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Updated Personal Profile is attached.

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An attempt has been made to fill up the available data in the Form 1, Form 2 and Form 3, which are modified to some extent to have user friendliness and comprehensiveness and also to analyze and interpret the data on energy consumption

Form 1, Table A,

1. A column for comments with respect to the respective item has been added to get more information regarding energy consumption, which the company would like to add.
2. In case of energy consumption items, quality of liquid fuel used with respect GCV/ NCV may be desirable. This data can be obtained from suppliers of the fuel.
3. Though the average cost incurred by a company can be calculated on the basis of annual cost incurred and quantity of fuel used, it may be useful, if this is given separately to have the trend in the average cost fuel used for two consecutive years.
4. Use of renewable energy resources in the total energy consumption should be indicated separately. This will give better idea about a company switching over to renewable energy resources.
5. More details on product mix such as rated capacity of each product, actual production achieved during two years under reference, design specific energy consumption, best achieved energy consumption, actual specific energy consumption for the respective two

years would help in identifying trends, the company's efforts towards energy conservation and their results.

Form 2

In this Table, it may be necessary to indicate the status of energy conservation measures under a separate column showing whether the scheme is implemented or under implementation with Expected Date of Completion (EDC).

Form 3

This Table presents a Executive Summary of appraised Energy Conservation potential as identified in Energy Auditors Report. In this table, categories have been modified/ expanded to get a clear idea about the energy conservation measures implemented / under implementation. The Category 1 i.e. Good house keeping is subdivided into five subcategories i.e. Reduce steam leakages, steam trap maintenance, insulation maintenance, cleaning of heat exchangers and miscellaneous measures. A separate category for improvement in operating practices will be useful in many industries particularly chemical process industry. One more category for energy conservation in chemical process industry i.e. revamping / retrofitting / technology up-gradation needs to be included. It involves integration of many energy conservation measures, which may not be effective if implemented individually but yield benefits with their integration..

It can be seen that the short term measures are requires less investment and benefits are maximum. Long term measures are generally capital intensive and have comparatively longer payback period. However, long term measures are often considered with future benefits with forecast of higher energy cost.

Form - 1**Format for Information regarding Total Energy Consumption and Energy Consumption per Unit of Production**

Name of the company : XYZ Fertilizers & Chemicals (Fertilizer Sector)

Full Address :

Contact Person :

Email address :

Telephone/ Fax numbers :

Plant Address :

A. Power and Fuel Consumption

		2003-04	2004-05	Comments
1.0	Electricity			
a)	Purchased			
	Contract demand, KVA	46000	46000	
	Connected load, kW	86800	86800	
	Annual Consumption, lakh kWh	2463	2592	
	Annual average cost, Rs./kWh			
	Total Cost, Rs. lakhs	9337	10234	
b)	Own (Captive) Generation			
(i)	Through Diesel generator, kWh			
	Annual Generation	0.0	0.0	
	Annual Diesel Consumption, kL	0.0	0.0	
	Average annual cost, Rs./kL			
	Total Diesel cost			
(ii)	Through Steam turbine/ generator			No generation due to gas availability constraint
	Annual Generation, kWh	0.0	0.0	
	Type of fuel used			
	Annual fuel consumption, unit	0.0	0.0	
	Annual average cost of fuel, Rs/unit			
	Annual Cost of fuel, Rs. lakhs			
(iii)	Through Gas Turbine			
	Annual Generation, kWh	0.0	0.0	
	Type of Fuel used			
	Annual fuel consumption, unit	0.0	0.0	
	Annual average cost of fuel, Rs/unit			
	Annual Cost of fuel, Rs. lakhs	0.0	0.0	
(iv)	Through any other means			
	Annual Generation, kWh	0.0	0.0	
	Energy source,			
	Annual consumption of energy	0.0	0.0	

