




**Verification and certification report form for
CDM project activities
(Version 03.0)**

BASIC INFORMATION

Title and UNFCCC reference number of the project activity	Fes New Landfill Gas Recovery Reuse and Flaring Project UNFCCC Reference Number: 9761
Scale of the project activity	<input checked="" type="checkbox"/> Large-scale <input type="checkbox"/> Small-scale
Version number of the verification and certification report	01.2
Completion date of the verification and certification report	10/02/2021
Monitoring period number and duration of this monitoring period	Monitoring Period Number:- 1; Duration:- 12/03/2015 – 30/04/2018 (including both days)
Version number of the monitoring report to which this report applies	03.2
Crediting period of the project activity corresponding to this monitoring period	12/03/2015 - 11/03/2025
Project participants	1. Ecomed Gastaion des Deschets 2. Commune Urbaine de Fes
Host Party	Morocco
Applied methodologies and standardized baselines	ACM0001: Flaring or use of landfill gas Version 13.0.0 Standardized baseline: Not applicable
Mandatory sectoral scopes	13: Waste handling and disposal
Conditional sectoral scopes, if applicable	1: Energy industries (renewable - / non-renewable sources)
Estimated amount of GHG emission reductions or GHG removals for this monitoring duration in the registered PDD	365,759 tCO ₂ e
Certified amount of GHG emission reductions or GHG removals for this monitoring period	11,869 tCO ₂ e
Name and UNFCCC reference number of the DOE	Earthood Services Private Limited E-0066
Name, position and signature of the approver of the verification and certification report	 Ashok K Gautam Director

SECTION A. Executive summary

The Project activity is the installation of enhanced landfill gas extraction and flaring equipment for the destruction of the landfill gas and the installation of electricity generation equipment for the electricity generation. The project activity aim to have the total capacity of 2.134 MW consisting two units each having capacity 1.067MW. However, only one unit of 1.067 MW has been installed so far. The captured LFG is being utilized in the gas engines to generate electricity and being exported to the grid.

The assessment team confirms that the total emission reduction achieved under this monitoring period 12/03/2015 - 30/04/2018 (including both days) is 11,869 tCO₂e

Scope of verification

The scope of the verification was limited to the monitoring period covered under the current monitoring period 12/03/2015 - 30/04/2018 of the registered CDM PA "Fes New Landfill Gas Recovery Reuse and Flaring Project" to determine whether; the project activity has been implemented and operated as per the revised approved PDD or any approved revised PDD, and that all physical features (technology, project equipment, and monitoring and metering equipment) of the project are in place;

The monitoring report and other supporting documents provided are complete in accordance with the latest applicable version of the completeness checklist for requests for issuance of CERs, verifiable, and in accordance with applicable CDM requirements;

The actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan, any revised approved monitoring plan, the approved methodology including applicable tool(s) and/or, where applicable, the approved standardized baseline;

The data recorded and stored as per the monitoring methodology including applicable tool(s) and, where applicable, the standardized baseline.

Verification process

The verification process involved following;

- Publication of monitoring report
- Desk review
- Physical on-site inspection
- Issuance of verification findings
- Reporting, calculation checks, QA/QC and resolution of findings
- Issuance of draft verification report
- Independent technical review of the project documentation
- Issuance of the final verification report
- Submission of the request for issuance, as appropriate

Conclusion

ESPL has performed the verification of the CDM PA "Fes New Landfill Gas Recovery Reuse and Flaring Project" having UNFCCC Ref. Number 9761 for the monitoring period 12/03/2015 - 30/04/2018. The verified emission reductions amount to 11,869 tCO₂e in the aforesaid monitoring period.

The verification concluded that the registered CDM PA complies with all relevant CDM procedures/standards/guidance and therefore request for issuance is being submitted in accordance with the CDM procedures.

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/document review	On-site inspection	Interviews	Verification findings
1.	Team Leader	IR	Singh	Kaviraj	Central Office	Y	Y	Y	Y
2.	Meth. Expert (ACM0001)	IR	Singh	Kaviraj	Central Office	Y	Y	Y	Y
3.	Technical Expert (TA 13.1)	IR	Singh	Kaviraj	Central Office	Y	Y	Y	Y
4.	Local Expert	EI	Boutaleb	Abderrahim	Central Office	Y	N	N	N
5.	Verifier	IR	Gupta	Anshika	Central Office	Y	N	N	Y

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	Gautam	Ashok	Central Office
2.	TA expert to TR (TA 13.1)	IR	Gautam	Ashok	Central Office
3.	Approver	IR	Gautam	Ashok	Central Office

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.	Error in transferring the recorded data to ER sheet	High	The procedure for transferring the recorded data for each parameter from its source to the spreadsheet is manual in nature thus increasing the chances of error.	All monthly reported values in ER sheet were verified with the source of parameter values.
2.	Error in recording of data	High	The project requires more than one monitoring equipment in the whole process of ER calculations. They might show wrong readings and be out of calibration.	The calibration certificates were checked and found calibrated for the entire monitoring period.

C.2. Consideration of materiality in conducting the verification

In accordance with the CDM VVS Version 02 para 326 the thresholds for materiality for CDM PAs are under:

Emission Reductions (tCO ₂ e)/year	500,000 or more	300,001 to 499,999	300,000 or less	Small Scale CDM Pas	Micro Scale CDM PAs
Materiality Threshold (para 326)	0.5%	1.0%	2.0%	5.0%	10.0%

The applicable materiality threshold is 2.0 % as project activity is a large scale CDM PA.

Particulars / Monitoring Report	MR Version (Public)	MR Version (Revised/Final)
Emission Reductions Achieved (tCO ₂ e) in this monitoring period	70,933	11,869
Applicable Threshold (%) as per para 326 of CDM VVS Version 2	2.0%	2.0%

Monitored parameters checked are as follows:

Monitored Parameter (Symbol / Description)	Reporting Frequency	Number of Discrete Data (Total)	Sample selected for verification	Type of error identified	Impact on ERs
		Total (100%)	Sample (%)		100% of data has been verified. Extrapolation of impact is not required.
*V _{t,db} / V _{t,wb} / FVRG _h (FCH ₄ ,EL,y): Volumetric Flow rate of LFG to Gas Engines	Daily	100%	100%	No error identified	No impact
*V _{t,db} / V _{t,wb} / FVRG _h (FCH ₄ ,sent_flare,y): Volumetric Flow rate of LFG to Flare	Daily	100%	100%	No error identified	No impact
*v _{i,t,db} = f _{vi,h} : Volumetric fraction of methane in a hourly time interval <i>t</i> on a dry basis	Hourly	100%	100%	No error identified	No impact
*T _t : Temperature of the gaseous stream in time interval <i>t</i>	hourly	100%	100%	No error identified	No impact
*P _t : Pressure of the gaseous stream in time interval <i>t</i>	hourly	100%	100%	No error identified	No impact
Management of SWDS	Annually	100%	100%	No error identified	No impact
*Op _{j,h} : Operation of the equipment that consumes the LFG	Hourly	100%	100%	No error identified	No impact
EG _{PJ,y} : Amount of electricity generated using LFG by the project activity in year <i>y</i>	Monthly	100%	100%	No error identified	No impact
EG _{EC,y} : Amount of electricity consumed by the project activity in year <i>y</i>	Monthly	100%	100%	No error identified	No impact
*T _{EG,m} : Temperature in the exhaust gas of the enclosed flare in minute <i>m</i>	Hourly	100%	100%	No error identified	No impact
*Flame _m : Flame detection of flare in the minute <i>m</i>	Hourly	100%	100%	No error identified	No impact
TDL _{k,y} : Average technical transmission and distribution losses for	Default	100%	100%	No error identified	No impact

providing electricity to source <i>j, k or l</i> in year <i>y</i>					
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*These values are recorded automatically in the specially designed software (SCADA) and copied and pasted in the ER sheet. The first and last values reported in the column of related ER sheet were cross checked from the originally recorded values. The total of all these values reported in that column was also cross verified from source values. This ensures that no error was made while the values were transferred from source to ER sheet.

Based on the above table it can be confirmed that the materiality threshold is not breached applicable for the registered PA as per CDM VVS. The verifying DoE confirms that the total ERs are free from material errors.

