UNILEVER INDIA EXPORTS LIMITED – PUNE TEA EXPORTS

Pune (Maharashtra)

Unit Profile

Unilever India Exports Ltd. Pune Tea Exports is located in Maharashtra at about 15 Kms from Pune Railway Station (20 kms. from Pune Airport). Factory was set up in 1985. This factory is a 100% Export Oriented Unit (EOU) and a strategic Global Double Chamber Tea Bag Sourcing unit for Unilever. The factory produces premium quality tea bags with double chamber tea bags using the Constanta machines tag, string and stapling technology. The main brands are Lipton Yellow Label, Brooke Bond, Lipton Brisk, Rickshaw and Taj Mahal

Unit administrates its Supply Chain including sourcing of Packaging material and Raw material imported from various countries and exporting the finished goods to about a dozen of customer countries like Unilever Australia, Unilever Canada, Unilever Hong Kong, Unilever Israel, Unilever UAE, Unilever Saudi and Unilever USA.

Highlights on Energy Saving Initiatives

The Company Vision "Unilever Sustainability Living Plan" is to reduce the Carbon Foot Print by Half and sustain it while it grow and double its business

In line with this prime agenda & guidelines they continue marching towards their organization's Vision. Continuous improvements is being executed and continuously raising their bars and delivered seamlessly and achieved dramatic results year on year. This year 2015 unit has achieved 4.4 Lakh unit savings and in terms of monetarily cumulating to 25.4Lakh savings.

List of Energy Conservation Projects Implemented

Project 1 : Optimization of pneumatic system		
(i) Optimizing the Pneumatic air pressure - operating pressure reduction for 90% equipments		
Description	**Qty**	**Units**
Consumption pattern of pneumatic air - Full Plant with pneumatic pressure >5.4 Bar	294	CFM
Consumption pattern of pneumatic air - Full Plant with pneumatic pressure >4.3 Bar	264	CFM
Savings on CFM	30	CFM
Specific Unit consumption per CFM (our Compressor produces 100CFM with 22KWH)	0.22	KWH
Units saved / hour	6.6	KWH
Annual savings @ 312Days with 24Hrs running per day	**49421**	KWH
(ii)		
Power consumption on 7 Carton Errectors - no idle time considered	228096	KWH
Power consumption on 7 Carton Errectors - only running time	185147	KWH
Power consumption on 7 Carton Errectors - during idle running time	**42949**	KWH
(iii)		
Constanta Tea Bag Machines - 49 machines - Vacuum generator air consumption	1	CFM
Constanta Tea Bag Machines - 49 machines - idle time / sft	30	min
Specific Unit consumption per CFM (our Compressor produces 100CFM with 22KWH)	0.22	KWH
Constanta Tea Bag Machines - 49 machines - Power consumption while idle time / Annum (49 machines)	**4373.7**	KWH

Total Savings on Project 1	**96744**	**KWH**
Project 2 : Obsoleting the old compressors		
Load for Compressor - 100CFM X 4 nos (22KW X4) actual Power consumed (2014)	492187	KWH
Load for Compressor - 350CFM X 1 nos (with VFD)	301048	KWH
Theoretical Savings	191139	KWH
Annual savings assumed at 60% of the Theoretical saving	**114683**	KWH
Total Savings on Project 2	**114683**	**KWH**
Project 3 : Production Consolidation and scheduling		
Production consolidation and Scheduling - optimising the capacity utilisation - 64 days X 3000 KWH	192000	KWH
Annual savings	**192000**	KWH
Total Savings on Project 3	**192000**	**KWH**
Project 4 : Other Savings		
a.) VFD on cooling tower fan 7.5Hp*0.75*22 hrs*26 days*0.7 eff *0.2 saving in VFD	5897	KWH
b.) Armani line 2 motors upper +serv. 25/50 lower, 3 motor+ Serv 100 lower 2 motor+ser 100 CE/1000 tray top conv 1 motor, each qtr HP motor, 0.25KW*no of motors*no of days 1000 run*22 hrs *8 rs rate*60%	3888	KWH
c.) Reduction in pressure from 5 bar to 4 bar without Armani - 55Kw*24hrs*no of days*8rate*.06saving	7620	KWH
d.) Maintain Power factor >0.995 by rigouros daily monitoring and control system implementation (Savings in Rs converted in terms of KWH)	2157	KWH
e.) Stopping of Coding conveyors and interlocking when product through put is not there	4286	KWH
f.) In Godowns - convenient circuit grouping of lightings for effectively switching OFF when not in use period	315	KWH
g.) Every shift 2 hours blower is stopped to improve the digestion efficiency by controlling temperature of blowed air - 5 kw*6 hr/day*26 no of days*7 rate	7042	KWH
h.) Replacing the 15HP motor to IE3 motor - @6% savings - 15*0.75kw x 24 hrs x no of days x 8.0 rate x 6% savings	2704	KWH
Annual savings	**33909**	KWH
Total Savings on Project 4	**33909**	**KWH**
Sum of Total Savings on Project 1 to 4	**437337**	**KWH**

