

# Associate gas recovery and utilization from oilfield project in Shandong

Project Owner:

Shengli Doro Energy Corp., Ltd.

Project Address:

Shengli Oilfield in Dongying City, Shandong Province, People's  
Republic of China

Document provided by

**Müller-BBM Cert Umweltgutachter GmbH**

Accreditation No. D-VS-18709-01-00 (DAkKS)

Report No. MC-UER-2022-017

Version No. 1.2

Title of the project activity (as stated within the application template)	Associate gas recovery and utilization from oilfield project in Shandong												
Project Owner of the Project	Shengli Doro Energy Corp., Ltd.												
Address of the Project	Shengli Oilfield in Dongying City, Shandong Province, People's Republic of China												
UER sources	Crude oil extraction												
Kick-off date of the project	10-11-2013												
Monitoring/verification period number and duration of this monitoring period	MP 03 01-01-2021 to 31-12-2021 (incl. both days)												
Version number of the monitoring report to which this report applies	02, dated 10-05-2022												
Host State	P. R. China												
Scale of the project activity	<input type="checkbox"/> Large-scale <input checked="" type="checkbox"/> Small-scale												
Sectoral scopes linked to the applied methodologies	Sectoral scope: 01 Energy industries (renewable / non- renewable sources) Sectoral scope: 10 Fugitive emissions from fuel (solid, oil and gas)												
Applied methodologies and standardized baselines	ISO 14064-2 "Greenhouse gases — Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements"; AM0009 "Recovery and utilization of gas from oil fields that would otherwise be flared or vented" Version 07.0 Standardized baselines: N/A												
The project site which is the closest to the source of the emissions, by reference to longitude and latitude coordinates to four decimal places [hddd.ddddd°]	<table border="0"> <thead> <tr> <th>Station</th> <th>Latitude</th> <th>Longitude</th> </tr> </thead> <tbody> <tr> <td>HWC Station</td> <td>38.1172°N</td> <td>118.8816°E</td> </tr> <tr> <td>YB Station</td> <td>37.9473°N</td> <td>118.6401°E</td> </tr> <tr> <td>NB Station</td> <td>37.3963°N</td> <td>118.5283°E</td> </tr> </tbody> </table>	Station	Latitude	Longitude	HWC Station	38.1172°N	118.8816°E	YB Station	37.9473°N	118.6401°E	NB Station	37.3963°N	118.5283°E
Station	Latitude	Longitude											
HWC Station	38.1172°N	118.8816°E											
YB Station	37.9473°N	118.6401°E											
NB Station	37.3963°N	118.5283°E											
Certified amount of GHG upstream emission reductions during determined monitoring period [t CO <sub>2</sub> e]	51,653												
Prepared by	Müller-BBM Cert Umweltgutachter GmbH												
Contact	Heinrich-Hertz-Straße 13 50170 Kerpen												
Accreditation ID	D-VS-18709-01-00 (DAkKS)												
Verification report ID	MC-UER-2022-017												
Version number of the verification report	1.2												
Issue date of the verification report	21-10-2022												
Verification carried out (from-to)	15-04-2022 to 25-06-2022												
Applicable level of assurance	Reasonable												

Name and position of the confirming personnel of the verification report

Dr. Stefan Bräker, Dr. Matthias Bender,  
Managing director

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## Section A Executive Summary

### A.1 Purpose and general description of project activity

Shengli Doro Energy Corp., Ltd. Shengli Doro Energy Corp., Ltd. has commissioned Müller-BBM Cert Umweltgutachter GmbH to carry out the 3<sup>rd</sup> verification of the UER project activity

Associate gas recovery and utilization from oilfield project in Shandong

with regards to the applicable requirements for UER project activities.

Müller-BBM Cert Umweltgutachter GmbH, an accredited verification body according to DIN EN ISO 14065 including the validation and verification of GHG assertions based on ISO 14064 Part 1 to 3<sup>/ISO14064/</sup> and duly authorized to confirm compliance of the monitoring report with requirements as set by ISO 14064 Part 2<sup>/ISO14064/</sup>.

This verification report refers to the project validation report<sup>/VAL/</sup> and its validation decision that the project is in accordance with all the relevant GHG program requirements as well as the host country's national requirements.

The Council Directive (EU) 2015/652 of 20 April 2015 laying down calculation methods and reporting requirements pursuant to Directive 98/70/EC (Fuel quality directive) of the European Parliament<sup>/FQD/</sup> and of the Council relating to the quality of petrol and diesel fuels having regard to Directive 98/70/EC of the European Parliament and of the Council of 13 October 1998 relating to the quality of petrol and diesel fuels and amending Council Directive 93/12/EEC (1).

The applied CDM monitoring methodology is AM0009 ver. 07.0 "Recovery and utilization of gas from oil fields that would otherwise be flared or vented"<sup>/AM0009/</sup> and the 3<sup>rd</sup> monitoring period is from 01/01/2021 to 31/12/2021 (both days included).

The project reduces GHG emissions through recovery and utilization of associated gas from remote and scattered oil wells in Shengli Oilfield in newly built 3 associated gas recycling and processing stations (YB station, NB station and HWC station), to avoid flaring of the associated gas. The associated gas comes from an oil field with scattered oil wells. For all the three stations, after separation, compression, dehydration, condensate-separation etc., the associated gas is separated into the final products of dry gas and NGL (Natural Gas Liquid), the rest of dry gas is used for the gas generators.

The project activity has a total design capacity of 75,000 Nm<sup>3</sup> per day and is designed to produce 24,978,700 Nm<sup>3</sup>/a of dry gas and 588 t/a of NGL, which has been confirmed to be in line with the actual design of the project verified by site inspection and interview with PP. The project activity generates GHG emission reductions by recovery of associated gas from remote and scattered oil wells in Shengli Oilfield which would otherwise be flared, and to process the recovered gas into hydrocarbon products.

Basic technical data is given in the table below.

#### **Main equipment list of the project activity of HWC station**

Parameter	Description			
<b>Compressor</b>				
Quantity	1	1	1	1
Type	VW-3.5/(1-5)-17	VW-6.3/(1-5)-17	VW-1.3/16-38	VW-1.8/14.5-38
Volume flow	3.5 m <sup>3</sup> /min	6.3 m <sup>3</sup> /min	1.3 m <sup>3</sup> /min	1.8 m <sup>3</sup> /min
<b>Dryer</b>				
Quantity	2			
Type	DN800×10×2977			
Design pressure	2.0 MPa			
Volume	1.06 m <sup>3</sup>			
<b>NGL separation tower</b>				
Type	DN600×8×7632			
Quantity	2			
Heat exchange area	6.3 m <sup>3</sup>			
<b>Boiler</b>				
Type	YQW-2400			
Quantity	1			
Rated thermal power	240 kW			

### Main equipment list of the project activity of YB station

Parameter	Description	
<b>Compressor</b>		
Quantity	2	1
Type	VWWJ-3.5/1.2-23	VWWJ-7.2/1.2-23
Volume flow	3.5 m <sup>3</sup> /min	7.2 m <sup>3</sup> /min
<b>Dried Tower</b>		
Quantity	3	
Type	S10/315/351/312	
Volume	0.68 m <sup>3</sup>	
Design pressure	1.2 MPa	
<b>Separator</b>		
Quantity	1	
Type	S10/334	
Design pressure	0.28/0.57 MPa	
Heat exchange area	0.47 m <sup>3</sup>	
<b>Gas generator</b>		
Quantity	1	
Type	400GF1- PWT	
Power	400 kW	

## Main equipment list of the project activity of NB station

Parameter	Description		
<b>Compressor</b>			
Quantity	2	2	1
Type	VWWJ-3.5/1.2-23	VWWJ-2.6/0.5-2.3	6GE-34Y-40P
Volume flow	3.5 m <sup>3</sup> /min	2.6 m <sup>3</sup> /min	153 m <sup>3</sup> /h
Rated capacity	-	-	37 kW
<b>Dried Tower A/B/C</b>			
Quantity	3		
Type	S10/315/351/312		
Volume	0.37 m <sup>3</sup>		
Design pressure	1.0 MPa		
<b>Separator</b>			
Quantity	1		
Type	SCM-900-01		
Volume	1.1m <sup>3</sup>		
Design pressure	0.32 MPa		
<b>Evaporator</b>			
Type	BH2238		
Quantity	1		
Volume	0.027 m <sup>3</sup>		
Design pressure	2.7 MPa		

The information of all the installed equipment for each station included in the project has been listed above. Via checking the nameplate of equipment<sup>/NE/</sup> by site inspection, it is verified that the technical data of the main equipment provided in above tables is correct.

## A.2 Location of project activity

Parameter	Description	
Host Country	People's Republic of China	
Region	Shandong Province	
Project location address	Shengli Oilfield, Dongying City	
Latitude	HWC station	38.1172°N
	YB station	37.9473°N
	NB station	37.3963°N
Longitude	HWC station	118.8816°E
	YB station	118.6401°E
	NB station	118.5283°E



## A.3 Scope of the verification

This verification activity addresses in particular whether:

- the preconditions for approval are present in relation to the project activity during the verification period,
- the implementation of the project is in accordance with the validated project design document; or in case of deviations whether the applicable requirements have been followed,
- the monitoring report complies with the applicable requirements,
- the monitoring activities are consistent with the monitoring plan esp. if all monitoring parameters have been determined in line with the methodological and, if applicable, other requirements and if all calculations methods have been applied correctly,
- the calibration frequency of the respective measuring instruments are met – or in case of deviations whether the applicable requirements have been followed,
- the amount of emission reductions achieved during the monitoring period is correct,
- indications for potential double counting of emission reductions have occurred.

Müller-BBM Cert Umweltgutachter GmbH has performed all tasks as specified under ISO 14064 Parts 2 and 3<sup>/ISO14064/</sup>, thus undertaking a systematic, independent and documented process for the evaluation of the greenhouse gas assertions of the above-mentioned project activity against the agreed verification criteria through this verification report. The main objective of this activity is the use of the verification report by the project owner for the creation of UERs that are eligible under the requirements of EU member state specific Greenhouse Gas Emissions Reporting Regulations Guidance. The process of UER creation requires verification.

Müller-BBM Cert Umweltgutachter GmbH has nominated a verification team fulfilling the internal qualification criteria based on ISO 14064 Parts 2 and 3, ISO 14065 and ISO 14066<sup>/ISO14064/</sup>. The verification process involved an in-depth review of the submitted set of documentation and records as well as background research regarding applied technologies and country-specific circumstances, among others. Following a strategic analysis and the determination of assessment risks, a detailed verification plan has been developed.

The verification included a site visit by the local team member, with the participation of all the personnel involved in the GHG emissions reduction project. A findings list has been provided to the lead partner who subsequently revised the documentation. The revised documentation underwent a further review before issuing this final verification report.

The verification statement is given at a reasonable level of assurance. When verifying reported data, a 5% materiality threshold has been applied with regard to the total amount of emission reductions and in analogy to the EU ETS scheme (Regulation (EU) No 600/2012 as repealed and replaced by Regulation No 2018/2067 and Regulation (EU) No 601/2012), of which the quality requirements are applicable according to the Fuel Quality Directive<sup>/FQD/</sup>.

In order to fulfil the internal requirements of Müller-BBM Cert Umweltgutachter GmbH for final appraisal of this report, an independent technical review has been carried out to the 'final

verification report'. This review was done by a lead verifier, who has not been part of the main verification team.

The verification has been carried out in the period from 15-04-2022 until 25-06-2022 (incl.)

## A.4 Preparation and assessment

The verification criteria were agreed between the client and Müller-BBM Cert Umweltgutachter GmbH prior to the assessment as the verification of the monitoring report to meet the requirements under ISO 14064 Parts 2 and 3<sup>/ISO14064/</sup>, the Council Directive (EU) 2015/652<sup>/EUD/</sup> of 20 April 2015 laying down calculation methods and reporting requirements pursuant to Directive 98/70/EC (Fuel quality directive)<sup>/FQD/</sup> of the European Parliament and of the Council relating to the quality of petrol and diesel fuels having regard to Directive 98/70/EC of the European Parliament and of the Council of 13 October 1998 relating to the quality of petrol and diesel fuels and amending Council Directive 93/12/EEC and the requirements of EU member state specific Greenhouse Gas Emissions Reporting Regulations Guidance.

As preparation for the assessment, the project participant has submitted the project documentation and emissions estimations before starting the verification. By reviewing and evaluating these documents a strategic and risk analysis has been performed in order to develop an assessment plan, that has captured and identified all relevant areas of assessment in order to reduce assessment risks and to enable a statement at a reasonable level of assurance that the project complies with the requirement of ISO 14064 Part 2 (ISO 14064-2)<sup>/ISO14064/</sup>.

Müller-BBM Cert Umweltgutachter GmbH has been provided with a Monitoring Report<sup>/MR/</sup> and underlying data records covering the monitoring period. This document serves as the basis for the assessment presented herewith.

On the basis of the assessment plan a site visit has been executed. During the site visit

- an opening meeting was held
- interviews with key personnel of the project have been held
- the physical project implementation has been checked
- the monitoring equipment has been inspected
- monitoring practices have been observed
- on-site available records have been reviewed and
- a closing meeting was held where the findings list and, if applicable, required corrective action as respective timelines have been discussed and agreed.

This step is followed by the findings' resolution. The lead partner identifies and implements corrections which are to be assessed by the verification team. In case of deviant monitoring practices this might require a respective approval from the UER project approval authority.

Upon successful closure of the findings the final verification report incl. the verification statement is prepared by the verification team.

Finally, the verification report undergoes a technical review, where by a different verifier or a technical review team the complete verification sequence is reviewed. The personnel used for TR

has not been involved in any stage of the verification decision making and is duly authorized for the project scope. In case of additional findings these will be addressed by the verification team and, if required, by the lead partner or project owner until full compliance with all applicable requirements is ensured.

In case not all findings can be closed out a negative verification opinion will be issued.

Upon successful Technical Review the final report is then signed and forwarded to the lead partner, who is responsible for submission to the respective state authority being responsible for UER issuance. Alternatively, where required, the final report may also be directly forwarded to the Competent authority.

## A.5 Conclusion

As a result of this verification it is confirmed that

- the project has been implemented in line with the description of Validation Report including the assessment on baseline and additionality following ISO 14064-part 2
- the assessment of MR is executed to check whether the project has achieved emission reductions with the project activity in line with verification principles of ISO 14064 part 2
- the project has been implemented in accordance with the monitoring report
- or in case of deviations whether the applicable requirements have been followed,
- the monitoring report complies with the applicable requirements,
- the monitoring activities are consistent with the monitoring plan
- the calibration frequency requirements have been followed
- no indications for potential double counting have been identified during this verification.
- upon request the client has provided a statement that emission reductions units for "Associate gas recovery and utilization from oilfield project in Shandong", besides verified under UER scheme, have not been used for any other purpose or under any other ER crediting scheme.

Müller-BBM Cert Umweltgutachter GmbH confirms that during the above specified verification period the project has achieved UER emission reductions for monitoring period 01/01/2021 to 31/12/2021 (incl.) as follows:

51,653 t CO<sub>2</sub>e

## Section B Verification team, technical reviewer and approver

### B.1 Verification team member

No.	Role	Type of resource	Name	Email	Affiliation (e.g. name of central or other office of VB)	Involvement in			
						Desk/document review	On-site inspection	Interviews	Verification findings
1.	Team Leader	EI	Rainer Winter	rwinter@2-grad.eu	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.	Verifier/ Local Expert	EI	Xuejiao Zhao	fzhao@2d-g.com	N/A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

### B.2 Technical reviewer and approver of the verification report

No.	Role	Type of resource	Name	Email	Affiliation (e.g. name of central or other office of VB)
1.	Technical Reviewer	IR	Dr. Joerg Zens	joerg.zens@mabbm-cert.com	Müller-BBM Cert Umweltgutachter GmbH
2.	Assistant Technical reviewer.	IR	Dr. Matthias Bender	matthias.bender@mabbm-cert.com	Müller-BBM Cert Umweltgutachter GmbH

## Section C Application of materiality

### C.1 Consideration of materiality in verification planning

The verification has been planned against the materiality threshold as displayed in the following table. These thresholds have been adopted from UNFCCC Clean Development Mechanism (CDM) requirements.

	Category	Threshold	Applicable for
<input type="checkbox"/>	C	0,5 %	UER project activities achieving > 500.000 t of emission reductions
<input type="checkbox"/>	B2	1%	Large scale UER project activities achieving > 300.000 t of emission reductions
<input type="checkbox"/>	B1	2%	Other large scale UER project activities
<input checked="" type="checkbox"/>	A	5 %	Small scale UER project activities

Strategic Analysis:

At the beginning of the verification the verification team leader has assessed the nature, scale and complexity of the verification tasks to be done by carrying out a strategic analysis of all activities relevant to the UER PA. The team leader has collected and reviewed the information relevant to assess that the designated verification team is sufficiently competent to carry out the verification and to ensure that it is able to conduct the necessary risk analysis.

Risk analysis and detailed audit testing planning:

For the identification and assessment of potential reporting risks and to determine the necessary detailed audit testing procedures for residual risk areas the verification planning tool as documented in Appendix 5 has been used.

On the basis of this analysis the verification has been planned. A detailed audit/verification plan has been prepared and submitted to the project proponents in due time before the site visit.

### C.2 Consideration of materiality in verification activities

The verification has basically been carried out as per the verification plan. Errors, mistakes or other nonconformities have been addressed and corrected.

The verification team has carried out its verification in a way to be able to confirm, with a reasonable level of assurance, that the collective effect of any omissions or undetected mistakes on the stated emission reductions does not exceed the above specified materiality level.

## Section D Means of verification

### D.1 Desk/document review

Based on submitted information on the project idea, its location, relevant stakeholders and the applied methodology, it was agreed to execute the project under an extension of the framework contract for UER activities closed between the auditors and Müller-BBM Cert Umweltgutachter GmbH. The scope of accreditation of Müller-BBM Cert Umweltgutachter GmbH as accredited validation and verification body covers all relevant scopes of this project activity according to AM0009. Müller-BBM Cert Umweltgutachter GmbH has access to auditors covering the required competences in the sectors related for this activity. The contract complies with the internal requirements of the validation and verification body. The cost estimate ensured that the required personnel and time resources were available for processing. The client confirmed the independence of the verification team members and Müller-BBM Cert Umweltgutachter GmbH in writing.

### D.2 On-site inspection

Duration of on-site inspection: 28/04/2022~ 29/04/2022				
No.	Activity performed on-site	Site location	Date	Team member
1.	Opening meeting Interview with PP Representative and Operation Staff	Meeting room in PP company in Shengli Oilfield in Dongying City, Shandong Province, People's Republic of China	28/04/2022	Zhao Xuejiao
2.	On-site inspection	3 associated gas recycling and processing stations in Dongying City, Shandong Province, People's Republic of China	28/04/2022~29/04/2022	Zhao Xuejiao
3.	Documents check	Meeting room in PP company in Shengli Oilfield in Dongying City, Shandong Province, People's Republic of China	29/04/2022	Zhao Xuejiao
4.	Finding Summary	Meeting room in PP company in Shengli Oilfield in Dongying City, Shandong Province, People's Republic of China	29/04/2022	Zhao Xuejiao
5.	Closing Meeting	Meeting room in PP company in Shengli Oilfield in Dongying City, Shandong Province, People's Republic of China	29/04/2022	Zhao Xuejiao

### D.3 Interviews

Interviewee						Team member
No.	Last name	First name	Affiliation	Date	Subject	
1	Wang <sup>13/</sup>	Xi	Shengli Doro Energy Corp., Ltd /Director	28/04/2022 ~ 29/04/2022	- General aspects of the project - Calibration procedures	Xuejiao Zhao

2	Zhao <sup>/11/</sup>	Guangying	YB Station/ Operator	28/04/2022	- Gas processing plant operation situation	
3	Chen <sup>/11/</sup>	Changqing	YB Station/ Engineer	28/04/2022	- Quality management system	Xuejiao Zhao
4	Zheng <sup>/11/</sup>	He	HWC Station/ Operator	28/04/2022	- Involved personnel and responsibilities	Xuejiao Zhao
5	Fu <sup>/11/</sup>	Si	HWC Station/ Operator	28/04/2022	- Training and practice of the operational personnel	Xuejiao Zhao
6	Zhang <sup>/12/</sup>	Dongwei	NB Station/ Engineer	29/04/2022	- Implementation of the monitoring plan	Xuejiao Zhao
7	Wang <sup>/11/</sup>	Xiaoyue	NB Station/ Operator	29/04/2022	- Monitoring data management	Xuejiao Zhao
8	He <sup>/13/</sup>	Yutian	Shengli oilfield /Director	28/04/2022	- Data uncertainty and residual risks	Xuejiao Zhao
9	Qin <sup>/13/</sup>	Xiaoming	Local villager	29/04/2022	- Procedural aspects of the verification	Xuejiao Zhao
10	Wu <sup>/13/</sup>	Xiaodan	Local villager	29/04/2022	- Maintenance	Xuejiao Zhao
11	Lin <sup>/13/</sup>	Ji	Local villager	29/04/2022	- Environmental aspects	Xuejiao Zhao

## D.4 Sampling approach

Sampling approach is not applied for the project.

