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Response to Request for Review

Dear Sirs,

Please find below the response to the request for review formulated for the CDM project with the registration number 0804. In case you have any further inquiries please let us know as we kindly assist you.

Yours sincerely,

Javier Castro
Carbon Management Service

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Response to the CDM Executive Board

Request 1, 2 and 3

Issue:

The methodology requires that historical generation of the existing power unit ($EG_{\text{historic},3\text{yr}}$) is based on the three most recent years and the PDD stated that $EG_{\text{historic},3\text{yr}}$ is 6,007.26 MWh. However, the monitoring report stated that the historic generation of 6,007.26 MWh is based on the generation from 2005 to 2006 and 20.0 MW turbo generator of the project activity was commissioned on 27 December 2006. Further clarification is required.

Response by PP:

1. It is clarified that $EG_{\text{historic},3\text{yr}}$ of 6007.26 is for the year 2005-2006 as the existing plant (pre project plant) was commissioned in 2005-2006 only.
2. In the absence of the data for 2003-2004 and 2004-2005 for the calculation of $EG_{\text{historic},3\text{yr}}$, Turbine manufacturer's specifications can be used as a likely reference. The Normal/Economical out put of the turbines (at the actual operating conditions in the plant) as recommended by the turbine manufacturer / Turbine specialist (Chartered Engineer) for 3.3 MW and 2.8 MW Turbines are 2.2 MW and 2.25 MW respectively.
3. Based on the above conservative approach the Emissions Reductions have been reworked as 10177 (Details as per Excel sheet attached). It may be noted that while calculating the ERs an average capacity utilization of 90% has been taken which is very conservative for Back Pressure Turbines based power plant in a sugar plant. In a Back Pressure turbine based power plant, the turbine capacity utilization depends entirely on the availability of the cane for the whole season. The average availability of cane and thus the sugar plant capacity utilization is normally less than 85% as out of 180 days of season a minimum of 15 days are required during startup stabilization and 15 days during season end tapering. Further atleast 5 days are lost in total stoppage for plant cleaning etc. Capacity utilization of near by sugar mills is attached for reference.
4. $EG_{\text{historic},3\text{yr}}$ thus calculated based on the above conservative approach can be used for future ER calculations as the 20MW project plant is based on Back Pressure Turbine and can be operated only during the season.

Response by TÜV SÜD:

The pre-project plant was commissioned in December 2005 and only data from December 2005 to April 2006 was available during validation. The same was used for arriving at the $EG_{\text{historic},3\text{yr}}$ and was fixed at validation. Since this parameter was required to be determined at validation, TÜV SÜD did not evaluate it further during the verification stage. However, we understand that CDM EB is concerned if this data can be considered as sufficient and conservative to arrive at historical generation of the existing power unit ($EG_{\text{historic},3\text{yr}}$). To take care of this issue, the project proponent has used the approach from the clarification provided by Meth Panel:

“Q BL product’ determination in cases where no 3 years historic data is available, AM_CLA_0071”,
[http://cdm.unfccc.int/UserManagement/FileStorage/AM CLAR GU59XMVIK6RS6RXDL25B0H BHWHAP30](http://cdm.unfccc.int/UserManagement/FileStorage/AM_CLAR_GU59XMVIK6RS6RXDL25B0H_BHWHAP30)

The project proponent has calculated the historical generation of the existing power unit **per day** based on manufacturer’s data for normal operating conditions. This calculated generation is higher than the measured generation **per day** and hence for conservative reasons same has now been used to calculate the emission reductions due to project activity.

As per the technical data sheet for 2.8 MW turbine (annexure 1) the normal output is 2.25 MW. As per the technical data sheet for 3.3 MW turbine (annexure 2) the power out is 2.6/3.3 MW depending on the steam pressure of 37/42 ata and temperature of 385/400 degree centigrade and a exhaust pressure of 4 ata. Since this turbine is fed by steam at a lower pressure and temperature of 32 ata & 365 degree centigrade respectively and a higher exhaust pressure of 4.8ata , the normal power generation capacity has been reworked as 2.2 MW as evidenced by certificate from Chartered Engineer (annexure 3). This information is considered appropriate by TUV SUD.

Further, 90% capacity utilization has been assumed to calculate the historical generation of the existing power unit. This is considered appropriate by TUV SUD because 2.8 MW and 3.3 MW turbines are back-pressure turbines and the electricity production from these turbines depends entirely on process requirements. The sugar manufacturing process plant is very likely to operate below 90% of its capacity because out of 180 days of season around 15 days would be required during startup stabilization and 15 days during season end tapering. Two years operational data of other sugar mills in the region (annexure 4) demonstrates that sugar mills are operating in the range of 70% to 85% of their capacity. Hence 90% capacity utilization is considered appropriate by TUV SUD.

With the assumptions justified above, the historical generation of the existing power unit **per day** has been calculated to be 96.12 MWh. Since the 20 MW turbine installed in the project activity is a back-pressure turbine and can be operated only during cane crushing season, the historical generation of the existing power unit calculated **per day** can be used for entire crediting period, if approved by CDM EB.

- A. We would also like to point out here that the pre-project plant was commissioned on 27 December 2005 and operated for 102 days till 7 April 2006 during the season of 2005-2006. During this period it generated 6007.26 MWh electricity, which was fixed as $EG_{\text{historic},3\text{yr}}$ in the registered PDD. The historical generation of the existing power unit calculated **per day** from this data is calculated to be 58.89 MWh. With this we would also like to state here that it was a mistake in the verification process to divide $EG_{\text{historic},3\text{yr}}$ from the registered PDD (6007.26) with 180 days (page 19 of monitoring report) to calculate the $EG_{\text{historic},3\text{yr}}$ corresponding to 45 days of operation in this monitoring period.
- B. The pre-project plant was commissioned on 27 December 2005 and operated for 151 days till 26 December 2006. During this period it generated 9387.66 MWh electricity. The historical generation of the existing power unit calculated **per day** from this data is calculated to be 62.17 MWh.
- C. The calculated generation of 96.12 MWh is higher than the measured generation of 58.89 MWh **per day** and 62.17 MWh **per day** and hence for conservative reasons same



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has now been used to calculate the emission reductions due to project activity. The revised emission reductions are calculated to be 10,177 ton CO₂.