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Pilot Test for reporting by Designated Consumers

Before presenting the data of an actual designated consumers who will be required to submit the information and report on energy consumption under clause (k) and (l) of section 14 of the “Energy Conservation Act’2001”, I would like to highlight a few relevant points which will serve the purpose of collecting such information. :

1. The particulars as prescribed under sub-section (1)(c) of section 217 of the Companies Act,1956 regarding conservation of energy are already being reported by the companies in the following format :
 - a) Energy Conservation measures taken
 - b) Additional investment and proposals for reduction of consumption of energy
 - c) Impact of above measures.
 - d) Total energy consumption and energy consumption per unit of production.

In addition 'Form-A' is required to be submitted by the companies, which gives the details of energy purchased, and own generation besides energy consumption per unit of production

It is suggested that the information required to be submitted by the Designated Consumers (DCs) to Designated Agencies and BEE shall be in similar format so that the DCs don't have to spend too much time on that. It would be better if the 'Form-A' is retained.

2. Aggregated data reporting as discussed under Issue #19 in EMT shall be included as a separate form.
3. It should be compulsory for the DCs to get the submitted data signed by the Energy Manager and certified by Accredited Energy Auditor (AEA). Necessary place in the forms shall be earmarked for the AEs. It may not be out of place to mention here that the Chartered Accountants tend to give more importance to the financial data than to the data related to the energy conservation.
4. It might be useful if sector-wise reporting formats are developed. I foresee BEE expanding with specialist sector-wise departments taking care of respective sectors. This will also be useful for better understanding of the data.
5. I feel that the 'Form-1' can be divided into 3 parts

Part-A : General Details

Part-B : Details of Power & Fuel Consumption

Part-3 : Details of Production

I have also added some entries to make the information more comprehensive. Plus I have added another column for the previous years figures .I feel it will be better, if specific energy consumption figures for each type of product/activity are also collected

6. I feel that 'Form-2' is alright, but 'Form-3' needs slight change in the sense that instead of first year's savings, second year's savings should be reported. Often the first year's savings are for only few months and difficult to arrive at.
7. I have some doubts about the procedure to be adopted for processing of the information collected from DCs. The answers to my doubts may result in further improvements in the formats. The doubts are :
 - What will be the role of Designated Agencies in processing the information ?
 - To whom the information will be submitted by DCs first ? to BEE, Das or both simultaneously ?

- Whether the information to be submitted shall have to be attested by the Accredited Energy Auditors ?
 - Whether this information will be treated as confidential or will be available on request to interested parties ?
 - Will DC be obliged to furnish the technical details of the energy conservation measures undertaken ?
 - How the reporting format is linked with the Energy Audit Report prepared by the Accredited Energy Auditors is not clear.
8. In response to the pilot test under the Issue #24 I have presented information about DC in Bangalore. The consumer is a 5 star hotel with 130 rooms, centrally air- conditioned with all facilities. There are over 150 employees working round the clock.It was established in the year 1991. Its total turnover in the year 2003-04 was about Rs 42.5 crores. I have given figures for the year 2003-04 and the previous year 2002-03.
9. Overall, I feel that some collective thinking is required on the part of BEE and DAs before the formats are finalized.

(S.K.Sood)

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Encl : Attachments Forms1,2 and 3

**Information regarding Total Energy Consumption and
Energy Consumption per Unit of Production**

A. General Details :

SL. No.	Description	Particulars
1.	Name of the Designated Consumer	M/s XYZ Hotels Pvt.Ltd.
2.	Name of the Sector	Buildings & Establishments
3.	Regd. Office Address Tel.Nos., e-mail address Web-site address
4.	Name of the Energy Manager and BEE Certification No.
5.	Name and Address of the Accredited Energy Auditor Agency
6.	Name & Address of the Designated Agency	M/s
7.	Address of the plant for which information submitted Bangalore
8.	Names of Plant Key persons with designation	1. Mr.....MD 2. Mr.....GM 3. Mr.....CE
9.	Brief Description about the establishment (e.g. capacity, no. of employees, year of establishment, turn-over etc.	The unit is a 5 star hotel with 130 rooms, centrally air-conditioned with all facilities. There are over 150 employees working round the clock.It was established in the year 1991. Its total turnover in the year 2003-04 was about Rs 42.5 crores