(a) Operating pressure reduction for 90% equipments – many kaizens executed like cycle timing, providing accumulators, increasing pipe sizes, elimination of leaks, filter and pressure regulators replacements etc.,

(b) Equipment's vacuum generators air cut-off during idle run - 56 mcs

Key Highlights / actions :

(a) 90% of equipments covered

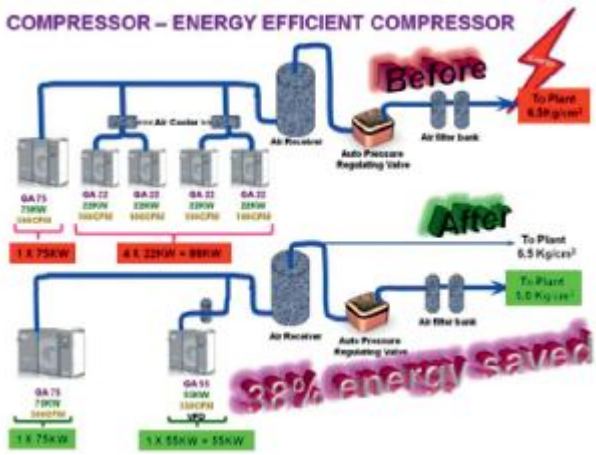
(b) Break-through innovative ideas implemented.

Challenges and how overcome:

- There is little space left for the energy conservation as continual Year on Year optimising the energy conservation is being implemented.
- Many Kaizens were derived in-house and implemented.

(A) Obsolescing old compressor:

The compressor constitutes to about 35% of the total power consumption for the factory – hence old compressors has been replaced with VFD compressors



Benefits:

a) Increase in productivity.
b) Morale amongst the shop floor employees increased.

(B) Production consolidation and scheduling and optimising the capacity utilisation for power reduction. :

Manufacturing team draw out the weekly plan meticulously by forecasting the all the hurdles in terms of capacity utilization, raw materials, packing materials and man power resources, demands and firm up an optimal plan to ensure the production is being done balancing all the resources so as to achieve the production plan in a minimal time to save the energy.

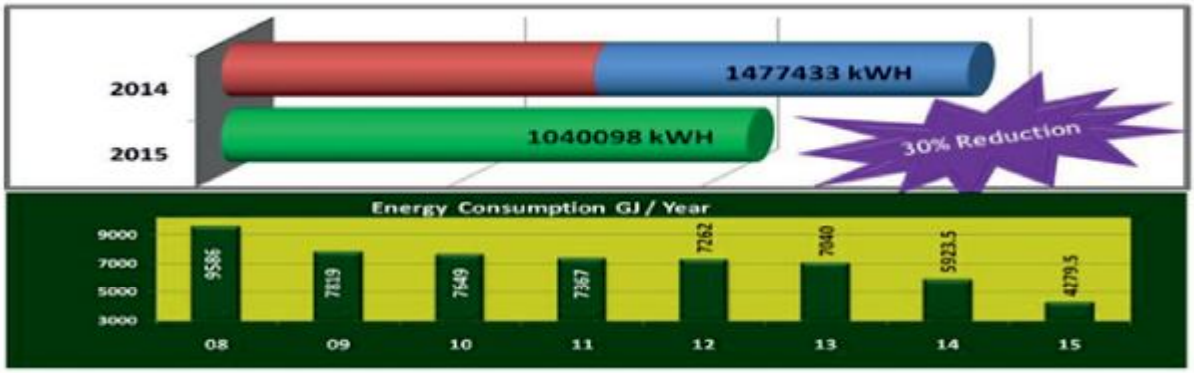
Benefits:

a.) Increase in productivity.
b.) Savings is almost 1/3 rd of power consumtion from this project

(C) Energy Saving - Key projects:

No.	Detail of the project	Benefits / Pictures
1	VFD provided for the cooling tower fan for operating at constant temperature – as previously the energy consumption was huge.	
2	The cartons are being conveyed on the conveyor while no cartons being conveyed – during this period the empty conveyor being interlocked so that which is switched "OFF" automatically.	
3	Reduction in pressure from 5 bar to 4 bar for the complete plant while not running one high air pressure consumption line.	

