

Step 1.3: Assess whether the continuation of the use of current baseline equipment(s) or an investment is the most likely scenario for the crediting period for which renewal is requested.

As the previous flaring equipment was rudimentary it was technically feasible for its continued use in the second crediting period for which renewal is requested.

Step 1.4: Assessment of the validity of the data and parameters

The emission factors have been updated by the project participants for the second crediting period of the project activity accordingly. The CO₂ emission factor for methane which is fixed ex-ante and has been revised for the second crediting period in Section B.6.2 of the PDD.

Further In terms of validity of the baseline, Indonesia remains the 15th largest country for gas flaring according to world bank Global Gas Flaring Reduction Partnership (GGFR) data published by World Bank^{/15/}.

Step 2. Update the current baseline and the data and parameters

Step 2.1: Update the current baseline

As per the requirement of the sub-step, the update for baseline emissions of the second crediting period is based on Recovery and utilization of gas from oil fields that would otherwise be flared or vented" AM0009: version 7.0, which is the valid approved version of the methodology applicable to the project activity at the time of request for renewal of the crediting period.

Step 2.2: Update the data and parameters

The emission factors have been updated by the project participants for the second crediting period of the project activity accordingly. The CO₂ emission factor for methane which is fixed ex-ante and has been revised for the second crediting period in Section B.6.2 of the PDD

These changes have been appropriately considered in the updated PDD.

Conclusion:

The original baseline scenario of the project as per the registered PDD is still valid for the 2nd crediting period. Most of the data and parameters determined ex-ante are still valid except for the CO₂ emission factor for methane which is re-

	determined in the emission calculation. Further the note on gas flaring in Indonesia ^{/16/} submitted by PP indicates that there are currently two regulations that cover gas flaring in Indonesia. Gas flaring is allowed and the regulations require that a permit must be provided and recommends monitoring of gas flaring levels be carried out.
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D.4. Estimated emission reductions or net anthropogenic removals

Means of validation	As per the Paragraph 412 a) iv of VVS 2.0 ^{/17/} , the validation team has assessed the approach of PP in calculating the estimated GHG emission reductions comply with the applied methodology and other requirements of Project Standard, Version 02.0, EB101 ^{/3/} .
Findings	One CL (CL 01) is raised in this section as detailed in Appendix 4
Conclusion	<p>The calculation of ERs is done as per the applied methodology (AM0009: version 7.0). The calculation in the Excel spreadsheet and the corresponding calculation tables in the PDD have been checked and no mistakes have been identified. The estimation of emission reductions for the 2nd crediting period is deemed plausible and conservative.</p> <p>All changes due to the upgraded methodology and the re-assessment of the baseline have been considered appropriately. The calculation in the Excel spreadsheet and the corresponding calculation tables in the PDD have been checked and no mistakes have been identified. The estimation of emission reductions for the 2nd crediting period is deemed plausible and conservative.</p> <p>The validation has concluded that the estimation of emission reductions for the applicable crediting period of the registered CDM project activity. For details, refer Appendix 6 of this report</p>

D.5. Validity of monitoring plan

Means of validation	As per the Paragraph 412 a) clause iii of VVS 2.0, the validation team has assessed whether the approach and validity of the monitoring plan indicated in the updated PDD comply with the requirements of the applied methodology and other requirements of Project Standard, Version 02.0, EB101 ^{/3/} .
Findings	Two CLs (CL 02 and CL 03) are raised in this section as detailed in Appendix 4
Conclusion	The validation has concluded that the monitoring plan of the updated PDD (version 6.0) is in line with the requirements of the applied methodology and implemented monitoring plan. For details, refer section D.4 and Appendix 6 of this report.

