Brakes India Limited's Environment Practices


Company Profile

Brakes India - A Joint Venture of TVS 51% TRW 49%

Established	**: 1962, Joint Venture with Lucas PLC UK**
Employees	**: 6655**
Products	**: Braking Systems, Castings, Machine Building, Polymer Compounding**
Engineering Capability	**: Design, Develop, Test and Validate**
R&D Spend	**: 1.54% of Sales in Brake Division**
Certifications	**: ISO/TS16949, ISO 14001, TPM, Ford Q1, Deming (Foundry), BS OHSAS 18001, BS EN 16001 (Foundry)**
Segments	**: Light Vehicle, Commercial & Off Highway**

Manufacturing Locations

Our Products

- Foundation Braking Parts
- Hydraulic Brake & Clutch Actuation Systems
- Brake Seals
- Brake & Clutch Hoses
- Brake Fluid
- Friction Products
- Grey & S G Iron Sand Castings
- Permanent Mould Ferrous Casting



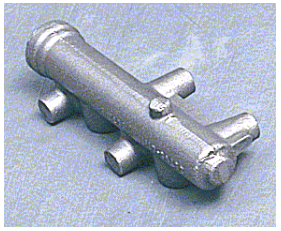












Our Customers

Environmental Initiatives

Rain water collection pond

Brakes India limited

Site	Capacity in Kilo litres
Padi	35,000
Sholinghur	33,600
Nanjangud	1,300
Polambakkam	10,000

Rain water percolation pits

35 nos. of Rain water surface runoff percolation pits created throughout the factory for ground water recharging at Brakes India, Padi.

Water conservation measures

Brakes India limited

Water consumption reduced from 300 Kl./day to 250 Kl./day by implementing various water conservation measures, viz.,

- **3” / 4” underground water pipes were replaced with 2” pipes routed above ground level.**
- **Reducing the overhead water tank pressure and water force at the pipes by means of maintaining water with half tank capacity, always.**
- **Maintaining the throttle valves in half closed condition at the user ends.**
- **Orifices introduced in water taps across the company / sites.**

Water tap without orifice

Water tap with orifice

4 mm dia hole

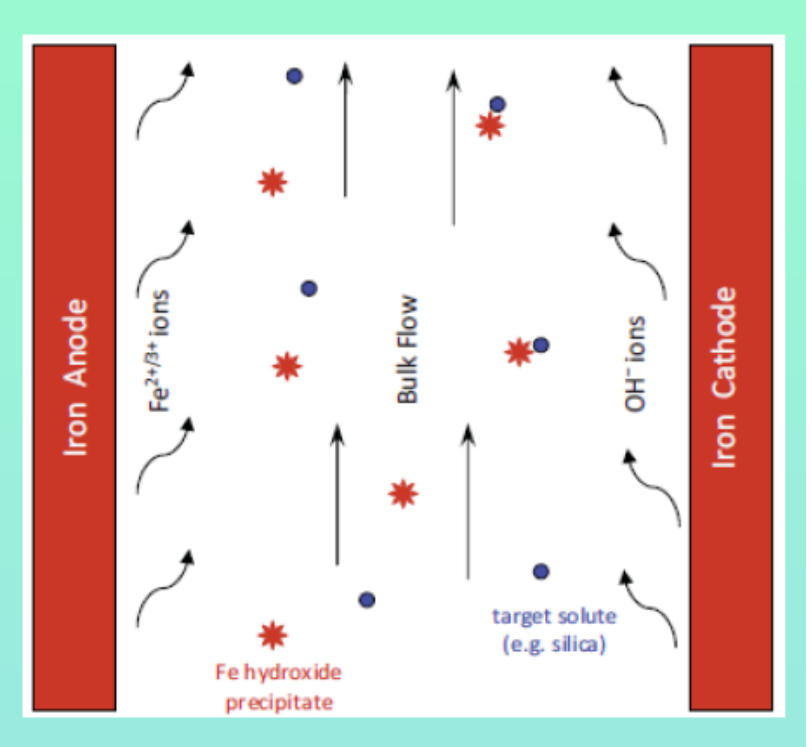
3 mm dia hole

Electrocoagulation

Brakes India limited

Electro coagulation methodology introduced for treating trade effluent to reduce sludge generation by 40% at Brake division, Sholinghur.

Haz. Chemical / Sludge	Before EC	After EC
Consumption of Lime in tons / year	20	0
Consumption of Sodium Bisulphate in tons / year	3	1.5
Sludge generation in tons / year	150	90



Removes heavy metals, suspended solids from water using electricity.

