



**Verified Carbon  
Standard**

# VERIFICATION REPORT FOR SICHUAN FURONG COAL MINE METHANE UTILIZATION PROJECT



Document Prepared by China Classification Society Certification Co., Ltd. (CCSC)

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### Summary:

China Classification Society Certification Co., Ltd. (hereafter referred to as “CCSC”) has been commissioned by Goldchina Consultancy International Co., Ltd. to perform the verification of greenhouse gas emission reductions of the project activity “Sichuan Furong Coal Mine Methane Utilization Project” (UNFCCC Ref. No. 2677, VCS Ref. No. 1446, hereafter referred to as “the project activity”) reported in the monitoring report during monitoring period 01/01/2018 to 15/04/2020.

The verification scope is defined as a periodic independent and objective review and ex-post determination by the Designated Operational Entity of the monitored reductions in GHG emissions during defined verification period, and consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up on-site visit and interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion. The overall verification, from Contract Review to Verification Report & Opinion, was conducted using CCSC internal procedures.

In summary, CCSC confirms that the Project is implemented as planned and described in the validated CDM PDD and VCS-PD. The post-registration changes on the project implementation and monitoring plan are sufficiently justified. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the Project is ready to reduce GHG emission. The GHG emission reduction is calculated without material misstatements, and the emission reductions verified totalize 841,244 tons of CO<sub>2</sub>e for the monitoring period.

Our opinion relates to the Project’s GHG emissions and the resulting GHG emission reductions viz. Voluntary Carbon Units (VCUs) reported are based on the valid project baseline, deviation on the monitoring plan and associated documents. Based on the evidence and information that are considered necessary to guarantee that GHG emission reductions are appropriately calculated, CCSC confirms following statement:

Vintage	BE (tCO <sub>2</sub> )	PE (tCO <sub>2</sub> )	LE (tCO <sub>2</sub> )	ER (tCO <sub>2</sub> )
01/01/2018-31/12/2018	421,288	39,115	0	382,173
01/01/2019-31/12/2019	405,483	37,589	0	367,894
01/01/2020-15/04/2020	100,617	9,440	0	91,177
<b>Total</b>	<b>927,388</b>	<b>86,144</b>	<b>0</b>	<b>841,244</b>

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# 1 INTRODUCTION

## 1.1 Objective

Goldchina Consultancy International Co., Ltd. has commissioned Classification Society Certification Company (hereafter referred to as “CCSC”) to verify the emission reductions of the Verified emission reduction (VER) of Sichuan Furong Coal Mine Methane Utilization Project (hereafter referred to as “the Project”), which is located in Yibin City, Sichuan Province, People’s Republic of China for the period from 01/01/2018 to 15/04/2020.

CCSC as the validation/verification body (VVB) of the Project has been accredited as a DOE by UNFCCC and also meets the competence requirements as set out in ISO 14065.

The objective of verification is to verify the reported voluntary emission reductions generated by the Project for the period from 01/01/2018 to 15/04/2020 and to confirm that actual monitoring systems and procedures are in compliance with that described in the monitoring plan and the additional requirements stated by Verra.

## 1.2 Scope and Criteria

The verification scope is defined as an independent and objective review of the registered PD, the Project’s baseline study and Monitoring Report (MR) and other relevant documents. The information in these documents is reviewed against VCS Version 4.3 requirements, UNFCCC rules and associated interpretations.

The verification is not meant to provide any consulting towards the client. However, stated requests for forward actions and/or corrective actions may provide input for improvement of the Project monitoring towards reductions in the GHG emissions.

## 1.3 Level of Assurance

CCSC has undertaken a reasonable assurance engagement in accordance with VCS Version 4.3. It requires a reasonable level of assurance in verification that GHG assertions are free of material errors, omissions and misrepresentations. The verification conclusion is based on the VCS-PD, VCS-MR, CDM-PDD, supporting evidences made available to the verifier and information collected through performing interviews and during the on-site inspection.

## 1.4 Summary Description of the Project

Project title	Sichuan Furong Coal Mine Methane Utilization Project
UNFCCC reference number	UNFCCC Ref.2677
VCS reference number	VCS ID.1446
Crediting period	VCS Crediting Period: 16/04/2010 to 15/04/2020 (10-year)

Project Proponents	Sichuan Furong Group's Limited Industrial Company
Location of the project	Located in Yibin City, Sichuan Province, People's Republic of China Geographic coordinates: 104°39'~104°41' east longitude, 28°25'~28°28' north latitude.
Monitoring period	01/01/2018 to 15/04/2020
Applied	ACM0008, Ver.04
Scope/Technical Area	08: Mining/Mineral Production and 10: Fugitive Emission from Fuels
UNFCCC link:	<a href="https://cdm.unfccc.int/Projects/DB/DNV-CUK1244587133.21/view">https://cdm.unfccc.int/Projects/DB/DNV-CUK1244587133.21/view</a>
VCS	<a href="https://registry.verra.org/app/projectDetail/VCS/1446">https://registry.verra.org/app/projectDetail/VCS/1446</a>

The project involves coal mine methane capture and utilization in power generation at captive CMM power plants. Generator sets with a combined capacity of 15MW (with model number 500GF1-2RW, installed at Baijiao and Gongquan CMM power plant, and JMS620GS generators installed at Baijiao and Shanmushu CMM power plant) have been installed to utilise CMM extracted from Furong Group's Baijiao, Shanmushu and Gongquan coal mines that is vented in the baseline scenario is captured by the project for power generation, while the small portion of residential and commercial usage of CMM in the baseline scenario remains unaffected by the Project and no emission reduction is claimed for this part of CMM utilization. Through the implementation of the project, it is estimated that an average annual volume of 15.6 million cubic meters of CH<sub>4</sub> will be combusted and destroyed, which in the baseline scenario would otherwise be released directly into the atmosphere. It is estimated average annual 43,890 MWh electricity derived from CMM will be delivered to the Furong coal mines for self-use, which will displace electricity from the CCPG. Waste heat from the power generation process is recovered and utilized for coal miners. However, no ERs will be claimed for this component as conservative.

The verification team checked the Construction completion acceptance reports issued by Sichuan Furong Group's Limited Industrial Company and was able to confirm that it is implemented by phases. The project start date is 28 November 2007, which is the date when the four domestic generators each with a 500kW capacity were commissioned in Baijiao CMM power plant. By the end of year 2012, totally generation capacity of 13.144MW have been installed, namely 6.596MW have been installed in the Baijiao coal mine area, 3.50MW in Gongquan coal mine area and 3.048MW in Shanmushu coal mine area. 6.096MW in the Baijiao coal mine area and 3.50MW in Gongquan coal mine area have been put into commission on 25/05/2009 and 15/05/2009. 3.048MW in Shanmushu coal mine area has been put into commission since 01/09/2013 and another 3.048MW gas generator has been put into commission at Shanmushu coal mine since 01/10/2015.

