



BOSCH - JAIPUR

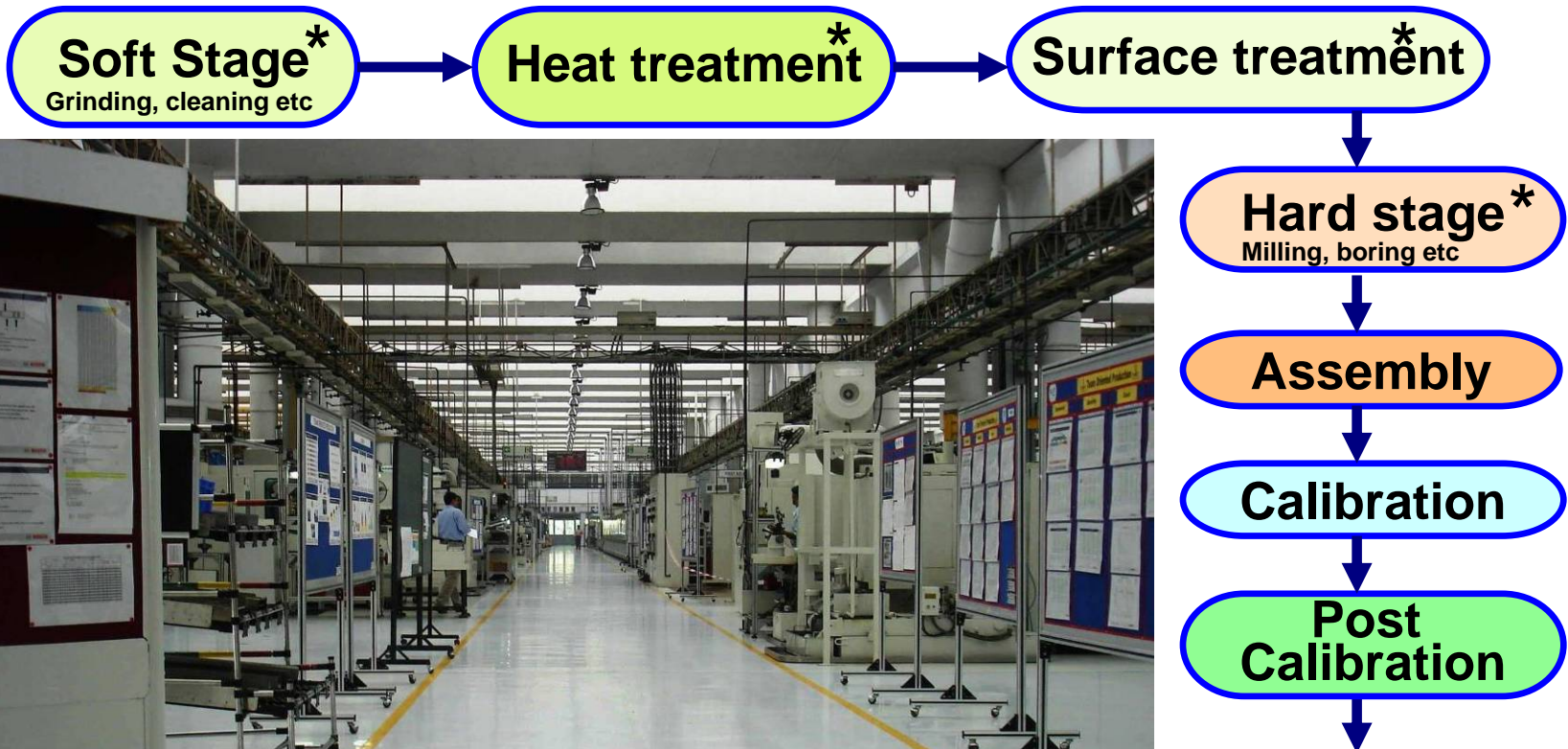
Established : 1999
Land Area : 202,350 m²
Built Area : 30,834 m²
Employees : 1,383
Turnover : 9,000 MINR
Product : Fuel injection pumps

CERTIFICATIONS

ISO 14001:2004
TS 16949:2002
OHSAS 18001
(Under implementation)



MANUFACTURING PROCESS



Production facility



VE-Pump

RESOURCE
CONSERVATION

Reduce Fresh Water consumption within i.e *adopting new technologies, utilizing rain water, and increase recycling*