SECTION D. Means of verification

D.1. Desk/document review

Earthood conducted a desk review as under;

- A review of the data and information presented to verify their completeness;
- A review of the monitoring plan, the monitoring methodology including applicable tool(s) and, where applicable, the applied standardized baseline, paying particular attention to the frequency of measurements, the quality of metering equipment including calibration requirements, and the quality assurance and quality control procedures;
- An evaluation of data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions;

In addition to the monitoring documentation, Earthood has reviewed;

- The PDD (revised) Version 16.1 dated 22/12/2020 and the monitoring plan, including any approved revised monitoring plan and/or changes from the registered PDD, and the corresponding validation opinion;
- The applied monitoring methodology (ACM0001: Flaring or use of landfill gas Version 13.0.0);
- The monitoring report (all versions) to verify that it is as per the standardized format;
- Any other information and references relevant to the project activity's emission reductions (e.g. IPCC reports, data on electricity generation in the national grid or laboratory analysis and national regulations).

The complete list of documents reviewed is included under Appendix 3.

D.2. On-site inspection

Duration of on-site inspection: 30/05/2018-31/05/2018				
No.	Activity performed on-site	Site location	Date	Team member
1.	Project implementation and operation (project boundary, technology, project equipment, monitoring and metering equipment) and changes as per revised PDD	Wilaya de Fes-Boulemane, Morocco	30/05/2018	Kaviraj Singh
2.	A cross check between information provided in the monitoring report and data from other sources such as plant logbooks, inventories, purchase records or similar data sources;		30/05/2018	Kaviraj Singh
3.	Project boundary and emission sources included in the project boundary.		30/05/2018	Kaviraj Singh
4.	A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the PDD, the applied methodology including applicable tool(s), and, where applicable, the applied standardized baseline;		31/05/2018	Kaviraj Singh
5.	Monitoring plan (validity of ex-ante parameters). A review of calculations and assumptions made in determining the GHG data and emission reductions;		31/05/2018	Kaviraj Singh
6.	Closing meeting and issuance of findings		31/05/2018	Kaviraj Singh

D.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Labzae	Sami	ECOMED	30/05/2018-31/05/2018	Production facility, Maintenance and operation, Monitoring details etc.	Kaviraj Singh
2.	Bokkajja	Mohammed	ECOMED	30/05/2018-31/05/2018	PDD, MR, ER Calculation, Monitoring Plan, Monitoring Frequency, calibration etc.	Kaviraj Singh

D.4. Sampling approach

No sampling approach was followed by the assessment team. All reported figures in the MR/2/ and ER sheet/3/ were checked from the actual records.

D.5. Clarification requests (CLs), corrective action requests (CARs) and forward action requests (FARs) 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 and operation with the registered PDD	-	-	-
Post-registration changes	CL#01, CL#02,	CAR#04, CAR#03	-
Compliance of the registered monitoring plan with the methodologies including applicable tools and standardized baselines	-	-	-
Compliance of monitoring activities with the registered monitoring plan	-	-	-
Compliance with the calibration frequency requirements for measuring instruments	-	-	-
Assessment of data and calculation of emission reductions or net removals	-	-	-
Assessment of reported sustainable development co-benefits	-	-	-
Global stakeholder consultation	-	-	-
Others (please specify)	-	-	-
Total	02	02	0

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

Means of verification	The monitoring report form used is CDM-MR-FORM version 7 /50/ which was the appropriate form and the latest version available at the time of verification, as verified through UNFCCC webpage.
Findings	No findings
Conclusion	All the sections of the form were filled as per the guidelines and gave all the relevant details. The revised final monitoring report /2/ was found to be in compliance with the applicable latest monitoring report form and instructions therein.

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

This is the first verification and there is no FAR from the validation.

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

Means of verification	<p>The Project activity is the installation of enhanced landfill gas extraction and flaring equipment for the destruction of the landfill gas and the installation of electricity generation equipment for the electricity generation. The project activity aim to have the total capacity of 2.134 MW consisting two units each having capacity 1.067MW. However, only one unit of 1.067 MW has been installed so far. The captured LFG is being utilized in the gas engines to generate electricity and being exported to the grid. The detailed technical specifications of the CDM project activity verified on site were found inline to the revised PDD, as detailed below.</p> <p>Flare technology: The project activity involves the installation of a stationary enclosed gas flare consisting of pipe work, valves, blower, stack with burners, instrumentation and control panel. The details of the installed flare are as follows:</p> <table border="1" data-bbox="336 611 1294 801"> <tr> <td>Description</td><td>Flare</td></tr> <tr> <td>Make</td><td>Biogas Technology Limited, UK</td></tr> <tr> <td>Flow capacity range (Nm³/h)</td><td>2000Nm³/h</td></tr> <tr> <td>Combustion temperature range (°C)</td><td>1000 - 1150</td></tr> <tr> <td>Manufacturing Year</td><td>2010</td></tr> </table> <p>Electricity generation technology: The project has an installed electricity generation capacity of 1067kw using captured landfill gas as follows:</p> <table border="1" data-bbox="336 954 1294 1245"> <tr> <td colspan="2">Gas Engine</td></tr> <tr> <td>Make</td><td>Jenbacher GE</td></tr> <tr> <td>Number of unit</td><td>1</td></tr> <tr> <td>Rated Power (kW)</td><td>1067</td></tr> <tr> <td>Year of Manufacturing</td><td>2012</td></tr> <tr> <td>Rated power factor</td><td>1</td></tr> <tr> <td>Rated frequency</td><td>50 Hz</td></tr> <tr> <td>Rated voltage</td><td>415 V</td></tr> <tr> <td>Rated current</td><td>1484 A</td></tr> </table> <p>The verification team has checked the detailed specifications of installed gas engine /24/ and flare system /25/ with other project component and project implementation on site and found it consistent with the revised PDD/1/. Also, the monitored data recorded as the plant record was checked and found that the plant was in continuous operation during the monitoring period, except the short intermittent shutdown due to technical problems or maintenance. The verification team concludes that the operations of the plant were carried out in accordance with the description provided in the PDD/1/.</p> <p>The metering equipment includes energy meters, weighbridge and gas flow meters. The SCADA system is also implemented by the PP. The specifications, accuracy class, serial number, calibration, location, usage, connections, etc was checked onsite with reference to revised PDD/1/ and details of assessment is written below under section E.7 and E.6.2.</p> <p>The emission reduction achieved in this monitoring period are 11,869 tCO₂e, which is lower than the estimated ERs as per revised PDD 365,759tCO₂e.</p> <p>The monitoring and metering system, and its compliance with the revised monitoring plan has been discussed in later sections of the report.</p> <p>For the purpose of verification of implementation of project activity, audit team conducted following activities onsite:</p> <ul style="list-style-type: none"> • An inspection round of activity premise for visual observation • Interviews of personnel employed in the functioning of project activity to gauge if the monitoring personnel were well verse of their role and responsibilities • Review of documentation for the monitored data and to cross-check their correct transfer 	Description	Flare	Make	Biogas Technology Limited, UK	Flow capacity range (Nm³/h)	2000Nm ³ /h	Combustion temperature range (°C)	1000 - 1150	Manufacturing Year	2010	Gas Engine		Make	Jenbacher GE	Number of unit	1	Rated Power (kW)	1067	Year of Manufacturing	2012	Rated power factor	1	Rated frequency	50 Hz	Rated voltage	415 V	Rated current	1484 A
Description	Flare																												
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Year of Manufacturing	2012																												
Rated power factor	1																												
Rated frequency	50 Hz																												
Rated voltage	415 V																												
Rated current	1484 A																												

	to ER sheet Temporary deviation, as listed under E.4.1. of this report, has been sought for the current monitoring period. The permanent changes and change in project design is also sought and discussed in the report.
Findings	CL#01 and CL#02 were raised and closed.
Conclusion	DOE, inline to para 354-356 of VVS for PA Version 02/33/, confirms that: <ul style="list-style-type: none"> • Implementation and operation of project activity has been conducted in accordance with the description contained in revised approved PDD/1/. • There is no deviation or the proposed or actual changes in the implementation and operation of project activity • Physical features of the registered project activity specified in revised approved PDD/1/ are in place and PP have operated the project activity as per the revised approved PDD/1/. The emission reductions achieved during the current monitoring period are 11,869 tCO _{2e} which is lower than the estimated ERs as per revised approved PDD/1/ 365,759tCO _{2e}

E.4. Post-registration changes

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

The temporary deviation is proposed for period 12/03/2015 to 30/04/2018 as no monitoring was taking place due to implementation delays. Furthermore, for the period from June 2015 to Feb 2018 the monitoring on ground was not exactly as per registered PDD in terms of frequency; the monitoring frequency of the parameter methane percentage in biogas was monitored on daily basis and not continuously as required by registered PDD. Hence, monthly values have been used to compute the ERs for this period. Further, in view of conservativeness, the PP has not considered the emission reductions during the period till February 2018 for methane destruction and emission reduction for power generation is considered during this period. The assessment team has checked the calculation for the said period and found it correct and conservative.