Location	Installed capacity	Model	Waste heat boiler
Baijiao power plant	0.5 MW (1* 0.5MW) 6.096MW (2*3.048MW)	500GF1-2RW JMS620GS-S.L	Q2/500/0.28-5.5- 115/60

			QC12/500-2.4-1.0-200
Shanmushu power plant	6.096MW (2*3.048MW)	JMS620GS-S.L	Q12.4/493-1.75-0.8
Gongquan power plant	3.5MW(7*0.5MW)	500GF1-2RW	Q2/500/0.28- 1.0/120/60r

Sichuan Provincial Development and Reform Commission approved the installed capacity changes in the 'Approval of the installed capacity of the Sichuan Furong Coal Mine Methane Utilization Project', Chuan Fa Gai Neng Yuan Han [2013]536 dated 15 May 2013. The verification team reviewed the Chuan Fa Gai Neng Yuan Han [2013] and was able to confirm that 2 sets of 500GF1-2RW for back-up units only and the total actual capacity of the project activity will be about 15MW.

It's estimated that the proposed project could achieve GHG emission reductions of 215,387 tons of CO<sub>2e</sub> (with 21 of the GWP of CH<sub>4</sub>) annually in the registered PDD, or 282,954.3 tons of CO<sub>2e</sub> (with 28 of the GWP of CH<sub>4</sub>) annually.

## 2 VERIFICATION PROCESS

### 2.1 Method and Criteria

The overall validation, from Contract Review to Validation Report & Opinion, was conducted using CCSC internal procedures. CCSC verified the information contained in the documents reviewed against the requirements set in VCS Standard version 4.3, CDM M&P, the latest version of the CDM Validation and Verification Standard, and relevant UNFCCC requirements and applying standard auditing techniques.

### 2.2 Document Review

Verification was conducted using CCSC's procedures in line with the requirements specified in the VCS Standard version 4.3, CDM M&P, the latest version of the CDM Validation and Verification Standard, and relevant UNFCCC requirements and applying standard auditing techniques.

The CDM Project Design Document (CDM-PDD) and the Monitoring Report (VCS-MR) submitted by Goldchina Consultancy International Co., Ltd. and additional background documents related to the project design and baseline, i.e. country law, registered CDM-PDD, validation report, Approved methodology, Clarifications on Validation Requirements to be Checked by a certified validation body were reviewed.

Furthermore, crosschecks were made between information provided in the VCS-PD, CDM-PDD and information from sources other than those used.

### 2.3 Interviews

The follow-up interview was conducted during the site visit on 13/06/2022-14/06/2022 by Mr. YONG Hanlin (Team Leader), Mr.XU Fangzhou (Team Member) from CCSC, which is focused on the issues identified during the

desk review. The main topics of the interviews are summarized in Table 1.

**Table 1. Interview topics**

Interviewed Organization and Persons	Interview Topics
Sichuan Furong Group's Limited Industrial Company - Mr. Zhang Honghe, CDM Director - Mr. Chen Guiping, Engineer on duty - Mr. WANG Lu, Operator on duty - Mr. Liu Runsheng, Operator on duty - Mr. Liu Long, Operator on duty - Mr. Liu Long, Operator on duty - Wang Yuejian	⇄ Status of the CDM project implementation. ⇄ Any changes of the CDM project; ⇄ The Project on-site inspection – the evidences of construction, status and operation of key equipment, parameters monitoring and data processing activities, monitor equipment and calibration; ⇄ Compliance of the project implementation with the registered project design document; ⇄ Compliance with National Laws and Regulations. ⇄ Quality Management; organizational structure, responsibilities and competencies. Internal QA/QC Management procedures and document control (QA/QC) ⇄ Environmental Impacts ⇄ Preparation of Monitoring Report.
Goldchina Consultancy International Co., Ltd. - Mr. Li Xi, project manager - MR. Zheng Zhaoning, Technical Director	⇄ Compliance of the monitoring plan with the monitoring methodology; ⇄ Compliance of monitoring with the monitoring plan; ⇄ Assessment of data and calculation of GHG emission reductions.

## 2.4 Site Inspections

The assessment team performed the on-site verification on 13/06/2022-14/06/2022. The interviewed personnel and objective are listed in above table.

## 2.5 Resolution of Findings

The objective of this phase of the validation is to resolve issues that require further elaboration, research or expansion prior to CCSC's positive conclusion on the project design.

A Corrective Action Request (CAR) is raised, if one of the following situations occurs:

- (a) The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable, verifiable and additional emission reductions;
- (b) The applicable VCS requirements have not been met;
- (c) There is a risk that emission reductions cannot be monitored or calculated.

A Clarification Request (CL) is raised, if information is insufficient or not clear enough to determine whether the applicable VCS requirements have been met.

A Forward Action Request (FAR) may also be raised during validation, to identify issues related to project implementation that require review during the first verification of the project activity.

To guarantee the transparency of the validation process, the issues raised, the responses provided by the project participants, the means of validation of such responses and references to any resulting changes in the VCS-PD or supporting annexes are documented in the Appendix A.

### 2.5.1 Forward Action Requests

No FAR was raised during the verification process. Also there are no remaining from former verification and validation.

## 2.6 Eligibility for Validation Activities

Not applicable as China Classification Society Certification Co., Ltd. holds the accreditation for the validation and verification for projects under scope 8 and scope 10.

# 3 VALIDATION FINDINGS

## 3.1 Participation under Other GHG Programs

Through reviewing the registered PD and validation report at UNFCCC website, it was validated that the project has also been registered as a CDM project with reference No. 2677. By checking <https://registry.verra.org/app/projectDetail/VCS/1446>, it is confirmed that the project also registered as a VCS project. The project does not participate in the other emissions trading program by checking public information on Internet and interviewing with project owner.

The verification team reviewed issuance information in VCS/CDM registry system, and confirmed that GHG Emission Reductions Credits have been issued as follows:

**Table 2. List of GHG emission reduction credits**

Monitoring period	Credit Type	Program	Status
16/04/2010 - 31/12/2012	VCU	VCS	Issued
01/01/2013 - 31/12/2017	VCU	VCS	Submitted for issuance
01/01/2018 - 15/04/2020 (this monitoring period)	VCU	VCS	In progress

#### [Other Forms of Credit]

China has initiated ETS in July 2021, and as per the Notice (Huan ban qi hou [2021] No.9) issued by Ministry of Ecology and Environment of P.R.China (MEE), the fossil fuel power and/or heat generation plants are covered by China ETS, and also other seven industries will be included in the future.

However, it is confirmed that the project proponent Sichuan Furong Group's Limited Industrial Company is not included the mandatory emission control scheme and there is no emission cap enforced for the PP by checking the enforced company list in public information.

Also, PP has provided a “No Double Counting Statement” in which confirms that the PP has not issued and will not issue the GHG emission reductions generated during this monitoring period in any other GHG programmes.

In summary, CCSC verification team can conclude that net GHG emission reductions generated during this monitoring period have not been used and will not be used for compliance under other programs or mechanisms.

### 3.2 Methodology Deviations

Not applicable as not deviation for methodology.

### 3.3 Project Description Deviations

The post -registration changes on the project implementation and monitoring plan were described in the revised registered PDD version 08 dated 28/08/2013. Validation opinion was prepared by ERM CVS for post registration changes dated 09 September 2013 and approved by EB on 18/12/2013.

There are no deviations identified for the methodology applied to the project.

### 3.4 Grouped Project

Not applicable.

