

**MONITORING REPORT FORM (CDM-MR)**
Version 01 - in effect as of: DD/MM/YYYY**CONTENTS**

- A. General description of the project activity
 - A.1. Brief description of the project activity
 - A.2. Project participants
 - A.3. Location of the project activity
 - A.4. Technical description of the project
 - A.5. Title, reference and version of the baseline and monitoring methodology applied to the project activity
 - A.6. Registration date of the project activity
 - A.7. Crediting period of the project activity and related information
 - A.8. Name of responsible person(s)/entity(ies)
- B. Implementation of the project activity
 - B.1. Implementation status of the project activity
 - B.2. Revision of the monitoring plan
 - B.3. Request for deviation applied to this monitoring period
 - B.4. Notification or request of approval of changes
- C. Description of the monitoring system
- D. Data and parameters monitored
 - D.1. Data and parameters used to calculate baseline emissions
 - D.2. Data and parameters used to calculate project emissions
 - D.3. Data and parameters used to calculate leakage emissions
 - D.4. Other relevant data and parameters
- E. Emission reductions calculation
 - E.1. Baseline emissions calculation
 - E.2. Project emissions calculation
 - E.3. Leakage calculation
 - E.4. Emission reductions calculation
 - E.5. Comparison of actual emission reductions with estimates in the registered CDM-PDD
 - E.6. Remarks on difference from estimated value



MONITORING REPORT
Version No. 01 Date 23/07/2010

Rice Husk Based Power Project
Reference No. 0186
Monitoring Period: 01/04/2009-31/03/2010 (first and last days included)

SECTION A. General description of the project activity

A.1. Brief description of the project activity:

Purpose of the project activity and Greenhouse Gas (GHG) abatement measures taken:

The project activity is a rice husk based power generation project with provisions to co-fire coal with rice husk, set up by Vandana Vidhyut Limited at Sirgitti Industrial Area, Bilaspur, Chattisgarh. Entire power generated from the project activity is exported to the Chattisgarh State Electricity Board (CSEB) Grid after meeting the auxiliary consumption of the power plant equipment. In absence of the project activity, equivalent quantum of electrical energy to that in the project activity would have been generated by fossil-fuel fired thermal power plants connected to the state grid. Thus the project activity is reducing corresponding GHG emission by replacing GHG intensive grid power.

Brief description of installed technology and equipments:

The total capacity of the power plant is 7.7MW. The power plant will have one condensing steam turbo generator unit with a matching boiler of travelling grate type design capable of firing multi-fuel with rice husk as the primary fuel along with coal being co-fired with rice husk. There is one 35 tph, 66 kg/cm², 500°C high pressure boiler and a single bleed cum condensing steam turbine generator (STG) of 7.7 MW capacity.

Relevant dates for the project activity:

Start date of commercial operation: 1st November 2001

(As per the “Investment Certificate” issued by Chattisgarh State Renewable Energy Development Agency)

Monitoring Period:

The monitoring period is chosen from 01/04/2009 to 31/03/2010 (both days included).

Emission reductions achieved in the monitoring period – 28595 t CO₂

**A.2. Project Participants**

Vandana Vidhyut Limited, Bilaspur, Raipur, Chattisgarh, India - Project Promoter

Contact: Shri GP Agrawal, Director

Vandana Vidhyut Limited

Vandana Bhawan, M.G. Road,

Raipur – 492001, Chattisgarh, India

A.3. Location of the project activity:

The project location is at Sirgitti Industrial Area of Bilaspur District, Chattisgarh State, India.