D.6. Crediting period

Means of validation	As per the Paragraph 412 a) clause V of VVS 2.0, the validation team has assessed whether the next crediting period of the registered CDM project activity commences on the day immediately after the expiration of the current crediting period and in accordance with paragraph 278 of Project Cycle Procedure, version 2.0, EB101/1/ (hereinafter referred to as PCP). The validation team has also checked whether the submission of request for renewal of crediting period is no earlier than 270 days prior to, but no later than one year after, the expiry of the crediting period.
Findings	No findings are raised in this section
Conclusion	With the entry into force of PCP-PA version 2.0 from 01 Jan 2019, the requirement of prior notification by PP is removed. As per para 278 of PCP-PA, ver 2.0, the submission request of RCP is to be within one year of expiry of the crediting period, since the first C.P is ending on 31st December 2019, the RCP is due for renewal and the validation process has been initiated within this time period. Hence, the validation team has concluded that the submission of RCP request is eligible as it is within one year of end of previous crediting period on 31st Dec 2019 and that the next renewable credit period can start immediately after the expiry of the current crediting period.

D.7. Project participants

Means of validation	As per paragraph 412a) clause vi of VVS 2.0, the validation team has checked
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	whether the names of the PP in the updated PDD are consistent with that in the registered PDD/ project webpage
Findings	One CL (CL04) is raised in this section as detailed in Appendix 4
Conclusion	Contact person name of project participants 1) PT. Yudistira Energy and 2) Agrinergy Pte Ltd indicated in the updated PDD is inline with the MoC information available in the project UNFCCC webpage. The validation team, after reviewing the updated PDD and project UNFCCC webpage/5/, has concluded that the names are correctly specified in the updated PDD.

D.8. Post-registration changes

Type of post-registration changes (PRCs)	Confirmation (Y/N)	Validation report for PRCs	
		Version	Completion date
Temporary deviations from the registered monitoring plan, applied methodologies or applied standardized baselines	N	NA	NA
Corrections	N	NA	NA
Change to the start date of the crediting period of the project activity	N	NA	NA
Inclusion of a monitoring plan	N	NA	NA
Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other applied standards or tools	N	NA	NA
Changes to the project design	N	NA	NA
Changes specific to afforestation and reforestation project activities	N	NA	NA

SECTION E. Internal quality control

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After the completion of assessment by the validation team all the relevant documentation is submitted to a qualified, Independent Technical reviewer as part of EPIC' internal quality control system. A Technical reviewer team is appointed to review the draft final validation report (Draft FVR). The comments made by the Technical reviewer team are taken into consideration and incorporated in the final FVR. The technical reviewer team assesses whether all the reporting requirements have been fulfilled and whether all the issues raised were closed satisfactorily by the validation team with justification. The technical review process can also raise issues in this regard which is resolved further by the validation team to the satisfaction of the technical reviewer. The technical reviewer team either accepts or rejects the report made by the validation team. The final report (after resolutions of all findings) is then submitted to the Head-operations for review and approval.

SECTION F. Validation opinion

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EPIC performed the validation of the renewal of crediting period of the CDM project "Recovery and Utilization of Associated Gas at Pondok Tengah LPG Plant – PT. Yudistira Energy" in Indonesia (UNFCCC registration Ref. No. 6008). The validation was performed on the basis of the specific criteria as per VVS, PS and PCP and other relevant requirements.

The validation team has concluded that updated PDD uses the valid version of the PDD template and all the necessary instructions are followed in preparing the PDD. The names of the PP are consistent with that specified in the UNFCCC project webpage. The project activity confirms with all the applicable conditions of the valid version of the applied methodology. The baseline and monitoring methodology are applied in accordance with the applicable requirements of PS. The baseline, the estimated GHG emission reductions and the monitoring plan in the updated PDD comply with the applicable requirements in the PS. The next crediting period can commence on the day immediately after the expiration of the current crediting period.

In summary, it is opinion of EPIC that the project meets all relevant UNFCCC requirements for the CDM and is eligible for renewal of crediting period from 01 January 2020 to 31 December 2026.

