Arya Vaidya Sala, Kottakkal

Arya Vaidya Sala, Kottakkal is pioneer in the field of Ayurveda. The main activities include manufacturing Ayurvedic Medicines and is having its first unit located at Kottakkal which was started in 1902. Earlier, medicines were manufactured in the traditional way using fire wood as medium of heating for processing of medicines. Since 1968 the unit has been using Furnace Oil as fuel and steam boilers for steam generation. The major process heating is carried out in steam vessels called drug boilers and jacketed pans. Steam generated from boilers through stead header and PRS stations to 3 major steam plants. Electricity is the second utility by which machineries are working. We have mostly lower HP motors with the maximum rating being 40 HP for Pulveriser. The mostly produced items are Arishtas, Kashayas, Ghrithas (medicated ghee) Oils, tablets, Lehas, Bhasmas, Rasakriyas etc. The factory is work in 3 shifts for 360 days in a year.

Energy conservation details

As a part of our energy conservation measures, we organized training programmes for workers, staff and executives of institution. In addition we are conducting in-plant awareness regarding proper operation of equipments, switching off or lights, fans, etc. when not required, steam wastage by closing of by-pass valves, rectifying leakages in plants etc.

Energy Conservation plans & targets

1. Staggering the load to improve load factor in three shifts.
2. Incorporating VFD drive for blower motor for varying load conditions in the boilers
3. installing steam flow meter at strategic load points to monitor and control steam energy more effectively.
4. Installing a lighting circuit transformer to save electricity.
5. Giving of steam piping to reduce pressure drop to be carried out in a phased manner.
6. Water source pumps to be replaced in a phased manner by submersible pumps of lower HP

Energy conservation achievements

1. APFC Panel to improve p.f.
2. Insulated feed water tank
3. Installing Ball Float trap in place of TD Traps
4. providing insulation to condensate lines and complete recovery of condensate and transfering to boiler
5. Condensate mixing tank to utilise maximum heat efficiency
6. Installing capacitors at load centers for improving p.f to 0.98
7. Installing energy efficient tube lights.
8. replacing incandescent lights with tube lights.
9. Replacing old cooling tower with lower HP high efficiency FRP Cooling tower.
10. Replacing 10 HP motor for counter line chuck with 5 HP.

Environment and Safety

Our organisation is committed to the aspect of health and safety for all individuals. We are having effluent treatment plants for treating effluent from the factory.

We are monitoring the stack emissions regularly to keep the surroundings pollution free.

Since our effluents are having only oil contents, the water after treatment is being used for vegetable cultivation in our own fields.

16.5 A condensate mixing tank with flash steam utilised for heating of condensate and fresh make up water was commissioned on 30.1.2005

An investment of Rs.69000/- was made for the installations. We are getting an average temperature of 97^{o}C for condensate water.

We are having an annual savings of 3% in Furnace Oil by higher feed water temperature as a result. An amount of Rs.1,71,065/- for 2 months in savings is observed.

Condensate Tanks

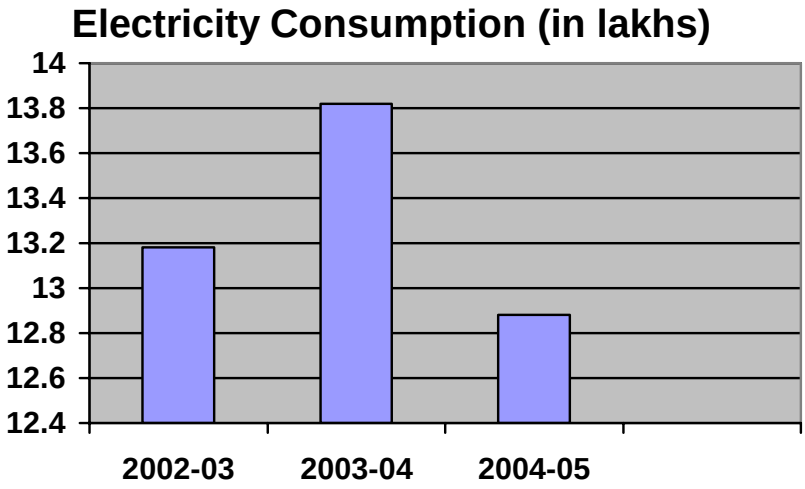
2 Nos. Condensate collection and pumping systems were installed in April 2004 near our Pilot Plant and near Sambharanam Section. Investment was Rs.30,000/-. We are having maximum condensate recovery by these two tanks with pumps back to boiler house feed water tank. A savings of 0.3% in Furnace Oil is obtained with maximum recovery of condensate.