Community/employee empowerment

Introduce non- conventional Energy i.e *Wind energy and Solar Thermal energy*

Sustainable
Approach

Water Management in the local community

ENVIRONMENT
PROTECTION

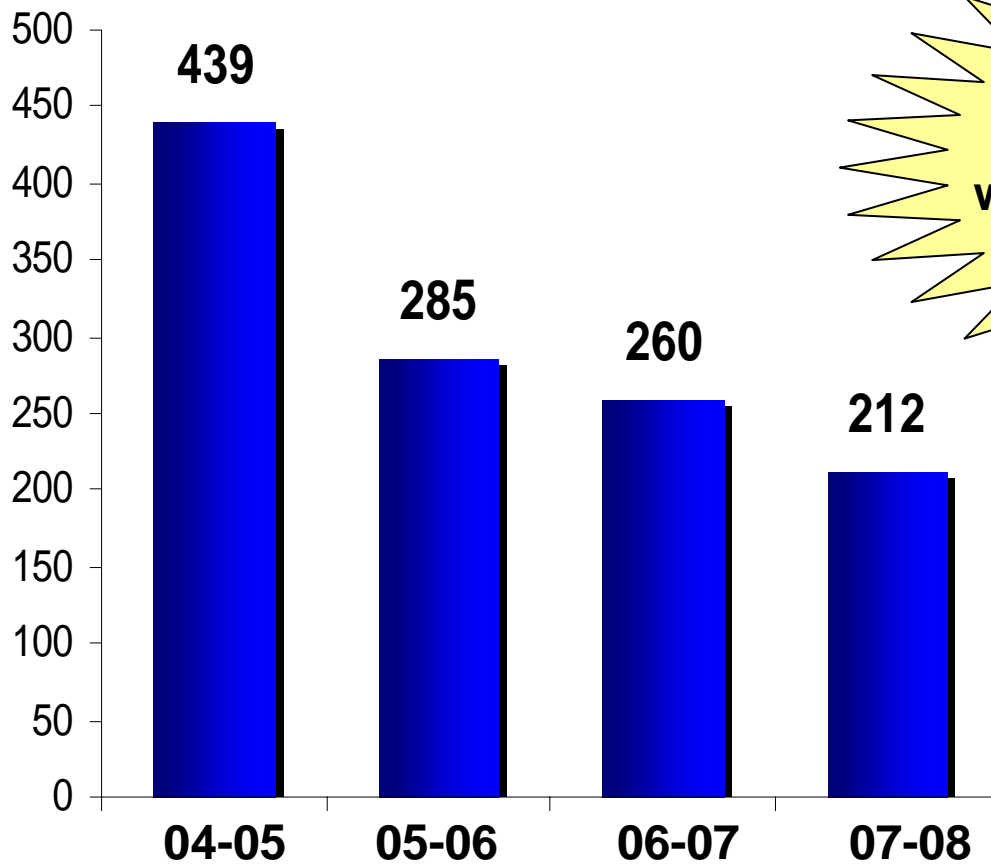
Eliminating hazardous chemicals and waste

Reducing carbon foot print

Tree plantation in the society

Society involvement through PPP

SPECIFIC WATER CONSUMPTION



51%
reduction in specific
water consumption since
year 2004-05

■ Specific Water consumption
in Liters

List of few projects completed to reduce water consumption:

- Conversion of water cooled fan chamber in SQF to air cooled**
- Conversion of conventional taps to sensor based**
- Introduction of Zeriscaping in landscaping**
- Water budgeting and audits**
- Recycling of water after treatment in the resin treatment plant**
- Up gradation of Sewage treatment plant**
- Installation of dishwasher in canteen**
- Leakage audits**

