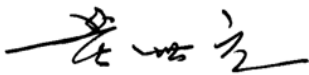


**Validation report form for Renewal of GS programme of activities period  
(Version 02.0)**

*Complete this form in accordance with the instructions attached at the end of this form.*

**BASIC INFORMATION**

<b>Title of the programme of activities (PoA)</b>	Sichuan Rural Poor-Household Biogas Development Programme (GS1239)
<b>Number and duration of the next period</b>	2 <sup>nd</sup> (11/04/2019 to 10/04/2026)
<b>Version number of the validation report</b>	02.2
<b>Completion date of the validation report</b>	31/01/2021
<b>Version number of PoA-DD to which this validation report applies</b>	3.4
<b>Date of the POA-DD to which this report applies</b>	22/01/2021
<b>Coordinating/managing entity (CME)</b>	Chengdu Oasis Science & Technology Co., Ltd
<b>Host Parties</b>	China
<b>Applied methodologies and standardized baselines</b>	AMS-I.I.– Biogas/biomass thermal applications for households/small users (version 04); AMS-III.R.– Methane recovery in agricultural activities at household/small farm level (version 03)
<b>Certification Pathway (Project Certification/Impact Statements &amp; Products)</b>	Project Certification (Design Certification Renewal)
<b>Activity Requirements applied (mark GS4GG if none relevant)</b>	GS4GG Renewable Energy Activities (Version 1.2)
<b>Product Requirements applied</b>	N/A
<b>Regular/Retroactive:</b>	Retroactive
<b>SDG Impacts:</b>	SDG 3 (Good Health and Well Being) SDG 6 (Clean Water and Sanitation) SDG 7 (Affordable and Clean Energy) SDG 8 (Decent work and economic growth) SDG 13 (Climate Action)
<b>Name and UNFCCC reference number of the DOE</b>	China Classification Society Certification Company (CCSC) Ref. Number: E-0046
<b>Name, position and signature of the approver of the validation report</b>	<b>Mr. HUANG Shiyuan, General Manager</b> 

## SECTION A. Executive summary

>>

Chengdu Oasis Science & Technology Co., Ltd has commissioned China Classification Society Certification Company (hereafter referred to as “CCSC”) to assess the information in the GS-PoA-DD (hereinafter PoA-DD) for design certification renewal of the Programme of Activities titled “Sichuan Rural Poor-Household Biogas Development Programme (GS1239)” (hereafter referred to as “the PoA”) against the requirements stated for the registration under Gold Standard for the Global Goals Renewable Energy Activities Requirements (GS4GG REA Requirements, Version 1.2, 24/10/2019)<sup>[6]</sup> which is designed to be read in conjunction with Gold Standard for the Global Goals Principles & Requirements (GS4GG, Version 1.2, 24/10/2019)<sup>[6]</sup>, the Methodology AMS-I.I.–Biogas/biomass thermal applications for households/small users (version 04); AMS-III.R.–Methane recovery in agricultural activities at household/small farm level (version 03), GS4GG GHG Emissions Reduction & Sequestration Product Requirements (Version 1.2, 10/2019) and associated documents, UNFCCC criteria for the Clean Development Mechanism, CDM Validation and Verification Standard for Programme of Activities (VVS-PA, Version 02.0) and host country criteria.

In the course of the validation, no Corrective Action Request (CAR), no Clarification Request (CL) and no Forward Action Request (FAR) were raised.

### A.1. Objective

The objective of the validation is as follows:

- Ensure a thorough, independent assessment of the PoA submitted for the design certification renewal of a proposed GS PoA against the applicable GS and CDM requirements.
- Report the results of its assessment in a validation report. Only if the PoA complies with the applicable GS and CDM requirements through validation shall the validation report include a positive validation opinion.
- Submit the validation report, along with the supporting documents to the Gold Standard Technical Advisory Committee (GS-TAC) as part of the request for the design certification renewal of a project activity as a proposed GS PoA.

### A.2. Scope

The validation scope is defined as an independent and objective review of the programme of activity design document (PoA-DD), the project’s baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against the requirements of the GS and CDM rules and requirements on the basis of the PoA-DD.

The validation is not meant to provide any consulting towards the project participants. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

### A.3. PoA Description

The PoA is a micro-scale PoA which aims to reduce a large amount of greenhouse gases (GHG) by facilitating the installation of a large number of household biogas digesters. To achieve this target, the PoA will generate additional incentives to install digesters to households that are supported by existing subsidy schemes. Target group of the PoA are low-income households located in Sichuan Province, China. The primarily targeted areas are thirteen cities (however, the PoA shall not be limited to this thirteen cities exclusively): Yibin, Neijiang, Suining, Ziyang, Zigong, Ruzhou, Leshan, Meishan, Mianyang, Guang’An, Ganzi, Aba and Dazhou, all of which are located in Sichuan. With installation of the biogas systems, both sources of emissions will be reduced: reducing methane emitted from the existing manure management systems, as the manure will be treated within the biogas digesters and furthermore, all recovered methane will be utilized for cooking to reduce the coal consumption of each household.

The PoA will be managed, implemented, operated and monitored by the Coordinating/managing Entity (CME) Chengdu Oasis Science & Technology Co., Ltd. The CME will be responsible for all CDM related tasks, including writing of all related documents, quantitative calculation of emission reductions, and etc.

Each CPA under the PoA will have two CPA implementers:

- Chengdu Oasis Science & Technology Co., Ltd. (also acting as the CME)
- The Sichuan Rural Energy Office

**A.4. Conclusion**

The conclusions are summarized in detail as follows:

- ✓ The PoA is in line with all relevant host country criteria, legislation and with all relevant requirements of GS and UNFCCC for Programme of Activities (Paragraph 37 of the CDM M&Ps included).
- ✓ The operational and management plan established by the coordinating/managing entity (CME) is suitable for the PoA.
- ✓ The baseline has been appropriately identified as per the applied methodology.
- ✓ The programme’s additionality is sufficiently justified in the PoA-DD.
- ✓ Eligibility criteria in the CPA-DDs are sufficient to ensure that all CPAs would comply with the GS and CDM requirements applicable to the PoA for Design Certification Renewal. These eligibility criteria cover the minimum requirement contained in the GS4GG and the Project Standard for Programme of Activities (PS-PoA).
- ✓ The monitoring plan and the Operational and Management Plan are transparent and adequate.

CCSC validation team concludes the validation with a positive opinion that the GS PoA “Sichuan Rural Poor-Household Biogas Development Programme (GS1239)”, as described in the PoA-DD (Version 3.4) <sup>[1]</sup>, meets all applicable relevant GS criteria, UNFCCC requirements for the CDM and the relevant host country criteria.

**SECTION B. Validation team, technical reviewer and approver**

**B.1. Validation team members**

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk/document review	Remote inspection	Interview(s)	Validation findings
1.	Team Leader	IR	LI	Xingtong	CCSC Central Office	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2.	Validator	EI	XU	Fangzhou	CCSC Central Office	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Note: IR: Internal Resources, EI: External Individuals

**B.2. Technical reviewer and approver of the validation report**

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer	IR	ZHOU	Wusen	CCSC Central Office
2.	Technical reviewer	IR	ZHENG	Ling	CCSC Central Office
3.	Approver	IR	HUANG	Shiyuan	CCSC Central Office

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

&gt;&gt;

After receiving the PoA-DD (Version 3.3, dated 30/11/2020)<sup>[1]</sup>, CCSC made a desk review of the PoA-DD and additional background documents <sup>[2][3][4][20]</sup> related to the project design was conducted by the validation team to verify the correctness, credibility and interpretation of presented information, and to cross check between information provided in the PoA-DD and information from sources other than that used, if available. Review of the appropriateness of formulae and correctness of calculations was also carried out during this stage based on the approved methodology being applied. Documents reviewed and information sources used during desk review are listed in Appendix 3 to this report.

**C.2. On-site inspection**

Due to the COVID-19 pandemic, it is impossible for the validation team to visit the PoA on site at moment and an interim measure of remote audit was applied according to the RULE on COVID-19<sup>[21]</sup> INTERIM MESURES section 4.1.1 b<sup>1</sup>.

The interview by questionnaires/virtual meeting with the PPs and stakeholders was made on 23/11/2020-25/11/2020, and the validation team interviewed with the relevant personnel, stakeholders and consultancy for the design certification renewal of the PoA. The detail of the remote inspection including the interviewees and the main topics of the interview questionnaires are summarized in the following table.

**C.3. Interviews**

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	FU	Yinyin	Chengdu Oasis Science & Technology Co., Ltd (CME)	23/11/2020	<ul style="list-style-type: none"> <li>General aspects of the PoA and the CPA</li> <li>Changes since 1<sup>st</sup> CP validation</li> <li>Quality management system</li> <li>Sampling method</li> </ul>	Mr. LI Xingtong Mr.XU Fangzhou

<sup>1</sup> The validation team has planned to perform the onsite inspection. However, one member of the validation team reported the symptoms of fever and muscle aches before the proposed onsite visit. After communicating with the PPs and local government, they did not recommend the validation team to organize the onsite inspection considering the risk of COVID-19. Due to the strict restraint article of validation contract, the validation team has to apply the remote survey approach as per the interim measure for COVID-19 (Ver.02).

					<ul style="list-style-type: none"> <li>• Monitoring plan</li> <li>• Baseline scenario</li> <li>• Data uncertainty and residual risks;</li> <li>• GHG calculation</li> <li>• Procedural aspects of the RCP Validation;</li> </ul>	
2.	Qiu	Yonghong	Sichuan Rural Energy Office	23/11/2020	<ul style="list-style-type: none"> <li>• Project design and implementation</li> <li>• Project related legal issues</li> <li>• The impact of new relevant national and/or sectoral policies and circumstances on the baseline</li> <li>• Equipment installation and starting of operation</li> <li>• Monitoring plan and Procedures</li> <li>• QA and QC</li> <li>• Training history and records</li> <li>• Data collection and record keeping</li> <li>• Operation and maintenance records</li> <li>• Management system</li> </ul>	
3.	Qin	Haodong	Sichuan Rural Energy Office	23/11/2020		
4.	Pan	Hongyan	Zitong District, Mianyang City Rural Energy Office	23/11/2020		
5.	Nie	Zhonghua	Dongpo District, Meishan City Rural Energy Office	23/11/2020		
6.	Zeng	Libo	Xuzhou District, Yibin City Rural Energy Office	23/11/2020		
7.	Zhao	Ruwen	Xuzhou District, Yibin City Agriculture Bureau	23/11/2020		
8.	Luo	Xuebin	Xuzhou District, Yibin City Agriculture Bureau	23/11/2020		
9.	Zou	Xiujian	Xuzhou District, Yibin City Biogas Service Station	23/11/2020		
10.	Liu	Guoqiang	Local resident	24/11/2020		<ul style="list-style-type: none"> <li>• Household fuel consumption pattern inspection by interview questionnaire on: <ul style="list-style-type: none"> <li>a. The improved cook stove used or not</li> <li>b. The type of stove used before the project;</li> <li>c. Type of cooking by using the improved cook stove.</li> <li>d. Fuel used for cooking by improved cook stove more or less than the former stove;</li> <li>e. Type of cooking by using the improved cook stove.</li> </ul> </li> <li>• Social and environmental impact of the project</li> </ul>
11.	Yao	Jiangang	Local resident	24/11/2020		
12.	Fu	Hongtao	Local resident	24/11/2020		
13.	Zhou	Zhirong	Local resident	24/11/2020		
14.	He	Kehong	Local resident	24/11/2020		
15.	Huang	Juying	Local resident	25/11/2020		
16.	Guo	Juhua	Local resident	25/11/2020		
17.	Zhou	Yinchun	Local resident	25/11/2020		
18.	Xia	Chunxiu	Local resident	25/11/2020		
19.	Ke	Xiuying	Local resident	25/11/2020		
20.	Zhou	Jian	Local resident	25/11/2020		
21.	Li	Longquan	Local resident	25/11/2020		

