Date: 02nd April 2018

Project reference No.7734-MP1-IRP1

UNFCCC Executive Board
Martin Luther King Strasse 8
D-53153 Bonn
Germany.

Dear Members of the CDM Executive Board,

Response to Request for Review by EB on the submission for request for issuance of PoA reference 7734 "SimGas Biogas Programme of Activities" for the MP1 covering 20/01/2013 to 31/12/2015 (including both days)

EPIC Sustainability Services Pvt Ltd., expresses thankfulness to the CDM Executive Board for providing an opportunity to explain the issuance of the referenced CDM PoA for the first MR period.

Two issues were raised in the 'Request for Review' process and in response to the issues the MR, CER spreadsheet, PRC report and FVR has been revised to next version, and the excel spreadsheet discussing the sampling precision is also submitted for better clarity.

Issue No.1
An excel sheet "Monitoring Results 160330_KE+Analysis.xlsx" has been submitted showing how the sampling was conducted. The following issues are identified:
a) Cell C2 of sheet "Analysis" shows that a digester is considered non-operational when column N of sheet "160330_ke-carbon" is "no" to calculate parameter nk,y (Operational rate of the thermal application installed). The DOE is requested to substantiate how it has considered a digester as operational even when the household has declared that it was not working/using in the past month but with an assurance that the digester will be fixed in the next month, which is one month after the date of sampling and after this monitoring period (as indicated in column M, N, BO of sheet "160330_ke-carbon"). Please refer to VVS v9 paragraph 402(d);
Response by DOE:
The DOE and PP understands the issue raised and acknowledges that further clarification and corrections are needed to address the issue, hence the issue is responded by making necessary revisions to the MR, CER spreadsheet and the verification report. The details are elaborated below:-
For estimating the emission reduction calculations in the earlier submission, consideration of digester to be operational when response in column N of sheet "160330_ke-carbon" is "yes", to calculate the parameter nk,y (Operational rate of the thermal application installed) is based on the assurance that those digesters is made operational in the following month of the survey.. Regular follow-up of customers is a prime commitment on the part of SimGas (CME) both for on-going operational and commercial reasons. But the documentary evidence to substantiate that those digesters are made operational is not made available.

Hence, to be on the conservative side in the CER estimation the following approach is undertaken now. The correction in the revised submission is - If a customer responds 'No', in column M in sub-sheet "160330_ke-carbon", then their digester has not been operational for the past month' so the particular customer is considered to be dropped out of the program, only for this MR period. Accordingly, the value of the parameter nk,y is revised to 75.93% from the earlier value of 87.04% which the verification team confirms to be appropriate. CER value is also reduced proportionate to the reduction in operational rate of the digesters. Additionally discount factor is also applied to the CER value when compliance to the requirement of 90/10 confidence level is assessed (Please refer to next issue for detailed analysis). The MR and CER spreadsheet is updated for the new value, FVR is revised to capture this change. For comparison and to demonstrate conservativeness, the recent monitoring survey in the year 2017 (15 September – 20 October 2017 (which employs the same analysis approach as described above) yielded an operational rate of 86.57% in response to the exact same question.

Issue No.2

b) The DOE is requested to substantiate how it has verified that the result of the survey has met the requirement of the 90/10 confidence level. In doing so, the PP/DOE is requested to report the raw data and traceable calculation of the sampling precision. Please refer to Standard of Sampling and surveys for CDM project activities and programmes of activities Version 7, paragraph 17 and footnote 16. Please refer to VVS v9 paragraph 402(d), Standard of Sampling and surveys for CDM project activities and programmes of activities Version 7, paragraph 17 and footnote 16.

Response by DOE:

The DOE and PP understands the issue raised and acknowledges that further clarification and corrections are needed to address the issue, hence the issue is responded by making necessary revisions to the MR, CER spreadsheet, PRC report and the verification report and the excel spreadsheet discussing the sampling precision is also submitted. The details are elaborated below:-

Standard of Sampling and surveys for CDM project activities and programmes of activities Version 7, states:

17. If the estimates from the actual samples fail to achieve the target minimum levels of precision,[16][1] the project participants or the coordinating/managing entity shall either:

a. Perform additional data collection that is a supplemental or new sample to reach the