Latitude: - 21°47' N to 23°08' N

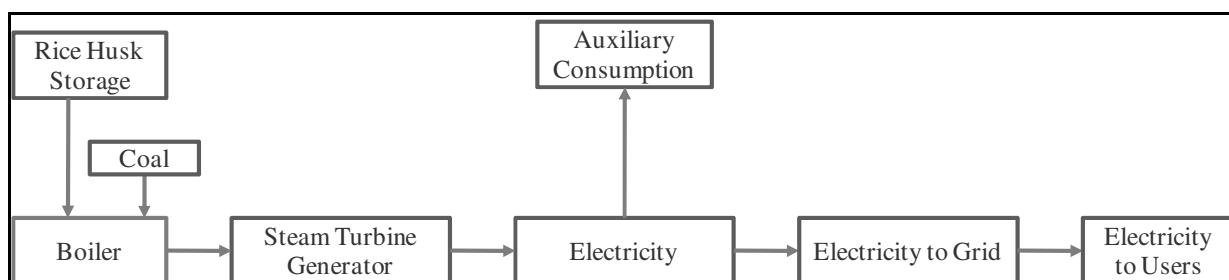
Longitude: - 81°14'E to 83°15' E

A.4. Technical description of the project

The 7.7 MW power plant is based on Rankine Cycle. Rice husk is used as the primary fuel with provisions of co-firing coal. The steam generator is designed to operate on any combination of rice husk and coal to ensure consistent plant efficiency even in times of rice husk deficiency, if any. The power plant will have one condensing steam turbo generator unit with a matching boiler of travelling grate type design capable of firing multi-fuel with rice husk as the primary fuel.

There is one 35 tph, 66 kg/cm², 500°C high pressure boiler and a single bleed cum condensing steam turbine generator (STG) of 7.7 MW capacity. The 35 tph of steam from boiler is fed into the 7.7 MW bleed cum condensing turbine. The boiler is of Fluidized Bed Combustion type and has the advantages of high thermal and combustion efficiency reducing quantity of husk needed, to a minimum, automatic operation for consistent high efficiencies and reduced need for manpower.

Steam Turbine of fully condensing mode with suitable alternator generator will be installed for generating electricity. The turbines are of the single cylinder, single exhaust fully condensing type, designed for high operating efficiencies and maximum reliability. Following is the set up of the project activity:-

**A.5. Title, reference and version of the baseline and monitoring methodology applied to the project activity:**

Title: - Renewable Electricity Generation for a Grid

Reference: - AMS I.D version 07 dated 28th November, 2005

A.6. Registration date of the project activity:

9th of February, 2006

A.7. Crediting period of the project activity and related information (start date and choice of crediting period):

Crediting Period as mentioned in the registered PDD is from 2002-2012. The starting date of the crediting period is from 1st April, 2002.

A.8. Name of responsible person(s)/entity(ies):

Contact Person - Mr. Pankaj Baldua

Address - M/s Vandana Vidhyut Limited, Vandana Bhawan, M.G. Road, District- Raipur, PIN- 492001, State- Chattishgarh, India

Tel: + 91 771-2535440/42077777

Fax: + 91 771- 4265491

E-mail: Vil-nib@sancharnet.in

SECTION B. Implementation of the project activity**B.1. Implementation status of the project activity**

1. Start date of commercial operation: 1st November 2001

(As per the "Investment Certificate" issued by Chattisgarh State Renewable Energy Development Agency)

**B.2. Revision of the monitoring plan**

Not Applicable.

B.3. Request for deviation applied to this monitoring period

Not Applicable.

B.4. Notification or request of approval of changes

The contact detail of authorized signatory has been changed and the same has been notified to the UNFCCC by changing the necessary Modalities of Communication.

SECTION C. Description of the monitoring system

The Monitoring and Verification (M&V) procedures define a project-specific standard against which the project's performance (i.e. GHG reductions) and conformance with all relevant criteria will be monitored and verified. It includes developing suitable data collection methods and data interpretation techniques for monitoring and verification of GHG emissions with specific focus on technical / efficiency / performance parameters. It also allows scope for review, scrutiny and benchmarking of all these information against reports pertaining to M & V protocols.

