IPCA Laboratories Ltd.
Sejavta, Ratlam M.P. (India)

Unit Profile :

Ipca Laboratories Limited, Ratlam is a leading pharmaceutical company of India having manufacturing locations at Ratlam, Indore, Athal and Piparia (Silvasa), Kandla and Aurangabad.

It is engaged in the production of Bulk Drugs and Formulations. Ipca is one of the leading manufacturer of API intermediates Atenolol, Chloroquine Phosphate, Frusamide and Pyrantel salt's etc. it features among India's top 30 Pharma Major in sales and top 10 in prescription count and board equity.

Continues improvement, customer Delight, total Employee improvement are the keywords witch all Ipcaite always work upon. Waste elimination, Energy and Solvent Conservation, yield optimization, process automation are some of the drivers adopted to drive this journey of improvements.

IPCA has to its credit various Awards by different Authorities……

It won following Awards in recognition of excellent performance.

- **TRISHUL** Highest award by Chemexcil for outstanding export performance. (1998-1999)

- **IDMA**
  1) Gold Medal, Ratlam 2000
  2) Silver Medal, Athal 2000
  3) Gold Medal, Kandla 2001
  4) Silver Medal, Ratlam 2001
  5) Bronze Medal, Athal 2001
  6) Bronze Medal, Kandla 2002
  7) Bronze Medal, Ratlam 2002

- III Express Pharma Pulse Award for best Overall Performance.

- Listed in Forbes magazine list of 200 successful Companies outside USA with annual sales under 1 Billion Dollars.

And the march Continues……

"Energy Management Policy"

At Ipca we are committed to carry out our operations by giving high priority to energy conservation measures through regular review of generation, consumption & effective control on utilization of energy.

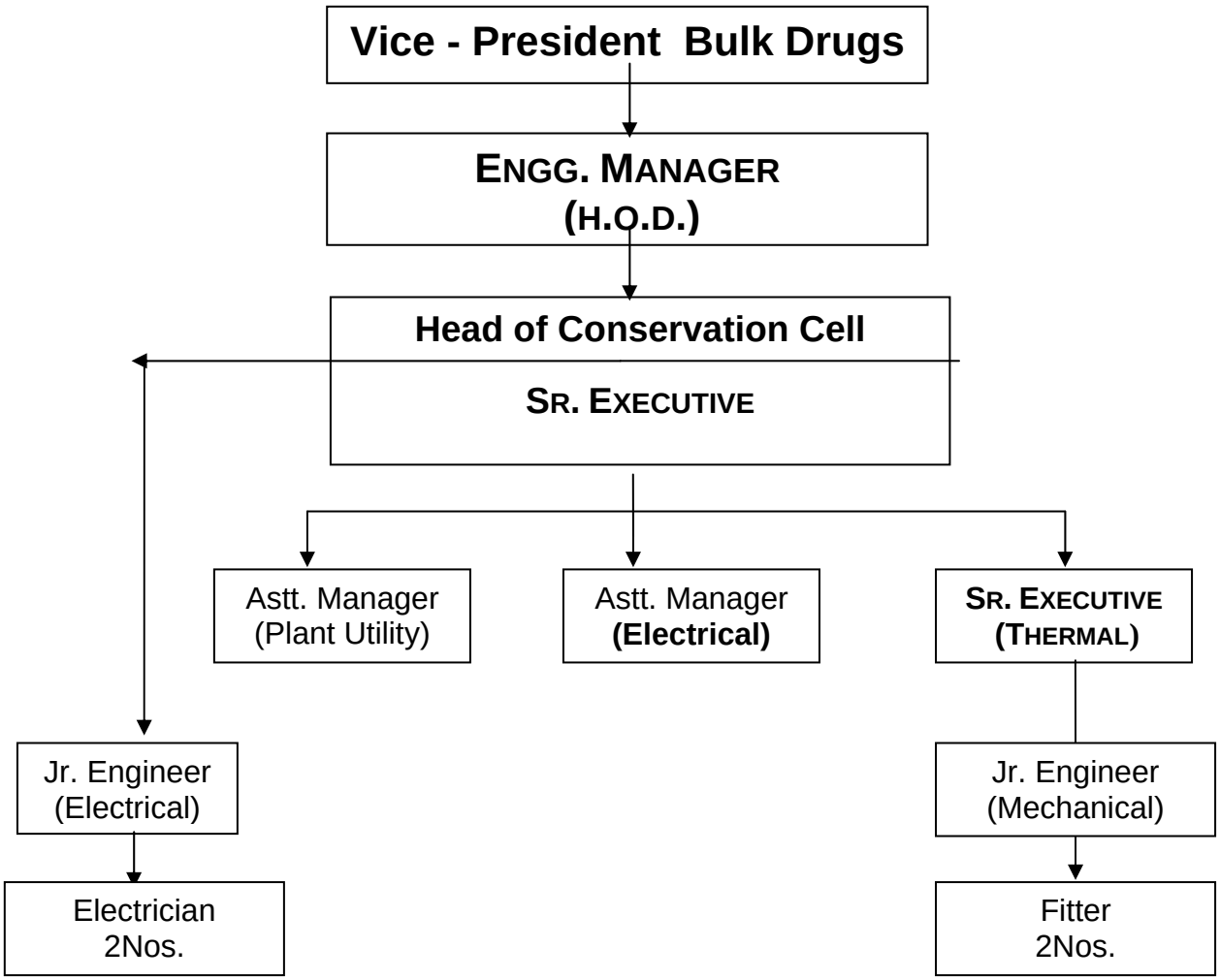
We shall improve our efficiency in energy usage through increased level of awareness amongst employees, implementation of energy saving projects energy usage audits and investments in technology up gradation for reduction of energy consumption.