## D.5 Clarification requests (CL) corrective action requests (CAR) and forward action requests (FAR) raised

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
Contents of the monitoring report	CL 01	CAR 01 CAR 02	-
Compliance of the project implementation and operation with the monitoring report	CL 02	-	-
Post-registration changes	-	-	-
Compliance of the monitoring system with the methodologies including applicable tools and standardized baselines	CL 03	-	-

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
Compliance of monitoring activities with the monitoring plan-	-	CAR 03 CAR 04 CAR 05 CAR 06 CAR 07 CAR 08	-
Compliance with the calibration frequency requirements for measuring instruments	-	CAR 09	-
Assessment of data and calculation of emission reductions	-	CAR 10 CAR 11	-
Others (please specify)	-	-	-
<b>Total</b>	<b>3</b>	<b>11</b>	<b>-</b>



## Section E Verification findings

### E.1 Contents of the monitoring report

Description	
<b>Means of verification</b>	The verification team has reviewed the monitoring report against the requirements of ISO14064-2. The following is confirmed
<b>Findings</b>	<input checked="" type="checkbox"/> The monitoring report clearly specifies the monitoring period.
	<input checked="" type="checkbox"/> The monitoring period, which is identical with the verification period fully lies within the approved offsetting period.
	<input checked="" type="checkbox"/> The monitoring period relates to a compliance year.
	<input checked="" type="checkbox"/> The date when the first upstream emission reductions were achieved as a result of the project activity has been specified. This date has been determined in MR.
	<input checked="" type="checkbox"/> The monitoring report includes a brief description of the upstream emission measures.
	<input checked="" type="checkbox"/> The monitoring report includes the project location (including latitude and longitude of the location closest to the upstream emissions).
	<input checked="" type="checkbox"/> The monitoring report includes a description of the technology and equipment installed.
	<input checked="" type="checkbox"/> The monitoring report includes information about the relevant dates of the project implementation, including information relating to erection and commissioning as well as to the operating periods.
	<input checked="" type="checkbox"/> The monitoring report includes the level of emission reductions in tonnes of carbon dioxide equivalent attained during the monitoring period as well as the determination thereof.
	<input checked="" type="checkbox"/> The monitoring report includes information regarding the implementation of the project activity during the monitoring period.
	<input checked="" type="checkbox"/> For each ex-ante defined parameter the following is included in the monitoring report: <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> the unit of measurement</li> <li><input checked="" type="checkbox"/> the source</li> <li><input checked="" type="checkbox"/> the recording frequency</li> <li><input checked="" type="checkbox"/> a description of the value</li> </ul>
	<input checked="" type="checkbox"/> For each monitoring parameter the following is included in the monitoring report: <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> the unit of measurement</li> <li><input checked="" type="checkbox"/> the source</li> <li><input checked="" type="checkbox"/> the recording frequency</li> <li><input checked="" type="checkbox"/> a description of the value</li> <li><input checked="" type="checkbox"/> a description of the quality control procedures</li> <li><input checked="" type="checkbox"/> the unit of measurement</li> </ul>
	<input checked="" type="checkbox"/> The following finding(s) have been identified in this context:

Description	
	<input checked="" type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR CAR 01 and CAR 02, CL 01 were raised. Refer to Appendix 4 for details of finding raised and closed out.
<b>Conclusions</b>	<input type="checkbox"/> The above listed findings could finally <b>not</b> be closed out. This requirement is not met.
	<input checked="" type="checkbox"/> The monitoring report complies with ISO14064-2.

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

This is the 3<sup>rd</sup> periodical verification of the project, via checking the 2<sup>nd</sup> periodical verification report of this project<sup>VER/</sup>, it is confirmed that there are no remaining Forward Action Requests (FAR) from the previous verification.

## E.3 Compliance of the project implementation and operation with the monitoring report

Description	
<b>Means of verification</b>	<p>The verification team has inspected the project site against the project description in the monitoring report<sup>MR/</sup>.</p> <p>By means of on-site inspection and MR<sup>MR/</sup> review, the verification team can confirm the below.</p> <p>Associate gas recovery and utilization from oilfield project in Shandong is located in Shengli Oilfield. The project contains three stations, namely HWC station, NB station and YB station located in Dongying City, Shandong Province, People's Republic of China.</p> <p>The project is to reduce GHG emissions through recovery and utilization of associated gas from remote and scattered oil wells in Shengli Oilfield in newly built 3 recovery and process stations, to avoid flaring of the associated gas. This has been confirmed by site inspection and comparison with the MR<sup>MR/</sup>.</p> <p>The associated gas comes from oil wells in Shengli Oilfield. Three associated gas processing stations are implemented for the project.</p> <p>The processing stations are operated to treat the associate gas and to separate the NGL. After the treatment, the associated gas becomes a resalable product, including dry gas and NGL.</p> <p>For HWC station, there is a heating facility to supply heat within HWC station; for YB station, there is on-site power generation to provide the electricity to run the whole processing plant, no electricity from grid is applied; HWC station and NB station use the electricity from the grid.</p> <p>The project activity has a total design capacity of 75,000 Nm<sup>3</sup> per day and is designed to produce 24,978,700 Nm<sup>3</sup>/a of dry gas and 588 t/a of NGL. This has been confirmed to be in line with the actual design of the project<sup>PDD/</sup> by site inspection and interview with PP. The project activity generates GHG emission reductions by</p>

Description									
	<p>recovery and associated gas from remote and scattered oil wells in Shengli Oilfield which would otherwise be flared, and to process the recovered gas into hydrocarbon products.</p> <p>The project boundary involves the project oil field and oil wells where the associated gas and/or gas-lift gas is collected, the site where the associated gas would have been flared or vented in the absence of the project activity, the gas recovery, pre-treatment, transportation infrastructure, including where applicable, compressors which have been clearly defined as per the applied methodology<sup>/AM0009/</sup>.</p> <p>The baseline scenario is the same as the status prior to the implementation of the project, i.e. all the associated gas recovered by the project would have been flared and the existing oil and gas infrastructure nearby the oil wells in Shengli Oilfield would have continued operation without processing of any recovered associated gas and without any other significant changes.</p> <p>The project activity generates GHG emission reductions by recovery of associated gas from oil wells in Shengli Oilfield, which would otherwise be flared, and to process the recovered gas into hydrocarbon products, thus not only generating GHG emission reductions but also produce financial, social and environmental benefits, which has been verified by interview with PP representatives<sup>/11/</sup>, operation staffs<sup>/12/</sup>, local officers<sup>/13/</sup> and villagers<sup>/14/</sup>.</p> <p>The commercial operation date is listed in below table respectively for 3 stations, which has been assessed by the Completion acceptance reports for each station<sup>/CAR/</sup>.</p> <p style="text-align: center;"><b>Table E.3-1 Commissioning date of each plant</b></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="background-color: #d9d9d9;">Station</th> <th style="background-color: #d9d9d9;">Commissioning Date</th> </tr> </thead> <tbody> <tr> <td>HWC station</td> <td>10/11/2013</td> </tr> <tr> <td>YB station</td> <td>04/11/2014</td> </tr> <tr> <td>NB station</td> <td>15/08/2015</td> </tr> </tbody> </table> <p>Via checking the nameplate of equipment<sup>/NE/</sup> by site inspection, it is verified that the technical data of the main equipment provided in the MR are correct.</p> <p>Further is has been checked if relevant technical equipment of the project activity has been exchanged or modified during the monitoring period and consistent notations of key equipment (meters etc.) in MR and calculation spreadsheet are applied. Interviews with operational personnel have been carried out, QMS records, maintenance records, instrument specifications were checked in this context.</p> <p>Thus based on the site inspection of the project implementation, it is verified that the implementation and operation of the project is in compliance with the PDD<sup>/PDD/</sup> and MR<sup>/MR/</sup>.</p> <p>No events or situations which may impact the applicability of the methodology during this monitoring period were observed by the verification team during the monitoring period.</p> <p>In particular, it is confirmed that (as below):</p>	Station	Commissioning Date	HWC station	10/11/2013	YB station	04/11/2014	NB station	15/08/2015
Station	Commissioning Date								
HWC station	10/11/2013								
YB station	04/11/2014								
NB station	15/08/2015								
<b>Findings</b>	<table border="1"> <tr> <td style="width: 30px; text-align: center;"><input checked="" type="checkbox"/></td> <td>The physical project boundary complies with the description in the MR against the applied methodology.</td> </tr> </table>	<input checked="" type="checkbox"/>	The physical project boundary complies with the description in the MR against the applied methodology.						
<input checked="" type="checkbox"/>	The physical project boundary complies with the description in the MR against the applied methodology.								

Description		
	<input checked="" type="checkbox"/>	The project has been implemented as described in the section B.1 of the monitoring report.
	<input checked="" type="checkbox"/>	The following finding(s) have been identified in this context:
	<input type="checkbox"/> CAR	CL 02 was raised.
	<input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR	Refer to Appendix 4 for details of finding raised and closed out.
<b>Conclusions</b>	<input type="checkbox"/>	The above listed findings could finally <b>not</b> be closed out. This requirement is not met.
	<input checked="" type="checkbox"/>	The project implementation is in full compliance with the MR.

## E.4 Post registration changes

E.4.1 Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines and other methodological documents

✓	
<input checked="" type="checkbox"/>	No temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological documents have been identified
<input type="checkbox"/>	The following temporary deviations have been identified:
#1	Description of deviation
	Comment:
#2	Description of deviation
	Comment:

✓ Findings	
<input type="checkbox"/>	No findings have been raised in this context
<input type="checkbox"/>	The following findings have been raised:
#1	<input type="checkbox"/> CAR
	<input type="checkbox"/> CL
	<input type="checkbox"/> FAR
#2	<input type="checkbox"/> CAR
	<input type="checkbox"/> CL
	<input type="checkbox"/> FAR

## E.4.2 Corrections

✓

<input checked="" type="checkbox"/>	No need for corrections of the registered monitoring plan, or other methodological documents have been identified	
<input type="checkbox"/>	The following corrections have been applied:	
#1	Description of deviation	
	Comment:	
#2	Description of deviation	
	Comment:	

<b>✓ Findings</b>		
<input checked="" type="checkbox"/>	No findings have been raised in this context	
<input type="checkbox"/>	The following findings have been raised:	
#1	<input type="checkbox"/> CAR	
	<input type="checkbox"/> CL	
	<input type="checkbox"/> FAR	
#2	<input type="checkbox"/> CAR	
	<input type="checkbox"/> CL	
	<input type="checkbox"/> FAR	

E.4.3 Permanent changes from registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines or other methodological documents

<b>✓</b>		
<input checked="" type="checkbox"/>	No permanent deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological documents have been identified.	
<input type="checkbox"/>	The following permanent deviations have been identified:	
#1	Description of deviation	
	Approved	<input type="checkbox"/>
	Date of approval	
	Comment:	
#2	Description of deviation	
	Approved	<input type="checkbox"/>
	Date of approval	
	Comment:	

<b>✓ Findings</b>		
<input checked="" type="checkbox"/>	No findings have been raised in this context	
<input type="checkbox"/>	The following findings have been raised:	

#1	<input type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR	
#2	<input type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR	

## E.4.4 Permanent changes to project design

<input type="checkbox"/>	No permanent changes to project design have been identified.	
<input checked="" type="checkbox"/>	The following permanent changes have been identified:	
#1	Description of change	<p>In the registered PDD, PP defined the Provisionally determined offsetting period is from 01/01/2020 to 31/12/2020, but now PP has applied the monitoring period beyond the provisionally determined offsetting period in the PDD.</p> <p>PP stated that the offsetting period defined in the PDD is actually not applicable to this project case due to the UER of the project was not sold in Germany hence there is no one year limitation to the crediting period in the other EU member states.</p> <p>During the validation period, the FQD is only mentioned the target in 2020 and only UERs generated during the calendar year 2020 shall be eligible to be counted towards the FQD target in 2020. This is the reason why the crediting period in the PDD was determined only for the whole year of 2020. However, the EU member states still implement the FQD after 2020 without limitation of crediting period. Therefore, the crediting period has been extended</p> <p>The crediting period in the updated MR has been amended to 01/01/2020 to 09/11/2023.</p> <p>The updated crediting period is from the issued date of FQD on 01/01/2020, and ended on 09/11/2023, due to the expected operational lifetime of project activity derived from the Feasibility Study Report (FSR), which is 10 years, and the project has been started since 10/11/2013 (the earliest Commercial Operation Date among the three stations), thus ended on 09/11/2023.</p> <p>The extending of the crediting period doesn't change the demonstration and establishment of the baseline scenario. The alternative 2 "Venting and/or flaring of the associated gas at the oil production facility" is still considered as the baseline scenario. Besides, the calculation of IRR of the project has taken into account 10 year's expected operational lifetime. Thus, there is no influence on the additionality demonstration result.</p>
	Comment:	<p>PP has changed the initial provisionally determined offsetting period (01/01/2020 to 31/12/2020) to 01/01/2020 to 09/11/2023.</p> <p>During the validation it was assumed that the validity of the FQD (EU Fuel Quality Directive<sup>/FQD/</sup> and Directive (EU) 2015/652<sup>/DEU/</sup>) ceases end of 2020. Therefore, the validity of the crediting/offsetting period was limited to one year only. However, after the project validation it became obvious</p>

✓		
		<p>that the FQD was also applied by the EU member states for compliance years post 2020. As further,</p> <ul style="list-style-type: none"> <li>a) FQD requirements do not limit the offsetting period</li> <li>b) no host country limitations apply, and</li> <li>c) the additionality of the project was basically justified considering the whole life cycle of the project</li> </ul> <p>the extension of the offsetting period up to the expected end of the project lifetime is deemed appropriate.</p> <p>In detail:</p> <ul style="list-style-type: none"> <li>- By checking the FSR<sup>/FSR/</sup>, it is confirmed that the operational lifetime of the project activity is 10 years which has been verified during the validation process, hence it is reasonable to limit the UER crediting period as per the project lifetime as the project can only generate emission reductions during the operational lifetime which is from 10/11/2013 to 09/11/2023.</li> <li>- Furthermore, as per the validation report<sup>/VAL/</sup>, the alternative 2 “Venting and/or flaring of the associated gas at the oil production facility” has been considered as the baseline scenario which is not influenced by the change of crediting period as per the demonstration in the validation report.</li> <li>- Besides, for the demonstration of additionality, via checking the assessment in the validation report<sup>/VAL/</sup>, it is confirmed that the investment analysis was conducted by calculation of the project IRR. The IRR has been calculated by taking into account 10 year’s expected operational lifetime based on the FSR<sup>/FSR/</sup> so that the additionality demonstration is not influenced by the change of the offsetting period as per the assessment in the validation report.</li> </ul> <p>Finally it is confirmed that the correction (change of the offsetting / crediting period) is unlikely to lead to a reduction in the accuracy of the ER calculation and can ensure that ER will not be overestimated.</p> <p>In conclusion, the correction does not affect the design of the project activity, and based on the above assessment, it is verified that the change of crediting period will have no material impact on the baseline scenario, additionality demonstration or the accuracy and completeness of the monitoring and ER calculation, thus this correction can be accepted.</p>
#2	Description of deviation	
	Comment:	

✓ Findings		
<input type="checkbox"/>	No findings have been raised in this context	
<input checked="" type="checkbox"/>	The following findings have been raised:	
#1	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR	CL 01 was raised. Refer to Appendix 4 for details of finding raised and closed out.

#2	<input type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR	
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## E.5 Compliance of the monitoring system with the methodologies, including applicable tools and standardized baselines

Description	
<b>Means of verification</b>	<p>The verification team has analyzed the content to the approved monitoring plan against the requirements of the applied methodology and the applicable methodological tools (at verification stage) and came to the following conclusions:</p> <p>Monitoring structure: The details of roles and responsibilities for the monitoring are provided in the MR<sup>MR/</sup> which is in line with the information inspected during site visit. The responsibilities as listed in the Management Structure of the project has been verified by on-site interview with the project owner.</p> <p>All required equipment and procedures are available and implemented in an appropriate manner. All necessary monitoring instruments are installed. The measuring devices are well known and state-of-the-art. All required instruments including stand by and operating procedures for the same have been implemented in an appropriate manner.</p> <p>Metering purpose is stated in the monitoring plan and MR,</p> <ol style="list-style-type: none"> <li>i. For YB station, there are three monitoring points: Flowmeter for monitoring recovered gas at point F in figure C-2, and flowmeter measured at point D in figure C-2 for dry gas transported on pipeline; weighbridge that metering point G in figure C-2 for the quantity of produced NGL.</li> <li>ii. For NB station, there are two monitoring points: Flowmeter for monitoring recovered gas at point F in figure C-3, electricity meter at point H in figure C-3 to measure the electricity consumption from the grid.</li> <li>iii. For HWC station, there are four monitoring points: Flowmeter for monitoring recovered gas at point F in figure C-4, and flowmeter measured at point D in figure C-4 for dry gas transported on pipeline; electricity meter that metering point H in figure C-4 for the electricity consumed from grid; weighbridge at point G in figure C-4 for the quantity of produced NGL.</li> </ol> <p>Refer to Appendix 6 for detailed assessment.</p> <p>The average net calorific value of recovered gas at point F (<math>NCV_{RG,F,y}</math>) and Average net calorific value of dry gas at point D (<math>NCV_{i,y}</math>) is conducted by sampling and compositional analysis including the subsequent calculation of net calorific value once a month<sup>NCVR/</sup>. Refer to Appendix 6 for detailed assessment.</p> <p>Neither failure nor exchange of electricity meters and flowmeter was detected during this monitoring period. The verifier has checked all related calibration certificates and confirms that the calibration of flowmeters and electricity meters is valid for the entire 3<sup>rd</sup> monitoring period<sup>CAL/</sup>. Also the ISO17025 accreditation of</p>