B. Details Power & Fuel Consumption :

Sl.No.	Description	This Year 2003-04	Previous Year 2002-03
1.	Electricity Consumption		
	(a) Purchased		
	1.1 Connected Load,kVA/kW	1500kW	1500kW
	1.2 Contract Demand kVA/kW	1000kVA	1000kVA
	1.3 Average Maximum Demand kVA/kW	625kVA	715kVA
	1.4 Name of Electricity Supplier	BESCOM	BESCOM
	1.5 Total Consumption for the year kWh	31,82,800	34,81,510
	1.6 Total Electricity Purchase Cost in Rs.	1,75,05,400	1,82,77,927
	1.7 Average Purchase Cost Rs./kWh	5.5	5.25
	(b) Captive Generation		
	2.1 By Diesel Generating Sets		
	- Total Generation in the year (kWh)	4,28,800	3,97,700
	- Diesel Consumption,kL	130	107.50
	- Diesel cost for the year (Rs.)	31,20,000	24,18,000
	- O& M cost of DG sets	4,50,000	3,85,000
	- Total Cost of generation (Rs)	35,70,000	28,03,000
	- Average cost of captive generation	8.32	7.04
	2.2 By Steam Turbine / Generator	Not applicable	Not applicable
	- Total Generation in the year (kWh)		
	- Fuel* Consumption, kL		
	- Fuel cost for the year (Rs.)		
	- O& M cost of Steam Turbine /Generator		
	- Total Cost of generation (Rs)		
	- Average cost of captive generation		
	2.3 By Gas Turbine / Generator	Not applicable	Not applicable
	- Total Generation in the year (kWh)		
	- Fuel* Consumption, kL		
	- Fuel cost for the year (Rs.)		
	- O& M cost of Gas Turbine /Generator		
	- Total Cost of generation (Rs)		
	- Average cost of captive generation		

Sl.No.	Description	This Year 2003-04	Previous Year 2002-03
2.	Coal		
	2.1 Average Coal Quality (Gross Calorific Value)		
	2.2 Consumption for the year MT	185	210
	2.3 Cost (Rs.)	4,07,000	421,000
3.	Oil		
	3.1 Furnace Oil	Not applicable	Not applicable
	3.1.1 Consumption for the year (kL)		
	3.1.2 Cost (Rs.)		
	3.2 Light Diesel Oil (LDO)		
	3.2.1 Consumption for the year (kL)	54	72
	3.2.2 Cost (Rs.)	8,10,000	9,97,000
	3.3 High Speed Diesel (HSD)	Not applicable	Not applicable
	3.3.1 Consumption for the year (kL)		
	3.3.2 Cost (Rs.)		
	3.4 Low Sulphur Heavy Stock (LSHS)	Not applicable	Not applicable
	3.4.1 Consumption for the year (kL)		
	3.4.2 Cost (Rs.)		
	3.5 Hot Heavy Stock (HHS)	Not applicable	Not applicable
	3.5.1 Consumption for the year (kL)		
	3.5.2 Cost (Rs.)		
	3.6 Others (Pl.specify)	Not applicable	Not applicable
	3.4.1 Consumption for the year (kL)		
	3.4.2 Cost (Rs.)		

Sl.No.	Description	This Year 2003-04	Previous Year 2002-03
4.	Gas		
	4.1 Compressed Natural Gas (CNG)	Not applicable	Not applicable
	4.1.1 Gross Calorific Value (kCal/NM ³)		
	4.1.2 Consumption for the year (NM ³)		
	4.1.3 Total Annual Cost (Rs)		
	4.2 Liquefied Petroleum Gas (LPG)		
	4.2.1 Gross Calorific Value (kCal/kg)		
	4.2.2 Consumption for the year (Tonnes)	54.75	60.50
	4.2.3 Total Annual Cost (Rs)	16,42,500	15,76,000
	4.3 Piped Natural Gas (PNG)	Not applicable	Not applicable
	4.3.1 Gross Calorific Value (kCal/NM ³)		
	4.3.2 Consumption for the year (NM ³)		
	4.3.3 Total Annual Cost (Rs)		
5.	Biomass		
	5.1 Wood		
	5.1.1 Average Moisture Content, as fired (%)		
	5.1.2 Avg. Gross Calorific Value, as fired (%)		
	5.1.3 Consumption for the year(MT)	10	12.5
	5.1.4 Total Annual Cost (Rs.)	20,800	25,000
	5.2 Other (Agro -waste etc. pl. specify)	NIL	NIL
	5.2.1 Average Moisture Content, as fired (%)		
	5.2.2 Avg. Gross Calorific Value, as fired (%)		
	5.2.3 Consumption for the year(MT)		
	5.2.4 Total Annual Cost (Rs.)		

