

MONITORING REPORT

Monitoring Period
25.06.2006 to 23.07.2007
(Both Days Included)

Project 0374: KMS Power 6 MW Renewable Sources Biomass Power project

**Version : KMS/001
Date : 22.08.2007**

Project Site:
Lakkaraju Garlapadu village,
Sattenapalli Mandal, Guntur district,
Andhra Pradesh, India

KMS POWER PRIVATE LIMITED
1071, Road No 44, Jubilee Hills,
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Andhra Pradesh, India.
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Current Status of the Project

Project 0374: KMS Power 6 MW Renewable Sources Biomass Power Project Plant at Lakkaraju Garlapadu, Sattenapalli Mandal, Guntur Dist., Andhra Pradesh, India, has been commissioned and is operational since 22.07.2002.

Monitoring Period

The Monitoring period is chosen from 25.06.2006 to 23.07.2007 (both days included).

During the present monitoring period, plant exported 36.505 million kWh to APTRANSCO grid and consumed 64,201 MT of biomass fuel and 2008 MT of coal.

Statement to what extent the Project has been implemented as planned

The Project has been completed as planned and described in the Project Design Document (PDD).

The Plant is in operation continuously (with outages – forced & planned) in continuation with the first monitoring period. The Plant is using renewable Biomass fuels like Rice Husk, Cotton & Chilly Stalks, Prosopis Julie flora, and other biomass fuels and supplementary fuel like coal (less than the permitted quantity). 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 also for internal vehicles for fuel transfer.

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

Billing Month	Running hours	Planned outages	Forced outages
		Hrs	Hrs.
July - 06	539.69	48.00	132.31
August - 06	392.25	20.00	331.75
September - 06	653.39	10.55	56.06
October - 06	637.67	14.22	68.11
November - 06	532.62	36.33	175.05
December - 06	694.20	4.80	21.00
January - 07	408.15	325.70	10.15
February - 07	644.75	0.00	96.36
March - 07	590.48	2.84	76.08
April - 07	620.73	32.59	83.76
May - 07	631.82	22.26	70.17
June - 07	613.06	0.00	107.94
July - 07	613.30	0.00	128.87
Total For the Monitoring Period	7572.11	517.29	1357.61

Sustainability – Economic and Social well being

The Company has spent around Rs. 87.62 million (USD 1.9 million @ IUS\$ = Rs 46/-) 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.

Parameters being monitored according to Monitoring Plan

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

- 1 ***Power Generation:*** 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 compare the auxiliary consumption of the plant after deducting power exported to the grid with the consumption measured from the auxiliary energy meters.
- 2 ***Power Export and import:*** Power exported to the grid and imported from the grid is monitored from energy meters installed at APTRANSCO sub station on 23rd or 24th day of every 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 **KMS POWER PRIVATE LIMITED**.
- 3 ***Biomass Fuel:*** 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:*** The calorific value of the Biomass fuel (of all kinds) used is being measured in the out side Govt. approved laboratory at

regular intervals, as per the arrivals and average value will be considered on monthly basis.

- 5 **Coal/Diesel:** Coal on receipt in the Plant is weighed in the Electronic Weigh Bridge installed in the Plant and unloaded in the fuel storage yard. Coal is fed to the Boiler as and when required and consumption will be recorded accordingly. Diesel consumption will be monitored on regular basis using level gauge/measurement on store issues.
- 6 **Carbon content in Coal:** Carbon content in the coal received is being considered as per the analysis reports of government-approved laboratory, which are being obtained at regular intervals.
- 7 **Calorific value (CV) of coal:** CV of coal is being analyzed at government approved outside laboratory at regular intervals.

Power Generation, Export & Fuel Consumption

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
July (From 25 June 2006)	2006	2797600	2452200	24400	4919	0	7279
Aug	2006	2166000	1892100	31000	3454	0	3104
Sept	2006	3561200	3147600	12800	5823	0	3095
Oct	2006	3472900	3035200	8400	5732	306	3536
Nov	2006	2628000	2287500	31600	4747	20	2991
Dec	2006	3584000	3132900	3100	6425	195	2566
Jan	2007	2243300	1980600	27900	3115	527	3280
February	2007	3767300	3343900	20600	4794	616	3196
March	2007	3340400	2947200	10900	4727	167	3145
April	2007	3549300	3129600	23600	5275	100	3088
May	2007	3528900	3107900	17700	5175	77	4576
June	2007	3410110	3009500	17100	4981	0	4888
July (Up to 23 July)	2007	3459700	3039000	14300	5035	0	4712
Total For The Monitoring Period		41508710	36505200	243400	64201	2008	49456

Emission Reductions

The emission reductions during the chosen monitoring period (2006 -2007) are as given below:

Emission reductions are calculated based on the power exported to the grid, power imported from the grid during shut down and start up, coal and diesel consumed in the

plant from [start date 25.6.2006] to [end of monitoring period date 23.7.2007].