## Outcome of the interview with the stakeholders:

<b>Date: 23/11/2020 -25/11/2020</b>	
The main topics in the interview questionnaires are summarized as follows:	
Q1: The brief opinions of the PoA from the local residents.	<u>Response:</u> The installed biogas digesters have provided a large amount of biogas to the local residents for cooking replacing coal consumption, improves local environment, improves living conditions and public health, promotes sustainable development of local agriculture, reduces the risks of accident. The local residents support the operation of the PoA.
Q2: The brief opinions of the PoA from the government.	<u>Response:</u> The installed biogas digesters have provided a large amount of biogas to the local residents for cooking replacing coal consumption, which reduces a large amount of GHG emissions, improves local environment, alleviate the fossil fuel dependence, improves living conditions and public health, promotes sustainable development of local agriculture, reduces the risks of accident. The local government support the operation of the PoA.
Q3: What the impacts (positive and negative) of the PoA? eg. 1) Affordable and Clean Energy 2) Decent work and economic growth 3) Climate Action 4) Clean Water and Sanitation 5) Good Health and Well Being	The Sustainable Development Goals (SDGs) impacts of the Project are assessed. The impact of the Project is positive. 1) climate action: the PoA improves education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning. 2) Decent work and Economic Growth: Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small and medium-sized enterprises, including through access to financial services 3) Affordable and Clean Energy: Biogas is affordable and clean energy 4) Clean Water and Sanitation: Reduce water pollutants and improve water quality 5) Good Health and Well Being: Reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination
Q4: Do you support the Project, and any other comments on the Project?	<u>Response:</u> Yes, the local residents support the project, who never heard any complaints about the project during the last few years.

**C.4. Sampling approach**

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As per the applied methodology AMS-I.I.– Biogas/biomass thermal applications for households/small users (version 04); AMS-III.R.– Methane recovery in agricultural activities at household/small farm level (version 03) <sup>[8][9]</sup>, sampling approaches for monitored parameter Annual consumption of baseline fossil fuel  $j$  ( $FC_{BL,k,j}$ ) in section B.3 of the updated PoA-DD<sup>[1]</sup> for the design certification renewal are to be determined.

According to the AMS-I.I (version 04), the Annual consumption of baseline fossil fuel  $j$  ( $FC_{BL,k,j}$ ) could be determined using method (a) Option (ii):

Option (ii):

*Determining the average quantity of fossil fuel consumption in a year from a representative sample survey of targeted households prior to the installation/commissioning of the project equipment. This data on annual baseline fuel consumption obtained from households shall be cross checked with purchase receipt(s) submitted by the household. The value obtained is multiplied by 0.89 to account for uncertainties. This option can only be applied for residential applications.*

*The data collected through sample-based measurements shall comply with the 90% confidence interval and 10% margin of error requirement. Account shall be taken of possible stratification of the sampled population (e.g. average income level, household occupancy, food or heating habits, climate/temperature zone, availability, price and type of fuel used).*

*The latest version of "Standard for sampling and surveys for CDM project activities and programme of activities" shall be complied with. Fuel consumption will be directly determined as mass or volume consumed per unit time;*

Thus, as per the applied methodology, a representative sample survey of targeted households should be carried out prior to the installation/commissioning of the project equipment. For this PoA, the survey was conducted in June, 2010 before the PoA's commissioning which is the data source for Annual consumption of baseline fossil fuel ( $FC_{BL,k,j}$ ).

Hence no sampling survey need to be conducted as per the methodology for the 2<sup>nd</sup> crediting period to assess the GHG emission reductions or net anthropogenic GHG removals that would have resulted from baseline scenario. Thus, no sampling approach is used in the PoA-DD for the 2<sup>nd</sup> crediting period is confirmed as in line with the applied methodology and CDM project standard for programmes of activities (version 02.0).

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

Areas of validation findings	No. of CL	No. of CAR	No. of FAR
<b>Programme of activities</b>	-	-	-
Compliance with PoA-DD form	-	-	-
Programme of activities period	-	-	-
Coordinating/managing entity and the project participants	-	-	-
Post-registration changes	-	-	-
Demonstration of additionality of PoA	-	-	-
Start date and duration of PoA	-	-	-
Environmental, Social and Economic impacts (Safeguards) and SDG outcomes	-	-	-
Management System	-	-	-
<b>Generic Voluntary project activities</b>	-	-	-
Application and selection of methodologies and standardized baselines	-	-	-

• Deviation from methodologies and/or methodological tools	-	-	-
• Clarification on applicability of methodology, tool and/or standardized baseline	-	-	-
Application of methodologies and standardized baselines			
• General	-	-	-
• Project boundary, sources and GHGs			
Validity of original baseline or its update	-	-	-
Estimation of emission reductions or net anthropogenic removals	-	-	-
Validity of monitoring plan	-	-	-
Eligibility criteria for inclusion of CPAs	-	-	-
Others (please specify)	-	-	-
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>

## SECTION D. Validation findings

### D.1. Programme of activities

#### D.1.1. Compliance with PoA-DD form

<b>Means of validation</b>	<p>CCSC validation team has checked the PoA-DD Ver.3.4 against the valid version of “Gold Standard for the Global Goal Key Programme Information &amp; Programme Design Document (PoA-DD) form” (Version 1.1) /11/and GS4GG REA Requirements and GS4GG Principles &amp; Requirements listed in GS website<sup>2</sup> and “CDM project standard for programmes of activities” [15] listed in UNFCCC website, and the relevant Feasibility Studies.</p> <p>The validation team compared the information transferred to the valid version of the PoA-DD with that in the registered PoA-DD and approved transition documentation within the 1<sup>st</sup> crediting period.</p> <p>The validation team also interviewed CME about the type of programme.</p>
<b>Findings</b>	<p>PoA-DD Form</p> <ul style="list-style-type: none"> <li>• The PoA-DD used the Gold Standard for the Global Goal Key Programme Information &amp; Programme Design Document (PoA-DD) form (version 1.1) at GS website, which has been verified to be effective since October 2020.</li> <li>• The PoA-DD is complete and meet all relevant requirements of instructions for filling out the “Gold Standard for the Global Goal Key Programme Information &amp; Programme Design Document (PoA-DD) form” (version 1.1) for GS PoA and GS4GG Renewable Energy Activities Requirements and GS4GG Principles &amp; Requirements and “CDM project standard for programmes of activities” (version 02.0).</li> </ul>

<sup>2</sup> <https://www.goldstandard.org/project-developers/standard-documents>

Description of PoA in updated PoA-DD

As section A.1 of PoA-DD Ver.3.4, the objective of this PoA is to reduce a large amount of greenhouse gases (GHG) by facilitating the installation of a large number of household biogas digesters. To achieve this target, the PoA will generate additional incentives to install digesters to households that are supported by existing subsidy schemes. Target group of the PoA are low-income households located in Sichuan Province, China. Therefore, the PoA is in line with the eligibility criteria of the approved GS4GG Renewable Energy Activities Requirements. Therefore, the project type is automatically eligible for Gold Standard Certification, which consists with the design and statement of the CME/PPs.

**The policy/measure or stated goal that the PoA seeks to achieve;**

The validation team confirmed the PoA involves that each household is equipped with a household biogas digester that will treat the manure anaerobically and recover the generated methane. After installation of the biogas systems, both sources of emissions will be reduced: Reducing methane emitted from the existing manure management systems, as the manure will be treated within the biogas digesters and furthermore, all recovered methane will be utilized for cooking to reduce the coal consumption of each household.

**A framework for the implementation of the PoA;**

The PoA is correctly identified as micro-scale GS PoA during the registered PoA-DD in the first crediting period which is in line with the applicability requirements in the applied methodologies.

The PoA involves that each household is equipped with a household biogas digester that will treat the manure anaerobically and recover the generated methane.

To support local households, the Sichuan Rural Energy Office implements the existing governmental subsidy schemes by providing a financial support during the construction of the biogas digesters. Target of the subsidy schemes is to reduce methane emissions from the pits, generate biogas as renewable source of energy and use the digester effluent as high-efficient fertilizer. However, after reaching mid-and high-income families, the Sichuan Rural Energy Office came to the conclusion, that low-income families still face barriers and cannot participate in the digester installation programme. Therefore, these households need further promotion to participate in the existing programmes and install a biogas digester.

**A confirmation that the PoA is a voluntary action by the CME;**

As per the interview with the CME, the validation team confirmed there is no mandatory requirement for private sector to invest in small-scale renewable energy projects. Therefore, it's confirmed that the PoA is a voluntary action by the CME.

**Physical/geographical boundary**

The validation team has assessed the PoA's geographical boundary. Target group of the PoA are low-income households located in Sichuan Province, China. The primarily targeted areas are thirteen cities (however, the PoA shall not be limited to this thirteen cities exclusively): Yibin, Neijiang, Suining, Ziyang, Zigong, Ruzhou, Leshan, Meishan, Mianyang, Guang'An, Ganzi, Aba and Dazhou, all of which are located in Sichuan.

	<p>It was checked and confirmed by reviewing the PoA-DD and interviews with representatives of CME. And in section A of the PoA-DD, the CME has taken into consideration all applicable national and/or sectoral policies and regulations within that chosen boundary. China has no mandatory operational schemes to reduce GHG emissions in any form and can host a Gold Standard PoA. The PoA aims to reduce GHG emissions and contribute to sustainable development in the host countries.</p> <p><b>Technology/measure</b></p> <p>A typical biogas digester system consists of different components such as inlet, inlet pipe, fermentation chamber, gas chamber storage, hydraulic chamber, movable cover and gas tube. After being fed into the inlet of the whole system, the manure will reach the fermentation chamber where it is digested with a planned retention time of several months. Within the fermentation chamber, the main biogas generation takes place. The gas is stored in the upper part of fermentation chamber just above the slurry surface (the gas storage chamber). If more gas is generated than consumed, the pressure within the gas storage chamber will increase and press the liquids into the hydraulic chamber. When the gas is extracted for utilization via the gas tube, the pressure decreases again and allows the liquids to flow back into the fermentation chamber. This system guarantees a strict separation of the gas storage and the hydraulic chamber where the sludge can be extracted and used as organic fertilizer.</p> <p><b>Contributes to the Climate Security &amp; sustainable development Goal of the host Party (SDG)</b></p> <p>The Project contributes towards the sustainable development of the host country. The relevant targets and indicators selected are in accordance with the ones in the UN's Sustainable Development Goal (SDG) websites:</p> <p>SDG 3-Good health and Well Being, SDG 6- Clean Water and Sanitation, SDG 7-Affordable and Clean Energy, SDG 8- Decent Work and Economic Growth and SDG13 -Climate Action. The detailed information for the three SDG will be found in D.4.7 of this validation report.</p> <p>From the desk review of PoA-DD for design certification renewal and interviews of the CME representatives, it is revealed that the PoA does not involve any ODA funding. Thus, the validation team considers no ODA funding from any Annex 1 country has been involved under the PoA.</p> <p>No CARs/CLs/FARs raised in this section.</p>
<b>Conclusion</b>	<p>CCSC validation team checked the general description of the PoA in the POA-DD against the GS4GG REA Requirements<sup>[6]</sup>, 3.1.1 of GS4GG principles and requirements <sup>[11]</sup>and Para.38-43/VVS-PoA<sup>[16]</sup>and <u>Para.31 and Para.32-35/PS-PoA</u> <sup>[15]</sup>, and confirmed:</p> <ul style="list-style-type: none"> <li>• It complied with relevant valid version of GS PoA-DD form and instructions therein for filling out PoA-DD; the information transferred to the valid version of the PoA-DD is materially the same as that in the registered PDD within the 1st design certification cycle;</li> <li>• The programme type has been correctly defined and identified in the PoA-DD.</li> </ul>