Description															
	<p>the entity who conducted the NCV measurement is also verified to meet the methodology requirements<sup>/CMA/</sup>.</p> <p>For data collection, the gas quantities are measured continuously by flowmeters, quantities of produced NGL are measured by weighbridges and electricity consumed by stations are measured continuously by electricity meters.</p> <p>The UER monitoring staffs record the readings of flowmeters daily and aggregated data once a month, then prepare Monthly production summary tables which has been verified by checking the monthly records<sup>/MPST/</sup> for recovered gas and dry gas. Further, UER monitoring staffs record the readings of electricity meters daily and aggregated data once a month, then prepared Monthly meter reading records<sup>/MMRR/</sup> for consumed electricity. The UER monitoring staffs also record the readings of weighbridges daily and aggregated data once a month, then prepare Monthly production summary tables which has been verified by checking the monthly records<sup>/MPST/</sup> for NGL.</p> <p>The monthly data in the Confirmation form for quantity of recovered gas and dry gas issued by the gas supplier company (Shengli oilfield)<sup>/CFQ/</sup> is used for crosscheck for associated gas and dry gas quantities, monthly data in Monthly electricity settlement<sup>/MES/</sup> is used for crosscheck for consumed electricity quantities, and monthly data in Settlement statement of NGL<sup>/SSN/</sup> is used for crosscheck for NGL quantities.</p> <p>QA/QC procedure for meter calibration and data measurement and recording; procedure for monitoring staff training<sup>/TRR/</sup> were established and implemented. The data flow and emergency procedure were observed during the on-site verification. In case the monitoring equipment is out of order, no emission reductions will be claimed of the respective period.</p> <p>Data management and archive procedures are provided in the MR<sup>/MR/</sup> and have been applied by the project implementation which has been verified by site inspection and checking all the related monitoring records.</p>														
<b>Findings</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%; text-align: center;"><input checked="" type="checkbox"/></td> <td>The actual monitoring system is in full compliance with the applied methodology AM0009 version 07.0<sup>/AM0009/</sup></td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>The actual monitoring system is in full compliance with TOOL 03: “Tool to calculate project or leakage CO<sub>2</sub> emissions from fossil fuel combustion” version 03.0.0<sup>/TPL/</sup></td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>The actual monitoring system is in full compliance with TOOL 05: “Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation” version 03.0.0.<sup>/TBPL/</sup></td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>The actual monitoring system is in full compliance with TOOL 21: “Demonstration of additionality of small scale project activities” (Version 13.0)<sup>/TDA/</sup></td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>The actual monitoring system is in full compliance with TOOL 02: “Combined tool to identify the baseline scenario and demonstrate additionality” (Version 07.0.0)<sup>/TIBA/</sup></td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>The following finding(s) have been identified in this context:</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/> CAR</td> <td>CL 03 was raised.</td> </tr> </table>	<input checked="" type="checkbox"/>	The actual monitoring system is in full compliance with the applied methodology AM0009 version 07.0 <sup>/AM0009/</sup>	<input checked="" type="checkbox"/>	The actual monitoring system is in full compliance with TOOL 03: “Tool to calculate project or leakage CO <sub>2</sub> emissions from fossil fuel combustion” version 03.0.0 <sup>/TPL/</sup>	<input checked="" type="checkbox"/>	The actual monitoring system is in full compliance with TOOL 05: “Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation” version 03.0.0. <sup>/TBPL/</sup>	<input checked="" type="checkbox"/>	The actual monitoring system is in full compliance with TOOL 21: “Demonstration of additionality of small scale project activities” (Version 13.0) <sup>/TDA/</sup>	<input checked="" type="checkbox"/>	The actual monitoring system is in full compliance with TOOL 02: “Combined tool to identify the baseline scenario and demonstrate additionality” (Version 07.0.0) <sup>/TIBA/</sup>	<input checked="" type="checkbox"/>	The following finding(s) have been identified in this context:	<input type="checkbox"/> CAR	CL 03 was raised.
<input checked="" type="checkbox"/>	The actual monitoring system is in full compliance with the applied methodology AM0009 version 07.0 <sup>/AM0009/</sup>														
<input checked="" type="checkbox"/>	The actual monitoring system is in full compliance with TOOL 03: “Tool to calculate project or leakage CO <sub>2</sub> emissions from fossil fuel combustion” version 03.0.0 <sup>/TPL/</sup>														
<input checked="" type="checkbox"/>	The actual monitoring system is in full compliance with TOOL 05: “Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation” version 03.0.0. <sup>/TBPL/</sup>														
<input checked="" type="checkbox"/>	The actual monitoring system is in full compliance with TOOL 21: “Demonstration of additionality of small scale project activities” (Version 13.0) <sup>/TDA/</sup>														
<input checked="" type="checkbox"/>	The actual monitoring system is in full compliance with TOOL 02: “Combined tool to identify the baseline scenario and demonstrate additionality” (Version 07.0.0) <sup>/TIBA/</sup>														
<input checked="" type="checkbox"/>	The following finding(s) have been identified in this context:														
<input type="checkbox"/> CAR	CL 03 was raised.														

Description	
	<input checked="" type="checkbox"/> CL Refer to Appendix 4 for details of finding raised and closed out. <input type="checkbox"/> FAR
<b>Conclusions</b>	<input type="checkbox"/> The above listed findings could finally <b>not</b> be closed out. This requirement is not met.
	<input checked="" type="checkbox"/> The monitoring plan complies with the applied methodology and the monitoring system and all applied procedures are completely in compliance to the latest approved monitoring plan and the methodology AM0009 version 07.0 and related tools.

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

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

Description				
<b>Means of verification</b>	The verification team has checked all ex ante determined parameters for correct application in the MR and the ER calculation. The following results have been obtained.			
<b>Findings</b>	Parameter	Value	Unit	Correct application
	EF <sub>CO<sub>2</sub>,Methane</sub>	54.834	tCO <sub>2</sub> /TJ	<input checked="" type="checkbox"/>
	NCV <sub>NGL,j,y</sub>	40.90	GJ/t	<input checked="" type="checkbox"/>
	EF <sub>EF,j,y</sub>	1.3	tCO <sub>2</sub> /MWh	<input checked="" type="checkbox"/>
	TDL <sub>j,y</sub>	20	%	<input checked="" type="checkbox"/>
	EF <sub>NGL,y</sub>	0.0583	tCO <sub>2</sub> /GJ	<input checked="" type="checkbox"/>
	<input checked="" type="checkbox"/>	The following finding(s) have been identified in this context:		
<input checked="" type="checkbox"/> CAR	CAR 03 was raised.			
<input type="checkbox"/> CL	Refer to Appendix 4 for details of finding raised and closed out.			
<input type="checkbox"/> FAR				
<b>Conclusion</b>	<input type="checkbox"/>	The above listed findings could finally not be closed out. This requirement is not met.		
	<input checked="" type="checkbox"/>	All ex-ante defined parameters have been applied correctly throughout the Monitoring report and the emission reduction calculation.		

### E.6.2 Data and parameters monitored

Description	
<b>Means of verification</b>	The verification team has checked all monitored parameters and the required monitoring equipment. For each equipment it has been checked whether the accuracy requirements have been met and whether all applicable QA/QC requirements incl. calibration have been met. It has further been checked whether the parameter description in the monitoring plan corresponds with the actual situation. Finally, the data aggregation from the original data to the reported value has been checked and recalculated, where applicable.

Description	
<b>Findings</b>	Please refer to table A6-1 in Appendix 6
	<input checked="" type="checkbox"/> The following finding(s) have been identified in this context:
	<input checked="" type="checkbox"/> CAR CAR 04, CAR 05, CAR 06, CAR 07, CAR 08 was raised. <input type="checkbox"/> CL Refer to Appendix 4 for details of finding raised and closed out. <input type="checkbox"/> FAR
<b>Conclusion</b>	<input type="checkbox"/> The above listed findings could finally <b>not</b> be closed out. This requirement is not met.
	<input checked="" type="checkbox"/> All monitored parameters have been determined correctly. Where data gaps have occurred, accuracy or QA/QC requirements have not been met appropriate conservative compensations have been applied.

### E.6.3 Implementation of sampling plan

Description	
<b>Means of verification</b>	As stated in the section B.7.2 of the PDD <sup>PDD</sup> , no sampling approach was applied for the project.
<b>Findings</b>	N/A
	<input type="checkbox"/> The following finding(s) have been identified in this context: - N/A
<b>Conclusion</b>	<input type="checkbox"/> The above listed findings could finally <b>not</b> be closed out. This requirement is not met.
	<input checked="" type="checkbox"/> No sampling has been carried out during this verification

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

Description	
<b>Means of verification</b>	The verification team has checked the calibration data for all implemented monitoring equipment.
<b>Findings</b>	Please refer to table A7-1 in Appendix 7
	<input checked="" type="checkbox"/> The following finding(s) have been identified in this context:
	<input checked="" type="checkbox"/> CAR CAR 09 was raised. <input type="checkbox"/> CL Refer to Appendix 4 for details of finding raised and closed out. <input type="checkbox"/> FAR
<b>Conclusion</b>	<input type="checkbox"/> The above listed findings could finally <b>not</b> be closed out. This requirement is not met.
	<input checked="" type="checkbox"/> All calibrations have been carried out in line with the requirements of the registered monitoring plan. No delays in calibration have occurred.

## E.8 Assessment of data and calculation of emission reductions

### E.8.1 Calculation of baseline GHG emissions

Description					
<b>Means of verification</b>	<p>The verification team has checked the calculation of baseline emissions in the monitoring report<sup>/MR/</sup> and the related ER calculation spread sheet<sup>/ER/</sup>. In detail it has been checked whether</p> <ul style="list-style-type: none"> <li>• all underlying non monitored parameters have been considered correctly</li> <li>• All monitored parameters have been considered correctly</li> <li>• The calculations are in line with the approved monitoring plan</li> <li>• The ER calculation spread sheet is free of material errors</li> <li>• The calculation of the energy related baseline emissions has been done correctly</li> </ul> <p>The formula used for the determination of baseline emissions is consistent with the applied methodology AM0009<sup>/AM0009/</sup>,</p> $BE_y = V_{F,y} \times NCV_{RG,F,y} \times EF_{CO_2,Methane} \quad (1)$ <p>Where:</p> <p><math>BE_y</math> = Baseline emissions in year <math>y</math>, (tCO<sub>2</sub>e)  <math>V_{F,y}</math> = Volume of total recovered gas measured at point F in year <math>y</math>, (Nm<sup>3</sup>)  <math>NCV_{RG,F,y}</math> = Average net calorific value of recovered gas at point F in year <math>y</math>, (TJ/Nm<sup>3</sup>)  <math>EF_{CO_2,Methane}</math> = CO<sub>2</sub> emission factor for methane (tCO<sub>2</sub>/TJ)</p> <p>Based on the ex-ante determined value of <math>EF_{CO_2,Methane}</math> and monitoring result of <math>V_{F,y}</math> and <math>NCV_{RG,F,y}</math> as assessed in Appendix 6 of this report, for this monitoring period, the baseline emission is calculated as below</p> <p>For YB station,</p> $BE_{YB,y} = \sum V_{F,y} \times NCV_{RG,F} \times EF_{CO_2,Methane} = 11,901 \text{ tCO}_2\text{e}$ <p>For NB station,</p> $BE_{NB,y} = \sum V_{F,y} \times NCV_{RG,F} \times EF_{CO_2,Methane} = 11,887 \text{ tCO}_2\text{e}$ <p>For HWC station,</p> $BE_{HWC,y} = \sum V_{F,y} \times NCV_{RG,F} \times EF_{CO_2,Methane} = 36,206 \text{ tCO}_2\text{e}$ <p>And total baseline emissions for this monitoring period is</p> $BE_y = BE_{YB,y} + BE_{NB,y} + BE_{HWC,y} = 59,994 \text{ tCO}_2\text{e}$ <p>The total baseline emissions for this project are the sum whole year of 2021 values of 3 stations which the calculation results have been listed clearly in the ER sheet<sup>/ER/</sup> and MR<sup>/MR/</sup> and have been verified and re-calculated by verifier.</p>				
<b>Findings</b>	<table border="1"> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>All required calculations have been demonstrated by the project proponents</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>The calculation of baseline emissions is fully traceable and transparent</td> </tr> </table>	<input checked="" type="checkbox"/>	All required calculations have been demonstrated by the project proponents	<input checked="" type="checkbox"/>	The calculation of baseline emissions is fully traceable and transparent
<input checked="" type="checkbox"/>	All required calculations have been demonstrated by the project proponents				
<input checked="" type="checkbox"/>	The calculation of baseline emissions is fully traceable and transparent				

Description	
	<input checked="" type="checkbox"/> No mistakes have occurred to calculate the baseline emissions
	<input checked="" type="checkbox"/> The final baseline emissions value reported is deemed to be correct
	<input checked="" type="checkbox"/> The following finding(s) have been identified in this context:
	<input checked="" type="checkbox"/> CAR CAR 10 was raised.
	<input type="checkbox"/> CL Refer to Appendix 4 for details of finding raised and closed out.
	<input type="checkbox"/> FAR
<b>Conclusion</b>	<input type="checkbox"/> The above listed findings could finally <b>not</b> be closed out. This requirement is not met.
	<input checked="" type="checkbox"/> The calculation of baseline emissions has been done correctly. This also includes the energy related baseline values.

## E.8.2 Calculation of project GHG emissions

Description	
<b>Means of verification</b>	<p>The verification team has checked the calculation of project emissions in the monitoring report<sup>/MR/</sup> and the related ER calculation spread sheet<sup>/ER/</sup>. In detail it has been checked whether</p> <ul style="list-style-type: none"> <li>• all underlying non monitored parameters have been considered correctly.</li> <li>• all monitored parameters have been considered correctly</li> <li>• the calculations are in line with the approved monitoring plan</li> <li>• the ER calculation spread sheet is free of material errors.</li> <li>• the calculation of the energy related project emissions has been done correctly.</li> </ul> <p>The formula used for the determination of project emissions is consistent with the applied methodology<sup>/AM0009/</sup>:</p> <p>(a) CO<sub>2</sub> emissions due to consumption of fossil fuels for the recovery, pre-treatment, transportation, and, if applicable, compression of the recovered gas up to the point F;</p> <p>(b) CO<sub>2</sub> emissions due to the use of electricity for the recovery, pre-treatment, transportation, and, if applicable, compression of the recovered gas up to the point F.</p> $PE_y = PE_{CO_2, fossil\ fuels, y} + PE_{CO_2, elec, y} \quad (2)$ <p>Where:</p> <p><math>PE_y</math> = Project emissions in year y, (tCO<sub>2</sub>e)</p> <p><math>PE_{CO_2, fossil\ fuels, y}</math> = CO<sub>2</sub> emissions due to consumption of fossil fuels for the recovery, pre-treatment, transportation, and if applicable, compression of the recovered gas up to the point F in year y (tCO<sub>2</sub>e)</p> <p><math>PE_{CO_2, elec, y}</math> = CO<sub>2</sub> emissions due to the use of electricity for recovery, pre-treatment, transportation and if applicable, compression of the recovered gas up to the point F in year y (tCO<sub>2</sub>e)</p>

Description
<p><b><u>Project emissions from the consumption of fossil fuels</u></b></p> <p>According to the “Tool to calculate project or leakage CO<sub>2</sub> emissions from fossil fuel combustion” (version 03.0)<sup>/TPL/</sup>, <math>PE_{CO_2, fossil\ fuels, y}</math> is calculated as follows:</p> $PE_{CO_2, fossil\ fuels, y} = PE_{FC, j, y} = \sum_i FC_{i, j, y} \times COEF_{i, y} \quad (3)$ <p>Where:</p> <p><math>PE_{CO_2, fossil\ fuels, y}</math> = CO<sub>2</sub> emissions due to consumption of fossil fuels for the recovery, pre-treatment, transportation, and compression of the recovered gas up to the point F in year y (tCO<sub>2</sub>e)</p> <p><math>PE_{FC, j, y}</math> = Are the CO<sub>2</sub> emissions from fossil fuel combustion in process j during the year y (tCO<sub>2</sub>/yr)</p> <p><math>FC_{i, j, y}</math> = The quantity of fuel type i combusted in process j measured at point E during the year y (mass or volume unit/yr)</p> <p><math>COEF_{i, y}</math> = The CO<sub>2</sub> emissions coefficient of fuel type i in year y (tCO<sub>2</sub>/mass or volume unit)</p> <p><math>i</math> = The dry gas combusted in process j during the year y</p> <p>Via site inspection and as per the PDD, it is confirmed that the project emission from dry gas consumption on-site of YB station and HWC station are calculated as above formula.</p> <p>Based on the ex ante determined values of <math>NCV_{NGL, j, y}</math>, <math>EF_{NGL, y}</math> and the monitoring results of <math>V_{DG, y}</math>, <math>V_{F, y}</math>, <math>M_{NGL, y}</math>, <math>NCV_{i, y}</math> and <math>EF_{CO_2, i, y}</math> as assessed in Appendix 6 of this report, for this monitoring period, the project emissions from dry gas consumption are calculated as below</p> <p>For YB station,</p> $PE_{CO_2, fossil\ fuel, y, YB} = \sum FC_{i, j, y} \times NCV_{i, y} \times EF_{CO_2, i, y}$ $= (V_{F, y} - V_{DG, y}) \times NCV_{i, y} \times EF_{CO_2, i, y} - M_{NGL, y} \times NCV_{NGL, y} \times EF_{NGL, y}$ $= 1,415 \text{ tCO}_2\text{e}$ <p>For HWC station,</p> $PE_{CO_2, fossil\ fuel, y, HWC} = \sum FC_{i, j, y} \times NCV_{i, y} \times EF_{CO_2, i, y}$ $= (V_{F, y} - V_{DG, y}) \times NCV_{i, y} \times EF_{CO_2, i, y} - M_{NGL, y} \times NCV_{NGL, y} \times EF_{NGL, y}$ $= 677 \text{ tCO}_2\text{e}$ <p>And total project emission from dry gas consumption for this monitoring period is</p> $PE_{CO_2, fossil\ fuel, y} = PE_{CO_2, fossil\ fuel, y, YB} + PE_{CO_2, fossil\ fuel, y, HWC} = 2,092 \text{ tCO}_2\text{e}$ <p>The total project emissions from the consumption of dry gas for this project is the sum of two stations in whole year of 2021. The calculation results have been listed clearly in the ER sheet and MR and have been verified and re-calculated by the verifier.</p>

Description	
<p><b><u>Project emissions from consumption of electricity</u></b></p> <p>According to the “Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation” version 03.0.0<sup>TBPL</sup>, <math>PE_{CO_2,elec,y}</math> is calculated as follows:</p> $PE_{CO_2,elec,y} = PE_{EC,y} = \sum_j EC_{PJ,j,y} \times EF_{EL,j,y} \times (1 + TDL_{j,y}) \quad (4)$ <p>Where:</p> <p><math>PE_{EC,y}</math> = CO<sub>2</sub> emissions due to the use of electricity for the recovery, pre-treatment, transportation, and compression of the recovered gas up to the point F in year y (tCO<sub>2</sub>e)</p> <p><math>EC_{PJ,j,y}</math> = Quantity of electricity consumed by the project activity source j in year y (MWh/y)</p> <p><math>EF_{EL,j,y}</math> = Emission factor for electricity generation for source j in year y (tCO<sub>2</sub>/MWh).</p> <p><math>TDL_{j,y}</math> = Average technical transmission and distribution losses for providing electricity to source j in year y</p> <p><math>j</math> = Sources of electricity consumption in the project.</p> <p>Based on the ex ante determined values of <math>TDL_{j,y}</math> and <math>EF_{EL,j,y}</math> and monitoring results of <math>EC_{PJ,j,y}</math> as assessed in the Appendix 6 of this report, for this monitoring period, the Project emissions from the consumption of electricity are calculated as below</p> <p>For NB station,</p> $PE_{CO_2,ele,y,NB} = EC_{PJ,j,y} \times EF_{EF,j,y} \times (1+TDL_y)$ $= 2,120 \text{ tCO}_2\text{e}$ <p>For HWC station,</p> $PE_{CO_2,ele,y,HWC} = EC_{PJ,j,y} \times EF_{EF,j,y} \times (1+TDL_y)$ $= 4,129 \text{ tCO}_2\text{e}$ <p>The total project emissions from electricity consumption for this monitoring period are</p> $PE_{CO_2,ele,y} = PE_{CO_2,ele,y,NB} + PE_{CO_2,ele,y,HWC} = 6,249 \text{ tCO}_2\text{e}$ <p>The calculation results have been listed clearly in the ER sheet and MR and have been verified and re-calculated by verifier.</p> <p>In summary, for this monitoring period,</p> $PE_y = PE_{CO_2,fossil\ fuel,y} + PE_{CO_2,elec,y} = 8,341 \text{ tCO}_2\text{e}.$	
<b>Findings</b>	<input checked="" type="checkbox"/> All required calculations have been demonstrated by the project proponents
	<input checked="" type="checkbox"/> The calculation of project emissions is fully traceable and transparent
	<input checked="" type="checkbox"/> No mistakes have occurred to calculate the project emissions
	<input checked="" type="checkbox"/> The final project emissions value reported is deemed to be correct

Description	
	<input checked="" type="checkbox"/> The following finding(s) have been identified in this context: <input checked="" type="checkbox"/> CAR CAR 11 was raised. <input type="checkbox"/> CL Refer to Appendix 4 for details of finding raised and closed out. <input type="checkbox"/> FAR
<b>Conclusion</b>	<input type="checkbox"/> The above listed findings could finally <b>not</b> be closed out. This requirement is not met.
	<input checked="" type="checkbox"/> The calculation of project emissions has been done correctly. This also includes the energy related project values.