Energy Consumption:

Power consumption detail		**Unit**	**2002-2003**	**2003-2004**	**2004-2005**
Annual Production	Bulk drugs & Intermediate	MT	834.809	1040.281	1070.356
	Formulations	Nos.	123481114	135824320	95455724
Total Energy consumption / annum	Bulk drugs & Intermediate	Kwh (Lacks)	105.46	131.92	153.66
	Formulations		30.86	34.71	38.13
Total Thermal energy consumption	Bulk drugs & Intermediate	MkCal	16279	19038	29555
	Formulations		11312	12792	12666
Total Manufacturing cost		Rs. Lacks	4103.23	4636.28	4442.41
Total Energy cost	Bulk drugs & Intermediate	Rs. lacks	555.31	746.93	903.23
	Formulations		207.49	251.03	263.87
Steam Consumption	Bulk drugs & intermediate	MkCal/ MT	16279	19038	29555
	Formulations		11312	792	12666

The unit has Energy conservational cell at Ipca Lab Ltd. Ratlam headed by engineering manager assisted by Sr. Executive & supported by 2 engineers from engineering dept. this team finds various energy saving potential in their working areas. This team make the proposal & after a brief brain storming session & after evaluating their feasibility. a report has been made in this regard & submit to management for approval.

Organ gram of energy conservation cell



Conservation cell

Using of VFD's in Different Applications

We have taken different measures to save energy in plants. for the same we have provided Variable frequency drive VFD in different application like, Pumps, Centrifuges, Reactors, etc.

Provided Drives in equipments { having total 200 H.P. } motors..

Saving Per year = 200 H.P.×0.746 ×20 Hr×350 Days × 10%

= 1,04,440 Unit / Year

= Rs.4,66 Lacks

As cost of VFD's is = Rs.3,25,Lacks

PAYBACK WILL BE-

Cost of VFD's = Rs. 3,25,Lacks

Saving per Year = Rs. 4,66 Lacks

PAYBACK PERIOD = 8 MONTH

Conservation cell

Replacement of Boiler Feed Water Pump by Energy Efficient Pump.

Existing Pumps are having 8 cu.Mt/Hr. capacity with 156 Mt. Head & connected with 12.5 H.P. Motor. As our daily water consumption is 110 KL/Day.

Daily Power Consumption = (12.5-10)H.P.× 0.746 × 14 Hr.×330 Day

= 8616 Unit/Year

= Rs.39, 633

Hence, annual saving will be = Rs.39,633

As cost of the Pump will be Rs. 0.95 Lacks hence payback period will be as below.

Cost of the Pump = Rs. 95,000.00

Saving per annum = Rs. 39633.00

PAYBACK PERIOD = 2.43 YEARS

Conservation cell

Provide Natural Cooling at Finished Good Stores.

Natural Cooling (Structural Cooling): - To cooling the structural area of the building up to 30 $\pm$ 2^{O} C and drain out the excessive solar load .

Total heat load for building is 60 TR (ground floor)

Saving by Structural Cooling	=	30 kW (30TR)
Saving per annum	=	30 kW ×16Hr. ×365Days
	=	1,75,200 Unit / Year
	=	Rs. 8,05,920 Per Year
Investment	=	Rs. 1150000.00
Payback	**=**	**18 months**

HEAT RECOVERY FROM WASTE FLUE GASES FROM INCINERATOR

In incinerator waste product from bulk drugs are being incinerate as it can not be discharge any where hence it is being incinerate in the furnace . waste flue gases of temperature 700 ° C being discharge from primary chamber before it is been cooled in scrubber . we have provided the waste heat recovery column in the primary chamber in place of vertical duct . soft water of ambient temperature being circulated in shell while hot flue gases are getting exhaust through tubes .we are getting return hot water of 40 ° C to 42 ° C which is being supplied to feed water tank .

We are using 1 HP pump of 3 m3 / hr to circulate water in the shell of hot water generator .
Power being used in the pump = 1 x 0.746 x 4.50 x 22 = Rs. 73.85 per day

Fuel saved in heating water from 30 ° C to 41 ° C = 3000 x (41 – 30) x1
= 33000 kcal /hr

Fuel saved = 33000/4800 =6.87 kg coal / hr { G.C.V. of coal – 4800 kcal /kg}

Cost of fuel per hr. = 6.87 x 3.70{ coal cost Rs. 3.70 / kg }

Total saving per hr. = Rs. 25.43 / Hr

Total saving per day = 25.43 x 24 = Rs. 610.5 / day
Hence saving per annum = 610.5 – 73.85 = Rs. 536.65 x 300
= Rs. 160995.00
{considering 300 days operation of Incinerator }
Cost of hot water generator = Rs. 75000.00

Hence payback period = 75000/160995 *12 = **5.64 months**.