THIRD MONITORING REPORT

Monitoring Period
25.09.2007 to 24.09.2008
(Both Days Included)

Project 0362: Sri Balaji 6 MW Non-Conventional Renewable Sources Biomass Power Project

Version: Balaji/001
Date : 31.12.2008

Project Site:
Chennur village,
Chennur Mandal, Kadapa district,
Andhra Pradesh, India

Sri Balaji Biomass Power Pvt. Ltd.
1071, Road No 44, Jubilee Hills,
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Andhra Pradesh, India.
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A. Project Reference:

Title: Sri Balaji 6 MW Non – Conventional Renewable Sources Biomass Power project

UNFCCC Reference No: 0362

Registration Date: 21 May 2006

Methodology: AMS ID Version 7

B. Monitoring Period

The Monitoring period is chosen from 25.09.2007 to 24.09.2008 (both days included).

C. Location of the Project:

Project 0362: Sri Balaji 6 MW Non – Conventional Renewable Sources Biomass Power Project Plant located at Chennur Village, Chennur Mandal, Kadapa Dist., Andhra Pradesh, India, has been commissioned and is operational since 14.04.2004. The Plant is using renewable Biomass fuels like Rice Husk, Ground Nutt Shell, Prosophis Julie flora etc.

D. Brief Description and Current Status of the Project:

The project was registered with CDM Executive Board on 21 May 2006.

During the first Monitoring Period (15 April 2004 to 24 November 2006) plant exported 96.55 Million units to the grid and issued 81295 CERs.

During the second Monitoring Period (25 November 2006 to 24 September 2007) plant exported 30.13 Million units to the grid and issued 24830 CERs.

The specifications of major equipment and their suppliers are detailed below.

S. No	Equipment	Supplier
1	Boiler	Walchand Nagar Industries Ltd, Pune.
2	Turbo Generator	Triveni Engineering & Industries Ltd.

The Plant is in operation continuously (with outages – forced & planned) during the monitoring period. The Plant is using renewable Biomass fuels like Rice Husk, Ground Nutt Shell, Prosophis Julie flora etc. Based on the Biomass assessment carried by private consultant it has been observed the excess biomass is available in the region after total usage in the District as detailed.

S.NO	Details	Quantity in MT
1	Industrial Produce (Rice Husk, Saw dust etc)	168400
2	Crop Residue Generation & Other (like Paddy straw, Wheat, Juliflora etc)	815130
3	Total Generation	983530
4	Domestic Consumption (usage like fuel, manure, thatching etc)	678623
5	Usage by biomass plants (Balaji is one of the plant)	58867
6	Total Consumption (A)	737490
7	Surplus available (B)	246040
	Percentage {(B/A)*100}	33.4% Excess

In addition, plant also uses small quantity of diesel very occasionally for power generation using DG set to meet emergency power requirement during complete black out and factory also for internal vehicles for fuel transfer.

The Plant had suffered major outages as detailed below during the period:

Month	Running hours	Planned outages	Forced outages	Reason for major Outrage
		Hrs/Min.	Hrs/Min.	
Oct (25/09 to 24/10)	599-48	93-50	10-22	Wet fuel
Nov (24/10 to 24/11)	566-09	172-12	1-34	Grid Failure
Dec (24/11 to 24/12)	562-55	154-26	2-12	Grid Failure
Jan (24/12 to 24/01)	577-54	163-40	6-58	Grid Failure
Feb (24/01 to 24/02)	582-49	150-40	6-10	Grid failure ,Air Compressor Problem
Mar (24/02 to 24/03)	573-57	122-04	4-20	Grid Failure
Apr(24/03 to 24/04)	330-15	408-30	2-50	Annual maintenance
May(24/04 to24/05)	496-30	216-00	3-45	Grid Failure
Jun(24/05 to 24/06)	511-09	235-35	4-06	Grid Failure
Jul(24/06 to 24/07)	491-45	223-00	5-15	Grid Failure
Aug(24/07 to 24/08)	533-18	90-30	117-21	Monthly maintenance, wet fuel, AVR Problem
Sep(24/08 to24/09)	144-33	603-53	1-32	Travelling great problem
Total For The Monitoring Period	**5971-02**	**2634-20**	**166-25**	

E. Sustainability – Economic and Social well being:

The Company has spent around Rs. 67 million (USD 1.34 million @ IUS$ = Rs 49/-) during the monitoring period towards fuel usage in the Plant. Procurement of biomass fuel from local farmers and biomass suppliers has

generated additional income and improved economic condition of the community.