4	Stopping of Coding conveyors and interlocking when product through-put is not there	
5	In Godowns - convenient circuit grouping of lightings for effectively switching OFF when not in use period	
6	Every shift 2 hours blower is stopped to improve the digestion efficiency by controlling temperature of blowed air	
7	Replacing the 15HP motor to IE3 motor - @6% savings.	



(Internal Calculation for monitoring and reporting– April to March)

GLAXO SMITHKLINE CONSUMER HEALTHCARE LTD.

Distt. Sonipat (Haryana)

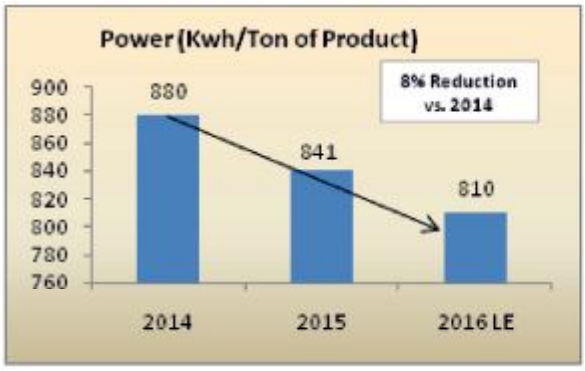
Unit Profile

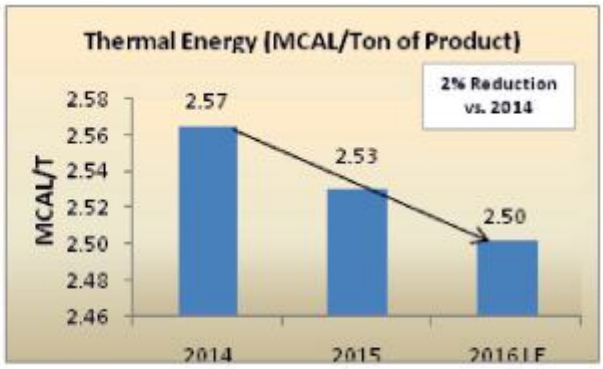
The company is a science-led global healthcare company and is having a significant global presence with commercial operations in more than 180 countries and manufacturing facilities in 89 countries and large R&D centres in UK, USA, Belgium and China. Company's Consumer Healthcare business develops and markets products in Wellness, Oral health, Nutrition and Skin health. It has a portfolio some of the world's most trusted and best selling brands which includes Sensodyne, Voltaren, Horlicks and Panadol.

In India GSK Consumer Healthcare have 3 manufacturing sites at Nabha (Punjab), Rajahmundry (Andhra Pradesh) and Sonepat (Haryana). Sonepat site is a Large Secondary manufacturing site of GSK Consumer healthcare in GMS for manufacturing & supply of base intermediates product to packaging sites located in different parts of country for Nutritional products like Horlicks & Boost with their variants. Sonepat site is a local supply site for nutritional Powder (Horlicks) to Indian market. Horlicks, a 125 years old brand in India, has delivered sustained high double digit growths over the last decade.

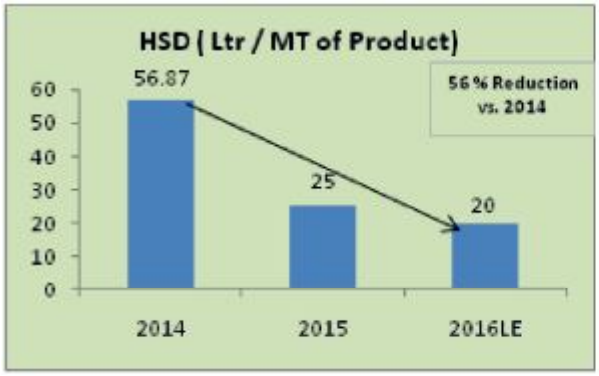
Energy Consumption

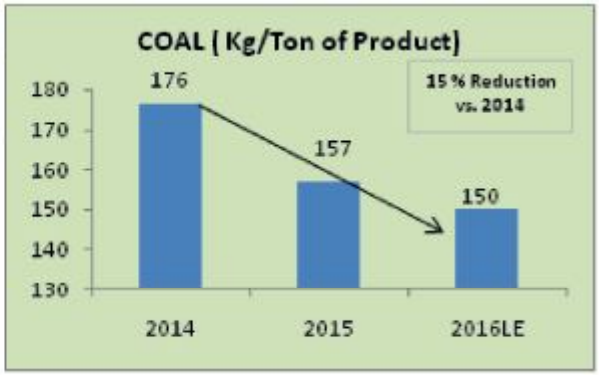
With the implementation of various energy conservation measures as ongoing practice, there is steady decline of specific energy consumption. Last three years specific energy consumption figures are shown below, which depicts continual reduction in energy consumption over last two years due to the sustained efforts to conserve it with the implementation of various energy conservation measures & ideas to increase efficiency of equipments.



