



RESPONSE TO REQUESTS FOR REVIEW

Bureau Veritas Certification had performed the validation of the CDM Project No. 1350 – “Shri Chamundi Captive Energy Private Limited”, 16MW biomass fired cogeneration plant for supply of power and steam to an industrial facility in Karnataka.

Subsequently, there have been three requests for review.

We thank the CDM Executive Board and the Secretariat for giving us the opportunity to clarify about our considerations in validating the said project.

Our responses to the queries are given below:

Reasons for Request for Review

1. The DOE is required to further justify with relevant evidences how it has validated the investment and technological barriers to demonstrate additionality.

Bureau Veritas Certification’s response:

Investment Barrier:

The validation team have analysed the investment barrier as explained below:

J K Industries (the consumer of heat and electricity produced by the proposed Project activity) had already received the required coal linkage¹ approval for the purpose of installing a coal based cogeneration plant. This was the primary intention and option for the consumer. However, the PP (MPPL) and JK Industries have created a special purpose vehicle for investment in a biomass-based power plant. As evident from letter from independent consultant, costs are higher in biomass-based power plants compared to coal based plants due to special design requirements.

Since the fuels used in the boiler are low-density crop residues (most of it is coconut fronds and cane trash (not bagasse) followed by cashew shell residues, tobacco waste, corn cobs and eucalyptus branches), the boiler design requires modifications to suit the use of such fuel. The cost of such boilers are therefore higher compared to the conventional boilers and therefore it also has an impact on the cost of the project².

As per information available through Karnataka Renewable Energy Development Limited (KREDL), has allotted a total of 478.2 MW³ (65 projects of various capacities) Biomass based power projects in Karnataka State. Out of this only 81 MW (11 projects) Biomass based power projects have been commissioned till date⁴. It is to be noted that all these 11 projects commissioned have gone through CDM route. 6 projects are registered (Ref No: 298, 694, 849, 914, 971 and 718) and other 5 are under validation.

¹ Allotment letter for coal by Singereni Collieries Company Limited – Appendix – 3

² Letter from ARK Engineering and Consultancy – Appendix – 1

³ List of Biomass based power plants allotted till date (taken from KREDL web site) – Appendix – 2

⁴ Data available on KREDL website <http://kredl.kar.nic.in/VentureBiomassCogen.htm>

The PP has also claimed that the project be implemented only subject to its registration. The explanation on this issue has been provided by the PP in their response

Based on the evidences provided, the Validation team is of the opinion, that considering the above factors, although it cannot be conclusively established, investment barriers may exist in the comparable domain of such biomass based project activities.

Technological Barrier:

The biomass residues used (most of it would be coconut frond), as primary fuel for the project activity are low-density crop residues, which lead to technological challenges related to the combustion process. Compared with coal, biomass has a high amount of potassium, chlorine and silicon. During combustion or gasification of biomass, significant amounts of chlorine and alkali metals are released into the gas phase. They are very harmful in terms of causing fouling, slagging and high temperature corrosion in the furnace⁵.

The validation team has accepted these operational constraints which necessitates a special boiler design¹ as a technological barrier.

Reasons for Request for Review

2. Further justification is required to explain how exactly the DOE has validated that this project activity is first of its kind.

Bureau Veritas Certification's response:

As per the information available from, Karnataka Renewable Energy Development Limited (KREDL), 11 biomass based power projects are commissioned till date in Karnataka. As per the list⁶ of such projects, no similar project has come up in the region of Mysore district. They are projects that are there in other regions of Karnataka, ranging from capacities of 2 MW to 8 MW. Only one project is of 20 MW capacity and it is in Chitradurga district. All 11 projects commissioned (except Malavalli's own project of 4.5 MW in Mandya District, which uses low density crop residues) in Karnataka state, use rice husk and other woody mass as the primary fuel. However this project, (of capacity 16 MW), uses mostly coconut fronds and cane trash as primary fuel.

This being the uniqueness, the Validation team accepted this project as first of its kind.