	source			
	Average cost of energy source, Rs/ unit			
	Annual cost of energy source	0.0	0.0	
2.	Coal			
	Coal GCV, kcal/ kg			
	Annual consumption, MT	0.0	0.0	
	Avg. cost per MT			
	Annual cost, Rs. lakhs	0.0	0.0	
3.	Oil			
(i)	Furnace oil			
	Furnace oil GCV, kcal/ kg			
	Annual consumption, kL	0.0	0.0	
	Avg. annual cost/ kL			
	Annual cost, Rs. lakhs	0.0	0.0	
(ii)	Low Sulphur Heavy stock (LSHS)			
	LSHS GCV, kcal/kg			
	Annual consumption, kL	0.0	0.0	
	Avg. annual cost/ kL			
	Annual cost, Rs. lakhs	0.0	0.0	
(iii)	High sulphur Heavy stock			
	HSHS GCV, kcal/kg			
	Annual consumption, kL	0.0	0.0	
	Avg. annual cost/ kL			
	Annual cost, Rs. lakhs	0.0	0.0	
4.	Diesel oil			
(i)	High speed Diesel, HSD			
	HSD GCV, kcal/kg			
	Annual consumption, kL	0.0	0.0	
	Avg. annual cost/ kL			
	Annual cost, Rs. lakhs	0.0	0.0	
(ii)	Light Diesel oil (LDO)			
	LDO GCV, kcal/kg			
	Annual consumption, kL	0.0	0.0	
	Avg. annual cost/ kL			
	Annual cost, Rs. lakhs	0.0	0.0	
5.	Natural/ associated Gas			
(i)	Compressed natural gas (CNG)			
	GCV, kcal/ NM ³			
	Annual consumption, NM ³	0.0	0.0	
	Avg. annual cost/ 1000 NM ³			
	Annual cost, Rs. lakhs	0.0	0.0	
(ii)	Piped Natural/ associated gas			

	GCV/ NCV, kcal/ NM ³	9839/ 8883	9915/ 8949	NCV value given as energy consumption calculated based on NCV
	Annual consumption, million NM ³	376.2	403.6	
	Avg. annual cost/ 1000 NM ³	2830	3053	
	Annual cost, Rs. lakhs	10646	12322	
(iii)	Liquefied Petroleum Gas			
	GCV, kcal/ kg			
	Annual consumption, kg	0.0	0.0	
	Avg. annual cost/ kg			
	Annual cost, Rs. lakhs	0.0	0.0	
(iv)	Any other gaseous resource (non-renewable)- state			
	GCV/ NCV, kcal/ NM ³			
	Annual consumption, NM ³	0.0	0.0	
	Avg. annual cost/ 1000 NM ³			
	Annual cost, Rs. lakhs	0.0	0.0	
6.	Renewable energy resources			
(i)	Biomass			
	Average moisture, as fired, %			
	Average GCV, kcal/ kg			
	Annual consumption, kg	0.0	0.0	
	Avg. annual cost/ kg			
	Annual cost, Rs. lakhs	0.0	0.0	
(ii)	Biogas			
	Avg. GCV, kcal/ NM ³			
	Annual consumption, NM ³	0.0	0.0	
	Avg. annual cost/ 1000 NM ³			
	Annual cost, Rs. lakhs	0.0	0.0	
(iii)	Any other renewable resource			

B. Product mix specifications

S. No	Product Name	Rated Annual capacity, MT	Actual Production, MT		Specific energy Consumption, kcal/MT			Comments
			2003-04	2004-05	Design/ Best Achieved	Actual		
						2003-04	2004-05	
1.	Ammonia from Ammonia- A plant	115,500	26895	22,450	10.82/	10.93	11.71	Plant could be run only for 80 stream days due to non-availability of natural gas
2.	Ammonia from Ammonia- B plant	297,000	242,848	222590	10.93/ 11.77	11.84	11.77	
3.	Urea	330,000	17372 (less Prodn. Due to gas constraints)	Nil (No Prodn. Due to gas constraints)	7.65/9.10	9.25	--	Best achieved was higher on account of higher sp. Energy consumption of ammonia, which is an input for urea.
4.	Methanol	49,500	56690	54945	9.26/8.79	8.85	8.79	Lower sp. Energy consumption than the design due to various energy conservation measures.