E.4.2. Corrections

Section A.3 is updated and technical details are revised due to change in design capacity of the project. There are other editorial corrections in other sections of the PDD. There are other editorial corrections in line with the requirement of new CDM-PDD template. The correction doesn't affect the project design and is in compliance with project methodologies.

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

NA

E.4.4. Inclusion of a monitoring plan

NA

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

There are permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other applied standards or tools as observed during onsite assessment are discussed below:

Revision in monitoring frequency for parameter Tt: Temperature of the gaseous stream in time interval t and frequency of aggregation has been added. The assessment team has reviewed the revised PDD and compared with the registered PDD. The monitoring frequency is continuous for the parameter as per

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).

registered PDD. The frequency is updated and it is now as per actual implementation at site. The monitoring frequency is continuous and aggregated hourly as discussed in the revised PDD. The assessment team has found these in line with the requirement of the methodology.

Revision in monitoring frequency for parameter Pt: Pressure of the gaseous stream in time interval t and frequency of aggregation has been added. The monitoring frequency is continuous for the parameter as per registered PDD. The frequency is updated and it is now as per actual implementation at site. The monitoring frequency is continuous and aggregated hourly as discussed in the revised PDD. The assessment team has found these in line with the requirement of the methodology.

E.4.6. Changes to the project design

The capacity of the project is reduced and the revised capacity of electricity generation is 2.134MW from 3 MW. A PRC validation opinion is being submitted with this request for issuance.

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

NA

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

Means of verification	The review of applied methodology ACM0001: Flaring or use of landfill gas Version 13.0.0./6/ and monitoring plan as contained in revised PDD/1/, Version 16.1, dated 22/12/2020, establishes that the monitoring plan is consistent with the applied methodology and revised PDD/1/. Based on this review it was found the monitoring plan contained in the revised PDD/1/ includes all the required parameters to be monitored in the context of project design and description and allows proper determination of emission reductions in accordance with the revised PDD /1/ and applied methodology/6/.
Findings	No findings
Conclusion	The monitoring plan outlined in the revised PDD/1/ is in accordance with the applied methodology /6/ and correctly applied by the registered CDM project activity.

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	The values considered ex-ante for this monitoring period were cross-checked with revised PDD/1/ and their respective sources. The summary of all the ex-ante parameters has been given below:		
	Parameter/ Description	Value applied	MoV
	OX_{top_layer}: Fraction of methane that is oxidized in the top layer of the SWDS in the baseline	0.1	The value of the parameter was checked from revised PDD/1/ and also from registered PDD.
	F_{CH4,BL,x-1}: Historical amount of methane in the LFG which is captured and destroyed in the year prior to the implementation of the project activity	20%	The value is consistently reported inline to revised approved PDD/1/.
	GWP_{CH4}: Global warming potential of methane valid for the commitment period	25 tCO ₂ e/tCH ₄	The value is consistently reported inline to revised PDD/1/
	η_{PJ}: Efficiency of the LFG capture system that is installed in the project activity	The expected efficiency of the LFG capture system is likely not to exceed 60% based on the experience. The assumption at the time of investment decision was 60% and therefore	The value is consistently reported inline to revised PDD/1/

		same has been used in contrast to 50% prescribed as default by ACM0001 V13.0.0													
	Φ_{default} : Default value for the model correction factor to account for model uncertainties	0.75 for baseline emissions 1.00 for project or leakage emissions, if any	The value is consistently reported inline to revised PDD/1/												
	OX : Oxidation factor (reflecting the amount of methane from SWDS that is oxidized in the soil or other material covering the waste)	0.1	Default value as per Methodological Tool “Emissions from solid waste disposal sites”. The value is consistently reported inline to revised PDD/1/												
	F : Fraction of methane in the SWDS gas (volume fraction)	0.5	The value is consistently reported inline to revised PDD/1/ and it is a default value as per Methodological Tool “Emissions from solid waste disposal sites”												
	DOC_{f,default} : Default value for the fraction of degradable organic carbon (DOC) in MSW that decomposes in the SWDS	0.5	The value is consistently reported inline to revised PDD/1/ and was correctly determined from IPCC 2006 Guidelines for National Greenhouse Gas Inventories.												
	MCF_{default} : Methane correction factor	1.0	The value is consistently reported in line to revised PDD/1/ and was correctly determined from IPCC 2006 Guidelines for National Greenhouse Gas Inventories												
	DOC_j : Fraction of degradable organic carbon (by weight) in the waste type j	<table><tr><td>Food</td><td>50.3%</td></tr><tr><td>Paper</td><td>7.4%</td></tr><tr><td>Wood</td><td>0.0%</td></tr><tr><td>Textile</td><td>5.7%</td></tr><tr><td>Garden</td><td>7.8%</td></tr><tr><td>Plastic</td><td>28.8%</td></tr></table>	Food	50.3%	Paper	7.4%	Wood	0.0%	Textile	5.7%	Garden	7.8%	Plastic	28.8%	The value is consistently reported inline to revised PDD/1/.
Food	50.3%														
Paper	7.4%														
Wood	0.0%														
Textile	5.7%														
Garden	7.8%														
Plastic	28.8%														
	K_j : Decay rate for the waste type j	<table><tr><td>Food</td><td>0.185</td></tr><tr><td>Paper</td><td>0.060</td></tr><tr><td>Cardboard</td><td></td></tr><tr><td>Wood</td><td>0.030</td></tr><tr><td>Textile</td><td>0.060</td></tr><tr><td>Garden waste</td><td>0.100</td></tr></table>	Food	0.185	Paper	0.060	Cardboard		Wood	0.030	Textile	0.060	Garden waste	0.100	The value is consistently reported inline to revised PDD/1/.
Food	0.185														
Paper	0.060														
Cardboard															
Wood	0.030														
Textile	0.060														
Garden waste	0.100														
	EF_{EL,k,y} : CO2 emissions intensity of the baseline source of electricity displaced, which in this case corresponds to electricity provided from the ONE grid connected to the project site, tCO2e/MWh	0.4 tCO2e/MWh	The values are consistently reported inline to revised PDD/1/ and was correctly determined using Tool to calculate baseline, project and/or leakage emissions from electricity consumption Version 1												
	SPEC_{flare} : Manufacturer’s flare specifications for temperature, flow rate and maintenance schedule	Minimum - Maximum flow rate = 500 Nm3/h to 2000 Nm3/h) Minimum – Maximum operating temperature = 1000 °C to 1150 °C)	The values are consistently reported inline to revised PDD/1/												
	η_{flare} : Flare efficiency in minute	80%	The values are consistently												

	<i>m</i>		reported inline to revised PDD/1/.
Findings	CL#01 and CL#02 is raised and resolved.		
Conclusion	The value in the monitoring report /2/ and corresponding emission reduction calculations spreadsheet /3/ are consistent with the revised PDD /1/. The applied value is correct and justified.		

E.6.2. Data and parameters monitored

Vt,db / Vt,wb / FVRG,h (FCH4,EL,y): Volumetric Flow rate of the residual gas in dry basis at normal conditions in the hour h., Nm³ /h

Means of verification	Criteria/Requirements	Assessment/Observation													
	Measuring /Reading /Recording frequency	Continuous recorded and hourly aggregated.													
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the monitoring frequency is in accordance to the monitoring plan/1/ and monitoring methodology/6/.													
	Monitoring equipment	<p>The flow of gas going to electricity meter is monitored by the gas flow meter/30/ installed before the gas engine.</p> <p>Flow meters</p> <table><tr><td>Period</td><td>June 2015 to Mar 2017</td><td>Apr 2017 to Mar 2018</td></tr><tr><td>Make</td><td>Endress+Hauser</td><td>Endress+Hauser</td></tr><tr><td>Type</td><td>Proline t-mass 65</td><td>Proline t-mass 65</td></tr><tr><td>Serial Number</td><td>D40AAE02000</td><td>K108D402000</td></tr></table> <p>Accuracy class: 1% of flow rate</p>		Period	June 2015 to Mar 2017	Apr 2017 to Mar 2018	Make	Endress+Hauser	Endress+Hauser	Type	Proline t-mass 65	Proline t-mass 65	Serial Number	D40AAE02000	K108D402000
	Period	June 2015 to Mar 2017	Apr 2017 to Mar 2018												
	Make	Endress+Hauser	Endress+Hauser												
	Type	Proline t-mass 65	Proline t-mass 65												
	Serial Number	D40AAE02000	K108D402000												
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	Accuracy class of the equipment is as per national standards, which is in line to revised PDD/01/ and consistent with calibration certificate/26/ as well. Information was found consistent onsite.													
Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Accuracy class is valid for entire range/26-27/.														
Calibration frequency /interval:	<p>The meter is calibrated by accredited external third party /26-27/.</p> <p>Accuracy class: 1% of flow rate Calibration date: 10/02/2015 Validity of calibration: 5 years from the date of calibration</p>														
Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected	Yes														

	frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes, the calibration of the measuring equipment is carried out by accredited third party institution as checked from the accreditation certificate of this organization /26/.
	Is(are) calibration(s) valid for the whole reporting period?	Yes the calibration was carried out on 10/02/2015 is valid for the whole monitoring period.
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes
	How were the values in the monitoring report verified?	A value of 7,542,635.76 Nm ³ /h was the consolidated value for the monitoring period verified with plant records/21/ maintained onsite. The value was found to be consistently reported in MR/2/ and ER sheet/3/. However, for the purpose of ER calculations 584,794 Nm ³ /h (for the month of March 2018 and April 2018) were considered.
	If applicable, has the reported data been cross-checked with other available data?	NA
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	The readings are reported in the SCADA system automatically /20/ maintained by the plant operators and reviewed by the supervisor. The meter provides constant measurement accuracy across the operating range, which is also confirmed through calibration of the meter records /26/. The verification team reviewed the daily log-books to check the frequency of measurement and recording of data and found them in line with the monitoring plan. The quality assurance and quality control procedures were applied in accordance with the monitoring plan during the monitoring period.
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	yes. Please see section E.4.1 of this report for details.
Findings	None	
Conclusion	<p>The DOE confirms that:</p> <ul style="list-style-type: none"> • The revised monitoring plan has been properly implemented and followed by the project participants • Monitoring of parameter is implemented in accordance with revised monitoring plan/1/. • The equipment used for monitoring the parameter is controlled and calibrated in accordance with revised approved monitoring plan and applied methodology. Where there is a gap in calibration, an appropriate error factor has been applied inline to para 366 and 367 of VVS for PA Version 02. • Monitoring results are consistently recorded as per frequency 	

- Quality assurance and quality control procedures have been applied in accordance with the revised monitoring plan/1/.

Vt,db / Vt,wb / FVRG,h (FCH₄,sent flare,y): Volumetric Flow rate of LFG to Flare, Nm³/h

Means of verification	Criteria/Requirements	Assessment/Observation	
	Measuring /Reading /Recording frequency	Continuous recording and hourly aggregation	
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the monitoring frequency is in accordance to the monitoring plan/1/ and monitoring methodology/6/.	
	Monitoring equipment	The flow of gas going to flare for combustion is monitored by the gas flow meter/30/ installed before the gas engine. Flow rate meters	
		Period	2015 to 2018
		Make	Endress+Hauser
		Type	Proline t-mass 65
		Serial Number	D40AB002000
		Accuracy Class	1% of flow rate
		Calibration date:	10/02/2015
	Validity of calibration:	09/02/2020	
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	Accuracy class of the equipment is as per national standards, which is in line to revised PDD/01/ and consistent with calibration certificate/26/ as well. Information was found consistent onsite.	
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Accuracy class is valid for entire range/26-27/.	
	Calibration frequency /interval:	The meter is calibrated by accredited external third party /26-27/. Accuracy class: 1% of flow rate Calibration date: 10/02/2015 Validity of calibration: 5 years from the date of calibration	
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Yes	

	Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes, the calibration of the measuring equipment is carried out by accredited third party institution as checked from the accreditation certificate of this organization /26/.
	Is(are) calibration(s) valid for the whole reporting period?	Yes the calibration was carried out on 10/02/2015 is valid for the whole monitoring period.
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes
	How were the values in the monitoring report verified?	A value of 1,854,721.14 Nm ³ /h was the consolidated value for the monitoring period verified with plant records/21/ maintained onsite. The value was found to be consistently reported in MR/2/ and ER sheet/3/. However, for the purpose of ER calculations 116,493 Nm ³ /h (for the month of March 2018 and April 2018) were considered.
	If applicable, has the reported data been cross-checked with other available data?	NA
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	The readings are reported in the SCADA system automatically /20/ maintained by the plant operators and reviewed by the supervisor. The meter provides constant measurement accuracy across the operating range, which is also confirmed through calibration of the meter records /26/. The verification team reviewed the daily log-books to check the frequency of measurement and recording of data and found them in line with the monitoring plan. The quality assurance and quality control procedures were applied in accordance with the monitoring plan during the monitoring period.
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	Yes. Please see section E.4.1 of this report for details.
Findings	None	
Conclusion	The DOE confirms that the parameter has been determined correctly following the monitoring plan/1/.	

vi,t,db = fvi,h : Volumetric fraction of methane in a hourly time interval t on a dry, % basis

Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	Measurements by project participants using a gas analyzer on continuously basis and recorded hourly.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the monitoring frequency is in accordance to the monitoring plan/1/ and monitoring methodology/6/.

	Monitoring equipment	<p>The methane analyser is installed before both the flow meters.</p> <p>The flow of gas going to flare for combustion is monitored by the gas flow meter installed before the gas engine.</p> <p>Following are the specifications of the Gas analyser/29/ used for measurement of this parameter:</p> <table border="1" data-bbox="879 443 1385 891"> <tr> <td>Make</td> <td>EATON</td> </tr> <tr> <td>Series</td> <td>CROUSE-HINDS</td> </tr> <tr> <td>SN</td> <td>I-11321</td> </tr> <tr> <td>Type</td> <td>GIR5500</td> </tr> <tr> <td>Range</td> <td>0-50000 ppm</td> </tr> <tr> <td>Accuracy</td> <td>2%</td> </tr> <tr> <td>Calibration date</td> <td>03/03/2015</td> </tr> <tr> <td>Validity of calibration</td> <td>02/03/2020</td> </tr> </table>	Make	EATON	Series	CROUSE-HINDS	SN	I-11321	Type	GIR5500	Range	0-50000 ppm	Accuracy	2%	Calibration date	03/03/2015	Validity of calibration	02/03/2020
	Make	EATON																
	Series	CROUSE-HINDS																
	SN	I-11321																
	Type	GIR5500																
	Range	0-50000 ppm																
	Accuracy	2%																
	Calibration date	03/03/2015																
	Validity of calibration	02/03/2020																
Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	Yes, Accuracy class of the equipment is as per national standards, which is in line to revised PDD/01/ and consistent with calibration certificate/26/ as well. Information was found consistent onsite.																	
Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes, the accuracy is valid for the entire measuring range/26/.																	
Calibration frequency /interval:	5years from the date of calibration. As per manufacturer's specification.																	
Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Yes, the calibration interval is in line to the monitoring plan/1/.																	
Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes, the calibration is carried out by accredited institution, as checked from the accreditation certificate of this organization /26,27/.																	
Is(are) calibration(s) valid for the whole reporting period?	The calibration was carried out on 03/03/2015 as checked from the calibration certificates/26/. and is valid for the whole monitoring period.																	
Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes, calibration has been carried out for a measuring range/26/.																	
How were the values in the monitoring report verified?	A consolidated value of 60.31% was checked with plant log book/20/. The value was found to be consistently reported in MR/2/ and ER																	

		sheet/3/. However, for the purpose of ER calculations 60.58% (for the month of March 2018 and April 2018) were considered.
	If applicable, has the reported data been cross-checked with other available data?	NA
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	The readings are recorded in the SCADA system automatically. The meter provides constant measurement accuracy across the operating range, which is also confirmed through calibration certificate of the meter /26/. The verification team reviewed the SCADA records to check the frequency of measurement and recording of data and found them in line with the monitoring plan. The quality assurance and quality control procedures were applied in accordance with the monitoring plan during the monitoring period.
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	Yes. Please see section E.4.1 of this report for details.
Findings	None	
Conclusion	<p>The DOE confirms that:</p> <ul style="list-style-type: none"> The revised approved monitoring plan has been properly implemented and followed by the project participants Monitoring of parameter is implemented in accordance with revised approved monitoring plan/1/. The equipment used for monitoring the parameter is controlled and calibrated in accordance with revised approved monitoring plan and applied methodology. Where there is a gap in calibration, an appropriate error factor has been applied inline to para 366 and 367 of VVS for PA Version 02. Monitoring results are consistently recorded as per approved frequency <p>Quality assurance and quality control procedures have been applied in accordance with the revised approved monitoring plan/1/.</p>	