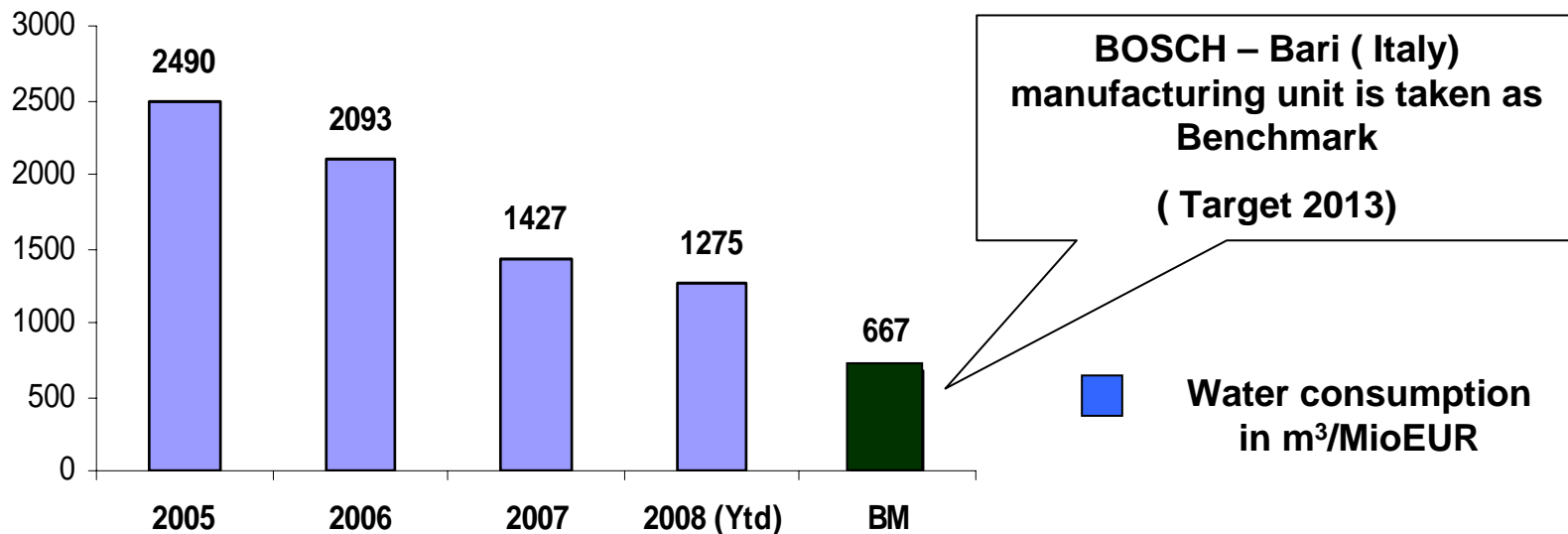
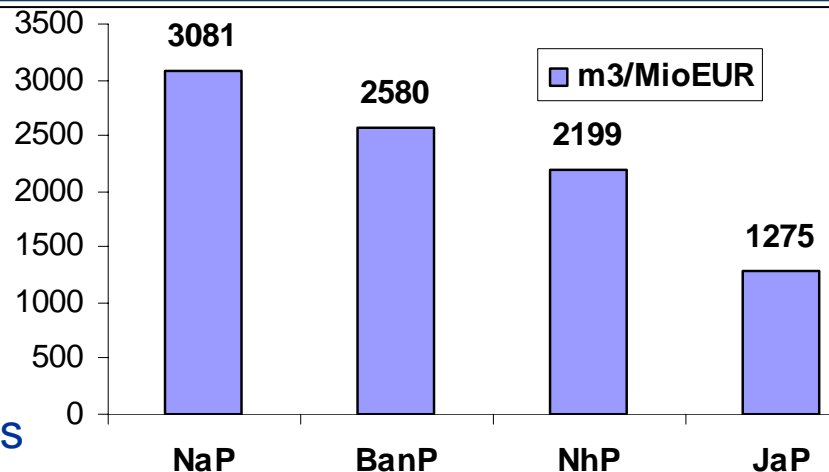


National Award for “Excellence in Water Management – 2008

BENCHMARKING

Bosch Jaipur unit has already reached to a benchmark among the four BOSCH manufacturing units in India in water consumption against added value output.

i.e Bangalore, Nashik, Nagnathapura plants



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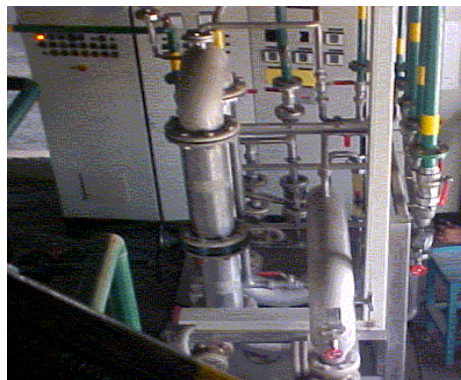
WASTE WATER TREATMENT & DISCHARGE

