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Andhra Pradesh - 533 125
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Ref: GREL-RJY / O&M / 16 / 59

Date: 05/09/2017

The Regional Environmental Engineer
Andhra Pradesh Pollution Control Board,
2-532, Shanthinagar,
Opp. DIC office, Ramanayyapeta,
Kakinada- 533 005

Sub: Submission of Environmental Audit report (Form-V) for 2016-2017

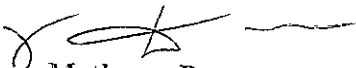
Dear Sir,

We are here with submitting Environmental Audit Report (Form-V) for 2016-2017. Kindly acknowledge.

Thanking you,

Yours faithfully,

For GMR Rajahmundry Energy Limited



Mathews. P
Plant Head

Encl: As above cc: APPCB, Hyderabad; MOEF, Chennai.

**ENVIRONMENTAL STATEMENT
(FORM-V)**

05th September 2017

**GMR Rajahmundry Energy Limited
Vemagiri Village
Kadiyam Mandal
East Godavari District
Andhra Pradesh.**

Form – V
(See rule 14)

As per Rule –14 of Environmental [Protection] Rules, 1986 and amendments there of

Environmental Audit report for the financial year ending the 31st March-2017

PART – A

i)	Name and address of the owner/occupier of the industry, operation or process	A.SAHA GMR Rajahmundry Energy Limited, Vemagiri Village, Kadium Mandal, East Godavari District, Andhra Pradesh-533125. Phone No : 0883-2452313-316 Fax No : 0883-2452312
ii)	Industry category Primary: (STC Code) Secondary: (STC Code)	-----
iii)	Production Capacity units	2X383.779 MW
iv)	Year of Establishment	Commercial Operation Date 22nd October 2015
v)	Date of the last environmental audit report submitted	September, 2016

PART – B

a) Water consumption			
Purpose of water consumption		Water consumption per day [m³/day]	
		During the previous financial year 2015-2016	During the current financial year 2016-2017
i)	DM plant regeneration and back wash	4.63	18.2
ii)	Cooling make up	2238	1732.9
iii)	Domestic	4.51	4.60
iv)	HRSB Boiler feed	84.16	32.5

v)	PLF %	8.24	9.66
Name of the Product	Water consumption per unit of product [m3/kWh]		
		During the previous financial year 2015-2016	During the current financial year 2016- 2017
Power generation		0.001462	0.0009963
b) Raw material consumption			
Name of raw material	Name of products	Consumption of raw material per unit of energy output (Power – Sm3/ kWh)	
		During the previous financial year 2015-2016	During the current financial year 2016- 2017
Natural gas	Electric Power Generation	0.18032	0.17979

Note: Consumption of water during the year 2016-17 is given in Annexure – I.

PART - C

Pollution Generated
(Parameters as specified in the consent issued)

Pollutants	Quantity of pollutants discharged (mass/Day)	Concentration of pollutants discharged (mass/volume)	Percentage of variation from prescribed standards with reasons
a) Total 143.6 M³/Day of water is generated from ETP.			
1. pH	7.13		
2. TSS	2.47 kg/day	17.24 mg/l	
3. Iron as Fe	0.0445 kg/day	0.31 mg/l	
4. Phosphates	0.056 kg/day	0.39 mg/l	
5. Oil & Grease	BDL	BDL	
Note :			
b) Stack gas emissions (Oxides of Nitrogen and SPM)			
1	Stack	Oxides of Nitrogen(PPM)	5.96
		SPM	2.71
c) Ambient Air Quality (AAQ)			
Note: Ambient Air Quality Monitoring Statement for the year 2016-17 is given In Annexure-VI			
d) Noise Level Monitoring			
Note: Noise Monitoring Statement for the year 2016-17 is given in Annexure - VII.			

PART – D

Hazardous Wastes

[As specified under Hazardous Wastes (Management and Handling) rules, 1989]

Hazardous Wastes	Total Quantity (kg)	
	During the previous financial year 2015– 2016	During the current financial year 2016 – 2017
a) From process	Nil	0.4
b) From others	Nil	Nil
c) From pollution control facilities	Nil	Nil

PART – E

Solid Wastes

	Total Quantity (M.Tones / Year)	
	During the previous financial year 2015-2016	During the current financial year 2016-2017
a) From process	Nil	Nil
b) From Pollution control Facilities	Nil	Nil
c) Quantity recycled or reutilized within the unit	Nil	Nil

Note: No hazardous wastes are generated in the plant.