#### D.1.2. Programme of activity period

<b>Means of validation</b>	By means of comparison of the registered PDD and GS Transition Documentation with the PoA-DD submitted by the CME, interviews with CME representatives, the validation team has assessed the PoA period in
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	accordance with applicable related validation requirements in the GS4GG REA Requirements, GS4GG Principles & Requirements and GS4GG transition requirements .
<b>Findings</b>	<p>As per the registered PoA-DD and GS Transition Documentation of the PoA, this PoA was registered under GS on 22/04/2012 and the first GS crediting period was from 11/04/2012 to 10/04/2019, seven years.</p> <p>As per 3.4 of the GS4GG transition requirements version 1.1<sup>[13]</sup>, for PoAs and CPA submitted within the first crediting period (i.e. 7 years) of the PoA shall be allowed to use the same 7 years, twice renewal model. According to the “crediting period of POAs following GS4GG transition”, published on 14 Jan 2021, the maximum total duration of the Transitioning PoA shall be 28 years as envisaged at time of registration under an earlier version of Gold Standard. Therefore, the duration of the POA shall be 28 years from 11/04/2012 to 10/04/2040. The first certification cycle of this PoA ended on 10/04/2019 and now it seeks design certification renewal for the next cycle 11/04/2019-10/04/2026, which complied with section 13.1.1 of PoA Requirements Version 1.2.</p> <p>It was confirmed by the validation team that the CME had sent out an email invitation to stakeholders on 17/11/2020 to invite relevant stakeholders to provide their comments and feedback on the programme design for the PoA certification renewal by reviewing GS4GG PoA Design Consultation Report provided by CME. The consultation period was from 17/11/2020 to 24/11/2020. No comments have been received during the period. Furthermore, the CME sent a reminder to the stakeholders and extended the comment period to 27/11/2020. The validation team reviewed the 30 questionnaires collected and confirmed that all stakeholders expressed their support to the PoA, and no negative comments were received.</p> <p>No CARs/CLs/FARs raised in this section.</p>
<b>Conclusion</b>	<p>CCSC validation team checked the POA-DD of the PoA against the GS4GG REA Requirements, GS4GG transition requirements, section 3.1.1 of GS4GG principles and requirements, Section 3.1.3 of GS4GG PoA requirements<sup>[12]</sup> and Para.38-43/VVS-PoA and Para.32-35/PS-PoA, and confirmed:</p> <ul style="list-style-type: none"> <li>• It complied with the requirements;</li> <li>• The description on the second crediting period of the PoA in the PoA-DD is accurate and complete;</li> <li>• It provides a transparent understanding of the PoA.</li> </ul>

**D.1.3. Coordinating/managing entity and the project participants**

<b>Means of validation</b>	The validation team has checked the CME and the project participants described in the PoA-DD and crosschecked with PoA transition documents <sup>[4]</sup> , MRS <sup>[3]</sup> for the first crediting period of the CPAs under this PoA and the interview with CME/PP/Implementers against GS4GG PoA requirements <sup>[12]</sup> and Para.36-37/PS-PoA.
<b>Findings</b>	<p>As per the registered PoA-DD, the transition documentation and MRs and verification reports of CPAs in the first crediting period, the PP and CME in the updated PoA-DD were consistent with these documents.</p> <p>No CARs/CLs/FARs raised in this section.</p>
<b>Conclusion</b>	Complying with GS4GG PoA requirements and <u>Para.36-37/PS-PoA</u> , the CCSC validation team confirmed that the CME and the project participants contained in updated PoA-DD.

**D.1.4. Post-registration changes**

Type of post-registration changes (PRCs)	Confirmation (Y/N)	Validation report for PRCs	
		Version	Completion date
• Corrections	N/A	N/A	N/A
• Inclusion of monitoring plan	N/A	N/A	N/A
• Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents	N/A	N/A	N/A
• Changes to the programme design	N/A	N/A	N/A
• Addition of CPA inclusion template	N/A	N/A	N/A
• Changes specific to afforestation and reforestation activities	N/A	N/A	N/A
• Change of coordinating/managing entity	N/A	N/A	N/A

**D.1.5. Demonstration of additionality of PoA**

<b>Means of validation</b>	The validation team has checked the additionality demonstration of the PoA by desk review and interviewing with CME/PP/Implementers against GS4GG REA Requirements Version 1.2 <sup>[6]</sup> , GS4GG principle and requirements <sup>[11]</sup> and Para.38-39 and 120(g)/PS-PoA <sup>[15]</sup> .
<b>Findings</b>	<p>According to GS4GG Renewable Energy Activities Requirements Version 1.2 <sup>[6]</sup>, projects that meet any of the following criteria are considered as deemed additional and therefore are not required to prove Financial Additionality at the time of Design Certification:</p> <p>(i) The PoA is a voluntary coordinated action;</p> <p>(ii) The PoA would not be implemented in the absence of the PoA;</p> <p>(iii) The PoA is not implementing a mandatory policy/regulation.</p> <p>(iv) No mandatory policies and/or regulations are being enforced by the PoA.</p> <p>The additionality demonstration system in the PoA-DD for the Design Certification Renewal is complete and in line with relevant requirements. No CARs/CLs/FARs raised in this section.</p>
<b>Conclusion</b>	<p>CCSC validation team confirmed that the PoA additionality has been adequately demonstrated.</p> <p>CCSC validation team concluded that:</p> <p>The CME has demonstrated additionality of the proposed GS microscale PoA by establishing that this PoA is a microscale PoA and each CPA under this PoA is a microscale project activity. Therefore, it is deemed automatically additional based on 4.1.9 of GS4GG REA Requirements Version 1.2.</p> <p>The CME has included conditions that would systematically demonstrate additionality of CPAs under the proposed GS microscale PoA in the eligibility criteria for inclusion of CPAs in the PoA in accordance with GS4GG REA Requirements Version 1.2, GS4GG principle and requirements and Para.120(g)/PS-PoA.</p>

## D.1.6. Start date and duration of PoA

<b>Means of validation</b>	The information of start date and duration of the PoA has been assessed through desk review against the GS4GG principles and requirements and Para.46-50/VVS-PoA.
<b>Findings</b>	<p>Start Date</p> <p>As per the registered PoA-DD<sup>[2]</sup>, the start date for PoA is considered as 10/05/2012, which has been determined during the validation of the registered PDD.</p> <p>Duration of PoA</p> <p>According to the “crediting period of POAs following GS4GG transition”, published on 14 Jan 2021, the maximum total duration of the Transitioning PoA shall be 28 years as envisaged at time of registration under an earlier version of Gold Standard. Therefore, the duration of the POA shall be 28 years from 11/04/2012 to 10/04/2040.</p> <p>No CARs/CLs/FARs raised in this section.</p>
<b>Conclusion</b>	Complying with requirements of GS4GG and <u>Para.46-50/VVS-PoA<sup>[16]</sup></u> and <u>Para.40-43/PS-PoA<sup>[15]</sup></u> , CCSC validation team confirmed the PoA start date and duration have been correctly defined.

## D.1.7. Environmental, Social and Economic impacts (Safeguards) and SDG outcomes

<b>Means of validation</b>	Through desk review and the interview with the CME, the validation team assessed the environmental impacts as per GS4GG Safeguarding Principles & Requirements <sup>[14]</sup> and GS4GG principle and requirements and Para.51-55/VVS-PoA.
<b>Findings</b>	<p>Regarding nine safeguarding principles, incl. human rights, health working conditions, land tenure, emissions, water, soil, release of pollutants, etc, the purpose is to identify potential risks and adverse outcomes of their activities; and to adopt a mitigation strategy to avoid or minimize identified risks, as per the Safeguarding Principles Requirements (version 1.2). Therefore, the assessments refer to the detailed project activities under each CPA, instead of the Programme framework. Therefore, it is appropriate to conduct safeguarding principles assessments at CPA level.</p> <p>For each CPA operates within a geographically defined region, and then the Safeguarding principles assessment and SDG outcomes are done on CPA level to ensure that the environmental, social and economic conditions of each region actually affected by the project activity are qualified for the national rules based on GS4GG Safeguarding Principles &amp; Requirements and GS4GG principle and requirements. No negative social, economic and environmental impacts are expected to be caused by the implementation of the CPAs.</p> <p>The validation team also crosschecked with the CME interview, and confirmed the Safeguarding principles assessment shall be performed based on each CPA.</p> <p>No CARs/CLs/FARs raised in this section.</p>
<b>Conclusion</b>	Complying with GS4GG Safeguarding Principles & Requirements and GS4GG principle and requirements and <u>Para.51 and 54/VVS-PoA</u> , the validation team concluded that it's reasonable for the PoA to conduct the Safeguarding principles assessment on the CPA level.

## D.1.8. Management System

<b>Means of validation</b>	The validation team has checked the management system described in the PoA-DD and the interview with CME/PP/Implementers against GS4GG requirements and Para.36-37/PS-PoA.
<b>Findings</b>	<p>The management system has been outlined in section C. of the updated PoA-DD <sup>[1]</sup>.</p> <p>The CME has established an operational and management structure, which has been sufficiently defined roles and responsibilities for different parties in line with the requirements of GS4GG and Para.36-37/PS-PoA.</p> <p>Details of training plan have also been included.</p> <p>CME has provided a procedure in the PoA-DD for technical review of inclusion of CPAs, which is validated to be transparent and complete. CME has taken A record keeping system for each CPA under the PoA, and maintain A system/procedure to avoid double accounting e.g. to avoid the case of including a new CPA that has been already registered either as a CDM project activity or as a CPA of another PoA, the SSC-CPA included in the PoA is not a de-bundled component of another CDM programme activity (CPA) or CDM project activity. And the provisions to ensure that those operating the CPA are aware of and have agreed that their activity is being subscribed to the PoA.</p> <p>The CME is responsible for maintaining several databases that hold all relevant information related to the implementation of all CPAs and their households.</p> <p>No CARs/CLs/FARs raised in this section.</p>
<b>Conclusion</b>	Complying with requirements of GS4GG and <u>Para.36-37/PS-PoA</u> , the CCSC validation team confirmed that the management system contained in PoA-DD can keep the Standardized operation of the PoA and sufficiently ensure the quality of CPA inclusion, monitoring, validation and issuance of emission reductions.

## D.1.9. Local stakeholder consultation

<b>Means of validation</b>	Through desk review and the interview with the government sector and CME, the validation team assessed the environmental impacts as per requirements of GS4GG and Para.51-55/VVS-PoA.
<b>Findings</b>	<p>For each CPA operates within a geographically defined region, and then local stakeholder consultation (LSC) was carried out on PoA level to ensure that the stakeholders of each region actually affected by the project activity are adequately informed and consulted.</p> <p>The validation team also interviewed by questionnaires/virtual meeting with local stakeholder about the LSC process of specific CPAs and confirmed it was reasonable for LSC be performed based on each CPAs, and the LSC was carried out in accordance with national regulations.</p> <p>No CARs/CLs/FARs raised in this section.</p>
<b>Conclusion</b>	According to requirements of GS4GG and <u>Para.51-55/VVS-PoA</u> , the validation team considered the LSC will be conducted on PoA level in accordance with the national regulations.

