

 <p style="text-align: center;">Verification and certification report form for CDM project activities (Version 03.0)</p>	
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)
Scale of the project activity	<input checked="" type="checkbox"/> Large-scale <input type="checkbox"/> Small-scale
Version number of the verification and certification report	4.0
Completion date of the verification and certification report	10/09/2020
Monitoring period number and duration of this monitoring period	01/01/2020 to 31/03/2020
Version number of the monitoring report to which this report applies	02
Crediting period of the project activity corresponding to this monitoring period	01/01/2020 – 31/12/2026
Project participants	1. PT Yudistira Energy (Indonesia) 2. Agrinergy Pte Ltd. (United Kingdom of Great Britain and Northern Ireland, Switzerland) 3. Agasco Limited 4. ACT Financial Solutions B.V.
Host Party	Indonesia
Applied methodologies and standardized baselines	AM0009 ver. 7 - Recovery and utilization of gas from oil wells that would otherwise be flared or vented
Mandatory sectoral scopes	1: Energy Industries (renewable - / non-renewable sources) 10: Fugitive emissions from fuels (solid, oil and gas)
Conditional sectoral scopes, if applicable	N.A
Estimated amount of GHG emission reductions or GHG removals for this monitoring duration in the registered PDD	35,857 tCO ₂ e
Certified amount of GHG emission reductions or GHG removals for this monitoring period	41,193 tCO ₂ e
Name and UNFCCC reference number of the DOE	TÜV SÜD South Asia Private Limited (TÜV SÜD)-E-0005

**Name, position and signature of the approver
of the verification and certification report**



Milind Shende

Manager

Certification Body "Environment and Energy"

TUV SUD South Asia Pvt Ltd.

Pune, India

SECTION A. Executive summary

TÜV SÜD South Asia Pvt. Ltd. has performed the first verification of the aforementioned CDM project activity. The verification is based on the currently valid documentation of the United Nations Framework Convention on Climate Change (UNFCCC).

The verification process includes three phases:

- Desk review of documents;
- On-site audit and follow-up interviews with the relevant personnel;
- Resolution of outstanding issues and the issuance of final verification report and opinion.

The project site is located at PT Yudistira Energy plant in Huripjaya village, Bekasi District in the West Java province of Indonesia with GPS coordinates 6.085806 S and 107.042564 E. The same was confirmed during the site visit, document review and found to be correct.

The project activity encompasses 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 pipeline and LPG Plant is designed to process 17 MMSCFD of gas into LPG, condensate and lean gas. The LPG Plant Pondok Tengah applies a refrigeration and condensation process for LPG and condensate recovery. The final products of LPG, condensate and lean gas are produced through drying wet associated gas and then putting it through a distillation process to separate the dried gas hydrocarbon components. The project activity uses processing and basic engineering design from Mackenzie Hydrocarbons Australia, a design specialist established since 1990 which holds licences for the petroleum, petrochemical and power industries. The project activity was commissioned on 03/03/2011, and the commercial operation started on 01/03/2011.

3 Clarification Requests (CLs) and 1 Corrective Action Request (CAR) have been raised during the course of verification process and has been successfully closed. No Forward Action Request (FAR) was/were raised during this monitoring period.

SECTION B. Verification team, technical reviewer and approver

B.1. Verification 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 review	On-site inspection	Interview(s)	Verification findings
1.	Team Leader and Verifier	IR	Murty	Eswar	TUV SUD South Asia	✓		✓	✓
2	Technical Expert (10.1)	IR	Shukla	Atul	TUV SUD South Asia			✓	
3	Host Country	EI	Rangkuti	Arie J	TUV SUD	✓			

	Expert				South Asia				
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B.2. Technical reviewer and approver of the verification and certification report

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	Meesa	Srikanth	TUV SUD South Asia
2	Technical Expert (10.1)	EI	Joshi	Akhilesh	TUV SUD South Asia
2	Approver	IR	Shende	Milind	TUV SUD South Asia

SECTION C. Application of materiality**C.1. Consideration of materiality in planning the verification**

No.	Risk that could lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk level	Justification	
1.	Human errors	Medium	Human error is likely to occur if the monitoring personnel are not trained well or inexperienced in data recording procedures and monitoring processes.	Wherever there is a greater likelihood of errors and chances of incorrect transfer of data, effective data verification should be done on those days/months data. Data related to holiday months need to be checked thoroughly.
2	Design of data management	Medium	Use of spreadsheets without adequate data control, changes/updates, version tracking, traceability and security	Depending on how data is generated, processed, and reported, place greater emphasis on verifying data captured and processed manually and/or in spreadsheets versus those that are generated from an automated system.
3	Manual data	Low	Typographic errors in the spreadsheets and log books while recording.	Require the PPs to assess all the data again and confirm that no further errors are made.

C.2. Consideration of materiality in conducting the verification

The errors identified in the project are below the threshold limit of materiality and hence not material. The GHG emission reductions are calculated without material misstatements.