EFFLUENT TREATMENT PLANT



Process Effluent

Domestic sewage




ULTRA FILTRATION PLANT

**"ZERO DISCHARGE UNIT"
SINCE INCEPTION**



SEWAGE TREATMENT PLANT



1   **%**
Recycling and reuse
in gardening and process

National Award for “Excellence in Water Management – 2008

ROADMAP TO EXCELLENCE

To become a benchmark plant in BOSCH - DS

Treat and utilize external drain sewage

Rain water utilization for Process and Cooling

Technology up gradation for wastewater treatment

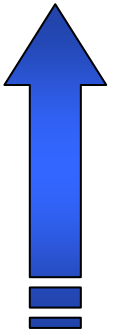
Recycling of treated wastewater in Secondary purposes

Irrigation 100% by treated waste water

Modify cleaning process in canteen

Introduce Zeriscaping in the lawns

Awareness among employees/contractors - Continuous



National Award for “Excellence in Water Management – 2008

Sustainability tools

Kaizen

Suggestion Scheme

Team Oriented Production

POKA - YOKE

Awareness campaigns

Leanstats

Policy Deployment

Strategic Themes and Targets



Monitoring and Reporting

CONSUMPTION

- Daily consumption Monitoring by meters on various lines.
- Monthly review on consumption and conservation with Plant Management
- Half Yearly review through PDCA methodology
- Annual review with Bosch –India, Corporate Management

REPORTING

Quarterly reporting to Bosch – HSE :India

Annual reporting to Bosch – C/PSE :Germany



Utilization of Rain water in cooling towers

1. Diversion of roof top rain water after filtration to cooling tower water tank
2. Collection of Rain water and pumping it to cooling tower after filtration.

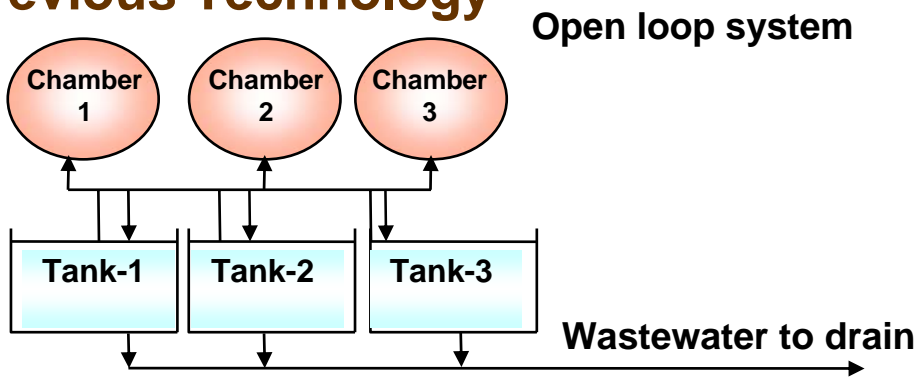


Benefit:

- Due to low TDS rain water the blow down frequency is reduced
- Saving of anti scaling chemicals in cooling tower and salt in softener
- Saving of fresh water, soft water, regeneration water
- Saving of power.