**D.2. Generic voluntary project activities**

**D.2.1. General description of generic CPAs**

<b>Means of validation</b>	<p>The validation team checked the description of 5 CPAs as per GS4GG requirements and the Para.90-91 and Para.139-141/VVS-PoA, Para.81/PS-PoA.</p> <p>By desk review and interview, the validation team checked the accuracy and completeness of the description.</p>
<b>Findings</b>	<p>The CME did not request a deviation from the valid version of the methodology (including a consolidated methodology thereof) and/or methodological tool applied in the registered PoA-DD, or from any other selected methodology and/or methodological tool for the purpose of renewal of the registered CDM PoA.</p> <p>By checking the GS website, the validation team confirmed that CPAs under this PoA meet the eligibility criteria in section 3.1.1 of GS4GG Principles &amp; Requirements document and the relevant activity requirements document which is the latest version applied in the PoA-DD for the Design Certification Renewal and it's valid. Refer to section D.2.6.</p> <p>No CARs/CLs/FARs raised in this section.</p>
<b>Conclusion</b>	<p>Complying with section 3.1.1 of GS4GG Principles &amp; Requirements document and the relevant activity requirements, CCSC validation team concluded the general description about the purpose, technology employed and types and the eligibility criteria met by the generic CPA-DDs is accurate and complete.</p>

**D.2.2. Application and selection of methodologies and standardized baselines**

**D.2.2.1.General**

<b>Means of validation</b>	<p>Through document review and interview with CME, the validation team has reassessed all applicability conditions in the methodology AMS-I.I.– Biogas/biomass thermal applications for households/small users (version 04); AMS-III.R.– Methane recovery in agricultural activities at household/small farm level (version 03) <sup>[8][9]</sup> which is applicable to the PoA and each CPA under this PoA against the proposed technologies, measure, design, and scope of the generic CPA based on the knowledge of the CPAs from the initial validation, subsequent verifications and the confirmation from the PPs.</p>
<b>Findings</b>	<p>At the time of registration, the applied methodology of the project was AMS-I.I. and AMS-III.R.</p> <p>The updated PoA-DD for the renewal of crediting period applied the valid version of the selected approved methodologies AMS-I.I.– Biogas/biomass thermal applications for households/small users (version 04); AMS-III.R.– Methane recovery in agricultural activities at household/small farm level (version 03); hence it meets the condition that for renewal of the crediting period, the methodology shall not be changed.</p>

Methodology requirement	DOE Assessment
<b>Relevant applicability criteria for AMS-I.I.</b>	
<p>This category comprises activities for generation of renewable thermal energy using renewable biomass or biogas for use in residential, commercial, institutional applications (e.g. for supply to households, small farms or for use in built environment of institutions such as schools).</p> <p>Examples of these technologies that replace or avoid fossil fuel use include but are not limited to biogas cook stoves, biomass briquette cook stoves, small scale baking and drying systems, water heating, or space heating systems.</p>	<p>As per the eligibility criteria for CPAs the technology installed under a CPA is a renewable energy technology and supplies residential users with biogas for use.</p> <p>The validation team can confirm that methodology is applicable.</p>
<p>The total installed/rated thermal energy generation capacity of the project equipment is equal to or less than 45 MW thermal.</p>	<p>As per the eligibility criteria for CPAs it will be safeguarded that the number of biogas systems installed under each individual CPA does not lead to a total installed thermal energy generation capacity above 45 MW thermal.</p> <p>The validation team can confirm that methodology is applicable.</p>
<p>Each unit (e.g. cook stove, heater) shall have a rated capacity equal to or less than 150 kW thermal.</p>	<p>Each unit of biogas stove has capacity less than 150 kW thermal.</p> <p>The validation team can confirm that methodology is applicable.</p>
<b>Relevant applicability criteria for AMS-III.R.</b>	
<p>This project category comprises recovery and destruction of methane from manure and wastes from agricultural activities that would be decaying anaerobically emitting methane to the atmosphere in the absence of the project activity. Methane emissions are prevented by:</p> <p>(a) Installing methane recovery and combustion system to an existing source of methane emissions, or</p> <p>(b) Changing the management practice of a biogenic waste or raw material in order to achieve the controlled anaerobic digestion equipped with methane recovery and combustion system.</p>	<p>As per the eligibility criteria for CPAs a CPA covers the installation of methane recovery and combustion systems to an existing source of methane emissions.</p> <p>The validation team can confirm that methodology is applicable.</p>

	<p>The category is limited to measures at individual households or small farms (e.g. Installation of a domestic biogas digester). Methane recovery systems that achieve an annual emission reduction of less than or equal to 5 tonnes of CO<sub>2</sub>e per system are included in this category. Systems with annual emission reduction higher than 5 tonnes of CO<sub>2</sub>e are eligible under AMS-III.D.</p>	<p>As per the eligibility criteria for CPAs comprises the installation of biogas digesters at individual households and small farms. The individual devices will achieve emission reductions of less than 5 tCO<sub>2</sub>e. The validation team can confirm that methodology is applicable.</p>
	<p>This project category is only applicable in combination with AMS-I.C, AMS-I.I and/or AMS-I.E.</p>	<p>The PoA and the connected CPAs combine methodologies AMS-I.I and AMS-III.R. The validation team can confirm that methodology is applicable.</p>
	<p>The project activity shall satisfy the following conditions: (a) The sludge must be handled aerobically. In case of soil application of the final sludge the proper conditions and procedures that ensure that there are no methane emissions must be ensured. (b) Measures shall be used (e.g. combusted or burnt in a biogas burner for cooking needs) to ensure that all the methane collected by the recovery system is destroyed.</p>	<p>As per the eligibility criteria for CPAs the digester effluent (sludge) will be handled aerobically; the biogas will be destroyed efficiently. The validation team can confirm that methodology is applicable.</p>
	<p>Aggregated annual emission reductions of all systems included shall be less than or equal to 60 kt CO<sub>2</sub> equivalent.</p>	<p>As per the eligibility criteria for CPAs it will be safeguarded that annual emission reduction of all systems included in one CPA will be less than or equal to 60 ktCO<sub>2</sub>e. The validation team can confirm that methodology is applicable.</p>
	<p>By checking the methodology website, the validation team confirmed the methodology AMS-I.I.– Biogas/biomass thermal applications for households/small users (version 04); AMS-III.R.– Methane recovery in agricultural activities at household/small farm level (version 03) applied in the PoA-DD for the Design Certification Renewal is the latest version and it's valid. No CARs/CLs/FARs raised in this section.</p>	
<p><b>Conclusion</b></p>	<p>The validation team has confirmed that the PoA and CPAs under the PoA meets all applicability conditions in the methodology AMS-I.I.– Biogas/biomass thermal applications for households/small users (version 04); AMS-III.R.– Methane recovery in agricultural activities at household/small farm level (version 03), which is the valid version of the methodology.</p>	

## D.2.2.2. Project boundary, sources and GHGs

<b>Means of validation</b>	The validation team validates the boundary for whether it complies with the definition in the AMS-I.I.– Biogas/biomass thermal applications for households/small users (version 04); AMS-III.R.– Methane recovery in agricultural activities at household/small farm level (version 03), including which sources and GHGs are to be included in the project boundary under which conditions or circumstances are in accordance with the selected methodologies.
<b>Findings</b>	CME has specified the project boundary of the CPA. In section A.2 of updated PoA-DD <sup>[1]</sup> , the geographical boundary for the PoA is the administrative boundary of Sichuan province, China, which is in accordance with the AMS-I.I.– Biogas/biomass thermal applications for households/small users (version 04); AMS-III.R.– Methane recovery in agricultural activities at household/small farm level (version 03)..  The validation team reviewed the sources and GHGs included in the project boundary and confirmed it complied with the methodology applied.
<b>Conclusion</b>	The validation team concludes that the PoA's spatial boundaries will be implemented is clearly defined. All sources and GHGs included in the CPA boundary are as required in the applicable methodology AMS-I.I.– Biogas/biomass thermal applications for households/small users (version 04); AMS-III.R.– Methane recovery in agricultural activities at household/small farm level (version 03) .

## D.2.3. Validity of original baseline or its update

<b>Means of validation</b>	According to 5.1.47 (c) of GS4GG Principle and requirements <sup>[11]</sup> and Para. 407 of the CDM-PoA-VVS (version 02.0) <sup>[16]</sup> , CCSC validation team reviewed the updated PoA-DD, and evaluated whether project participants assess and incorporate the impact of national and/or sectoral policies and circumstances existing at the time of requesting renewal of the crediting period on the current baseline GHG emissions, without reassessing the baseline scenario. Where data and parameters used for determining the original baseline that was determined ex ante (and not monitored during the crediting period) are no longer valid, CCSC validation team identified whether PPs update such data and parameters in accordance with the Methodological Tool “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period” (version 03.0.1) <sup>[19]</sup> .  The validation team validates the baseline scenario identified in the PoA and generic CPAs for whether it complies with the definition in the methodology AMS-I.I.– Biogas/biomass thermal applications for households/small users (version 04); AMS-III.R.– Methane recovery in agricultural activities at household/small farm level (version 03).
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**Findings**

According to 5.1.47 (c) of GS4GG, design certification renewal follows the same process as validation and design review through the scope of assessment is limited to Re-definition of Baseline Scenario and any impact of change on the Eligibility Principles, Criteria and Requirements.

The following steps from the Methodological Tool “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period” (version 03.0.1) as per CDM-PoA-VVS version 02.0 were applied to assess the continued validity of the baseline and/or to update the baseline at the renewal of crediting period:

**Step 1- Assess the validity of the current baseline for the next crediting period**

As per the AMS-I.I.– Biogas/biomass thermal applications for households/small users (version 04); AMS-III.R.– Methane recovery in agricultural activities at household/small farm level (version 03), the baseline scenario is the fuel consumption of the thermal application used or that would have been used in the absence of the project activity times an emission factor for the fossil fuel displaced. The baseline is still in line with the applied methodology. As per the project standard this scenario is not subject to re-assessment and is thus deemed to be applicable for the next crediting period.

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

The current baseline remains the same as it was in the registered PoA-DD within the first design certification cycle. The validation team has confirmed that no relevant mandatory national and/or sectoral policies applicable to the project activity came into effect since the date of earlier registered PoA-DD within the first design certification cycle till now. Thus, it can be concluded that the current baseline still complies with all the relevant policies.

**Step 1.2- Assess the impact of circumstances**

The validation team confirmed that the current baseline identified in the originally registered PoA-DD within the 1<sup>st</sup> crediting period is still valid for the second crediting period.

In conclusion, as per the requirement of the sub-step, it has been assessed that there were no impact of circumstances existing at the time of requesting of the crediting period on the current baseline scenarios.

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

This sub-step should only be applied if the baseline scenario identified at the validation of the project activity was the continuation of use of the current equipment(s) without any investment, so it's not applicable for the project.