SECTION D. Means of verification**D.1. Desk review**

Publication has been initiated before the verification activities started. Based on the published MR the assessment team performed a desk review to:

- verify the completeness of the data and the information presented in the MR,

- check the compliance of the MR with respect to the monitoring plan depicted in the registered PDD and verify that the applied methodology was carried out. Particular attention was paid to the frequency of measurements, the quality of the metering equipment including calibration requirements, and the quality assurance and quality control procedures.,
- evaluate the data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions.

D.2. On-site inspection

Duration of on-site inspection:				
No.	Activity performed on-site	Site location	Date	Team member
1				
2				

The DOE has not conducted the on-site inspection for this current monitoring period, which is the 9th periodic verification of this project activity, in line with p.339 and p.340 of the CDM VVS PA v2.0.

The last on-site inspection was conducted by the DOE on 25th June 2019, as a part of verification of 6th monitoring period (01-01-2019 to 30-04-2019).

According to p.339 and p.340 of the CDM VVS PA v2.0, the following conditions are mandatory for on-site inspection.

S.No	Requirement as per p.339 of CDM VVS PA v2.0	Applicability for the current verification
1	It is the first verification for the DOE with regard to this project activity;	This is the 9 th periodic verification of the project activity.
2	More than three years have elapsed since the last on-site inspection conducted for verification for the project activity	Last on-site inspection has been conducted on 25 th June 2019, which is less than 12 months.
3	The project activity has achieved more than 300,000 t CO ₂ eq of GHG emission reductions or net anthropogenic GHG removals since the last verification when an on-site inspection was conducted	The project activity has achieved only 41,193 t CO ₂ eq of GHG emission reductions or net anthropogenic GHG removals since the last verification when an on-site inspection was conducted

The DOE has conducted telephonic interviews and video calls to discuss with the client regarding the data and documents pertaining to the 9th verification period. The interviews and discussions were conducted successfully, and it is sufficient for the DOE to verify and prepare the report, in line with p.340 of the CDM VVS PA v2.0.

D.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Harismanto	Mohd.	PT Yudistira Energy	05/05/2020	Plant technology and monitoring	Eswar Murty Atul Shukla
2	Novianto	Topo	PT Yudistira Energy	05/05/2020	Plant technology and monitoring	Eswar Murty Atul Shukla
3	Iqbal	Mohammed	Agrinergy	05/05/2020	CDM Monitoring	Eswar Murty Atul Shukla

D.4. Sampling approach

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Not Applicable

D.5. Clarification requests, corrective action requests and forward action requests raised

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
Compliance of the monitoring report with the monitoring report form			
Compliance of the project implementation with the registered PDD		1	
Post-registration changes			
Compliance of the monitoring plan with the monitoring methodology including applicable tool and standardized baseline			
Compliance of monitoring activities with the registered monitoring plan	1		
Compliance with the calibration frequency requirements for measuring instruments	1		
Assessment of data and calculation of emission reductions or net removals	1		
Others (please specify)			
Total	3	1	0

SECTION E. Verification findings**E.1. Compliance of the monitoring report with the monitoring report form**

Means of verification	To check the compliance of the monitoring report with the latest monitoring report form available at UNFCCC
Findings	The latest version of MR form available at UNFCCC is 7.0 and same has used by the project proponent in the monitoring report.
Conclusion	TUV SUD confirms that the monitoring report has been prepared as per the latest version of the MR available at UNFCCC.

E.2. Remaining forward action requests from validation and/or previous verifications

No FAR have been presented, neither in the validation report nor in the previous verification report.

E.3. Compliance of the project implementation and operation with the registered project design document

Means of verification	<p>The audit team has checked the project Implementation in accordance with the registered Project Design Document (PDD) according to the requirement of CDM VVS PA ver 2.0 p.354 and p.355.</p> <ol style="list-style-type: none"> 1. The purpose of the proposed project activity is utilization of associated gas. The project activity involves the installation of a new pipeline to recover and transport the associated gas and the construction of a LPG Plant to utilize it. 2. The pipeline and LPG Plant is designed to process 17 MMSCFD of gas into LPG, condensate and lean gas. The LPG Plant Pondok Tengah applies a refrigeration and condensation process for LPG and condensate recovery. 3. The final products of LPG, condensate and lean gas are produced through drying wet associated gas and then putting it through a distillation process to separate the dried gas hydrocarbon components. The project activity uses processing and basic engineering design from Mackenzie Hydrocarbons Australia, a design specialist established since 1990 which holds licences for the petroleum, petrochemical and power industries. 4. The project activity was commissioned on 03/03/2011, and the commercial operation started on 01/03/2011 (Initial Gas-in incl. for trial etc). <p>The operation of the project activity complies with all applicable statutory</p>
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	<p>requirements in Indonesia.</p> <p>All measuring devices have been found installed and operational. The verification team has checked the lean and feed gas fuel data, gas analysis reports, NCV test reports and calibration test certificates.</p> <p>There is no event or situation occurred during this monitoring period which has impacted the applicability of methodology. There was no diversion from the implementation details given in the registered PDD during this reported monitoring period.</p>
Findings	CAR 1 has been raised since the MR did not mention the reason for the shut down and its details of the plant. The same has been successfully closed by the PP.
Conclusion	The verification team has verified the implementation of the project activity as per p.354 and p.355 of CDM VVS PA ver 2.0 and found to be correct. The project activity has been implemented and operated as stated in the registered PDD which has been confirmed during the interviews.