Technology Up gradation in component cleaning process

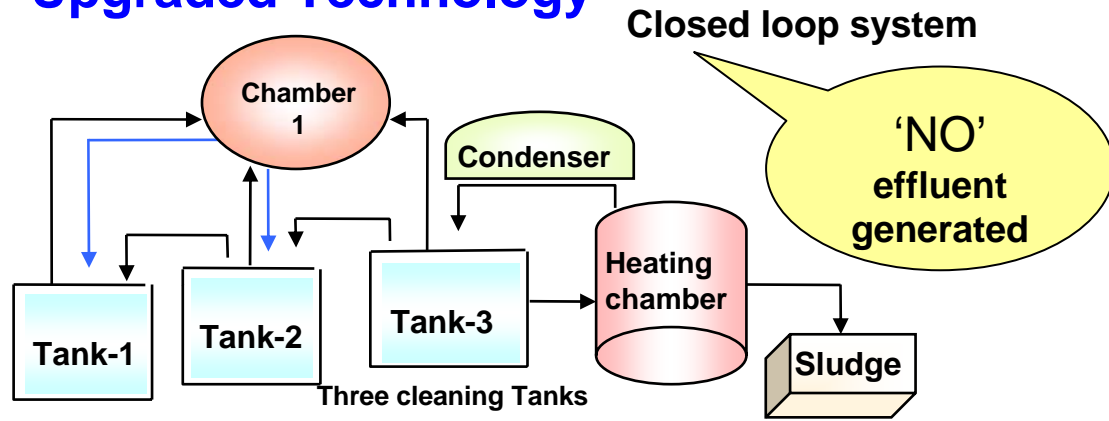
Previous Technology



Pre project

Insight Cleaning m/c
Multi chamber, Multistage

Upgraded Technology

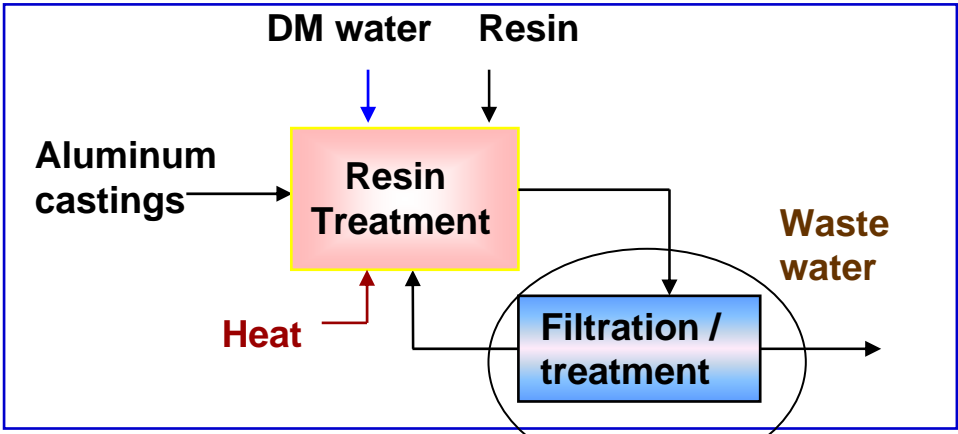


Post project

DÜRR –Ecoclean
Single chamber, Multistage



Water recycling in resin treatment plant



Additional Unit added for clarification of waste water, which is now recycled back to the Resin Treatment Plant.

Now effluent is discharged only 3 -4 times a year

Rain water Harvesting system

Collection of surface/rooftop runoff and recharging
Water collection system having total volume of 1,200 m³.
A set of pumps with meters provided
Harvested rain water charged back to recharge well in
premises



Pumps and collection system



Recharging well

Emulsion Oil replacement in Machining processes

PROCESS: Water + Emulsion Oil (Coolant) used in grinding/machining

Pre- modification

Frequency of changing the coolant - Monthly

Post modification

Frequency of changing the coolant – Once in 6 months

Features:

Reduction in water consumption

Less hazardous waste generation

Energy saving in Ultra Filtration of wastewater

Investment = Nil

Saving = 348 m³ liters /annum fresh water

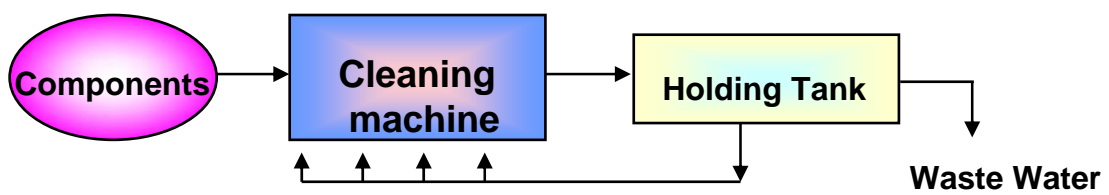
Payback period = Immediate



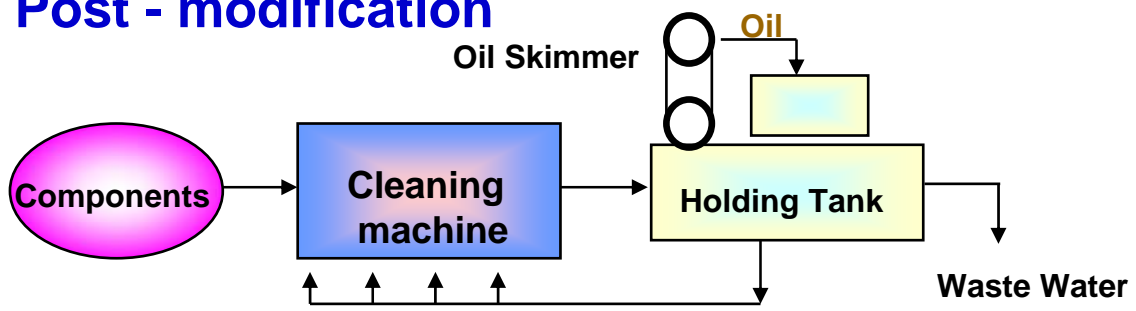
Modification In cleaning process before heat treatment

PROCESS: Water + chemical used to remove oil from components

Pre- modification



Post - modification



Investment = INR 39,000
Saving = 96 m³ liters /annum fresh water
Payback period = 2.8 years

PLC controlled Irrigation system (Sprinkler & Drip) :

Irrigation automatically through

- PLC controlled
 - pop-up sprays sprinklers
 - Drippers.



Waste water after treatment is used for landscape irrigation

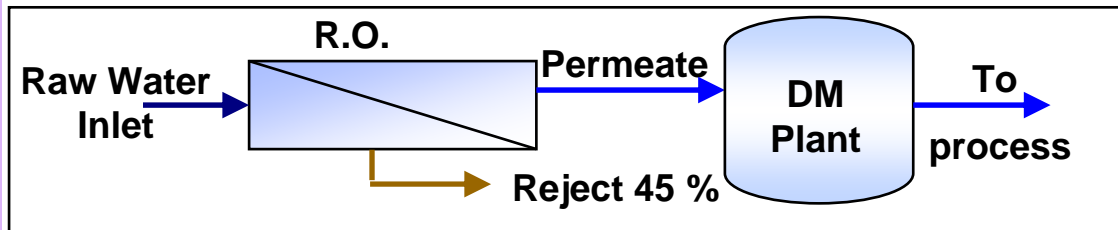
Investment = Rs.11 lakhs

Benefits:

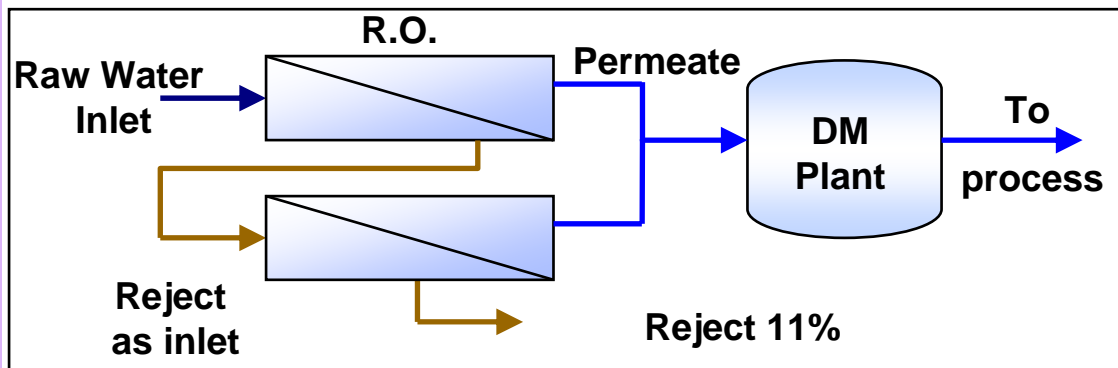
- Less water consumption in irrigation.
- Evaporation losses minimized as programmed to work in late night hrs.

RO cascading with DM combination

Pre- modification



Post - modification



Investment = negligible (system was available)

Saving = 3,200,000 liters /annum

Payback = immediate



Other projects and Milestones

- Installation of Non Cyanide Alkali based Zn Plating line.
- Elimination of Hexavalent chrome Cr^{+6} in electroplating process
- Elimination of Ozone Depleting substances (Total 347 units)..
- Up gradation of Sewage treatment Plant.
- Solar water heating system installation for canteen.
- Change of conventional faucets to sensor based.
- Conversion of water cooled fan chamber in SQF to air cooled.
- Elimination of lapping paste (Hazardous waste)