**Step 1.4- Assessment of the validity of the data and parameters**

The parameters which have been determined ex-ante in the latest approved PoADD are still valid, assessment is as below:

Parameter	Unit	Applied Value and Assessment
VS <sub>LT,y</sub> - Daily volatile solid excreted per animal	kg dry matter / animal / year	As per the paragraph 18 of the applied AMS-III.D version 21 b) (i) “The preferred method to obtain VS is to use data from nationally published sources. These values shall be compared with IPCC default values and any significant differences shall be explained.” Hence based on this requirement, validation

			<p>team has checked the website of China Biogas Network, which is hosted by China Biogas Society and China Biogas Journal and issued all the related biogas policies, regulations and standards in China, validation team has also checked authoritative public literatures and journals, all the publicly available sources showed that there is no nationally published sources to obtain VS in China.</p> <p>Hence, as per (ii) "If data from nationally published sources are not available, country-specific VS excretion rates can be estimated from feed intake levels, via the enhanced characterisation method (tier 2) described in section 10.2 in 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 4 chapter 10, using the equation (2) in methodology."</p> <p>Via checking the 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 4 chapter 10, page 42, it stated that for the calculation of VS, the <math>GE_{LT}</math>, UE and ASH should use the country-specific values where available, then the validation team checked all the publicly available sources above, and confirmed that the Country specific values of <math>GE_{LT}</math>, UE and ASH are not available, therefore, the VS is not able to be calculated based on equation (2).</p> <p>Hence, Based on AMS-III.D, 18 b (iii), due to the Country specific VS values are not available, IPCC default values of VS is used. The applied value derived from the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 4, and Chapter 10, Table 10A-7 (swine), the value for the daily solid excreted by Asian swines multiplied with 365 days in a year (=0.3*365 kg dry matter per animal per year).</p> <p>Value is 109.5 which is verified still valid for the next crediting period as per IPCC.</p>
	<p><math>B_{0,LT}</math> - Maximum methane producing capacity for manure produced by livestock, of VS excreted.</p>	<p><math>M^3CH_4/kg</math></p>	<p>As per the paragraph 18 of the applied AMS-III.D version 21 a) "The maximum methane-producing capacity of the manure (<math>B_0</math>) varies by species and diet. The preferred method to obtain <math>B_0</math> measurement values is to use data from country-specific published sources, measured with a standardized method (<math>B_0</math> shall be based on total as-excreted VS)", if country specific <math>B_0</math> values are not available, default values from tables 10 A-4 to 10 A-9 of 2006 IPCC Guidelines for National Greenhouse Gas Inventories volume 4 Chapter 10 can be used". Hence based on</p>

			<p>this requirement, validation team has checked the website of China Biogas Network, which is hosted by China Biogas Society and China Biogas Journal and issued all the related biogas policies, regulations and standards in China, validation team has also checked authoritative public literature and journals, all the publicly available sources showed that the Country Specific B<sub>0,LT</sub> is not available in China. Therefore, based on AMS-III.D, the IPCC default values are employed for the baseline emission calculation.</p> <p>The applied value derived from the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 4, and Chapter 10, Table 10A-7 (swine). Conservative standard value for Asian swine is applied for all animals in the calculations of emission reduction of the PoA.</p> <p>Value is 0.29 which is verified still valid for the next crediting period as per IPCC.</p>
	GWP <sub>CH<sub>4</sub></sub> - Global warming potential for CH <sub>4</sub> .	-	<p>In this monitoring period global warming potential for CH<sub>4</sub> is 25 according to para. 66 of EB69 meeting report “the Board agreed that the second commitment period global warming potentials (GWPs) shall apply to all calculations of emissions reductions or removals achieved from 01/01/2013”.</p> <p>Value is 25 which is verified still valid for the next crediting period as per EB decision.</p>
	D <sub>CH<sub>4</sub></sub> - Conversion factor of m <sup>3</sup> CH <sub>4</sub> to kilogram CH <sub>4</sub> .	kg/m <sup>3</sup>	<p>The applied value derived from the 2006 IPCC guidelines, Volume 4, Chapter 10, Page 10.42.</p> <p>Value is 0.67 which is verified still valid for the next crediting period as per IPCC.</p>
	UF <sub>b</sub> - Model correction factor to account for model uncertainties	-	<p>The applied value derived from the referred methodology AMS-III.D (version 21).</p> <p>Value is 0.94 which is verified still valid for the next crediting period as per latest version of AMS-III.D.</p>
	FC <sub>BL,k,j</sub> - Annual consumption of baseline fossil fuel j	0.987 x 0.89 Tonnes	<p>Although this parameter is listed in the monitored parameters’ table as per the methodology, this parameter is ex-ante determined.</p> <p>The value of this parameter is sourced from a comprehensive baseline survey of targeted households prior to the installation/commissioning conducted in June, 2010.</p> <p>Thus, as per the applied methodology, a representative sample survey of targeted</p>

		<p>households should be carried out prior to the installation/commissioning of the project equipment. For this PoA, the survey was conducted in June, 2010 before the PoA's commissioning which is the data source for Annual consumption of baseline fossil fuel (<math>FC_{BL,k,j}</math>). Hence no sampling survey need to be conducted as per the methodology for the 2nd crediting period.</p> <p>Via checking this representative sample survey against the latest approved PoA-DD, it is confirmed that the mean value of <math>FC_{BL,k,j}</math> is 0.987t. The relative error is 1.51% at the 95% confidence level. The value obtained 0.987t will multiply by 0.89 to account for uncertainties, i.e. <math>0.987t * 0.89</math>.</p> <p>As per paragraph 10(a) AMS-I.I (version 04). The value will be fixed ex ante in the whole 2nd crediting period of each CPA in the CPA-DD.</p>
<b>Conclusion</b>	<p><b>Step 2- Update the current baseline and the date and parameters</b></p> <p><b>Step 2.1- Update the current baseline</b> As per the requirement of the sub-step, the baseline scenario was not changed. Thus, this step is not applicable.</p> <p><b>Step 2.2- Update the data and parameters</b> Comparing the updated version of methodology AMS-III.R and AMS-III.D with the version used in the latest approved PoA-DD, it is verified that no default parameters in the new version of the applied methodologies have to be updated. Furthermore, all formulae used to calculate the Baseline Emissions, Project Emissions, Leakage and Emission Reductions in the latest version of the methodology was all same to the old version thus no need to be updated.</p> <p>No CARs/CLs/FARs raised in this section.</p> <p>Complying with the GS4GG requirements and <u>Para.111-121/VVS-PoA</u>, the validation team confirms that:</p> <ul style="list-style-type: none"> <li>(a) The methodology has been correctly applied to describe identification of the most plausible baseline scenario and the description reasonably represents what would occur in the absence of corresponding PoA and CPAs.</li> <li>(b) The baseline scenario for the PoA and CPAs under this PoA remains the same as that in the registered PoA-DD within the 1<sup>st</sup> crediting period and the baseline scenario in line with the applied methodology and the same is deemed reasonable. There is not any impact of change on the Eligibility Principles, Criteria and Requirements of GS4GG.</li> </ul>	

**D.2.4. Estimation of emission reductions or net anthropogenic removals or how the PoA achieve safeguarding principles**

<b>Means of validation</b>	The validation team checked section B.3 of the PoA-DD against the methodology AMS-I.I.– Biogas/biomass thermal applications for
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	<p>households/small users (version 04); AMS-III.R.– Methane recovery in agricultural activities at household/small farm level (version 03) <sup>[8]</sup>.</p> <p>The validation team validated the justification given in the updated PoA-DD for the choice of data and parameter (fixed ex ante and to be monitored) used in the equations</p>
<p><b>Findings</b></p>	<p>The emission reductions generated by each CPA were calculated in accordance with the methodology AMS-I.I.– Biogas/biomass thermal applications for households/small users (version 04); AMS-III.R.– Methane recovery in agricultural activities at household/small farm level (version 03).</p> <p>As per the methodology, the Emission reductions are calculated as follows:</p> <p><b>1. Baseline emissions</b></p> <p><b>AMS-III.R - Methane recovery in agricultural activities at household/small farm level</b></p> <p>Paragraphs 9 and 10 of AMS-III.R, requires:</p> <p><i>9. The baseline scenario is the situation where, in the absence of the project activity, biomass and other organic matter are left to decay anaerobically within the project boundary and methane is emitted to the atmosphere. Baseline emissions (BE<sub>y</sub>) are calculated ex ante using the amount of the waste or raw material that would decay anaerobically in the absence of the project activity, with the most recent IPCC tier 2 approach (please refer to the chapter ‘Emissions from Livestock and Manure Management’ under the volume ‘Agriculture, Forestry and other Land use’ of the 2006 IPCC Guidelines for National Greenhouse Gas Inventories). Country/regional-specific values shall be used if available. The option in paragraph 9 (a) and relevant formulae shown in paragraph 10 of AMS-III.D “Methane recovery in animal manure management systems” shall be used to calculate baseline emissions.</i></p> <p><i>10. The amount of waste or raw materials that would decay anaerobically in the absence of the project activity is determined by survey of a sample group of households/small farms with a 90% confidence interval and 10% margin of error. The survey should determine the baseline animal manure management practices applied. This small-scale methodology is only applicable to the portion of the manure, which would decay anaerobically in the absence of the project activity established by the survey.</i></p> <p>In the cited paragraph 17 of methodology AMS-III.D, the first option (17 (a)) is chosen to calculate the emissions. Therefore, the formulas provided in paragraph 10 are applied for the calculation. To distinguish the baseline methane emissions from the baseline carbon dioxide emissions (which are covered under AMS-I.I), an additional index CH<sub>4</sub> is applied to BE<sub>y</sub>:</p> $BE_y = GWP_{CH_4} \times D_{CH_4} \times UF_b \times \sum_{j,LT} MCF_j \times B_{0,LT} \times N_{LT,y} \times VS_{LT,y} \times MS\%_{BL,j}$ <p>Where:</p> <p>BE<sub>CH<sub>4</sub>,y</sub>                      Baseline methane emissions in year y (tCO<sub>2</sub>e)</p> <p>GWP<sub>CH<sub>4</sub></sub>                      Global Warming Potential for CH<sub>4</sub> (25)</p>

$D_{CH_4}$	CH <sub>4</sub> density (0.00067 t/m <sup>3</sup> at room temperature (20 °C) and 1 atm pressure)
$UF_b$	Model correction factor to account for model uncertainties (0.94)
$j$	Index for animal manure management system. As – according to the applicability criteria - all households use pits to store the animal manure, this index is used for the different climate conditions on a city basis.
$LT$	Index for all types of livestock
$MCF_j$	Annual methane conversion factor (MCF) for the baseline animal manure management system $j$ . To pay respect to different annual mean temperatures in the covered region, the pits in different cities are considered different manure management systems with different MCF values.
$B_{0,LT}$	Maximum methane producing capacity for the volatile solid generated for animal type $LT$ (m <sup>3</sup> CH <sub>4</sub> (kgdm) <sup>-1</sup> )
$N_{LT,y}$	Annual average number of animals of type $LT$ in year $y$ (numbers). The number of animals will be determined based on city averages of the number of pigs per households and the number of households in each city (=climatic region).
$VS_{LT,y}$	Volatile solids for livestock $LT$ entering the animal manure management system in year $y$ (on a dry matter weight basis, kg dm/animal/year)
$MS\%_{BL,j}$	Fraction of manure handled in baseline animal manure management system $j$ . As the index $j$ is covered the different climate conditions of the cities, this fraction reflects the share of animals in a climatic region to the total number of animals.