E.4. Post-registration changes

E.4.1. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents¹

Not applicable.

E.4.2. Corrections

Not applicable.

E.4.3. Changes to the start date of the crediting period

Not applicable.

E.4.4. Inclusion of a monitoring plan

Not applicable.

E.4.5. Permanent changes from registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines or other methodological regulatory documents

Not applicable.

E.4.6. Changes to the project design

Not applicable.

E.4.7. Changes specific to afforestation and reforestation project activities

Not applicable.

E.5. Compliance of the registered monitoring plan with applied methodologies, applied standardized baselines, and other applied methodological regulatory documents

Means of verification	As per the applied methodology, monitoring shall consist of measuring the gas recovered and fuel combusted in the project activity. Continuous monitoring is done through meters.
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¹ Other standards, methodologies, methodological tools and guidelines (to be) applied in accordance with the applied(selected) methodologies are collectively referred to as the other (applied) methodological regulatory documents).

Findings	There is no deviation observed between monitoring plan of the project activity with the monitoring plan of the applied methodology of the project activity.
Conclusion	The registered monitoring plan and monitoring system implemented are in accordance with the approved methodology applied by the proposed CDM project activity i.e. <u>AM0009 ver. 7</u> as per the CDM VVS PA ver 02.0. Based on the above observations, the verification team confirms that the registered monitoring plan complied with the approved methodology applied by the registered CDM project activity thus satisfies requirements of CDM p.357, VVS PA ver 2.0.

E.6. Compliance of monitoring activities with the registered monitoring plan

E.6.1. Data and parameters fixed ex ante or at renewal of crediting period

Means of verification	Data and parameters fixed ex-ante as listed in the monitoring report have been crosschecked and reviewed as applicable against the registered PDD, monitoring plan as well as against the applied methodology and other relevant CDM related documentation. The ex-ante and validated fixed value of CEF i.e. carbon emission factor for methane is calculated in line with procedures and data presented in ISO 6976.
Findings	No CAR/CL has been raised
Conclusion	TÜV SÜD confirms that the PP has considered carbon emission factor, tCO ₂ e/TJ (54.834, registered PDD in emission factor calculation) which has been fixed ex-ante.

E.6.2. Data and parameters monitored

Means of verification	Referring to p.360, p.361, p.363 and p.364 of CDM VVS PA, v2.0, the below tables provide a summary on the verification of each monitoring parameter listed in the registered monitoring plan.												
	<table> <tr> <td>Data / Parameter:</td><td>$V_{F,y}$</td></tr> <tr> <td>Data unit:</td><td>Nm³</td></tr> <tr> <td>Description:</td><td>Volume of total recovered gas measured at point F in Figure B1 in year y</td></tr> <tr> <td>Source of data used:</td><td>Plant records</td></tr> <tr> <td>Means of verification/Comments:</td><td>The volume of total gas recovered at point F is measured by the flow meter and the audit team has checked all the monitoring equipment related to the flow meter viz. Orifice lifting, flow computer, differential and static pressure transmitter, temperature transmitter, orifice and three pens recorder. The audit team has checked the complete set of monthly data for the monitoring period from the spreadsheets and compared with the plant records.</td></tr> <tr> <td>Cross-check</td><td>--</td></tr> </table>	Data / Parameter:	$V_{F,y}$	Data unit:	Nm ³	Description:	Volume of total recovered gas measured at point F in Figure B1 in year y	Source of data used:	Plant records	Means of verification/Comments:	The volume of total gas recovered at point F is measured by the flow meter and the audit team has checked all the monitoring equipment related to the flow meter viz. Orifice lifting, flow computer, differential and static pressure transmitter, temperature transmitter, orifice and three pens recorder. The audit team has checked the complete set of monthly data for the monitoring period from the spreadsheets and compared with the plant records.	Cross-check	--
Data / Parameter:	$V_{F,y}$												
Data unit:	Nm ³												
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Source of data used:	Plant records												
Means of verification/Comments:	The volume of total gas recovered at point F is measured by the flow meter and the audit team has checked all the monitoring equipment related to the flow meter viz. Orifice lifting, flow computer, differential and static pressure transmitter, temperature transmitter, orifice and three pens recorder. The audit team has checked the complete set of monthly data for the monitoring period from the spreadsheets and compared with the plant records.												
Cross-check	--												
	<table> <tr> <td>Data / Parameter:</td><td>$NCV_{RG,F,y}$</td></tr> <tr> <td>Data unit:</td><td>TJ/Nm³</td></tr> <tr> <td>Description:</td><td>Net calorific value of recovered gas measured at point F in Figure B1 during the period y</td></tr> </table>	Data / Parameter:	$NCV_{RG,F,y}$	Data unit:	TJ/Nm ³	Description:	Net calorific value of recovered gas measured at point F in Figure B1 during the period y						
Data / Parameter:	$NCV_{RG,F,y}$												
Data unit:	TJ/Nm ³												
Description:	Net calorific value of recovered gas measured at point F in Figure B1 during the period y												

