




**Validation report form for renewal of crediting period for  
CDM project activities  
(Version 03.0)**

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

**BASIC INFORMATION**

<b>Title and UNFCCC reference number of the project activity</b>	Bagepalli CDM Biogas Programme UNFCCC Ref No : 0121
<b>Number and duration of the next crediting period</b>	Number of crediting period: 3 Duration of Crediting period: 01/09/2020 to 31/08/2027
<b>Version number of the validation report</b>	1
<b>Completion date of the validation report</b>	10/08/2020
<b>Version number of PDD to which this report applies</b>	08
<b>Project participants</b>	Private Entity - Agricultural Development and Training Society (ADATS) – Host Country Private Entity - FairClimateFund B.V - The Netherlands Private Entity - Evangelisches Werk für Diakonie und Entwicklung e.V – Germany Private Entity – Velcan Energy – France Private Entity – Velcan Energy – Switzerland Private Entity - Atmosfair gGmbH - Germany
<b>Host Party</b>	India
<b>Applied methodologies and standardized baselines</b>	AMS.I.E. Switch from non-renewable biomass for thermal applications by the user, Version 10.1
<b>Mandatory sectoral scopes</b>	Sectoral Scope 1: Energy industries (renewable-/non-renewable sources)
<b>Conditional sectoral scopes, if applicable</b>	Sectoral Scope 13: Waste handling and disposal
<b>Estimated amount of annual average GHG emission reductions or GHG removals by sinks in the next crediting period</b>	13,519 tCO <sub>2e</sub>
<b>Name and UNFCCC reference number of the DOE</b>	4K Earth Science Private. Limited UNFCCC Ref No. CDM-E-0069
<b>Name, position and signature of the approver of the validation report</b>	S. Jagajothi  Director

**SECTION A. Executive summary**

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4K Earth Science Private Limited has been contracted by 'Agricultural Development and Training Society' to perform a validation of the registered Project 'Bagepalli CDM Biogas Programme' (UNFCCC Ref #0121) in India for renewal of crediting period.

The scope of the validation is defined as an independent and objective review of the revised Project Design Document, project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against the CDM validation and verification standard for project activities (version 02), CDM project cycle procedure for project activities (version 02) and CDM project standard for project activities (version 02), Kyoto Protocol requirements and UNFCCC rules.

The report is based on the assessment of the Project design document (PDD) undertaken through stakeholder consultations, application of standard auditing techniques including but not limited to desk review, follow up actions (e.g., on site visit, electronic (telephone or e-mail) interviews) and also the review of the applicable approved methodological and relevant tools, guidance and CDM decisions.

The project activity is the installation of 5,500 biogas plants (digesters) of 2 m<sup>3</sup> capacity each for single households in 5 taluks (Bagepalli, Chickballapur, Chintamani, Gudibanda and Siddalaghatta) in Chickballapur District in Karnataka State. The biogas units will be fed by cattle dung generated from the households. The biogas stoves will replace the traditional fire wood stoves used for cooking and heating purposes. The project was registered in UNFCCC on 10/12/2005 and currently applying renewal for third crediting period ie, 01/09/2020 to 31/08/2027.

The review of the project design document and the subsequent follow-up interviews have provided 4KES with sufficient evidence to determine the project's fulfillment of all the stated criteria. In our opinion, the project meets all applicable UNFCCC requirements for the CDM.

☒ The project will be recommended to the CDM Executive Board with a request for renewal of crediting period.

☐ The project is not recommended for renewal of crediting period

**SECTION B. Validation team, technical reviewer and approver****B.1. Validation team member**

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection	Interview(s)	Validation findings
1.	Team Leader/ Technical Expert/ Local Expert	IR	R	Narendra Kumar	Central Office	x		x	x

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

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	C	Indumathi	Central office
2	Approver	IR	Jagajothi	S	Central Office

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

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The report is based on the assessment of the project design document undertaken through stakeholder consultations, application of standard auditing techniques including but not limited to desk review, follow up actions (e.g., on site visit, electronic (telephone or e-mail) interviews) and also the review of the applicable approved methodological and relevant tools, guidance and CDM decisions.

All the documents used for arriving validation conclusion are listed in Appendix 03 and referenced accordingly in validation report

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

As a result of the COVID-19 pandemic, taking into account the rules of relevant national and local authorities (local to the DOE offices as well as to locality of the site visits), World Health Organization (WHO) recommendations, policies of the DOE and other relevant travel restrictions and guidance (for example, a requirement to self-isolate upon return from specific countries), A DOE may postpone site visits for onsite inspections required by the “CDM validation and verification standard for project activities (version 02.0) (VVS-PA)”.

If the site visits cannot be postponed, a proper justification should be provided by the DOE why the site visits cannot be postponed, including the demonstration of a significant impact of delaying the site visits on the DOE, or project participants or coordinating/ managing entity (e.g. commitment/ timeline as per the validation or verification contract, CER delivery commitment by project participants) reliance on applicable force majeure provisions in the validation or verification contracts, if needed.

The project is a Gold Standard CDM project and as per the Gold standard requirements, the RCP requests shall be submitted before the end of the previous crediting period. Hence, for this project activity, the DOE has committed to complete the CDM and Gold standard validation before end of crediting period ie, 31<sup>st</sup> August 2020. Due to the COVID pandemic situation, the DOE initially postponed the site visit up to two month. But with the current COVID cases rate in India, the site visit is not expected to happen in near future. Hence the DOE has skipped the on-site visit. Moreover the estimated emission reduction for the project activity is less than 100,000 t CO<sub>2</sub> eq and hence as per the para 31 of CDM validation and Verification standard for PA, v2, the site visit is optional for this project activity. However para 31 & 32 requirements, the DOE may use other standard auditing techniques for validation or verification as referred in sections 7.1.3.1 of the VVS for PA.

Verification team has used the following alternative means for its assessment and to justify that they are sufficient for the purpose of verification. Along with desk review, audit team has conducted remote audit interview (Zoom interview) as follows:

- A complete desk review of the revised PDD, as well as all applicable country legal requirement and supportive evidences have been checked by the verification team.
- Verification team has performed Zoom interview with PP in order to check implementation, validity of current or updated baseline, application of latest methodology, revised monitoring requirements etc.
- Verification team has also performed Zoom interview with end-user to crosscheck the implementation details and other monitoring details.
- Cross checks between information provided by interviewed personnel (i.e. by checking sources) to ensure that no relevant information has been omitted.

- Cross-check evaluation, for information received from interviews, under the scope of all information and references provided in PDD and supporting documents.

Details of interviewees, topics covered and additional information presented in the below section “C.3 Interviews”

Duration of on-site inspection: DD/MM/YYYY to DD/MM/YYYY				
No.	Activity performed on-site	Site location	Date	Team member
1.	NA			

### C.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Esteves	Ram	Director, ADATS	29/06/2020	<ul style="list-style-type: none"> <li>- Roles and responsibilities</li> <li>- End user agreement</li> <li>- Technical details</li> <li>- Revised baseline</li> <li>- Revised monitoring requirement</li> <li>- Stakeholder consultation process</li> </ul>	Narendra Kumar R
2	Pasha	Mukheem	Coordinator, ADATS	29/06/2020		
3	-	Waheed	ADATS	29/06/2020		
4	Padmanabha	Sudha	FCN	29/06/2020	<ul style="list-style-type: none"> <li>- Updated Baseline assessment</li> <li>- Issues in the PDD</li> <li>- Application of latest methodology</li> <li>- Revised ER estimation</li> </ul>	Narendra Kumar R
5	-	Ramanjamma	End user-2008, Merupalli	29/06/2020	<ul style="list-style-type: none"> <li>- Implementation details</li> <li>- Operational status</li> <li>- CER rights</li> <li>- Grievances</li> </ul>	Narendra Kumar R
6	-	Papamma	End user-8243, Merupalli	29/06/2020		
7	-	Ratnamma	End user-2009, Merupalli	29/06/2020		
8	-	nagaratnamma	End user-2010, Merupalli	29/06/2020		
9	-	Jyothi	End user-4023, Vadigiri	29/06/2020		
10	-	Lakshmi Narasimamma	End user-4026, Vadigiri	29/06/2020		
11	-	Devamma	End user-4030, Vadigiri	29/06/2020		
12	-	Venkatamma	End user-5884, Vadigiri	29/06/2020		
13	-	Anjamma	End user-4155, Bandolapalli	29/06/2020		
14	-	Lalitha	End user-4150, Bandolapalli	29/06/2020		
15	-	Venkatalaxmma	End user-4150, Bandolapalli	29/06/2020		
16	-	Jayamma	End user-4151, Bandolapalli	29/06/2020		

### C.4. Sampling approach

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PP has conducted Kitchen test on sample basis in the non-project households to determine the updated baseline fuel wood consumption.

The Kitchen test results have been conducted in 160 non-project households. The Kitchen Tests are conducted for 3 continuous days in each household. Verification team checked the appropriateness of test results using the following steps:

- The Method of Kitchen test followed by PP is checked and found to be in accordance with established international/national procedures.
- The Kitchen test results have been crosschecked with the respective Kitchen test monitoring sheet and found no error
- The method of Kitchen test is simple and the PP's staffs are found to be capable of doing the test.