The M&V Protocol provides a range of data measurement, estimation and collection options/techniques in each case indicating preferred options consistent with good practices to allow project managers and operational staff, auditors, and verifiers to apply the most practical and cost effective measurement approaches to the project. The aim is to enable this project have a clear, credible, and accurate set of monitoring, evaluation and verification procedures. The purpose of these procedures would be to direct and support continuous monitoring of project performance/key project indicators to determine project outcomes, greenhouse gas (GHG) emission reductions.

The project revenue is based on the units exported as measured by power meters at plant and main meter and check meters at the high-tension substation of the CSEB. The monitoring and verification system would mainly comprise of these meters as far as power export is concerned. The rice husk input is also to be monitored. The export of electricity will be through invoices to CSEB. The invoices, based on meter readings will also be covered in the regular finance audit. The measurement of the quantity of rice husk used will produce evidence to the quantity of energy generated with zero net CO₂ emissions. The CERs will be generated from the quantity of power generation from rice husk. The determination of quality and quantity of coal co-fired with rice husk will help us to determine the project emissions due to this in terms of mass CO₂.



The project employs Distributed Control System (DCS) type monitoring and control equipment that will measure, record, report, monitor and control various key parameters. Parameters monitored will be quantity and quality of rice husk fuel used, quantity and quality of coal used, total power generated, power exported to the grid, etc.(details enclosed in the tables given below). These monitoring and controls will be the part of the DCS of the entire plant. All monitoring and control functions will be done as per the internally accepted standards and norms of VVL. The instrumentation system for the project will mostly comprise microprocessor-based instruments of reputed make with desired level of accuracy. All instruments will be calibrated and marked at regular intervals so that the accuracy of measurement can be ensured all the time. The quantity of emission reduction claimed by the project will only be a fraction of the total generated emission of the grid, which depends on the actual generation mix of the grid in a particular year.

Data needed to calculate the emission factor of the CSEB grid are based on information available from authorized government agencies - Central Electricity Authority (www.cea.nic.in), Western Regional Electricity Board (www.wreb.gov.in) - a subsidiary of CEA and the Chattisgarh State Electricity Board (www.cseb-powerhub.com) sources. The government authorized agencies monitor power generated and supplied to state grid. The grid mix scenario through the entire crediting period will be based on records and reports with CEA and CSEB. CEA and CSEB monitor the performance of all power generation unit connected to the CSEB grid under their own monitoring schedule monthly/ annually. The state grid transmission and distribution network includes monitoring and control facilities at each generation unit level, as well as voltage, substation and consumer level. The power records from the State Grid contain all information related to sources and origin of generation like thermal, hydro and renewable energy sources, installed and de-rated capacity, performance of generating unit like actual and expected generation, and planned capacity additions during the year, etc. Hence, the transparency of measurements, recording, monitoring and control of the generation mix of the State Grid is ensured all the time. These records can be used for verification of generation mix and emission factor (EF) for baseline calculation for a particular year.

SECTION D. Data and parameters

The Monitoring Protocol requires the following parameters to be monitored for the computation of emission reductions:

- Power export
- Carbon content in coal



Apart from the above parameters, the project proponent also monitors the following supplementary parameters to check the operational performance of the power plant:

- Total electricity generated
- Auxiliary consumption
- Type of fuel used (Coal, Biomass)
- Total quantity of fuel consumption (Coal, Biomass)
- Calorific value of fuels used (Coal, Biomass)
- Plant heat rate
- Efficiency of power generation activity

D.2.1 Data and parameters monitored	
Data / Parameter:	Power export
Data unit:	kWh
Description:	Power exported to grid
Measured /Calculated /Default:	Measured
Source of data:	Chhattisgarh State Power Distribution Company Limited (CSPDCL) ¹ - HT Meter Reading Statement.
Value(s) of monitored parameter:	Please refer to emission reduction calculation sheet submitted to DOE.
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	Estimation of Baseline Emissions.
Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)	<p>The CSPDCL Main Meter (MM) readings are used to determine the net export quantity. Under circumstances wherein the Main Meter is not functional, the CSPDCL Check Meter (CM) readings are used to determine the same. Furthermore, the accuracy of the Main Meter readings is substantiated by the Check Meter readings. The parameter can also be cross-checked with the measured values of the net export, monitored by the In-house Export Meter. The In-house Export Meter (or the Static Meter) is a micro-processor based metering device supplied by Secure Meter Limited (SEMS).</p> <p><u>Calibration of Monitoring Equipment</u></p> <p>a) CSPDCL HT Meter - Maintained and calibrated by CSPDCL. All these meters are sealed by CSEB on a regular basis. All these meters are sealed by CSPDCL.</p> <p>b) In-house Export Meter (SEMS) - Calibrated once in a year by Yenkey Instruments And Controls Pvt. Ltd.</p> <p>Sl. No. - TNB00708</p>