	Source of data used:	Gas analysis reports by third party laboratory
	Means of verification/Comments:	The audit team has checked all the laboratory analysis reports of the recovered gas to verify the NCV values reported in the MR.
	Cross-check	Supplier data
	Data / Parameter:	$FC_{i,j,y}$
	Data unit:	m ³ /year
	Description:	Quantity of gas fuel combusted in process j during the year y
	Source of data used:	Plant records
	Means of verification/Comments:	The quantity of gas fuel combusted in process is measured by the flow meter and the audit team has checked all the monitoring equipment related to the flow meter viz. Orifice lifting, flow computer, differential and static pressure transmitter, temperature transmitter, orifice and three pens recorder. The audit team has checked the complete set of data for the monitoring period from the spreadsheets and compared with the plant records.
	Cross-check	--
	Data / Parameter:	$NCV_{i,y}$
	Data unit:	GJ/m ³
	Description:	Average net calorific value of gas fuel in year y for combustion of compressor
	Source of data used:	IPCC default value
	Means of verification/Comments:	The IPCC default value is used for average NCV value of gas fuel, which is used to calculate project emissions. The value has been checked as per Table 1.2 of Chapter 1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories
	Cross-check	--
	Data / Parameter:	$EF_{CO_2,i,y}$
	Data unit:	tCO ₂ /GJ
	Description:	Weighted average CO ₂ emission factor of lean gas fuel in year y for combustion
Source of data used:	IPCC default value	
Means of verification/Comments:	The IPCC default value is used for Weighted average CO ₂ emission factor of lean gas fuel, which is used to calculate project emissions. The value has been checked as per Table 1.4 of Chapter 1 of Vol. 2 (Energy) of the 2006 IPCC	

Means of verification	Not Applicable
Findings	Not Applicable
Conclusion	Not Applicable

Means verification	of	The audit team has checked the calibration certificates and records of the monitoring equipment as given below [IRL # 10, 12]:				
		Equipment	Make	Serial no	Calibration date	Valid till

		Orifice fitting	Pietro Fiorentini	2D1 DDEDED465D		
		Flow Computer	OMNI	1730101		
		Differential pressure transmitter	Yokogawa	91K652743-026	17/01/2019 17/01/2020	17/01/2020 17/01/2021
		Static Pressure Transmitter	Yokogawa	91K652758-026		
		Temperature transmitter	Yokogawa	C2K71 0093-028		
		Three pens recorder	ITT Barton	11785689003		

E.8. Assessment of data and calculation of emission reductions or net removals**E.8.1. Calculation of baseline GHG emissions or baseline net GHG removals by sinks**

Means of verification	The assessment of data and the calculation of baseline emission reduction in the MR and the CER excel sheet have been verified as per the following set of supporting documents: 1. Fuel gas data plant records 2. Gas analysis reports 3. CER spreadsheets
Findings	No CAR/CL has been raised.
Conclusion	Calculations applied formulae and method for calculation of baseline emission are in accordance with the registered monitoring plan and are in line with the requirements of the applied methodology.

E.8.2. Calculation of project GHG emissions or actual net anthropogenic GHG removals by sinks

Means of verification	The assessment of data and the calculation of project emission reduction in the MR and the CER excel sheet have been verified as per the IPCC default values.
Findings	No CAR/CL has been raised.
Conclusion	Calculations applied formulae and method for calculation of project emission are in accordance with the registered monitoring plan and are in line with the requirements of the applied methodology.

E.8.3. Calculation of leakage GHG emissions

Means of verification	No leakage emissions
Findings	No leakage emissions
Conclusion	No leakage emissions

E.8.4. Summary calculation of GHG emission reductions or net anthropogenic GHG removals by sinks