This has also resulted in local employment generation. Plant has generated employment opportunities directly / indirectly to more than 500 people.

As a part of social responsibility, Plant has been contributing to social infrastructure by way of employing local people for the Plant operations and also paying significant amount as tax for Sales Tax, water charges to Irrigation Department, and for the local Panchayat.

F. Baseline Emission Factor

The baseline emissions and the emission reductions from project activity are estimated based on the quantum of electricity to be exported by the project activity and the Baseline Emission Factor (BEF) of the chosen Southern Regional grid (India). The baseline emission factor (combined margin) has been calculated as per the guidance provided in ACM0002 (Version 06). The Baseline Emission Factor 0.83 Kg CO_2/ KWh has been validated and is available in the registered CDM PDD.

G. Baseline Emission Factor

Baseline and project emissions are calculated as per the formulas mentioned in Section B of the PDD.

- Baseline emissions are calculated as per the formula given below:

  Baseline emissions = Net Electricity exported to the grid (KWh) x Grid emission factor (tCO_2/KWh)

  Grid emission factor of 0.83 $kgCO_2$/kWh is considered based on the data provided in the registered PDD and procedures mentioned in ACM0002 (Version 6).

- Emission Reductions:

  The project activity reduces carbon dioxide through displacement of grid electricity generation with fossil fuel based power plants by renewable-

electricity generated through biomass. The emission reduction ERy due to project activity during a given year y is calculated as the difference between baseline emissions (BEy), project emissions (PEy) and emissions due to leakage (Ly), as per the formulae given below:

ERy = BEy – PEy – Ly

Where,

BEy = Baseline emissions
PEy = Project emissions;
Ly = Emissions due to Leakage.

PEy(Import) = Net Electricity imported to the grid (KWh) x Grid emission factor (tCO_2/KWh)
PEy(coal) = (Coal used in MT X (Carbon content in % / 100)) x 44/12
PEy(diesel) = [(Diesel consumed in liters x calorific value (TJ/kg) x density of fuel (kg/l))] x IPCC emission factor (tCO_2/TJ) x oxidation factor

Where,
CV = Calorific value = 10270 Kcal/Kg *(Ex-Ante)*
EF = Emission Factor = 74.1 tCO_2/TJ *(Ex-Ante) IPCCC 2006*

In the case of this project activity Ly = 0 (Please refer to the registered PDD)

Monitoring Period	Baseline Emissions (tCO2)	Project Emissions (tCO2)	Net Emission Reduction (tCO2)
25.09.2007 to 24.09.2008	18297	219	30951

H. Parameters being monitored:

For the Project, the following parameters are being monitored on continuous basis:

1 ***Power Generation (KWh):*** Power generation from the plant is measured continuously using the generation meter installed in the control room of the plant. The total generated power will also be used to measure the auxiliary consumption of the plant after deducting power exported to the grid.

2 ***Power Export & Import (KWh):*** Power exported to the grid and imported from the grid is monitored from energy meters installed at APTransco substation on end of every billing month. A joint meter reading for the energy exported to the Grid will be recorded by representatives of APTransco and Company and the readings will be jointly signed by both the parties as a proof of export of Power to the grid from power plant and import of Power from grid by the power plant. These meter readings are the basis for the invoices raised by SRI BALAJI BIOMASS POWER PRIVATE LIMITED.

3 ***Biomass Fuel (MT):*** The Biomass fuel (of all kinds) on receipt in the Plant is weighed in the Electronic Weigh Bridge installed at the entry of the Plant and unloaded in the fuel storage yard. The biomass fuel after necessary preparation is fed to the Boiler as per the requirement and consumption will be recorded on daily basis.

4 ***Calorific value of the Biomass fuel (Kcal/Kg):*** The calorific value of the Biomass fuel (of all kinds) used is being measured in the laboratory on a monthly basis, by sampling method as per the arrivals of the biomass and average value is considered. Though this parameter is not directly used in the emission reduction calculations the project proponent monitors the same for maintaining a check on the quality of biomass being fired in the boiler.