¹ The Chhattisgarh State Electricity Board (CSEB) has been reorganized into five companies in accordance with the provisions contained in the Electricity Act 2003 by the Govt. of Chhattisgarh vide Notification dated 19.12.2008.



	Certificate No: - YB/VVL/2008-09/M-06 dtd 24/03/2009.
Measuring/ Reading/ Recording frequency:	Measured continuously and CSPDCL HT Meter Reading Statements issued on monthly basis.
Calculation method (if applicable):	Not Applicable.
QA/QC procedures applied:	Any discrepancies in the Main Meter reading (for example, difference between Main Meter and Check Meter readings or extreme deviation in the net export figure from that reported by the In-house Export Meter of VVL), if identified, will immediately be brought to the notice of CSPDCL. CSPDCL will ensure the corrective actions to be undertaken at their earliest.

D.2.2 Data and parameters monitored	
Data / Parameter:	Fuel Quantity
Data unit:	Tonnes
Description:	Total quantity of coal consumption
Measured /Calculated /Default:	Measured
Source of data:	Coal Stock Register
Value(s) of monitored parameter:	Please refer to emission reduction calculation sheet submitted to DOE.
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	Estimation of Project Emissions.
Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)	<p>The quantity of coal consumed is monitored by scaling of bunker (i.e. by measuring the difference in levels of coal in the bunker before feeding coal and after discharging the same into the feeding hoppers of the FBC boiler). A standardized scaling chart for the bunker is used to calculate the fuel fed from the bunker to the FBC boiler.</p> <p>The scaling of bunker was carried out by VVL which was certified by Power Tech Engineers(Consulting Engineers)</p>
Measuring/ Reading/ Recording frequency:	Recorded on a daily basis.
Calculation method (if applicable):	Not Applicable.
QA/QC procedures applied:	<p>The daily coal consumption figure, as reported in the "Coal Stock Register" can also be cross-verified with the coal consumption figure of the "Details of daily Report". The annual coal consumption figure can also be cross-checked from the audited (by a third party statutory auditor) Balance Sheet of VVL. There is a defined procedure on "GHG Performance Monitoring, Measurement and Reporting of Data" which ensures that proper corrective actions are undertaken immediately if any discrepancies are identified in the coal consumption data. These discrepancies are also documented as 'History' in the daily report.</p>



D.2.3 Data and parameters monitored	
Data / Parameter:	Fuel Quantity
Data unit:	%
Description:	Carbon Content in Coal
Measured /Calculated /Default:	Actual sample testing
Source of data:	Coal Analysis Reports of National Accredited Laboratory
Value(s) of monitored parameter:	Please refer to emission reduction calculation sheet submitted to DOE.
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	Estimation of Project Emissions.
Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)	Not Applicable.
Measuring/ Reading/ Recording frequency:	Recorded on a monthly basis.
Calculation method (if applicable):	Not Applicable.
QA/QC procedures applied:	The carbon content of the coal used is analyzed by a National Accredited Laboratory following the standard testing procedure which will ensure lower uncertainty level of the parameter.