3. [1] The range of confidence and precision of data collected through sampling should be computed to see if the stipulated requirements in paragraph 10 are met. Paragraph 10 states Where there is no specific guidance in the applied methodology, the project participants or the coordinating/managing entity shall use 90/10 confidence/precision as the criteria for the reliability of sampling efforts for small-scale CDM project activities…. This reliability specification shall be applied to determine the sampling requirements for each individual parameter value determined through a sampling effort. If there is more than one parameter to be estimated in a CDM project activity, then a sample size calculation should be done for each of them. Then either the largest number for the sample size is chosen for the sampling effort with one common survey, or the sampling effort and survey is repeated for each of the parameters. A random sub-sample within the common survey is allowed as long as: (i) the reliability specification (e.g. 90/10 confidence/precision for small-scale CDM project activities and 95/10 for large- scale CDM project activities) is achieved for each individual parameter; and (ii) the random sub-sample is consistent with the design of the survey and the corresponding sample size calculation.

required precision level; or
b. Apply a correction to the estimates using one of the two options below:[17]
(i) Discounting the emission reduction estimates by either:
a. Taking the lower or the upper bound, whatever is the more conservative, of the 90 or 95 per cent confidence interval, depending on the type of methodologies applied; or
b. Discounting by no less than three times (x3) the percentage precision points missed (e.g. if the required precision is 90/10 and the attained precision is 90/11 then the GHG emission reduction estimates are discounted by 3 per cent);
(ii) Using a conservative default value included in the applied methodologies (e.g. 3.5 hours for lighting usage for AMS-II.J, default failure rates[18] *provided in equation 3 of AMS-II.J);*
c. The option in subparagraph (b) above is only eligible for the application to the survey undertaken during the first two years of the crediting period of the CDM project activity or component project activities (CPAs) (if sampling is undertaken at the PoA level, the two-year limit applies from the start date of crediting to the PoA), and when the attained confidence/precision from the actual samples is equal to or better than 90/15 for a small-scale CDM project activity and 95/15 for a large-scale CDM project activity.
The following steps were followed in order to assess 'how the results of the survey have met the requirement of the 90/10 confidence'. It is acknowledged that the below given information was not made available in the previous submission, and as a result detailed explanation for each of the parameter is provided below.
As per the Guidelines for 'Sampling and surveys for CDM project activities and programmes of activities', Version 4.0 an outlier analysis[2] is carried out on all mean (ie. non-proportional) data (refer sheet 'Outlier analysis' of the monitored data spread sheet titled "20180330 Monitoring Results KE MP1 + ANALYSIS"). An interquartile analysis was carried out to identify the 'inner fence' outliers via the most commonly applied method of analysis that identifies data points that are 1.5 times above or below the interquartile range. In order to identify true outliers, an 'outer fence' outlier analysis was also conducted to identify data points that are 3 times above or below the interquartile range. Only data points that were identified as 'outer fence' outliers were carefully scrutinized to determine whether they should be excluded from the data analysis or not. The verdict for each data point identified as a possible outlier, and rational, is provided in the spread sheet titled "20180330 Monitoring Results KE MP1 + ANALYSIS", sheet "Outlier analysis" columns F, J, N, R and V entitled 'Verdict" of for each parameter evaluated.
Once the outlier analysis was completed, compliance with the 90/10 confidence level was evaluated for each monitored parameter. Please refer to the sheet 'Analysis' columns F to Q of the monitored data spread sheet titled "20180330 Monitoring Results KE MP1 + ANALYSIS".
This analysis revealed that all monitored data meet the 90/10 confidence level, apart from the parameters listed below (see column N in sheet 'Analysis'), for which the discount factors following the Standard for Sampling & Surveys (v07) paragraph 17 (b) therefore needed to be applied. *Paragraph 17 (c) states that the option to apply a discount factor is only permitted if 1) the survey is undertaken within the first two years of the crediting period and*

[2] The Guidelines for Sampling and Surveys mentions that an outlier analysis may be carried out, but is not explicit about whether outliers may be excluded once they are identified. The UNFCCC Secretariat confirmed that it is permitted to remove outliers from the data during a call on 19 March 2018, as long as these are carefully scrutinized to ensure they are true outliers, not just variation in the data.