Project title:	Recovery and Utilization of Associated Gas at Pondok Tengah LPG Plant – PT. Yudistira Energy
UNFCCC ref no:	6008
Crediting period requested for renewal:	01 January 2020 to 31 December 2026 (second crediting period)
Updated PDD	Version 5, dated 16 th May 2019
Sector and applied methodology	Sector 10 Recovery and utilization of gas from oil fields that would otherwise be flared or vented” AM0009: version 7.0
Estimated CER	143,428 tCO ₂ e/year

Appendix 1. Abbreviations

Abbreviations	Full texts
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reductions
CL	Clarification Request
CM	Combined Margin
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
DNA	Designate National Authority
DOE	Designated Operational Entity
EF	Emission Factor
ESSPL	EPIC Sustainability Services Private Limited
EG	Electricity grid
FAR	Forward Action Request
GHG	Greenhouse gases
IPCC	Intergovernmental Panel on Climate Change
LoA	Letter of Approval
MoV	Means of Verification
OM	Operating Margin
PCP	Project Cycle Procedure
PDD	Project Design Document
PLF	Plant Load Factor
PP	Project Participant
PS	Project Standard
QA/QC	Quality Assurance/Quality Control
RCP	Renewal of Crediting Period
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard

Appendix 2. Competence of team members and technical reviewers

The following validation team has been assigned to carry out the verification of the project.

Name	Dr. G. Vishnu	Mr Edward Bender	Mr R. Vijaya Raghavan	Mr G. Sai Prasad
Role	Lead Auditor	Technical Expert	Technical Reviewer	Technical Expert
Competence in relevant sectors	NA	Sector 10	NA	Sector 10
Responsibility	Document review, site visit DVR preparation, resolution, FVR preparation	Document review, findings	Technical review	Assistance to technical reviewer

Dr. G. Vishnu, holds a Masters and Doctorate in Environmental Science. He has around 12 years of experience in the field of research and consultancy related to water, wastewater, solid waste management systems, implementation of new, Cleaner Production technologies and biomass assessment studies. He has more than eight years' experience in validation verification of more than seventy CDM, projects and has undergone extensive training on GHG validation and verification. He is a Lead Auditor for various technical areas. He is also an ISO 26000 lead auditor and ISO 50001 auditor certified by Professional Evaluation and Certification Board (PECB). He is a Certified Sustainability Assurance Practitioner (CSAP) from AccountAbility, UK. He is qualified as Technical Reviewer based on EPICs CDM accreditation procedures.

Mr. Edward Bender has a Diploma in engineering and is a NEBOSH certified auditor. He has more than 12 years of sectoral experience in design and implementation of offshore and onshore oil and gas installations and specifically 5 years of experience in Indonesian oil and gas sector. He has been qualified as a Technical Expert as per EPIC procedure for oil and gas sector.

Mr. R. Vijayaraghavan holds BE in Mechanical Engineering, M.Tech in Energy Conservation and Management and MBA in Technology Management. He is certified as Energy Auditor by Bureau of Energy Efficiency (BEE), Government of India. He has 15 years of working experience in energy sector including validation / verification of hundred CDM and VCS/GS projects and has undergone extensive training on CDM validation and verification and has been qualified as Lead Auditor with Sectoral Scope 1 and 13.

Mr. V. Sai Prasad holds BE in Mechanical Engineering. He has more than 36 years of experience in the field of Engineering, Project Management, Construction, Operation & Maintenance and Industrial Health, Safety & Environment for the oil & gas installations. He has been qualified as a Technical Expert as per EPIC procedure for oil and gas sector.

