

REVISED MONITORING PLAN

March 27, 2008

**“4.5 MW Biomass (Agricultural Residue) Based Power
Generation Unit of M/s Matrix Power Pvt. Ltd. (MPPL)”
Reference no. UNFCCC 00000281-CDMP**

**Project Site: Karempudi Village, Karempudi Mandal, Guntur
District, Andhra Pradesh, India**

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1. Introduction

1.1 Title of the project activity

4.5 MW Biomass (Agricultural Residue) Based Power Generation Unit of M/s Matrix Power Pvt. Ltd. (MPPL).

1.2 Introduction

The purpose of this report is to revise the monitoring plan as per the directions of UNFCCC.

Starting date of the project activity

The starting date of the project activity is August 15, 2001

1.3 CDM Registration details

Date of registration: July 21, 2006

Reference no: UNFCCC 00000281-CDMP

Methodology: AMS I D version 7

1.4 Project Activity

The project activity is a 4.5 MW (gross) capacity grid connected biomass (agricultural residue) based renewable energy power plant.

The power plant has one condensing steam turbo generator unit with a matching boiler of traveling grate type capable of firing multi fuels. The boiler was specifically designed to burn 100% agricultural residue (cotton stalks, chilli stalks and red gram stalks). All necessary auxiliary facilities of the power plant are provided. The boiler is sized to produce a maximum of 19.25 tonnes per hour of steam. The steam turbine is a straight condensing type machine with two bleed off, one to deaerator and one to Low Pressure (LP) heater for feed water heating. The steam conditions at the boiler heat outlet are at a pressure of 65 kg/cm² and temperature of $480 \pm 5^{\circ}\text{C}$. The plant is situated on 25 acres of land, with raw water consumption of 600 cubic metres per day. The chimney height is 43 metres and the power evacuation is through a 33 KV line.

2. Need for revision in the monitoring plan

A revision to the monitoring plan is proposed to provide clarity on

I. The following point raised by UNFCCC

The secretariat noted that in the request for issuance for 19,993 CERs for the monitoring period from 24/07/06 - 23/07/07 that was issued on 5 November, the auxiliary consumption was calculated as the difference between total electricity generated and total electricity exported to the grid, both of which were continuously measured. However, the description in the monitoring table is that for the auxiliary consumption to be measured, therefore, this description needs to be corrected. We would like to request the DOE and PP to revise the monitoring plan taking into account these changes prior to submitting the next request for issuance.

As per the registered CDM – PDD, the monitoring methodology for auxiliary consumption for the plant operations is reported as ‘Measured’. The Auxiliary Consumption was reported on basis of calculation in the Monitoring Report as difference between electricity generated and exported. In this view the PP is proposing a revision in the monitoring plan to change the method of capturing the auxiliary consumption from ‘Measured’ to ‘Calculated’ for better information for the registered monitoring plan.

PP calculates the auxiliary consumption based on the difference between gross generation meter and export meter readings mainly to have better accuracy. Hence, the same is included in the monitoring plan.

Moreover, the emission reductions are being calculated on basis of power exported to grid though as per the registered PDD the emission reductions were calculated on basis of power generated. This is in accordance with methodology AMS ID version 7. PP is proposing a revision in the monitoring plan to change the method of capturing the auxiliary consumption from ‘Measured’ to ‘Calculated’ only for the last year of the initial crediting period.

II. As per the registered CDM – PDD, CERs were calculated on the basis of the total power generated minus the total power imported from the grid. However, to be more conservative Project Proponent calculated the CERs based on the power exported to the grid minus the power imported from the grid. The meter that measures the total power exported to the grid also measures the total power imported from the grid and therefore no new meter was required to measure power imported. The measurement of power imported was not mentioned in the monitoring plan.

Hence the PP is proposing a revision in the Monitoring plan to include the monitoring of power imported, even though it is already being followed. This is in accordance with methodology AMS ID version 7. PP is proposing a revision in the monitoring plan to include measurement of power imported only for the last year of the initial crediting period.