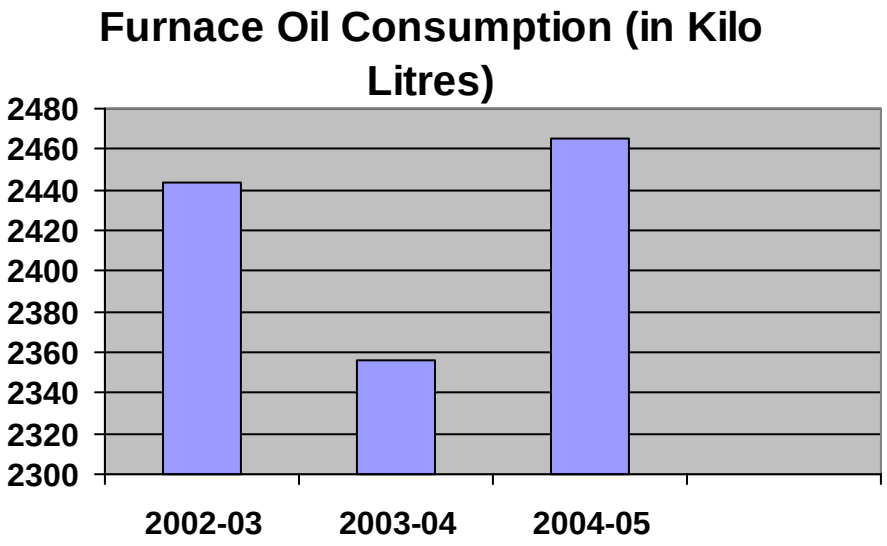
Cooling Tower

A FRP Cooling Tower was installed in place of old wooden frame work cooling tower for the evaporator. An investment of Rs.1,10,000/- including commissioning charges was made. Apart from savings of 2 HP in electrical power, effective head transfer and operational effectiveness are found in practice. Since this was installed in March 2005, savings in power for one month only is observed. This is Rs.4455/- for the month.

APFC Panel and Capacitors at Load Centre

An APFC Panel with 100 KAVR Capacitor was installed which will automatically switch on the Capacitors to maintain p.f. above 0.96. The individual capacitor provided for higher 4 Motors improved the system p.f. further to 0.98





2 c. Scientific Energy consumption (SEC) Reduction during the period 2003-2005					
Year	Product	*kWh/tonne	% Reduction over 2003-04	*MkCal/Tonne	% Reduction over 2002-03
2003-04	Arishtam Kashayam Tablet Ghritham Measuring Ghritham Weighing Oil Measuring Oil Weighing Leham	0.6747 0.9165 0.295 0.1043 0.1141 0.8703 0.8245 0.2879	Nil Nil 18.95 Nil 8.611 6.93 16.05 0.5183	0.016761 0.012717 0.005513 0.017556 0.018383 0.013031 0.013027 0.007595	10.13 11.49 9.56 10.27 18.29 24.46 9.73 9.873
2004-05	Arishtam Kashayam Tablet Ghritham Measuring Ghritham Weighing Oil Measuring Oil Weighing Leham	0.5258 0.8109 0.272 0.8866 0.9019 0.7336 0.5867 0.2741	22.06 11.52 6.7 Nil Nil 15.7 28.8 4.7	0.01671 0.012538 0.005632 0.01754 0.018946 0.007122 0.013364 0.007567	Nil 2.9 Nil 0.09 Nil 45 Nil 0.3
Remarks if any					

2 d. Scientific Energy consumption Comparison with National & International Best Values (S No.12)			
Unit' values		*National / International Best Values	
Product	Figures for the current year (2004-05)	National	International
	Electrical Thermal	NA	
Remarks if any			

3 Annual Energy Savings and Annual Sales Turnover			
Year	Annual Energy Savings achieved (Rs.Lakhs) (i)	Annual Sales Turnover (Rs. Lakhs) (ii)	Annual Savings achieved / Annual Sales Turnover (in %) (i/ii) x 100
2002-03			
2003-04			
2004-05			

4. Specific energy consumption target as achieved during 2004-05 [Ref S.No.19(a)]						
Specific energy consumption or use actual units						
Planned Target for 2004-05 (a)		Actually achieved in 2004-05 (b)		% Reduction (+) or increase (-) (a-b) X 100 % a		Money saved during 2004-05
*kWh/tonne	*Mkcal/tonne	8kWh/tonne	*Mkcal/tonne	*Electrical	Thermal	Rs. Lakhs

5 Planned specific energy consumption target for the year 2005-06 & 2006-07 [Ref S. No.19(b)				
Year	Electrical	Thermal	Reduction over the year 2004-05	
			Electrical	Thermal
2004-05 (Base year)				
2005-06				
2006 – 07				

Asst.Gen. Manager inaugrating programme on Energy conservation conducted by Energy Management Centre.

Dharesan Unnithan of Energy Management Centre on a Session

Our Managing Trustee Dr. P.K.Warrier Inaugurating Programme on Energy conservation conducted by PCRA

Manoj of PCRA handling the Session

APFC Panel Installed at Main Switch Board

Insulated Feed Water Tank at Boiler House

Condensate Recovery Tank

Pressure Powered Pump at Kashayam Plant

Reduction of Motor HP for the counter line AMMIE

Full View

Energy Efficient FRP Cooling Tower

Condensate Recovery System

Capacitor Installed For 20HP Disintegrator Motor at Load Centre