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Att: CDM Executive Board

Your ref.:
 CDM Ref 1832

Our ref.:
 LAICK/MLEH

Date:
 15 September 2008

Response to request for review

Methane fired power generation plant in Samrong Thom Animal Husbandry, Cambodia (1832)

Dear Members of the CDM Executive Board,

We refer to the requests for review raised by three Board members concerning DNV's request for registration of the project activity entitled "Methane fired power generation plant in Samrong Thom Animal Husbandry, Cambodia" (1832), and we would like to provide the following response to the issues raised by these requests for review.

1. AMS-IA is applicable to "technologies that produce electricity all of which is used on-site by the user". This project activity involves export of power production. The DOE is therefore requested to substantiate how the applicability of the methodology has been validated.

DNV Response:

We would like to reiterate that as addressed in DNV's validation report, that REE grid is a stand-alone (isolated) grid and is not connected to the state/regional/national grid. This was confirmed through follow-up interviews with the DNA of Cambodia. In addition, DNV was able to verify a published article from the International Institute for Energy Conservation (IIEC)¹ which states:

"Most rural people rely on electricity services from small stand-alone grids operated by Rural Electricity Enterprises (REEs) and rechargeable car-batteries. It is estimated that there are more than 600 REEs and 1,500 commercial battery-charging stations throughout Cambodia. These businesses are operated by local entrepreneurs using diesel generator sets and the grids are constructed from materials locally available."

It can therefore be inferred that it is possible for multiple users to be included within the project boundary, so long as they are connected to an isolated mini-grid, thus meeting the applicability of "limited to households and users that do not have a grid connection... except in the case of an isolated mini-grid". In the case of the project, the maximum planned capacity is approximately 200 kW, a relatively small capacity, and excess power availability would be such that at most power could be only supplied to a few dozen surrounding households. In this case, we would like to seek approval from EB to include the nearby households which receive electricity as being 'on-site' and 'users', thus meeting the applicability condition of "technologies that produce electricity all of which is used on-site by the user".

We also refer to the validation report (Section 4.2 and Section 4.5.1) where DNV stated the decision to export power to the REE grid is not finalized and will only be verified during the

¹ Biofuel for Rural Electrification in Cambodia - http://iiec.org/index.php?option=com_content&task=view&id=336&Itemid=1

verification period. Upon further consultation with the project owner during the request for review process, it has been confirmed by the project participants that at the point of writing, provisions are still not yet in place to allow the export of excess electricity to the grid.

After months of consideration, it has become clearer to the project participants that without a clear and concrete plan to export the excess electricity to the grid; this plan may not be implemented in the foreseeable future. Thus, it has been agreed and decided among the project participants that:

- a) Relevant sections in the PDD mentioning supply of electricity to the REE grid will be amended, and
- b) Not claiming CERs associated with the export of power production.

In the event where implementation of export electricity to the REE takes place, the amount of electricity generated by the project activity exported to the REE grid will be metered continuously using an electricity meter. No CERs attributable to the displacement of grid electricity by the project activity will be claimed.

2. Projects applying AMS-III.D must “ensure that all biogas produced by the digester is used or flared”. As the power demand from this project activity is unclear and no flare is installed the DOE is requested to explain how compliance with this applicability condition has been validated.

DNV Response:

During the validation of the project, through follow-up interviews conducted on-site it was DNV’s understanding that, the intention of the project owner was to fully utilize all biogas to generate electricity for on-site consumption and if feasible, to export surplus electricity to the REE grid. However, as reiterate in our response to comment 1, at the time of validation, the project proponent had neither provisions nor concrete plan to undergo the export of power production.

To address this situation, an open flare system is to be installed, as it is necessary to flare a portion of the biogas in case the fluctuations in the level of gas output make it uneconomical to operate the project at full capacity. It is proposed that the flare will serve as a contingency measure if there is a problem with the gas engines, or if an increase in swine numbers leads to higher production of biogas.

Hence, DNV requested to include the monitoring of the flare efficiency in case surplus biogas will be flared. The portion of gas combusted in the flare and that destroyed by the gas engines will be monitored separately. References to open flare system and the monitoring of the flare efficiency have thus been included in the revised PDD submitted with the project participants’ response to the requests for review.

3. The compliance of the baseline emission factor of 1.3 tCO₂/MWh for exported power with the methodology requires further substantiation.

DNV Response:

We refer to our response to comment 1, where it was explained that CERs will no longer be claimed for this source, as without a clear and concrete plan to export the excess electricity to the REE grid, this plan may not be implemented in the foreseeable future.

In addition, 1.3 tCO₂/MWh is chosen because the nearby households are currently using batteries for their electricity, and that these batteries are charged by small gensets with average capacity of around 11 kW. The validity of the statement is confirmed by a feasibility study jointly conducted by the EC-ASEAN Energy facility², where it was found that the 2 battery charging stations located nearest to the project area has a capacity of 15 HP (about 11 kW) each.

The value of 1.3 tCO₂/MWh was selected for conservativeness from the options in AMS-I.D, Table I.D.1. The diesel gensets at the battery charging shops are used at varying load factors, with peak load being during business hours when a number of batteries are being simultaneously charged, and off-peak being out of business hours, when only the living quarters of the shop owners and a small number of neighbours are drawing power from the generator. In addition, the generators, at less than 15 kW, could have used the higher emission factor of the smaller category, instead of using the emission factors for 15 – 35 kW. Therefore, potential higher values such as 2.4 tCO₂/MWh, 1.9 tCO₂/MWh or 1.4 tCO₂/MWh were also defensible, but it was decided a more conservative value should be used. In addition, it should be noted that all of these values would be conservative in the case of the project activity, as most users are having batteries charged, a process that is far more inefficient than the direct supply of electricity proposed by the project.

4. Further clarification is required regarding how the efficiency of the combustion process will be monitored and the basis of the values which will be applied in determining CERs

DNV Response:

We refer to the response to the requests for review submitted by the project participants. The revised PDD (attached along with this response) and the project proponent's response now contains information on how all parameters required by the methodology, including gas engine and flare efficiency, will be monitored. DNV is able to confirm that the attached revised PDD (under Section B.7.1) now includes the above mentioned requirement.

We sincerely hope that the Board accepts our above explanations.

Yours faithfully
for DET NORSKE VERITAS CERTIFICATION AS



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² EC-Asean Energy Facility: "Feasibility Study of a Methane-fired Power Generation Plant in Kien Svay District, Kandal Province, Project Number 103-2004" Publication Reference: EuropeAid/119920/C/SV, dated August 2006