Hence, the verification team accepts the Kitchen test result.

Nevertheless, PP has compared the Kitchen test result against the fuel wood consumption of the project area determined by 'Third party study "Decision support system for regional domestic energy planning' by Ramachandra, T.V., Vamshee Krishna S and Shruthi, B.V. 2005 and considered the Third party study value for the emission reduction calculation. Since the fuel wood consumption provided by the third party study is conservative compared to the fuel wood consumption determined in the Kitchen test, the verification team found considering the third party value for the emission reduction calculation to be appropriate.

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

Area of validation findings	No. of CL	No. of CAR	No. of FAR
Compliance with PDD form	-	1	-
Application and selection of methodologies and standardized baselines	1	-	-
Validity of original baseline or its update	1	1	-
Estimated emission reductions or net anthropogenic removals	1	1	-
Validity of monitoring plan	-	-	-
Crediting period	-	-	-
Project participants	1	-	-
Post-registration changes	-	-	-
Others (please specify)	-	-	-
<b>Total</b>	<b>4</b>	<b>3</b>	<b>-</b>

### SECTION D. Validation findings

#### D.1. Compliance with PDD form

<b>Means of validation</b>	Validation team checked the Project Design Document with latest version of 'Project design document form' in the UNFCCC website (ie, version 11.0)/8/ and "Instructions for completing this form" mentioned as attachment to Project design document form (version 11.0)/8/.
<b>Findings</b>	CAR-01 is raised and closed satisfactorily
<b>Conclusion</b>	Validation team confirms that final PDD is completed using the valid version of the applicable PDD form at the time of submission.

#### D.2. Application and selection of methodologies and standardized baselines

<b>Means of validation</b>	<p>For the 2<sup>nd</sup> crediting period, the project applied the following methodology</p> <ul style="list-style-type: none"> <li>• AMS-I.E. ver. 5 - Switch from non-renewable biomass for thermal applications by the user</li> </ul> <p>During this renewal of the crediting period, the latest version of AMS. I.E is used:</p> <ul style="list-style-type: none"> <li>• AMS-I.E. ver. 10.1 - Switch from non-renewable biomass for thermal applications by the user</li> </ul> <p>The assessment team has validated the documentation referred to in the revised</p>
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	<p>PDD for renewable of crediting period and verified the documentation content for verifying the justification of the applicability of the methodology AMS I.E Version 10.1/5/ and confirmed that the documentation referred to in the PDD is correctly quoted and interpreted. The applicability of the methodology AMS I.E, version 10.1 is assessed as below:</p> <ul style="list-style-type: none"> <li>- The project activity is installation of 2 m<sup>3</sup> biogas units in the households which generates thermal energy for cooking and hence replaces the non-renewable biomass which otherwise would have used for the cooking needs in the households. Hence the project applies the technology that displaces use of non-renewable biomass by renewable energy.</li> <li>- PP has signed end user agreement with all the biogas users that confirms end user accepts transfers of the emission reductions generated from the project activity to the PP, ADATS and is not transferable to any other entity. Hence, the double counting of emission reduction between end users, distributors and producers of stoves etc is avoided. The assessment team also checked the end user agreements and found to be valid. The same has been explained in the revised CDM-PDD.</li> <li>- PP has allotted unique ID number for each biogas unit. The unique ID number and "ADATS-VELCAN" are engraved/written on each bio-digester on the unit to distinguish it as part of this project activity. The same is checked during the video call with the end users. This will avoid double counting of emission reductions. The same is explained the revised CDM-PDD.</li> <li>- All the bio digesters are constructed by PP (ADATS). There is no involvement of manufacturers, wholesale providers or any other organisation. Moreover, PP has signed agreement with all the end users in which the end user agree to transfer the carbon credits only to PP. Hence, no double counting of emission reduction is expected in this project activity. The same explained in the revised CDM-PDD</li> </ul>
<b>Findings</b>	CL-02 is raised and closed satisfactorily
<b>Conclusion</b>	The project fulfils all relevant criteria of the applied methodology "AMS-I.E.: Switch from non-renewable biomass for thermal applications by the user" - Version 10.1. Hence use of the selected methodology is appropriate for this project activity.

### D.3. Validity of original baseline or its update

<b>Means of validation</b>	<p>Validation team checked the registered PDD (of 2<sup>nd</sup> CP) and the revised PDD submitted for the validity of original baseline or its update. Validity of the baseline has been assessed as per 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 03.0.1/14/</p> <p><b>Step 1: Assess the validity of the current baseline for the next crediting period</b></p> <p>The CDM Project Standard for PA, version 2 requires assessing the impact of new relevant national and/or sectoral policies and circumstances on the baseline. The validity of the current baseline is assessed in the following sub-steps:</p> <p><b>Step 1.1: Assess compliance of the current baseline with relevant mandatory national and/or sectoral policies</b></p> <p>The baseline of the project activity is continued use of the fuel wood for cooking in traditional cook stove that were used before the implementation of the biogas system. There are no relevant national and/or sectoral policies and circumstances ever since the project was registered that have an impact on the baseline. No national and sectoral policies that mandate the PP to invest in the project or prevent village households to use traditional cook stove and fuel wood use.</p> <p>Thus, the baseline identified during the validation is still compliance with the relevant mandatory national and/or sectoral policies</p>
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**Step 1.2: Assess the impact of circumstances**

The baseline scenario identified during the validation of the project activity was generation of thermal energy for cooking in the households from the fuel wood, of which a large part of it was non-renewable biomass. So, in the absence of the project activity, the project households would have continued using the fuel wood for their cooking. The project is completely a voluntary action by the PP. Hence, without the project, the end-users would have continued to use non-renewable biogas in traditional cook stove for cooking. There is no circumstances that affect rural households prevent from fuel wood use for cooking in the traditional cook stove.

Since, there is no change in the circumstance and hence the circumstance will not have any impact on the current baseline emission.

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

In the absence of the project activity, the baseline scenario in the project boundary is the use of non-renewable biomass for cooking and heating water on traditional cook stoves with low efficiencies. The traditional cook stoves are mostly three stone cook stove or mud stove which are made locally by the households itself and does not involve any cost for purchase of new stoves or repair. No investment would be required for continuation of baseline equipments even now. Even in the present scenario, fuel wood is the common fuel used for cooking & water heating in the Chikballapur district. In the project area, PP has also conducted a survey in non-project households. As per the survey results/18/, 73.73% of the rural households in the project area uses fuel wood for cooking & water heating in the traditional wood stove (without chimney or grate). As per the Census data/26/, about 73.94% of total population and 85.63% of urban population in Chikballapura district uses fuel wood for cooking. As per National Sample Survey-76<sup>th</sup> Round report/27/<sup>1</sup>, about 27.3% of rural people in Karnataka still use fire wood for cooking. Though LPG is promoted by the government through the Pradhan Mantri Ujjwala Yojana, there is no increase in LPG consumption among general rural consumers<sup>2</sup>. This shows that though LPG has been provided with subsidy to the rural communities, the refill is very expensive and rural households are still using traditional stove for cooking<sup>3</sup>.

Hence, during the 3<sup>rd</sup> crediting period also, the baseline traditional cook stoves and use of fuel wood for cooking would have continued in the absence of the project activity

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

As per para 404 of CDM Validation and Verification standard for PA(version 2), validity of the original baseline or its update is assessed as below:

- a) As per the PDD, the following are the baseline parameters that are fixed ex-ante:

$BC_{BL,HH,y}$  = Average annual consumption of woody biomass per household before the start of the project activity

<sup>1</sup> [http://www.mospi.gov.in/sites/default/files/publication\\_reports/Report\\_584\\_final\\_0.pdf](http://www.mospi.gov.in/sites/default/files/publication_reports/Report_584_final_0.pdf)

<sup>2</sup> <https://www.nature.com/articles/s41560-019-0429-8?proof=true&n%2525EF%2525BB%2525BF>

<sup>3</sup> <https://energy.economictimes.indiatimes.com/news/oil-and-gas/indias-ujjwala-scheme-provided-lpg-access-but-failed-to-promote-its-use-study/73580017>

$f_{NRB,y}$  = Fraction of woody biomass used in the absence of the project activity in year y that can be established as non-renewable biomass (fNRB)

$NCV_{biomass}$  = Net calorific value of the non-renewable woody biomass that is substituted (IPCC default for wood fuel, 0.0156 TJ/tonne)

$EF_{projected\_fossil\ fuel}$  Emission factor for the substitution of non-renewable woody biomass by similar consumers.