### E.8.3 Calculation of leakage emissions

Description	
<b>Means of verification</b>	As per the applied methodology, Leakage emissions are not considered.
<b>Findings</b>	<input checked="" type="checkbox"/> No leakage has been considered to calculate the UER emission reductions. The verification team confirms that no leakage effects need to be considered for this project during the current monitoring period as per the actual project situation against the applied methodology.
	<input type="checkbox"/> All required calculations have been demonstrated by the project proponents
	<input type="checkbox"/> The calculation of leakage emissions is fully traceable and transparent
	<input type="checkbox"/> No mistakes have occurred to calculate the leakage emissions
	<input type="checkbox"/> The final leakage emissions value reported is deemed to be correct
	<input type="checkbox"/> The following finding(s) have been identified in this context: - N/A
	<input type="checkbox"/>
<b>Conclusion</b>	<input type="checkbox"/> The above listed findings could finally <b>not</b> be closed out. This requirement is not met.
	<input checked="" type="checkbox"/> No leakage emissions were to be considered for this project during the current monitoring period.

### E.8.4 Summary calculation of upstream emission reductions

Description	
<b>Means of verification</b>	Considering baseline, project and where applicable leakage emissions the UER value has been calculated. The verification team has checked this calculation and confirms the following:  Emission reductions are calculated as follows:  $ER_y = BE_y - PE_y - LE_y \quad (6)$  Where:



Description																					
	<p><math>ER_y</math> = Emission reductions in year <math>y</math>, (tCO<sub>2</sub>e)  <math>BE_y</math> = Baseline emissions in year <math>y</math>, (tCO<sub>2</sub>e)  <math>PE_y</math> = Project emissions in year <math>y</math>, (tCO<sub>2</sub>e)  <math>LE_y</math> = Leakage emissions in year <math>y</math>, (tCO<sub>2</sub>e)</p> <p>Based on the above calculation of <math>BE_y</math> and <math>PE_y</math>,            During this monitoring period, the emission reduction is calculated as below table</p> <table border="1"> <thead> <tr> <th>Parameters</th> <th>Baseline Emissions <math>BE_y</math></th> <th>Project Emissions <math>PE_y</math></th> <th>Leakage Emissions <math>LE_y</math></th> <th>Emission Reductions <math>ER_y</math></th> </tr> <tr> <td></td> <td>(tCO<sub>2</sub>e)</td> <td>(tCO<sub>2</sub>e)</td> <td>(tCO<sub>2</sub>e)</td> <td>(tCO<sub>2</sub>e)</td> </tr> </thead> <tbody> <tr> <td>Period</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>01/01/2021-31/12/2021</td> <td>59,994</td> <td>8,341</td> <td>0</td> <td>51,653</td> </tr> </tbody> </table>	Parameters	Baseline Emissions $BE_y$	Project Emissions $PE_y$	Leakage Emissions $LE_y$	Emission Reductions $ER_y$		(tCO <sub>2</sub> e)	(tCO <sub>2</sub> e)	(tCO <sub>2</sub> e)	(tCO <sub>2</sub> e)	Period					01/01/2021-31/12/2021	59,994	8,341	0	51,653
Parameters	Baseline Emissions $BE_y$	Project Emissions $PE_y$	Leakage Emissions $LE_y$	Emission Reductions $ER_y$																	
	(tCO <sub>2</sub> e)	(tCO <sub>2</sub> e)	(tCO <sub>2</sub> e)	(tCO <sub>2</sub> e)																	
Period																					
01/01/2021-31/12/2021	59,994	8,341	0	51,653																	
<b>Findings</b>	<input checked="" type="checkbox"/>	The calculation of upstream emission reductions has been done correctly.																			
	<input type="checkbox"/>	The final UER value reported is deemed to be correct																			
	<input checked="" type="checkbox"/>	The following finding(s) have been identified in this context:																			
	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR	Refer to CAR 10 and CAR 11																			
<b>Conclusion</b>	<input type="checkbox"/>	The above listed findings could finally <b>not</b> be closed out. This requirement is not met.																			
	<input checked="" type="checkbox"/>	The upstream emission reduction value has correctly been calculated from baseline, project and leakage emissions as per UER = BE-PE-LE.																			

## E.8.5 Comparison of actual of upstream emission reductions with estimates in the approved PDD

Description	
<b>Means of verification</b>	<p>The verification team has compared the ex-ante determined value with the actual value achieved during the current monitoring period.</p> <p>Via checking the actual value in MR comparing with the PDD, it is verified that the actual Emission reduction value is slightly 7.93% (1-51,653 tCO<sub>2</sub>eq/56,099 tCO<sub>2</sub>eq, where 56,099 tCO<sub>2</sub>eq is annual GHG emission reductions estimated in registered PDD) lower than the estimated emission reduction of the registered UER PDD during this monitoring period. This lower ratio is verified as reasonable due to the main parameters of gas volume and NCV are fluctuating caused by a variety of factors such as formation pressure, oil production methods and change in moisture content based on expertise of the verification team.</p> <p>It is concluded that there is no significant deviation from the ex-ante determined value for this monitoring period.</p>
<b>Findings</b>	<input checked="" type="checkbox"/> No significant deviations from the ex-ante determined value have occurred

Description	
	<input type="checkbox"/> The actual value of achieved UER during the current monitoring period differs significantly from the ex ante determined value. However, The differences are not due to reasons which would have an effect on the project approval The size category of the project (large / small scale) is not affected by this difference The materiality level considered during the planning stage of the verification was not to be revised.
	<input type="checkbox"/> The following finding(s) have been identified in this context:
	- N/A
<b>Conclusion</b>	<input type="checkbox"/> The above listed findings could finally <b>not</b> be closed out. This requirement is not met.
	<input checked="" type="checkbox"/> Differences of the upstream emission reductions determined during the current monitoring period are either not significant or don't raise issues which would have affected the project approval or the verification planning.

## E.8.6 Assessment on scale of small-scale project activity

Description	
<b>Means of verification</b>	The actual ER value for the 3 <sup>rd</sup> monitoring period (365 days in whole year 2021) is verified as 51,653 tCO <sub>2</sub> eq in this report. Hence it is verified that the small-scale project type (Type III) remained under the limit of that type during the crediting period, i.e. 60,000 tCO <sub>2</sub> eq.
<b>Findings</b>	<input checked="" type="checkbox"/> The project is belonging to the same small-scale project type III and remained under the limit of that type for this monitoring period.
	<input checked="" type="checkbox"/> The project is under the limit of type III and no need to cap the GHG emission reductions that are claimed for that year at the amount calculated with the limit of its type.
	<input type="checkbox"/> The following finding(s) have been identified in this context:
	- N/A
<b>Conclusion</b>	<input type="checkbox"/> The above listed findings could finally <b>not</b> be closed out. This requirement is not met.
	<input checked="" type="checkbox"/> The project is under the limit of small-scale project type III

## E.9 Oil production related information

Description																						
<b>Means of verification</b>	<p>EU Regulation (EU) 2015/652 Annex 1 part 2 No. 1 e )and h) requires reporting on</p> <ul style="list-style-type: none"> <li>- 1e): baseline annual emissions prior to installation of reduction measures and annual emissions after the reduction measures have been implemented (in g CO<sub>2</sub>eq/MJ of feedstock produced),</li> <li>- 1h): where the project relates to oil extraction, the average annual historical and reporting year gas-to-oil ratio (GOR) in solution, reservoir pressure, depth and well production rate of the crude oil.</li> </ul> <p>Even though Article 56 of (EU) 2018/1999 has repealed the requirement as per 1h) above, this is still included in EU member state specific UER regulations. Therefore, the respective information has been provided and verified as below.</p> <table border="1"> <thead> <tr> <th>Parameter</th> <th>Unit</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Baseline annual emissions prior to installation:</td> <td>gCO<sub>2</sub>eq/MJ</td> <td>7.17</td> </tr> <tr> <td>Annual emissions after the reduction measures:</td> <td>gCO<sub>2</sub>eq/MJ</td> <td>1</td> </tr> <tr> <td>Gas-oil-ratio (GOR) – reporting year</td> <td>Nm<sup>3</sup>/t;</td> <td>125.77</td> </tr> <tr> <td>Reservoir pressure</td> <td>MPa</td> <td>31.76</td> </tr> <tr> <td>Depth of the well</td> <td>m</td> <td>3280.69</td> </tr> <tr> <td>Average amount of oil extracted from the well at least for the last year preceding introduction of measures (2021)</td> <td>t (crude oil)</td> <td>196,393.26</td> </tr> </tbody> </table>	Parameter	Unit	Value	Baseline annual emissions prior to installation:	gCO <sub>2</sub> eq/MJ	7.17	Annual emissions after the reduction measures:	gCO <sub>2</sub> eq/MJ	1	Gas-oil-ratio (GOR) – reporting year	Nm <sup>3</sup> /t;	125.77	Reservoir pressure	MPa	31.76	Depth of the well	m	3280.69	Average amount of oil extracted from the well at least for the last year preceding introduction of measures (2021)	t (crude oil)	196,393.26
	Parameter	Unit	Value																			
	Baseline annual emissions prior to installation:	gCO <sub>2</sub> eq/MJ	7.17																			
	Annual emissions after the reduction measures:	gCO <sub>2</sub> eq/MJ	1																			
	Gas-oil-ratio (GOR) – reporting year	Nm <sup>3</sup> /t;	125.77																			
	Reservoir pressure	MPa	31.76																			
	Depth of the well	m	3280.69																			
	Average amount of oil extracted from the well at least for the last year preceding introduction of measures (2021)	t (crude oil)	196,393.26																			
<b>Findings</b>	<input checked="" type="checkbox"/> All information as per EU Regulation (EU) 2015/652 Annex 1 part 2 No. 1 e ) has been provided.																					
	<input checked="" type="checkbox"/> In addition, also information as per EU Regulation (EU) 2015/652 Annex 1 part 2 No. 1 h) has been provided (even though this EU requirement has been repealed).																					
	<input type="checkbox"/> The following finding(s) have been identified in this context: - N/A																					
<b>Conclusion</b>	<input type="checkbox"/> The above listed findings could finally <b>not</b> be closed out. This requirement is not met.																					
	<input checked="" type="checkbox"/> All required oil production figures have been provided by the project proponents.																					

## E.10 Double Counting

Description																	
<b>Means of verification</b>	<p>Double counting might occur if the emission reductions achieved from this project activity would be</p> <ul style="list-style-type: none"> <li>- used under another ER project activity</li> <li>- used as UERs in other EU member states</li> <li>- used as ER credits in another GHG program</li> <li>- counted towards the host country's NDCs or</li> <li>- transferred as ITMOs.</li> </ul> <p>In order to avoid the occurrence of such double counting, the verification team has checked the chain of custody from the owner of the production site, who is considered to be the primary UER owner, to the current beneficiary of the UERs, including all intermediates. In this context the legal identities and the ownership transfer contracts have been checked.</p> <p>Beyond that the possibilities to verify the absence of double counting are limited as</p> <ul style="list-style-type: none"> <li>- the modalities for accounting towards NDC commitments or for the transfer of ITMOs under article 6 of the Paris Agreement have not yet been developed and</li> <li>- in the absence of a centralized UER database corresponding cross-checks cannot be carried out.</li> </ul> <p>However, on the basis of</p> <ul style="list-style-type: none"> <li>- cross-checks of available project information from other GHG programs as well as information from other validated / verified UER project activities and</li> <li>- conducted interviews with the project proponents</li> </ul> <p>the verification team is convinced that the emission reductions under this project activity are uniquely used as per the described intended purpose.</p>																
<b>Findings</b>	<table border="1"> <tbody> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>The legal identity of the production site owner, all intermediate owners and the current beneficiary (OMV Downstream GmbH) have been checked and were found to be OK.</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>All ownership transfer contracts along the chain of custody have been checked and complete traceability of ownership transfer is confirmed.</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>No indications have been identified that ERs from the described emission reduction activities have been used in the context of other ER projects</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>No indications have been identified that this ER project has been utilized within other ER schemes (e.g. CDM, VCS), or where this is case, evidence has been provided that achieved ER have been voluntarily cancelled under the other scheme.</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>No indications have been identified that the same UER batches from this project have been used or will be used in more than one EU member state.</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>A letter from the host country has been provided stating that emission reductions from this project activity will not be counted towards Host country NDCs or be used as ITMOs in future.</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>The following finding(s) have been identified in this context:</td> </tr> <tr> <td></td> <td style="text-align: center;">- N/A</td> </tr> </tbody> </table>	<input checked="" type="checkbox"/>	The legal identity of the production site owner, all intermediate owners and the current beneficiary (OMV Downstream GmbH) have been checked and were found to be OK.	<input checked="" type="checkbox"/>	All ownership transfer contracts along the chain of custody have been checked and complete traceability of ownership transfer is confirmed.	<input checked="" type="checkbox"/>	No indications have been identified that ERs from the described emission reduction activities have been used in the context of other ER projects	<input checked="" type="checkbox"/>	No indications have been identified that this ER project has been utilized within other ER schemes (e.g. CDM, VCS), or where this is case, evidence has been provided that achieved ER have been voluntarily cancelled under the other scheme.	<input checked="" type="checkbox"/>	No indications have been identified that the same UER batches from this project have been used or will be used in more than one EU member state.	<input type="checkbox"/>	A letter from the host country has been provided stating that emission reductions from this project activity will not be counted towards Host country NDCs or be used as ITMOs in future.	<input type="checkbox"/>	The following finding(s) have been identified in this context:		- N/A
<input checked="" type="checkbox"/>	The legal identity of the production site owner, all intermediate owners and the current beneficiary (OMV Downstream GmbH) have been checked and were found to be OK.																
<input checked="" type="checkbox"/>	All ownership transfer contracts along the chain of custody have been checked and complete traceability of ownership transfer is confirmed.																
<input checked="" type="checkbox"/>	No indications have been identified that ERs from the described emission reduction activities have been used in the context of other ER projects																
<input checked="" type="checkbox"/>	No indications have been identified that this ER project has been utilized within other ER schemes (e.g. CDM, VCS), or where this is case, evidence has been provided that achieved ER have been voluntarily cancelled under the other scheme.																
<input checked="" type="checkbox"/>	No indications have been identified that the same UER batches from this project have been used or will be used in more than one EU member state.																
<input type="checkbox"/>	A letter from the host country has been provided stating that emission reductions from this project activity will not be counted towards Host country NDCs or be used as ITMOs in future.																
<input type="checkbox"/>	The following finding(s) have been identified in this context:																
	- N/A																

Description	
Conclusion	<input checked="" type="checkbox"/> The above listed findings could finally <b>not</b> be closed out. This requirement is not met.
	<input checked="" type="checkbox"/> In the absence of <ul style="list-style-type: none"> <li>a) the modalities and procedures for Article 6 of the Paris Agreement and</li> <li>b) their implementation in national legislation as well as</li> <li>c) respective requirements within the FQD and supplemental ER legislation</li> </ul> a Host country confirmation that the achieved ER from this project activity will not be counted towards NDC commitments or be used as ITMOs could not be provided during the verification. Considering the above, it is considered to be within the discretion of the Competent Authority of the EU member state where the UERs intended to be redeemed to accept the emission reductions from this project activity as UERs.

## Section F Internal quality control

Upon finalization of the verification report by the verification team a technical review of the whole verification process was carried out. The technical review team consists of competent GHG auditors which are duly appointed for the project scope. The technical reviewers have not been involved in any steps of the decision-making process up to this stage.

The technical review encompasses a procedural as well as a technical check. Following a risk-based approach the technical reviewers are to confirm that

- the verification has been carried out by personnel meeting the applicable competence and impartiality requirements,
- the verification process has been carried out in line with the internal verification procedures,
- the conclusions drawn are transparent and in line with the applicable criteria for verification considering the country and scheme specific requirements,
- the derived upstream emissions reduction value has been derived correctly meeting the applicable accuracy requirements.

In case of identified nonconformities or unclear statements the verification team will be asked to respond to such requests and to carry out required corrections and/or clarifications in the verification report and the supplementary documentation, if applicable.

After the successful technical review the final approval of the complete verification process is carried out by a senior assessor located in the accredited premises of Müller-BBM Cert Umweltgutachter GmbH.

Finally, the duly signed and authorized report will be submitted to the client.

## Section G Verification opinion

Shengli Doro Energy Corp., Ltd. has commissioned Müller-BBM Cert Umweltgutachter GmbH to carry out the verification of the 3<sup>rd</sup> monitoring period of the UER project “Associate gas recovery and utilization from oilfield project in Shandong” with regard to the requirements ISO 14064 Pts. 2 and 3 and the requirements of EU member state specific Greenhouse Gas Emissions Reporting Regulations Guidance.

The project activity involves the utilization of associated gas that was previously flared.

Monitoring period: From 01/01/2021 to 31/12/2021 (incl.).

The assessments are based on the Validation Report including the validation on baseline and additionality, the 3<sup>rd</sup> monitoring report including the monitoring system, the emission reduction calculation spreadsheet and supporting documents made available to the verification team by the project participant.

In detail the conclusions can be summarised as follows:


- The verification has been carried in out in accordance with the requirements of ISO 14064 Pts. 2 and 3, the EU member state specific Greenhouse Gas Emissions Reporting Regulations Guidance as well as relevant parts of the Regulation (EU) No 600/2012 as repealed and replaced by Regulation No 2018/2067.
- The project only involves activities related to oil production located upstream to the raw material entering a refinery or a processing plant.
- The project has been carried out in full accordance with the registered project design document or approved deviations thereof.
- The monitoring activities are consistent with the registered monitoring plan – or approved deviations thereof.
- The monitoring report includes all mandatory information as required by the EU FQD.
- The calibration frequency requirements of the respective measuring instruments have been met, or in case of deviations these have been approved.
- All used data and calculations required to determine the upstream emissions reduction value achieved during the verification period have been checked and it can be confirmed that the final UER value has been determined without material misstatements.
- No indications have been identified by the verification team that double counting has occurred or is likely to occur.
- Oil production specific information as per FQD requirements, incl. its supplemental EU legislation has been provided.

Müller-BBM Cert Umweltgutachter GmbH herewith confirms that the project has achieved upstream emission reductions during the current verification period from 01/01/2021 to 31/12/2021 (incl.) as follows:

GHG Emission Reductions or Removal Enhancements	t CO <sub>2</sub> e
Baseline Emissions	59,994
Project Emissions	8,341

Leakage	0
<b>Net GHG emission reductions</b>	<b>51,653</b>

Berlin, 21/10/2022



Mr. Rainer Winter

Verification Team Leader

Kerpen, 15/07/2022; 21/10/2022



Dr. Joerg Zens; Dr. Matthias Bender

Approval

## Appendix 1: Abbreviations

Abbreviations	Full texts
BE	Baseline Emissions
CAR	Corrective Action Request
CDM	UNFCCC Clean development mechanism
CL	Clarification Request
DAkKS	Deutsche Akkreditierungsstelle
DEHSt	Deutsche Emissionshandelsstelle
EI	External Individual
FAR	Forward Action Request
FSR	Feasibility Study Report
GHG	Green House Gas
ISO	International Standard Organization
LE	Leakage Emissions
LNG	Liquified Natural Gas
MP	Monitoring period = verification period
MPE	Maximum Permissible Error
MRR	EU Monitoring and Reporting Regulation (=EU/2012/601)
NGL	Natural Gas Liquid
PE	Project Emissions
UER	Upstream Emission Reduction
VB	Verification Body
UNFCCC	United Nations Framework Convention on Climate Change



## Appendix 2: Certificates of verification team members

Team Leader: Rainer Winter

STATEMENT OF COMPETENCE

MÜLLER-BBM  
CERT GMBH

**Mr Rainer Winter** (Dipl.-Ing. Process Engineering),  
born on February 21<sup>st</sup>, 1963 in Rinteln, Germany,

fulfils Müller-BBM Cert's verification body's respective criteria  
of competence and therefore is appointed to act as a

### Lead Auditor

for validation and verification according to ISO 14064-3 and  
the following scopes:

- ISO 14064-2: 1, 4, 10,

under the regulation of Müller-BBM's specifications for  
validation and verification.