Means of verification	<p>No lack of evidence and missing data were detected during this monitoring period. All values as per the monitoring plan were crosschecked by the verification team against basic monitored data and the calculations were found to be correct. The verification team confirms that all assumptions, emission factors and default values have been correctly justified. All the emission factors, application of maximum permissible errors and default values are explicitly mentioned in the monitoring report. Hence the DOE confirms that the methods and formulae used to obtain the emissions are appropriate.</p> <p>No reporting risks have been identified for the data reported. Troubleshooting procedure, maintenance and calibration of monitoring equipment, monitoring measurements and reporting, record handling and maintenance, reviewing monitored data are available at the plant. All the monitored data are archived partially in electronic and paper form. The data will be kept for the whole crediting period and 2 years after the last crediting period thereby meeting the requirement of the monitoring plan.</p>
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	<p>Verified emission reductions in this monitoring period: 41,193 (round down to nearest integer) tCO₂e</p> <p>Baseline: 44,658.30 tCO₂e Project emissions: 3,465.25 tCO₂e Leakage: 0 tCO₂e</p>
Findings	No CAR/CL has been raised.
Conclusion	<p>The formulae and the methods referred in the MR and the emission reduction calculation spread sheet comply with the methods described in the registered PDD.</p> <p>No lack of evidence and missing data were detected during this monitoring period. All values as per the monitoring plan were crosschecked by the verification team against basic monitored data and the GHG emission calculation is found correct.</p> <p>TUV SUD confirms that all assumptions, emission factors and default values have been correctly justified. All the emission factors and default values are explicitly mentioned in the monitoring report. Calculations applied formulae and method for calculation of GHG emission are in accordance with the registered monitoring plan and are in line with the requirements of the applied methodology and p. 372, p.373 of CDM VVS PA ver 2.0.</p>

E.8.5. Comparison of actual GHG emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD

Means of verification	TUV SUD compared the ex-ante estimation of emission reductions in the registered PDD with the emission reductions reported by the PPs in the monitoring report.
Findings	The estimated CERs for this monitoring period are 35,857 tCO ₂ e however during this monitoring period the reported CERs are 41,193 tCO ₂ e. This clearly demonstrates that the reported emission reductions resulted are more than that of estimated in the registered CDM-PDD.
Conclusion	TUV SUD confirms that the emission reductions are real and measurable.

E.8.6. Remarks on difference from estimated value in registered PDD

Means of verification	TUV SUD compared the ex-ante estimation of emission reductions in the registered PDD with the emission reductions reported by the PPs in the monitoring report.
Findings	<p>CL 2 has been raised since there is an increase in the ERs when compared to the registered PDD and the exact reasons were not properly justified by the PP. The PP has mentioned the reasons and the issue could be closed.</p> <p>The increase of 14.88% in emission reductions during the current monitoring period relative to those estimated in the registered CDM-PDD. The estimation of emission reductions in the registered PDD over the period of this monitoring report is 35,857 tCO₂e</p> <p>The increase in emission reductions during the monitoring period is attributed to the monthly fluctuations in feed gas volumes and net calorific value of recovered gas during the monitoring period. In addition, current monitoring period covers only three months, and within any given 12-month period there will be months with above average CER generation and periods with below average and zero generation (due to e.g. outage and maintenance). The increase in emission reductions during the monitoring period reflects such monthly fluctuations and the short monitoring period.</p>

Conclusion	TUV SUD confirms that the emission reductions are real and measurable as per p.373 of CDM VVS PA ver 2.0.
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E.8.7. Actual GHG emission reductions or net anthropogenic GHG removals by sinks during the first commitment period and the period from 1 January 2013 onwards

Means of verification	The reported GHG emission reductions reported in the monitoring report are 41,193 tCO ₂ e. As described in detail in Section E of this report, all relevant aspects of the project activity have been assessed in order to determine, whether the claimed emission reductions by the PPs are correctly determined, reasonable and fairly stated and based on verifiable evidence and in accordance with the applied methodology, the registered PDD and the monitoring plan.
Findings	The monitoring period of the present verification is from 01/01/2020 to 31/03/2020 (first and last days included) Hence, GHG emission reductions or net GHG removals up to 31 December 2012 is Nil.
Conclusion	TUV SUD confirms that the GHG emission reduction of the present monitoring period is 41,193 tCO ₂ e.

E.9. Assessment of reported sustainable development co-benefits

Means of verification	Not applicable
Findings	Not applicable
Conclusion	Not applicable

E.10. Global stakeholder consultation

Means of verification	Not applicable
Findings	Not applicable
Conclusion	Not applicable

SECTION F. Internal quality control

Internal quality control within the team is assured by means of a technical review process that takes place after the on-site assessment and after closure of findings. The internal quality control in the verification process is given by the final decision (Verification and Certification Conclusion) made by the CB "Environment and Energy".

SECTION G. Verification opinion

The DOE confirms that

- the development and maintenance of records and reporting procedures are in accordance with the registered monitoring plan;
- the project is operated as planned and described in the project design document approved by the EB;
- the installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately;
- the monitoring system is in place and generates GHG emission reductions data;
- the monitoring plan in Monitoring Report is as per the PDD and monitoring plan approved by the EB;
- the approved monitoring plan in the approved PDD is as per the applied methodology;
- There is an audit trail that contains the evidence and records that validate the stated figures.

Based on the information we have seen and evaluated, we confirm that the project activity achieved the verified amount of reductions in anthropogenic emissions by sources of greenhouse gases that would not have occurred in the absence of the project activity.