Reasons for Request for Review

3. Further justification is required for selecting the baseline alternatives for: (a) power (P3 & P4) and heat (H6) generation; and (b) biomass residues (B1 & B3) which should also be identified for each type of biomass used (ACM0006 v4, p5).

Bureau Veritas Certification's response:

Selection of baseline alternatives for power, heat generation and biomass residues is done on the following basis:

Power: Methodology ACM 0006 (Version 4) scenario 17, for power, provides the alternatives of P3 and P4 only.

Heat: As per methodology, scenario 17, H6 or H7 or H8 can be selected. Out of these, H7 is not considered, as there is no external source such as district heating. H8, based on other heat generation alternatives, such as solar energy or heat pumps, are considered to be economically less attractive and technically less adequate due to large capacity and high temperature of heat requirement for the tyre manufacturing process. H6 is considered as baseline alternative, as there are an existing HFO fired boilers running in the plant. This represents continuation of existing situation.

⁵ Article on "Behaviour of gaseous chlorine and alkali metals during biomass thermal utilization" – Appendix – 4

⁶ List of Biomass based power plants commissioned till date (taken from KREDL web site) – Appendix – 5

Biomass Residue: As per methodology, scenario 17, B1 or B2 or B3 can be selected. Out of these B2 (anaerobic decay - in landfills for example) is excluded even though part of the residues might be disposed in nearby landfills (in theory). This decision to exclude the anaerobic decay alternative is a conscious decision by the project participants in order to avoid an overestimation of baseline emissions due to biomass decay. This is conservative. Alternatives B1 (aerobic decay) and B3 (uncontrolled burning) represent the most plausible baseline alternatives for the biomass residue types that will be used in the project activity. In terms of baseline emissions, methodology ACM0006, Version 04 assumes, for both scenarios (natural decay and uncontrolled burning), that the biomass residues would be burnt in an uncontrolled manner. Hence, it is not relevant to specify (neither in the ex-ante calculation of baseline emissions nor in the ex-post calculations based on the monitoring report) which of the two alternatives B1 or B3 is the most likely baseline scenario. Project participant in their response have identified the alternative uses of each type of biomass residues.

Reasons for Request for Review

4. The PP/DOE are required to explain (in section B.7.2) how exactly each type of biomass delivered to the project site is going to be monitored according to ACM0006 v4 (p 48).

Bureau Veritas Certification's response:

As per the monitoring procedures following monitoring parameters are linked to biomass residues delivered to the project site:

- (i) Biomass quantity of type k combusted in the plant;
- (ii) Moisture content of the biomass of type k;
- (iii) Average trip distance between biomass source of type k and plant and
- (iv) Average truck load for transportation of biomass of type k
- (v) Available surplus of biomass of type k (analysis of leakage emissions)

Among the different types of biomass residues to be used in the project activity, such as cane trash, coconut fronds, corn cobs, eucalyptus branches, tobacco waste, cashew shell residues, rice husk and wood chips, each type of biomass are generated in different locations and will be provided by different suppliers. Given the fact that biomass delivery to the cogeneration plant will occur in separate trucks for each type of biomass and that the source of biomass will be registered for each delivery (for leakage assessment purposes), above mentioned parameters will be monitored separately for each single type of biomass as outlined in Section B.7 of the PDD.

The quantity of biomass combusted will be collected separately for all types of biomass. Upon delivery of biomass to the cogeneration plant, the amount of biomass of each single type will be weighted and recorded in the logbooks of the cogeneration plant. Adjustments will be made for the moisture content in order to determine the quantity of dry biomass. The quantity shall be crosschecked with the quantity of electricity (and heat) generated.

Whenever, wood chips are sourced, purchase receipts shall indicate that the wood is being purchased from licensed provider by the State Forest Department only. This is to ensure that the demand created for biomass will not result in any deforestation activities.

This has been explained in section B.7.1 of the PDD & it would be extended to section B.7.2 of PDD once this response is accepted by CDM-EB.

The project proponent along with their response has provided all the necessary evidences.

We hope that the explanation provided above is satisfactory and request you to kindly register the project.