#### AMS I.I - Biogas/biomass thermal applications for households/small users

The Option 1 is selected to determine emission reductions of the project activity as per AMS-I.I (version 04):

#### Option 1: Based on avoided quantity of fossil fuel consumption (applicable only to biogas projects)

Following paragraph 9 of AMS-I.I, version 04, the baseline emissions are calculated as:

$$BE_y = \sum_k \sum_j N_{k,0} * n_{k,y} * FC_{BL,k,j} * NCV_j * EF_{FF,j}$$

Where:

$BE_{CO_2}$	Baseline carbon dioxide emissions from fossil fuel combustion in year $y$ (tCO <sub>2</sub> e)
$K$	Index for the type of thermal applications introduced by the project activity (e.g. cook stove, water heater). Only one type of thermal application, i.e. cook stove is considered.
$j$	Index for the type of baseline fossil fuel consumed. Here $j$ is 1 as only coal is considered. This is conservative.
$N_{k,0}$	Number of thermal applications $k$ commissioned;
$n_{k,y}$	Proportion of $N_{k,0}$ that remain operating in year $y$ (fraction)

- $FC_{BL,k,j}$  Annual consumption of baseline fossil fuel  $j$  (mass or volume unit). For this project, only baseline emissions from coal consumption are considered in the calculation of emission reductions. This is a conservative approach.
- $NCV_j$  Net calorific value of the fossil fuel  $j$  (GJ/mass or volume unit). According to national data published by NDRC ([http://cdm.ccchina.gov.cn/archiver/cdmcn/UpFile/Files/Default/20150511145355\\_964897.pdf](http://cdm.ccchina.gov.cn/archiver/cdmcn/UpFile/Files/Default/20150511145355_964897.pdf)), at the time of PDD writing, the NCV of raw coal is 20.908 GJ/t.
- $EF_{FF,j}$  Is the CO<sub>2</sub> emission coefficient of fuel  $j$  in year  $y$  (tCO<sub>2</sub>/GJ). National data of coal is applied. According to the national data ([http://cdm.ccchina.gov.cn/archiver/cdmcn/UpFile/Files/Default/20150511145355\\_964897.pdf](http://cdm.ccchina.gov.cn/archiver/cdmcn/UpFile/Files/Default/20150511145355_964897.pdf)), the emissions factor for raw coal is 87.3 tCO<sub>2</sub>/TJ.

Following paragraph 10 of AMS-I.I, version 04, the Annual consumption of baseline fossil fuel  $j$  ( $FC_{BL,k,j}$ ) could be determined using method (a) Option (ii):

*Option (ii):*

*Determining the average quantity of fossil fuel consumption in a year from a representative sample survey of targeted households prior to the installation/commissioning of the project equipment. This data on annual baseline fuel consumption obtained from households shall be cross checked with purchase receipt(s) submitted by the household. The value obtained is multiplied by 0.89 to account for uncertainties. This option can only be applied for residential applications.*

*The data collected through sample-based measurements shall comply with the 90% confidence interval and 10% margin of error requirement. Account shall be taken of possible stratification of the sampled population (e.g. average income level, household occupancy, food or heating habits, climate/temperature zone, availability, price and type of fuel used). The latest version of "Standard for sampling and surveys for CDM project activities and programme of activities" shall be complied with. Fuel consumption will be directly determined as mass or volume consumed per unit time;*

Regarding the parameter the Annual consumption of baseline fossil fuel  $j$  ( $FC_{BL,k,j}$ ), the target population is all the potential to-be-included households in the PoA which includes the households in the 13 regions, who will replace their original pit manure management by household biogas digester system and replace their original cooking coal consumption by biogas.

All of households are located in Sichuan, in a similar and limited area, target low-income households, they have similar food and heating habits and availability of fuel used, have similar climatic conditions and similar animal raising habits as well as similar pit storage of manure, etc. It indicates that the entire households population is relatively homogeneous.

## 2. Project emissions

### AMS-III.R - Methane recovery in agricultural activities at household/small farm level

Paragraphs 7 and 8 of AMS-III.R (version 03) are used:

*7. Project emissions consist of CO<sub>2</sub> emissions from use of fossil fuels or electricity for the operation of the system and the physical leakages of methane from the recovery system.*

In this specific case, no fossil fuel or electricity is consumed during the operation of the project. Therefore, the project emissions (covered by AMS-III.R) only comprise the physical leakage from the methane recovery system. These calculation methods to determine the project emissions are referred to in paragraph 8:

*8. Project emissions consist of CO<sub>2</sub> emissions from use of fossil fuels or electricity for the operation of the system and the physical leakages of methane from the recovery system. The relevant methodological tools "Tool to calculate baseline, project and/or leakage emissions from electricity consumption" and "Tool to calculate project or leakage CO<sub>2</sub> emissions from fossil fuel combustion" shall be followed.*

In the cited paragraph 21 of AMS-III.D, the first option (21 (a)) is chosen to calculate the project emissions. Following this paragraph, a physical leakage of 10% of the maximum methane producing potential of manure fed into the management systems implemented by the project activity is assumed.

$$PE_{PL,y} = 0.10 \times GWP_{CH_4} \times D_{CH_4} \times \sum_{i,LT} B_{0,LT} \times N_{LT,y} \times VS_{LT,y} \times MS\%_{i,y}$$

Where:

$PE_{CH_4,y}$	Project methane emissions in year y (tCO <sub>2</sub> e)
$GWP_{CH_4}$	Global Warming Potential for CH <sub>4</sub> (25)
$D_{CH_4}$	CH <sub>4</sub> density (0.00067 t/m <sup>3</sup> at room temperature (20 °C) and 1 atm pressure)
$i$	Index for animal manure management system. As – according to the applicability criteria - all households use pits to store the animal manure, this index is used for the different climate conditions on a city basis.
$LT$	Index for all types of livestock
$B_{0,LT}$	Maximum methane producing capacity for the volatile solid generated for animal type $LT$ (m <sup>3</sup> CH <sub>4</sub> (kg dm) <sup>-1</sup> )
$N_{LT,y}$	Annual average number of animals of type $LT$ in year y (numbers). The number of animals will be determined based on city averages of the number of pigs per households and the number of households in a given city.
$VS_{LT,y}$	Volatile solids for livestock $LT$ entering the animal manure management system in year y (on a dry matter weight basis, kg dm/animal/year)
$MS\%_{i,j}$	Fraction of manure handled in system $i$ in year $y$ . As the index $i$ covers the different climate conditions of the

cities, this fraction reflects the share of household in a given city.

### **AMS-I.I - Biogas/biomass thermal applications for households/small users**

Similar to the baseline emissions from fossil fuel, the project emissions will be calculated:

$$PE_y = \sum_m \sum_j N_{m,y} * FC_{m,j} * NCV_j * EF_{FF,j}$$

Where:

$PE_{CO2,y}$	Project carbon dioxide emissions from fossil fuel combustion in year y (tCO <sub>2</sub> e)
m	Index for thermal application (e.g. cook stove, water heater) not decommissioned by the project activity. In this POA, only cook stove is involved, here m is 1.
$N_{m,y}$	Number of thermal application m remaining in use in year y
$FC_{m,j}$	Annual consumption of fossil fuel type j (physical units, mass/volume) by application m (use 90/10 precision for sampling and sampling requirements specified for baseline sampling described in paragraph 10(a) above may be applied). Option (ii) under paragraph 10(a) is chosen, the value obtained is multiplied by 1.12 to account for uncertainties. Here, coal as fossil fuel is accounted for.
$NCV_j$	Net calorific value of the fossil fuel j (GJ/mass or volume unit). According to national data published by NDRC, at the time of PDD writing, the NCV of raw coal is 20.908 GJ/t.
$EF_{FF,j}$	Is the CO <sub>2</sub> emission coefficient of fuel j in year y (tCO <sub>2</sub> /GJ). National data of coal is applied. According to the national data, the emissions factor for raw coal is 87.3 tCO <sub>2</sub> /TJ.

### 3. Leakage

The leakage will be determined by paragraph 15 of AMS-III.R and paragraph 16 of AMS-I.I:

*15. If the energy generating equipment introduced by the project activity is transferred from outside the boundary to the project activity, leakage is to be considered.*

*16. In case of biogas digesters which are not part of a Type III CDM project activity:*

*(a) Any leakage due to change in manure management practice shall be taken into account e.g. referring to methods provided in AMS-III.D "Methane recovery in animal manure management systems"*

	<p style="text-align: center;"><i>(b)Physical leakage of biogas shall be accounted for as per the methods specified under AMS-III.D “Methane recovery in animal manure management systems”.</i></p> <p>Both paragraphs are not applicable to the proposed project as no equipment will be transferred from or to another activity and no collection/processing/transportation takes place outside the project boundary.</p> <p><b>4. Emission Reduction</b></p> <p>The emission reduction due to avoided methane emissions is calculated as:</p> $ER_y = BE_y - PE_y - Leakage$ <p>The Ex ante calculation of emission reductions will be in a complete and transparent manner as reflected in a calculation sheet attached to each CPA DD.</p> <p>The safeguarding principles will be undertaken at CPA level.</p>
<p><b>Conclusion</b></p>	<p>Complying with GS4GG requirements and <u>Para.122-126/VVS-PoA</u>, CCSC validation team hereby confirms that:</p> <p>(a) The baseline methodology AMS-I.I.– Biogas/biomass thermal applications for households/small users (version 04); AMS-III.R.– Methane recovery in agricultural activities at household/small farm level (version 03) <sup>[8][9]</sup> and has been applied correctly to calculate project emissions, baseline emissions, leakages as well as emission reductions;</p> <p>(b) All estimates of the baseline emissions can be replicated using the data and parameter values provided in the generic CPA-DD.</p>

**D.4.1. Validity of Monitoring plan**

<p><b>Means of validation</b></p>	<p>The validation team reviewed the updated PoA-DD for validation for Design Certification Renewal of the proposed GS PoA, checked whether the PoA-DD update the monitoring plan section in accordance with all relevant applicable requirements in the GS4GG and VVS-PoA; whether the PoA-DD list all data and parameters to be monitored, as required by the applied methodology and whether the monitoring plan explained the operational and management structure, responsibilities and institutional arrangement for data collection/archiving, QA/QC procedures.</p>
<p><b>Findings</b></p>	<p>The monitoring plan in the updated PoA-DD is not changed comparing with the latest approved PoA-DD. This PoA has applied PRC of voluntary changes AMS-I.C. (version 19) to AMS-I.I. (version 04) which had been approved by EB on 09/11/2017. And the updated of the version of methodology AMS-III.R. from V02 to V03 is not changing the monitoring methodology. Thus the latest approved PoA-DD has complied with the latest applicable version of the monitoring methodology.</p> <p>The validation team has duly assessed all the required changes due to the upgraded methodological requirements and the re-assessment of the baseline. The validation team has concluded that</p> <ul style="list-style-type: none"> <li>- all necessary changes have been appropriately reflected in the updated PoA-DD;</li> <li>- the monitoring plan in the updated PoA-DD is in compliance with the applied monitoring methodology;</li> </ul>

	- the monitoring arrangements described in the updated PoA-DD can be implemented and are feasible within the project design.
<b>Conclusion</b>	<p>CCSC validation team hereby confirms that the monitoring plan complies with the requirements of the methodology AMS-I.I.– Biogas/biomass thermal applications for households/small users (version 04); AMS-III.R.– Methane recovery in agricultural activities at household/small farm level (version 03) and GS4GG and <u>Para.129-131/VVS-PoA</u>:</p> <p>(a) The compliance of the description of the monitoring plan stated in the generic CPA DD with the requirements of the applied methodology AMS-I.I.– Biogas/biomass thermal applications for households/small users (version 04); AMS-III.R.– Methane recovery in agricultural activities at household/small farm level (version 03) including applicable tools;</p> <p>(b) The monitoring arrangements described in the monitoring plan are feasible within the project design;</p> <p>(c) The coordinating/managing entity has ability to implement the monitoring plan.</p>

#### D.4.2. Eligibility criteria for inclusion of a CPA in the PoA

No.	Eligibility criterion - Category/Required condition	Means of validation	Findings	Conclusion
1.	The CPA has been approved by the CME.	The validation team has confirmed by interviewing the CME.	No findings raised.	The Eligibility criterion is defined in accordance with GS4GG PoA requirements and GS4GG principle and requirements..  This criterion is objective and comprehensive to allow assessment and inclusion of the CPA into the PoA.
2.	The geographic boundary of the CPA lies within Sichuan province.	The validation team has confirmed by interviewing the CME.	No findings raised.	The Eligibility criterion is defined in accordance with GS4GG PoA requirements and GS4GG principle and requirements..  This criterion is objective and comprehensive to allow assessment and inclusion of the CPA into the PoA.
3.	The CPA implementers confirm in written statements that:  a)All biogas systems to be newly installed under the CPA are not and will	The validation team has confirmed by interviewing the CME.	No findings raised.	The Eligibility criterion is defined in accordance with GS4GG PoA requirements and GS4GG principle and requirements..