Reverse Osmosis Plant

Two stages of RO Plants installed at Process Shop (Padi) to recover 80% of used water to reuse again for process. Planning for 3rd stage RO plant to recover 90% of used water (Padi).

Treated STP water used or Cooling towers

Brakes India limited

STP

Softener Plant

PSF to remove TSS, if any, ACF to remove Chlorine & odour and Softener plant to maintain hardness less than 10 mg. /litre

Cooling Tower

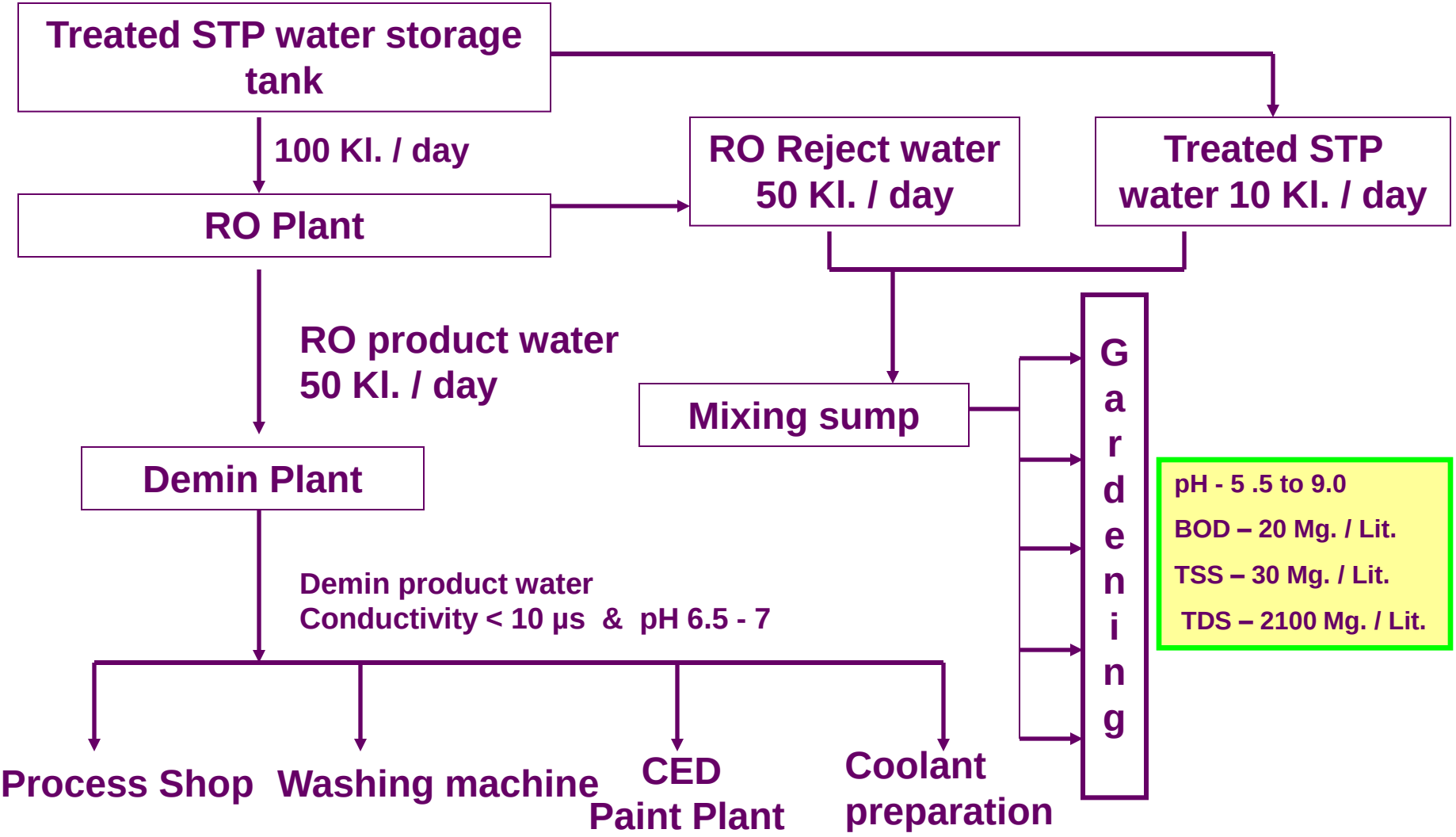
40 Kl. / day of Treated STP water is reused for Cooling towers. (Padi)

Sewage Treatment Plant Water → Pressure Sand Filter → Activated Carbon Filter → Softener Plant → Soft water O/ H tank → Cooling Towers

Reuse of Treated STP water for Electroplating thro' RO Plant & Demin plant:

Brakes India limited

Out of 150 Kl. / day of Treated STP water, 100 Kl. / day is reused for Electroplating processes through RO Plant & Demin plant.