Tt: Temperature of the gaseous stream in time interval t, °C

Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	The temperature of the gas is monitored continuously by the flow meter and recorded in SCADA and recorded hourly basis.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes.
	Monitoring equipment	<p>The specification of the manufacturing equipment/28/:</p> <p>Digital Thermometer, Rototherm, Resolution 1 °C Type: S Accuracy: +/- 1.0° C Calibration date:03/03/2015</p>

		Validity of calibration: 4 yrs from the date of manufacturing/initial calibration
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	Yes, Accuracy class of the equipment is as per national standards, which is in line to revised PDD/01/ and consistent with calibration certificate/26/ as well. Information was found consistent onsite.
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes, the accuracy is valid for the entire measuring range/26/.
	Calibration frequency /interval:	4 yrs from the date of manufacturing/initial calibration. As per supplier instructions/25/.
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Yes, the calibration interval is in line to the monitoring plan/1/.
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes, the calibration is carried out by accredited institution, as checked from the accreditation certificate of this organization /26,27/.
	Is(are) calibration(s) valid for the whole reporting period?	The calibration was carried out on 03/03/2015 as checked from the calibration certificates/26/. and is valid for the whole monitoring period.
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes, calibration has been carried out for a measuring range/26/.
	How were the values in the monitoring report verified?	The values are reported directly in SCADA system which was checked by the assessment team and found correct.
	If applicable, has the reported data been cross-checked with other available data?	NA
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes.
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	Temporary deviation discussed in the report.
Findings	None	
Conclusion	The DOE confirms that: <ul style="list-style-type: none"> The revised approved monitoring plan has been properly implemented and followed by the project participants Monitoring of parameter is implemented in accordance with revised approved monitoring plan except for period which temporary deviation has been sought/1/. 	

	<ul style="list-style-type: none"> The equipment used for monitoring the parameter is controlled and calibrated in accordance with revised approved monitoring plan and applied methodology. Where there is a gap in calibration, an appropriate error factor has been applied inline to para 366 and 367 of VVS for PA Version 02. Monitoring results are consistently recorded as per approved frequency Quality assurance and quality control procedures have been applied in accordance with the revised approved monitoring plan/1/
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Pt: Pressure of the gaseous stream in the time interval t , m bar

Means of verification	Criteria/Requirements	Assessment/Observation												
	Measuring /Reading /Recording frequency	The pressure of the gas is being monitored continuously and recorded in system on hourly basis.												
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes.												
	Monitoring equipment	Pressure meters checked from manufacturer specification/31/: <table><tr><td colspan="2">Specifications:-</td></tr><tr><td>Make</td><td>WIKA</td></tr><tr><td>SN</td><td>13065416 S</td></tr><tr><td>Accuracy class</td><td>0.1</td></tr><tr><td>Calibration date</td><td>07/03/2015</td></tr><tr><td>Validity</td><td>4 years</td></tr></table>	Specifications:-		Make	WIKA	SN	13065416 S	Accuracy class	0.1	Calibration date	07/03/2015	Validity	4 years
	Specifications:-													
	Make	WIKA												
	SN	13065416 S												
	Accuracy class	0.1												
	Calibration date	07/03/2015												
	Validity	4 years												
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	Yes.												
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes.												
Calibration frequency /interval:	As per supplier specifications													
Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	4 yrs from the date of manufacturing/initial calibration. As per supplier instructions/25/.													
Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes.													
Is(are) calibration(s) valid for the whole reporting period?	Yes, the meter is found calibrated for the monitoring period emission reduction are claimed for. Emission reductions are claimed only for the period wherein the metering systems were installed in compliance with the registered PDD.													

	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes.
	How were the values in the monitoring report verified?	The values reported in the ER calculation sheet was reviewed and verified from the SCADA records available on site.
	If applicable, has the reported data been cross-checked with other available data?	NA
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes.
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	Temporary deviation discussed in the report.
Findings	None	
Conclusion	<p>The DOE confirms that:</p> <ol style="list-style-type: none"> 1. The revised approved monitoring plan has been properly implemented and followed by the project participants 2. Monitoring of parameter is implemented in accordance with monitoring plan/1/. 3. The equipment used for monitoring the parameter is controlled and calibrated in accordance with revised approved monitoring plan and applied methodology. Where there is a gap in calibration, an appropriate error factor has been applied inline to para 366 and 367 of VVS for PA Version 02. 4. Monitoring results are consistently recorded as per approved frequency 5. Quality assurance and quality control procedures have been applied in accordance with the monitoring plan/1/. 	

Management of SWDS

Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	Annually
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes.
	Monitoring equipment	NA
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	NA
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	NA

	Calibration frequency /interval:	NA
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	NA
	Is the calibration of measuring equipment carried out by an accredited person or institution?	NA
	Is(are) calibration(s) valid for the whole reporting period?	NA
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	NA
	How were the values in the monitoring report verified?	NA
	If applicable, has the reported data been cross-checked with other available data?	NA
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes.
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	No such issues.
Findings	No findings raised.	
Conclusion	The DOE confirms that: 1. The revised approved monitoring plan has been properly implemented and followed by the project participants 2. Monitoring of parameter is implemented in accordance with monitoring plan/1/. 3. Quality assurance and quality control procedures have been applied in accordance with the monitoring plan/1/.	

Op_{j,h} : Operation of the equipment that consumes the LFG, Every hour

Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	Monitored continuously, recorded hourly
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the monitoring frequency is in accordance to the monitoring plan/1/ and monitoring methodology/6/.
	Monitoring equipment	SCADA
	How were the values in the monitoring report verified?	The reported values are verified from On-site records.

	If applicable, has the reported data been cross-checked with other available data?	NA
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	NA
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	No such issues.
Findings	No findings.	
Conclusion	The DOE confirms that: 1. The revised approved monitoring plan has been properly implemented and followed by the project participants 2. Monitoring of parameter is implemented in accordance with monitoring plan/1/. 3. Monitoring results are consistently recorded as per approved frequency	

EG_{PJ,y} : Amount of electricity generated using LFG by the project activity in year y

Means of verification	Criteria/Requirements	Assessment/Observation	
	Measuring /Reading /Recording frequency	Measured continuously using energy meters. Recorded monthly.	
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the monitoring frequency is in accordance to the monitoring plan/1/ and monitoring methodology/6/.	
	Monitoring equipment	Energy Meter	
		Make	ISKRA
		Type	A12E
		Serial number	N35800044
		Accuracy Class	1
		Calibration date	12/03/2015
		Validity upto	11/03/2020
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	The installed meter is in control by the grid company and meets all local regulations including the accuracy class.	
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes the accuracy class is valid for the range of electricity being monitored.	
	Calibration frequency /interval:	The calibration is being conducted inline to the supplier specifications as reported in the section above.	

	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	The monitoring plan prescribes the calibration as per supplier specifications and that is being conducted accordingly.
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes, the entity conducted the calibration is accredited by the local regulatory body.
	Is(are) calibration(s) valid for the whole reporting period?	Yes, the meter is found calibrated for the monitoring period emission reduction are claimed for.
	How were the values in the monitoring report verified?	The value reported is 13,662.51 MWh is verified from on-site records maintained by the PP. The value was found to be consistently reported in MR/2/ and ER sheet/3/.
	If applicable, has the reported data been cross-checked with other available data?	NA
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes. The electricity meter is in regular maintenance in accordance with stipulation of the meter supplier to ensure accuracy.
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	No such issues.
Findings	No findings raised.	
Conclusion	The DOE confirms that the parameter has been determined correctly following the monitoring plan/1/.	

EG_{EC,y}: Amount of electricity consumed by the project activity in year y

Means of verification	Criteria/Requirements	Assessment/Observation	
	Measuring /Reading /Recording frequency	Measured continuously using energy meters. Recorded monthly.	
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the monitoring frequency is in accordance to the monitoring plan/1/ and monitoring methodology/6/.	
	Monitoring equipment	The Energy Meter were found installed on site and the details are verified as below/32/;	
		Make	ISKRA
		Type	A12E
		Serial number	N35800044
		Accuracy Class	1
		Calibration date:	12/03/2015

		Validity of calibration:	11/03/2020
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	The installed meter is in control by the grid company and meets all local regulations including the accuracy class.	
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes the accuracy class is valid for the range of electricity being monitored.	
	Calibration frequency /interval:	The calibration is being conducted inline to the supplier specifications as reported in the section above.	
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	The monitoring plan prescribes the calibration as per supplier specifications and that is being conducted accordingly.	
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes, the entity conducted the calibration is accredited by the local regulatory body.	
	Is(are) calibration(s) valid for the whole reporting period?	Yes, the meter is found calibrated for the monitoring period emission reduction are claimed for. Emission reductions are claimed only for the period wherein the metering systems were installed in compliance with the registered PDD.	
	How were the values in the monitoring report verified?	The value reported is 12.248 MWh is verified from on-site records maintained by the PP. The value was found to be consistently reported in MR/2/ and ER sheet/3/.	
	If applicable, has the reported data been cross-checked with other available data?	NA	
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes. The electricity meter is in regular maintenance in accordance with stipulation of the meter supplier to ensure accuracy.	
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	No such issues.	
Findings	No findings raised.		
Conclusion	The DOE confirms that the parameter has been determined correctly following the monitoring plan/1/.		