The assessment of the validity of the parameters are provided below:

Ex-ante Parameters	Value for the 2 <sup>nd</sup> Crediting period	Validity for 3 <sup>rd</sup> Crediting period	Assessment
$BC_{BL,HH,y}$	3.07 tonnes/year/family	Not Valid	For the previous crediting period, $BC_{BL,HH,y}$ (depicted as <b>By</b> in previous PDD) s estimated based on the study report "Ramachandra, T.V., Krishna, S.V. and Shruthi, B.V. 2005/21/. Decision support system for regional domestic energy planning. Journal of Scientific and Industrial Research.  Since, this is an old data, the value may not be applicable for the now for the 3 <sup>rd</sup> crediting period.
$f_{NRB,y}$	0.95	Not valid	For the previous crediting period the $f_{NRB,y}$ was calculated based on the report "Forest Survey of India, 2011, Ministry of Environment and Forests, Government of India.  Since, the latest data is now available and also the applied methodology requires $f_{NRB,y}$ to be calculated as per the 'Tool 30: Calculation of the fraction of non-renewable biomass'/16/, the old data estimated for the previous crediting period is no more valid.
$NCV_{biomass}$	0.015 TJ/tonne	Valid	As per latest version of applied methodology (AMS I.E, version 10.1), the NCV of biomass is same. However, the value is provided with four decimal accuracy ie, 0.0156 TJ/tonne
$EF_{projected\_fossil\ fuel}$	81.6 tCO <sub>2</sub> /TJ	Not Valid	As per the latest version of AMS.I.E methodology, the default emission factor of projected fuel is changed to 64.4 tCO <sub>2</sub> /TJ for the project region (South Asia). Hence, the emission factor of 81.6 tCO <sub>2</sub> /TJ is no more valid.

#### Step 2: Update the current baseline and the data and parameters

As determined in step 1.4 above, the flowing fixed parameters needs to be updated:



$BC_{BL,HH,y}$  = Average annual consumption of woody biomass per household before the start of the project activity

$f_{NRB,y}$  = Fraction of woody biomass used in the absence of the project activity in year y that can be established as non-renewable biomass ( $f_{NRB}$ )

$EF_{projected\_fossil\_fuel}$  Emission factor for the substitution of non-renewable woody biomass by similar consumers.

$BC_{BL,HH,y}$

To check the updated  $BC_{BL,HH,y}$  value, PP has conducted the Kitchen test in the non-project households in the project area.

The Kitchen test results have been conducted in 160 non-project households. The Kitchen Tests are conducted for 3 continuous days in each sample household. Average fuel wood consumption for each family is determined from Kitchen Test and per capita fuel wood consumption for each household is estimated based on the respective family size. From the mean & standard deviation of the survey results, the sample size is determined based on the 90/10 confidence/precision level using the below formula:

$$n = \frac{1.645^2 V}{0.1^2}; \text{ where } V = \left( \frac{SD}{mean} \right)^2$$

The formula is found to be appropriate as the test is conducted in non-project household which is an infinite population. As per the above formula, the minimum sample size required for estimation of per capita fuel wood consumption is 45 and minimum sample size required for estimation of family size is 40. The actual sample size considered for the survey is 160 which is higher than minimum sample size required.

Also from the survey results, it is found that the precision level achieved in the survey for per capita fuel wood consumption is 5.33% and precision level achieved for family size is 5.03% which are within the required precision level ie, 10%. Hence, the verification team finds the sample size considered for the kitchen test is adequate.

As per the survey result, the average fuel wood consumption in the project area among the non-project household is 1.979 kg/capita/household and the average family size is determined as 4.93. Hence, the average fuel wood consumption per household per year is estimated to be 3.56 tonnes/year/household. Verification team checked the appropriateness of test results using the following steps:

- The Method of Kitchen test followed by PP is checked and found to be in accordance with established procedures in the host country.
- The Kitchen test results have been crosschecked with the respective Kitchen test monitoring sheet and found no error
- The method of Kitchen test is simple and the PP's staffs are found to be capable of doing the test.

Hence, the verification team accepts the Kitchen test result.

Nevertheless, PP has compared the Kitchen test result against the fuel wood consumption of the project area determined by 'Third party study "Decision support system for regional domestic energy planning' by Ramachandra, T.V., Vamshee Krishna S and Shruthi, B.V. 2005/21/ (ie, 1.648 kg/capita/day or 3.03 tonnes/year/household with consideration of 4.93 average family size determined above) and considered the Third party study value for the emission reduction calculation. Since the fuel wood consumption provided by the third party study is

conservative compared to the fuel wood consumption determined from the Kitchen test, the verification team found considering the third party value for the emission reduction calculation to be appropriate.

### $f_{NRB}$

In the updated PDD, the  $f_{NRB,y}$  is calculated based on the data provided in the FSI report 2019/22/ as per the procedure given in the 'Tool 30: Calculation of the fraction of non-renewable biomass', version 2. The assessment of the same is provided below:

The  $f_{NRB}$  is calculated using the below formula

$$f_{NRB} = \frac{NRB}{NRB + RB}$$

Where

$f_{NRB}$  = Fraction of non-renewable biomass in the country/region or project area

NRB = Quantity of non-renewable biomass (t/yr) in the country/region or project area

RB = Quantity of renewable biomass in the country/region or project area

NRB is calculated as below:

$$NRB = H - RB$$

Where

H - Total annual consumption of wood in the absence of the project activity in the country/region/project area (t/year)

H is calculated as below:

$$H = HW_{region} \times N_{region} + TI_{region}$$

$HW_{region}$  - Average household wood fuel consumption, including fuelwood and charcoal in the country or region (t/yr/household)

$N_{region}$  - Number of households consuming wood fuel for thermal applications within the country/region (households)

$TI_{region}$  - Non-domestic woody biomass consumption for energy applications (e.g. commercial, industrial or institutional uses of wood in ovens, boilers etc.) and all woody biomass consumption for non-energy applications (e.g. construction, furniture) that are extracted from forests or land areas in the country/region for which the estimate of  $f_{NRB}$  is to be made (t/yr)

RB is calculated as below:

$$RB = \sum (MAI_{forest,i} \times (F_{forest,i} - P_{forest})) + \sum (MAI_{other,i} \times (F_{other,i} - P_{other}))$$

$MAI_{forest,i}$  - Mean Annual Increment of woody biomass growth per hectare in subcategory i of forest areas (t/ha/yr)

$MAI_{other,i}$  - Mean Annual Increment of woody biomass growth per hectare in subcategory i of other wooded land areas (t/ha/yr)

$F_{forest,i}$  - Extent of forest in sub-category i (ha)

$F_{other,i}$  - Extent of other wooded land in sub-category i (ha)

$P_{forest}$  - Extent of non-accessible area (e.g. protected area where extraction of wood is prohibited, geographically remote area) within forest

$P_{other}$  areas (ha)  
 Extent of non-accessible area (e.g. protected area where extraction of wood is prohibited, geographically remote area) within other wooded land areas (ha)  
 $i$  Sub-category  $i$  of forest areas and other wooded land areas

**Determination of H**

Parameter	Value	Assessment
$HW_{region} \times N_{region}$	21.00 Million tonnes	This is based on the report 'Wood is Good' published by Centre of Science & Environment, 2017 /24/ (page 23). Since, the total value for wood fuel consumption for Karnataka is directly available the same is taken. The value is verified with the report and found to be correct
$TI_{region}$	13.93 Million Tonnes	This is based on the report 'Wood is Good' published by Centre of Science & Environment, 2017 /24/ (page 16). The non-domestic woody biomass consumption (total timber consumption) for Karnataka is provided in the report. The value is verified with the report and found to be correct
H	34.93 Million Tonnes	Calculated using the below formula $H = HW_{region} \times N_{region} + TI_{region}$ The calculation is verified and found to be correct

**Determination of RB**

Parameter	Value	Assessment
$MAI_{forest}$	1.023 t/ha/yr	This is based on the report 'Phytomass carbon pool of trees and forests in India' by Meenakshi Kaul · G. M. J. Mohren · V. K. Dadhwa/23/ (page 9). The mean average increment of for the Karnataka forests is provided in this report. The value is verified with the report and found to be correct
$F_{forest,i}$	3,857,548 ha	This is based on Forest Survey of India, 2019 report/22/ (page 124). The total forest area in Karnataka is provided in this report. The value is verified with the report and found to be correct
$P_{forest,i}$	393,100 ha	This is based on Forest Survey of India, 2019 report/22/ (page 122). The total reserved forest area (which is the protected forest) in Karnataka is provided in this report. The value is verified with the report and found to be correct
$MAI_{forest,i} \times (F_{forest,i} - P_{forest,i})$	3.54 million tonnes	This is calculated. The calculation is verified and found to be correct
$(MAI_{other,i} \times (F_{other,i} - P_{other,i}))$	1.59 million tonnes	Since the MAI for trees outside forest is not available, PP has calculated the

