

Chair, CDM Executive Board
UNFCCC Secretariat

06th May, 2010

Dear CDM Executive Board Members,

Re: Request for review of the request for registration for the CDM project activity "6 MW Biomass based power project in Assam by BEPL" (Ref. no.3189).

SGS has been informed that the request for registration for the CDM project activity "6 MW Biomass based power project in Assam by BEPL" (Ref. No.3189) is under consideration for request for review because three requests for reviews have been received from members of the Board. The request for review is based on the reasons outlined below. SGS would like to provide a response to the issue raised for the request for review:

Request for clarification to the DOE:

Request for Review Comments 1 – 4:

Questions:

1. The DOE is requested to further substantiate how the project activity meets the applicability condition of the methodology as paragraph 1 of the methodology limits the applicability of the methodology to the renewable energy technologies that supply thermal energy to the user/s and/or biomass-based co-generation systems, whereas the project activity is a renewable biomass based electricity generation system.

SGS & PP response

The project activity generates thermal energy (steam) for turbine and thereby electricity generation. The same energy would have been generated by fossil fuel based captive power plant in absence of project activity. The project activity comes under renewable energy technologies that provide thermal energy (to turbine) that displaces fossil fuel. As per methodology AMS.I.C. version 13, please refer the following paragraph:

Paragraph 1:

This category comprises renewable energy technologies that supply individual households or users with thermal energy that displaces fossil fuels. Examples include solar thermal water heaters and dryers, solar cookers, energy derived from renewable biomass for water heating, space heating, or drying, and **other technologies that provide thermal energy that displaces fossil fuel**. Biomass-based co-generating systems that produce heat and electricity are included in this category.

Paragraph 6:

For renewable energy technologies that displace technologies using fossil fuels, the simplified baseline is the fuel consumption of the technologies that would have been used in the absence of the project activity times an emission coefficient for the fossil fuel displaced. IPCC default values for emission coefficients may be used.

Paragraph 8:

Baseline emissions for **electricity produced in captive plants** shall be calculated as the amount of electricity produced with the renewable energy technology (GWh) multiplied by the CO2 emission factor per

unit of energy of the fuel that would have been used in the baseline plant in (tCO₂ / TJ) divided by the efficiency of the captive plant.

The project activity meets the requirement of the methodology on the basis of the following interpretation of the applicability –

1. The energy is generated using renewable energy technology i.e. biomass;
2. The energy generated in the project activity is for captive use only;
3. The project activity displaces fossil fuels.
4. The energy generation system, wherein emission reduction takes place i.e. boiler, generates thermal energy i.e. steam for the user. Subsequently thermal energy produced in the boiler generates electricity.

Paragraph 8, which is specific to this type of project activity i.e. electricity production in captive plants, clearly explains how to calculate the baseline emissions for such cases.

All the above indicate that the project activity is eligible under the methodology.

2. The DOE is requested to clarify how they have validated the credibility of the proposed baseline as the pre-project scenario is import from grid and use of a DG set for back up.

SGS & PP response:

The project activity is located in the state of Assam in the North-Eastern part of India. Prior to implementation of project activity, the PP was importing the power in their cement plant from the grid and DG sets were acting as a standby measure as the grid power was highly erratic. This intermittent nature of power supply from the grid was checked during the validation site visit by checking the plant records of electricity consumption for grid and DG sets. Thus it was ensured that the PP was left with no option than to go for captive power generation for their cement plant.

For further substantiation, annual report of the North Eastern Regional Electricity Board (NEREB) for 2005-06 was checked. The section 2.12: POWER CUTS of the annual report mentioned monthly power cuts in the Assam state http://www.cea.nic.in/god/reb/nerpc/AnnualReport_2006_literature.pdf. It mentions that “There are no notified power cuts. Some of the constituent States of NER resorted to load shedding due to more demand than availability of power, particularly during peak hours”. This situation continued and even became worst than before. This has been verified from http://assamgovt.nic.in/departments/electricity_dept.asp which states that there is a shortfall of about 100-150 MW during peak demand.

The PP has appointed the consultant DSCL Energy Services Company Ltd (http://www.dscl.com/Business_energy.aspx?PID=39) to carry out a feasibility study for captive power generation for their cement plant on 06/01/2005 (Annex 1). Accordingly DSCL had submitted their Detailed Project Report (DPR). The executive summary of the DPR (Annex 2) has mentioned the erratic nature grid electricity and problems faced by the PP. This was the base to take decision to go ahead with the implementation of the project activity on 01/06/2005. This is evident from Board resolution dated 01/06/2005 (Annex 3) which indicates the PP's intention to implement Biomass based electricity generation plant i.e. project activity. The validation team has checked DPR and also the Board Resolution dated 01/06/2005 was checked for CDM benefits as a decisive factor for the project activity. DPR clearly mentioned that cost of electricity generation through coal based captive power plant is cheaper than electricity generation from biomass based power plant. However, the implementation of biomass based electricity generation plant would attract additional CDM benefits which can make it as competitive as coal and the PP will be able to maintain competitiveness of their products in the international market place. Thus the PP opted for biomass based power generation with CDM revenue to fulfil their captive requirement.