Appendix 3. Documents reviewed or referenced

No	Author	Title	References to the document	Provider
1	UNFCCC	CDM validation and verification standard for project activities, Version 02.0	1	Publicly available
2	UNFCCC	CDM Project Cycle procedure for project activities, Version	2	Publicly

		02.0		available
3	UNFCCC	CDM project standard for project activities, Version 02.0,	3	Publicly available
4	UNFCCC	Glossary – CDM terms, Version 08.0 https://cdm.unfccc.int/sunsetcms/storage/contents/stored-file-20150226124446845/glos_CDM.pdf	4	Publicly available
5	UNFCCC	Registered PDD, Corresponding previous validation report https://cdm.unfccc.int/Projects/DB/LRQA%20Ltd1333528065.88/view	5	Publicly available
6	UNFCCC	Recovery and utilization of gas from oil fields that would otherwise be flared or vented, AM0009 (Version 7.0) https://cdm.unfccc.int/methodologies/DB/ET4NXMVXFQ5C2EJ5L1OF8YZIEVLVDA	6	Publicly available
7	UNFCCC	Project Design Document form for CDM project activities, version 10.1 https://cdm.unfccc.int/sunsetcms/storage/contents/stored-file-20170628103246832/PDD-Form05.pdf	7	Publicly available
8	PP	Initial PDD Version 1.0 and Final PDD version 4.0	8	PP
9	PP	ER sheet version 1.0	9	PP
10	UNFCCC (tools)	Tool for the demonstration and assessment of additionality Version 07.0.0 Combined tool to identify the baseline scenario and demonstrate additionality Version 07.0 Tool to calculate project or leakage CO2 emissions from fossil fuel combustion Version 03.0 Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation Version 03.0 Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period Version 03.0.1	10	Publicly available
14	Govt of Indonesia	Low Carbon Support Programme to Ministry of Finance, Indonesia. March 2015	14	PP
15	World Bank	http://www.worldbank.org/en/programs/gasflaringreduction#7	15	Publicly available
16	Govt of Indonesia	Note on flaring regulation: The Directorate General of Oil and Gas, Ministry of Energy and Mineral Resource Ministerial Decree No. 31 (2012) National Action Plan on GHG Emission Reduction (RAN-GRK), formalized through Presidential Regulation No. 61/2011	16	PP

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

Table 1. CL from this validation

CL ID	01	Section no.	D.6	Date: 22/03/2019
Description of CL				
The validated PDD indicates an estimated annual average of 292,708 GHG emission reductions. However the PDD submitted for the second crediting period has a much lower estimate. Clarify whether the change in the emission reductions is due a project design or operational change.				
Project participant response				Date: 15/04/2019
<p>The validated PDD for the first crediting period showed average emissions reductions across the crediting period. However, this was an average and the emissions reductions decline across the years starting at 327,570 in 2013 and falling to 181,416 in 2019. This decline in line with projected decline in oil production as outlined in Annex 3 of the validated PDD and reflects the fact that during the second crediting period only associated gas from the Tambun oil field is processed. For the second crediting period the volume of associated gas is flat at the 2020 figure of 6.58 MMSCFD in line with the FS, documents from Pertamina and the financial analysis included with the original registered PDD. The volume of feed gas is not guaranteed, but over the course of the crediting period feed gas is expected to remain broadly at these lower levels. This is consistent with Para 47 of AM0009 v7.</p> <p>Project emissions are estimated based on the fuel consumption technical data of the compressors located before point F.</p>				
Documentation provided by project participant				
<p>Validated original PDD. Validated original financial analysis.</p> <p>https://cdm.unfccc.int/UserManagement/FileStorage/FUJA9CL4BKTNQ5YHX23OWEM6Z0I87V</p> <p>https://cdm.unfccc.int/UserManagement/FileStorage/QNE42WBG8H1ZOKPD7SIXOL5MT96FVJ</p>				
DOE assessment				Date: 21/04/2019
<p>The estimate of CERs for the second crediting period reflects the projected decline in oil production and is not related to any design change in the project activity. Hence based the response by the PP and evidences submitted the finding is resolved.</p>				
CL 01 Closed				