			<p>value based on the Von Mantel Method<sup>4</sup>:</p> <p><math>t = 2GS/R</math></p> <p>where GS is growing stock and R is rotation. This approach is found to be appropriate.</p> <p>GS for trees outside forest in Karnataka is 103.03 million cum which is based on the Forest Survey of India, 2019 report/22/ (page 129). The same is verified and found to be correct.</p> <p>R is 80 years determined based on the relative abundance of dominant species (long term trees) in Karnataka provide in Forest Survey of India, 2019 report/22/ (page 130) and rotation period respective species. The calculation/28/ is verified and found that average rotation period for the species in Karnataka is 80 years.</p> <p>From the above formula mean annual increment of trees outside the forest volume is estimated to be 2.58 million cum. By considering wood density of 0.619 tonne/cum (based on Ratnam et al, 2019/25/), the mean annual increment of trees outside the forest mass is 1.59 million tonnes.</p>						
	RB	5.14 million tonnes	<p>Calculated as below:</p> $RB = \sum (MAI_{forest,i} \times (F_{forest,i} - P_{forest})) + \sum (MAI_{other,i} \times (F_{other,i} - P_{other}))$ <p>The calculation is checked and found to be correct.</p>						
	<p>Calculation of NRB</p> <table border="1"> <thead> <tr> <th>Parameter</th><th>Value</th><th>Assessment</th></tr> </thead> <tbody> <tr> <td>NRB</td><td>29.79 million tonnes</td><td> <p>This is calculated as below:</p> <p>NRB = H-RB</p> <p>The calculation is checked and found to be correct.</p> </td></tr> </tbody> </table>			Parameter	Value	Assessment	NRB	29.79 million tonnes	<p>This is calculated as below:</p> <p>NRB = H-RB</p> <p>The calculation is checked and found to be correct.</p>
	Parameter	Value	Assessment						
NRB	29.79 million tonnes	<p>This is calculated as below:</p> <p>NRB = H-RB</p> <p>The calculation is checked and found to be correct.</p>							
<p>Calculation of <math>f_{NRB}</math></p> <table border="1"> <thead> <tr> <th>Parameter</th><th>Value</th><th>Assessment</th></tr> </thead> <tbody> <tr> <td><math>f_{NRB}</math></td><td>0.85</td><td> <p>This is calculated as below:</p> <math display="block">f_{NRB} = \frac{NRB}{NRB + RB}</math> <p>The calculation is checked and found to be correct.</p> </td></tr> </tbody> </table>			Parameter	Value	Assessment	$f_{NRB}$	0.85	<p>This is calculated as below:</p> $f_{NRB} = \frac{NRB}{NRB + RB}$ <p>The calculation is checked and found to be correct.</p>	
Parameter	Value	Assessment							
$f_{NRB}$	0.85	<p>This is calculated as below:</p> $f_{NRB} = \frac{NRB}{NRB + RB}$ <p>The calculation is checked and found to be correct.</p>							

	<p><u><math>EF_{\text{projected fossil fuel}}</math></u></p> <p>The projected fossil fuel is now taken as per the applied methodology (AMS I.E, v10.1). As per the Table 2 of the methodology, the emission factor of projected fossil fuel for south Asia 64.4 t CO<sub>2</sub>e/TJ and the same is considered in the PDD. Hence Ok.</p> <p>All the above updated parameters takes into consideration the impact of:</p> <ul style="list-style-type: none"> <li>• All the new relevant mandatory national and/or sectoral policies on Renewable Energy Sector; and</li> <li>• Any changes in circumstances or conditions, for example, change in market characteristics, the availability of fuels for power generation or raw materials for developing new power generation capacity as well as the impact of electricity or fuel prices.</li> </ul>
<b>Findings</b>	CL-03 & CAR-02 are raised and closed satisfactorily
<b>Conclusion</b>	Validity of the baseline has been correctly assessed and the parameters are updated as per 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 in the PDD submitted for the renewal of crediting period.

#### D.4. Estimated emission reductions or net anthropogenic removals

<b>Means of validation</b>	<p>The validation team checked whether the equations and parameters used to calculate GHG emission reductions or net anthropogenic GHG removals for project activity are in accordance with applied methodology.</p> <p>Validation team checked section B.6.1 &amp; B.6.3 of the PDD to confirm whether all formulae to calculate baseline emissions, project emission and leakage have been applied in line with the underlying methodology.</p> <p><b>Baseline Emission:</b> The baseline emission of the project activity is estimated in accordance with applied methodology AMS-I.E (Version 10.1) as follows:</p> $BE_y = B_y \times f_{NRB,y} \times NCV_{\text{biomass}} \times EF_{\text{projected fossil fuel}}$ <table border="1"> <thead> <tr> <th>Parameter</th><th>Assessment</th></tr> </thead> <tbody> <tr> <td><math>B_y</math> - Quantity of woody biomass that is substituted or displaced in tonnes</td><td> <p>The quantity of woody biomass substituted will be estimated based the option (a) given in the methodology as below:</p> <math display="block">B_y = N_{HH} \times (BC_{BL,HH,y} - BC_{PJ,HH,y})</math> <p>The parameter <math>N_{HH}</math> (Number of households in the project activity in year y) is fixed ex-ante. The number of households where the biodigesters are installed are 5,500 and hence the same value is considered for ex-ante calculation</p> <p>The parameter <math>BC_{BL,HH,y}</math> (Average annual consumption of woody biomass per household before the start of the project activity, tonnes/household/year) is fixed ex-ante. , PP has conducted the Kitchen test in the non-project households in the project area and compared the value with the third party study conducted by Ramachandra, 2005. Since the third party study value is conservative, the same is fixed ex-ante.</p> </td></tr> </tbody> </table>	Parameter	Assessment	$B_y$ - Quantity of woody biomass that is substituted or displaced in tonnes	<p>The quantity of woody biomass substituted will be estimated based the option (a) given in the methodology as below:</p> $B_y = N_{HH} \times (BC_{BL,HH,y} - BC_{PJ,HH,y})$ <p>The parameter <math>N_{HH}</math> (Number of households in the project activity in year y) is fixed ex-ante. The number of households where the biodigesters are installed are 5,500 and hence the same value is considered for ex-ante calculation</p> <p>The parameter <math>BC_{BL,HH,y}</math> (Average annual consumption of woody biomass per household before the start of the project activity, tonnes/household/year) is fixed ex-ante. , PP has conducted the Kitchen test in the non-project households in the project area and compared the value with the third party study conducted by Ramachandra, 2005. Since the third party study value is conservative, the same is fixed ex-ante.</p>
Parameter	Assessment				
$B_y$ - Quantity of woody biomass that is substituted or displaced in tonnes	<p>The quantity of woody biomass substituted will be estimated based the option (a) given in the methodology as below:</p> $B_y = N_{HH} \times (BC_{BL,HH,y} - BC_{PJ,HH,y})$ <p>The parameter <math>N_{HH}</math> (Number of households in the project activity in year y) is fixed ex-ante. The number of households where the biodigesters are installed are 5,500 and hence the same value is considered for ex-ante calculation</p> <p>The parameter <math>BC_{BL,HH,y}</math> (Average annual consumption of woody biomass per household before the start of the project activity, tonnes/household/year) is fixed ex-ante. , PP has conducted the Kitchen test in the non-project households in the project area and compared the value with the third party study conducted by Ramachandra, 2005. Since the third party study value is conservative, the same is fixed ex-ante.</p>				

		<p>Please refer the assessment in section D.3 above. Hence, the value considered for this parameter (ie, 3.03 tonnes/hh/yr) is correct.</p> <p>The parameter <math>BC_{PJ,HH,y}</math> (If it is found that pre-project devices were not completely displaced but continue to be used to some extent, average annual consumption of woody biomass per household in the pre-project devices during the project activity tonnes/household/year) is monitored ex-post. For the ex-ante estimation it is assumed as zero as it is assumed that the project will completely replace the NRB in the baseline stove. This is found to be acceptable.</p> <p>Hence, the <math>B_y</math> is estimated ex-ante as 16,665.0 t/year is verified to be correct.</p>					
	<p><math>f_{NRB,y}</math> - Fraction of woody biomass used in the absence of the project activity in year y that can be established as non-renewable biomass</p>	<p>The value is fixed ex-ante. It is calculated from the FSI 2019- State of Forest Report/22/, Forest Survey of India, Ministry of Environment and Forests, Government of India, Please refer the assessment in the above section D.3. The calculated <math>f_{NRB}</math> value of 0.85 is verified to be correct.</p>					
	<p><math>NCV_{biomass}</math> - Net calorific value of the non-renewable woody biomass that is substituted</p>	<p>This is fixed ex-ante. PP considered IPCC default value of 0.0156 TJ/ton as given in methodology/6/ and hence acceptable</p>					
	<p><math>EF_{projected\_fossil\ fuel}</math> - Emission factor for the substitution of non-renewable woody biomass by similar consumers.</p>	<p>This is fixed ex-ante. The projected fossil fuel is taken as per the applied methodology (AMS I.E, v10.1). As per the Table 2 of the methodology, the emission factor of projected fossil fuel for south Asia 64.4 t CO<sub>2</sub>e/TJ and the same is considered for the emission reduction calculation. Hence Ok.</p>					
	<p>Based on the above values, the baseline emission is estimated as 14,231 tCO<sub>2</sub>/year for the ex-ante calculation.</p> <p><b>Project emission:</b></p> <p>The project does not involve any cultivation of biomass. Hence, the project emission (<math>PE_y</math>) considered zero. Hence <math>PE_y = 0</math> tCO<sub>2</sub>e</p> <p><b>Leakage:</b></p> <p>As per Tool 16: Project and leakage emissions from biomass v4, there are two leakage emission applicable:</p> <p><math>LE_y = LE_{BC,y} + LE_{BR,y}</math></p> <table border="1" data-bbox="448 1727 1439 2072"> <thead> <tr> <th>Parameter</th> <th>Assessment</th> </tr> </thead> <tbody> <tr> <td><math>LE_{BC,y}</math> - Leakage emissions due to shift of pre-project activities resulting from cultivation of biomass in a dedicated plantation, in year y</td> <td>Not applicable as the project does not involve any cultivation of biomass</td> </tr> <tr> <td><math>LE_{BR,y}</math> - Leakage emissions due to diversion of biomass residues from other applications, in year y</td> <td>As per 31 of the applied methodology, Leakage emissions related to the non-renewable woody biomass saved by the</td> </tr> </tbody> </table>		Parameter	Assessment	$LE_{BC,y}$ - Leakage emissions due to shift of pre-project activities resulting from cultivation of biomass in a dedicated plantation, in year y	Not applicable as the project does not involve any cultivation of biomass	$LE_{BR,y}$ - Leakage emissions due to diversion of biomass residues from other applications, in year y
Parameter	Assessment						
$LE_{BC,y}$ - Leakage emissions due to shift of pre-project activities resulting from cultivation of biomass in a dedicated plantation, in year y	Not applicable as the project does not involve any cultivation of biomass						
$LE_{BR,y}$ - Leakage emissions due to diversion of biomass residues from other applications, in year y	As per 31 of the applied methodology, Leakage emissions related to the non-renewable woody biomass saved by the						

