# VCS PROJECT REVIEW REPORT

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| **Project ID** | 1315 |
| **Project Name** | Biomass based cogeneration plant at Godrej Agrovet Ltd. Chintampalli |
| **Project Proponent** | Godrej Agrovet Limited |
| **Methodology** | AMS-I.C. v19.0 “Thermal energy production with or without electricity” |
| **Sectoral Scope(s)** | Energy (renewable-/non-renewable sources) |
| **Validation/Verification Body (VVB)** | TÜV Rheinland (China) Ltd |
| **Registry** | APX |

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| **Assessment Criteria** | VCS Standard, v3.4; VCS Program Guide, v3.5, AMS-I.C. v19.0 “Thermal energy production with or without electricity”, Guidelines on the demonstration of additionality of small-scale project activities v9.0, Glossary of CDM terms v7, Guidelines on the assessment of investment analysis v5 |
| **Date of First Issue** | 10 September 2014 |
| **Date of Final Issue** | 30 September 2014 |

**Summary:**

An accuracy review of the Biomass based cogeneration plant at Godrej Agrovet Ltd. Chintampalli registration request has been conducted by VCS in accordance with Section 4.3 of the *Registration and Issuance Process*.

The accuracy review has raised one assessment finding and one minor finding, detailed below. The VVB, in coordination with the project proponent, is hereby required to provide a response to the assessment finding presented in section 1. The assessment finding must be addressed to the satisfaction of VCS. The VVB need not to address the minor finding during this review. Please note though that where VCS finds consistent minor findings by the VVB in future reviews, minor findings shall be escalated to assessment findings.

This findings report may be made publically available, confidential information may be provided as separate attachments.

# 1 ASSESSMENT FINDINGS

**Finding 1**

Section 2.5 of the project description includes a table demonstrating the sensitivity analysis of PLF, fuel cost, NCV and O&M cost. It appears, however, that the values in this table have been incorrectly represented. For example, the table seems to indicate that increases in fuel NCV would increase the cost per output and that an increase in O&M and in fuel cost would decrease the cost per output of both fuels. As one could reasonably expect the opposite to be the case, the VVB is requested to please clarify the conclusions of the sensitivity analysis table.

The sensitivity analysis table in section 2.5 of the project description appears to compare the unit cost of coal and biomass only when together subjected to the same 10% adjustment. In order to demonstrate the robustness of the assumptions in a conservative way, one would expect only the unit cost of the project activity should be subjected to different variables, and then compared to a static unit cost of the baseline (349.3 Rs/GJ). As such, the VVB is requested to please clarify whether the sensitivity analysis was correctly conducted.

Furthermore, employing the above mentioned comparison of biomass variations against the static 349.3 Rs/GJ of coal then presents a scenario where a 10% variation in fuel cost results in a unit cost of biomass of 348.25Rs/GJ, which is less expensive than the baseline scenario.

Paragraph 21 of the CDM *Guidelines on the assessment of investment analysisv5* states that "*In cases where a scenario will result in the project activity passing the benchmark or becoming the most financially attractive alternative the DOE shall provide an assessment of the probability of the occurrence of this scenario in comparison to the likelihood of the assumptions in the presented investment analysis, taking into consideration correlations between the variables as well as the specific socio-economic and policy context of the project activity*."

As such, should it be a case where the original sensitivity analysis was incorrectly carried out, the VVB is requested to please provide an assessment of the probability of the variation of fuel cost resulting in a lower unit cost of biomass than the coal baseline.

**PP response:**

The sensitivity analysis results are corrected now. The table subheadings -10% and +10% were earlier interchanged as compared to the position in the calculation sheet.

During sensitivity analysis, in only one case the cost of biomass is lower i.e. when cost of biomass is reduced by -10% compared to that of baseline. However, this situation is unlikely as per the national biomass price index and state regulatory order on biomass based power projects.

1) The data from a Government of India database shows net price increase in bagasse (a listed biomass residue) over a 10 year period. Evidence is attached.
2) APERC recommends an annual 5% price escalation for biomass based power projects (APERC Tariff order dated 31/03/2009, pg. 5)

These changes are made in the PD

**VVB Response:**

The error in sensitivity analysis results has been rectified. The validation team has checked the changes and found to be correct.

Moreover, sensitivity analysis in the revised PD has been checked to have correctly carried out only for the project activity i.e., unit cost of the project activity subjected to different variables and then compared to a static unit cost of the baseline.

Validation team has checked that the unit cost of energy generation in project case is higher and economically unattractive compared to that in the baseline for all sensitivity cases except one.

In only one sensitivity case, i.e., when cost of biomass is reduced by 10%, the unit cost of energy generation using biomass (348.25 *Rs./GJ)* is less than unit cost of energy generation using coal (*349.3 Rs./GJ*). However, validation team accepts this situation to be unlikely based on verification of following references.

1. The Bagasse price index sourced from Ministry of Commerce and Industry, Government of India[1] was checked to verify the net price increase in bagasse over a 10 year period.
2. Validation team has also verified APERC Tariff order dated 31/03/2009[2] showing annual 5% price escalation for biomass based power project.

Based on above facts and scenarios, it has been accepted that decrease in biomass cost is improbable.

**VCS Response:**

The sensitivity analysis table in section 2.5 of the revised PD reflects an accurate comparison of the static unit cost of the baseline with the variables of the project activity unit costs. Further, with regards to the scenario where the unit cost of energy generation using biomass would be lower than the baseline unit cost, the project description uses the national biomass price index and the state regulatory order on biomass based power projects as evidence of the unlikeliness of this condition.

Section 3.2.5 of the validation report states that the project activity unit costs are compared to the static unit cost of the baseline. The VVB confirms that it is unlikely that the cost of biomass would decrease by the 10% required to make the project activity financially attractive.

Based on the above, this finding has been closed and no further information is required.

[1] Reference B12 of Validation report

[2] Reference B11 of validation report

## 2 MINOR FINDINGS

**Finding 1**

Section 3.2.7 of the validation report states that no methodology deviations were applied to this project.

However, Section 4 of the validation report states that "*deviations from the applied CDM methodology have sufficiently been addressed and justified*."

Given that there are no deviations being applied by the project, the statement in section 4 appears to have been included in the validation report by error. In the future, please ensure that such statements are consistent with the VVB's assessments of the project.

## 3 ASSESSMENT CONCLUSION

On 10 September 2014, VCS issued the first round of findings to TÜV Rheinland (China) Ltd.

On 26 September 2014, VCS received the assessment finding response from TÜV Rheinland (China) Ltd. The response included an updated project description and validation report document, which clarify the issues identified in the assessment finding.

On 30 September 2014, VCS closed all findings and no further action was required by the VVB.