$T_{EG,m}$: Temperature in the exhaust gas of the enclosed flare in minute m , °C

Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	The temperature of the exhaust gas is being reported on minute basis.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes.
	Monitoring equipment	Embedded in SCADA Flare system Rototherm, Resolution 1 deg C Accuracy: +/- 1.0° C Calibration date:03/03/2015 Validity of calibration: 4 yrs from the date of manufacturing/initial calibration
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	Yes.
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes.
	Calibration frequency /interval:	The meter was found calibrated inline with the supplier instructions.
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Yes
	Is the calibration of measuring equipment carried out by an accredited person or institution?	The meter is calibrated by the entity accredited as per national regulations.
	Is(are) calibration(s) valid for the whole reporting period?	Yes, the meter was in calibration for the period ER are being claimed in this monitoring period.
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	YES
	How were the values in the monitoring report verified?	The values reported in the ER calculation sheet are verified from the SCADA records.
	If applicable, has the reported data been cross-checked with other available data?	NA
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes.
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved	Temporary deviation discussed in the PRC report.

	by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	
Findings	None	
Conclusion	<p>The DOE confirms that:</p> <ol style="list-style-type: none"> 1. The revised approved monitoring plan has been properly implemented and followed by the project participants 2. Monitoring of parameter is implemented in accordance with monitoring plan/1/. 3. The equipment used for monitoring the parameter is controlled and calibrated in accordance with revised approved monitoring plan and applied methodology. Where there is a gap in calibration, an appropriate error factor has been applied inline to para 366 and 367 of VVS for PA Version 02. 4. Monitoring results are consistently recorded as per approved frequency 5. Quality assurance and quality control procedures have been applied in accordance with the monitoring plan/1/. 	

Flame_m: Flame detection of flare in the minute *m*

Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	The flame of the flare whenever its ON and OFF is recorded on minute basis.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes.
	Monitoring equipment	Optical flame detector
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	There is no accuracy class defined for this measuring device since the parameter is to record just ON and OFF numbers in the time interval.
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	NA
	Calibration frequency /interval:	Equipment doesn't require any calibration.
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	NA
	Is the calibration of measuring equipment carried out by an accredited person or institution?	NA
	Is(are) calibration(s) valid for the whole reporting period?	NA

	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	NA
	How were the values in the monitoring report verified?	Every time the flame of the flare is ON or OF is being recorded on minute basis in the SCADA system. The values reported in the ER sheet are verified from the SCADA records and found consistent.
	If applicable, has the reported data been cross-checked with other available data?	NA
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes.
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	NA
Findings	None	
Conclusion	<p>The DOE confirms that:</p> <ol style="list-style-type: none"> 1. The revised approved monitoring plan has been properly implemented and followed by the project participants 2. Monitoring of parameter is implemented in accordance with monitoring plan/1/. 3. The equipment used for monitoring the parameter is controlled and calibrated in accordance with revised approved monitoring plan and applied methodology. Where there is a gap in calibration, an appropriate error factor has been applied inline to para 366 and 367 of VVS for PA Version 02. 4. Monitoring results are consistently recorded as per approved frequency 5. Quality assurance and quality control procedures have been applied in accordance with the monitoring plan/1/. 	

TDL_{k,y}: Average technical transmission and distribution losses for providing electricity to source *j*, *k* or *l* in year *y*

Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	Default
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes.
	Monitoring equipment	NA
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	NA

	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	NA
	Calibration frequency /interval:	NA
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	NA
	Is the calibration of measuring equipment carried out by an accredited person or institution?	NA
	Is(are) calibration(s) valid for the whole reporting period?	NA
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	NA
	How were the values in the monitoring report verified?	The value of 20% is considered from National data (as reported by the grid)
	If applicable, has the reported data been cross-checked with other available data?	NA
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes.
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	NA
Findings	None	
Conclusion	The DOE confirms that: 1. The revised approved monitoring plan has been properly implemented and followed by the project participants 2. Monitoring of parameter is implemented in accordance with monitoring plan/1/. 3. Quality assurance and quality control procedures have been applied in accordance with the monitoring plan/1/.	

E.6.3. Implementation of sampling plan

Means of verification	There is no sampling plan applied for the verification.
Findings	No findings
Conclusion	There is no sampling plan applied.

E.7. Compliance with the calibration frequency requirements for measuring instruments

Means of verification	According to registered PDD/1/, calibration of the meters used for all the monitoring parameters, has to be done as per manufactures specifications. The monitoring frequency for the monitoring devices were found consistent with the registered PDD.
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	The calibration of all instruments was conducted by reputed third party laboratories /25-26/ and has been mentioned above in the related sections of the monitoring parameters.
Findings	NA
Conclusion	The calibration is conducted at the frequency as specified by the methodology, the standardized baseline and/or the registered monitoring plan. All the above meters are duly calibrated before the expiry of the calibration validity, and cover the monitoring period. Moreover, it has been confirmed that no emergency procedures have been applied for the monitoring equipment during the current monitoring period and all the meters were under valid calibrated period and working properly.

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	<p>The baseline emissions accounted in the project activity are as follows: In the case of project activity, the equation is trimmed as under;</p> $BE_y = BE_{CH_4,y} + BE_{EC,y}$ <p>Where, $BE_{CH_4,y}$: Baseline emissions of methane from the SWDS in year y (t CO₂e/yr). $BE_{EC,y}$: Baseline emissions associated with electricity generation in year y (t CO₂/yr) The baseline emissions are calculated as per the provisions indicated in the revised PDD/1/, applied methodology/6/ and the referred tools/21/. The means of verification for the parameter are described under section E.6.2. The equations were found to be correctly applied in the ER sheet/3/. The total baseline emissions achieved by the project activity during the monitoring period are 11,869 tCO₂</p>
Findings	No findings raised.
Conclusion	<p>Calculation of baseline GHG emissions was found to be satisfactory. The verification team confirms that (a) The monitored data was available in accordance with the revised approved monitoring plan; (b) The monthly reported data was cross-checked, as prescribed in the revised approved PDD/1/, with the relevant supporting and was found consistent; (c) Appropriate methods and formulae for calculating baseline GHG emissions or baseline net GHG removals have been followed; (d) The assumptions, emission factors and default values that were applied in the calculations have been justified; (e) The first day in which CERs are being claimed has been correctly specified, where applicable.</p>

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

Means of verification	<p>The project emission associated with project is calculated by using formula $PE_y = PE_{EC,y} + PE_{FC,y}$ Where, PE_y Project emissions in year y (t CO₂/yr) $PE_{EC,y}$ Emissions from consumption of electricity due to the project activity in year y (t CO₂/yr) $PE_{FC,y}$ Emissions from consumption of fossil fuels due to the project activity, for purpose other than electricity generation, in year y (t CO₂/yr) The project emissions are calculated as per provisions indicated in the revised PDD/09/ and applied methodology and its referred tools /6/. The means of verification for the parameter are described under section E.6.2. The equations were found to be correctly applied in the ER sheet/3/. The total project emissions during the monitoring period are 0 tCO₂.</p>
Findings	No Findings raised.
Conclusion	<p>Calculation of project GHG emissions was found to be satisfactory. The verification team confirms that (a) The monitored data was available in accordance with the revised approved monitoring plan;</p>

	<p>(b) The monthly reported data was cross-checked, as prescribed in the revised approved PDD/1/, against available sources and was found consistent;</p> <p>(c) Appropriate methods and formulae for calculating project GHG emissions have been followed;</p> <p>(d) The assumptions, emission factors and default values that were applied in the calculations have been justified.</p>
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E.8.3. Calculation of leakage GHG emissions

Means of verification	There is no leakage calculation associated with the project activity.
Findings	No Findings raised.
Conclusion	<p>Calculation of project GHG emissions was found to be satisfactory.</p> <p>The verification team confirms that</p> <p>(a) The monitored data was available in accordance with the registered monitoring plan;</p> <p>(b) The monthly reported data was cross-checked, as prescribed in the revised approved PDD/1/, against available sources and was found consistent;</p> <p>(c) Appropriate methods and formulae for calculating leakage GHG emissions have been followed;</p> <p>(d) The assumptions, emission factors and default values that were applied in the calculations have been justified;</p>

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

Means of verification	The estimated GHG emission as calculated according to the revised PDD is 365,759tCO ₂ e. During this monitoring period, total GHG emission reduction or net GHG removals by sinks as verified is 11,869tCO ₂ e.
Findings	No findings raised.
Conclusion	<p>The verification team confirms that appropriate methods and formulae for calculating baseline GHG emissions or baseline net GHG removals, project GHG emissions or actual net GHG removals and leakage GHG emissions have been followed;</p> <p>The assumptions, emission factors and default values that were applied in the calculations have been justified.</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	The actual emission reductions achieved during the monitoring period (11,869 tCO ₂ e) are less than the estimated value of emission reduction (365,759 tCO ₂ e) for the equivalent period (i.e. 12/03/2015-30/04/2018).
Findings	No findings
Conclusion	The decrease in the emission reductions is because of the dynamic nature of the waste composition.