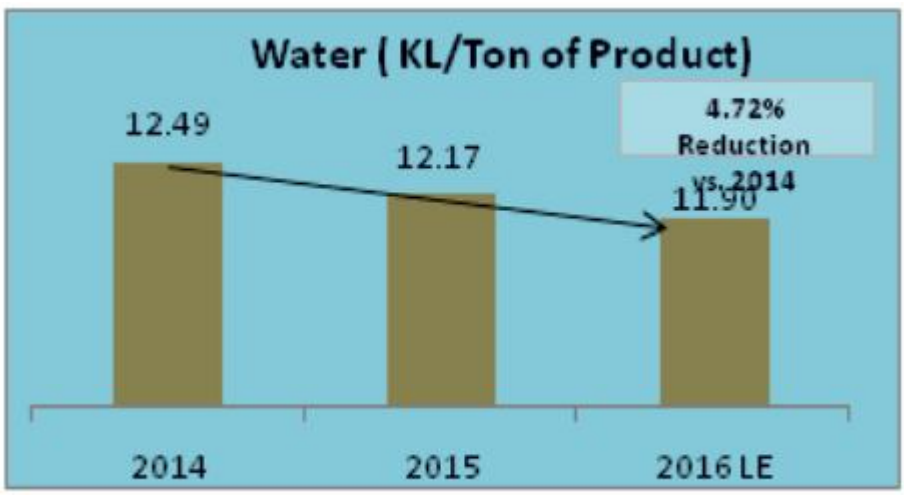


Fuel Consumption





Water Consumption

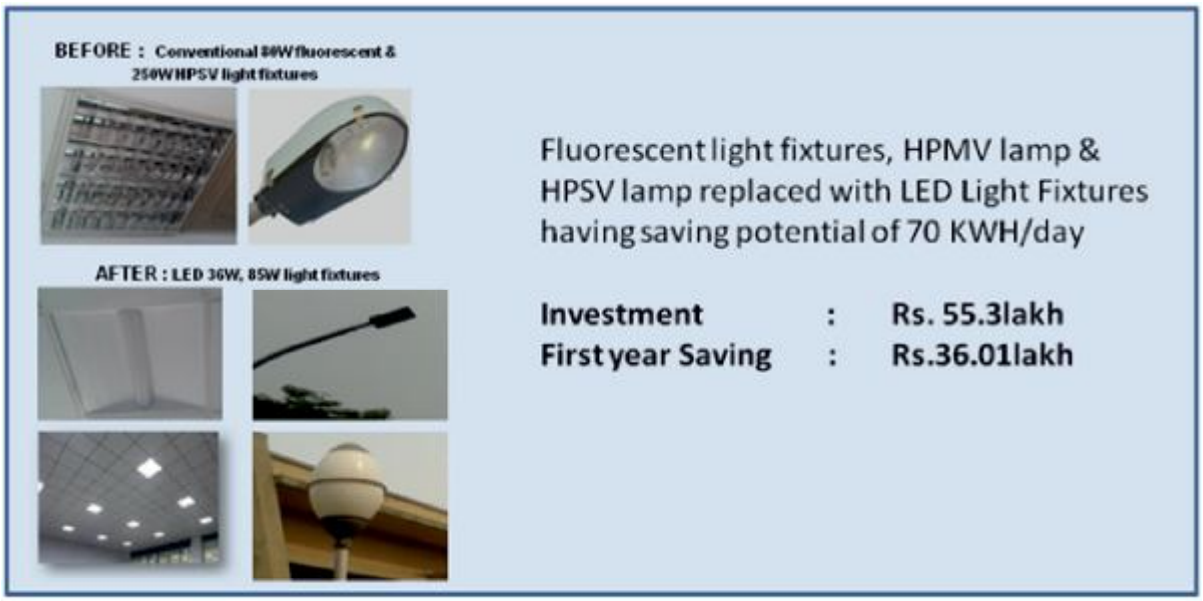


Engagement & Empowerment:

As a part of site strategy a challenging target of Power Consumption & water reduction by 5% over 2015. To deliver the key projects strategy was to increase the engagement and empowerment of the employees through participation in kaizen & sharing ideas

Major Projects Implemented for Energy Conservation during 2015

1. LED Lighting Installation :



2. Energy Efficient Chillers for Process Cooling :

3. Misc projects e.g. energy efficient motors, air compressor leakages, motion sensors, Sun Pipe, power factor improvement etc :

4. Misc projects e.g. energy efficient motors, air compressor leakages, motion sensors, Sun Pipe, power factor improvement etc :

5. FBC boiler reliability- Header Modified, Life cycle scheduling of tube replacement