## 4 VERIFICATION FINDINGS

### 4.1 Project Implementation Status

CCSC has performed an on-site visit and found that the project involves coal mine methane capture and utilization in power generation at captive CMM power plants. Generator sets (with model number 500GF1-2RW, installed at Baijiao and Gongquan CMM power plant, and JMS620GS generators installed at Baijiao and newly built Shanmushu CMM power plant) have been installed to utilise CMM extracted from Furong Group's Baijiao, Shanmushu and Gongquan coal mines, and waste heat from the power generation process is recovered and utilized for coal miners. However, no ERs will be claimed for this component as conservative.

The project construction commenced on 31 August 2007, and the operation of the first generator was started on 28 November 2007. The project start date is 28 November 2007, which is the four domestic generators each with a 500kW capacity were commissioned in Baijiao CMM power plant (three 500GF1-2RW generators were moved from Baijiao to Gongquan in May to June 2012). By the end of year 2012, totally generation capacity of 13.144MW have been installed, namely 6.596MW have been installed in the Baijiao coal mine area, 3.50MW in Gongquan coal mine area and 3.048MW in Shanmushu coal mine area. 6.096MW in the Baijiao coal mine area and 3.50MW in Gongquan coal mine area have been put into commission on 25/05/2009 and 15/05/2009. 3.048MW in Shanmushu coal mine area has been put into commission since 01/09/2013 and another 3.048MW gas generator has been put into commission at Shanmushu coal mine since 01/10/2015. Based on the interview, and checking the nameplate of the facilities, the Project Completion acceptance Reports, the verifier confirm that the equipment and the project implementation are consistent with the approved revised PDD and previous MR. The implementation and operation status in terms of generators and waste heat boiler for each coal mine are confirmed as stated in the tables below separately.

Table 4-1 implementation status

Location	Installed capacity	Model	Waste heat boiler	Date put into operation
Baijiao power plant	0.5 MW (1* 0.5MW)	500GF1-2RW	Q2/500/0.28-5.5-115/60	28/11/2007
	6.096MW (2*3.048MW)	JMS620GS-S.L	QC12/500-2.4-1.0-200	25/05/2009
Shanmushu power plant	3.048MW	JMS620GS-S.L	Q12.4/493-1.75-0.8	01/09/2013
	3.048MW	JMS620GS-S.L	Q12.4/493-1.75-0.8	01/10/2015
Gongquan power plant	3.5MW(7*0.5MW)	500GF1-2RW	Q2/500/0.28-1.0/120/60r	15/05/2009

During the on-site visit and interview, the verification team checked the equipment that had been installed to monitor the parameters of  $MM_{ELEC}$ ,  $GEN_y$ ,  $CONSELEC,PJ$ , and  $PC_{CH4}$ , and confirmed that the installation of the monitoring equipment is consistent with the monitoring plan in the registered PDD.

The verification team review the daily and monthly electricity meters readings record for the electricity generation ( $GEN_y$ ), daily and monthly electricity meters readings record for  $CONSELEC,PJ$ . daily and monthly CMM consumption records ( $MM_{ELEC}$ ), and confirmed that  $MM_{ELEC}$  is automatically calculated by the installed monitoring system with monitored data by gas flow meters and methane concentration meters,  $GEN_y$  and  $CONSELEC,PJ$  are continuously monitored by on-site electricity meters, which are in line with the monitoring plan in the registered PDD.

The verification team also has reviewed the extracted gas analysis reports ( $PC_{NMHC}$ ) and confirmed that the analysis reports meet the requirements in the monitoring plan.

The verification team checked and verified the flow of information from data generation, aggregation, to recording, calculation and reporting. The verification team was able to trace the data for this parameter from its measurement source and confirms that it is correctly reported in the monitoring report and the emissions reduction spreadsheet.

Therefore, CCSC was able to confirm that there are no any material discrepancies between the actual monitoring system, and the monitoring plan set out in the project description and the applied methodology.

Although the national emission trading scheme has been launched since 16/07/2021 in China. It is confirmed that the project proponent Sichuan Furong Group's Limited Industrial Company is not included the mandatory emission control scheme and there is no emission cap enforced for the PP by checking the enforced company list in public information. The project is not a registered CCER project in China, according to the Regulation of Carbon Emission Trading, the emission reductions of the project activity are not eligible for transaction in China's ETS. Furthermore, the verification team check the letter of commitment for no-double counting submitted by the project owner, and confirm that the project owner claimed have not submitted, sought, request or received any recognition of reductions generated by the project during the verification period for which the project owner requested VCU issuance from any GHG program other than under the VCS program.

By checking the UNFCCC website (<https://cdm.unfccc.int/Projects/DB/DNV-CUK1244587133.21/view>), it is confirmed that no GHG emission reductions generated by the project activity has been issued as CERs during the fixed CDM crediting period. The emission reductions for the period of 16/04/2010-31/12/2012 have been issued as VCUs under VCS scheme. Therefore, it is concluded that the monitoring periods of the project is contiguous in line with the requirement of VCS standard and there is no no double counting issuance has occurred for this verified monitoring period 01/01/2018 to 15/04/2020 under both VCS and CDM programmes. Via the on-site interview, the project proponent confirmed the emission reductions for this verified period are only requested for VCUs issuance.

The verification team confirmed the project has implemented the activities that result in the SD contributions described in the monitoring report as following:

- SDG 7.1.2, Indicator Proportion of population with access to electricity.

As verified by on-site inspection, and via checking daily and monthly electricity generation report, 134052.7804 MWh electricity in this monitoring period, that is 60362.7336MWh in 2018, 59232.4396MWh in 2019 and 14457.6072MWh in 2020, and 461514.3052MWh electricity till the end

of this monitoring period were supplied. This contributes to the demands of the electricity of the local population.

- SDG 8.5.1, Indicator Number of jobs created.

As verified by on-site interview and by checking employee list, the verification team confirmed that 7 managers and engineers, 13 workers in Baijiao CMM power plant, 11 workers in gongquan CMM power plant and 12 workers in Shanmushu power plant were employed in the last monitoring periods and total more than 43 persons obtained jobs after the project implementation. This contributes to the job creation.

- SDG 13, Indicator Tonnes of greenhouse gas emissions avoided or removed.

As verified by on-site inspection, and via checking the emission reduction calculation sheet and the daily and monthly reading records, 841,244tCO<sub>2e</sub> GHG emission reductions are generated by the project activity during this monitoring period. And by checking the VCS verification reports for the previous monitoring periods, it is confirmed the cumulative emission reductions are 2,792,506 tCO<sub>2e</sub> since operation of the project activity. This contributes to achieve one of China's stated sustainable development priorities "Actively adapt to climate change and strengthen resistance capacity to climate risks in agriculture, forestry, water resources and other key fields, as well as cities, coastal regions and ecologically vulnerable areas".

- SDG 17.7.0, Indicator Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed.

As verified by on-site inspection and by checking the nameplates, the verification team confirmed that the model of GE JMS620GS-S.L 3MW level gas generators were installed to combust CMM and produce electricity, which contributes to introduce advanced CMM combustion technology to China.

In summary, CCSC was able to conclude that the project has been implemented as described in the project description.

## 4.2 Safeguards

### 4.2.1 No Net Harm

According to the EIA report completed by Chongqing Dehe Environmental Engineering Co., Ltd. in July 2007 and approved by Yibin EPB on August 29<sup>th</sup> 2007, the main impacts include dust & NO<sub>x</sub> air pollution, noise, wastewater and solid waste during the construction and operation of the project.