Verified emission reductions in this monitoring period: 41,193 (round down to nearest integer)
tCO₂e

Baseline: 44,658.30 tCO₂e
Project emissions: 3,465.25 tCO₂e
Leakage: 0 tCO₂e

SECTION H. Certification statement

TÜV SÜD South Asia Pvt. Ltd. has performed the periodic verification CDM project activity "Recovery and Utilization of Associated Gas at Pondok Tengah LPG Plant – PT. Yudistira Energy". The verification is based on the currently valid documentation of the United Nations Framework Convention on Climate Change (UNFCCC).

The management of Agrinergy is responsible for the preparation of the GHG emissions data and the reported GHG emission reductions on the basis set out within the project's Monitoring Plan indicated in the registered PDD and the applied methodology.

TUV SUD conducted the verification on the basis of the monitoring methodology "AM0009 ver. 7- Recovery and utilization of gas from oil wells that would otherwise be flared or vented registered PDD, validation report and the monitoring report, emission reduction spreadsheets and all the supporting documentation made available to us.

TÜV SUD confirms that the project is implemented as described in the validated and registered project design documents. Based on the information we have assessed, we confirm that the GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner.

Pune, 10/09/2020



Milind Shende

Certification Body "Environment and Energy"
TÜV SÜD South Asia Pvt Ltd

Appendix 1: Abbreviations

Abbreviations	Full texts
SSC	Small Scale
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM-EB	CDM Executive Board
CER	Certified Emission Reduction
CM	Combined Margin
CMP	Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol
CO₂e	Carbon dioxide equivalent
CR / CL	Clarification Request
DNA	Designated National Authority
DOE	Designated Operational Entity
EF	Emission Factor
EIA / EA	Environmental Impact Assessment / Environmental Assessment
ER	Emission Reduction
FAR	Forward Action Request
FSR	Feasibility Study Report
GHG	Greenhouse Gas(es)
GWP	Global Warming Potential
IRL	Information Reference List
KP	Kyoto Protocol
MP	Monitoring Plan
MR	Monitoring Report
NGO	Non-Governmental Organisation
OM	Operational Margin
PCP	Project Cycle Procedure
PDD	Project Design Document
PP	Project Participant
PS	Project Standard
TÜV SÜD	TÜV SÜD South Asia Pvt. Ltd
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Clean Development Mechanism Validation And Verification Standard for PA

Appendix 2: Competence of team members and technical reviewers



CERTIFICATE OF APPOINTMENT

Mr. Murty, Eswar fulfills the requirements of the Certification Body 'Environment and Energy' of TÜV SÜD South Asia Pvt Ltd. to participate in audits.

Qualification applicable to					
Standard	CDM	GIS	VCRS	ISO-14004-1 2006	Other
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Qualification as						
Status	validator	verifier	ATL	Technical Reviewer	Financial Expert	Technical Expert
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
TA (s)	1.1, 1.2, 3.1, 4.1, 13.1					

Country Expertise						
Region	1	2	3	4	5	Other
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Further countries						

Technical Area	
1.1_Thermal Energy Generation	
1.2_Renewables	
3.1_Energy demand	
4.1_Cement and lime production	
13.1_Solid waste and wastewater	

This appointment is valid until 31.05.2021 and is bound by internal requirements of the Certification Body 'Environment and Energy' of TÜV SÜD South Asia Pvt Ltd.

In case of loss of validity of this certificate as per result of an assessment according to internal procedures or due to any other reason, it will be properly communicated to you.

Your Certificate has the internal reference no. CB-IND-CCP-0001/011.

Date	Signature
01/06/2020	

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CERTIFICATE OF APPOINTMENT

Mr. Shukla Ajay fulfills the requirements of the Certification Body 'Environment and Energy' of TÜV SÜD South Asia Pvt Ltd to participate in audits.

Qualification applicable to					
Standard	CDM	GS	VCS	ISO 14064-1:2006	Other
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Qualification as						
Status	Validator	Verifier	ATL	Technical Reviewer	Financial Expert	Technical Expert
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TA (s):	1.1, 10.1					

Country Expertise						
Region	1	2	3	4	5	Other
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Further countries						

Technical Area	
1.1 Thermal energy generation	
10.1 Fugitive emissions from oil and gas	

This appointment is valid until 31.05.2021 and is bound by internal requirements of the Certification Body 'Environment and Energy' of TÜV SÜD South Asia Pvt Ltd.

In case of loss of validity of this certificate as per result of an assessment according to internal procedures or due to any other reason, it will be properly communicated to you.

Your Certificate has the internal reference no. CB-IND-CCP-0009/010.

Date	Signature
01/06/2020	

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CERTIFICATE OF APPOINTMENT

Mr. Joshi, Akhilesh fulfills the requirements of the Certification Body 'Environment and Energy' of TÜV SÜD South Asia Pvt Ltd to participate in audits.