	<p>project activity shall be assessed based on ex post surveys of users and the areas from which this woody biomass is sourced (using 90/30 precision for a selection of samples). Alternatively, <math>B_y</math> is multiplied by a net to gross adjustment factor of 0.95 to account for leakages, in which case surveys are not required.</p> <p>PP decided to use leakage adjustment factor. Hence, the leakage is 5% of the baseline emission which is estimated to be 712 tCO<sub>2</sub>/year. The same is verified to be correct.</p> <p>Hence, the total leakage emission calculated to be 712 tCO<sub>2</sub>/year.</p> <p><b>Emission reduction:</b></p> <p>As per the methodology emission reduction (<math>ER_y</math>) is calculated as below:</p> $ER_y = BE_y - PE_y - LE_y$ $= 14,231 - 0 - 712 = 13,519 \text{ tCO}_2\text{e/year}$ <p>PP has submitted the ex-ante emission reduction estimation in a excel sheet/2/. The excel sheet is clear, viewable, non-protected and the calculated values in the sheet are reproducible. Hence the ex-ante emission reduction calculated for this project is correct.</p>
<b>Findings</b>	CL-04 & CAR-03 are raised and closed satisfactorily
<b>Conclusion</b>	<p>Validation team confirm that the algorithms and formulae proposed to calculate project emissions, baseline emissions, leakage and emission reductions in the PDD is in line with the requirements of the selected methodology AMS I.E, version 10.1.</p> <p>For ex-ante calculation, the assessment team confirms that</p> <ul style="list-style-type: none"> <li>• All assumptions and data used by the project participants are listed in the PDD, including their references and sources;</li> <li>• All documentation used by project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the PDD;</li> <li>• All values used in the PDD are considered reasonable in the context of the project.</li> <li>• The applied formula and methods for calculating ER are in accordance with the applied methodology and</li> <li>• All calculations are complete and without any omissions.</li> </ul>

#### D.5. Validity of monitoring plan

<b>Means of validation</b>	<p>Validation team checked whether existing monitoring plan followed during the 2<sup>nd</sup> crediting period monitoring the plan is still valid for the 3<sup>rd</sup> crediting period or not. Validation team checked the monitoring plan provided in the revised PDD and crosschecked with the monitoring plan provided in the PDD of 2<sup>nd</sup> crediting period.</p> <p>Validation team also checked whether the monitoring plan provided in the revised PDD is in consistent with requirements of the applied methodology (AMS I.E, version 10.1).</p> <p>The information provided in the PDD has been found in compliance with the information evaluated during the remote audit, while interviewing with the concerned people and the same was re-affirmed through the documentary evidence.</p> <p>The monitoring plan described in the PDD is in compliance with the applied methodology. The assessment team has reviewed all the parameters in the monitoring plan against the requirements of the applied methodology and</p>
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confirmed that monitoring parameters are applied in line with the requirement of the methodology and relevant in the context of the project. The procedures have been reviewed by the assessment team through document review and interviews with the respective department's personnel. The information provided has allowed the assessment team to confirm that the proposed monitoring plan is feasible within the project design. The relevant points of monitoring plan have been discussed with the PP. Specifically, these points include the monitoring methodology, data management, and the quality assurance and quality control procedures to be implemented in the context of the project. Therefore, the PP will be able to implement the monitoring plan and the achieved emission reductions can be reported ex-post and verified.

The parameters that are fixed ex-ante are:

Parameter	Value	Source & Assessment
$f_{NRE,y}$ - Fraction of woody biomass saved by the project activity during year $y$ that can be established as non-renewable biomass	0.85	Calculated based on following sources of data: 1. State of Forest Report, Forest Survey of India, 2019./22/ 2. Kaul, M., Mohren, G.M.J., and Dadhwal, V.K., Phytomass carbon pool of trees and forests in India, Climatic Change, DOI 10.1007/s10584-010-9986-3, 2011/23/ 3. Wood is Good, Is India doing enough to meet its present and future needs? A status report by Centre for Science and Environment, CSE, 2017./24/ 4. Ratnam, J., Chengappa, S.K., Siddarth, J., Machado, Nandita Nataraj, Anand M. Osuri and Mahesh Sankaran. Functional Traits of Trees From Dry Deciduous Forests of Southern India Suggest Seasonal Drought and Fire Are Important Drivers. Frontiers in Ecology and Evolution. Brief Research Report, 2019, doi: 10.3389/fevo.2019.00008 /25/  Please refer assessment Section D.3 above.
$N_{HH}$ - Number of households in the project activity in year $y$	5,500	This value is based on project database. The same is verified and found to be correct.
$BC_{BL,HH,y}$ - Average annual consumption of woody biomass per household before the start of the project activity	3.03	It is calculated determined though the following:  1. Kitchen Test conducted in the project area/17/ and 2. Third party study "Ramachandra, T.V., Vamshee Krishna S and Shruthi, B.V. 2005. Decision support system for regional domestic energy planning.



		Journal of Scientific and Industrial Research. Vol 64, pp 163-174."/21/  The conservative value among above two are considered. Please refer the assessment section D.3 above.
$NCV_{biomass}$ - Net calorific value of the non-renewable woody biomass	0.0156	This is IPCC default value as per AMS I.E Methodology/5/. Hence OK.
$EF_{projected\_fossil\ fuel}$ - Emission factor for the substitution of non-renewable woody biomass by similar consumers.	64.4	This is default value as per AMS I.E methodology/5/ for the South Asia. Hence appropriate.
Determination of Leakage	0.15 for household fuelwood use of 3.03 t/HH/Yr. Determined by net to gross adjustment factor of 0.95 to account for leakage	This is estimated based on the default value as per AMS I.E. Methodology/5/ for leakage. Hence appropriate.

The parameters that are to be monitored ex-post are:

Parameter	Monitoring Details
<b>Date of commissioning of biogas units</b> - Actual date of commissioning of the project device.	The construction processes were monitored on a day to day basis and database maintained from its initiation to completion dates for each of the biogas unit in first crediting period of the project activity. Thus the start date of each of the unit installed in fixed for each of the unit.
<b>Number of installed 2 m<sup>3</sup> systems</b> - Number of biogas units installed under the project activity	The construction processes were monitored on a day to day basis and database maintained from its initiation to completion dates for each of the biogas unit. Thus the start date of each of the unit installed in fixed for each of the unit. In case of replacement of any unit due to demolition will be recorded and the loss days accounted for. This could be for the same user or new users, in which case the baseline is the users were using fuel wood. A new end user agreement will signed with them and recorded.
<b>Number of biogas plants operating</b> - Number of plants operating in year	In every village, the women Volunteer monitors the biogas units that are non-operational. The days other than that non-operational will determine the biogas units which are operational. For the monitoring period, the operational days of installed biogas units will be calculated by subtracting the non-usage days. The emission reduction will be estimated only for operational days

	<p><b>BC<sub>PJ,HH,y</sub></b> - Average annual consumption of woody biomass per household in the pre-project devices during the project activity, if it is found that pre-project devices were not completely displaced but continue to be used to some extent</p>	<p>1. As and when biogas units are not functional, the beneficiaries report to the village level women volunteer, who in turn reports to the Case Worker of the project for the repair of the unit. A log book is maintained for the reason of non-function and days under repair. The data is entered into the monitoring solution for each of the unit. The appropriate fuelwood use for non-operational days of biogas units will be accounted.</p> <p>2. For parallel use of pre-project devices, monitoring shall consist of estimation of a representative sample thereof, at least once every two years (biennial). A statistically determined sample size will be sampled to determine the quantity of fuelwood used on pre project devices. A household level questionnaire survey will be conducted.</p>
	<p><b>Confirmation that non-renewable biomass has been substituted</b></p>	<p>A household level sample survey will be conducted biennially to confirm that non-renewable biomass has been substituted.</p>
	<p>The monitoring plan content has been checked in the PDD and compared against the requirements of the monitoring methodology</p> <p>All means of implementing the monitoring plan are in line with the applied and monitoring methodology. The validation team has no doubts that the monitoring arrangements as it is already implemented during the first crediting period itself as described in the PDD.</p> <p><b>Sampling plan:</b> As mentioned above, the following parameters will be determined using biennial sample survey:</p> <ul style="list-style-type: none"> <li>(i) Confirmation that non-renewable biomass has been substituted</li> <li>(ii) Average annual consumption of woody biomass per household in the pre-project devices during the project activity, used in parallel.</li> </ul> <p>The PDD indicates a sampling plan as per the recommendation outlined in 'Guideline for Sampling and Surveys for CDM Project Activities and Programme of Activities, version 04/10/' (which also has normative reference to Sampling Standard, version 08) has been referred.</p> <p>Assessment team confirms that the sampling method (Simple random sampling) is clearly described and is in line with the description of the population. The sampling plan transparently describes how the samples will be selected. PP also demonstrates how simple random sampling is suitable for the project as the project population is homogeneous.. The PP also provided formula for sample size calculation and reliability requirements in line with the sampling guidelines.</p> <p>Hence, the sampling plan provided in the PDD is found to be appropriate and in line with the sampling guideline.</p>	
<b>Findings</b>	No finding	
<b>Conclusion</b>	<p>The validation team confirms that the monitoring plan based on the approved monitoring methodology is included in the PDD and is correctly applied to the project. The monitoring plan has been found to be in compliance with the requirements of the applied methodology. The monitoring plan will give opportunity for real measurements of achieved emission reductions. The validation team considers that monitoring arrangements described in the monitoring plan is feasible within the project design.</p>	