CCSC can confirm via EIA report and on site inspection that the project owner take measures, such as the installation of equipment, recycle and reuse of the wastewater, to mitigate the impacts. The verification team also confirmed the implementation of the project activities result in the CMM emission reduction, creating more job opportunities, providing clean and reliable electricity, Therefore, the proposed project has no negative environmental and socio-economic impacts.

#### 4.2.2 Local Stakeholder Consultation

The project proponent collected the comments for the proposed project via the meetings with local residents before the implementation of the project. All of the participants supported the construction and operation of the proposed project.

A feedback book is used to allow the local stakeholders to put their comments at each coal mine during the project implementation. CCSC check the feedback books and confirmed that the project owner did not receive any comments in the past years.

#### 4.3 AFOLU-Specific Safeguards

Not applicable.

#### 4.4 Accuracy of GHG Emission Reduction and Removal Calculations

[Fixed ex-ante parameters]

The following table describe for each parameter which data are fixed ex-ante. Data and parameters fixed ex-ante as listed in the monitoring report have been cross-checked and reviewed by the verification team as applicable against the validated PD, the registered monitoring plan and applied methodology as following:

- $Eff_{ELEC}$ , the efficiency of methane destruction in power plant

The verification team confirmed that the default value of 99.5% for  $Eff_{ELEC}$  is taken from IPCC.

- $GWP_{CH_4}$ , Global warming potential of methane

According to VCS Standard V4.3, for GHG emission reductions occurring on or before 31 December 2020, all ex-ante estimates and ex-post calculations may be converted to CO<sub>2e</sub> using either the GWP values from the IPCC Fourth Assessment Report (AR4) or those from AR5. The  $GWP_{CH_4}$  value in AR5 of 28 was applied for the proposed project. The verification team confirmed the applicability of  $GWP_{CH_4}$  value.

- $CEF_{CH_4}$ , Carbon emission factor for combusted methane

The value of 2.75 tCO<sub>2</sub>/tCH<sub>4</sub> is applied for the parameter of  $CEF_{CH_4}$  based on the methodology and the registered PDD, which is applicable.

- $D_{CH_4}$ , Density of methane under normal conditions (20°C and 101.325kPa) in the exhaust gases

The default value of  $D_{CH_4}$  is taken as 0.00067 tCH<sub>4</sub>/m<sup>3</sup> from IPCC, the verification team confirmed the applicability of  $D_{CH_4}$  value.

- $CEF_{ELEC}$ , Combined Margin Emission Factor for the CCPG

In the baseline scenario the coal mine consumed electricity from both the on-site captive plant and the CCPG, thus the combined emission factor should be applied, however due to the fact that on-site captive plant was closed as per the local government requirements, only considering the electricity from the CCPG is displaced. So the

CE<sub>ELEC</sub> is the same as CCPG emissions factor. CCSC checked the approved revised CDM PDD and the Validation opinion prepared by ERM CVS for post registration changes dated 09 September 2013, and confirmed that it is conservative. Therefore the CE<sub>ELEC</sub> 0.9745 tCO<sub>2</sub>/MWh is applied in the emission reduction calculations.

It is confirmed that the parameters listed above are fixed ex-ante and used for baseline and project emissions calculation in accordance with the applied methodology and methodological tools.

[Monitoring parameters]

The following table describe for each parameter which is to be measured according to the monitoring plan and how the verification team has verified that the actual monitoring complies with the monitoring plant and that data have been assessed to correctly support the GHG removals being claimed.

Parameter	Description	Value applied				Assessment
MM <sub>ELEC</sub>	Methane measured sent to power plant	Year	Baijiao	Gongquan	Shanmushu	The parameter is used to calculate the baseline emissions from release of methane into the atmosphere in year y that is avoided by the project activity (BE <sub>MR,y</sub> ), Project emissions from methane destroyed (PE <sub>MD</sub> ) and Project emissions from un-combusted methane (PE <sub>UM</sub> ). The verification team has checked the values from the meters readings and monthly records for the period from 01/01/2018 to 15/04/2020.  The meters were correctly installed and with an appropriate accuracy. The data are 100% transferred electronically and checked by the on-site operator, and stored in a protected data base.  The verification team checked and verified the flow of information from data generation, aggregation, to recording, calculation and reporting. The verification team was able to trace the data for this parameter from its measurement source and confirms that it is correctly reported in the monitoring report and the emissions reduction spreadsheet.
		01/01/2018-31/12/2018	4960.64	3234.39	4675.26	
		01/01/2019-31/12/2019	4762.63	2921.34	4661.81	
		01/01/2020-15/04/2020	1392.03	665.23	1011.10	
		Total	11115.30	6820.96	10348.17	
GEN <sub>y</sub>	Electricity generated by gas generators	Year	Baijiao	Gongquan	Shanmushu	The parameter is used to calculate the baseline emissions from the production of power and supply to gas grid replaced by the project activity (BE <sub>USE,y</sub> ), the verification team has checked the values from the meters readings and monthly records for the period from 01/01/2018 to 15/04/2020.  The electricity meters were correctly installed and with an appropriate accuracy.
		01/01/2018-31/12/2018	25576.608	12176.640	24760.992	
		01/01/2019-31/12/2019	25807.776	10881.216	24677.088	

		<table border="1"> <tr> <td>01/01/2020-15/04/2020</td> <td>6992.256</td> <td>2745.072</td> <td>5350.560</td> </tr> <tr> <td>Total</td> <td>58376.640</td> <td>25802.928</td> <td>54788.640</td> </tr> </table>	01/01/2020-15/04/2020	6992.256	2745.072	5350.560	Total	58376.640	25802.928	54788.640	<p>The data are 100% transferred electronically and checked by the on-site operator, and stored in a protected data base.</p> <p>The verification team checked and verified the flow of information from data generation, aggregation, to recording, calculation and reporting. The verification team was able to trace the data for this parameter from its measurement source and confirms that it is correctly reported in the monitoring report and the emissions reduction spreadsheet.</p>							
01/01/2020-15/04/2020	6992.256	2745.072	5350.560															
Total	58376.640	25802.928	54788.640															
CON <sub>ELEC,PJ</sub>	Additional electric power consumption by the project in year y	<table border="1"> <thead> <tr> <th>Year</th> <th>Baijiao and Shanmushu*</th> <th>Gongquan</th> </tr> </thead> <tbody> <tr> <td>01/01/2018-31/12/2018</td> <td>1983.4344</td> <td>168.072</td> </tr> <tr> <td>01/01/2019-31/12/2019</td> <td>1960.8204</td> <td>172.820</td> </tr> <tr> <td>01/01/2020-15/04/2020</td> <td>577.9040</td> <td>52.3768</td> </tr> <tr> <td>Total</td> <td>4522.1588</td> <td>393.2688</td> </tr> </tbody> </table> <p>*.Additional electricity consumption for capture and use of methane in Baijiao and Shanmushu coalmine can not be separated.</p>	Year	Baijiao and Shanmushu*	Gongquan	01/01/2018-31/12/2018	1983.4344	168.072	01/01/2019-31/12/2019	1960.8204	172.820	01/01/2020-15/04/2020	577.9040	52.3768	Total	4522.1588	393.2688	<p>The parameter is used to calculate the project emissions from energy use to capture and use methane (PE<sub>ME</sub>), the verification team has checked the values from the meters readings and monthly records for the period from 01/01/2018 to 15/04/2020.</p> <p>The electricity meters were correctly installed and with an appropriate accuracy.</p> <p>The data are 100% transferred electronically and checked by the on-site operator, and stored in a protected data base.</p> <p>The verification team checked and verified the flow of information from data generation, aggregation, to recording, calculation and reporting. The verification team was able to trace the data for this parameter from its measurement source and confirms that it is correctly reported in the monitoring report and the emissions reduction spreadsheet.</p>
Year	Baijiao and Shanmushu*	Gongquan																
01/01/2018-31/12/2018	1983.4344	168.072																
01/01/2019-31/12/2019	1960.8204	172.820																
01/01/2020-15/04/2020	577.9040	52.3768																
Total	4522.1588	393.2688																
PC <sub>CH4</sub>	Concentration (in volume) of methane in extracted gas (%), measured on wet basis	34.15% (average)	<p>Methane concentration (PC<sub>CH4</sub>) is measured real-time by infrared methane concentration meters mounted on the gas pipelines using nondispersive infrared gas analysis technique. The methane concentration meters work with flow meters to measure and calculate methane sent to power plant (MM<sub>ELEC</sub>) automatically.</p> <p>The methane concentration meters were correctly installed and with an appropriate accuracy.</p> <p>The verification team was able to trace the data for this parameter from its measurement source and</p>															