CL ID	02	Section no.	D.5	Date: 22/03/2019
Description of CL				
Section A. 3 of the PDD indicates that the project activity has obtained the approval certificate from the Indonesian Directorate General of Oil and Gas and is being implemented in accordance with the Indonesian Environmental Ministry Regulation based on EIA approval in 2008. Clarify if the approval is valid for this second Crediting period.				
Project participant response				Date: 15/04/2019
<p>The EIA remains valid unless there is a substantial change in the project. There is no such change and hence the existing EIA remains valid.</p> <p>Environment Permit is a permit given to the person/project owner who has AMDAL/EIA or UKL-UPL to protect and manage the environmental as a requirement to obtain Business and/or Activity Permit.</p> <p>On Article 50, Paragraph 1 (p. 21), the person in charge of business and/or activity obliged to submit a request for change to Environment Permit if there are planned changes to the business and/or activity that already obtained it</p>				
Documentation provided by project participant				
Government of Indonesia Regulation No. 27-2012 on Environment Permit.pdf				
DOE assessment				Date: 21/04/2019
<p>Based the response by the PP and evidences submitted the finding is resolved.</p>				
CL 02 Closed				

CL ID	03	Section no.	D.2	Date: 22/03/2019
Description of CL				
As per interview with O & M personnel, the economizer which is used to reduce energy consumption, or to perform function such as preheating a fluid was informed to be removed from the project design at the location depicted in Figure 3. Clarify on the effect of this design change on the overall operation and efficiency of the plant.				
Project participant response				Date: 15/04/2019
The Economiser is part of the Refrigeration Package as outlined in Table A2. This was installed and has been continuously operated. The Economizer is shown in the wrong place in Figure 3 and this has now been corrected.				
Documentation provided by project participant				
Revised PDD				
DOE assessment				Date: 21/04/2019
DOE Assessment 01				
Considering that the flow diagram in Figure 3 showed the economizer incorrectly, the right location of the economizer is now indicated in the revised figure submitted. As this does not pertain to a design change, the finding is resolved.				
CL 03 Closed				

CL ID	04	Section no.	D.7	Date: 22/03/2019
Description of CL				
Section B. 5 applicability of tools indicate that the project activity does not involve electricity consumption hence the tool is not followed. However as per interview with O & M personnel, the fuel gas is recovered from the lean gas and is used for captive electricity consumption the plant. In this context clarify on the use of the applicable tool.				
Project participant response				Date: 15/04/2019
Fuel gas is lean gas that is used as fuel. Fuel gas is used to operate the compressor and also to run a genset which supplies electricity to the LPG Plant.				
In line with AM0009 v7 sources of project emissions are CO2 emissions due to consumption of fossil fuels and the use of electricity for the recovery, pre-treatment, transportation, and, if applicable, compression of the recovered gas up to the point F. The compressor is before Point F and the fuel gas used by this is accounted for as project emissions. Electricity consumption after point F is outside of the boundary and hence not a source of project emissions. As such the tool Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation is not required.				
Documentation provided by project participant				
NA				
DOE assessment				Date: 21/04/2019
DOE Assessment 01				
As the electricity consumption which is located after the Pont F is outside the project boundary it is not considered as source of project emissions the reply by PP is acceptable and the finding is resolved.				
CL 04 Closed				

Table 2. CAR from this validation

CAR ID	01	Section no.	D.1	Date: 22/03/2019
Description of CAR				
During interviews with O & M personnel it was informed that the implementation does not contain the operator control room depicted in the schematic in figure 6.				
Project participant response				Date: 15/04/2019
PP Response 01				
revised figure 6 in the PDD				
Documentation provided by project participant				
revised figure 6 in the PDD				

DOE assessment	Date: 21/04/2019
DOE Assessment 01	
The revised PDD indicates the actual monitoring plan implemented and hence the finding is resolved.	
CAR 01 Closed	

CAR ID	02	Section no.	D.1	Date: 03/05/2019
Description of CAR				
In Section B.2 of the PDD, applicability condition 01 of the methodology is not discussed and not all the relevant tools are referenced.				
Project participant response				Date: 07/05/2019
PP Response 01				
PDD is updated now				
Documentation provided by project participant				
Revised PDD				
DOE assessment				Date: 14/05/2019
DOE Assessment 01				
The revised PDD indicates that all relevant applicability conditions and relevant tools as per the methodology have been discussed.				
CAR 01 Closed				