FORM – F

Please specify the characteristics (in terms of concentration and quantum) of Hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes

Waste oil 0.4 KL generated in the plant. Stored in sealed 200 lit drums for disposal at respective storage shed.

FORM – G

Impact of pollution control measures on conservation of natural resources and consequently on the cost of production.

Storm water pond is available to collect the rain water from entire plant(GVPGL&GREL). Over flow of this rain water is being used as feed water and gardening for our plant requirements. Due to which intake water from river is reduced and running hours of the river water pump is also reduced.

FORM – H

Additional investment proposal for environmental protection including abatement of pollution.

All necessary investments for environment protection required are implemented.

FORM – I

Any other particulars for improving the quality of the environment

1. Fully-fledged environmental laboratory was setup for continuous analysis of various streams of waste water, such that any deviations observed are corrected immediately.
2. Environment monitoring is being carried out through MOEF Approved laboratory during plant operation.

ANNEXURE – I**RAW WATER CONSUMPTION (m3)****STATEMENT FOR THE FINANCIAL YEAR 2016- 2017**

S.No	Month	DM Plant Regenerati on & Back wash	Cooling Makeup	HRSG Boiler feed	Domestic	Total Consumption
1	April-16	0	0	251	151	402.00
2	May-16	0	5624	2377.6	139	8140.60
3	June-16	50	0	279	162	491.00
4	July-16	841	110440	2165.64	170	113616.64
5	August-16	1888	221839	2872.35	149	226748.35
6	September-16	3201	294605	3907.35	164	301877.35
7	October-16	0	0	0	127	127.00
8	November-16	0	0	0	167	167.00
9	December-16	117	0	0	132	249.00
10	January-17	130	0	0	90	220.00
11	February-17	0	0	0	108	108.00
12	March-17	429	0	0	122	551.00
Total / Year		6656	632508	11852.94	1681	652697.94
Average/ day		18.2	1732.9	32.5	4.6	1788.2
APPCB Limit KL/DAY		136	20736	768	10	21650

Note: APPCB: Andhra Pradesh Pollution Control Board.

ANNEXURE – II

**NATURAL GAS AND POWER GENERATION STATEMENT FOR THE FINANCIAL
YEAR 2016 – 2017**

Month	Natural Gas Consumption	Gross Power Generation
	24 hrs basis (SCM)	
April-16	0	0
May-16	31450095	175.39
June-16	0	0
July-16	13515516	74.19
August-16	33054134	183.9
September-16	39764032	221.63
October-16	0	0
November-16	0	0
December-16	0	0
January-17	0	0
February-17	0	0
March-17	0	0
Total / Year	117783777	655.11
Average/ day	322695	1.795

Note: SCM: Standard Cubic Meter
MU: Million Unit

ANNEXURE - III

TREATED EFFLUENT ANALYSIS STATEMENT FOR THE FINANCIAL YEAR 2016 - 2017

Month	pH	Total residual Chlorine (mg/ltr)	Suspended solids (mg/ltr)	Dissolved Phosphates (mg/ltr)		Oil & Grease (mg/ltr)	Copper (mg/l)	Iron (mg/l)	BOD (mg/l)	COD (mg/l)	Temp.	
											Deg C	
April-16	0	0	0	0	0	0	0	0	0	0	0	0
May-16	7.39	BDL	12	0.42	BDL	BDL	0.55	14	28.8	0.4		
June-16	7.56	BDL	14.3	0.4	BDL	BDL	0.54	20	32	0.5		
July-16	7.57	BDL	18	0.38	BDL	BDL	0.45	25.5	30	0.4		
August-16	8.17	BDL	29.2	0.62	BDL	BDL	0.42	26.2	31.6	0.4		
September-16	7.97	BDL	24.5	0.52	BDL	BDL	0.52	21	29	0.5		
October-16	7.86	BDL	16.6	0.55	BDL	BDL	0.24	22.4	29.2	0.1		
November-16	7.78	BDL	15	0.52	BDL	BDL	0.19	30	23.5	0.2		
December-16	7.27	BDL	19.3	0.41	BDL	BDL	0.26	30	25.3	0.3		
January-17	8.41	BDL	17.2	0.36	BDL	BDL	0.2	23.4	28.4	0.2		
February-17	8.09	BDL	24	0.25	BDL	BDL	0.2	22	26	0.2		
March-17	7.5	BDL	16.8	0.22	BDL	BDL	0.2	21.5	24.5	0.2		
Average	7.13	BDL	17.24	0.39	BDL	BDL	0.31	21.33	25.69	0.28		
APPCB Limit	6.5 to 8.5	< 1.0	< 100	< 5.0	< 10	< 3.0	< 3.0	< 30.0	< 250	< 5°C		