			confirms that it is correctly reported in the monitoring report and the emissions reduction spreadsheet.																
PC <sub>NMHC</sub>	Concentration (in volume) of NMHC in extracted gas	<table border="1"> <thead> <tr> <th>Year</th> <th>Baijiao CMM power plant</th> <th>Gongquan CMM power plant</th> <th>Shanmushu CMM power plant</th> </tr> </thead> <tbody> <tr> <td>2018</td> <td>0.015%</td> <td>0.016%</td> <td>0.014%</td> </tr> <tr> <td>2019</td> <td>0.015%</td> <td>0.016%</td> <td>0.015%</td> </tr> <tr> <td>2020</td> <td>0.015%</td> <td>0.015%</td> <td>0.016%</td> </tr> </tbody> </table>	Year	Baijiao CMM power plant	Gongquan CMM power plant	Shanmushu CMM power plant	2018	0.015%	0.016%	0.014%	2019	0.015%	0.016%	0.015%	2020	0.015%	0.015%	0.016%	<p>The parameter is used to calculate the Project emissions from methane destroyed (PE<sub>MD</sub>), the verification team has checked the values from extracted gas analysis reports for the period from 01/01/2018 to 15/04/2020.</p> <p>The qualified lab, Sichuan Gaseous Products Quality Supervision and Inspection Station, analyzed the extracted gas with hydrogen flame ionization detector using gas phase chromatography.</p> <p>The verification team checked and verified the flow of information from data generation, aggregation, to recording, calculation and reporting. The verification team was able to trace the data for this parameter from its measurement source and confirms that it is correctly reported in the monitoring report and the emissions reduction spreadsheet.</p>
		Year	Baijiao CMM power plant	Gongquan CMM power plant	Shanmushu CMM power plant														
		2018	0.015%	0.016%	0.014%														
		2019	0.015%	0.016%	0.015%														
2020	0.015%	0.015%	0.016%																
CE <sub>NMHC</sub>	Carbon emission factor for combusted non methane hydrocarbons (various)	PC <sub>NMHC</sub> <1%, emission from NMHC destruction is ignored.	<p>PC<sub>NMHC</sub> is less than 1%, thus emission from NMHC destruction is ignored.</p> <p>The assessment for the parameter of PC<sub>NMHC</sub> is included in the about table.</p>																

[Calculation of baseline GHG emissions]

Means of verification	<p>The verification team has performed the following activities to assess the data and calculations of GHG emission reductions achieved by the Project as per the methodology:</p> <ul style="list-style-type: none"> <li>• Through desk review and on-site inspection on the daily and monthly electricity meters readings record for the electricity generation, the daily and monthly CMM consumption records, to verify that a complete set of data for the specified monitoring period is available.</li> <li>• Information provided in the monitoring report has been cross-checked with other sources such as meters readings, monthly records.</li> <li>• Review the calculations of baseline GHG emissions have been carried out in accordance with the formulae and methods described in the registered PDD, and the methodology;</li> <li>• Review emission factors, IPCC default values, GWPs and other reference values as per the registered PDD.</li> </ul>
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Findings	<p>According to the registered CDM-PDD/VCS-PD and the applied methodology, the baseline emissions are calculated as follows:</p> $BE_y = BE_{MD,y} + BE_{MR,y} + BE_{Use,y}$ <p>Where:</p> <p><math>BE_{MD,y}</math> = Baseline emissions from destruction of methane in the baseline scenario in year y (tCO<sub>2</sub>e)</p> <p><math>BE_{MR,y}</math> = Baseline emissions from release of methane into the atmosphere in year y that is avoided by the project activity (tCO<sub>2</sub>e)</p> <p><math>BE_{Use,y}</math> = Baseline emissions from the production of power and supply to gas grid replaced by the project activity in year y (tCO<sub>2</sub>e)</p> <p><b><u>Methane destruction in the baseline</u></b></p> <p>In the baseline scenario, a small portion of the extracted CMM is utilized by residential users through the gas grid. Emission reduction of <math>BE_{MD,y}</math> is not considered and methane destruction in the baseline is set to zero. This is conservative.</p> <p><b><u>Methane released into the atmosphere</u></b></p> $BE_{MR,y} = GWP_{CH_4} \times MM_{ELEC}$ <p>Where:</p> <p><math>GWP_{CH_4}</math> = Global warming potential of methane (28tCO<sub>2</sub>e/tCH<sub>4</sub>)</p> <p><math>MM_{ELEC}</math> = Methane measured sent to power plant (tCH<sub>4</sub>)</p> $BE_{Use,y} = GEN_y \times CEF_{ELEC}$ <p>The verification team has checked the values from the meters readings and monthly records for the period from 01/01/2018 to 15/04/2020, and the calculation process in the MR and the ER spreadsheet.</p> <p>The verification team confirmed the calculation of baseline emissions as reported in the MR and the ER spreadsheet is correct and rounded down to integers.</p>
Conclusion	<p>CCSC verification team confirms that:</p> <ul style="list-style-type: none"> <li>● A complete set of data for the monitoring period is available.</li> <li>● Information on the baseline GHG emission calculation provided in the monitoring report has been cross-checked with other sources.</li> <li>● Calculations of baseline emissions have been carried out in accordance with the formulae and methods described in the monitoring plan and the applied methodology document.</li> </ul>

	<ul style="list-style-type: none"> <li>• There are no assumptions applied.</li> <li>• Appropriate emission factor of the power grid has been correctly applied.</li> </ul>
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[Calculation of project GHG emissions]