Qualification applicable to					
Standard	CDM	GS	VCS	ISO 14064-1: 2006	Other
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Qualification as						
Status	Validator	Verifier	ATL	Technical Reviewer	Financial Expert	Technical Expert
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TA (s)	1.2, 3.1, 4.1, 10.1					

Country Expertise						
Region	1	2	3	4	5	Other
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Further countries						

Technical Area	
1.2_Renewables	
3.1_Energy demand	
4.1_Cement and lime production	
10.1_Fugitive emissions from oil and gas	

This appointment is valid until 31.07.2020 and is bound by internal requirements of the Certification Body 'Environment and Energy' of TÜV SÜD South Asia Pvt Ltd.

In case of loss of validity of this certificate as per result of an assessment according to internal procedures or due to any other reason, it will be properly communicated to you.

Your Certificate has the internal reference no. CB-IND-CCP-00101/003.

Date	Signature
07/08/2019	

IS-CDM-478-POG-01/03, version 03

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CERTIFICATE OF APPOINTMENT

Mr. Meesa, Srikanth fulfils the requirements of the Certification Body 'Environment and Energy' of TÜV SÜD South Asia Pvt Ltd to participate in audits

Qualification applicable to					
Standard	CDM	GS	VOS	ISO-14004-1, 2006	Other
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Qualification as						
Status	Validator	Verifier	ATL	Technical Reviewer	Financial Expert	Technical Expert
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TA (s)	1.2, 3.1, 7.1, 10.1					

Country Expertise						
Region	1	2	3	4	5	Other
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Further countries						

Technical Area	
1.2_Renewables	
3.1_Energy demand	
7.1_transport	
10.1_Solid waste and wastewater	

This appointment is valid until 31.05.2021 and is bound by internal requirements of the Certification Body 'Environment and Energy' of TÜV SÜD South Asia Pvt Ltd.

In case of loss of validity of this certificate as per result of an assessment according to internal procedures or due to any other reason, it will be properly communicated to you.

Your Certificate has the Internal reference no. CB-IND-CCP-0096/007.

Date	Signature
01/06/2020	

IS-CMS-CB-POC-01/05, version 03

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CERTIFICATE OF APPOINTMENT

Mr. Arie Jufrizal Rangkuti fulfills the requirements as per the Evaluation and Qualification criteria (IS-CMS-CB-POG-01/01) of the Certification Body 'Environment and Energy' of TÜV SÜD South Asia Pvt Ltd and is appointed as a

Country Expert- Indonesia

This appointment as a Country Expert is for his involvement in projects related to CDM, GS and VCS Standards.

This appointment is valid until 09.11.2020 and is bound by internal requirements of the Certification Body 'Environment and Energy' of TÜV SÜD South Asia Pvt Ltd.

Your Certificate has the internal reference no. CB-IND-CCP-CE-02/01.

Date	Signature
10/11/2018	

IS-CMS-CB-POG-01/05, version 04

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Appendix 3: Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1	UNFCCC	http://cdm.unfccc.int/Projects/DB/LRQA%20Ltd1333528065.88/view	---	UNFCCC
2	UNFCCC	AM0009 ver. 7 - Recovery and utilization of gas from oil wells that would otherwise be flared or vented		UNFCCC
3	Agrinergy Pte Ltd	Monitoring report. version 1	08/04/2020	Agrinergy Pte Ltd
4	Agrinergy Pte Ltd	Monitoring report. version 2	07/05/2020	Agrinergy Pte Ltd
5	Agrinergy Pte Ltd	ER calculation spreadsheet version 3	08/09/2020	Agrinergy Pte Ltd
6	PT Yudistira Energy	CDM Monitoring data	01/01/2020 to 31/03/2020	PT Yudistira Energy
7	PT Yudistira Energy	Distribution of feed gas and lean gas- LPG plant		PT Yudistira Energy PT Pertamina
8	PT Yudistira Energy	Commissioning certificate of LPG Pondok Tengah plant	03/03/2011	PT Yudistira Energy PT Pertamina ep PT Pertamina PT Marindotech
9	Pertamina EP	Recovered gas data	01/01/2020 to 31/03/2020	PT Yudistira
10	Director General, Oil & Gas	Calibration certificates of recovered gas meters	01/01/2020 to 31/03/2020	PT Yudistira Energy
11	KAN (Komite Akreditasi Nasional)	NCV (recovered gas) testing reports	01/01/2020 to 31/03/2020	PT Yudistira Energy
12	Director General, Oil & Gas	Calibration certificates of gas fuel combusted meters	01/01/2020 to 31/03/2020	PT Yudistira Energy
13	PT Yudistira Energy	Gas fuel combusted data	01/01/2020 to 31/03/2020	PT Yudistira Energy
14	PT Yudistira Energy	Internal audit records during the monitoring period	01/01/2020 to 31/03/2020	PT Yudistira Energy
15	PT Yudistira Energy	Training records of monitoring personnel	01/01/2020 to 31/03/2020	PT Yudistira Energy
16	PT Yudistira Energy	Plant shutdown details for the monitoring period	01/01/2020 to 31/03/2020	PT Yudistira Energy
17	UNFCCC	PDD Version 4	16/05/2019	UNFCCC

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

Table 1. Remaining FAR from validation and/or previous verifications

NA.