Table 3. FAR from this validation

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

Appendix 5:

Applicability Criteria for Applied Meth AM0009, Ver 7.0	Justification
The methodology is applicable to project activities that recover and utilize the associated gas and/or gas-lift gas from oil fields that would have been either vented or flared in the absence of the project activity. The recovery may include the pre-treatment (compression and phase separation) in mobile or stationary equipment	<p>The baseline scenario as indicated in Section B.4, prior to the implementation of the project activity which is the associated gas from Pondok Tengah & Tambun oil fields was flared is still valid. This gas is now recovered (including compression) and utilised in the LPG plant as per the project activity which involves the recovery and utilisation of associated gas that would have been flared. Hence the applicability condition is met.</p> <p>There is no change in the applicability from the previous validation.</p>
Under the project activity the recovered gas is transported to a gas pipeline with or without prior processing. Prior processing may include transportation to a processing plant where the recovered gas is processed into hydrocarbon products (e.g. dry gas, liquefied petroleum gas (LPG)). The dry natural gas is either: (i) transported to a gas pipeline directly; or (ii) compressed to CNG first, then transported by trailers/trucks/carriers and then decompressed again; and/or	<p>The condition is met as the recovered gas is transported to the processing plant where it is processed into LPG, lean gas and condensate.</p> <p>There is no change in the applicability from the previous validation.</p>
All recovered gas comes from oil wells that are in operation and are producing oil at the time of the recovery of the associated gas and/or gas-lift gas;	<p>The project activity recovers gas from oil wells that are in operation and are producing oil at the time of the recovery of the associated gas.</p> <p>The condition is met and there is no change in the applicability from the previous validation.</p>
Partial amount of the associated gas and/or gas-lift gas can be used on-site to meet on-site energy demands, i.e. to run auxiliary equipment prior to the implementation of the project activity and after the implementation of the project activity.	<p>Associated gas is used in the compressor.</p> <p>The condition is met and there is no change in the applicability from the previous validation.</p>
Finally, this methodology is only applicable if the application of the procedure to identify the baseline scenario and demonstrate additionality results in the venting and/or flaring of the associated gas and/or gas-lift gas at the oil production facility as the most plausible baseline scenario.	<p>As per the PDD, the identified baseline scenario of the project activity is the continuation of the current practice of flaring of the associated gas and the continued operation of the existing oil and gas infrastructure without processing of any recovered gas and without any other significant changes, as detailed in the Sections B.4. and B.5.</p> <p>The condition is met and there is no change in the applicability from the previous validation.</p>

The proposed project activity meets the applicability conditions of the tools.

Applicability Criteria for tools applied	Justification
<p><i>Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation Version 03.0</i></p> <p>If emissions are calculated for electricity consumption, the tool is only applicable if one out of the following</p>	<p>The project activity does not involve electricity consumption hence the tool is not followed.</p> <p>The condition is met and there is no change in the applicability from the previous validation.</p>