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

Means of verification	As the achieved emission reduction are lower than the estimates, no additional explanation was sought from PP.
Findings	None
Conclusion	The difference in emission reduction has been given satisfactorily in section E.6 of MR.

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	<p>Earthood Services Private Limited is able to certify that the emission reductions from the CDM project activity 9761 "Fes New Landfill Gas Recovery Reuse and Flaring Project" in Morocco during the period 12/03/2015 – 30/04/2018 (including both days) amount to 11, 869 tCO₂e.</p> <p>Verified and certified emission reductions as per commitment period:</p> <table> <tr> <td>Commitment period</td><td>Amount</td></tr> <tr> <td>Upto 31/12/2012 (1st commitment period)</td><td>Nil</td></tr> <tr> <td>From 01/01/2013</td><td>11,869 tCO₂e.</td></tr> </table>	Commitment period	Amount	Upto 31/12/2012 (1 st commitment period)	Nil	From 01/01/2013	11,869 tCO ₂ e.
Commitment period	Amount						
Upto 31/12/2012 (1 st commitment period)	Nil						
From 01/01/2013	11,869 tCO ₂ e.						

Findings	None
Conclusion	Actual GHG emission reductions in the second commitment period (31/12/2012 onwards) were found to be 11,869 tCO ₂ e

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

Means of verification	NA
Findings	NA
Conclusion	NA

E.10. Global stakeholder consultation

Means of verification	NA
Findings	NA
Conclusion	NA

SECTION F. Internal quality control

The draft verification report that is prepared by verification team is reviewed by an independent technical review team (one or more members) to confirm if the internal procedures established and implemented by Earthood were duly complied with and such opinion/conclusion is reached in an objective manner that complies with the applicable CDM rules/requirements. The technical review team is collectively required to possess the technical expertise of all the technical area/sectoral scope the project activity relates to. All team members of technical review team are independent of the verification team.

During the technical review process additional findings may be identified or the closed-out findings may be opened, which needs to be satisfactorily resolved before the request for issuance is submitted to UNFCCC. The independent technical reviewer may either approve the report as such or reject/return the same in such case providing the comments/findings/issues that needs to be resolved by the verification team. The decision taken by the Technical Reviewer is final and is authorized on behalf of Earthood Services Private Limited.

SECTION G. Verification opinion

Earthood Services Private Limited (Earthood), contracted by Ecomed gestion des dechets, has performed the independent verification of the emission reductions for the CDM project activity 9761 "Fes New Landfill Gas Recovery Reuse and Flaring Project" in Morocco for the monitoring period 12/03/2015 – 30/04/2018 (including both days) as reported in the Monitoring Report (public) Version 1 dated 01/05/2018 and Monitoring Report (Final) Version 03.2 dated 14/01/2021. Ecomed Gestion des Dechets is responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the project activity.

Earthood commenced the verification on the basis of the baseline and monitoring methodology ACM0001: Flaring or use of landfill gas, Version 13.0.0, the monitoring plan contained in the registered PDD, revised PDD, Monitoring Report (public) Version 1 dated 01/05/2018.

Earthood's verification approach is based on the understanding of the risks associated with reporting of GHG emission data and the controls in place to mitigate these. Earthood planned and performed the verification by obtaining evidence and other information and explanations that Earthood considered necessary to give reasonable assurance that reported GHG emission reductions are fairly stated.

The verification team confirms that the project activity was found completely implemented as per the description given in the revised PDD and the actual operation conforms to the description in the revised PDD.

SECTION H. Certification statement

It is our responsibility to express an independent verification statement on the reported GHG emission reductions from the project activity.

In our opinion the GHG emissions reductions reported for the project activity for the period 12/03/2015 – 30/04/2018 (including both days) are fairly stated in the Monitoring Report (final) Version 03.2 dated 14/01/2021. The GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodology ACM0001, version 13.0 and the monitoring plan contained in the PDD Version 16.1 dated 22/12/2020.

Earthood Services Private Limited is able to certify that the emission reductions from the CDM project activity 9761 "Fes New Landfill Gas Recovery Reuse and Flaring Project" in Morocco during the period 12/03/2015 – 30/04/2018 (including both days) amount to 11,869 tCO₂e tCO₂e.

Verified and certified emission reductions (for current monitoring period) as per commitment period:

Commitment period	Amount
Upto 31/12/2012 (1 st commitment period)	Nil
From 01/01/2013	11,869 tCO ₂ e

Appendix 1. Abbreviations

Abbreviations	Full texts
AS	Accreditation Standard
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM PCP for PA	Clean Development Mechanism Project Cycle Procedure for Project Activities
CDM PS for PA	Clean Development Mechanism Project Standard for Project Activities
CDM VVS for PA	Clean Development Mechanism Validation and Verification Standard for Project Activities
CER	Certified Emission Reduction(s)
CL	Clarification Request
CPCB	Central Pollution Control Board
DOE	Designated Operational Entity
DNA	Designated National Authority
EB	Executive Board
ESPL	Earthood Services Private Limited
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
IR	Internal Resource
IPCC	Intergovernmental Panel on Climate Change
MR	Monitoring Report
MW	Mega Watt
NCV	Net Calorific Value
PDD	Project Design Document
PP	Project Participants
PPA	Power Purchase Agreement
QA/QC	Quality Assurance / Quality Control
RMP	Revised Monitoring Plan
tCO ₂ e	tonnes of Carbon dioxide equivalent
TG	Turbine Generator
TPH	Tonnes Per Hour
UNFCCC	United Nations Framework Convention on Climate Change
VCR	Verification and Certification Report

Appendix 2. Competence of team members and technical reviewers

Competence Statement			
Name	Kaviraj Singh		
Country	India		
Education	Ph.D. (Environmental Engineering), IIT Delhi Masters (Energy & Environmental), DAVV Indore		
Experience	15 Years +		
Field	Climate Change & Environment		
Approved Roles			
Team Leader	YES		
Validator	YES		
Verifier	YES		
Methodology Expert	AMS-I.D., AMS-II.D., ACM0006, AMS-I.A., AMS-I.C., AMS-II.B., AMS-III.H, ACM0002, ACM0001		
Local expert	YES (India)		
Financial Expert	YES		
Technical Reviewer	YES		
TA Expert	YES (TA 1.1, TA 1.2, TA 13.1)		
Reviewed by	Abhishek Mahawar	Date	01/03/2018
Approved by	Ashok Gautam	Date	01/03/2018

Competence Statement			
Name	Anshika Gupta		
Country	India		
Education	M.Sc. (Climate Science & Policy), TERI University		
Experience	4 Years +		
Field	Climate Change		
Approved Roles			
Team Leader	YES		
Validator	YES		
Verifier	YES		
Methodology Expert	AMS-I.A., AMS-II.G., ACM0002, AMS-III.A.V.		
Local expert	YES (India)		
Financial Expert	NO		
Technical Reviewer	YES		
TA Expert	Yes (TA 1.2, TA 3.1)		
Reviewed by	Shreya Garg	Date	12/03/2019
Approved by	Kaviraj Singh	Date	12/03/2019

Competence Statement	
Name	Abderrahim Boutaleb
Country	Morocco

Education	Masters in Renewable Energy and Environment		
Experience	17 years		
Field	Energy, Environment		
Approved Roles			
Team Leader	No		
Validator	No		
Verifier	No		
Methodology Expert	No		
Local expert	YES (Morocco)		
Financial Expert	No		
Technical Reviewer	No		
TA Expert	No		
Reviewed by	Shreya Garg	Date	21/05/2018
Approved by	Anshika Gupta	Date	21/05/2018