Form-2

Format for reporting status of implementation of energy conservation measures based on business plan of the company

I: implemented
 UI: Under Implementation
 EDC: expected date of completion

Sl. No.	Plant	Description of measure	category	Investment, Rs. lakhs	Verified savings, Rs. lakhs	Verified energy savings, units	Unit of energy	Fuel	Status of Implementation (year)
1.	Ammonia-B	Modification in LP turbine rotor	7	453	349.5	123.5	Lakh NM ³	Natural gas	I (2203-04)
2.	Ammonia B	Replacement of CT fan blades with FRP material	6	0.85	3.51	0.93	Lakh kWh	Power	I (2003-04)
3.	Ammonia-B	Revamping of plant	12	15000.00	3633.00	1190	Lakh NM ³	Natural gas	UI (EDC: March 06)
4.	Ammonia-A	VFD for ammonia transfer pump	5	10.0	4.74	1.20	Lakh kWh	Power	I (2004-05)
5.	Methanol	Installation of chiller unit	13	120	42.40	11.20	Lakh kWh	Power	I (2003-04)
6..	Methanol	Installation of Advanced Process Control system	3	80.0	35.03	12.38	Lakh NM ³	Gas	I (2003-04)
7..	Methanol	Improved insulation for Primary reformer furnace	8	5.75	10.41	3.41	Lakh NM ³	Gas	I (2004-05)
8.	Methanol	Raising Combustion air temperature by cleaning Air pre-heater	1.4	0.10	20.06	6.57	Lakh NM ³	Gas	I (2004-05)
9.	Methanol	Hydrogen recovery through membrane unit	12	350	1.10	36	Lakh NM ³	Gas	UI (EDC: March 2006)
10.	Methanol	Removal of wiremesh filter inlet to Instrument air dryer reducing pressure drop and saving energy	2	0.0	6.14	1.62	Lakh kWh	Power	I (2003-04)

Sl. No.	Plant	Description of measure	category	Investment, Rs. lakhs	Verified savings, Rs. lakhs	Verified energy savings, units	Unit of energy	Fuel	Status of Implementation (year)
11.	Methanol	Replacement of HPMV lamps with metal halide lamps	4	2.0	0.91	0.23	Lakh kWh	Power	I (2004-05)
12..	Sewage treatment plant (Utility)	Stopping four aerators	2	0.0	35.39	8.96	Lakh kWh	Power	I (2004-05)
13.	Steam Generation & distribn.	Main Steam line NRV passing	1.1	1.50	33.60	13.65	Lakh NM ³	gas	I (2003-04)
14.	Steam Generation & distribn.	Replacement of damaged insulation	1.3	5.40	2.90	0.95	Lakh NM ³	gas	I (2004-05)
15.	Steam Generation & distribn	Replacement of HPMV lamps with MPSV lamps	4	2.10	2.40	0.61	Lakh kWh	Power	I (2004-05)
16.	Steam Generation & distribn.	Lighting device voltage control transformer	10	3.05	1.54	0.39	Lakh kWh	Power	I (2004-05)
17.	Steam Generation & distribn.	Steam traps maintenance and replacement	1.2	2.0	6.0	1.97	Lakh NM ³	Gas	I (2004-05)
18.	Bagging plant	Stoppage of idle belt conveyors though PLC	2	Nil	5.50	1.45	Lakh kWh	Power	I (2003-04)
19.	Bagging plant	Provision of transparent sheets on conveyor gantry	1.5	0.25	0.61	0.16	Lakh kWh	Power	I (2003-04)

S. No.	Area of Improvement and modification	Investment, Rs. lakhs	First Year savings, Units					First Year cost reduction, Rs. lakhs					Life cycle years
			Gas	Oil	Coal	Electricity	Other	Gas	Oil	Coal	Electricity	Other	
6.	Retrofitting, modification or sizing of fans, blowers, compressor, pumps including duct system	0.85				1.20					4.80		15
7.	Retrofitting of drive of compressor, fans, blowers, pumps	453.0	123.5					346					15
8.	Improved insulation	5.75	3.41					9.41					10
9..	Recovery of waste heat from process heat and/or power generation												
10.	Loss reduction in transformers and power distribution system	3.05				0.39					1.60		15
11.	Fuel switching measures from fossil to fossil or fossil to renewable energy	0.0											15
12.	Revamping/Technology up-gradation through integration of a number of schemes	15000	1190					4030					15
13.	Installation of chiller unit to reduce suction temp. of gas to reduce compression power	120				11.20					45.00		15