Means of verification	<p>The verification team has performed the following activities to assess the data and calculations of GHG emission reductions achieved by the Project as per the methodology:</p> <ul style="list-style-type: none"> <li>• Through desk review and on-site inspection on the daily and monthly electricity meters readings record for <math>CONS_{ELEC,PJ}</math> and <math>MM_{ELEC}</math>, the extracted gas analysis reports (<math>PC_{NMHC}</math>), the default value of <math>CEF_{CH4}</math>, <math>Eff_{ELEC}</math> and <math>GWP_{CH4}</math>, to verify that a complete set of data for the specified monitoring period is available.</li> <li>• Information provided in the monitoring report has been cross-checked with other sources such as meters readings, monthly record, gas analysis reports.</li> <li>• Review the calculations of project emissions have been carried out in accordance with the formulae and methods described in the registered PDD, and the methodology;</li> <li>• Review emission factors, IPCC default values, GWPs and other reference values as per the registered PDD.</li> </ul>
Findings	<p>According to the registered CDM-PDD/VCS-PD and the applied methodology, the project emissions are calculated as follows:</p> <p><b><u>Project emissions</u></b></p> <p>Project emissions are defined by the following equation:</p> $PE_y = PE_{ME} + PE_{MD} + PE_{UM}$ <p>Where:</p> <p><math>PE_{ME}</math> = Project emissions from energy use to capture and use methane (tCO<sub>2e</sub>)</p> <p><math>PE_{MD}</math> = Project emissions from methane destroyed (tCO<sub>2e</sub>)</p> <p><math>PE_{UM}</math> = Project emissions from un-combusted methane (tCO<sub>2e</sub>)</p> <p><b><u>Project emissions from energy use to capture and use methane</u></b></p> $PE_{ME} = CONS_{ELEC,PJ} \times CEF_{ELEC}$ <p>Where:</p> <p><math>CONS_{ELEC,PJ}</math> = Additional electricity consumption for capture and use of methane (MWh)</p> <p><math>CEF_{ELEC}</math> = Carbon emissions factor of electricity used by Furong coal mines (tCO<sub>2e</sub>/MWh)</p> <p><b><u>Project emissions from methane destroyed</u></b></p>

	$PE_{MD} = MD_{ELEC} \times ( CEF_{CH_4} + r \times CEF_{NMHC} )$ $r = PC_{NMHC} / PC_{CH_4}$ <p>Where:</p> <p><math>MD_{ELEC}</math> = Methane destroyed through power generation (tCH<sub>4</sub>)</p> <p><math>CEF_{CH_4}</math> = Carbon emission factor for combusted methane (2.75 tCO<sub>2</sub>/tCH<sub>4</sub>)</p> <p><math>CEF_{NMHC}</math> = Carbon emission factor for combusted non methane hydrocarbons (the concentration varies and, therefore, to be obtained through periodical analysis of captured methane) (tCO<sub>2</sub>/tNMHC)</p> <p><math>r</math> = Relative proportion of NMHC compared to methane</p> <p><math>PC_{NMHC}</math> = Concentration (in mass) of methane in extracted gas (%)</p> <p><math>PC_{CH_4}</math> = NMHC concentration (in mass) in extracted gas (%)</p> <p>The verification team has reviewed the extracted gas analysis reports (<math>PC_{NMHC}</math>) and confirmed that the concentration of NMHC in extracted CMM from Furong coal mines only accounts no more than 0.016% in volume according to the annual tests, which is much lower than 1%. Therefore, the combustion emission from NMHC is ignored in ex ante emission calculations.</p> <p>Thus</p> $PE_{MD} = MD_{ELEC} \times CEF_{CH_4}$ $MD_{ELEC} = MM_{ELEC} \times Eff_{ELEC}$ <p><b><u>Project emissions from un-combusted methane(PE<sub>UM</sub>)</u></b></p> <p>The project emissions from un-combusted methane are calculated as following:</p> $PE_{UM} = GWP_{CH_4} \times MM_{ELEC} \times (1 - Eff_{ELEC} )$ <p>The verification team has checked the values from the meters readings and monthly records, gas analysis reports for the period from 01/01/2018 to 15/04/2020, and the calculation process in the MR and the ER spreadsheet.</p> <p>The verification team confirmed the calculation of project emissions as reported in the MR and the ER spreadsheet is correct and rounded down to integers.</p>
Conclusio n	CCSC verification team confirms that: <ul style="list-style-type: none"> <li>● A complete set of data for the monitoring period is available.</li> <li>● Information on the project GHG emission calculation provided in the monitoring report has been cross-checked with other sources.</li> <li>● Calculations of project emissions have been carried out in accordance with the formulae and methods described in the monitoring plan and the applied methodology document.</li> <li>● There are no assumptions in emission reductions calculation.</li> </ul>

	<ul style="list-style-type: none"> <li>• Appropriate emission factor of the power grid has been correctly applied.</li> </ul>
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[Calculation of Leakage GHG emissions]

Means of verification	The verification team has reviewed the leakage emission calculation as per the registered PDD and the applied methodology.
Findings	According to the ACM0008., Ver.04, CDM PDD and the VCS-PD, no leakage need to be considered for the Project.
Conclusion	<p>CCSC verification team confirms that:</p> <ul style="list-style-type: none"> <li>• A complete set of data for the monitoring period is available.</li> <li>• Information on the project GHG emission calculation provided in the monitoring report has been cross-checked with other sources.</li> <li>• Calculations of project emissions have been carried out in accordance with the formulae and methods described in the monitoring plan and the applied methodology document.</li> <li>• There are no assumptions in emission reductions calculation.</li> <li>• Appropriate emission factor of the power grid has been correctly applied.</li> </ul>

[Summary of calculation of GHG emission reductions or net anthropogenic GHG removals by sinks]

Means of verification	The verification team has reviewed the calculation of GHG emission reductions in the final MR and the ER spreadsheet as per the PDD and the applied methodology.				
Findings	The emission reductions during the monitoring period (01/01/2018 to 15/04/2020) are calculated as:				
	Vintage	BE (tCO <sub>2e</sub> )	PE (tCO <sub>2e</sub> )	LE (tCO <sub>2e</sub> )	ER (tCO <sub>2e</sub> )
		A	B	C	=INT(A-B-C)
	01/01/2018-31/12/2018	421,288	39,115	0	382,173
	01/01/2019-31/12/2019	405,483	37,589	0	367,894
	01/01/2020-15/04/2020	100,617	9,440	0	91,177
	Total	927,388	86,144	0	841,244
	The team confirmed the calculation of emission reductions as reported in the MR and the ER spreadsheet is correct.				
	Based on the above assessment, the emission reduction during the monitoring period (01/01/2018 to 15/04/2020) is verified as 841,244 tCO <sub>2e</sub> . The verification team confirmed that the estimated emission reduction with the 28 of GWP <sub>CH4</sub> is 719,496				

	<p>according to the registered ER calculation sheet and updated ER calculation sheet prepared by the project proponent. Thus, the actual emission reduction is 17.06% higher than the estimated emission reductions. For the CMM project, the increase of emission reductions means the increase of CMM consumption and electricity generation. The impact on the additionality of the increases are demonstrated as following:</p> <p>By checking the CMM consumption records, it is confirmed that the actual CMM consumption is 15.24% higher than the estimated CMM consumption. But the price of the CMM was considered as zero in the registered PDD, therefore, the increase of the CMM consumption has no impact on additionality.</p> <p>The estimated electricity supply of the project in the monitoring period is 109901.6393MWh based on the registered ER calculation sheet, and the actual electricity supplied by the project in the monitoring period is 138968.2080 MWh, which is 26.45% higher than the estimated value.</p> <p>According to the registered PDD, the project IRR will cross the benchmark when the electricity supplied by the project increase 300%. Therefore, the increase of 26.46% of the electricity supply has no impact on the additionality.</p>
Conclusion	CCSC verification team confirms that: <ul style="list-style-type: none"> <li>● A complete set of data for the monitoring period is available.</li> <li>● Information provided in the monitoring report has been cross-checked with other sources;</li> <li>● Calculations of baseline emissions, and project activity emissions and leakage, as appropriate, been carried out in accordance with the formulae and methods described in the monitoring plan and the applied methodology document.</li> <li>● There are no assumptions in emission reductions calculation.</li> <li>● Appropriate emission factor of the power grid has been correctly applied.</li> </ul>

#### 4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

The monitoring has been carried out in accordance with the monitoring plan contained in the VCS-PD and CDM PDD.