Table 2. CL from this verification

CL ID	01	Section no.		Date: 02/05/2020
Description of CL				
1.	For the parameter $V_{f,y}$ - the calibration of metering equipment is valid until 17/01/2020 as mentioned in the MR. However the monitoring period is until 31/03/2020- PP to provide the calibration details and certificate			
2.	For the parameter $FC_{i,j,y}$ - the calibration of metering equipment is valid until 21/03/2020 as mentioned in the MR. However the monitoring period is until 31/03/2020- PP to provide the calibration details and certificate			
Project participant response				Date: 07/05/2020
1.	The calibration certificate for the period 2020-2021 valid for the monitoring period is updated in the revised MR and provided to DOE.			
2.	Due to COVID 19 pandemic, there was delay in calibration for the $FC_{i,j,y}$ meter. Hence as per CDM validation and verification standard for project activities Version 02 paragraph 366 the maximum permissible error (i.e. accuracy class) of the instrument to the measured values taken during the period between the scheduled date of calibration and the actual date of calibration is applied. On conservative side the correction factor for delay in calibration is applied for the month of March 2020. The latest calibration certificate is updated in the revised MR and provided to DOE.			
Documentation provided by project participant				
Calibration certificate for $V_{f,y}$, $FC_{i,j,y}$				
DOE assessment				Date: 15/05/2020
For the parameter $V_{f,y}$, the calibration details have been updated in the MR and the relevant calibration certificates have been submitted by the PP. The same are found to be correct.				
For the parameter $FC_{i,j,y}$, there was delay in calibration, however the calibration certificate has been submitted by the PP for the next schedule. Calibration details have been updated in the revised MR. Also necessary correction factors have been applied by the PP in line with p.366 of VVS, for the gap in the calibration observed during the monitoring period. The issue has been closed.				

CL ID	02	Section no.		Date: 02/05/2020
Description of CL				
PP has mentioned the reason for increase in ERs as compared to the estimated data, however this explanation is not clear.				
Project participant response				Date: 07/05/2020
The reason for increase in ERs as compared to the estimated data is clearly explained in the revised MR.				
Documentation provided by project participant				
Revised MR				
DOE assessment				Date: 15/05/2020
The increase in the ERs has been attribute to the monthly fluctuations in the lean gas flow and shorter duration of the monitoring period. The explanation has been accepted and the issue is closed.				

CL ID	03	Section no.		Date: 07/09/2020
Description of CL				
<p>It is observed that in the CER spreadsheet, worksheet "Baseline data", notes 2 - 4, require the monitoring of actual gravity weekly and to apply this gravity correction factor to the monitored $V_{f,y}$ values. However, the $V_{f,y}$ values reported in the cells B10-B12 (i.e. the monitored value as per the note 3) are the same as the values listed in the cells D10-D12 (i.e. the corrected value as per note 4), and these corrected values are said to be used for baseline emission calculation) for the period January to March 2020. Please provide information regarding the monitoring of the actual gravity monitored on a weekly basis and how it has been applied to correct the monitored value of $V_{f,y}$ in order to arrive at the final value of $V_{f,y}$ since it would participate in and have an impact on the calculation of emission reductions</p>				
Project participant response				Date: 08/09/2020
<ul style="list-style-type: none"> The flow meter and flow computer used to monitor $V_{F,y}$ (Volume of total recovered gas measured at point F in Figure B1 in year y) is owned and managed by PT Pertamina. Prior to June 2018 PT Pertamina manually corrected the flow computer reading at the end of each month based on weekly specific gravity readings. Since June 2018, a functioning Gas Chromatograph has been in place which the flow computer interacts with to produce a daily reading that does not require correction. <p>Taken this into account, the CER spreadsheet is revised (the column pertaining to the corrected values of $V_{F,y}$ is taken out as the recorded and corrected values are the same).</p>				
Documentation provided by project participant				
Revised CER spreadsheet				
DOE assessment				Date: 15/05/2020
<p>The corrected values of $V_{F,y}$ in the previous version of the CER spreadsheet have been taken out since these are the same values as that of the monitored values. This is due to the fact that since June 2018, PT Pertamina has been using a gas chromatograph and the flow computer interacts with this to produce daily values and hence no correction was required for the values of $V_{F,y}$. Hence only one monitored value is included in the CER sheet. The audit team has verified the same and there is no impact on the emission reductions. Therefore this issue is closed.</p>				

Table 3. CAR from this verification

CAR ID	01	Section no.	C	Date: 02/05/2020
Description of CAR				
PP has not mentioned the downtime hours of the plant during the period.				
Project participant response				Date: 07/05/2020
The details of operating and downtime hours are provided in the revised MR.				
Documentation provided by project participant				
Revised MR				
DOE assessment				Date: 15/05/2020
The shutdown details have been provided in the revised MR. Hence the issue is closed.				

Table 4. FAR from this verification

NA.