**D.6. Crediting period**

<b>Means of validation</b>	<p>The validation team checked whether the PP specified the Start date &amp; duration of the 3<sup>rd</sup> crediting period which is in accordance with the applicable requirements in the VVS for PA and the PS for PA.</p> <p>The details provided in the PDD are:</p> <ul style="list-style-type: none"> <li>Start date of crediting period: 01/09/2020</li> <li>Length of crediting period: 7 years</li> </ul> <p>The end date of the 2<sup>nd</sup> crediting period is 31/08/2020 and the renewal of crediting period is submitted within 1 year from the end of 2<sup>nd</sup> crediting period. Hence, considering the start date of 3<sup>rd</sup> crediting period for the project is appropriate.</p> <p>The length of the crediting period is as per the para 87(a) of PS for PA, v2 requirements</p>
<b>Findings</b>	No finding
<b>Conclusion</b>	The start date and the crediting period type & length have been validated and found to be in accordance with 'CDM project standard for project activities', version 2

**D.7. Project participants**

<b>Means of validation</b>	<p>As per the Section A.4 of the PDD, the project participants of the project activity are:</p> <table border="1"> <thead> <tr> <th>Party</th><th>Project participant</th></tr> </thead> <tbody> <tr> <td>India</td><td>Private Entity - Agricultural Development and Training Society (ADATS)</td></tr> <tr> <td>The Netherlands</td><td>Private Entity - FairClimateFund B.V</td></tr> <tr> <td>Germany</td><td>Private Entity - Evangelisches Werk für Diakonie und Entwicklung e.V</td></tr> <tr> <td>France</td><td>Private Entity – Velcan Energy</td></tr> <tr> <td>Switzerland</td><td>Private Entity – Velcan Energy</td></tr> <tr> <td>Germany</td><td>Private Entity - Atmosfair gGmbH</td></tr> </tbody> </table> <p>The names of the CME and project participants are checked and found to be in consistent with the in the latest version of the MoC statement/4/ available in the UNFCCC website and UNFCCC project view page.</p>	Party	Project participant	India	Private Entity - Agricultural Development and Training Society (ADATS)	The Netherlands	Private Entity - FairClimateFund B.V	Germany	Private Entity - Evangelisches Werk für Diakonie und Entwicklung e.V	France	Private Entity – Velcan Energy	Switzerland	Private Entity – Velcan Energy	Germany	Private Entity - Atmosfair gGmbH
Party	Project participant														
India	Private Entity - Agricultural Development and Training Society (ADATS)														
The Netherlands	Private Entity - FairClimateFund B.V														
Germany	Private Entity - Evangelisches Werk für Diakonie und Entwicklung e.V														
France	Private Entity – Velcan Energy														
Switzerland	Private Entity – Velcan Energy														
Germany	Private Entity - Atmosfair gGmbH														
<b>Findings</b>	CL-01 is raised and closed satisfactorily														
<b>Conclusion</b>	The names of Project Participant mentioned in the PDD are in consistent with the latest version of MoC available in the UNFCCC website and UNFCCC project view page. Hence, it is in line with the requirements of para 288 of the 'CDM project standard for project activities', version 2														

**D.8. Post-registration changes**

Type of post-registration changes (PRCs)	Confirmation (Y/N)	Validation report for PRCs	
		Version	Completion date
Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents <sup>5</sup>	N	NA	NA
Corrections	N	NA	NA
Change to the start date of the crediting period	N	NA	NA
Inclusion of a monitoring plan	N	NA	NA
Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents	N	NA	NA
Changes to the project design	N	NA	NA
Changes specific to afforestation and reforestation project activities	NA	NA	NA

<sup>5</sup> Other standards, methodologies, methodological tools and guidelines (to be) applied in accordance with the applied(selected) methodologies are collectively referred to as the other (applied) methodological regulatory documents).

**SECTION E. Internal quality control**

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The validation report prepared by team leader is reviewed by an independent technical reviewer (having competence of relevant technical area himself/herself or through an independent technical area expert) to confirm the internal procedures established by 4KES are duly followed and the validation report/opinion is reached in an objective manner and complies with the applicable CDM requirements.

The technical review team is collectively required to possess the technical expertise of all the technical area/sectoral scope the project activity relates to. All team members of technical review team are independent of the validation team. The independent technical reviewer(s) may approve or reject the draft validation report. The findings may be identified even at this stage, which needs to be satisfactorily resolved, before submit final report to UNFCCC. The final approval decision is taken by the Head of the DOE/Director.

The final decision is authorized by the Director, 4KES, once the report is finalized by the Head of the DOE/DOE Manager.

**SECTION F. Validation opinion**

&gt;&gt;

4K Earth Science Private Limited has been contracted by 'Agricultural Development and Training Society (ADATS)' to undertake validation of renewal of crediting period of the CDM registered project 'Bagepalli CDM Biogas Programme' (UNFCCC Ref #0121) in India for renewal of project activities period.

The validation was performed in accordance with the UNFCCC criteria for the Clean Development Mechanism, latest version of Validation and Verification Standard and related Standards/Guidance and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting. In our opinion, the project meets all relevant UNFCCC, CDM criteria and all relevant host country criteria.

The review of the final PDD and the subsequently performed follow-up interviews with representatives of the project participant has provided the validation team with sufficient evidence to determine the validity of the original baseline and/or its update of the project. The PDD correctly applies small scale methodology AMS-I.E. Version 10.1. It is demonstrated that the project baseline scenario is not changed and also all necessary parameters are updated correctly for the 3<sup>rd</sup> crediting period.

The monitoring plan provides for the monitoring of the project emission reductions. The monitoring arrangements described in the monitoring plan are feasible within the project design, and it is the validation team's opinion that the project participates are able to implement the monitoring plan.

The revised ex-ante emission reduction from the PDD is estimated to be 13,519 tCO<sub>2</sub> per year or 94,633 tCO<sub>2</sub> for the entire crediting period of 7 years.

In summary, it is validation team's opinion that the project 'Bagepalli CDM Biogas Programme' (UNFCCC Ref #0121) in India meets all relevant UNFCCC requirements for the renewal of crediting period. Hence 4KES requests the renewal of the crediting period of the project.

## Appendix 1. Abbreviations

Abbreviations	Full texts
4KES	4K Earth Science Private Limited
AMS	Approved Methodology for Small-scale
BE	Baseline Emissions
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CL	Clarification request
CME	Coordinating/ Managing Entity
COP	Conference of Parties
DOE	Designated Operational Entity
DNA	Designated National Authority
DR	Document Review
EB	Executive Board
EF	Emission Factor
ERs	Emission Reductions
FAR	Forward Action Request
FCN	Fair Climate Network
FSI	Forest Survey of India
GHG	Greenhouse gas(es)
HCA	Host Country Approval
IPCC	Intergovernmental Panel on Climate Change
KP	Kyoto Protocol
LSC	Local Stakeholder Consultation
LE	Leakage Emissions
LoA	Letter of Approval/Authorization
ISO	International Organization for Standardization
MNRE	Ministry of New & Renewable Energy
MOP	Meeting of Parties
MoC	Modalities of Communication
MoV	Means of Verification
MP	Monitoring Plan
NCV	Net Calorific Value
NRB	Non-Renewable Biomass
ODA	Official Development Assistance
PA	Project Activity
PDD	Project Design Document
PE	Project Emissions
PP	Project Participant
PS	Project Standard
PCP	Project Cycle Procedure
QA/QC	Quality Assurance/Quality Control
RCP	Renewal of Crediting period
SDG	Sustainable Development Goal
SSC	Small Scale
T&C	Technical & Certification
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation & Verification Standard

## Appendix 2. Competence of team members and technical reviewers

<b><u>Certificate of Competence</u></b>						
<b>Name</b>	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	<b>Narendra Kumar .R</b>				
<b>Qualification Procedure</b>	Fulfil the requirement as per the appointment of personnel procedure of 4KES for Validation and Verification of CDM/VCS/GS/GHG Projects.					
<b>Appointed to work as:</b>						
	<b>CDM Validator/Verifier</b>	<b>Team Leader</b>	<b>Team Member</b>	<b>Technical Expert</b>	<b>Technical Reviewer</b>	<b>Financial Expert</b>
Appointed	Yes	Yes	Yes	Yes	Yes	No
Appointed Date	29-07-2019					
<b>Authorized to work as Technical Expert for:</b>						
<b>Authorized Technical Area</b>	<b>Sectoral Scope</b>		<b>TA Code</b>	<b>Technical Area within the scope</b>		
	Energy industries (renewable - / non-renewable sources)		1.1	Thermal energy generation		
	Energy industries (renewable - / non-renewable sources)		1.2	Renewables		
	Energy demand		3.1	Energy demand		
	Waste handling and disposal		13.1	Solid waste and wastewater		
<b>Authorized to work as Local Expert for:</b>						
Country/Countries	India					
<b>Compliance check by:</b> Anand S. R.						