Note: APPCB: Andhra Pradesh Pollution Control Board.
BDL: Below Detectable Limit.

ANNEXURE - IV

TREATED EFFLUENT (m3) QUANTITY STATEMENT FOR THE FINANCIAL YEAR 2016- 2017

S.No	Month	Cooling Tower Blow Down	D.M.Plant Regeneration, Back Wash & Boiler Blow Down	Total Quantity Effluents Generated
1	April-16	0	0	0
2	May-16	0	0	0
3	June-16	0	50	50
4	July-16	9000	841	9841
5	August-16	11978	1888	13866
6	September-16	24783	3201	27984
7	October-16	0	0	0
8	November-16	0	0	0
9	December-16	0	117	117
10	January-17	0	130	130
11	February-17	0	0	0
12	March-17	0	429	429
Total / Year		45761	6656	52417
Average KL/Day		125.4	18.2	143.6
APPCB Limit KL/Day		2064	136	

ANNEXURE - V

STACK EMISSION STATEMENT FOR THE FINANCIAL YEAR 2016-2017

OXIDES OF NITROGEN (PPM) AND PM

S.No	Month	Oxides of Nitrogen in PPM	PM in mg/Nm ³
1	April-16	0	0
2	May-16	17.05	6.77
3	June-16	0	0
4	July-16	18.16	8.33
5	August-16	18.34	8.7
6	September-16	18.04	8.8
7	October-16	0	0
8	November-16	0	0
9	December-16	0	0
10	January-17	0	0
11	February-17	0	0
12	March-17	0	0
Average		5.96	2.71
APPCB Limit		50	115

Note: APPCB: Andhra Pradesh Pollution Control Board.

ANNEXURE – VI

AMBIENT AIR QUALITY (PLANT SITE)

STATEMENT FOR THE FINANCIAL YEAR 2016-2017

Location: Main gate

S.No	Month	PM ₁₀	PM _{2.5}	SO ₂	Nox
		[µg/m ³]	[µg/m ³]	[µg/m ³]	[µg/m ³]
1	April-16	50.18	15.38	4.77	5.49
2	May-16	49.99	16.22	4.91	5.22
3	June-16	44.39	13.90	4.40	5.03
4	July-16	44.99	13.88	4.27	4.96
5	August-16	42.80	13.41	4.09	4.78
6	September-16	42.78	13.60	4.01	4.68
7	October-16	40.89	12.79	3.61	4.28
8	November-16	39.60	12.17	3.64	4.11
9	December-16	39.33	11.83	3.84	4.11
10	January-17	39.88	11.94	3.76	4.06
11	February-17	38.73	11.74	3.64	4.00
12	March-17	36.32	10.24	3.08	3.24
Average		42.49	42.49	13.09	4.00
APPCB Limit		100	60	80	80

Location: South side plant Boundary

S.No	Month	PM ₁₀	PM _{2.5}	SO ₂	Nox
		[µg/m ³]	[µg/m ³]	[µg/m ³]	[µg/m ³]
1	April-16	48.03	16.93	4.51	4.84
2	May-16	51.122	16.956	4.278	4.756
3	June-16	44.222	14.267	4.411	4.589
4	July-16	45.078	13.989	4.433	4.867
5	August-16	42.911	13.411	3.967	5.067
6	September-16	43.289	13.778	4.222	4.833
7	October-16	41.056	12.789	3.567	4.000
8	November-16	39.967	12.022	3.556	4.044
9	December-16	40.056	12.067	3.700	3.989
10	January-17	40.133	11.967	4.022	3.778
11	February-17	39.122	11.667	3.822	3.944
12	March-17	36.144	10.422	3.056	3.467
Average		42.59	13.36	3.96	4.35
APPCB Limit		100	60	80	80

