















**Foster's India Ltd**  
**M-99, MIDC, Waluj,**  
**Aurangabad**

system to vapour absorption based refrigerated system for refrigeration			
Replacement of mercury vapour lamps by tube lights with electronic choke	1.00 / annum	5.00	2005-06
Separation of refrigeration system for cold water generation	1.10 / annum	3.00	2004-05
Installation of new bottle washer for conserving energy for bottle washing	100.00/annum	250.00	2004-05
Replacement of aeration stirrers by energy efficient blowers	1.00/ annum	5.00	2004-05
Installation of conserve air on compressor	0.50/annum	2.00	2004-05
Use of energy efficient pumps for transfer of product	1.00 / annum	5.00	2004-05
Installation of AC drives on KC6 compressors	2.00/ annum	15.00	2005-06
Converting the manual processes to auto	2.00 / annum	10.00	2004-05
Installation of 20MT CO2 storage tank to recover 100% in house generated CO2	6.00 / annum	40.00	2004-05
Installation of AC dives on packaging conveyors	1.50/ annum	10.00	2005-06
Installation of wind ventilators in other areas of Plant	NIL	10.00	2005-08
Hot water generation from ammonia compressor discharge for use in pasteuriser	0.75 / annum	6.00	2005-06

All other initiatives like Kaizens, suggestion schemes, Engineering initiatives, open forum, self-realization concept etc. will continue. By adopting the above energy conservation, Foster's will be able to achieve the best target by the year 2005-06.

**Environment & Safety :-**

Foster's India Ltd., is committed to the protection of the environment by Prevention & Pollution and continual improvement in the Environmental Performance. The Company has successfully worked on Environmental Management System (ISO 14001) & Occupational Health, Safety Assessment Series (OHSAS 18001) and bagged both the certification in June 2003 & Feb 2004 respectively from ICS India. We have clearly focused on the following: -

- Conservation of natural resources like water, energy & fuel
- Effective Pollution Prevention
- Effective waste management
- Good Health of each employee
- Zero injury

The above has been implemented with the use of research and technological innovation, bringing out & implementing all good ideas, supporting the overall process with effective leadership, sharing & learning from others & keeping the commitment to the overall concept through long terms policies & systems.

100% usage of Treated Effluent for complete landscaping & providing green cover to 11 acres land in the factory premises, resulting in zero usage of raw water from MIDC & also zero discharge of treated effluent with a complete pipeline distribution network with a capital investment of more than Rs. 9 lacs.

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Industrial Safety is an essential & integral part of every operation at Foster's India Ltd., FIL is having its complete 16 sets of standards on HSE in combination with OHSAS 18001. FIL has received letter of appreciation from TERI, New Delhi. FIL also participated in awards by various institutes like CII, FICCI. "Zero Harm or injury" is the main object behind it.

**Following activities are introduced to achieve zero harm or injury :-**

- Monthly safety committee Meeting
- Monthly safety audit to locate unsafe conditions, acts
- Well defined system on Accident reporting & investigation
- Self realisation concept on Safety
- Safety Week celebration
- Periodic Mock Drills
- Training on Safety to all employees like Fire Demo, First Aid, HSE etc.,
- Work permit system etc
- Kaizens

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**Project – Energy Conservation by Installation of 15KW Air compressor for off peak load requirement instead of using 37KW**

Background of the Project: - Production fluctuation on account of Seasonality

Observations made: The need for pressurized air varies depending upon the production cycles. The volume of air required during non-production hours was less than 50%.

Technical & Financial analysis made: Installation of a small compressor during this non-production hours could conserve energy.

Impact of implementation: Opportunity resulted in savings of 22KW per hour in non-production hours resulting to the savings of Rs. 4.00 Lac

**Project – Installation of Automatic Power Factor controller and re-arrangement of capacitors**

Background of the Project: - Scope to reduce the energy losses, grab the opportunity of discounts in MSEB bills.

Observations made: Power factor was always stable on production days. During non-production hours the PF dropped to 0.97 and capacitors switching cycles were more.

Technical & Financial analysis made: Installed the PF meter, which enabled the PF to raise to 0.99, however the PF during non-production hours was difficult to sustain, which further was rectified by selecting the rating and re-locating the capacitors in the Plant.

Impact of implementation: We have achieved unity factor for last 6 months and annual savings are Rs. 3.22 Lac

**Project – Use of emergency lighting in non-production hours**

Background of the Project: - There was a need of emergency lights in the Plant premises during night time.

Observations made: Energy conservation gave a thought to select CFL as emergency lights. Further the idea to use them during non-production hours clicked another energy conservation project.