<b><u>Certificate of Competence</u></b>						
<b>Name</b>	<input type="checkbox"/> Mr. <input checked="" type="checkbox"/> Ms.	<b>Indumathi .C</b>				
<b>Qualification Procedure</b>	Fulfil the requirement as per the appointment of personnel procedure of 4KES for Validation and Verification of CDM/VCS/GS/GHG Projects.					
<b>Appointed to work as:</b>						
	<b>CDM Validator/Verifier</b>	<b>Team Leader</b>	<b>Team Member</b>	<b>Technical Expert</b>	<b>Technical Reviewer</b>	<b>Financial Expert</b>
Appointed	Yes	Yes	Yes	Yes	Yes	No
Appointed Date	29-07-2019					
<b>Authorized to work as Technical Expert for:</b>						
<b>Authorized Technical Area</b>	<b>Sectoral Scope</b>		<b>TA Code</b>	<b>Technical Area within the scope</b>		
	Energy industries (renewable - / non-renewable sources)		1.1	Thermal energy generation		
	Energy industries (renewable - / non-renewable sources)		1.2	Renewables		
	Energy demand		3.1	Energy demand		
	Waste handling and disposal		13.1	Solid waste and wastewater		
<b>Authorized to work as Local Expert for:</b>						
Country/Countries	India					
<b>Compliance check by:</b> Anand S. R.						

### Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1	ADATS	Updated Project Design Document	Version 07, dated 24/04/2020	ADATS
	ADATS	Updated Project Design Document	Version 08, dated 11/07/2020	ADATS
2	ADATS	Revised ER Estimation sheet	Version 7	ADATS
	ADATS	Revised ER Estimation sheet	Version 8	ADATS
3	ADATS	Registered PDD (applicable for 2 <sup>nd</sup> crediting period)	Version 6, dated 11/05/2017	Publicly available
4	ADATS	Latest Modalities of communication	Dated 03/02/2017	Publicly available
	ADATS	MOC Annex 2	Dated 28/11/2018	
	ADATS	MOC Annex 2	Dated 02/07/2019	
5	UNFCCC	AMS.I.E – “Switch from non-renewable biomass for thermal applications by the user”	<a href="#">Version 10.1</a>	Publicly available
6	IPCC	1. 1996 IPCC Guidelines for National Greenhouse Gas Inventories: work book 2. 2006 IPCC Guidelines for National Greenhouse Gas Inventories: work book	<a href="#">Web Link</a>	Publicly available
7	UNFCCC	Kyoto Protocol (1997)	<a href="#">Web Link</a>	Publicly available
8	UNFCCC	Project design document form	<a href="#">Version 11</a>	Publicly available
9	UNFCCC	CDM Project Standard for project activities	<a href="#">Version 02</a>	Publicly available
10	UNFCCC	Standard: Sampling and surveys for CDM project activities and programme of activities	<a href="#">Version 08</a>	Publicly available
	UNFCCC	Guidelines for sampling and surveys for CDM project activities and programme of activities	<a href="#">Version 04</a>	Publicly available
11	UNFCCC	CDM Validation and Verification Standard for project activities	<a href="#">Version 02</a>	Publicly available
12	UNFCCC	Glossary “CDM terms”	<a href="#">Version 10</a>	Publicly available
13	UNFCCC	CDM project cycle procedure for project activities	<a href="#">Version 02</a>	Publicly available
14	UNFCCC	TOOL11: Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period	<a href="#">Version 3.0.1</a>	Publicly available
15	UNFCCC	Tool 16: Project and leakage emissions from biomass	<a href="#">Version 04</a>	Publicly available
16	UNFCCC	Tool 30: Calculation of the fraction of non-renewable biomass	<a href="#">Version 02</a>	Publicly available
17	ADATS	Kitchen Performance Test Documents: <ul style="list-style-type: none"> <li>KT mentoring sheets</li> <li>Survey result summary excel sheet</li> </ul>	-	ADATS
18	ADATS	Sample survey sheets	-	ADATS
19	ADATS	Project database	-	ADATS
20	ADATS	End user agreements	-	ADATS
21	Ramachandra T.V., Vamshee Krishna S and Shruthi, B.V	Decision support system for regional domestic energy planning, 2005. Journal of Scientific and Industrial Research. Vol 64, pp 163-174	-	ADATS
22	Forest Survey of India, MoEF & CC	State of Forest Report	<a href="#">Year 2019</a>	Publicly available
23	Meenakshi Kaul · G. M. J. Mohren · V. K.	Research Paper: Phytomass carbon pool of trees and forests in India	-	ADATS

	Dadhwal			
24	Centre for Science and Environment	Status Report: Wood is Good. But is India doing Enough to meet Its present and future needs?	-	Publically available
25	Ratnam, J., Chengappa, S. K., Siddarth, J., Machado, Nandita Nataraj, Anand M. Osuri and Mahesh Sankaran.	Functional Traits of Trees From Dry Deciduous Forests of Southern India Suggest Seasonal Drought and Fire Are Important Drivers. <i>Frontiers in Ecology and Evolution. Brief Research Report</i> , 2019, doi: 10.3389/fevo.2019.00008	-	Publically available
26	Directorate Of Census Operations	District Census Handbook- Chikkaballapura	-	Publically available
27	Ministry of Statistics and Programme Implementation	NSS Report: Drinking water, sanitation, hygiene and housing condition in India,	76 <sup>th</sup> Round	Publically available
28	ADATS	Excel sheet for calculation of rotation period of dominant species in Karnataka	-	ADATS
29	ADATS	Undertaking letter from PP	Dated 23/04/2020	ADATS

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

Table 1. CL from this validation

CL ID	01	Section no.	D.7	Date: 31/05/2020
<b>Description of CL</b>				
All the project proponent included in the UNFCCC project page & MOC are not included in the project title page & Section A.4 of the revised PDD. In particular the following project proponent names are not included in the PDD which are included in the MOC:				
<ul style="list-style-type: none"> <li>• Velcan Energy France</li> <li>• Velcan Energy, Switzerland</li> </ul>				
Clarify.				
<b>Project participant response</b>				<b>Date: 11/07/2020</b>
These project proponents have withdrawn as Annex I Parties. Hence they are not included as Project Proponents in the renewal. From the MOC it can be seen that the MoC as valid from 03/02/2017 is solely Agricultural Development and Training Society (ADATS) and on 28/11/2018 and 02/07/2019, Atmosfair gGmbH; Evangelisches Werk für Diakonie und Entwicklung e.V. and FairClimateFund B.V. were added. Hence they are the only two Annex I Parties as Project Proponent to the project activity.				
<b>Documentation provided by project participant</b>				
-				
<b>DOE assessment</b>				<b>Date: 22/07/2020</b>



As per the UNFCCC webpage, the Velcan Energy, France and Velcan Energy, Switzerland are still showing as involved parties in this project ie, not showing as withdrawn.

However as verified from the latest MoC and additional MoC Annex 2, only the following entities are involved in the project:

- Private Entity - Agricultural Development and Training Society (ADATS) – Host Country
- Private Entity - FairClimateFund B.V - The Netherlands
- Private Entity - Evangelisches Werk für Diakonie und Entwicklung e.V – Germany

Hence, verification team accepts the same.

However as per UNFCCC completeness check finding, the following Project Participants are not withdrawn from the project:

- Velcan Energy, France
- Velcan Energy, Switzerland
- Atmosfair gGmbH, Germany

Hence, the above mentioned participants are now include in the PDD.

CL is closed.

<b>CL ID</b>	02	<b>Section no.</b>	D.2	<b>Date:</b> 31/05/2020
<b>Description of CL</b>				
As per the applied methodology AMS I.E, the baseline emission also includes the non-CO2 emission. However as per section B.3 of the PDD, the CH <sub>4</sub> & N <sub>2</sub> O are excluded from baseline emission. Clarify				
<b>Project participant response</b>				<b>Date:</b> 11/07/2020
<i>The Section B.3. is corrected to include CH<sub>4</sub> and N<sub>2</sub>O in the baseline emissions and also in project scenario</i>				
<b>Documentation provided by project participant</b>				
<i>Revised PDD</i>				
<b>DOE assessment</b>				<b>Date:</b> 22/07/2020
The CH <sub>4</sub> & N <sub>2</sub> O are excluded from baseline emission are also now included in the baseline scenario. And since the 5% of baseline emission is considered as leakage in the project scenario, the CH <sub>4</sub> & N <sub>2</sub> O are included in the project scenario as well which is appropriate. CL is closed.				