C. Details of Production :

Sl.No.	Description	This Year 2003-04	Previous Year 2002-03
1.	Regular Products/Services		
	1.1 Rooms Occupancy	90 %	95%
	1.2 Banquet		
	1.3 Food & Beverages		
	1.4		
	1.5		
2.	Non-regular Products/Services		
	2.1		
	2.2		
	2.3		
	2.4		
	2.5		
	2.6		

Name of the Designated Consumer :

Address :

(Signature of Energy Manager)

(Signature of Accredited Energy Auditor)

**Status of implementation of energy conservation measures based on
business plan of the company**

Sl. No.	Description of measure	Category ¹	Investment (Rupees)	Verified savings ² (Rupees Lakhs)	Verified energy savings	Units ³	Fuel ⁴
1	Provision of T5 Tubelights and CFLs	3	8,60,000	12.76	2,32,000	kWh	E
2	Modifications in AHUs and Ducting	5	10,89,000	9.79	1,78,000	kWh	E
3	Provision of Under-deck Insulation	7	12,50,000	9.90	1,80,000	kWh	E
4	Waste Heat Recovery from D.G.Exhaust	8	2,50,000	0.64	4.8	kL	O
5.	Provision of Solar Water Heater of capacity 10,000LPD/70deg C	10	14,85,000	2.43	18	kL	O
6.	Re-insulation of steam pipelines and boiler	12	85,000	0.20	1.5	kL	O

Name of the Designated Consumer :

Address :

(Signature of Energy Manager)

(Signature of Accredited Energy Auditor)

¹ Use "C" number of form 3 as reference

² First year

³ Use conventional energy, volume or mass units with proper prefix k = 10³, M = 10⁶, G = 10⁹

⁴ 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.

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 ¹ savings					First year cost reduction ² , Lakh Rs.					Life cycle years ³
			Oil kL	Gas	Coal	Electricity kWh	other	Oil	Gas	Coal	Electricity	other	
1.	Better house keeping measures	-											
2.	Installation of improved process monitoring and control instrumentation, or software	-											
3.	Measures in the area of lighting	8,60,000				2,32,000					12.76		3-5
4.	Sizing, changing and controlling electric motors including variable speed drives	-											
5.	Retrofitting, modification or sizing of fans, blowers, pumps, including duct systems	10,89,000				1,78,000					9.79		15

¹ Use commercial units of litre, kg, tons, normal cubic meter, kWh or MWh and indicate the unit. Indicate the anticipated potential in energy savings.

² Anticipated cost savings in the first year based on anticipated fuel savings.

³ 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.

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 ⁴ savings					First year cost reduction ⁵ , Lakh Rs.					Life cycle years ⁶
			Oil kL	Gas	Coal	Electricity kWh	other	Oil	Gas	Coal	Electricity	other	
6.	Performance improvement of compressors and compressed air distribution system	-											
7.	Improved insulation against heat or cold losses	12,50,000				1,80,000					9.9		15
8.	Recovery of waste heat for process heat or power generation	2,50,000	4.8					0.64					10
9.	Loss reduction in transformers and power distribution within firm	-											
10.	Fuel switching measures from fossil to fossil or fossil to renewable energy	14,85,000	18					2.43					15

¹ Use commercial units of litre, kg, tons, normal cubic meter, kWh or MWh and indicate the unit. Indicate the anticipated potential in energy savings.

² Anticipated cost savings in the first year based on anticipated fuel savings.

³ 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.

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 kL	Gas	Coal	Electricity kWh	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	85,000	1.5					0.20						10
13.	Modernization measures with benefits of energy consumption reduction	-												
	TOTAL	50,19,000	24.3			5,90,000		3.27			32.45			

Name of Designated Consumer

(Signature of Energy Manager)

(Signature of Accredited Energy Auditor)

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.