No.	Eligibility criterion - Category/Required condition	Means of validation	Findings	Conclusion
	not be part of another CDM project or program activity and that no CERs will be claimed for the biogas system other than those to be claimed by the CME on behalf of the CPA implementer and the participating households respectively; and b) That he is aware and agrees with the inclusion of the CPA to the PoA.			This criterion is objective and comprehensive to allow assessment and inclusion of the CPA into the PoA.
4.	The biogas systems for all involved households is to be newly installed under the CPA is not and will not be part of another CDM project or program activity and that no CERs will be claimed for the biogas system other than those to be claimed by the CME on behalf of the CPA implementer and the participating households respectively;	The validation team has confirmed by interviewing the CME.	No findings raised.	The Eligibility criterion is defined in accordance with GS4GG PoA requirements and GS4GG principle and requirements.  This criterion is objective and comprehensive to allow assessment and inclusion of the CPA into the PoA.
5.	A check for double counting of single households came to a negative result.	The validation team has confirmed by interviewing the CME.	No findings raised.	The Eligibility criterion is defined in accordance with GS4GG PoA requirements and GS4GG principle and requirements.  This criterion is objective and comprehensive to allow assessment and inclusion of the CPA into the PoA.
6.	All relevant applicability criteria of methodology AMSIII.R shall be met:  • The project installs methane recovery and combustion systems to existing sources of methane emissions.	Confirmed against the methodology AMS-III.R.	No findings raised.	The Eligibility criterion is defined in accordance with GS4GG PoA requirements and REA requirements and GS4GG principle and requirements.  This criterion is objective and comprehensive to allow assessment and inclusion of the CPA into the PoA.

No.	Eligibility criterion - Category/Required condition	Means of validation	Findings	Conclusion
7.	<ul style="list-style-type: none"> <li>The installed methane recovery systems achieve annual emission reductions of less than 5 tCO<sub>2</sub>e. (This can be shown by demonstrating that the annual average temperature does not exceed 21°C and the annual average number of pigs is no larger than 33.7 for the project households.</li> </ul>	Confirmed against the methodology AMS-III.R.	No findings raised.	<p>The Eligibility criterion is defined in accordance with GS4GG PoA requirements and GS4GG principle and requirements.</p> <p>This criterion is objective and comprehensive to allow assessment and inclusion of the CPA into the PoA.</p>
8.	<ul style="list-style-type: none"> <li>Methodology AMS-III.R is used in combination in with methodology AMS-I.I.</li> </ul>	Confirmed against the methodology AMS-III.R.	No findings raised.	<p>The Eligibility criterion is defined in accordance with GS4GG PoA requirements and GS4GG principle and requirements.</p> <p>This criterion is objective and comprehensive to allow assessment and inclusion of the CPA into the PoA.</p>
9.	<ul style="list-style-type: none"> <li>The sludge must be handled aerobically. In case of soil application of the final sludge the proper conditions and procedures that ensure that there are no methane emissions must be ensured.</li> </ul>	Confirmed against the methodology AMS-III.R.	No findings raised.	<p>The Eligibility criterion is defined in accordance with GS4GG PoA requirements and GS4GG principle and requirements.</p> <p>This criterion is objective and comprehensive to allow assessment and inclusion of the CPA into the PoA.</p>
10.	<ul style="list-style-type: none"> <li>Measures shall be used (e.g. combusted or burnt in a biogas burner for cooking needs) to ensure that all the methane collected by the recovery system is destroyed.</li> </ul>	Confirmed against the methodology AMS-III.R.	No findings raised.	<p>The Eligibility criterion is defined in accordance with GS4GG PoA requirements and GS4GG principle and requirements.</p> <p>This criterion is objective and comprehensive to allow assessment and inclusion of the CPA into the PoA.</p>
11.	<ul style="list-style-type: none"> <li>Aggregated annual emission reductions of all systems included shall be less than or equal to 60 kt CO<sub>2</sub>equivalent.</li> </ul>	Confirmed against the methodology AMS-III.R.	No findings raised.	<p>The Eligibility criterion is defined in accordance with GS4GG PoA requirements and GS4GG principle and requirements.</p> <p>This criterion is objective and comprehensive to allow</p>

No.	Eligibility criterion - Category/Required condition	Means of validation	Findings	Conclusion
				assessment and inclusion of the CPA into the PoA.
12.	<p>All relevant applicability criteria of methodology AMSI.I shall be met:</p> <p>This category comprises activities for generation of renewable thermal energy using renewable biomass or biogas for use in residential, commercial, institutional applications (e.g. for supply to households, small farms or for use in built environment of institutions such as schools).</p> <p>Examples of these technologies that displace or avoid fossil fuel use include but are not limited to biogas cook stoves, biomass briquette cook stoves, small scale baking and drying systems, water heating, or space heating systems.</p>	<p>Confirmed against the methodology AMS-</p> <p>I.I.</p>	<p>No findings raised.</p>	<p>The Eligibility criterion is defined in accordance with GS4GG PoA requirements and GS4GG principle and requirements.</p> <p>This criterion is objective and comprehensive to allow assessment and inclusion of the CPA into the PoA.</p>
13.	<p>The total installed/rated thermal energy generation capacity of the project equipment is equal to or less than 45 MW thermal.</p>	<p>Confirmed against the methodology AMS-</p> <p>I.I.</p>	<p>No findings raised.</p>	<p>The Eligibility criterion is defined in accordance with GS4GG PoA requirements and GS4GG principle and requirements.</p> <p>This criterion is objective and comprehensive to allow assessment and inclusion of the CPA into the PoA.</p>
14.	<p>Each unit (e.g. cook stove, heater) shall have a rated capacity equal to or less than 150 kW thermal</p>	<p>Confirmed against the methodology AMS-</p> <p>I.I.</p>	<p>No findings raised.</p>	<p>The Eligibility criterion is defined in accordance with GS4GG PoA requirements and GS4GG principle and requirements.</p> <p>This criterion is objective and comprehensive to allow assessment and inclusion of the CPA into the PoA.</p>

No.	Eligibility criterion - Category/Required condition	Means of validation	Findings	Conclusion
15.	<p>All households meet the inclusion criteria for households to be included in a certain CPA. They:</p> <ul style="list-style-type: none"> <li>• are located within the geographic boundary of the CPA.</li> <li>• generate animal manure and wastes from agricultural activities that are currently stored under anaerobic conditions in deep pits.</li> <li>• currently use coal as source of energy for cooking.</li> <li>• install a new household biogas system, considering the relevant technical standards.</li> <li>• are considered low income households.</li> <li>• No recovery or combustion equipment is transferred from or to other activities</li> </ul>	<p>The PoA focuses on poor households. No household should be located outside the defined CPA boundary. All households meet the inclusion criteria for households to be included in a certain CPA.</p>	<p>No findings raised.</p>	<p>The Eligibility criterion is defined in accordance with GS4GG PoA requirements and GS4GG principle and requirements.</p> <p>This criterion is objective and comprehensive to allow assessment and inclusion of the CPA into the PoA.</p>
16.	<p>Each of the independent subsystems (the digesters and biogas stoves) is no larger than 1% of the small scale thresholds defined by the methodologies applied (600 tCO<sub>2</sub>e emission reduction from methane avoidance, 150 kW thermal installed capacity of the stoves).</p>	<p>Confirmed through interviewing CME.</p>	<p>No findings raised.</p>	<p>The Eligibility criterion is defined in accordance with GS4GG PoA requirements and GS4GG principle and requirements.</p> <p>This criterion is objective and comprehensive to allow assessment and inclusion of the CPA into the PoA.</p>
17.	<p>The proposed project and the new CPA do not lead to a diversion of official development assistance (ODA).</p>	<p>Avoidance of CDM leading to a diversion of official development assistance.</p>	<p>No findings raised.</p>	<p>The Eligibility criterion is defined in accordance with GS4GG PoA requirements and GS4GG principle and requirements.</p>

No.	Eligibility criterion - Category/Required condition	Means of validation	Findings	Conclusion
				This criterion is objective and comprehensive to allow assessment and inclusion of the CPA into the PoA.
18.	The CPA implements a monitoring plan that is in line with the monitoring plan described in the PoA-DD (section I.7.2)	The monitoring plan of each CPA should be in line with the monitoring plan validated by the DOE and registered with the PoA.	No findings raised.	The Eligibility criterion is defined in accordance with GS4GG PoA requirements and GS4GG principle and requirements.  This criterion is objective and comprehensive to allow assessment and inclusion of the CPA into the PoA.
19.	The start date of the CPA can be determined with suitable evidence.	Confirmed against CDM project standard for programmes of activities)	No findings raised.	The Eligibility criterion is defined in accordance with GS4GG PoA requirements and GS4GG principle and requirements.  This criterion is objective and comprehensive to allow assessment and inclusion of the CPA into the PoA.
20.	The start date of the CPA is not before the date of public web hosting of the PoA documentation (28/10/2010).	Confirmed against CDM project standard for programmes of activities)	No findings raised.	The Eligibility criterion is defined in accordance with GS4GG PoA requirements and GS4GG principle and requirements.  This criterion is objective and comprehensive to allow assessment and inclusion of the CPA into the PoA.
21.	The end date of the CPA does not exceed the PoA end date.	The CPAs will automatically be terminated when the PoA reached the end of its end date.	No findings raised.	The Eligibility criterion is defined in accordance with GS4GG PoA requirements and GS4GG principle and requirements.  This criterion is objective and comprehensive to allow assessment and inclusion of the CPA into the PoA.
22.			No findings raised.	The Eligibility criterion is defined in accordance with GS4GG PoA requirements and GS4GG principle and requirements.  This criterion is objective and comprehensive to allow