<b>CL ID</b>	03	<b>Section no.</b>	D.3	<b>Date:</b> 31/05/2020
<b>Description of CL</b>				
In the section B.4 of PDD, the data and parameters used for determining the original baseline, that were determined ex ante and not monitored during the crediting period, are no longer valid are updated for this crediting period. However, it is not clear how the updated parameters are determined 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”.				
<b>Project participant response</b>				<b>Date:</b> 11/07/2020
<i>The data and parameters were updated based on step 2.1 of the methodological tool, wherein, it is based on the latest approved version of the methodology applicable to the project activity, based on the sectoral policies and circumstances that are applicable at the time of renewal of the crediting period. This is updated in the revised PDD.</i>				
<b>Documentation provided by project participant</b>				
<i>Revised PDD</i>				
<b>DOE assessment</b>				<b>Date:</b> 22/07/2020
PP has now included how the updated parameters are determined 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”. CL is closed.				

<b>CL ID</b>	04	<b>Section no.</b>	D.4	<b>Date:</b> 31/05/2020
<b>Description of CL</b>				

In NRB Calculation:	
<ol style="list-style-type: none"> <li>1. In the determination of consumption of wood in Karnataka, PP considered the fuel wood consumption reported from the FSI Report, 2019 as fuel wood consumption of 26.15% of villages and based on this fuel wood consumption for 100% villages are estimated. Please clarify basis of considering the fuel wood consumption reported in the report for only 26.15% of villages.</li> <li>2. PP shall clarify the appropriateness of the conversion factors used in biomass conversion (ie, from cum to tones &amp; number of logs to tones)</li> <li>3. MAI from inside forest is taken from the Annual Report of Karnataka Forest Department, 2018-19. However, there is no clear justification available that the values taken from the report represent the MAI. Moreover clarify why the it is not calculated from the FSI report, 2019 as determined for TOF</li> <li>4. The RB calculation is not in line with the equation 6 of the TOOL30, Methodological Tool for calculation of the fraction of non-renewable biomass. Version 2. Clarify.</li> </ol>	
<b>Project participant response</b>	<b>Date:</b> 11/07/2020
<ol style="list-style-type: none"> <li>1. Based on the CSE Report (<a href="http://cdn.cseindia.org/attachments/0.39269300_1505297987_wood-is-good.pdf">http://cdn.cseindia.org/attachments/0.39269300_1505297987_wood-is-good.pdf</a>) the wood consumption for Karnataka is 21 Million tonnes for fuelwood and 22.5 million cum or 13.93 Million tonnes for Timber. This value is considered for fnrb calculations.</li> <li>2. The conversion of cum to t is based on density of wood, which is 0.619 (ratnam et al, 2019).</li> <li>3. Based on research paper Kaul, M., Mohren, G.M.J., and Dadhwal, V.K., Phytomass carbon pool of trees and forests in India, Climatic Change, DOI 10.1007/s10584-010-9986-3, 2011, the mean annual increment for Karnataka is 1.023 t/ha. This value is considered for estimation of Renewable Biomass in the revised approach to calculate <math>f_{NRB}</math> fraction. For the trees outside forests, the Von Mantels equation of <math>t=2GS/R</math>, where GS is the growing stock and R is the rotation period is considered. The Growing stock for Trees outside forests (TOF) is taken from the latest FSI Report, 2019.</li> <li>4. The RB calculations is revised which is now based on the Equation 6 of the TOOL30.</li> </ol>	
<b>Documentation provided by project participant</b>	
<ol style="list-style-type: none"> <li>1. Report "Wood is Good" by Centre for Science and Environment</li> <li>2. FSI 2019 Report</li> <li>3. Ratnam et al, 2019'</li> <li>4. Research Paper "Phytomass carbon pool of trees and forests in India" by Meenakshi Kaul · G. M. J. Mohren · V. K. Dadhwal</li> </ol>	
<b>DOE assessment</b>	<b>Date:</b> 22/07/2020
<ol style="list-style-type: none"> <li>1. PP has now directly taken the consumption of wood from CSE report "Wood is Good". The report is verified and fuel wood consumption value taken is found to be correct.</li> <li>2. PP has provided the report 'Ratnam et al, 2019'. The assessment team checked the report and found that the density of wood considered for the calculation is correct. Since, the reference to the calculation of logs to tones is now removed, the source for the conversion factor is not provided. Hence ok.</li> <li>3. PP has now calculated the renewable biomass from trees inside forest from Total forest area (Source: FSI 2019 report) and mean annual increment for Karnataka forest (Source: Phytomass carbon pool of trees and forests in India). The respective sources and calculation are verified and found to be correct.</li> <li>4. PP has revised the RB calculation which is now in line with equation 6 of the TOOL30. Hence OK.</li> </ol>	
CL is closed	

Table 2. CAR from this validation

<b>CAR ID</b>	01	<b>Section no.</b>	D.1	<b>Date:</b> 31/05/2020
<b>Description of CAR</b>				
The following details are not included in the section A.1 of the PDD: <ul style="list-style-type: none"> <li>• Explanation on how the baseline emission occurs.</li> <li>• Project boundary</li> <li>• The estimates of annual average and total GHG emission reductions for the chosen crediting period</li> </ul>				
<b>Project participant response</b>				<b>Date:</b> 11/07/2020
The details of explanation of baseline emission, project boundary and estimates of annual average and total GHG emission reductions are included in the revised document				
<b>Documentation provided by project participant</b>				
Revised PDD				
<b>DOE assessment</b>				<b>Date:</b> 22/07/2020
PP has now included the above mentioned details in section A.1 of the PDD.				
CAR is closed.				

<b>CAR ID</b>	02	<b>Section no.</b>	D.3	<b>Date:</b> 31/05/2020
<b>Description of CAR</b>				
PP shall submit the all the documents/reports referenced in the report				
<b>Project participant response</b>				<b>Date:</b> 11/07/2020
<p>The following documents/reports are submitted</p> <ol style="list-style-type: none"> <li>1. State of Forest Report, Forest Survey of India, 2019.</li> <li>2. Kaul, M., Mohren, G.M.J., and Dadhwal, V.K., Phytomass carbon pool of trees and forests in India, Climatic Change, DOI 10.1007/s10584-010-9986-3, 2011</li> <li>3. Wood is Good, Is India doing enough to meet its present and future needs? A status report by Centre for Science and Environment, CSE, 2017.</li> <li>4. Ratnam, J., Chengappa, S.K., Siddarth, J., Machado, Nandita Nataraj, Anand M. Osuri and Mahesh Sankaran. Functional Traits of Trees From Dry Deciduous Forests of Southern India Suggest Seasonal Drought and Fire Are Important Drivers. <i>Frontiers in Ecology and Evolution. Brief Research Report</i>, 2019, doi: 10.3389/fevo.2019.00008</li> <li>5. Ramachandra, T.V., Vamshee Krishna S and Shruthi, B.V. 2005. Decision support system for regional domestic energy planning. <i>Journal of Scientific and Industrial Research</i>. Vol 64, pp 163-174.</li> <li>6. Chickaballapura district at a glance, 2016-17. Page 104, District Statistical Office, Chickballapur District, Government of Karnataka.</li> <li>7. NSS Report, 76<sup>th</sup> Round, Drinking water, sanitation, hygiene and housing condition in India, Ministry of Statistics and Programme Implementation, Government of India. 2018.</li> </ol>				
<b>Documentation provided by project participant</b>				
References as stated above				
<b>DOE assessment</b>				<b>Date:</b> 22/07/2020
PP has provided all the reports referenced in the PDD. CAR is closed.				

<b>CAR ID</b>	03	<b>Section no.</b>	D.4	<b>Date:</b> 31/05/2020
<b>Description of CAR</b>				
The By equation mentioned in the ER calculation sheet is not consistent with the equation used in the revised PDD.				
<b>Project participant response</b>				<b>Date:</b> 11/07/2020
The By equation is revised in the ER Calculation Sheet and is now consistent with the equation in the PDD.				
<b>Documentation provided by project participant</b>				
Revised PDD				
<b>DOE assessment</b>				<b>Date:</b> 22/07/2020
PP has corrected the By equation in the ER calculation sheet which is now in line with the equation in the PDD and applied methodology. CAR is closed				

Table 3. FAR from this validation

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

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**Document information**

<i>Version</i>	<i>Date</i>	<i>Description</i>
03.0	31 May 2019	Revision to: <ul style="list-style-type: none"><li>• Ensure consistency with version 02.0 of the “CDM validation and verification standard for project activities” (CDM-EB93-A05-STAN) and version 02.0 of the “CDM project cycle procedure for project activities” (CDM-EB93-A06-PROC);</li><li>• Make editorial improvements.</li></ul>
02.0	31 October 2017	Revision to align with the requirements of the “CDM validation and verification standard for project activities” (version 01.0).
01.0	23 March 2015	Initial publication.
Decision Class: Regulatory Document Type: Form Business Function: Renewal of crediting period Keywords: crediting period, project activities, validation report		