D.2.4 Data and parameters monitored	
Data / Parameter:	Power
Data unit:	kWh
Description:	Total electricity generated
Measured /Calculated /Default:	Measured
Source of data:	Monthly Performance Report
Value(s) of monitored parameter:	Please refer to emission reduction calculation sheet submitted to DOE.
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	
Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)	<p>In-house Generation Meter.</p> <p>The In-house Generation Meter (or the Energy Meter) is a micro-processor based metering device which is supplied by ABB. It is calibrated by a third party on a regular basis.</p> <p>In-house Generation Meter (ABB) - Calibrated once in a year by Yenkey Instruments And Controls Pvt. Ltd.</p> <p>Sl. No-02131300</p> <p>Certificate No: - YB/VVL/2008-09/M-07 dated 24/03/2009.</p>
Measuring/ Reading/	Measured continuously and recorded on daily basis.



Recording frequency:	
Calculation method (if applicable):	Not Applicable.
QA/QC procedures applied:	<p>The monthly generation as reported in the "Monthly Performance Report" can also be cross-verified with the corresponding figures as reported in the "Details of daily Report".</p> <p>The annual generation can also be cross-checked from the audited (by a third party statutory auditor) Balance Sheet of VVL.</p> <p>There is a defined procedure on "GHG Performance Monitoring, Measurement and Reporting of Data" which ensures that proper corrective actions are undertaken immediately if any discrepancies are identified in the generation figures (like inconsistencies in reported parameters) and/or discrepancies in the operation of the power plant. These discrepancies are also documented as 'History' in the daily report.</p>

D.2.5 Data and parameters monitored	
Data / Parameter:	Power
Data unit:	kWh
Description:	Auxiliary Consumption
Measured /Calculated /Default:	Measured
Source of data:	Monthly Performance Report
Value(s) of monitored parameter:	Please refer to emission reduction calculation sheet submitted to DOE.
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	
Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)	<p>The Auxiliary meter is a micro-processor based metering device which is supplied by GEC ALSTOM. This is calibrated as per VVL's calibration schedule.</p> <p>Calibrated once in a year by Yenkey Instruments And Controls Pvt. Ltd.</p> <p>Sl. No-7138950</p> <p>Certificate No: - YB/VVL/2008-09/EM-04 dated 24/03/2009.</p>
Measuring/ Reading/ Recording frequency:	Measured continuously and recorded on daily basis.
Calculation method (if applicable):	Not Applicable.
QA/QC procedures applied:	<p>The monthly consumption as reported in the "Monthly Performance Report" can also be cross-verified with the corresponding figures as reported in the "Details of daily Report".</p> <p>The annual consumption can also be cross-checked from the audited (by a third party statutory auditor) Balance Sheet of VVL.</p> <p>There is a defined procedure on "GHG Performance Monitoring, Measurement and Reporting of Data" which ensures that proper corrective actions are undertaken immediately if any discrepancies are identified in the generation, consumption and export figures (like</p>



	inconsistencies in reported parameters) and/or discrepancies in the operation of the power plant. These discrepancies are also documented as 'History' in the daily report.
--	---

D.2.6 Data and parameters monitored	
Data / Parameter:	Fuel Quantity
Data unit:	Tonnes
Description:	Total quantity of rice husk consumption
Measured /Calculated /Default:	Measured
Source of data:	Rice Husk Stock Register
Value(s) of monitored parameter:	Please refer to emission reduction calculation sheet submitted to DOE.
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	
Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)	<p>The quantity of rice husk consumed is monitored by scaling of bunker (i.e. by measuring the difference in levels of rice husk in the bunker before feeding rice husk and after discharging the same into the feeding hoppers of the FBC boiler). A standardized scaling chart for the bunker is used to calculate the fuel fed from the bunker to the FBC boiler.</p> <p>The scaling of bunker was carried out by VVL which was certified by Power Tech Engineers(Consulting Engineers)</p>
Measuring/ Reading/ Recording frequency:	Recorded on a daily basis.
Calculation method (if applicable):	Not Applicable.
QA/QC procedures applied:	<p>The daily rice husk consumption figure, as reported in the "Rice Husk Stock Register" can also be cross-verified with the rice husk consumption figure of the "Details of daily Report". The annual rice husk consumption figure can also be cross-checked from the audited (by a third party statutory auditor) Balance Sheet of VVL.</p> <p>There is a defined procedure on "GHG Performance Monitoring, Measurement and Reporting of Data" which ensures that proper corrective actions are undertaken immediately if any discrepancies are identified in the rice husk consumption data. These discrepancies are also documented as 'History' in the daily report.</p>