Thus the assessment team had concluded that coal fired captive power plant is the most realistic baseline scenario inline with the definition of baseline scenario indicated in CDM Glossary of terms. It mentions “The baseline for a CDM project activity is the scenario that reasonably represents the anthropogenic emissions by sources of greenhouse gases (GHG) that would occur in the absence of the proposed project activity.”

Thus as demonstrated above, the PP would have gone for coal based captive power plant in the absence of the project activity as the state is rich in high quality coal and coal availability is not a barrier in Assam state. Electricity from the grid is not a baseline option in any case due to its intermittent nature. The appointment of DSCL to conduct the feasibility study for captive power plant, financial analysis of cost of power generation and the board resolution to go ahead with the project activity with CDM benefits are the credible evidences for the selection of baseline as coal based power plant though pre project scenario is import from grid and use of a DG set for back up.

3. The DOE is requested to substantiate how it has validated the efficiency of the baseline unit (coal based power plant), in line with paragraph 13 of the methodology.

SGS & PP response:

The efficiency of a power plant running on Rankine Cycle is primarily based on the efficiency of the boiler and the turbine. While estimating the baseline emission factor (tCO₂/MWh) for the baseline thermal power plant, the PP has considered the power plant efficiency as 100% which is the most conservative option. The same has been cross checked from the worksheet "assumption" of financial analysis submitted during request for registration. This assumption was considered based on the fact that the turbine efficiency is irrelevant whether it's a coal based power plant or biomass based power plant. Thus there will be no difference in turbine efficiency in the baseline as well as the project activity.

The PP has considered the assumption of 100% boiler efficiency for calculation of heat input to boiler. Accordingly specific energy consumption is calculated using rated capacity of the plant i.e. 6 MW and 100% efficiency of the power plant inline with para 13 c) of the applied methodology AMS I.C version 13. This is found to be appropriate and a conservative approach.

Based on the above information, the PP has estimated the fuel energy input requirement and the specific energy consumption in the baseline to calculate the baseline emission factor. The PP has considered the CO₂ emission factor of coal and 100% efficiency of captive power plant to calculate the baseline emission factor in tCO₂/MWh. This baseline factor will be multiplied by MWh energy produced by the power plant. This is found to be appropriate and is in line with para 8 of the methodology AMS I.C version 13.

4. The DOE is requested to substantiate how it has validated the application of the baseline methodology through an assessment of the surplus of biomass availability as per paragraph 17 and 18 of the General guidance on leakage in biomass project activities, version 3.

SGS & PP response:

Assam is a rice rich state of India. The total rice production in the state in 2004-05 was 3.47 million tones and this is evident from the web-link <http://agriassam.org/statistics/cropsStatistics.htm>. The Residue to Product Ratio of rice husks has been considered as 25% and can be cross checked from the page 6, table 1 of "MITIGATING GREENHOUSE GAS EMISSIONS FROM TROPICAL AGRICULTURE: SCOPE AND RESEARCH PRIORITIES". The document states that residue to produce ratio is 27% in Asia in table 1, page no. 6 (Annex 4), thus the 25% is conservative and it is accepted. Thus the rice husk availability of the state comes out at around 867,000 tonnes per annum.

Further specific to the proposed project activity, M/s DSCL Energy Service Company Limited (<http://www.dscl.com/>) had carried out biomass availability in the region where project activity is located as part of Detailed Project Report (DPR). Biomass assessment study mentions that the total biomass available in the region is 70,200 MT (Annex 5) and it is sufficient for 10 MW biomass power generation project (Page 2 of Annex 2) as there is no rice husk consumption other than the proposed project activity. This is evident from <http://www.business-standard.com/india/storypage.php?tp=on&autono=32251>. The section B.7.1 of the PDD estimates biomass consumption of the project activity as 55,095 tonnes. Based on the total biomass available and total biomass consumption as discussed above, it can be concluded that the total available biomass is 25% larger than the biomass consumption by the project activity as there is no any other biomass consumption (domestic or industrial) other than the proposed project activity. Thus it is concluded that

surplus of biomass availability in the region is inline with paragraphs 17 and 18 of the General guidance on leakage in biomass project activities, version 3.

We apologize if the information provided in the registration request was unclear on the issues raised by the CDM EB team and hope that this letter and the attached enclosure address the concerns of the members of the Board.

Ramkrishna Patil (+91 97300 88461) will be the contact person for the review process and he is available to address questions from the Board during the consideration of the review in case the Executive Board wishes.

Yours sincerely,

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ENCL:

Annex 1: Letter of appointment of DSCL for carrying out feasibility study and submission of DPR dated 06/01/2005

Annex 2: Executive Summary of DPR for erratic nature of electricity in Assam.

Annex 3: Board Resolution dated 01/06/2005 which indicates PP's decision to go ahead with the implementation of the project activity.

Annex 4: MITIGATING GREENHOUSE GAS EMISSIONS FROM TROPICAL AGRICULTURE: SCOPE AND RESEARCH PRIORITIES from, Institute for Meteorology and Climate Research, University of Bonn, Germany

Annex 5: Biomass Availability as per DPR of DSCL Energy Services Ltd.