As a result of verification of the ER calculation process, the assessment team confirmed that all the parameters required for the determination of the emission reductions have been included in the MR Report and ER Calculation Spreadsheet and are consistent with the applied methodology ACM0008, Ver.04 and the monitoring plan contained in the VCS-PD and CDM PDD. The parameters are complete in this monitoring period.

After verifying the reported figures with the raw data sources, it's confirmed that the values of the parameters from the raw data sources are consistent with those quoted in the ER Calculation Spreadsheet and the MR Report. The verification process for the same has been clearly described above in section 4.4 of the report.

The verification team review the calibration reports for electricity meters, gas flow meters, methane concentration meters, and the certificates for the calibration organizations, and confirmed the summarized calibration information of the meters in the below tables.

Table 4-1 Calibration of meters installed for additional electric power consumption (CONS<sub>ELEC,PJ</sub>)

Location	Baijiao	Shanmushu	Gongquan
Type	Electricity meter	Electricity meter	Electricity meter
Accuracy class	0.5S/0.5	0.5	0.5S
Serial number	0045641220/ 45386238	13442301/ 13442265	45386237
Calibration frequency	yearly	yearly	yearly
Date of previous calibration	10/12/2017 05/12/2018 01/12/2019	10/12/2017 05/12/2018 01/12/2019	10/12/2017 05/12/2018 01/12/2019
Calibration Entity	Electric Energy Metrological Station of Gongxian Quality Supervision Bureau with the certification paper, which was accredited by Sichuan Yinbin Quality Supervision Bureau on 20/11/2015 and 16/11/2018, validity for 3 years.		

Table 4-2 Calibration information of meters installed for electricity generation by CMM power plants (GENy)

Location	Baijiao	Gongquan	Shanmushu
Type	Electricity meter	Electricity meter	Electricity meter
Accuracy class	0.5/0.5/0.2	0.5	0.5S
Serial number	2510034/13260114 /1005031770071	13260124	190970070
Calibration frequency	yearly	yearly	year
Date of last calibration	01/04/2017 25/03/2018 20/03/2019 15/03/2020	01/04/2017 25/03/2018 20/03/2019 15/03/2020	01/04/2017 25/03/2018 20/03/2019 15/03/2020
Calibration Entity	Electric Energy Metrological Station of Gongxian Quality Supervision Bureau with the certification paper, which was accredited by Sichuan Yinbin Quality Supervision Bureau on 20/11/2015 and 16/11/2018, validity for 3 years.		

Table 4-3 Calibration information of gas flow meters and methane concentration meters

meter	Gas flow meter			methane concentration meter		
mine	Baijiao	Gongquan	Shanmushu	Baijiao	Gongquan	Shanmushu
Accuracy class	0.5	0.5	0.5	0.5	0.5	0.5
Serial number	120894	1528	09005/09001	2484/1101	1243	1414
Calibration frequency	yearly	yearly	yearly	yearly	yearly	yearly
Date of calibration	19/06/2017 19/06/2018 19/06/2019	19/06/2017 19/06/2018 19/06/2019	19/06/2017 19/06/2018 19/06/2019	19/06/2017 19/06/2018 19/06/2019	19/06/2017 19/06/2018 19/06/2019	19/06/2017 19/06/2018 19/06/2019
Calibration Entity	Chongqing Substation of National Petroleum & Natural-Gas Measuring Station With High Flux with the certification No. 201700062					

## 4.6 Non-Permanence Risk Analysis

Not applicable as a renewable project.

# 5 VERIFICATION CONCLUSION

CCSC has been commissioned by Goldchina Consultancy International Co., Ltd. to perform the verification of greenhouse gas emission reductions of the project activity “Sichuan Furong Coal Mine Methane Utilization Project” (UNFCCC Ref. No. 2677 VCS Ref. No. 1446).

The management of Sichuan Furong Group’s Limited Industrial Company is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the project’s Monitoring Plan in the VCS-PD.

Our verification approach was based on the requirements as defined under the applicable VCS standards and relevant UNFCCC requirements. Our approach is risk-based, drawing on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these. The verification can confirm that:

- the project is implemented and operated as per the VCS-PD and CDM PDD;
- the monitoring plan in VCS-PD and CDM PDD is as per the applied methodology;
- the monitoring complies with the monitoring plan in the VCS-PD and CDM PDD;
- the monitoring report and other supporting documents provided are complete and verifiable and in accordance with the applicable VCS and CDM requirements;
- the installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately;
- the monitoring system is in place and generates GHG emission reductions data;
- the GHG emission reductions are calculated without material misstatements.

In our opinion, the GHG emission reductions for “Sichuan Furong Coal Mine Methane Utilization Project” during the monitoring period 01/01/2018 to 15/04/2020 as reported in Monitoring Report, prepared on the basis of the project’s Monitoring Plan are fairly stated. Based on the information we have seen and evaluated, we confirm the following statement:

Verification period: 01/01/2018 to 15/04/2020

Verified GHG emission reductions and removals in the above verification period:

Vintage	Baseline emissions or removals (tCO <sub>2</sub> e)	Project emissions or removals (tCO <sub>2</sub> e)	Leakage emissions (tCO <sub>2</sub> e)	Net GHG emission reductions or removals (tCO <sub>2</sub> e)

01/01/2018-31/12/2018	421,288	39,115	0	382,173
01/01/2019-31/12/2019	405,483	37,589	0	367,894
01/01/2020-15/04/2020	100,617	9,440	0	91,177
Total	927,389	86,144	0	841,244

# APPENDIX A: ABBREVIATIONS

Abbreviations	Full texts
AFOLU	Agriculture, Forestry and Other Land Use
BM	Build Margin
CAR	Corrective Action Request
CCER	China Certified Emission Rrductions
CDM	Clean Development Mechanism
CL	Clarification Request
CCSC	China Classification Society Certification Co., Ltd.
CH <sub>4</sub>	Methane
CM	Combined Margin
CMM	Coal Mine Methane
CO <sub>2</sub>	Carbon dioxide
CO <sub>2</sub> e	Carbon dioxide equivalent
DOE	Designated Operation Entity
DNA	Designated National Authority
CDM-EB	CDM Executive Board
EF	Emission Factor
EIA	Environmental Impact Assessment
FAR	Forward Action Request
FSR	Feasibility Study Report
GHG(s)	Greenhouse gas(es)
GS	Golden Standard
IPCC	Intergovernmental Panel on Climate Change
MEE	Ministry of Ecology and Environment of the People's Republic of China

