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Request for Review

Dear Sir or Madam,

Below please find the DOE's response to the request for review for the CDM project with the registration number 1404. We are at your disposal for any further information you may need.

Yours sincerely,

Werner Betzenbichler
Carbon Management Service

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TÜV SÜD's Response to the CDM Executive Board

Issue 1:

Further clarification is required on how the DOE has validated the Kenyan grid emission factor.

DOE's Response:

The DOE validated the Kenyan grid emission factor by verifying:

- Data sources;
- Accuracy of calculation results;
- Compliance of the calculation with ACM 0002, Version 6.

Data sources were verified during the on-site audit by comparing data used in the calculation of the grid factor with a hardcopy of the dispatch data (daily and monthly logs) the project participants obtained from the Kenya Power and Lighting Company.

Accuracy of the calculation results was checked directly in the spreadsheet tables. Also compliance of the calculation with ACM 0002 was verified based on the spreadsheet tables the project participants provided to the DOE. The compliance check included determination of the set of plants in the top 10% of the grid system dispatch order. The order of operation and the amount of power that was dispatched from all plants in the system were calculated using the merit order provided by the Kenya Power and Lighting Company, including dispatched imports. The daily fuel consumption of the 5 most recent plants that make up for the top 10% is calculated using the Approved Specific Fuel Consumption of the plants provided by the Kenyan Energy Regulatory Commission (formerly Electricity Regulatory Board). The monthly figures are then consolidated into the overall built margin.

The only inconsistency noted was that in the merit order as provided by the Kenya Power and Lighting Company Limited, numbering of the power plants is in the reverse order, meaning that the plants having the least merit have the highest number. However, assumptions and calculations are fully in compliance with the methodology.

All information that was used in the validation of the grid factor (except for hardcopies verified during the on-site audit) can be made available to the EB.

Issue 2:

Further explanation is required on how the incremental quantity of bagasse, $BF_{PJ,k,y}$ has been calculated.

DOE's Response:

$BF_{PJ,k,y}$ is the incremental quantity of biomass residue type k used as a result of the project activity in the project plant during the year y (tons of dry matter). $BF_{PJ,k,y}$ is required for calculating baseline emissions from natural decay or uncontrolled burning of biomass. According to ACM0006 Version 4 (Page 39, Scenario 16), "*$BF_{PJ,k,y}$ should be determined taking into account*

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the project specific circumstances. Ensure that only the incremental increase in the use of bio-mass residues due to the project activity is taken into account".

The three-year historic data for the incremental quantity of bagasse $BF_{PJ,k,y}$ are based on measurements from the transport of surplus bagasse to the dumping sites. In average this quantity was 251 780 t wet bagasse annually, which is approximately 125 890 t dry biomass (at 50% moisture content). Data for the following table is taken from the PDD and is also included in the PPs response to the request for review.

Table: Historic yield data for bagasse (3-year period prior to the project)

	(1)	(2)	(3)	(4)
Year	**Sugarcane Crushed (t)**	**Wet Bagasse Produced (t)**	**Wet Bagasse Utilised (t)** (combusted)	**Wet Bagasse Dumped (t)**
Data source	Measured	Calculated based on (1), using the cane equation	Calculated (2-4)	Measured (truck trans-port)
2003/4	2 290 427	857 994	602 039	255 955
2004/5	2 339 954	881 695	626 640	255 055
2005/6	2 443 299	938 227	693 898	244 329
Total	**7 073 680**	**2 677 916**	**1 922 577**	**755 339**
Average 3 years	2 357 893	892 638	640 859	251 780
Average 3 years (%)	*100%*	*37.9%*	*27.2%*	*10.7%*

In the Project Scenario, the incremental quantity of bagasse $BF_{PJ,k,y}$ will be calculated based on the total bagasse quantity (calculated according to Issue 3 below) minus the historically consumed (= combusted) quantity $BF_{historic,k,3y}$ ("wet bagasse utilised" in the table above). However, the incremental bagasse quantity cannot exceed the quantity that was dumped in the past.

In other words: the incremental quantity of bagasse $BF_{PJ,k,y}$ will be the minimum of either

(a) the historically dumped volume; or
(b) the total bagasse quantity minus the historically consumed (combusted) volume.

However, the incremental bagasse quantity cannot become negative.

Taking into account the fact that the project claims emission reductions only for aerobic decay/ uncontrolled burning of the biomass, the calculation of the incremental quantity of bagasse $BF_{PJ,k,y}$ as it is presented here is conservative.

The PDD will have to be adjusted accordingly.

The DOE further noticed that in deviation from the "Guidelines for completing the project design document (CDM-PDD)", Version 06.2 the parameter tables do not include the line "Value of data applied". Also in this regard the PDD will have to be adjusted.

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Issue 3:

Further clarification is required on how the quantity of bagasse is measured according to ACM0006 v4.

DOE's Response:

In principal methodology ACM0006 Version 4 requires on-site measurements of the biomass residues that are combusted in the project plant (see parameter $BF_{k,y}$ in Section III Monitoring Methodology). However, in the Monitoring Procedures in the same section of the methodology (page 48, paragraph 3) it is outlined that: "*If the amount of biomass combusted is estimated from the amount of biomass delivered to the project site, a procedure should be established to undertake an energy balance for the verification period, considering the stocks of biomass at the beginning and end of each verification period*."

In project 1404, the bagasse quantity that is combusted ($BF_{k,y}$) is calculated using the "cane equation" to determine the total bagasse quantity. Total bagasse is calculated from the sugar-cane crushed, the water and steam added and the resulting juice. In the project, the calculated bagasse quantity for combustion will be crosschecked with the electricity produced and supplied to the grid and to the sugar factory.

For historic data, the total bagasse quantity has to be adjusted for surplus bagasse that was transported to the dumpsites in order to obtain the combusted bagasse quantity. The surplus bagasse was determined by weighing transport trucks.

The DOE supports the statement made by the Project Participants that the high reliability and accuracy of the current bagasse determination in combination with a crosscheck based on the energy balance justify calculation of the bagasse quantity that is combusted ($BF_{k,y}$).