Location: North East Boundary

S.No	Month	PM ₁₀	PM _{2.5}	SO ₂	Nox
		[µg/m ³]	[µg/m ³]	[µg/m ³]	[µg/m ³]
1	April-16	47.59	18.78	4.70	4.61
2	May-16	51.03	19.78	4.87	5.20
3	June-16	44.41	14.21	4.36	4.31
4	July-16	45.03	14.03	4.33	4.47
5	August-16	43.26	13.23	3.93	4.87
6	September-16	43.33	13.44	4.04	4.89
7	October-16	40.94	12.51	3.64	4.10
8	November-16	39.93	12.06	3.37	4.01
9	December-16	39.92	12.11	3.49	4.14
10	January-17	40.07	11.99	3.69	3.92
11	February-17	39.39	11.72	3.68	3.97
12	March-17	36.19	10.44	3.09	3.57
Average		42.59	13.69	3.93	4.34
APPCB Limit		100	60	80	80

Location: North West Boundary

S.No	Month	PM ₁₀	PM _{2.5}	SO ₂	Nox
		[µg/m ³]	[µg/m ³]	[µg/m ³]	[µg/m ³]
1	April-16	49.14	18.80	4.66	4.49
2	May-16	51.01	21.22	5.03	5.40
3	June-16	44.24	14.34	4.39	4.29
4	July-16	45.04	14.12	4.29	4.39
5	August-16	42.71	13.99	4.14	4.79
6	September-16	42.84	14.17	4.26	4.76
7	October-16	40.96	12.86	3.49	4.17
8	November-16	39.73	12.27	3.36	4.14
9	December-16	39.93	12.08	3.42	4.19
10	January-17	40.11	12.02	3.78	3.91
11	February-17	39.33	11.89	3.67	3.97
12	March-17	35.66	10.64	3.19	3.46
Average		42.56	14.03	3.97	4.33
APPCB Limit		100	60	80	80

Note: APPCB: Andhra Pradesh Pollution Control Board

ANNEXURE - VII

NOISE LEVELS STATEMENT FOR THE FINANCIAL YEAR 2016-2017

AMBIENT NOISE LEVEL MEASUREMENTS dB [A]

S. No	Month	Plant site [Main Gate]	
		Day Equivalent	Night Equivalent
1	April-16	63.2	62.7
2	May-16	58.9	56.7
3	June-16	56.5	54.5
4	July-16	54.9	52.8
5	August-16	56.0	53.0
6	September-16	55.4	53.6
7	October-16	53.5	52.3
8	November-16	55.5	53.7
9	December-16	55.8	54.1
10	January-17	52.7	50.9
11	February-17	58.4	56.7
12	March-17	56.7	55.8
Average		56.5	54.7
APPCB Limit		75.0	70.0

Note: APPCB: Andhra Pradesh Pollution Control Board.

ANNEXURE – VIII

FORM-IV STATEMENT FOR THE YEAT 2016-17.

[See rules 5(6) and 22 (2)]

FORM FOR FILLING ANNUAL RETURNS THE OCCUPIER OR OPERATOR OF FACILITY

[To be submitted by occupier/operator of disposal facility to State Pollution Control Board/Pollution Control Committee by 30th June of every year for the preceding period April to March]

For the period : April 2016-March 2017

Authorization No: **APPCB/VSP/RJY/10097/CFO/HO/2015 - 3548 Dt: 19/08/2015.**

1.	Name and address of the Occupier and Operator Facility	GMR Rajahmundry Energy Limited Vemagiri Village Kadiyam Mandal East Godavari District Andhra Pradesh	
2.	Name of the authorized person and full address with telephone and fax number:	Mathews. P Vice President GMR Rajahmundry Energy Limited Vemagiri Village Kadiyam Mandal East Godavari District Andhra Pradesh	
3.	Description of Hazardous wastes	Waste Oil	Used Oil Filters
4.	Quantity of Hazardous wastes (in Lts)	400	Nil
5.	Description of storage	Sealed Barrels	NA
6.	Description of treatment	NA	

7.	Details of transportation	Name & address of consignee	Mode of packing	Mode of transportation	Date of transportation
		Not applicable			
8.	Detail of disposal of hazardous waste	Not applicable	Not applicable	Not applicable	Not applicable
9.	Quantity of useful materials sent back to the manufacturers* and others#	Not applicable			