MP	Monitoring Plan
CCPG	Central China Power Grid
OM	Operating Margin
PD	Project Description
PP	Project Participant
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Verified Carbon Standard
VCU	Voluntary Carbon Unit
VVB	Validation / Verification Body

# APPENDIX B: COMPETENCE OF TEAM MEMBERS AND TECHNICAL REVIEWERS

CCS 认证公司  
CHINA CERTIFICATION SERVICE

Appendix B

## CERTIFICATE OF COMPETENCE

Date of issue: 20/01/2022

Mr. Yong Hanlin

Has been qualified in accordance with *CDM Personnel Competence Requirements and Professional Competence Evaluation Instructions (CDMI0301)* as

- CDM validator for Technical Area(s): TA1.1/TA1.2/TA8.1/TA10.1
- CDM verifier for Technical Area(s): TA1.1/TA1.2/TA8.1/TA10.1
- Technical expert for Technical Area(s): \_\_\_\_\_



Li Honglin  
CCSC General Manager

CCS 认证公司  
CHINA CERTIFICATION SERVICE

Appendix B

## CERTIFICATE OF COMPETENCE

Date of issue: 20/01/2022

Mr. Xu Fangzhou

Has been qualified in accordance with *CDM Personnel Competence Requirements and Professional Competence Evaluation Instructions (CDMI0301)* as

- CDM validator for Technical Area(s): TA1.2/TA3.1
- CDM verifier for Technical Area(s): TA1.2/TA3.1
- Technical expert for Technical Area(s): \_\_\_\_\_



Li Honglin  
CCSC General Manager

CCS 认证公司  
CHINA CERTIFICATION SERVICE

Appendix B

## CERTIFICATE OF COMPETENCE

Date of issue: 20/01/2022

Mr. Tan Wenbin

Has been qualified in accordance with *CDM Personnel Competence Requirements and Professional Competence Evaluation Instructions (CDMI0301)* as

- CDM validator for Technical Area(s): TA1.2/TA5.2/TA8.1/TA10.1
- CDM verifier for Technical Area(s): TA1.2/TA5.2/TA8.1/TA10.1
- Technical expert for Technical Area(s): \_\_\_\_\_



Li Honglin  
CCSC General Manager

# APPENDIX C: DOCUMENTS REVIEWED OR REFERENCED

- /1/ Monitoring report, version 2.0, dated 18/06/2022
- /2/ ER calculation spreadsheet
- /3/ CDM registered PDD version 07 and approved revised PDD version 08 dated 28 August 2013
- /4/ CDM validation report prepared by DNV, 12 April 2010 Previous CDM and VCS verification reports
- /5/ Validation opinion prepared by ERM CVS for post registration changes, 09 September 2013
- /6/ VCS PD version 01 and version 02
- /7/ VCS Standard version 4.3
- /8/ No double Counting Statement issued by the PPs
- /9/ CDM methodology: Consolidated baseline methodology for coal bed methane, coal mine methane and ventilation air methane capture and use for power (electrical or motive) and heat and/or destruction by flaring or catalytic oxidation, ACM0008 version 04
- /10/ 2006 IPCC Guidelines for National Greenhouse Gas Inventories
- /11/ PP VCS issuance representation
- /12/ CDM Project Management Manual
- /13/ CDM monitoring training records
- /14/ Nameplates of the equipment
- /15/ Daily electricity meters readings record for the electricity generation (GENy) at Baijiao, Shanmushu and Gongquan CMM power plant
- /16/ Monthly electricity generation (GENy) report at Baijiao, Shanmushu and Gongquan CMM power plant
- /17/ Daily electricity meters readings record for  $CONSE_{Elec,PJ}$  at Baijiao, Shanmushu and Gongquan pump stations
- /18/ Daily CMM consumption records at Baijiao, Shanmushu and Gongquan power plants
- /19/ Monthly CMM consumption records at Baijiao, Shanmushu and Gongquan power

plants

- /20/        Extracted Gas analysis reports for Baijiao and Gongquan, Sichuan Gaseous Products Quality Supervision and Inspection Station
- /21/        Calibration reports for electricity meters installed at CMM power plants, by Electric Energy Metrological Station of Gongxian Quality Supervision Bureau
- /22/        Calibration reports for electricity meters for electricity meters installed at pump stations for additional electricity consumptions, by Electric Energy Metrological Station of Gongxian Quality Supervision Bureau
- /23/        Calibration reports for gas flow meters, Chongqing Substation of National Petroleum & Natural-Gas Measuring Station With High Flux
- /24/        Calibration reports for methane concentration meters, Chongqing Substation of National Petroleum & Natural-Gas Measuring Station With High Flux
- /25/        Certificate of Electric Energy Metrological Station of Gongxian Quality Supervision Bureau, by Sichuan Yinbin Quality Supervision Bureau
- /26/        Verification Regulation of Electrical Energy Meters with Electronics (JJG 596-1999), by General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China
- /27/        Verification Regulation of Electromechanical Meters for Measuring Alternating-current Electrical Energy (JJG 307-2006), by General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China
- /28/        Certificate of Sichuan Gaseous Products Quality Supervision and Inspection Station, by Sichuan Quality Supervision Bureau
- /29/        Regulation of Carbon Emission Trading, issued by Ministry of Ecology and Environment of China
- /30/        Enforced company list in China ETS trade scheme, issued by Ministry of Ecology and Environment of China

# APPENDIX D: RESOLUTION OF CORRECTIVE ACTION REQUESTS AND CLARIFICATION REQUESTS

Two CAR, Four CLs and Zero FAR were raised in this verification.

Findings	PP's response	Verification team's conclusion
<p><b>CL-1:</b> The information about other forms of credit, eg. ETS and other binding limits and other forms of Environmental credits, is absent in the MR. Please clarify and elaborate that in section 1.10 of VCS-MR.</p>	<p>The information about other forms of credit, eg. ETS and other binding limits and other forms of Environmental credits was clarify and elaborate in 1.10 of the MR.</p>	<p>The verification team reviewed the revised MR and confirmed that the information about other form of credit has been included and demonstrate the double counting issues in section 1.10. Hence, the CL-1 is closed out.</p>
<p><b>CL-2:</b> The socio-economic impacts were not demonstrated in the section 2.1 of the MR version 01, which is not in line with the VCS MR template.</p>	<p>The socio-economic impacts are demonstrated in the section 2.1 of the MR</p>	<p>The verification team reviewed the revised MR and confirmed that the socio-economic impacts has been demonstrated in the section 2.1 of the MR. Hence, the CL-2 is closed out.</p>
<p><b>CAR-1:</b> The value of <math>BE_{MR,y}</math>, <math>BE_{Use,y}</math>, <math>PE_{ME}</math>, <math>PE_{MD}</math> and <math>PE_{UM}</math> in the MR version 01 is not consistent with the value in the ER spreadsheet.</p>	<p>Those value was corrected to consistent with the value in the ER spreadsheet</p>	<p>The revised ER spreadsheet has been validated. And the revised MR has been validated. The baseline emissions and project emissions in MR are consistent with these in the ER spreadsheet. Hence, the CAR-1 is closed out.</p>