2) when the attained confidence/precision from the actual samples is equal to or better than 90/15 for small-scale CDM project activities.
Since this is the first MR period, it is acknowledged that the project meets the first requirement as the discount factor is applied by the PP for the first time and not applied repeatedly[3]. Further, it is also in compliance with the para 17 of the applied methodology AMS-I.E ver 4.0 which states that "In cases where survey results indicate that 90/10 precision… is not achieved, the lower bound of a 90 per cent… confidence interval of the parameter value may be chosen as an alternative to repeating the survey efforts to achieve the 90/10… precision" without any further time boundary stated. This is the project's first monitoring report, the delayed periodical survey and the impact on the parameters is already assessed in the separate PRC report.
Compliance of the second requirement is assessed below:- The attained confidence/precision from the actual samples is equal to or better than 90/15 for all parameters listed below.
For the parameter '**Operational rate of thermal application installed', $n_{k,y}$**. The achieved precision is 11.3%, 1.3% higher than the 10 % target. Therefore the emission reductions were discounted by no less than three times the percentage precision points missed, inline with the Standard for Sampling & Surveys (V07), paragraph 17 (b) (i) (b). See the emission reduction calculation spreadsheet, sheet 'CDM CPA 1 Total ERs', rows 84 – 88. The operational rate applied in the ER calculations is 75.93%. For comparison and to demonstrate conservativeness, the more recent monitoring survey in the year 2017 (15 September – 20 October 2017) yielded a value of 86.57%.
For the parameter, '**Average annual hours of operation of a system', OP_{hours}**. The achieved precision was 12%, 2% higher than the 10% target. Therefore, the lower bound of the confidence interval was applied as per Standard for Sampling & Surveys (V07), para 17, (b) (i) (a), and AMS-I.E (V 04), paragraph 17. For comparison and to demonstrate conservativeness, the more recent 2017 monitoring survey yielded a value of 1536 (or an average of 4.21 hours per day).
For the parameter, **Number of animals produced annually of type LT for the year, $N_{p,y}$ y**
i. For average number of cows produced annually, the achieved precision was 15%, 5% higher than the 10% target. Therefore, the lower bound of the confidence interval was applied as per Standard for Sampling & Surveys (V07), para 17, (b) (i) (a). This is a conservative approach. For comparison and to demonstrate conservativeness, a more recent 2017 monitoring survey yielded a value of 5.65 cows.
ii. For average number of pigs produced annually. The survey revealed that only 3 customers owned pigs, with significant variation in the number owned (from 0- 300). It is reported to be prohibitively expensive to carry out additional monitoring in order to meet the 90/10 confidence level for this parameter due to the large sample size that would be needed. The PP has therefore chosen to report this parameter as zero, in line with the Para 2 of Appendix 1 of Project Standard, version 9.0, which is accepted by the verification team.
For the parameter, **Amount of waste/animal manure generated on the farm in year y**
% pig manure fed into the digester. The survey revealed that only 3 customers owned pigs, with significant variation in the number owned (from 0- 300). It is reported to be prohibitively expensive to carry out additional monitoring in order to meet the 90/10 confidence level for this parameter due to the large sample size that would be needed. The PP has therefore chosen to report this parameter as zero, in line with the Para 2 of Appendix 1 of Project Standard, version 9.0, which is accepted by the verification team.

[3] Call with the UNFCCC Secretariat on 19 March 2018 confirmed that the requirement is in place primarily to ensure that Project Participants do not apply the discount factor repeatedly

After analysing each parameter for sampling precision requirement, and application of allowed discount factor/lower bound values/conservative value in the CER calculations the emission reductions value is reduced to 2,519 tCO2 in the present submission, from the previous value of 3,513 tCO2.
The verification team hereby confirms that the survey results contained in the survey spread sheet titled “20180330 Monitoring Results KE MP1 + ANALYSIS” and the monitoring plan in section G.2 of the revised MR is re-checked and is deemed as accurate and complete based on the applied monitoring methodologies AMS-III.R. ver. 2, AMS-I.E. ver. 4 and AMS-I.I. ver. 4, referred ‘Standard of Sampling and surveys for CDM project activities and programmes of activities’, Version 7, and further confirms that the assessment is in line with requirement of para 401 and 402 of VVS 9.0.

We sincerely hope that the submitted revised MR, CER spreadsheet, PRC report and FVR will find acceptance among the members of the Executive Board.

Yours sincerely

Mr. K. Sudheendra
DOE Representative