Technical & Financial analysis made: Since there are minimal manpower in the plant, during non production hours, the lighting requirement was also minimal. There was a scope to switch off 20KW lighting load.

Impact of implementation: Savings to the tune of Rs. 2.63 Lacs per annum achieved in addition to additional emergency lighting requirement.

**Project – Installation of wind ventilators**

Background of the Project: - The process areas needs air circulation throughout the day in order to provide better working environment.

Observations made: There was a need for installing air handling units, which would have increased the electrical load by around 50KW. The idea of using energy conservation devices forced us to use wind ventilators.

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Technical & Financial analysis made: Although wind ventilators are costly, we decided to go with its installation in phases in order to conserve energy.

Impact of implementation: Energy conservation. Savings of Rs. 2.43 Lac

**Project – Use of small pumps in refrigeration for Glycol and cooling tower during off-peak load**

Background of the Project: - The refrigeration load varies depending upon the beer to be produced, which is a batch process.

Observations made: The refrigeration load is more during beer manufacturing process and reduces to 30% during non- manufacturing period.

Technical & Financial analysis made: The volume of chilled glycol supply reduces to 30% than that during the peak hours. This was an opportunity for conservation of energy. We therefore installed two small pumps for this purpose.

Impact of implementation: Energy saving without impacting the process parameters to the extent of Rs.4.84 Lac

**Project – Re-engineering in Glycol distribution**

Background of the Project: - During non-production hours, due to reduction in refrigeration loads, the amount of glycol required was less.

Observations made: We were using more volumes of glycol, which was a waste of energy. Hence we decided to change the glycol distribution and did glycol circulation through one single tank.

Technical & Financial analysis made: The modification in pipe line distribution was negligible cost as compared to the energy conservation from it.

Impact of implementation: Energy savings to the tune of Rs. 2.43 Lac

**Project – Installation of condensate recovery system for brewhouse and use of flash steam**

Background of the Project: - Energy conservation to reduce FO consumption

Observations made: The steam requirement is highest during brewing hours. This caused the use of more make up quantities of cold feed water.

Technical & Financial analysis made: There was a drop in efficiency of boiler on account of cold water addition, which reduced the feed water temperature. There was an opportunity to re-collect the condensate during the peak hours, which was at a temperature of 90 C and feed it back to boiler.

Impact of implementation: It has reduced the cold feed water requirement and maintains the feed water temperature during peak hours resulting in energy and savings to the tune of Rs. 3.03 Lac

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**Project – Use of fuel additives & magnets on fire and waterside on boiler**

Background of the Project: - In-Consistent Boiler efficiency

Observations made: We observed that the boiler needs to be tuned with every lot of FO received to maintain the combustion efficiencies. The scaling on the boiler tubes and shell resulted in reduction in heat transfer leading to more FO consumption.

Technical & Financial analysis made: The use of additives and fire side magnets helped us to improve the atomization thus resulting in improved combustion efficiencies, reduction in excess air and reduction in soot formation and maintain the stack temperatures for a longer period. The waterside magnets helped us to avoid scaling on waterside.

Impact of implementation: Self-maintenance of heat transfer surface and consistency in maintaining boiler efficiency in a narrow bandwidth resulting in energy savings of Rs. 4.00 Lac

**Project – Installation of auto controlled feed water pre-heating system**

Background of the Project: - Improve S/F ratio in boiler.

Observations made: Average feed water temp. was not being maintained on account of fluctuation in steam demand, feed water level in the tank and manual control on feed water heating. There was an opportunity to increase the efficiency by 3%.

Technical & Financial analysis made: Installed water level controller and auto steam controller to heat the feed water in order to maintain it between 85 to 95<sup>0</sup> C.

Impact of implementation: Rise in feed water temperature resulted in reduction in FO consumption by around 2.5 to 3% and savings to the tune of Rs.3.00 Lac.

**Project - Installation of CO2 evaporator**

Background of the Project: - Heat recovery from liquid CO2 to reduce the energy consumption in refrigeration.

Observations made: On order to convert liquid CO2 to vapour, we were using steam. Liquid CO2 is available at a temp. of -25 deg. C. We were using steam at 130 deg. C. There was an opportunity to use glycol and recover the cold energy from CO2 without using steam for this conversion.

Technical & Financial analysis made: There was a dual purpose of conserving energy. A) Used cold energy to chill glycol, which is done in refrigeration plant. B) Eliminate the use of FO.

Impact of implementation: Reduction in FO for this purpose, and heat recovery from CO2 thereby reducing the refrigeration load resulting savings to the tune of Rs. 2.60 Lac