3. Changes in Monitoring Plan / Section D of the PDD

The following changes (highlighted below) have been made to the Monitoring Plan / Section D of the PDD:

1. In Table D.3, for the data variable (D 3.3) auxiliary consumption, it is mentioned as “calculated” instead of “measured”.
2. In Table D.3, additional data variable (D 3.4) which is power imported has been inserted.
3. In Table D.4, ID number D 3.4 has been inserted.

CERs are calculated based on the total power exported to the grid, total power imported from the grid and emissions due to the usage of any coal by the biomass based power plant. Hence, the changes mentioned below will not lead to any deviation from the approved methodology to calculate CERs for a grid connected biomass based power plant.

D.3 - Data to be monitored

ID number	Data type	Data variable	Data unit	Measured (m), calculated (c) or estimated (e)	Recording frequency	Proportion of data to be monitored	How will the data be archived? (electronic/ paper)	For how long is archived data to be kept?	Comment
D.3.1	Power	Total electricity generated	KWh	Measured	continuous	100%	Electronic and Paper	Crediting period plus 2 years	Measured on plant premises and monitored and recorded continuously. Manufacturers of the system should be reputable.
D.3.2	Power	Power Export	KWh	Measured	continuous	100%	Electronic and Paper	Crediting period plus 2 years	Meter is Calibrated and Regularly inspected by The State Electricity Board of Andhra Pradesh
D.3.3	Power	Auxiliary consumption	kWh	Calculated	continuous	100%	Electronic and Paper	Crediting period plus 2 years	Electricity generated – Electricity exported = Auxiliary Consumption
D.3.4	Power	Power Imported	kWh	Measured	continuous	100%	Electronic and Paper	Crediting period plus 2 years	The same meter that measures electricity exported also measures electricity imported
D.3.5	Fuel quantity	Biomass used	MT	Measured	Daily	>95%	Electronic and Paper	Crediting period plus 2 years	To be monitored at purchase and usage
D.3.6	Fuel quality	Calorific value of Biomass	Kcal/kg	Actual sample testing	Monthly	Grab Sample	Electronic and Paper	Crediting period plus 2 years	Sample testing

D.3.7	Fuel quantity	Coal used	MT	Measured	Daily	>95%	Electronic and Paper	Crediting period plus 2 years	Coal is not likely to be used but as the plant is designed to fire up to 30% coal, monitoring should be done.
D.3.8	Fuel quality	Calorific value of Coal	Kcal/kg	Actual sample testing	Monthly	Sample	Electronic and Paper	Crediting period plus 2 years	Sample testing
D.3.9	Fuel quality	Carbon content of coal	%	Actual sample testing	Monthly	Sample	Electronic and Paper	Crediting period plus 2 years	Sample testing
D.3.10	Equipment operation specific	Efficiency of power generation activity	%	Calc	continuous	100%	Electronic and Paper	Crediting period plus 2 years	
D.3.11	Operation specific	Plant heat rate	Kcal/kWh	Calc	continuous	100%	Electronic and Paper	Crediting period plus 2 years	

D.4 - Qualitative explanation of how quality control (QC) and quality assurance (QA) procedures are undertaken:

ID number	Uncertainty level of data (High/medium/low)	Are QA/QC procedures planned for these data?	Outline explanation of why QA/QC procedures are/are not being planned.
D.3.1	Low	Yes	This data will be used to calculate the emission reductions by project activity
D.3.2	Low	Yes	This data will be used as supporting information for calculation of emission reduction by project activity
D.3.3	Low	Yes	This data will be used as supporting information for calculation of emission reduction by project activity
D.3.4	Low	Yes	This data will be used as supporting information for calculation of emission reduction by project activity
D.3.5	Low	Yes	This data will be used to calculate emission reductions by project activity (to check coal numbers)
D.3.6	Low	Yes	This data will be used as supporting information for calculation of emission reduction by project activity (to check coal numbers)
D.3.7	Low	Yes	This data will be used for calculation of project emissions if applicable
D.3.8	Low	Yes	This data will be used for calculation of project emissions if applicable
D.3.9	Low	Yes	This data will be used for calculation of project emissions if applicable
D.3.10	Low	Yes	This data will not be used to calculate the emission reductions by project activity but is an important parameter for plant performance
D.3.11	Low	Yes	This data will not be used to calculate the emission reductions by project activity but is an important parameter for plant performance