5 ***Coal (MT):*** Coal never has been used in plant during the complete monitoring period.

6 ***Diesel (Litres):*** Diesel consumption will be monitored on regular basis using level gauge/measurement on store issues.

Month-wise data on Power Generation, export, import, fuel consumption and diesel consumption is given below for the monitoring period:

Billing Month	Year	Electricity Generated, KWH	Electricity Exported KWH	Electricity Imported KWH	Biomass Used, MT	Coal Used, MT	Diesel consumption, lit
Oct (25/09 to 24/10)	2007	3990700	3610300	9100	6070	0	3106
Nov (24/10 to 24/11)	2007	4093400	3680600	11100	5290	0	2618
Dec (24/11 to 24/12)	2007	4062200	3659800	8900	5335	0	2706
Jan (24/12 to 24/01)	2008	4138100	3728700	9800	5390	0	2396
Feb (24/01 to 24/02)	2008	4103800	3688900	10000	5580	0	2600
Mar (24/02 to 24/03)	2008	4082300	3676500	8000	5285	0	2849
Apr(24/03 to 24/04)	2008	2435200	2192600	16100	2970	0	2265
May(24/04 to24/05)	2008	3601800	3244900	13800	4115	0	3056
Jun(24/05 to 24/06)	2008	3623000	3264000	12900	4230	0	2892
Jul(24/06 to 24/07)	2008	3561700	3214400	13300	4225	0	2664
Aug(24/07 to 24/08)	2008	3027800	2654700	18000	4820	0	2370
Sep(24/08 to24/09)	2008	1048400	939100	29900	1581	0	1670
Total For The Monitoring Period		**41768400**	**37554500**	**160900**	**54891**	**0**	**31192**

Emission reductions are calculated based on the power exported to the grid; power imported from the grid during shut down and starts up, coal and diesel consumed in the plant for the monitoring period.

Billing Month	Year	Electricity Exported, KWH	Electricity Imported KWH	Biomass Used, MT	Coal Used, MT	Diesel consumption, lit	Net Emission Reductions (tCO2e)
Oct (25/09 to 24/10)	2007	3610300	9100	6070	0	3106	2981
Nov (24/10 to 24/11)	2007	3680600	11100	5290	0	2618	3039
Dec (24/11 to 24/12)	2007	3659800	8900	5335	0	2706	3023
Jan (24/12 to 24/01)	2008	3728700	9800	5390	0	2396	3080
Feb (24/01 to 24/02)	2008	3688900	10000	5580	0	2600	3046
Mar (24/02 to 24/03)	2008	3676500	8000	5285	0	2849	3037
Apr(24/03 to 24/04)	2008	2192600	16100	2970	0	2265	1800
May(24/04 to24/05)	2008	3244900	13800	4115	0	3056	2673
Jun(24/05 to 24/06)	2008	3264000	12900	4230	0	2892	2691
Jul(24/06 to 24/07)	2008	3214400	13300	4225	0	2664	2650
Aug(24/07 to 24/08)	2008	2654700	18000	4820	0	2370	2182
Sep(24/08 to24/09)	2008	939100	29900	1581	0	1670	750
Total For The Monitoring Period		**37554500**	**160900**	**54891**	**0**	**31192**	**30951**

Based on the time of meter reading, the generation before reading has been added as a part of generation of the preceding month and the generation after reading added in the next month.

I. Measures to ensure the Results / uncertainty analysis

As per the Power Purchase Agreement (PPA), the energy exported to the APSEB Grid is recorded from two independent meters viz., Main Meter and Check Meter and reading of main meter is used for billing. In the event of main meter not in operation / fails, the reading of the check meter shall be used for Billing.

As per the requirements of APSEB the plant will undertake the calibration of meters once in a year to make sure the accurateness of readings. Power Generation, Export & Import, auxiliary Consumption, fuel consumption are being recorded and measured daily and the same is being verified by Manager (O&M) and approved by General Manager (Operation).

Weight Bridge will be calibrated once in year to assure the quantity of biomass used during the plant operation.