D.2.7 Data and parameters monitored	
Data / Parameter:	Fuel Quantity
Data unit:	kCal/kg
Description:	Calorific value of coal used
Measured /Calculated	Actual sample testing



/Default:	
Source of data:	Reports of National Accredited Laboratory
Value(s) of monitored parameter:	Please refer to emission reduction calculation sheet submitted to DOE.
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	
Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)	Not Applicable.
Measuring/ Reading/ Recording frequency:	Recorded on a monthly basis.
Calculation method (if applicable):	Not Applicable.
QA/QC procedures applied:	The calorific value of coal is tested by an external Laboratory, which is a National Accredited Laboratory (Central Fuel Research Institute, Bilaspur Unit).

D.2.8 Data and parameters monitored	
Data / Parameter:	Fuel Quantity
Data unit:	kCal/kg
Description:	Calorific value of rice husk used
Measured /Calculated /Default:	Actual sample testing
Source of data:	Lab Analysis Report
Value(s) of monitored parameter:	Please refer to emission reduction calculation sheet submitted to DOE.
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	
Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)	Bomb Calorimeter The calorific value of the rice husk is determined in the in-house laboratory of VVL as per the standard national practices by taking samples at random. The Bomb Calorimeter is calibrated once in every year following the standard procedure for calibration.
Measuring/ Reading/ Recording frequency:	Recorded on a monthly basis.
Calculation method (if applicable):	Not Applicable.
QA/QC procedures applied:	There is a defined procedure on “GHG Performance Monitoring, Measurement and Reporting of Data” which ensures that proper corrective actions are undertaken immediately if any observations in



	the calorific value of rice husk (like inconsistencies in reported parameters) are identified
--	---

D.2.9 Data and parameters monitored	
Data / Parameter:	Operation specific
Data unit:	kCal/kWh
Description:	Plant Heat Rate
Measured /Calculated /Default:	Calculated
Source of data:	Emission Reduction calculation sheet provided to DOE.
Value(s) of monitored parameter:	Please refer to emission reduction calculation sheet submitted to DOE.
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	
Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)	Not Applicable.
Measuring/ Reading/ Recording frequency:	Not Applicable.
Calculation method (if applicable):	The parameters are computed following the standard methods of calculation.
QA/QC procedures applied:	There is a defined procedure on “GHG Performance Monitoring, Measurement and Reporting of Data” which ensures that proper corrective actions are undertaken immediately if any observations in the plant heat rate or efficiency of power generation (like inconsistencies in computed parameters) are identified. These discrepancies are also documented as ‘History’ in the daily report.

D.2.10 Data and parameters monitored	
Data / Parameter:	Equipment / Operation specific
Data unit:	%
Description:	Efficiency of power generation activity
Measured /Calculated /Default:	Calculated
Source of data:	Emission Reduction calculation sheet provided to DOE.
Value(s) of monitored parameter:	Please refer to emission reduction calculation sheet submitted to DOE.
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	
Monitoring equipment (type, accuracy class, serial number, calibration)	Not Applicable.



frequency, date of last calibration, validity)	
Measuring/ Reading/ Recording frequency:	Not Applicable.
Calculation method (if applicable):	The parameters are computed following the standard methods of calculation.
QA/QC procedures applied:	There is a defined procedure on “GHG Performance Monitoring, Measurement and Reporting of Data” which ensures that proper corrective actions are undertaken immediately if any observations in the plant heat rate or efficiency of power generation (like inconsistencies in computed parameters) are identified. These discrepancies are also documented as ‘History’ in the daily report.