Billing Month	Year	Electricity Generated, KWH	Electricity Exported KWH	Electricity Imported KWH	Biomass Used, MT	Coal Used, MT	Diesel consumption, lit	Net Emission Reductions (tCO2e)
July (From 25 June 2006)	2006	2797600	2452200	24400	4919	0	7279	1995
Aug	2006	2166000	1892100	31000	3454	0	3104	1536
Sept	2006	3561200	3147600	12800	5823	0	3095	2593
Oct	2006	3472900	3035200	8400	5732	306	3536	2177
Nov	2006	2628000	2287500	31600	4747	20	2991	1846
Dec	2006	3584000	3132900	3100	6425	195	2566	2411
Jan	2007	2243300	1980600	27900	3115	527	3280	1103
February	2007	3767300	3343900	20600	4794	616	3196	2150
March	2007	3340400	2947200	10900	4727	167	3145	2275
April	2007	3549300	3129600	23600	5275	100	3088	2478
May	2007	3528900	3107900	17700	5175	77	4576	2482
June	2007	3410110	3009500	17100	4981	0	4888	2470
July (Up to 23 July)	2007	3459700	3039000	14300	5035	0	4712	2498
Total For The Monitoring Period		41508710	36505200	243400	64201	2008	49456	28013

- Base line Emissions are calculated as per the formula given below:

Base line Emissions = Electricity exported to the grid (kwh)
X Grid emission factor (tCO2/ kwh)

- Emissions due to usage of coal are calculated as per the formula given below:

Emissions due to coal = (Coal used in Mt X (Carbon content in % / 100)) x 44/12

Emissions due to electricity import and usage of diesel in the plant for emergency purpose and for fuel handling vehicles are included as per the verifiers suggestions during first verification.

Monitoring Period Summary

Sl. No	Particular	Monitoring Period (13 months)
1	CEF, kgCO2/kWh	0.83
2	Power export to the grid, Million Units (kWh)	36505200
3	Emission Reductions, tons of CO ₂	28013
GRAND TOTAL		28013 tCO ₂

Detailed calculation sheet is provided in Annexure I.

Measures to ensure the Results / uncertainty analysis

As per the Power Purchase Agreement (PPA), the energy exported to the AP 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.

The calibration of monitoring equipment is being maintained as per the requirement of APTRANSCO. Power Generation, Export & Auxiliary Consumption, fuel consumption are being recorded daily and the same is being verified by Manager (O&M) and approved by General Manager (Operation).

Roles & Responsibilities

A CDM team has been formed in **KMS** POWER PRIVATE LIMITED for monitoring and verification of all the monitoring parameters as per the guidelines formulated by the management of **KMS** POWER PRIVATE LIMITED. Qualified and trained people monitor the parameters and emission reduction calculations. In the complete implementation and monitoring Plan, **KMS** POWER PRIVATE LIMITED is the sole agency responsible for implementation and monitoring.

CDM team member names:

1. Mr. N..Seshagiri Rao, General Manager
2. Mr. Tirumala Raju, DGM Projects
3. Mr.V.Durga Prasad, Manager – Biomass Fuel
4. Mr. Md. Sardar, Manager – O&M

Annexure I
Detailed Calculation Sheet

Billing Month	Year	Electricity Generated, kWh	Electricity Exported, kWh	Electricity Imported, kWh	Total Biomass Used, MT	Coal Used, MT	Grand Total, MT	% Carbon in Coal	Emission Factor, kgCO ₂ /kWh	Diesel consumption, lit	Baseline emissions, tCO ₂	Project Emissions, tCO ₂				Net Emission reductions (tCO ₂)
												Emissions due to import	Emissions due to Coal	Emissions due to Diesel	Total Project emissions	
July (from 25 June)	2006	2797600	2452200	24400	4919	0	4919	0	0.83	7279.0	2035	20.25	0.00	19.94	40.19	1995
Aug	2006	2166000	1892100	31000	3454	0	3454	0	0.83	3104.0	1570	25.73	0.00	8.50	34.23	1536
Sept	2006	3561200	3147600	12800	5823	0	5823	0	0.83	3095.0	2613	10.62	0.00	8.48	19.10	2593
Oct	2006	3472900	3035200	8400	5732	306	6038	29.06	0.83	3536.0	2519	6.97	326.05	9.69	342.71	2177
Nov	2006	2628000	2287500	31600	4747	20	4767	25.09	0.83	2991.0	1899	26.23	18.40	8.19	52.82	1846
Dec	2006	3584000	3132900	3100	6425	195	6620	25.19	0.83	2566.0	2600	2.57	180.11	7.03	189.71	2411
Jan	2007	2243300	1980600	27900	3115	527	3642	26.35	0.83	3280.0	1644	23.16	509.17	8.99	541.31	1103
February	2007	3767300	3343900	20600	4794	616	5410	26.54	0.83	3196.0	2775	17.10	599.45	8.76	625.30	2150
March	2007	3340400	2947200	10900	4727	167	4894	25.06	0.83	3145.0	2446	9.05	153.45	8.62	171.11	2275
April	2007	3549300	3129600	23600	5275	100	5375	25.06	0.83	3088.0	2598	19.59	91.89	8.46	119.93	2478
May	2007	3528900	3107900	17700	5175	77	5252	25.06	0.83	4576.0	2580	14.69	70.75	12.54	97.98	2482
June	2007	3410110	3009500	17100	4981	0	4981	0	0.83	4888.0	2498	14.19	0.00	13.39	27.58	2470
July (up to 23 July)	2007	3459700	3039000	14300	5035	0	5035	0	0.83	4712.0	2522	11.87	0.00	12.91	24.78	2498
Total		41508710	36505200	243400	64202	2008	66210	----	0.83	49456	20102	142	1949	135	2287	28013