Competence Statement			
Name	Ashok Gautam		
Country	India		
Education	M. Sc. (Environmental Sciences) M. Tech. (Energy & Environmental Management)		
Experience	16 Years +		
Field	Energy, Climate Change & Environment		
Approved Roles			
Team Leader	YES		
Validator	YES		
Verifier	YES		
Methodology Expert	AMS-I.D., AMS-I.A., AMS-I.C., AMS-I.E, AMS-II.D., AMS-II.G., AMS-III.E., AMS-III.H., AMS-III.Q, AMS-III.Z., AMS-III.AV., AMS III.AR, AM0029, AM0025, AM0056, ACM0001, ACM0002, ACM0004, ACM0012, ACM0006, AM0018, ACM0009, AM0034, AMS.I.B, ACM0003		
Local expert	YES (India)		
Financial Expert	YES		
Technical Reviewer	YES		
TA Expert	YES (TA 1.1, TA 1.2, TA 3.1, TA 13.1)		
Reviewed by	Shreya Garg	Date	25/05/2020
Approved by	Kaviraj Singh	Date	25/05/2020

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1	ECOMED	Revised PDD & Registered PDD	Ver 16.1, Date 22/12/2020 (Revised) Ver 15.1, Dated 06/03/2014	PP
2	ECOMED	Monitoring Report V.1 (Published) Monitoring Report V.3.2 (Final)	Dated 01/05/2018 Dated 14/01/2021	PP
3	ECOMED	Emission reduction sheet (Final)	pertaining to final MR	PP
4	ESPL	Validation opinion for PRC	Dated 10/02/2021	Others
5	ECOMAD	SCADA operating manual	NA	Others
6	UNFCCC	Methodology ACM0001	Version 13.0.0	Others
7	SGS	Validation report,	Dated 13/03/2014	Others
8	UNFCCC	UNFCCC webpage for project details https://cdm.unfccc.int/Projects/DB/SGS-UKL1381329994.15/view	https://cdm.unfccc.int/Projects/DB/SGS-UKL1381329994.15/view	Others
9	UNFCCC	Tool to calculate the emission factor for an electricity system,	Version 3.0	Others
10	UNFCCC	Tool to determine methane emissions avoided from dumping waste at a solid waste disposal site	Version 1.0 Annex 14, EB 26	Others
11	ECOMED	Plant Operation and EHS Manual	-	PP
12	ECOMED	Onsite Emergency Plan	-	PP
13	ECOMED	SCADA records	For partial monitoring period	PP
14	ECOMED	Log Book for fuel consumption and purchase	For entire monitoring period	PP
15	ECOMED	Daily Log Books for export-import readings of meter	For entire monitoring period	PP
16	ECOMED	Gross generation log book for gas flow	For entire monitoring period	PP
17	UNFCCC	Standard: CDM PS for PA	Ver. 2	Others
18	UNFCCC	Standard: CDM VVS for PA	Ver. 2	Others
19	UNFCCC	Standard: CDM PCP for PA	Ver. 2	Others
20	ECOMAD	Logbooks & plant records (SCADA records)	For entire monitoring period	PP
21	ECOMAD	Photos of the name plate	NA	Others
22	UNFCCC	Tool "Emissions from solid waste disposal sites"	Version 06.0.1	Other
23	UNFCCC	Form: CDM-MR-FORM	Ver. 07	Others
24	ECOMAD	Specification of Gas Engine	NA	PP
25	ECOMAD	Specification of Flare System	NA	PP
26	ECOMAD	Calibration certificates for Various meters	NA	PP
27	Govt of Morocco	Accreditation by Department De Controle at Detalonnage Dinstruments Physico Chimiques	N SEC14154/17	Others

		& Gaz		
28	ECOMAD	Specifications of digital thermometer	NA	Others
29	ECOMAD	Specifications of gas analyzer	NA	Others
30	Endress+Hauser	Specifications of flow meters	NA	Others
31	WIKA	Specification of Pressure meters	NA	Others
32	ISKRA	Specification of the electricity meter	NA	Others

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

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

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

Table 2. CL from this verification

CL ID	01	Section no.	E.4.	Date : 31/05/2018
Description of CL				
Registered PDD version 15.1 requires the monitoring of the parameters 'Temperature of the gaseous stream in the time interval t'. No monitoring and recording of this parameter was conducted separately, however, the temperature of the biogas is being monitored by gas flow meters.				
Project participant response				Date : 20/03/2020
The changes are considered under post registration changes. The revised PDD is submitted to the DOE.				
Documentation provided by project participant				
Revised PDD.				
DOE assessment				Date: 27/03/2020
PP has provided the revised PDD to the assessment team. Assessment team has reviewed the revised PDD and it is observed that the changes are transparently discussed in revised PDD. The assessment team found these changes in line with requirement of the methodology and as observed during onsite audit. Hence, CL#01 is considered to be closed.				

CL ID	02	Section no.	E.4.	Date : 31/05/2018
Description of CL				
Following the registered PDD version 15.1, the flow of the biogas ($F_{CH_4,EL,y}$ & $F_{CH_4,sent\ flare,y}$) require to be monitored and reported in m ³ /h. The gas flow for both the parameters was reported in Nm ³ /h in the SCADA system. However, it was observed that the gas flow meter has the inbuilt sensors for temperature and pressure and adjust the values to Nm ³ /h. The unit of the recording parameters are not inline with the registered PDD.				
Project participant response				Date : 20/03/2020
The changes are considered under post registration changes. The revised PDD is submitted to the DOE.				
Documentation provided by project participant				
Revised PDD.				
DOE assessment				Date: 27/03/2020
PP has provided the revised PDD to the assessment team. Assessment team has reviewed the revised PDD and it is observed that the changes are transparently discussed in revised PDD. The assessment team found these changes in line with requirement of the methodology and as observed during onsite audit. Hence, CL#02 is considered to be closed.				

Table 3. CAR from this verification

CAR ID	03	Section no.	E.4.	Date : 31/05/2018
Description of CAR				
Registered PDD version 15.1 section A.3 mentioned that there will be 8 gas engines of 375 kWe and the total of 3 MW will be installed. However, it was observed during the site visit, that only 1 gas engine of 1067 kW was installed. The above referred section of the PDD was not followed during onsite implementation of the project activity technology specifications.				
Project participant response				Date : 20/03/2020
The changes are considered under post registration changes. The revised PDD and revised investment analysis calculation is submitted to the DOE.				
Documentation provided by project participant				
Revised PDD, IRR calculation sheet.				
DOE assessment				Date: 27/03/2020
PP has provided the revised PDD to the assessment team. Assessment team has reviewed the revised PDD and it is observed that the changes are transparently discussed in revised PDD. The assessment team found these changes in line with requirement of the methodology and as observed during onsite audit. The assessment team has also checked the calculation details of revised investment analysis sheet. The revised values as considered in the calculation are checked against the supportive evidences and found correct and consistent. Based on the investment analysis review, the assessment team is in the opinion that that the project still stands additional. Hence, CAR#03 is considered to be closed.				

CAR ID	04	Section no.	E.4.	Date : 31/05/2018
Description of CAR				
The SCADA system was installed on 11/02/2018 and started recording of the parameters inline to the registered PDD. However, starting from 12/03/2015 to 11/02/2018, the monitoring frequency of the parameters for example methane percentage in biogas was monitored on daily basis and not continuously as required by registered PDD version 15.1. Similarly, in the above referred period the flow of the biogas, energy generation, and energy consumption was however monitored continually by the totalizers of respective meters but recording of the values in the plant records were done on monthly basis.				
Project participant response				Date : 20/03/2020
The changes are considered under post registration changes. These are considered under temporary deviation and the revised MR is submitted to the DOE.				
Documentation provided by project participant				
-				
DOE assessment				Date: 27/03/2020
The above changes are considered under temporary deviation and PP has submitted the revised MR and the deviation is transparently discussed in revised MR. CAR#04 is closed.				

Table 4. FAR from this verification

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

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Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
03.0	31 May 2019	Revision to: <ul style="list-style-type: none">• Ensure consistency with version 02.0 of the “CDM validation and verification standard for project activities” (CDM-EB93-A05-STAN);• Make structural and editorial improvements.
02.1	11 January 2018	Editorial revision to correct the numbering of appendices in the instructions.
02.0	31 October 2017	Revision to align with the requirements of the “CDM validation and verification standard for project activities” (version 01.0).
01.0	23 March 2015	Initial publication.
Decision Class: Regulatory Document Type: Form Business Function: Issuance Keywords: project activities, verifying and certifying		