(Reference of scopes: IAF MD14, annex A, tables 1.1&1.2 and  
CDM sectoral scopes; see page two of this certificate.)

This appointment is valid for three years.

Kerpen, Germany, October 1<sup>st</sup>, 2020

Dr Matthias Bender  
on behalf of the Müller-BBM Cert verification body

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## MÜLLER-BBM CERT GMBH

### Scopes – mapping tables

#### ISO 14064-1

Scope (reference: IAF MD14, annex A, table 1.1)	
1	Power Generation and Electric Power Transactions
2	General Manufacturing (physical or chemical transformation of materials or substances into new products)
3	Oil and Gas Exploration, Extraction, Production and Refining, and pipeline distribution, including Petrochemicals
4	Metals Production
5	Aluminium Production
6	Mining and Mineral Production
7	Pulp, Paper and Print
8	Chemical Production
9	Carbon Capture Storage
10	Transport
11	Waste handling and disposal
12	Agriculture, Forestry and Other Land Use (AFOLU)
13	General

#### ISO 14064-2

Scope (reference: IAF MD14, annex A, table 1.2 and CDM sectoral scopes)	
1	Energy Industries (renewable/ non-renewable sources)
2	Energy Distribution
3	Energy Demand
4	Manufacturing Industries
5	Chemical Industry
6	Construction
7	Transport
8	Mining/Mineral Production
9	Metal Production
10	Fugitive Emissions from Fuels (solid, oil and gas)
11	Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride
12	Solvents Use
13	Waste Handling and Disposal
14	Afforestation and Reforestation
15	Agriculture
16	Carbon Capture and Storage of CO <sub>2</sub> in Geological Formations

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Auditor: Ms Xuejiao (Fancy) Zhao

STATEMENT OF COMPETENCE

MÜLLER-BBM  
CERT GMBH

## Ms Xuejiao (Fancy) Zhao

(M. Sc. Environmental Engineering, B. Sc. Biological Eng.),  
born on February 18<sup>th</sup>, 1982 in Hebei Province, China,

fulfils Müller-BBM Cert's verification body's respective criteria  
of competence and therefore is appointed to act as a

### Auditor

for validation and verification according to ISO 14064-3 and  
the following scopes:

- ISO 14064-2: 1, 10,

under the regulation of Müller-BBM's specifications for  
validation and verification.

(Reference of scopes: IAF MD14, annex A, tables 1.1&1.2 and  
CDM sectoral scopes; see page two of this certificate.)

This appointment is valid for three years.

Kerpen, Germany, October 1<sup>st</sup>, 2020

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Scopes – mapping tables

ISO 14064-1

	Scope (reference: IAF MD14, annex A, table 1.1)
1	Power Generation and Electric Power Transactions
2	General Manufacturing (physical or chemical transformation of materials or substances into new products)
3	Oil and Gas Exploration, Extraction, Production and Refining, and pipeline distribution, including Petrochemicals
4	Metals Production
5	Aluminium Production
6	Mining and Mineral Production
7	Pulp, Paper and Print
8	Chemical Production
9	Carbon Capture Storage
10	Transport
11	Waste handling and disposal
12	Agriculture, Forestry and Other Land Use (AFOLU)
13	General

ISO 14064-2

	Scope (reference: IAF MD14, annex A, table 1.2 and CDM sectoral scopes)
1	Energy Industries (renewable/ non-renewable sources)
2	Energy Distribution
3	Energy Demand
4	Manufacturing Industries
5	Chemical Industry
6	Construction
7	Transport
8	Mining/Mineral Production
9	Metal Production
10	Fugitive Emissions from Fuels (solid, oil and gas)
11	Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride
12	Solvents Use
13	Waste Handling and Disposal
14	Afforestation and Reforestation
15	Agriculture
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Technical Reviewer : Dr Joerg Zens

STATEMENT OF COMPETENCE

MÜLLER-BBM  
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**Dr Joerg Zens** (M. Sc. Applied Geography),  
born on April 4<sup>th</sup>, 1983 in Düren-Birkesdorf, Germany,

fulfils Müller-BBM Cert's verification body's respective criteria  
of competence and therefore is appointed to act as a

### Lead Auditor and Technical Reviewer

for validation and verification according to ISO 14064-3 and  
the following scopes:

- ISO 14064-1: 1, 2, 4, 6, 7, 9, 10, 11, 12, 13,
- ISO 14064-2: 1, 2, 3, 4, 7, 8, 9, 10, 13, 14, 15, 16,

under the regulation of Müller-BBM's specifications for  
validation and verification.

(Reference of scopes: IAF MD14, annex A, tables 1.2&1.2 and  
CDM sectoral scopes; see page two of this certificate.)

This appointment is valid for three years.

Kerpen, Germany, October 1<sup>st</sup>, 2020

Dr Mathias Bender  
on behalf of the Müller-BBM Cert verification body

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Scopes – mapping tables

ISO 14064-1

Scope (reference: IAF MD14, annex A, table 1.1)	
1	Power Generation and Electric Power Transactions
2	General Manufacturing (physical or chemical transformation of materials or substances into new products)
3	Oil and Gas Exploration, Extraction, Production and Refining, and pipeline distribution, including Petrochemicals
4	Metals Production
5	Aluminium Production
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10	Transport
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12	Agriculture, Forestry and Other Land Use (AFOLU)
13	General

ISO 14064-2

Scope (reference: IAF MD14, annex A, table 1.2 and CDM sectoral scopes)	
1	Energy Industries (renewable/ non-renewable sources)
2	Energy Distribution
3	Energy Demand
4	Manufacturing Industries
5	Chemical Industry
6	Construction
7	Transport
8	Mining/Mineral Production
9	Metal Production
10	Fugitive Emissions from Fuels (solid, oil and gas)
11	Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride
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Assistant Technical Reviewer: Dr Matthias Bender

STATEMENT OF COMPETENCE

MÜLLER-BBM  
CERT GMBH

**Dr Matthias Bender** (Dipl.-Chem.),

born on March 25<sup>th</sup>, 1961 in Heidelberg, Germany,

fulfils Müller-BBM Cert's verification body's respective criteria of competence and therefore is appointed to act as a

**Lead Auditor and Technical Reviewer**

for validation and verification according to ISO 14064-3 and the following scopes:

- ISO 14064-1: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13,
- ISO 14064-2: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16,

under the regulation of Müller-BBM's specifications for validation and verification.

(Reference of scopes: IAF MD14, annex A, tables 1.2&1.2 and CDM sectoral scopes; see page two of this certificate.)

This appointment is valid for three years.

Kerpen, Germany, October 1<sup>st</sup>, 2020

Dr Stefan Bräker  
on behalf of the Müller-BBM Cert verification body

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### Scopes – mapping tables

#### ISO 14064-1

Scope (reference: IAF MD14, annex A, table 1.1)	
1	Power Generation and Electric Power Transactions
2	General Manufacturing (physical or chemical transformation of materials or substances into new products)
3	Oil and Gas Exploration, Extraction, Production and Refining, and pipeline distribution, including Petrochemicals
4	Metals Production
5	Aluminium Production
6	Mining and Mineral Production
7	Pulp, Paper and Print
8	Chemical Production
9	Carbon Capture Storage
10	Transport
11	Waste handling and disposal
12	Agriculture, Forestry and Other Land Use (AFOLU)
13	General

#### ISO 14064-2

Scope (reference: IAF MD14, annex A, table 1.2 and CDM sectoral scopes)	
1	Energy Industries (renewable/ non-renewable sources)
2	Energy Distribution
3	Energy Demand
4	Manufacturing Industries
5	Chemical Industry
6	Construction
7	Transport
8	Mining/Mineral Production
9	Metal Production
10	Fugitive Emissions from Fuels (solid, oil and gas)
11	Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride
12	Solvents Use
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## Appendix 5: Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1.	Dongying Power Supply Company Electric Energy Metering Center	Calibration certificates /CAL/	Calibration certificate for electricity meters covering this monitoring period (Refer to Appendix 7 for the calibration date and validity)	PP
	Technology Inspection Center of Shengli Oilfield Branch, SINOPEC		Calibration certificates for flowmeters covering this monitoring period (Refer to Appendix 7 for the calibration date and validity)	
	Yantai Institute of Metrology		Calibration certificates for weighbridges covering this monitoring period (Refer to Appendix 7 for the calibration date and validity)	
2.	PP and construction companies	Completion acceptance report/CAR/	<ol style="list-style-type: none"> <li>1. Completion acceptance report for HWC station issued on 15/08/2015</li> <li>2. Completion acceptance report for YB station issued on 10/11/2013</li> <li>3. Completion acceptance report for NB station issued on 04/11/2014</li> </ol>	PP
3.	Oil and Gas Sales Center of Sinopec Shengli Oilfield Branch Company and PP	Confirmation form for quantity of recovered gas and dry gas /CFQ/	Monthly Confirmation form for quantity of recovered gas and dry gas for three stations during this monitoring period	PP
4.	China National Accreditation Service for Conformity Assessment (CNAS)	Certificate of Metrological Authorization /CMA/	<p>Certificate of Metrological Authorization of Yantai Institute of Metrology, valid from 21/01/2019 to 15/02/2025</p> <p>Certificate of Metrological Authorization of Dongying Power Supply Company Electric Energy Metering Center, valid from 09/07/2019 to 08/07/2023</p> <p>Certificate of Metrological Authorization of Technology Inspection Center of Shengli Oilfield Branch, SINOPEC, valid from 27/02/2019 to 03/03/2025</p> <p>Certificate of ISO17025 to Qingdao Inspection and Quarantine Technology Development Center, valid from 16/05/2019 to 15/05/2025</p>	PP
5.	PP	Calculation sheet of energy/CSE/	Calculation sheet of GHG emission per unit of energy (in gCO <sub>2</sub> eqMJ)	PP
6.	Consultant	Emission Reduction Calculation sheet/ER/	<p>Emission Reduction Calculation sheet of project “Associate gas recovery and utilization from oilfield project in Shandong” related to 3<sup>rd</sup> periodical MR</p> <ul style="list-style-type: none"> <li>• Draft Version 01, dated 14/04/2022</li> <li>• Final Version 02, dated 10/05/2022</li> </ul>	Consultant

No.	Author	Title	References to the document	Provider
7.	Sinopec Group Shengli Petroleum Administration Co., Ltd. Electric Power Branch	Monthly electricity statement /MES/	Monthly electricity statement form during this monitoring period	PP
8.	PP	Monthly meter reading record /MMRR/	Monthly meter reading record during this monitoring period	PP
9.	PP	Monthly production summary table/MPST/	Monthly production summary table records of value of recovered gas and dry gas and NGL produced	PP
10.	Consultant	Monitoring Report/MR/	3 <sup>rd</sup> Monitoring Report of project “Associate gas recovery and utilization from oilfield project in Shandong” <ul style="list-style-type: none"> <li>• Draft Version 01, dated 14/04/2022</li> <li>• Final Version 02, dated 10/05/2022</li> </ul>	Consultant
11.	Qingdao Inspection and Quarantine Technology Development Center	NCV test result for Raw gas/NCVD/	NCV test result in Analysis Report for Dry gas issued on <ol style="list-style-type: none"> <li>1. 28/01/2021 for January to 2 stations (HWC, YB)</li> <li>2. 28/02/2021 for February to 2 stations</li> <li>3. 28/03/2021 for March to 2 stations</li> <li>4. 28/04/2021 for April to 2 stations</li> <li>5. 28/05/2021 for May to 2 stations</li> <li>6. 28/06/2021 for June to 2 stations</li> <li>7. 28/07/2021 for July to 2 stations</li> <li>8. 28/08/2021 for August to 2 stations</li> <li>9. 28/09/2021 for September to 2 stations</li> <li>10. 28/10/2021 for October to 2 stations</li> <li>11. 28/11/2021 for November to 2 stations</li> <li>12. 28/12/2021 for December to 2 stations</li> </ol>	PP
12.	Qingdao Inspection and Quarantine Technology Development Center	NCV test result for Raw gas/NCVR/	NCV test result in Analysis Report for Raw gas issued on <ol style="list-style-type: none"> <li>1. 28/01/2021 for January to 3 stations</li> <li>2. 28/02/2021 for February to 3 stations</li> <li>3. 28/03/2021 for March to 3 stations</li> <li>4. 28/04/2021 for April to 3 stations</li> <li>5. 28/05/2021 for May to 3 stations</li> <li>6. 28/06/2021 for June to 3 stations</li> <li>7. 28/07/2021 for July to 3 stations</li> <li>8. 28/08/2021 for August to 3 stations</li> </ol>	PP

No.	Author	Title	References to the document	Provider
			9. 28/09/2021 for September to 3 stations 10. 28/10/2021 for October to 3 stations 11. 28/11/2021 for November to 3 stations 12. 28/12/2021 for December to 3 stations	
13.	Verification team	Nameplate of equipment/NE/	Photo of Nameplates of equipment taken by verifier during site inspection	N/A
14.	PP and Dongying Luhaileer Oil & Gas Co., Ltd.	Settlement statement of NGL <sup>/SSN/</sup>	Settlement statement of NGL for this monitoring period of two stations (HWC, YB)	PP
15.	PP	Training Record/TRR/	Staff Training record including training contents and attendance list during this monitoring period	PP
16.	UNFCCC	AM0009 /AM0009/	CDM Approved methodology AM0009 "Recovery and utilization of gas from oil wells that would otherwise be flared or vented" (Version 07.0)	UNFCCC
17.	National Standard	GB/T 13610 2014/CANG/	GB/T 13610 2014 Composition Analysis of Natural Gas-Gas Chromatography	Public Website
18.	China National Petroleum Corporation	Q/SY TZ 0271-2010 /DCNG/	Q/SY TZ 0271-2010 Determination of compounds in natural gas-gas chromatography	Public Website
19.	EU	Directive (EU) 2015/652/DEU/	Directive (EU) 2015/652	Public website
20.	National Energy Bureau	DL/T 448-2016/DLT/	Technical administrative code electric energy metering (DL/T 448-2016)	Public website
21.	EU	Fuel quality directive/FQD/	Directive 98/70/EC (Fuel quality directive)	Public website
22.	National Standard	GB/T 13609 /GNGS/	GB/T 13609 "Guideline for Natural Gas Sampling" which is derived from ISO 10715	Public Website
23.	ISO	ISO6976/ISO6976 /	ISO6976 Natural gas-Calculation of calorific values, density, relative density and Wobbe indices from composition	Public Website
24.	ISO	ISO14064, ISO14065, ISO14066 /ISO14064/	Greenhouse gases -- Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals as of May 2012  Greenhouse gases -- Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements as of May 2012	Public website

No.	Author	Title	References to the document	Provider
			Greenhouse gases -- Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions as of May 2012	
25.	General Administration of Quality Supervision, Inspection and Quarantine	JJG 1121-2015 /JJG1211/	JJG 1121-2015 Verification Regulation of Precession Vortex Flowmeter	Public Website
26.	General Administration of Quality Supervision, Inspection and Quarantine	JJG 1029-2007 /JJG1029/	JJG 1029-2007 Verification Regulation of Vortex-shedding Flow meter	Public Website
27.	General Administration of Quality Supervision, Inspection and Quarantine	JJG 539-2016 /JJG539/	Digital Indicating Weighing Instruments	Public Website
28.	General Administration of Quality Supervision, Inspection and Quarantine	JJG 596/JJG596/	JJG 596-2012 Electrical Meters for Measuring Alternating-current Electrical Energy	Public Website
29.	EU	Monitoring and Reporting Regulation/MRR/	EU Monitoring and Reporting Regulation (EU/2012/601)	Public Website
30.	National Standard	GB/T 11062-2014/NGCM/	GB/T 11062-2014 Natural gas calorific value, density, relative density and Wobbe index calculation method	Public Website
31.	PP	PDD/PDD/	PDD of "Associate gas recovery and utilization from oilfield project in Shandong", version 2.1 dated 22/07/2020	
32.	Verification team	Photo taken during site visit/PHT/	Photo taken during site visit by verification team including installed equipment of each gas station and all the flowmeters, weighbridges and electricity meters	N/A
33.	National Energy Bureau	SY/T 5398-2017/SYT/	"SY/T 5398-2017 Equipping specification of measuring instrument for petroleum and natural gas custody transfer measuring station"	Public Website
34.	UNFCCC	Tool of baseline, project or leakage/TBPL/	CDM methodological tool "Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation" version 03.0.0	UNFCCC
35.	UNFCCC	Tool for additionality /TDA/	CDM methodological tool, TOOL 07: "Demonstration of additionality of small scale project activities" (Version 07.0)	UNFCCC

No.	Author	Title	References to the document	Provider
36.	UNFCCC	Tool for baseline and additionality /TIBA/	CDM methodological tool, TOOL 02: “Combined tool to identify the baseline scenario and demonstrate additionality” (Version 07.0.0)	UNFCCC
37.	UNFCCC	Tool of project or leakage/TPL/	CDM methodological tool “Tool to calculate project or leakage CO <sub>2</sub> emissions from fossil fuel combustion” version 03.0.0	UNFCCC
38.	VERICO	Validation Report/VAL/	UER Validation report for project “Associate gas recovery and utilization from oilfield project in Shandong”, version 1.0, dated on 28/07/2020	PP
39.	VERICO	Previous Verification Report/VER/	UER 1 <sup>st</sup> and 2 <sup>nd</sup> periodical Verification report for project “Associate gas recovery and utilization from oilfield project in Shandong”	N/A

## Appendix 6: Clarification requests, corrective action requests and forward action requests

**Table A6-1: Remaining FAR from validation and/or previous verifications**

FAR ID	XX	Section no.	-	Date: DD/MM/YYYY
<b>Description of FAR</b>				
N/A				
<b>Project participant response</b>				Date: -
<b>Documentation provided by project participant</b>				
<b>VB assessment</b>				Date: -

**Table A6-2: CL from this verification**

CL ID	01	Section no.	A.5	Date: 30/04/2022
<b>Description of CL</b>				
In Section A.5, PP stated the fixed crediting period of the project is from 01/01/2020 to 31/12/2029 which is not consistent with the provisionally determined offsetting period from 01/01/2020 to 31/12/2020 as defined in PDD, clarification is requested.				
<b>Project participant response</b>				Date: 10/05/2022
<p>The crediting period in the updated MR has been amended to 01/01/2020 to 09/11/2023.</p> <p>Due to the project was not sold in Germany, hence there is no one year limitation to the crediting period in the other EU member states.</p> <p>During the validation period, the FQD only mentioned the target in 2020 and only UERs generated during the calendar year 2020 shall be eligible to be counted towards the FQD target in 2020. This is the reason why the crediting period in the PDD is only for the whole year of 2020. However, EU member states implement the FQD after 2020 without limitation of crediting period. Therefore, the crediting period has been extended to 09/11/2023 which is based on the expected operational lifetime of project activity of 10 years, derived from the Feasibility Study Report (FSR). The project has been started on 10/11/2013 (the earliest Commercial Operation Date among the three stations).</p> <p>The extension of the crediting period doesn't change the demonstration and establishment of the baseline scenario in the validated PDD. The alternative 2 "Venting and/or flaring of the associated gas at the oil production facility" is still considered as the baseline scenario. Besides, the calculation of IRR of the project has taken into account 10 year's expected operational lifetime. Thus, there is no influence on the additionality demonstration result.</p>				
<b>Documentation provided by project participant</b>				
MR- version 02 <sup>/MR/</sup>				
<b>VB assessment</b>				Date: 13/05/2022
<p>The clarification has been provided and this is considered as a correction and assessed by verification team. PP has changed the initial provisionally determined offsetting period (01/01/2020 to 31/12/2020) to 01/01/2020 to 09/11/2023.</p> <p>During the validation it was assumed that the validity of the FQD (EU Fuel Quality Directive<sup>/FQD/</sup> and Directive (EU) 2015/652<sup>/DEU/</sup>) ceases end of 2020. Therefore, the validity of the crediting/offsetting period was limited to one year only. However, after the project validation it became obvious that the FQD was also applied by the EU member states for compliance years post 2020. As further,</p>				

