From: Mathew Samuel <hoclchin@md2.vsnl.net.in>

Issue 24:

The details required are furnished in the form 1 to 3. To implement energy efficiency and conservation measures in the company the forms 1 to 3 are good. The comments in each form are as below.

Form – I

The details for 2 years (ie, 2002/03, 2003/04) shall also be obtained for reference. The contract demand is normally in KVA and not in KW. The own generation can be with heavy fuel also like LSHS/LSFO etc., in addition to diesel. Hence provision to be provided for this also.

Item No. 3 Oil – It shall be mentioned whether the oil is used for process or steam generation etc., and Gross Calorific Value can be included under item i, ii, iii.

The consumption of water also can be included in this form.
Consumption per unit of production shall also be obtained.
The standard consumption product wise for Electricity (kwh/T) and fuel (T/T) may also be obtained. This shall be available in the Annual Report or bench marking with international Standards.

Form – II

The details of each conservation measure including month of commissioning also can be obtained. How the saving obtained is reflected on the annual consumption figure. If not, it need to be clarified.

Form – III

The reasons for non implimentation of energy audit suggestion to be clearly mentioned.

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

Name of the company	:	HINDUSTAN ORGANIC CHEMICALS LTD
Full Address	:	P.O. - AMBALAMUGAL, DIST. ERNAKULAM KERALA – 682 302
Contact Person	:	MR. MATHEW SAMUEL, DGM(EM)
Email address	:	hclchin@md2.vsnl.net.in
Telephone/ Fax numbers	:	0484 – 2770911/0484 - 2720893
Plant Address	:	P.O. - AMBALAMUGAL, DIST. ERNAKULAM KERALA – 682 302

A. Power and Fuel Consumption	2004/ 2005
1. Electricity	
(a) Purchased	
Contract demand	9000KVA
Connected load	19452kW
Annual consumption	17721800kWh
Total cost	736.89Rs. Lakhs
(b) Own Generation	
(i) Through diesel generator	
Annual generation	33787532kWh
Annual diesel consumption	66.737 kilo liters + LSFO – 7427.689T
Total fuel costs	17.54281Rs. Lakhs + Fuel Cost – 944.30 lakhs
(ii) Through steam turbine/generator	
Annual generation	NIL kWh
Fuel used[1]	NIL
iii Through Gas Turbine	
Annual generation	NILkWh
2. Coal quality (Gross calorific value)	NIL kCal/kg
Annual consumption	NIL Tonnes
Total coal costs	NILRs. Lakhs
3. Oil	
(i) Furnace oil (LSFO)	
Annual consumption	26642.35 kilo liters
Annual costs	3391.25 Rs. Lakhs
(ii) Low Sulphur Heavy Stock (LSHS)	
Annual consumption	NILTonnes
Annual costs	NILRs. Lakhs
(iii) Hot Heavy Stock (HHS)	
Annual consumption	NILTonnes

[1] State which type of fuel or energy was used (C = coal, B = biomass, O = oil, G = gas, E = electricity). If coal was saved state which grade i.e. C/I = imported, or C/F coal of grade F.

Annual costs	NIL Rs. Lakhs

4. Diesel Oil

(i) High Speed Diesel (HSD)

Annual consumption	42.895kilo liters
Annual costs	11.2756Rs. Lakhs

(ii) Light Diesel Oil (LDO)

Annual consumption	NILkilo liters
Annual costs	NILRs. Lakhs

5. Gas

(i) Compressed Natural Gas (CNG)

Gross calorific value	NIL kCal/NM^3
Annual consumption	NIL NM^3
Annual costs	NIL Rs. Lakhs

(ii) Liquefied Petroleum Gases (LPG)

Gross calorific value	NIL kCal/kg
Annual consumption	NIL Tonnes
Annual costs	NIL Rs. Lakhs

(iii) Piped Natural Gas (PNG)

Gross calorific value	NIL kCal/NM^3
Annual consumption	NIL NM^3
Annual costs	NIL Rs. Lakhs

6 Biomass

Average moisture content, as fired	NIL %
Average Gross calorific value, as fired	NILkCal/kg
Annual consumption	NIL MT
Annual biomass costs	NIL Rs. Lakhs

B. Product mix specifications[2]

Product name 1:Phenol	48402.923 (MT)
Product name 2:Acetone	30277.28 (MT)
Product name 3: H2O2 – Hydrogen Peroxide3	9960.34 (MT)
Product name 4: _____	_____ (units**)**

[2] For example if you are a cement manufacturing unit producing different grades of cement, you may like to say under product name 1: OPC grade – XXX Tonnes and under product name 2: Portland slag cement– XXX Tonnes and so on.

Form - 2

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

Sl. No.	Description of Measure	Category[3]	Investment (Rupees)	Verified savings[4] (Rupees)	Verified energy savings	Units[5]	Fuel[6]
1	Installation of VFD for ID & FD Fan in Boiler.	4	6,00,000	63000(For 2 months)	18,000(For 2 months)	kWh	E
2	Installation of Lighting Transformer	3	1,34,808	2,86,972(For 8 months)	81,992(For 8 months)	kWh	E
3	Replacement of indication bulb with LFD	3	39, 600	71219.5(For 10 months)	20,087(For 10 months)	kWh	E
4	Renovation of Main Boiler	12	1,42,80,000	2,06,92,08(For 2 months)	114.3(For 2 months)	MT	O

[3] Use “C” number of form 3 as reference

[4] First year

[5] Use conventional energy, volume or mass units with proper prefix k = 10^3, M = 10^6, G = 10^9

[6] State which type of fuel or energy was saved (C = coal, B = biomass, O = oil, G = gas, E = electricity). If coal was saved state which grade i.e. C/I = imported, or C/F coal of grade F.

Form - 3
Executive Summary of appraised Energy Conservation potential as identified in energy auditor report

C. No.	Area of improvement and modification	Investment Lakh Rs.	First year energy[7] savings					First year cost reduction[8], Lakh Rs.					Life cycle years[9]
			Oil(T)	gas	coal	Electricity(kwh)	other	Oil(T)	gas	coal	Electricity(kwh)	other	
1.	Better house keeping measures												
2.	Installation of improved process monitoring and control instrumentation, or software	142.8	114.3					2069208					10
3.	Measures in the area of lighting	1.74				102079					338191.5		10
4.	Sizing, changing and controlling electric motors including variable speed drives												
5.	Retrofitting, modification or sizing of fans, blowers, pumps, including duct systems	6				18000					63000		20
6.	Performance improvement of compressors and compressed air distribution system												
7.	Improved insulation against heat or cold losses												
8.	Recovery of waste heat for process heat or power generation												
9.	Loss reduction in transformers and power distribution within firm												
10.	Fuel switching measures from fossil to fossil or fossil to renewable energy												

[7] Use commercial units of litre, kg, tons, normal cubic meter, kWh or MWh and indicate the unit. Indicate the anticipated potential in energy savings.

[8] Anticipated cost savings in the first year based on anticipated fuel savings.

[9] Estimate the predicted life of the measure, meaning the number of years the level of first year energy savings or even larger amounts will materialise.

C. No.	Area of improvement and modification	Investment Lakh Rs.	First year energy savings					First year cost reduction, Lakh Rs.					Life cycle years
			oil	gas	coal	electricity	other	oil	gas	coal	electricity	other	
11.	Improvement of prime mover performance such as gas, steam, water, turbines or internal combustion engines												
12.	Improvement of steam boilers and reduction of losses in steam distribution lines												
13.	Modernization measures with benefits of energy consumption reduction												

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