No.	Eligibility criterion - Category/Required condition	Means of validation	Findings	Conclusion
				assessment and inclusion of the CPA into the PoA.
23.	The total thermal capacity installed at all households of the CPA does not exceed 15 MW.	A test record of the typical biogas stoves will be provided as evidence during the inclusion. The number of households should not exceed the maximum capacity of 15 MW divided by the capacity of one stove.	No findings raised.	The Eligibility criterion is defined in accordance with GS4GG PoA requirements and GS4GG principle and requirements.  This criterion is objective and comprehensive to allow assessment and inclusion of the CPA into the PoA.
24.	The thermal capacity of a single stove does not exceed 4,500 kW.	Confirmed against the Guidelines for demonstrating the additionality of microscale project activities.	No findings raised.	The Eligibility criterion is defined in accordance with GS4GG PoA requirements and GS4GG principle and requirements.  This criterion is objective and comprehensive to allow assessment and inclusion of the CPA into the PoA.
25.	The users of the subsystems will be households.	Confirmed against the Guidelines for demonstrating the additionality of microscale project activities.	No findings raised.	The Eligibility criterion is defined in accordance with GS4GG PoA requirements and GS4GG principle and requirements.  This criterion is objective and comprehensive to allow assessment and inclusion of the CPA into the PoA.
26.	The CPA meets the additionality criteria relevant for Type III.	Confirmed against the Guidelines for demonstrating the additionality of microscale project activities.	No findings raised.	The Eligibility criterion is defined in accordance with GS4GG PoA requirements and GS4GG principle and requirements.  This criterion is objective and comprehensive to allow assessment and inclusion of the CPA into the PoA.
27.	The total annual emission reduction from methane avoidance (type II activity) aimed by the CPA does not exceed 20 ktCO <sub>2</sub> e in	Confirmed against the Guidelines for demonstrating the additionality of microscale project activities.	No findings raised.	The Eligibility criterion is defined in accordance with GS4GG PoA requirements and GS4GG principle and requirements.  This criterion is objective and comprehensive to allow

No.	Eligibility criterion - Category/Required condition	Means of validation	Findings	Conclusion
	any year of the crediting period.			assessment and inclusion of the CPA into the PoA.
28.	The annual emission reduction from methane avoidance (type III activity) of one single household does not exceed 600 tCO <sub>2</sub> e.	Confirmed against ER calculation.	No findings raised.	The Eligibility criterion is defined in accordance with GS4GG PoA requirements and GS4GG principle and requirements.  This criterion is objective and comprehensive to allow assessment and inclusion of the CPA into the PoA.
29.	The users of the subsystems will be households.	Confirmed against the Guidelines for demonstrating the additionality of microscale project activities.	No findings raised.	The Eligibility criterion is defined in accordance with GS4GG PoA requirements and GS4GG principle and requirements.  This criterion is objective and comprehensive to allow assessment and inclusion of the CPA into the PoA.
30.	All CPA specific input parameters that are determined by sampling have been determined by a survey that is based on the validated sampling plan and fulfils the minimum confidence/error of 95/10 for surveys combining several CPAs or 90/10 for surveys that cover only single CPAs.	The data quality of the sampling survey should meet the minimum requirements.	No findings raised.	The Eligibility criterion is defined in accordance with GS4GG PoA requirements and GS4GG principle and requirements.  This criterion is objective and comprehensive to allow assessment and inclusion of the CPA into the PoA.

## SECTION E. Internal quality control

>>

CCSC has taken the following quality control measures within the validation team and of the validation process according to relevant CCSC's internal procedures:

- The application review of the validation was conducted and concluded that CCSC has the accredited scope and competence to validate the project with impartiality as well;
- The validation team was selected with due considerations given in terms of the competence and impartiality;
- The validation team carried out the validation work and compiled a validation report strictly following CCSC's Procedures for Implementation of Validation.

The validation report submitted by the validation team was subjected to a technical review and decision-making process, the technical reviewers and decision-makers are qualified and independent from the validation team. If any issue is raised during technical review and/or decision-making the same is to be discussed between the issue-raiser and the team leader as well as the PP. All issues must be satisfactorily addressed before the submission of the report for final approval. The persons who conducted the technical review and decision-making for the project are shown in SECTION B of this report and their Certificates of Competence can be found in Appendix 2 of this report.

The report approved by the authorized official of CCSC as the final report together with relevant documents are submitted to Gold Standard through the UNFCCC dedicated web-platform for Design Certification Renewal (only if an unconditioned positive validation opinion is concluded).

## **SECTION F. Validation opinion**

>>

China Classification Society Certification Company (CCSC), commissioned by UPM Umwelt-Projekt-Management GmbH, has performed a validation of the Sichuan Rural Poor-Household Biogas Development Programme (GS1239) based on the requirements stated under Gold Standard for the GS4GG REA Requirements, GS4GG Principles & Requirements, GS4GG GHG Emissions Reduction & Sequestration Product Requirements and associated documents, UNFCCC criteria for the Clean Development Mechanism, CDM Validation and Verification Standard for Programme of Activities (VVS-PA, Version 02.0) and host country criteria.

The validation was executed by taking the following methods and in the following steps so far:

- Desk review of PoA-DD (Version 3.4, 22/01/2021)<sup>[1]</sup> and relative documents
- On-site visit with stakeholder interviews (from remote survey)
- Issue of corrective action requests (CARs) and clarification requests (CLs)
- Desk review of PoA-DD (Version 3.4)<sup>[1]</sup> and responses to CARs/CLs
- Updated revision of PoA-DD (Version 3.4)<sup>[1]</sup> requesting for Design Certification Renewal of the PoA.
- Issue of this version of the validation report

In the course of the validation, no Corrective Action Request (CAR), no Clarification Request (CL) and no Forward Action Request (FAR) were raised.

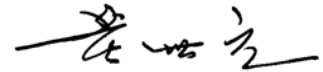
The review of the PoA-DD<sup>[1]</sup> and additional background documents, the subsequent follow up remote survey and interviews, together with the review of comments by Parties, Stakeholders and NGOs, have provided CCSC with sufficient evidence to confirm that the project has satisfied the stated criteria.

As a result of this validation, the validator confirms that:

- The PoA is in line with all relevant host country criteria and all relevant GS and UNFCCC requirements;
- The PoA additionality is sufficiently justified in the PoA-DD;
- The eligibility criteria established for CPA inclusion are deemed appropriate and sufficient;
- The methodological choices and equations for the calculation of the CPA emission reductions in the PoA are outlined in a transparent manner;

In our opinion, the project meets all relevant GS and UNFCCC requirements for the GS PoA and the relevant host country criteria. CCSC hereby requests Design Certification Renewal of the proposed GS PoA .

**For and on behalf of CCSC**



**Authorized Signature**

**Name: HUANG Shiyuan**

**Date: 31/01/2021**

## Appendix 1. Abbreviations

Abbreviations	Full Texts
BM	Build Margin
CAR	Corrective Action Request
CCSC	China Classification Society Certification Company
CDM	Clean Development Mechanism
CER	Certified Emission Reductions
CL	Clarification Request
CME	coordinating/managing entity
CPA	Component Project Activity
CO <sub>2</sub>	Carbon Dioxide
CO <sub>2</sub> e	Carbon Dioxide Equivalent
DD	Design Document
DNA	Designated National Authority
DOE	Designated Operational Entity
EB	Executive Board
EIA	Environmental Impact Assessment
FAR	Forward Action Request
GHG	Green House Gas(es)
GS	Gold Standard
GS4GG	Gold Standard for Global Goal
PCP-PoA	CDM Project Cycle Procedure for Programme of Activities
PoA	Programme of Activities
PP	Project Participant
PS-PoA	Project Standard for Programme of Activities
UNFCCC	United Nations Framework Convention on Climate Change
VPA	Voluntary project activity
VVS-PoA	Validation and Verification Standard for Programme of Activities

# Appendix 2. Competence of team member and technical reviewers



Appendix 9

## CERTIFICATE OF COMPETENCE

Date of issue: 23/01/2020

Mr. Li Xingtong

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/TA3.1/TA9.2/TA13.1
- CDM verifier for Technical Area(s): TA1.1/TA1.2/TA3.1/TA9.2/TA13.1
- Technical expert for Technical Area(s): \_\_\_\_\_

Huang ShiYuan  
CCSC General Manager



Appendix 9

## CERTIFICATE OF COMPETENCE

Date of issue: 23/01/2020

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): \_\_\_\_\_

Huang ShiYuan  
CCSC General Manager



Appendix 9

## CERTIFICATE OF COMPETENCE

Date of issue: 23/01/2020

Mr. Zhou Wusen

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

Huang ShiYuan  
CCSC General Manager



Appendix 9

## CERTIFICATE OF COMPETENCE

Date of issue: 23/01/2020

Ms. Zheng Ling

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
- CDM verifier for Technical Area(s): TA1.2
- Technical expert for Technical Area(s): TA13.1

Huang ShiYuan  
CCSC General Manager

### Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
[1]	CME	PoA-DD Version 3.3 PoA-DD Version 3.4	30/11/2020 22/01/2021	CME
[2]	CME	Registered PoA-DD Version 03	07/09/2016	CME
[3]	CME	Monitoring Reports of CPAs under this PoA during the first crediting period	/	CME
[4]	CME	GS4GG Transition GS1239 PoA Ver2.2	09/2019	CME
[5]	GS	GS4GG Key Programme Information & Programme Design Document (PoA-DD) Version 1.0	07/2017	Others
[6]	GS	GS4GG Renewable Energy Activity Requirements Version 1.2	10/2019	Others
[7]	GS	GS4GG GHG Emissions Reduction & Sequestration Product Requirements Version 1.2	10/2019	Others
[8]	UNFC CC	AMS-I.I.– Biogas/biomass thermal applications for households/small users (version 04)	20/07/2012	Others
[9]	UNFC CC	AMS-III.R.– Methane recovery in agricultural activities at household/small farm level (version 03)	13/09/2012	Others
[10]	UNFC CC	AMS-III.D.- Methane recovery in animal manure management systems	25/11/2005	Others
[11]	GS	GS4GG Principles & Requirements Version 1.2	10/2019	Others
[12]	GS	GS4GG Programme of Activity Requirements Version 1.2	10/2019	Others
[13]	GS	GS4GG Requirements & Guidelines for the Transition of Projects from Previous Versions of the Standard Version	03/2018	Others
[14]	GS	GS4GG Safeguarding Principles & Requirements Version 1.2	10/2019	Others
[15]	UNFC CC	CDM project standard for programmes of activities, Version 02.0	29/11/2018	Others
[16]	UNFC CC	Validation and Verification Standard for Programme of Activities, Version 02.0	29/11/2018	Others
[17]	UNFC CC	CDM project cycle procedure for programmes of activities, Version 02.0	29/11/2018	Others
[18]	UNFC CC	CDM Glossary terms, Version 10.0	12/09/2019	Others
[19]	UNFC CC	Methodological Tool “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period” (version 03.0.1)	02/03/2012	Others
[20]	CME	GS1239 Programme Design Consultation Report	/	CME
[21]	GS	COVID 19: INTERIM MEASURES valid from 24/07/2020-31/12/2020	24/07/2020	Others

		COVID-19 Interim Measures – Gold Standard for the Global Goals		
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## Appendix 4. Clarification requests, corrective action requests and forward action requests

**Table 1. CLs from this validation**

<b>CL ID</b>	N.A.	<b>Section no.</b>	N.A.	<b>Date:</b> N.A.
<b>Description of CL</b>				
/				
<b>CME response</b>				<b>Date:</b> N.A.
/				
<b>Documentation provided by CME</b>				
/				
<b>DOE assessment</b>				<b>Date:</b> N.A.
/				

**Table 2. CARs from this validation**

<b>CAR ID</b>	N.A.	<b>Section no.</b>	N.A.	<b>Date:</b> N.A.
<b>Description of CAR</b>				
/				
<b>CME response</b>				<b>Date:</b> /
/				
<b>Documentation provided by CME</b>				
/				
<b>DOE assessment</b>				<b>Date:</b> /
/				

**Table 3. FARs from this validation**

<b>FAR ID</b>	N.A.	<b>Section no.</b>	N.A.	<b>Date:</b> N.A.
<b>Description of FAR</b>				
/				
<b>CME response</b>				<b>Date:</b> /
/				
<b>Documentation provided by CME</b>				
/				
<b>DOE assessment</b>				<b>Date:</b> /
/				