CL ID	01	Section no.	A.5	Date: 30/04/2022
<p>d) FQD requirements do not limit the offsetting period                      e) no host country limitations apply, and                      f) the additionality of the project was basically justified considering the whole life cycle of the project the extension of the offsetting period up to the expected end of the project lifetime is deemed appropriate.                      In detail:</p> <ul style="list-style-type: none"> <li>- By checking the FSR<sup>/FSR/</sup>, it is confirmed that the operational lifetime of the project activity is 10 years which has been verified during the validation process, hence it is reasonable to limit the UER crediting period as per the project lifetime as the project can only generate emission reductions during the operational lifetime which is from 10/11/2013 to 09/11/2023.</li> <li>- Furthermore, as per the validation report<sup>/VAL/</sup>, the alternative 2 “Venting and/or flaring of the associated gas at the oil production facility” has been considered as the baseline scenario which is not influenced by the change of crediting period as per the demonstration in the validation report.</li> <li>- Besides, for the demonstration of additionality, via checking the assessment in the validation report<sup>/VAL/</sup>, it is confirmed that the investment analysis was conducted by calculation of the project IRR . The IRR has been calculated by taking into account 10 year’s expected operational lifetime based on the FSR<sup>/FSR/</sup> so that the additionality demonstration is not influenced by the change of the offsetting period as per the assessment in the validation report.</li> </ul> <p>Finally, it is confirmed that the correction (change of the offsetting / crediting period) is unlikely to lead to a reduction in the accuracy of the ER calculation and can ensure that ER will not be overestimated.                      In conclusion, the correction does not affect the design of the project activity, and based on the above assessment, it is verified that the change of crediting period will have no material impact on the baseline scenario, additionality demonstration or the accuracy and completeness of the monitoring and ER calculation, thus this correction can be accepted.                      CL 01 is closed.</p>				

CL ID	02	Section no.	B.1	Date: 30/04/2022
<b>Description of CL</b>				
In Section B.1, the actual value of associated gas, dry gas and NGL for this monitoring period is not clarified.				
<b>Project participant response</b>				Date: 10/05/2022
The actual value of main production data has been added in B.1 as below table.				
	Recovered Associated gas (Nm <sup>3</sup> )	Dry gas transported by pipeline (Nm <sup>3</sup> )	NGL (t)	
YB station	4,887,150	4,259,165	105.32	
NB station	4,888,088	4,747,575	108.02	
HWC station	14,925,142	14,377,435	327.24	
Total	24,700,380	23,384,175	540.58	
<b>Documentation provided by project participant</b>				
MR- version 02 <sup>/MR/</sup>				
<b>VB assessment</b>				Date: 13/05/2022
The revised MR is checked, it is confirmed that actual value of associated gas, dry gas and NGL for this monitoring period has been clarified, and the values are verified as correct. See detailed assessment in Appendix 6 for each parameter. CL 02 is closed.				

CL ID	03	Section no.	C	Date: 30/04/2022
<b>Description of CL</b>				
In Section C,				

1. PP stated that quantity of produced NGL transported away by trucks are recorded in C.3, the monitoring device is not clarified.
2. PP only stated measurement of NCV of the dry gas while recovered gas is not clarified in C.3.
3. The calibration requirement for weighbridges is not clarified in C.4.

#### Project participant response

Date: 10/05/2022

1. The quantity of produced NGL was monitored by weighbridges. It has been clarified in the updated MR.
2. The measurement of NCV of the recovered gas and the dry gas is conducted by a qualified entity. Chemical analysis test report of the recovered gas and the dry gas samples and calculation of net calorific value is done once a month by third party laboratories which have ISO 17025 accreditation. The gas sampling process is in accordance with GB/T 13609 equivalent to standard ISO 10715. Compositional analysis is in accordance with GB/T 13610. NCV on a volumetric basis was determined for each sample in line with GB/T 11062 which is equivalent to ISO 6976. The UER monitoring manager is responsible for collecting the testing report directly from the qualified entity.  
The elaboration above has been updated in MR.
3. The weighbridges calibrated based on JJG 539-2016 Digital Indicating Weighing Instruments<sup>/JJG539/</sup>. It has been clarified in updated MR.

#### Documentation provided by project participant

MR- version 02<sup>/MR/</sup>  
/NCVR/

#### VB assessment

Date: 13/05/2022

1. The revised MR has been checked. It is confirmed that the monitoring device of weighbridge has been clarified for measuring the NGL, which is confirmed as correct and actual by site inspection.
  2. The revised MR has been checked. It is confirmed that the measurement of NCV of the recovered gas is also specified which is confirmed as correct and actual by checking the NCV report of the recovered gas<sup>/NCVR/</sup>.
  3. The revised MR has been checked. It is confirmed that the calibration requirement for weighbridges is clarified.
- CL 03 is closed.

**Table A6-3: CAR from this verification**

CAR ID	01	Section no.	Cover page	Date: 30/04/2022
<b>Description of CAR</b>				
The sectoral scopes linked to the applied methodology is not complete. Revision is requested.				
<b>Project participant response</b>				Date: 10/05/2022
Sectoral scope 01 "Energy industries (renewable / non renewable sources)" has been added in the cover page.				
<b>Documentation provided by project participant</b>				
MR- version 02 <sup>/MR/</sup>				
<b>VB assessment</b>				Date: 13/05/2022
The revised MR is checked, it is confirmed that sectoral scope: 01 Energy industries (renewable / non-renewable sources) has been added accordingly which is confirmed linked to the applied methodology. CAR 01 is closed.				
CAR ID	02	Section no.	A.3	Date: 30/04/2022
<b>Description of CAR</b>				
In section A.3, the technical parameters of all the main installed equipment are missing.				
<b>Project participant response</b>				Date: 10/05/2022
The technical parameters of main equipment have been added as below tables:				



**Table A.3-2 Main equipment list of YB station**

Name	Type	Main Parameters	Quantity
Compressor	VWWJ-3.5/1.2-23	Volume flow: 3.5 m <sup>3</sup> /min	2
	VWWJ- 7.2/1.2-23	Volume flow: 7.2 m <sup>3</sup> /min	1
Dried Tower	S10/315/351/312	Volume: 0.68 m <sup>3</sup> , design pressure: 1.2 MPa	3
Separator	S10/334	Heat exchange area: 0.47 m <sup>3</sup> , design pressure: 0.28/0.57 MPa	1
Gas generator	400GF1- PWT	Power: 400 kW	1

**Table A.3-3 Main equipment list of NB station**

Name	Type	Main Parameters	Quantity
Compressor	VWWJ-3.5/1.2-23	Volume flow: 3.5 m <sup>3</sup> /min	2
	VWWJ-2.6/0.5-23	Volume flow: 2.6m <sup>3</sup> /min	2
	6GE-34Y-40P	Volume flow: 153 m <sup>3</sup> /h	1
Dried Tower A/B/C	S10/315/351/312	Volume: 0.37 m <sup>3</sup> , design pressure: 1.0 MPa	3
Separator	SCM-900-01	Volume: 1.1 m <sup>3</sup> , design pressure: 0.32 MPa	1
Evaporator	BH2238	Volume: 0.027 m <sup>3</sup> , design pressure: 2.7 MPa	1

**Table A.3-4 Main equipment list of HWC station**

Name	Type	Main Parameters	Quantity
Compressor	VW-3.5/(1-5)-17	Volume flow: 3.5 m <sup>3</sup> /min	1
	VW-6.3/(1-5)-17	Volume flow: 6.3 m <sup>3</sup> /min	1
	VW-1.3/16- 38	Volume flow: 1.3 m <sup>3</sup> /min	1
	VW- 1.8/14.5-38	Volume flow: 1.8 m <sup>3</sup> /min	1
Dryer	DN800×10×2977	Design pressure: 2.0 MPa Volume: 1.06 m <sup>3</sup>	2
NGL separation tower	DN600×8× 7632	Heat exchange area: 6.3 m <sup>3</sup>	2
Boiler	YQW-2400	Rated thermal power: 240 kW	1

**Documentation provided by project participant**

MR- version 02<sup>MR/</sup>  
/NE/

**VB assessment**

Date: 13/05/2022

The revised MR has been checked. It is confirmed that the technical parameters of all the main installed equipment are added. Via checking the nameplate of the equipment<sup>/NE/</sup> by site inspection, it is verified that the technical data of the main equipment provided in MR is correct.  
CAR 02 is closed.

CAR ID	03	Section no.	D.1	Date: 30/04/2022
<b>Description of CAR</b>				
In section D.1, for parameter $EF_{CO_2,i,y}$ , IPCC value is used in the PDD due to the PP is unable to measure $CO_2$ emission factor of combusted dry gas at point E in the validation process. However, during this monitoring period, the measurement value conducted by PP is available due to the compositional data and NCV are determined in NCV test result for dry gas. Hence the value for this monitoring period need to be re-calculated.				
<b>Project participant response</b>				Date: 10/05/2022
In section D.2, the table of monitoring parameter $EF_{CO_2,i,y}$ has been amended as calculated value based on gas analysis report. The ER spreadsheet has also been updated accordingly.				
<b>Documentation provided by project participant</b>				
MR- version 02 <sup>/MR/</sup> ER sheet – version 02 <sup>/ER/</sup> /NCVD/				
<b>VB assessment</b>				Date: 13/05/2022
The revised MR is checked, it is confirmed that the values of $EF_{CO_2,i,y}$ has been calculated upon the conservative method used for the $NCV_{i,y}$ , the weighted average $CO_2$ emission factor of dry gas is derived from the calculated values based on the analytical data <sup>/NCVD/</sup> and the calculated conservative surrogate values based on the standard deviation of the calculated emission factor of dry gas based on the analytical data, these are verified as correct and conservative in both ER sheet and MR. CAR 03 is closed.				

CAR ID	04	Section no.	D.2	Date: 30/04/2022
<b>Description of CAR</b>				
In section D.2, for parameter $V_{F,y}$ and $V_{DG,y}$ , the exact standard and regulation for the installation and calibration of the flowmeters have not been provided.				
<b>Project participant response</b>				Date: 10/05/2022
For parameter $V_{F,y}$ Two different types of flowmeters involved in this project, namely precession vortex flowmeter and Vortex-shedding Flowmeters, and each type corresponds to a specific verification regulation which is JJG 1121-2015 Verification Regulation of Vortex Precession Flowmeters and JJG 1029-2007 Verification Regulation of Vortex-shedding Flow meter respectively. For parameter $V_{DG,y}$ The dry gas flowmeters were calibrated based on “JJG 1121-2015 Verification Regulation of Vortex Precession Flowmeters”. All of the flowmeters for parameter $V_{F,y}$ and $V_{DG,y}$ are strictly equipped in accordance with "SY/T 5398-2017 Equipping specification of measuring instrument for petroleum and natural gas custody transfer measuring station" The information above has been added in section D.2 of updated MR.				
<b>Documentation provided by project participant</b>				
MR- version 02 <sup>/MR/</sup> /SYT/ /JJG1121/				

<b>VB assessment</b>	Date: 13/05/2022
<p>The revised MR has been checked and it is confirmed that the exact standard and regulation have been provided.</p> <p>Flowmeters are strictly equipped in compliance with the requirement of "SY/T 5398-2017 Equipping specification of measuring instrument for petroleum and natural gas custody transfer measuring station"<sup>3/SYT/</sup>. The accuracy of flowmeters is class 1.5 for recovered gas and dry gas measuring and the calibration of flowmeters was carried out annually in compliance with the requirement of JJG 1121-2015 Verification Regulation of Precession Vortex Flowmeter<sup>/JJG1121/</sup> and JJG 1029-2007 Verification Regulation of Vortex-shedding Flow meter<sup>/JJG1029/</sup> of host country.</p> <p>CAR 04 is closed.</p>	

<b>CAR ID</b>	<b>05</b>	<b>Section no.</b>	<b>D.2</b>	<b>Date: 30/04/2022</b>
<b>Description of CAR</b>				
<p>In section D.2, for parameter <math>NCV_{RG,F,y}</math>, in accordance with Commission Regulation (EU) 601/2012 Article 35 and Annex VII, "the minimum frequency of analyzing Natural gas is "weekly", but the monitoring frequency of the project is monthly, the <math>NCV_{RG,F,y}</math> values for associated gas during this monitoring period have not been calculated based on the (EU) 601/2012 requirement considering lower monitoring frequency applied.</p>				

<b>Project participant response</b>	Date: 10/05/2022
<p>Considering the EU 601/2012's requirement, a conservative surrogate data has been applied to comply with the weekly analysed frequency. The calculation method of surrogate data is as follow:</p> <p>In order to calculate the Baseline emissions conservatively, <math>\bar{X}_{i,RG}</math> minus 2 times standard deviation is adopted.</p>	

$$NCV_{Conservative, RG} = \bar{X}_{i, RG} - 2 \times S_{RG} \text{ (based on the equation under No.5 of Annex VIII of EU/601/2012) [MJ/Nm}^3]$$

$$NCV_{RG,F,y} = \frac{\sum_w NCV_{Real, RG, w} + \sum_w NCV_{Conservative, RG}}{\sum_w} \text{ [MJ/Nm}^3]$$

Where

$NCV_{Real, RG, w}$  is the NCV detection value from "Recovered Gas Analysis Report" in this monitoring period [MJ/Nm<sup>3</sup>];

$NCV_{Conservative, RG}$  is the conservative surrogate value of NCV calculated based on the standard deviation of the real NCV detection value from Recovered Gas Analysis report in this monitoring period [MJ/Nm<sup>3</sup>];

$\bar{X}_{i, RG}$  is the average value of NCV from "Recovered Gas Analysis Report" in this monitoring period [MJ/Nm<sup>3</sup>];

$S_{RG}$  is the standard deviation of real NCV detection value from "Recovered Gas Analysis Report" in this monitoring period [MJ/Nm<sup>3</sup>];

$w$  is the number of weeks in a month [/]

The ER spreadsheet has also been updated accordingly.

<b>Documentation provided by project participant</b>
MR- version 02 <sup>/MR/</sup> /NCVR/ /CMA/

<b>VB assessment</b>	Date: 13/05/2022
<p>The revised MR has been checked and it is confirmed that the <math>NCV_{RG,F,y}</math> values for associated gas during this monitoring period have been calculated based on the (EU) 601/2012 requirement.</p>	

Due to the monitoring frequency for this monitoring period is in line with the applied methodology as monthly, the weekly data is not available. The PP used an appropriate estimation method for determining conservative surrogate data for the respective time period and missing parameter as per Article 65<sup>/MRR/</sup>. Via checking MR and ER sheet, it is verified that the conservative surrogate data has been calculated for the data gap based on the standard deviation of the NCV<sub>RG,F,y</sub> monthly analyzed values and the method used is confirmed as correct and conservative.

Thus it is concluded that the final results for monitoring parameter NCV<sub>RG,F,y</sub> are conservative for the determination of the ER values during this monitoring period.

Furthermore, the MR and ER sheet have been checked, It is confirmed that during this monitoring period, the NCV measurement value was conducted by third party lab and through checking the chemical analysis test report of associated gas by third party laboratories<sup>/NCVR/</sup>. By checking the compositional analysis for the raw gas in the test report and based on the calculation methods in ISO 6976 with the value given by the report, it is verified that the calculated values are similar to the NCV value which was issued by the third party laboratories directly. Thus, it is verified that the NCV value listed in the test report used for ER calculation is reasonable and correct, and the lab is confirmed to have an ISO17025 accreditation<sup>/CMA/</sup>.

In conclusion, the value in the MR is in line with the value in the evidence and correctly used in the ER sheet for the project ER calculation within this monitoring period.

CAR 05 is closed.

CAR ID	06	Section no.	D.2	Date: 30/04/2022
<b>Description of CAR</b>				
In section D.2, for parameter M <sub>NGL,y</sub> , the exact standard for calibrate weighbridge has not been not provided.				
<b>Project participant response</b>				Date: 10/05/2022
The weighbridges are calibrated annually according to JJG 539-2016 Digital Indicating Weighing Instruments.				
It has been clarified in the updated MR.				
<b>Documentation provided by project participant</b>				
MR- version 02 <sup>/MR/</sup> /CAL/ /JJG539/				
<b>VB assessment</b>				Date: 13/05/2022
The revised MR has been checked and it is confirmed that the exact standard <sup>/JJG539/</sup> for the weighbridge calibration has been provided which is consistent with the calibration report <sup>/CAL/</sup> .				
CAR 06 is closed.				

CAR ID	07	Section no.	D.2	Date: 30/04/2022
<b>Description of CAR</b>				
In section D.2, for parameter EC <sub>P,j,y</sub> ,				
<ol style="list-style-type: none"> <li>1. The actual QA/QC procedure conducted in this monitoring period is missing.</li> <li>2. Data cross-check process is missing.</li> </ol>				
<b>Project participant response</b>				Date: 10/05/2022
1.The electricity meters have been subject to regular maintenance and calibration in accordance with DL/T 448-2016 “Technical administrative code electric energy metering”. The accuracy class of the meters have been in accordance with above regulation. All the data has been saved after the monitoring period.”				
2.The data from the monthly production summary table is cross-checked with the electricity settlement issued by the electricity supplier.				
<b>Documentation provided by project participant</b>				
MR- version 02 <sup>/MR/</sup> /DLT/				

/JJG596/  
/CAL/  
/CMA/  
/MES/  
/MMRR/

## VB assessment

Date: 13/05/2022

1. The revised MR has been checked. It is confirmed that the actual QA/QC procedure conducted in this monitoring period has been provided. 2 electricity meters are strictly equipped in compliance with the requirements of DL/T 448-2016 “Technical administrative code electric energy metering <sup>/DLT/</sup>. The accuracy of electricity meters is 0.5 class for consumed electricity measuring and the calibration of electricity meters was carried out regularly in compliance with the requirement of JJG 596-2012 “Electrical Meters for Measuring Alternating-current Electrical Energy”<sup>/JJG596/</sup> of host country. The calibration certificate<sup>/CAL/</sup> of the 2 electricity meters and Certificate of Metrological Authorization of the calibration party<sup>/CMA/</sup> are checked by verification team and it is confirmed that the calibration period covering this monitoring period and there is no delay of the calibration occurred.
2. The revised MR has been checked. It is confirmed that the data cross-check process is added. The monthly data in Monthly electricity settlement<sup>/MES/</sup> is used for crosscheck for consumed electricity quantities which have been verified by the verification team. It is confirmed that the total data in whole year of 2021 on settlements is consistent with the Monthly meter reading record<sup>/MMRR/</sup> for whole year of 2021.

CAR 07 is closed.

**CAR ID** 08 **Section no.** D.2 **Date:** 30/04/2022

## Description of CAR

In section D.2, for parameter  $NCV_{i,y}$ , in accordance with Commission Regulation (EU) 601/2012 Article 35 and Annex VII, “the minimum frequency of analyzing Natural gas is “weekly”, but the monitoring frequency of the project is monthly, the  $NCV_{i,y}$  values for dry gas during this monitoring period have not been calculated based on the (EU) 601/2012 requirement considering lower monitoring frequency applied.