<p>three scenarios applies to the sources of electricity consumption:</p> <p>Scenario A: Electricity consumption from the grid. The electricity is purchased from the grid only, and either no captive power plant(s) is/are installed at the site of electricity consumption or, if any captive power plant exists on site, it is either not operating or it is not physically able to provide electricity to the electricity consumer;</p> <p>Scenario B: Electricity consumption from (an) off-grid fossil fuel fired captive power plant(s). One or more fossil fuel fired captive power plants are installed at the site of the electricity consumer and supply the consumer with electricity. The captive power plant(s) is/are not connected to the electricity grid; or</p> <p>Scenario C: Electricity consumption from the grid and (a) fossil fuel fired captive power plant(s). One or more fossil fuel fired captive power plants operate at the site of the electricity consumer. The captive power plant(s) can provide electricity to the electricity consumer. The captive power plant(s) is/are also connected to the electricity grid. Hence, the electricity consumer can be provided with electricity from the captive power plant(s) and the grid.</p>	
<p><i>Tool for the demonstration and assessment of additionality Version 07.0.0</i></p> <p>The use of the “Tool for the demonstration and assessment of additionality” is not mandatory for project participants when proposing new methodologies. Project participants may propose alternative methods to demonstrate additionality for consideration by the Executive Board. They may also submit revisions to approved methodologies using the additionality tool.</p>	<p>As referenced in the approved methodology the application of the tool is mandatory. As this PDD is for the renewal of the crediting period, the Section on Additionality has been copied from the registered PDD for the first crediting period.</p> <p>The condition is met and there is no change in the applicability from the previous validation.</p>
<p><i>Combined tool to identify the baseline scenario and demonstrate additionality, Version 07.0</i></p> <p>The tool is applicable to all types of proposed project activities. However, in some cases, methodologies referring to this tool may require adjustments or additional explanations as per the guidance in the respective methodologies. This could include, inter alia, a listing of relevant alternative scenarios that should be considered in Step 1, any relevant types of barriers other than those presented in this tool and guidance on how common practice should be established.</p>	<p>The tool is applicable to the project activity and has been applied as per the guidance.</p> <p>The condition is met and there is no change in the applicability from the previous validation.</p>
<p><i>Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion, Version 03.0</i></p> <p>This tool provides procedures to calculate project and/or leakage CO₂ emissions from the combustion of fossil fuels. It can be used in cases where CO₂ emissions from fossil fuel combustion are calculated based on the quantity of fuel combusted and its properties. Methodologies using this tool should specify to which combustion process <i>j</i> this tool is being applied.</p>	<p>In line with the methodology, leakage is not considered as the recovered gas is not transported to processing plant where it is processed into hydrocarbon products and the dry gas compressed to CNG first the transported by trailers/trucks/carriers and then decompressed again before it finally enters the gas pipeline.</p> <p>The condition is met and there is no change in the applicability from the previous validation.</p>
<p>Assessment of the validity of the original/current baseline and update of the baseline at the renewal of</p>	<p>The tool has been applied as per the guidance as the current baseline has been evaluated to</p>

<p>the crediting period, Version 03.0.1</p> <p>This tool provides a stepwise procedure to assess the continued validity of the baseline and to update the baseline at the renewal of a crediting period, as required by paragraph 49 (a) of the modalities and procedures of the clean development mechanism.</p> <p>The tool consists of two steps. The first step provides an approach to evaluate whether the current baseline is still valid for the next crediting period. The second step provides an approach to update the baseline in case that the current baseline is not valid anymore for the next crediting period.</p>	<p>be valid for the crediting period under renewal. The use of the tool is outlined in Section B.4 of the PDD.</p> <p>The condition is met and there is no change in the applicability from the previous validation.</p>
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Appendix 6:

Parameters	Justification by the verification team
<u>Emission reductions (ER_y)</u>	As per updated PDD, Emission reductions are calculated as follows. $ER_y = BE_y - PE_y - LE_y$ Where: BE _y – Baseline emissions PE _y – Project emissions LE _y – Leakage emissions The requirements are met as the calculations are in line with the applicable version of the methodology.
<u>Baseline Emissions</u> CO ₂ emission from electricity generation in fossil fuel fired power plants that is displaced due to the project activity	$BE_y = V_{F,y} \cdot NCV_{RG,F,y} \cdot EF_{CO2Methane}$ (2) Where: BE _y = Baseline emissions during the period y, (tCO ₂ e) V _{F,y} = Volume of total recovered gas measured at point F in Figure 4 in year y, (Nm ³) NCV _{RG,F,y} = Net calorific value of recovered gas measured at point F in Figure 4 in year y, (TJ/Nm ³) EF _{CO2Methane} = CO ₂ emission factor for methane (tCO ₂ /TJ) T he requirements are met as the calculations are in line with the applicable version of the methodology.
<u>Project emissions (PE_y)</u>	The following sources of project emissions are accounted in this methodology: a) CO ₂ emissions due to consumption of fossil fuels for the recovery, pre-treatment, transportation, and, if applicable, compression of the recovered gas up to the point F in Figure 4. In this project activity, the source of these emissions for the project activity comes from fuel gas combustion of compressor. b) CO ₂ emissions due to the use of electricity for the recovery, pre-treatment, transportation, and, if applicable, compression of the recovered gas up to the point F in Figure 4. In this project activity, these emissions do not occur as there is no electricity used for the recovery, pre-treatment, transportation and compression of the recovered gas. As the calculations are in line with the methodology applied, it is acceptable by validation team.
<u>Leakage</u>	In line with the methodology, leakage is not considered as the recovered gas is not transported to processing plant where it is processed into hydrocarbon products and the dry gas compressed to CNG first the transported by trailers/trucks/carriers and then decompressed again before it finally enters the gas pipeline.
<u>Ex-Ante</u> <u>CO₂ emission factor for methane</u>	Calculated in line with procedures and data presented in ISO 6976. Value applied is 54.834 t CO ₂ /TJ. This parameter is used for baseline emissions. As the value applied is in line with the methodology applied, it is acceptable by validation team. The value is updated from earlier registration in line with the latest applicable source.
Ex-post	Monitored continuously and calibration is done annually. As the

Volume of the total recovered gas measured at point F in Figure 4 in year y	value applied is in line with the methodology applied, it is acceptable by validation team.
Net calorific value of recovered gas at point F of Figure 4 during the period	The average NCV during the period y is defined as the arithmetic average of NCVs for the samples taken during the same period. Sampling and compositional analysis and calculation of net calorific value at least monthly. Monitored continuously. As the value applied is in line with the methodology applied, it is acceptable by validation team and there is no deviation from the validated PDD.
Quantity of gas fuel combusted in process j during the year y	Monitored continuously. Quantity of fuel gas combusted will be continuously measured using Flow Meter and will be monthly aggregated. The gas fuel is used for Compressor. Operator is responsible to collect the data and the data result will be reviewed and validated by the Supervisor. Accuracy of the meter is +/- 1% As the value applied is in line with the methodology applied, it is acceptable by validation team
Net calorific value of gas fuel in year y for combustion of compressor	Sourced from IPCC default values at the upper limit of the uncertainty of a 95% confidence interval as provided in Table 1.2 of Chapter 1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories. As the value applied is in line with the methodology applied, it is acceptable by validation team
Weighted average CO2 emission factor of lean gas fuel in year y for combustion	Sourced from IPCC default values at the upper limit of the uncertainty at a 95% confidence interval as provided in table 1.4 of Chapter1 of Vol. 2(Energy) of the 2006 IPCC Guidelines on National GHG Inventories. As the value applied is in line with the methodology applied, it is acceptable by validation team
ESTIMATION OF EMISSION REDUCTIONS	
Baseline Emissions $BE_y = V_{F,y} \cdot NCV_{RG,F,y} \cdot EF_{CO2Methane}$	153,174 (tCO ₂ /year) The excel sheet has been reviewed to verify the correctness of the calculations.
Project emissions $PE_{FC,j,y}$ for each specific year is calculated as follows: $PE_{FC,j,y} = \sum_i FC_{i,j,y} \cdot COEF_{i,y}$ $COEF_{i,y} = NCV_{i,y} \cdot EF_{CO2,i,y}$ Where: $NCV_{i,y} = 0.0454 \text{ GJ/m}^3$ $EF_{CO2,i,y} = 0.054834 \text{ tCO}_2/\text{Gj}$	9,746 (tCO ₂ /year) The excel sheet has been reviewed to verify the correctness of the calculations.
Emission reductions are calculated as follows. $ER_y = BE_y - PE_y - LE_y$	153,174 - 9,746-0 = 143,428 (tCO₂/year) The excel sheet has been reviewed to verify the correctness of the calculations.