

Energy Conversion Factors

S No	Electricity/Fuel	Conversion factor
1.	1 kWh	860 k Cal
2.	1 Kg Coal/Coke	Gross calorific value as per suppliers (Coal Company's) latest certificate
3.	1 Kg Charcoal	6900 k Cal or as per suppliers latest certificate
4.	1 Kg Furnace Oil/RFO/LSHS/Naptha	10050 k Cal (Density = 0.9337 Kg/Liter) or as per suppliers certificate
5.	1 Kg HSD	11840 k Cal (Density = 0.7087 Kg/Liter) or as per suppliers certificate
6.	1 Kg Petrol	11,200 k Cal (Density = 0.7087 Kg/Liter) or as per suppliers latest certificate
7.	1 Kg Kerosene	11,110 k Cal (Density of SKO = 0.7782 Kg/Liter) or as per suppliers latest certificate
8.	1 Kg LPG	12,500 k Cal or as per suppliers latest certificate
9.	1 m ³ Natural Gas	8,000 – 10,500 k Cal/m ³ (Actual calorific value as per suppliers latest certificate may be considered) In case of non issue of certificate by the supplier, average of the range is 8,000 – 10,500 k Cal/m ³ may be considered)

MTOE (Metric Tons of Oil Equivalent)

S No	Fuel	Formula for conversion into MTOE
1.	Electricity	KWh X 860/10 ⁷
2.	Solid Fuel	(Qty of solid fuel used in Kg X GCV of fuel in kCal/Kg)/10 ⁷
3.	Liquid Fuel	(Qty of liquid fuel used in Kg or liters X GCV of fuel in kCal/Kg or Liter)/10 ⁷
4.	Gaseous Fuel	(Qty of gaseous fuel used in Kg or Nm ³ X GCV of fuel in kCal/Kg or Nm ³)/10 ⁷

SAVINGS BY USE OF MORE EFFICIENT LAMPS

Existing Lamp	Replace by	Potential Energy Savings, %
GLS (incandescent)	Compact Fluorescent Lamp (CFL)	38 to 75
	High Pressure Mercury Vapour (HPMV)	45 to 54
	Metal Halide	66
	High Pressure Sodium Vapour (HPSV)	66 to 73
Standard Tube light (Argon)	Slim Tube light (Krypton)	9 to 11
	Tube light (Krypton)	31 to 61
	High Pressure Mercury Vapour (HPMV)	54 to 61
	Metal Halide	48 to 73
	High Pressure Sodium Vapour (HPSV)	48 to 84
Mercury Blended Lamp	High Pressure Mercury Vapour (HPMV)	41
High Pressure Mercury Vapour (HPMV)	Metal Halide	37
	High Pressure Sodium Vapour (HPSV)	34 to 57
	Low Pressure Sodium Vapour (LPSV)	62
	High Pressure Sodium Vapour (HPSV)	35
	Low Pressure Sodium Vapour (LPSV)	42
High Pressure Sodium Vapour (HPSV)	Low Pressure Sodium Vapour (LPSV)	42

Cost Analysis of bulbs & CFL's

Parameters	100 Watt ordinary bulb	20 Watt CFL
Power consumption if used for 5 hrs daily	0.5 Unit	0.1 Unit
Power consumption if used for 5hrs daily for one month	15.0 Units	3.0 units
Power consumption per year (365 days)	180 Units	36 Units
Cost of electricity @ Rs 3.75/Unit	Rs 675	Rs 135
Money saving per year by using 20 Watt CFL		Rs 540
Cost of lamp (Rs)	Rs 12	Rs 110
Average life of lamp	1000 Hrs	8000 Hrs

Comparison of Star Rated Refrigerator with Non Star rated Refrigerator (220 Liters)

S No	Parameter	Star Rated Refrigerator	Non Star Rated Refrigerator
1.	Cost	Rs 23,000/-	Rs 15,000/-
2.	Annual Electricity consumption	720 Units	1800 Units
3.	Annual Electricity savings	1,080 Units	
4.	Annual Electricity Cost (@Rs 4.25/Unit)	Rs 3,060/-	Rs 7,650/-
5.	Annual Money Savings	Rs 4,590/-	
6.	Payback Period	2 -2.5 Years	

Comparison of Star Rated Air Conditioner with Non Star rated Air Conditioner (1.5 Tons)

S No	Parameter	Star Rated Refrigerator	Non Star Rated Refrigerator
1.	Cost	Rs 33,000/-	Rs 21,000/-
2.	Annual Electricity consumption	2400 Units	4050 Units
3.	Annual Electricity savings	1650 Units	
4.	Annual Electricity Cost (@Rs 4.25/Unit)	Rs 10,200/-	Rs 17213/-
5.	Annual Money Savings	Rs 7,013/-	
6.	Payback Period	1.5 – 1.75 Years	