## Project participant response

Date: 10/05/2022

Considering the EU 601/2012’s requirement, a conservative surrogate data has been applied to comply with the weekly analysed frequency. The calculation method of surrogate data is as follow:

In order to calculate the project emissions conservatively,  $\bar{X}_{i,DG}$  plus 2 times standard deviation is adopted.

$$NCV_{Conservative,DG} = \bar{X}_{i,DG} + 2 \times S_{DG} \text{ (based on the equation under No.5 of Annex VIII of EU/601/2012) [MJ/Nm}^3\text{]}$$

$$NCV_{i,y} = \frac{\sum_w NCV_{Real,DG,w} + \sum_w NCV_{Conservative,DG}}{\sum_w} \text{ [MJ/Nm}^3\text{]}$$

Where

$NCV_{Real,DG,w}$  is the NCV detection value from “Dry Gas Analysis Report” in this monitoring period [MJ/Nm<sup>3</sup>];

$NCV_{Conservative,DG}$  is the conservative surrogate value of NCV calculated based on the standard deviation of the real NCV detection value from Dry Gas Analysis report in this monitoring period [MJ/Nm<sup>3</sup>];

$\bar{X}_{i,DG}$  is the average value of NCV from “Dry Gas Analysis Report” in this monitoring period [MJ/Nm<sup>3</sup>];

$S_{DG}$  is the standard deviation of real NCV detection value from “Dry Gas Analysis Report” in this monitoring period [MJ/Nm<sup>3</sup>];

$w$  is the number of weeks in a month [/]

The ER spreadsheet has also been updated accordingly.

### Documentation provided by project participant

MR- version 02<sup>/MR/</sup>  
/NCVD/  
/CMA/

### VB assessment

Date: 13/05/2022

The revised MR has been checked and it is confirmed that the NCV<sub>i,y</sub> values for associated gas during this monitoring period have been calculated based on the (EU) 601/2012 requirement.

Due to the monitoring frequency for this monitoring period is in line with the registered PDD and applied methodology as monthly, the weekly data is not available. The PP used an appropriate estimation method for determining conservative surrogate data for the respective time period and missing parameter as per Article 65.

Via checking MR and ER sheet, it is verified that the conservative surrogate data has been calculated for the data gap based on the standard deviation of the NCV<sub>i,y</sub> monthly analyzed values and the method used is confirmed as correct and conservative.

Thus it is concluded that the final results for monitoring parameter NCV<sub>i,y</sub> are conservative for determination of the ER values during this monitoring period.

Furthermore, the MR and ER sheet are checked, it is confirmed that during this monitoring period, the NCV measurement value was conducted by third party lab and through checking the Chemical analysis test report of associated gas by third party laboratories<sup>/NCVR/</sup>. By checking the compositional analysis for the raw gas in the test report and based on the calculation methods in ISO 6976 with the value given by the report, it is verified that the calculated values are similar to the NCV value which was issued by the third party laboratories directly. Thus it is verified that the NCV value listed in the test report used for ER calculation is reasonable and correct, and the lab is confirmed have an ISO17025 accreditation<sup>/CMA/</sup>

In conclusion, the value in the MR is in line with the value in the evidence and correctly used in the ER sheet for the project ER calculation within this monitoring period.

CAR 08 is closed.

CAR ID	09	Section no.	D.2	Date: 30/04/2022
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### Description of CAR

In section D.2,

1. The calibration validity of the electricity meters and weighbridge is not covering this monitoring period.
2. The validity of flowmeter is two years listed in section D.2 but the frequency is annually listed in section C. Revision is requested.

### Project participant response

Date: 10/05/2022

1. The last calibration information of the electricity meters and weighbridges has been added in the MR. The updated information is shown as:

The detailed information for the involved weighbridges is summarized as follow:

Station	Identification Number	Type	Accuracy	Validity period of last calibration	Validity period of this calibration
HWC	238	HCS-80	III	12/11/2020-11/11/2021	03/11/2021-02/11/2022
YB	110608	SCS-80-QC	III	03/07/2020-02/07/2021	07/06/2021-06/06/2022

The detailed information for the involved electric meters is summarized as follow:

Station	Identification Number	Type	Accuracy	Validity period of last calibration	Validity period of this calibration
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HWC	560901008	DTSF6006	0.5 class	13/11/2020-12/11/2021	03/11/2021-02/11/2022
NB	51300010000002 39575180	DSZ331	0.5 class	06/10/2020-05/10/2021	11/09/2021-10/09/2022

2. The last calibration information of the flowmeters has been added in the MR. The updated information is shown as:

For raw gas flowmeters:

Station	Identification Number	Type	Accuracy	Validity period of last calibration	Validity period of this calibration
HWC	14097027	TDS50B	1.5 class	11/11/2020-10/11/2021	03/11/2021-02/11/2022
YB	YB0001	ALS INTELLIGENT SWIRL	1.5 class	04/07/2020-03/07/2021	07/06/2021-06/06/2022
NB	20121160	LUY-50B	1.5 class	05/10/2020-04/10/2021	12/09/2021-11/09/2022

For dry gas flowmeters:

Station	Identification Number	Type	Accuracy	Validity period of last calibration	Validity period of this calibration
HWC	141119277	TDS80B	1.5 class	11/11/2020-10/11/2021	03/11/2021-02/11/2022
YB	814033	LFXX-Z DN80	1.5 class	04/07/2020-03/07/2021	07/06/2021-06/06/2022

### Documentation provided by project participant

MR- version 02<sup>/MR/</sup>  
/CAL/

### VB assessment

Date: 13/05/2022

1. The revised MR has been checked It is confirmed that the calibration for electricity meters and weighbridge conducted during this monitoring period has been added into the related table in section D.2, which is confirmed as correct by checking the calibration reports<sup>/CAL/</sup>. It is verified that the calibration validity has covered the whole monitoring period.
2. The revised MR has been checked., It is confirmed that the frequency is annually and last calibration information of the flowmeters has been added in the MR which are verified as correct and actual via checking the calibration reports<sup>/CAL/</sup>.

CAR 09 is closed.

**CAR ID** 10 **Section no.** E.1 **Date:** 30/04/2022

### Description of CAR

In section E.1 and ER sheet, the calculation of BE result is not correct due to the value of  $NCV_{RG,F,y}$  is not correctly calculated based on the (EU) 601/2012 requirement.

### Project participant response

Date: 10/05/2022

To meet the requirements of (EU) 601/2012, the value of  $NCV_{RG,F,y}$  has been corrected. For details, please check the updated MR and ER.

### Documentation provided by project participant

MR- version 02<sup>/MR/</sup>  
ER sheet – version 02<sup>/ER/</sup>

<b>VB assessment</b>	Date: 13/05/2022
The revised MR is checked, it is confirmed that the value of $NCV_{RG,F,y}$ is updated upon the CAR 05 above and the BE and final ER value have been re-calculated in ER sheet which is verified as correct. CAR 10 is closed.	

<b>CAR ID</b>	<b>11</b>	<b>Section no.</b>	<b>E.2</b>	<b>Date: 30/04/2022</b>
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**Description of CAR**

- In section E.1 and ER sheet,
1. The calculation of PE result is not correct due to the values of  $NCV_{i,y}$  and  $EF_{CO2,i,y}$  are not correctly calculated based on the (EU) 601/2012 requirements.
  2. The formula for  $PE_{CO2,ele,y}$  calculation is not consistent with the PDD and applied methodology.

<b>Project participant response</b>	Date: 10/05/2022
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1. To meet the requirement of (EU) 601/2012, the values of  $NCV_{i,y}$  and  $EF_{CO2,i,y}$  have been corrected. For details, please check the updated MR and ER.
2. The formula for  $PE_{CO2,ele,y}$  calculation has been corrected in MR as “ $PE_{CO2,ele,y} = PE_{EC,y} = \sum_j EC_{PJ,j,y} \times EF_{EF,j,y} \times (1 + TDL_{j,y})$ ” and it has been consistent with the PDD and applied methodology.

**Documentation provided by project participant**

MR- version 02<sup>MR/</sup>  
ER sheet – version 02<sup>ER/</sup>

<b>VB assessment</b>	Date: 13/05/2022
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1. The revised MR has been checked and it is confirmed that the value of  $NCV_{i,y}$  is updated upon the CAR 08 above and the PE and final ER value have been re-calculated in ER sheet which is verified as correct.
  2. The revised MR has been checked and it is confirmed that the formula for  $PE_{CO2,ele,y}$  calculation has been updated to be consistent with the PDD and the applied methodology.
- CAR 11 is closed.

**Table A6-4: FAR from this verification**

<b>FAR ID</b>	<b>XX</b>	<b>Section No.</b>	<b>-</b>	<b>Date: DD/MM/YYYY</b>
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**Description of FAR**

<b>Project participant response</b>	Date: DD/MM/YYYY
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**Documentation provided by project participant**

<b>VB assessment</b>	Date: DD/MM/YYYY
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## Appendix 7: Verification Planning Tool

**Table A7-1: Applicable level of assurance**

<b>Level of assurance</b>	<input type="checkbox"/> limited	<input checked="" type="checkbox"/> reasonable
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**Table A7-2: Applicable materiality threshold**

	Category	Threshold	Applicable for
<input type="checkbox"/>	C	0,5 %	UER project activities achieving > 500.000 t of emission reductions
<input type="checkbox"/>	B2	1%	Large scale UER project activities achieving > 300.000 t of emission reductions
<input type="checkbox"/>	B1	2%	Other large scale UER project activities
<input checked="" type="checkbox"/>	A	5 %	Small scale UER project activities

**Table A7-3: Risk Assessment, verification activities, sampling plan**

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	Verification activities	Comments (e.g. sampling size*)
		Risk level	Justification			
<b>1.</b>	<b>Preconditions for Approval</b>					
1.1	Noncompliance with binding requirements from validation / registration	high	Validation and or approval might include limitations of ER eligibility	Check of validation and approval records	a) observation b) cross-checking c) examination	-
<b>2</b>	<b>Boundaries / completeness</b>					
2.1	Completeness of direct and indirect emission sources	medium	Relevant gas flows / gas quantities man not be considered in	Review of network plans Interviews	a) observation b) cross-checking	-

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	Verification activities	Comments (e.g. sampling size*)
		Risk level	Justification			
			input / output balance		c) inquiry	
<b>3</b>	<b>Implementation of monitoring plan</b>					
3.1	Installation of monitoring equipment	medium	Delayed installation of monitoring equipment Installation of different equipment	On-site visit and check of equipment records Check of monitoring records	a) observation b) inquiry c) cross-checking	-
3.2	Exchange of monitoring equipment	Low	Date gaps, accuracy requirements	On-site visit and check of equipment records	a) observation b) inquiry c) cross-checking	-
3.3	Dysfunction of monitoring equipment	high	Data gaps	On-site visit and check of equipment records	a) observation b) inquiry c) -	-
3.4	Different monitoring practices	Low	Data from deviant sources might have been used	On-site visit and check of monitoring records	a) retracing b) observation c) cross-checking	-
<b>4</b>	<b>Parameters</b>					
4.1	Different values for non-monitored parameters	Low	The values for non-monitored parameters which have been fixed ex-ante might be monitored or	Comparison with registered PDD Check of registered PDD and validation report Check of the ER calculation	a) cross-checking b) - c) -	-

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	Verification activities	Comments (e.g. sampling size*)
		Risk level	Justification			
			determined differently			
4.2	Wrong values for monitored parameters	high	The monitored parameters might have been determined incorrectly	Comparison with registered PDD Check of monitoring equipment Check of data aggregation	a) cross-checking b) - c) -	-
<b>5</b>	<b>Calculations</b>					
5.1	Calculation mistakes	high	Wrong values, different equations, or mistakes in the spreadsheet programming might have occurred	Spreadsheet walk-throughs Plausibility checks Re-calculation	a) recalculation b) cross-checking c) -	-
<b>6</b>	<b>Quality assurance / quality control</b>					
6.1	Non-fulfilment of calibration requirements	medium	Calibrations might not have taken place within applicable time frames	Check of manufacturer's specifications Check of national requirements Check of calibration data	a) cross-checking b) examination c) -	-
<b>7</b>	<b>Double counting</b>					
7.1	Double use of emission reduction credits	high	ER credits may be used in other projects or schemes. As of 2021 ERs may be counted against	Check of project boundaries and coordinates Check of other schemes Check of host country approvals (post 2020)	a) cross-checking b) - c) -	-

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	Verification activities	Comments (e.g. sampling size*)
		Risk level	Justification			
			the Host country NDCs			

\*) A sample size calculator can be found [here](#).

## Appendix 8: Monitored parameters

**Table A8-1: Monitored parameters**

No.	Abbr.	Name	Related monitoring equipment	Value applied	Verifiers action	Verification results (after findings resolution)	Related Findings	Final result
1	V <sub>F,y</sub>	Volume of the total recovered gas measured at Point F in year y	Flowmeters at point F of 3 stations (Refer to Appendix 7 for details of flowmeters)	24,700,380 Nm <sup>3</sup>	<p>Firstly, the verification team has checked all related monitoring equipment from which the reported monitoring parameter has been derived. V<sub>F,y</sub> is measured continuously by 3 flowmeters at point F of 3 stations and recording monthly data which has been verified by site inspection of processing station and flowmeters. The measured volume is automatically converted to the volume at normal temperature and pressure using the temperature and pressure at the time of measurement. The flowmeters are installed in the recovered gas exits the oil and gas separation station at point F of each station in figure C-2, C-3 and C-4 of the MR which is verified as correct by site inspection. Secondly, for each equipment it has been checked whether the accuracy requirements have been met and whether all applicable QA/QC requirements incl. calibration have been met. It has further been checked whether the parameter description in the monitoring plan corresponds with the actual situation. The 3 flowmeters are strictly equipped in compliance with the requirement of "SY/T 5398-2017 Equipping specification of measuring</p>	<p><input checked="" type="checkbox"/> The monitoring parameter description in the MR is deemed to be correct.</p> <p><input checked="" type="checkbox"/> The accuracy requirements as per (EU) 601/2012 are met or conservative corrections have been applied.</p> <p><input checked="" type="checkbox"/> Data gaps have not occurred or been closed in line with the applied methodology or (EU) 601/2012.</p> <p><input checked="" type="checkbox"/> The QA/QC have been applied in line with the MP</p> <p><input checked="" type="checkbox"/> Calibration requirements have been met for the related monitoring equipment (refer to A6-1). In case of delayed calibration an</p>	CAR 04	OK

No.	Abbr.	Name	Related monitoring equipment	Value applied	Verifiers action	Verification results (after findings resolution)	Related Findings	Final result
					<p>instrument for petroleum and natural gas custody transfer measuring station<sup>"/SYT/</sup>. The accuracy of flowmeters is class 1.5 for recovered gas measuring and the calibration of flowmeters was carried out annually in compliance with the requirement of JJG 1121-2015 Verification Regulation of Precession Vortex Flowmeter<sup>"/JJG1121/</sup> and JJG 1029-2007 Verification Regulation of Vortex-shedding Flowmeter<sup>"/JJG1029/</sup> of host country. The calibration certificate<sup>"/CAL/</sup> of the 3 flowmeters and Certificate of Metrological Authorization of the calibration party<sup>"/CMA/</sup> are checked by the verification team and it is confirmed that the calibration period covering this monitoring period and no delay of the calibration occurred.</p> <p><i>Finally, the data aggregation from the original data to the reported value has been checked and recalculated, where applicable.</i></p> <p>For data collection, the volume of the total recovered gas <math>V_{F,y}</math> is measured continuously by flowmeters in each station, total 3 flowmeters. Data is recorded by UER monitoring staffs. The staffs record the readings of flowmeter daily and aggregated data once a month which has been verified by checking the Monthly production summary table<sup>"/MPST/</sup>.</p> <p>The monthly data in Confirmation form for quantity of recovered gas and dry gas issued by</p>	<p>appropriate adjustment has been considered</p> <p><input checked="" type="checkbox"/> The data aggregation for this parameter has been done correctly and where mistakes have been identified these have been corrected.</p> <p><input checked="" type="checkbox"/> The reported value is deemed to be correct.</p>		

No.	Abbr.	Name	Related monitoring equipment	Value applied	Verifiers action	Verification results (after findings resolution)	Related Findings	Final result
					<p>the gas supplier company (Shengli oilfield)<sup>/CFQ/</sup> is used for crosscheck for associated gas which have been verified by the verification team, and it is confirmed that the total data in whole year of 2021 on Confirmation form is consistent with the monthly gas records<sup>/MPST/</sup> for the whole year of 2021 within this monitoring period for each station.</p> <p>In conclusion, the value calculated in the MR is in line with the evidence provided and correctly calculated in ER sheet for the project within this monitoring period.</p>			
2	NCV <sub>RG,F,y</sub>	Average net calorific value of recovered gas at point F in Figure C-2, C-3, C-4 in year y	Chemical analysis test report of recovered gas by third party laboratories	<p>44.41×10<sup>-6</sup> TJ/Nm<sup>3</sup> for YB Station</p> <p>44.35×10<sup>-6</sup> TJ/Nm<sup>3</sup> for NB Station</p> <p>44.24×10<sup>-6</sup> TJ/Nm<sup>3</sup> for HWC station</p>	<p>Firstly, the verification team has checked all related monitoring equipment from which the reported monitoring parameter has been derived. NCV<sub>RG,F,y</sub> is derived from the monthly Chemical analysis test report of recovered gas by third party laboratories<sup>/NCVR/</sup>.</p> <p>Secondly, for each equipment it has been checked whether the accuracy requirements have been met and whether all applicable QA/QC requirements incl. calibration have been met. It has further been checked whether the parameter description in the monitoring plan corresponds with the actual situation.</p> <p>Via checking the Chemical analysis test report of recovered gas by third party laboratories<sup>/NCVR/</sup>, it is verified that the measurements are</p>	<p><input checked="" type="checkbox"/> The monitoring parameter description in the MR is deemed to be correct.</p> <p><input checked="" type="checkbox"/> The accuracy requirements as per (EU) 601/2012 are met or conservative corrections have been applied.</p> <p><input checked="" type="checkbox"/> Data gaps have not occurred or been closed in line with the applied methodology or (EU) 601/2012.</p>	CAR 05	OK

No.	Abbr.	Name	Related monitoring equipment	Value applied	Verifiers action	Verification results (after findings resolution)	Related Findings	Final result
					<p>undertaken in line with national or international fuel standards, which is GB/T 13609 2017 Guidelines for Natural Gas Sampling which is equivalent to ISO10715<sup>/GNGS/</sup>, GB/T 13610 2014 Composition Analysis of Natural Gas-Gas Chromatography<sup>/CANG/</sup>, ISO6974 Natural gas – Determination of composition and associated uncertainty by gas chromatography<sup>/ISO6974/</sup> and GB/T 11062-2014 Natural gas calorific value, density, relative density and Wobbe index calculation method<sup>/NGCM/</sup>. The lab analyzed sampling and compositional analysis and calculation of net calorific value once a month. The third party lab is verified having an ISO17025 accreditation<sup>/CMA/</sup>.</p> <p>Gas samples are taken monthly at point F of each station in figure C-2, C-3, C-4 and the molar composition of each gas sample is determined through chemical analysis following the procedures for QA/QC. Based on the molar composition, the Net Calorific Value on a volumetric basis was determined for each sample in line with ISO6976<sup>/ISO6976/</sup>.</p> <p>Furthermore, by checking the compositional analysis for the raw gas in the test report and based on the calculation methods in ISO 6976 with the value given by the report, it is verified that the calculated values are higher than the NCV value which was issued by the third party laboratories directly. Thus it is verified that the</p>	<p><input checked="" type="checkbox"/> The QA/QC have been applied in line with the MP</p> <p><input checked="" type="checkbox"/> Calibration requirements have been met for the related monitoring equipment (refer to A6-1). In case of delayed calibration an appropriate adjustment has been considered</p> <p><input checked="" type="checkbox"/> The data aggregation for this parameter has been done correctly and where mistakes have been identified these have been corrected.</p> <p><input checked="" type="checkbox"/> The reported value is deemed to be correct.</p>		