SECTION E. Emission reductions calculation**E.1. Baseline emissions calculation**

Baseline Emissions = (Net Export to CSEB Grid * Grid emission Factor) tCO₂

The grid emission factor is calculated ex-ante and is fixed for the entire crediting period. The value of the grid emission factor was calculated in the Registered PDD based on figures provided by the Central Electricity Authority, Government of India and other government agencies of India (mentioned in the Registered PDD).

E.2. Project emissions calculation

Project Emissions = [(44/12) * Quantity of Coal consumed * Carbon content of coal] tCO₂

E.3. Leakage calculation

Not Applicable.

E.4. Emission reductions calculation / table

Emission Reductions = (Baseline Emissions – Project Emissions) tCO₂



Emission Reductions for the period April 2009 - March 2010							
Parameters Months	Baseline Emissions			Project Emissions			Emission Reductions
	Net Export to CSEB Grid	Grid Emission Factor	Baseline Emissions	Coal Consumption	Total Carbon in Coal	Project Emissions	
	(kWh)	(tCO ₂ /MU)	(tCO ₂)	(tonnes)	(%)	(tCO ₂)	(tCO ₂)
Apr-08	4494720	820.00	3686	1152.811	29.70	1255	2430
May-08	4816880	820.00	3950	1281.507	29.30	1377	2573
Jun-08	4756480	820.00	3900	1202.960	29.20	1288	2612
Jul-08	4396720	820.00	3605	1142.511	31.90	1336	2269
Aug-08	4957920	820.00	4065	1299.378	28.40	1353	2712
Sep-08	3814560	820.00	3128	982.790	30.20	1088	2040
Oct-08	4984640	820.00	4087	1300.517	26.30	1254	2833
Nov-08	4412400	820.00	3618	1139.129	28.10	1174	2444
Dec-08	4797840	820.00	3934	1242.354	25.60	1166	2768
Jan-09	4868080	820.00	3992	1354.297	27.90	1385	2606
Feb-09	4689840	820.00	3846	1250.572	31.30	1435	2410
Mar-09	1536560	820.00	1260	353.308	28.10	364	896
Total	52526640		43072	13702.134		14477	28595

E.5. Comparison of actual emission reductions with estimates in the CDM-PDD

Item	Values applied in ex-ante calculation of the registered CDM-PDD	Actual values reached during the monitoring period
Emission reductions (tCO ₂ e)	21076.2	28595

E.6. Remarks on difference from estimated value in the PDD

In the registered PDD, the emission reductions for the entire crediting period were projected based on

- Baseline emissions corresponding to a net exportable electricity of 45.41 GWh to Chattisgarh State Electricity Board (CSEB) grid for the year 2002-2003 and
- Project emissions resulting from co-firing of 9784.9 tonnes of coal with rice husk in 2002-2003 and a total carbon content of 45% in coal.

In line with the registered monitoring plan, the emission reductions for the period 2009-2010 are calculated based on

- Baseline emissions corresponding to a net exported electricity of 52.526 GWh to CSEB grid for the year 2009-2010



- Project emissions resulting from co-firing of 13702.134 tonnes of coal with rice husk in 2009-2010 and a total carbon content of coal (measured monthly) ranging between 25.60% to 31.90%

The above explanation signifies:

- (i) an increase in baseline emissions of 5850 tonnes CO₂ in 2009-2010 with respect to that in 2002-2003 (as provided in the registered PDD) which is attributed to an increase in net exported electricity to CSEB grid,
- (ii) a decrease in project emissions by 1669 tonnes CO₂ in 2009-2010 with respect to that in 2002-2003 (as provided in the registered PDD) which is attributed to a corresponding reduction in total carbon content of coal used.

This justifies an increase in emission reductions for the period 2009-2010 by 7519 tonnes of CO₂ with respect to that projected in the registered PDD.

History of the document

Version	Date	Nature of revision
01	EB 54, Annex 34 28 May 2010	Initial adoption.
Decision Class: Regulatory Document Type: Guideline, Form Business Function: Issuance		