J. Roles & Responsibilities

A CDM team has been formed in Sri Balaji Biomass Power private limited for monitoring and verification of all the monitoring parameters as per the guidelines formulated by the management. Qualified and trained people monitor the parameters and emission reduction calculations. In the complete implementation and monitoring Plan, Sri Balaji Biomass Power Private Limited is the sole agency responsible for implementation and monitoring.

CDM team member names:

1. Mr. Raju M
2. Mr. Sardar
3. Mr. M. Muralikrishna
4. Mr. K. Krishnakanth

Annexure I

Emission Reduction Calculation

Month	Year	Electricity Generated, kWh	Electricity Exported, kWh	Electricity Imported, kWh	Auxiliary Consumption		Biomass Used, MT					Coal Used, MT	Grand Total, MT	% Carbon in Coal	Emission Factor, kgCO2/ kWh	Diesel consumption , lit		Baseline emissions, tCO2e	Project Emissions, tCO2e				Nett Emission Reductions, tCO2e
					kWh	%	Rice Husk	GN Shell	Juliflora	*Others	Total Biomass								Emissions due to import	Emissions due to Coal	Emissions due to Diesel	Total Project emissions	
		As per SBPPL log sheets	*As per certified meter readings*	*As per certified meter readings*			*As per SBPPL Books*							*As per Test certificates*	*As per PDD*	*As per SBPPL Records*							
Oct (25/09 to 24/10)	2007	3990700	3610300	9100	380400	9.5	3455	1332	746	537	6070	0	6070	0	0.83	3106	74.1	2997	7.55	0	8.49	16	2981
Nov (24/10 to 24/11)	2007	4093400	3680600	11100	412800	10.1	1935	3135	90	130	5290	0	5290	0	0.83	2618	74.1	3055	9.21	0	7.16	16	3039
Dec (24/11 to 24/12)	2007	4062200	3659800	8900	402400	9.9	1605	3535	170	25	5335	0	5335	0	0.83	2706	74.1	3038	7.39	0	7.40	15	3023
Jan (24/12 to 24/01)	2008	4138100	3728700	9800	409400	9.9	1545	3625	220	0	5390	0	5390	0	0.83	2396	74.1	3095	8.13	0	6.55	15	3080
Feb (24/01 to 24/02)	2008	4103800	3688900	10000	414900	10.1	3265	1640	80	595	5580	0	5580	0	0.83	2600	74.1	3062	8.30	0	7.11	15	3046
Mar (24/02 to 24/03)	2008	4082300	3676500	8000	405800	9.9	2867	825	60	1533	5285	0	5285	0	0.83	2849	74.1	3051	6.64	0	7.79	14	3037
Apr(24/03 to 24/04)	2008	2435200	2192600	16100	242600	10.0	2110	445	10	405	2970	0	2970	0	0.83	2265	74.1	1820	13.36	0	6.19	20	1800
May(24/04 to24/05)	2008	3601800	3244900	13800	356900	9.9	2115	985	85	930	4115	0	4115	0	0.83	3056	74.1	2693	11.45	0	8.36	20	2673
Jun(24/05 to 24/06)	2008	3623000	3264000	12900	359000	9.9	1535	650	220	1825	4230	0	4230	0	0.83	2892	74.1	2709	10.71	0	7.91	19	2691
Jul(24/06 to 24/07)	2008	3561700	3214400	13300	347300	9.8	2235	845	170	975	4225	0	4225	0	0.83	2664	74.1	2668	11.04	0	7.29	18	2650
Aug(24/07 to 24/08)	2008	3027800	2654700	18000	373100	12.3	2764	611	300	1145	4820	0	4820	0	0.83	2370	74.1	2203	14.94	0	6.48	21	2182
Sep(24/08 to24/09)	2008	1048400	939100	29900	109300	10.4	670	345	10	556	1581	0	1581	0	0.83	1670	74.1	779	24.82	0	4.57	29	750
Total		**41768400**	**37554500**	**160900**	**4213900**	**10.1**	**26101**	**17973**	**2161**	**8656**	**54891**	**0**	**54891**	**0**		**31192**		**18297**	**47.23**	**0**	**85.31**	**219**	**30951**

*Others include: Bengal gram, Bagasse, Saw dust, Juwari Husk