No.	Abbr.	Name	Related monitoring equipment	Value applied	Verifiers action	Verification results (after findings resolution)	Related Findings	Final result
					<p>NCV value listed in the test report directly used for ER calculation is reasonable and conservative.</p> <p><i>Finally, the data aggregation from the original data to the reported value has been checked and recalculated, where applicable.</i></p> <p>For data collection, the value of <math>NCV_{RG,F,y}</math> during this monitoring period is reported in the MR based on the chemical analysis test report of recovered gas by third party laboratories<sup>/NCVR/</sup>. Sampling frequency of recovered associate gas was conducted once a month. Due to this monitoring period covering whole year of 2021, the NCV tests for recovered gas sampling were conducted 12 times for this monitoring period and the average value is used for BE calculation is verified as in line with the requirement of applied methodology.</p> <p>However, in accordance with Commission Regulation (EU) 601/2012 Article 35 and Annex VII, “the minimum frequency of analyzing Natural gas is “weekly”, or in the case that the minimum frequency is not available a lower frequency could be accepted, if any variation in the analytical values for analyzed gas does not exceed 1/3 of the uncertainty value to which the operator has to adhere (1.5%). It is necessary to indicate an acceptable sampling method for NCV</p>			

No.	Abbr.	Name	Related monitoring equipment	Value applied	Verifiers action	Verification results (after findings resolution)	Related Findings	Final result
					<p>of recovered gas to meet the above requirement.”</p> <p>The MR and ER sheet are checked, it is confirmed that the <math>NCV_{RG,F,y}</math> values for associated gas during this monitoring period have not been calculated based on the (EU) 601/2012 requirement in the original version of MR.</p> <p>For detailed of the confirmation, please refer to CAR 05.</p>			
3	$V_{DG,y}$	Volume of dry gas transported by pipeline measured by Point D in year y	Flowmeters at point D of 2 stations (HWC and YB) (Refer to Appendix 7 for details of flowmeters)	18,636,600 $Nm^3$	<p><i>Firstly, the verification team has checked all related monitoring equipment from which the reported monitoring parameter has been derived.</i></p> <p><math>V_{DG,y}</math> is measured continuously by 2 flowmeters at point D for dry gas transported by pipeline of 2 stations (HWC and YB) and recording monthly data which has been verified by site inspection of processing stations and flowmeters.</p> <p>The measured volume is converted by flowmeters automatically to the volume at normal temperature and pressure using the temperature and pressure at the time of measurement.</p> <p>The Flowmeters are installed where the recovered gas exits the oil and gas separation station at point F of each of two stations of the MR which is verified as correct by site inspection.</p> <p><i>Secondly, for each equipment it has been checked whether the accuracy requirements have been met and whether all applicable QA/QC</i></p>	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> The monitoring parameter description in the MR is deemed to be correct.</li> <li><input checked="" type="checkbox"/> The accuracy requirements as per (EU) 601/2012 are met or conservative corrections have been applied.</li> <li><input checked="" type="checkbox"/> Data gaps have not occurred or been closed in line with the applied methodology or (EU) 601/2012.</li> <li><input checked="" type="checkbox"/> The QA/QC have been applied in line with the MP</li> <li><input checked="" type="checkbox"/> Calibration requirements have</li> </ul>	CAR 04	OK

No.	Abbr.	Name	Related monitoring equipment	Value applied	Verifiers action	Verification results (after findings resolution)	Related Findings	Final result
					<p>requirements incl. calibration have been met. It has further been checked whether the parameter description in the monitoring plan corresponds with the actual situation.</p> <p>2 flowmeters are strictly equipped in compliance with the requirement of "SY/T 5398-2017 Equipping specification of measuring instrument for petroleum and natural gas custody transfer measuring station"<sup>/SYT/</sup>. The accuracy of flowmeters is class 1.5 for dry gas measuring and the calibration of Flowmeters was carried out annually in compliance with the requirement of JJG 1121-2015 Verification Regulation of Precession Vortex Flowmeter<sup>/JJG1121/</sup> of host country. The calibration certificate<sup>/CAL/</sup> of the 2 flowmeters and Certificate of Metrological Authorization of the calibration party<sup>/CMA/</sup> are checked by verification team and it is confirmed that the calibration period covering this monitoring period and there is no delay of the calibration occurred.</p> <p>Finally, the data aggregation from the original data to the reported value has been checked and recalculated, where applicable.</p> <p>For data collection, the volume of the total dry gas measured <math>V_{DG,y}</math> is measured continuously by flowmeter in two stations HWC and YB, total 2 flowmeters. Data is recorded by UER monitoring staffs. The staffs record the readings of</p>	<p>been met for the related monitoring equipment (refer to A6-1). In case of delayed calibration an appropriate adjustment has been considered</p> <p><input checked="" type="checkbox"/> The data aggregation for this parameter has been done correctly and where mistakes have been identified these have been corrected.</p> <p><input checked="" type="checkbox"/> The reported value is deemed to be correct.</p>		

No.	Abbr.	Name	Related monitoring equipment	Value applied	Verifiers action	Verification results (after findings resolution)	Related Findings	Final result
					<p>flowmeter daily and aggregated data once a month which has been verified by checking the Monthly production summary table<sup>/MPST/</sup>.</p> <p>The monthly data in Confirmation form for quantity of recovered gas and dry gas issued by the gas supplier company (Shengli oilfield)<sup>/CFQ/</sup> is used for crosscheck for dry gas which have been verified by the verification team, and it is confirmed that the total data in whole year of 2021 on Confirmation form is consistent with the monthly gas records<sup>/MPST/</sup> for whole year of 2021 within this monitoring period for each station.</p> <p>In conclusion, the value calculated in the MR is in line with the values in the evidence and corrected calculated in ER sheet for the project within this monitoring period.</p>			
4	M <sub>NGL,y</sub>	Mass of the total NGL measured at point G in year y	Onsite measurements by weighbridges at the point G (Refer to Appendix 7 for details of weighbridges)	432,56 t	<p>Firstly, the verification team has checked all related monitoring equipment from which the reported monitoring parameter has been derived. M<sub>NGL,y</sub> is measured continuously by 2 weighbridges at point G for mass of NGL transported by trucks in 2 stations (HWC and YB) and recording monthly data which has been verified by site inspection of processing stations and weighbridges.</p>	<p><input checked="" type="checkbox"/> The monitoring parameter description in the MR is deemed to be correct.</p> <p><input checked="" type="checkbox"/> The accuracy requirements as per (EU) 601/2012 are met or conservative corrections have been applied.</p> <p><input checked="" type="checkbox"/> Data gaps have not occurred or been</p>	CAR 06	OK

No.	Abbr.	Name	Related monitoring equipment	Value applied	Verifiers action	Verification results (after findings resolution)	Related Findings	Final result
					<p>A weighbridge is installed in each of the two stations (HWC and YB) which is verified as correct by site inspection.</p> <p><i>Secondly, for each equipment it has been checked whether the accuracy requirements have been met and whether all applicable QA/QC requirements incl. calibration have been met. It has further been checked whether the parameter description in the monitoring plan corresponds with the actual situation.</i></p> <p>The accuracy of 2 weighbridges is III for NGL mass measuring and the calibration of weighbridges was carried out annually in compliance with the requirements of JJG 539-2016 Digital Indicating Weighing Instruments<sup>/JJG539/</sup> of host country. The calibration certificate<sup>/CAL/</sup> of the 2 weighbridges and Certificate of Metrological Authorization of the calibration party<sup>/CMA/</sup> are checked by the verification team and it is confirmed that the calibration period covering this monitoring period and no delay of the calibration occurred.</p> <p><i>Finally, the data aggregation from the original data to the reported value has been checked and recalculated, where applicable.</i></p> <p>For data collection, the mass of the total NGL measured <math>M_{NGL,y}</math> is measured continuously by weighbridges in two stations HWC and YB, total 2 weighbridges. Data is recorded by UER monitoring staffs. The staffs record the readings</p>	<p>closed in line with the applied methodology or (EU) 601/2012.</p> <p><input checked="" type="checkbox"/> The QA/QC have been applied in line with the MP</p> <p><input checked="" type="checkbox"/> Calibration requirements have been met for the related monitoring equipment (refer to A6-1). In case of delayed calibration an appropriate adjustment has been considered</p> <p><input checked="" type="checkbox"/> The data aggregation for this parameter has been done correctly and where mistakes have been identified these have been corrected.</p> <p><input checked="" type="checkbox"/> The reported value is deemed to be correct.</p>		

No.	Abbr.	Name	Related monitoring equipment	Value applied	Verifiers action	Verification results (after findings resolution)	Related Findings	Final result
					<p>of weighbridges daily and aggregated data once a month which has been verified by checking the Monthly production summary table<sup>/MPST/</sup>.</p> <p>The monthly data in Settlement statement of NGL<sup>/SSN/</sup> is used for crosscheck for NGL quantities which have been verified by the verification team, and it is confirmed that the total data in whole year of 2021 on Settlement statement of NGL<sup>/SSN/</sup> for whole year of 2021 is consistent with the monthly data within this monitoring period for each station.</p> <p>In conclusion, the value calculated in the MR is in line with the provided evidence and correctly calculated in ER sheet for the project within this monitoring period.</p>			
5	EC <sub>PJ,j,y</sub>	Quantity of electricity consumed input from the grid by the project activity in year y	Electricity meters installed at point H in Figure C-3 and C-4 (Refer to Appendix 7 for details of electricity meters)	4,004.755 MWh	<p>Firstly, the verification team has checked all related monitoring equipment from which the reported monitoring parameter has been derived. EC<sub>PJ,j,y</sub> is measured continuously by 2 electricity meters at point H of 2 stations (HWC and NB) and recording monthly data which has been verified by site inspection of processing station and electricity meters.</p> <p>An electricity meter is installed at the grid access points at point H of each station in figure C-3 and C-4 of the MR which is verified as correct by site inspection.</p>	<p><input checked="" type="checkbox"/> The monitoring parameter description in the MR is deemed to be correct.</p> <p><input checked="" type="checkbox"/> The accuracy requirements as per (EU) 601/2012 are met or conservative corrections have been applied.</p> <p><input checked="" type="checkbox"/> Data gaps have not occurred or been closed in line with the</p>	CAR 07	OK

No.	Abbr.	Name	Related monitoring equipment	Value applied	Verifiers action	Verification results (after findings resolution)	Related Findings	Final result
					<p><i>Secondly, for each equipment it has been checked whether the accuracy requirements have been met and whether all applicable QA/QC requirements incl. calibration have been met. It has further been checked whether the parameter description in the monitoring plan corresponds with the actual situation.</i></p> <p>2 electricity meters are strictly equipped in compliance with the requirements of DL/T 448-2016 “Technical administrative code electric energy metering<sup>/DLT/</sup>. The accuracy of electricity meters is 0.5 class for consumed electricity measuring and the calibration of electricity meters was carried out regularly in compliance with the requirements of JJG 596-2012 “Electrical Meters for Measuring Alternating-current Electrical Energy<sup>/JJG596/</sup> of host country. The calibration certificate<sup>/CAL/</sup> of the 2 electricity meters and Certificate of Metrological Authorization of the calibration party<sup>/CMA/</sup> are checked by the verification team and it is confirmed that the calibration period covers this monitoring period and no delay of the calibration occurred.</p> <p><i>Finally, the data aggregation from the original data to the reported value has been checked and recalculated, where applicable.</i></p> <p>For data collection, the quantity of electricity consumed input from the grid by the project</p>	<p>applied methodology or (EU) 601/2012.</p> <p><input checked="" type="checkbox"/> The QA/QC have been applied in line with the MP</p> <p><input checked="" type="checkbox"/> Calibration requirements have been met for the related monitoring equipment (refer to A6-1). In case of delayed calibration an appropriate adjustment has been considered</p> <p><input checked="" type="checkbox"/> The data aggregation for this parameter has been done correctly and where mistakes have been identified these have been corrected.</p> <p><input checked="" type="checkbox"/> The reported value is deemed to be correct.</p>		

No.	Abbr.	Name	Related monitoring equipment	Value applied	Verifiers action	Verification results (after findings resolution)	Related Findings	Final result
					<p>activity <math>EC_{PJ,j,y}</math> is measured continuously by electricity meter in two stations (HWC and NB), total 2 electricity meters. Data is recorded by UER monitoring staffs. The staffs record the readings of electricity meter daily and aggregated data once a month which has been verified by checking the Monthly meter reading record<sup>/MMRR/</sup>.</p> <p>The monthly data in Monthly electricity settlement<sup>/MES/</sup> is used for crosscheck of consumed electricity quantities which has been verified by the verification team. It is confirmed that the total data in whole year of 2021 on settlements is consistent with the Monthly meter reading record<sup>/MMRR/</sup> for whole year of 2021.</p> <p>In conclusion, the value calculated in the MR is in line with the values in the provided evidence and correctly calculated in ER sheet for the project within this monitoring period.</p>			
6	NCV <sub>i,y</sub>	Average net calorific value of dry gas at point D in Figure C-2, C-4 in year y	Chemical analysis test report of dry gas by third party laboratories	$43.54 \times 10^{-3}$ GJ/Nm <sup>3</sup> for HWC Station $43.36 \times 10^{-3}$ GJ/Nm <sup>3</sup> for YB Station	<p>Firstly, the verification team has checked all related monitoring equipment from which the reported monitoring parameter has been derived. NCV<sub>i,y</sub> is derived from the Chemical analysis test report of dry gas by third party laboratories<sup>/NCVD/</sup>.</p> <p>Secondly, for each equipment it has been checked whether the accuracy requirements have been met and whether all applicable QA/QC requirements incl. calibration have been met. It has further been checked whether the parameter</p>	<p><input checked="" type="checkbox"/> The monitoring parameter description in the MR is deemed to be correct.</p> <p><input checked="" type="checkbox"/> The accuracy requirements as per (EU) 601/2012 are met or conservative corrections have been applied.</p>	CAR 08	OK



No.	Abbr.	Name	Related monitoring equipment	Value applied	Verifiers action	Verification results (after findings resolution)	Related Findings	Final result
					<p><i>description in the monitoring plan corresponds with the actual situation.</i></p> <p>Via checking the Chemical analysis test report of dry gas by third party laboratories<sup>/NCVD/</sup>, it is verified that the measurements are undertaken in line with national or international fuel standards, which is GB/T 13609 2017 Guidelines for Natural Gas Sampling which is equivalent to ISO10715<sup>/GNGS/</sup>, GB/T 13610 2014 Composition Analysis of Natural Gas-Gas Chromatography<sup>/CANG/</sup>, ISO6974 Natural gas — Determination of composition and associated uncertainty by gas chromatography<sup>/ISO6974/</sup> and GB/T 11062-2014 Natural gas calorific value, density, relative density and Wobbe index calculation method<sup>/NGCM/</sup>.</p> <p>Gas samples are taken monthly at point D in figure C-2, C-4 and the molar composition of each gas sample is determined through chemical analysis following the procedures for QA/QC. Based on the molar composition, the Net Calorific Value on a volumetric basis was determined for each sample in line with ISO6976<sup>/ISO6976/</sup>.</p> <p>Furthermore, by checking the compositional analysis for the dry gas in the test report and based on the calculation methods in ISO 6976 with the value given by the report, it is verified that the calculated values are higher than the</p>	<p><input checked="" type="checkbox"/> Data gaps have not occurred or been closed in line with the applied methodology or (EU) 601/2012.</p> <p><input checked="" type="checkbox"/> The QA/QC have been applied in line with the MP</p> <p><input checked="" type="checkbox"/> Calibration requirements have been met for the related monitoring equipment (refer to A6-1). In case of delayed calibration an appropriate adjustment has been considered</p> <p><input checked="" type="checkbox"/> The data aggregation for this parameter has been done correctly and where mistakes have been identified these have been corrected.</p> <p><input checked="" type="checkbox"/> The reported value is deemed to be correct.</p>		

No.	Abbr.	Name	Related monitoring equipment	Value applied	Verifiers action	Verification results (after findings resolution)	Related Findings	Final result
					<p>NCV value which was issued by the third-party laboratories directly. Thus it is verified that the NCV value listed in the test report directly used for ER calculation is reasonable and conservative.</p> <p><i>Finally, the data aggregation from the original data to the reported value has been checked and recalculated, where applicable.</i></p> <p>For data collection, the value of <math>NCV_{i,y}</math> during this monitoring period reported in the MR is based on the monthly chemical analysis test report of dry gas by third party laboratories<sup>/NCVD/</sup>. Due to this monitoring period covering the whole 2021 year, the NCV tests for dry gas sampling were conducted 12 times for this monitoring period and the average value is used for PE calculation is verified to be in line with the requirements of the approved PDD<sup>/PDD/</sup>.</p> <p>However, in accordance with Commission Regulation (EU) 601/2012 Article 35 and Annex VII, “the minimum frequency of analysing Natural gas is “weekly”, or in the case that the minimum frequency is not available a lower frequency could be accepted, if any variation in the analytical values for analysed gas does not exceed 1/3 of the uncertainty value to which the operator has to adhere (1.5%). It is necessary to indicate an acceptable sampling method for NCV</p>			

No.	Abbr.	Name	Related monitoring equipment	Value applied	Verifiers action	Verification results (after findings resolution)	Related Findings	Final result
					<p>of recovered gas to meet the above requirement.”</p> <p>The MR and ER sheet have been checked. It is confirmed that the <math>NCV_{i,y}</math> values for associated gas during this monitoring period have not been calculated based on the (EU) 601/2012 requirement in the original version of MR.</p> <p>For detailed of the confirmation, please refer to CAR 08.</p>			

## Appendix 9: Accuracy and Calibration details of monitoring equipment

**Table A9-1: Monitored parameters**

Equipment ID	Monitoring parameter	Type	Serial No.	Accuracy	EU-ETS tier requirements met	Calibration dates <sup>1</sup>	Validity of calibration	Delayed calibration
1 – HWC station – flowmeter	$V_{F,y}$	TDS50B	14097027	1.5 Class	<input checked="" type="checkbox"/>	11/11/2020 03/11/2021	10/11/2021 02/11/2022	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
2 -YB station – flowmeter	$V_{F,y}$	ALS INTELLIG- ENT SWIRL	YB0001	1.5 Class	<input checked="" type="checkbox"/>	04/07/2020 07/06/2021	03/07/2021 06/06/2022	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
3 - NB station – flowmeter	$V_{F,y}$	LUY-50B	20121160	1.5 Class	<input checked="" type="checkbox"/>	05/10/2020 12/09/2021	04/10/2021 11/09/2022	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
4 – HWC station – flowmeter	$V_{DG,y}$	TDS80B	141119277	1.5 Class	<input checked="" type="checkbox"/>	11/11/2020 03/11/2021	10/11/2021 02/11/2022	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
5 -YB station – flowmeter	$V_{DG,y}$	LFXX-Z DN80	814033	1.5 Class	<input checked="" type="checkbox"/>	04/07/2020 07/06/2021	03/07/2021 06/06/2022	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
6 – HWC station – weighbridge	$M_{NGL,y}$	HCS-80	238	III	<input checked="" type="checkbox"/>	12/11/2020 03/11/2021	11/11/2021 02/11/2022	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
7 -YB station – weighbridge	$M_{NGL,y}$	SCS-80-QC	110608	III	<input checked="" type="checkbox"/>	03/07/2020 07/06/2021	02/07/2021 06/06/2022	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
8- HWC station – electricity meter	$EC_{PJ,j,y}$	DTSF6006	560901008	0.5 class	<input checked="" type="checkbox"/>	13/11/2020 03/11/2021	12/11/2021 02/11/2022	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no

<sup>1</sup> Last calibration before the beginning of the MP and all calibration dates during the monitoring period

9 - NB station - electricity meter	EC <sub>PJ,i,y</sub>	DSZ331	513000100000 0239575180	0.5 class	<input checked="" type="checkbox"/>	06/10/2020 11/09/2021	05/10/2021 10/09/2022	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
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