RO Plant

Out of 150 Kl. / day of Treated STP water, 100 Kl. / day is reused for Electroplating processes through RO Plant & Demin plant.

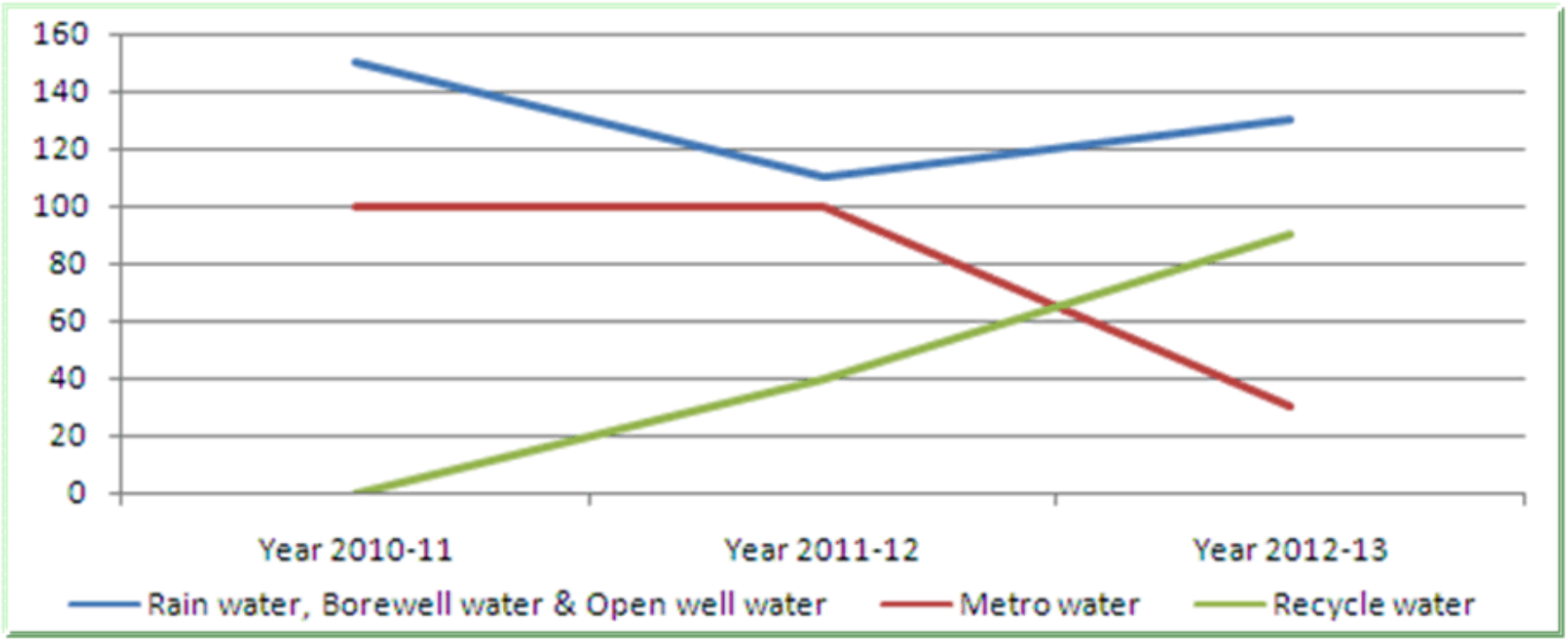
Demineralization Plant

Out of 150 Kl. / day of Treated STP water, 100 Kl. / day is reused for Electroplating processes through RO Plant & Demin plant.

Water sources & consumption

Brakes India limited

Water consumption: 250 Kl. / day for process, drinking, canteen and general usage



Water usage in Kilo litre / day	Year 2010-11	Year 2011-12	Year 2012-13
Rain water, Bore well water & Open well water	150	110	130
Metro water	100	100	30
Recycle water	0	40	90

Refrigerant Gas Recovery System during Maintenance

Brakes India limited

Before

Conventional method of recovering the Freon gases (HCFC / HFC) during repair and overhauling of A / C systems.

After

Freon recovery system introduced at BI Padi.

Benefits:

1. Less time taken during recovery of gases.
2. One common recovery system for all type of gases, viz., HCFC, HFC, etc.
3. 100% recovery of gas is possible and thereby Ozone depletion is avoided.

HydroGen equipment

Brakes India limited

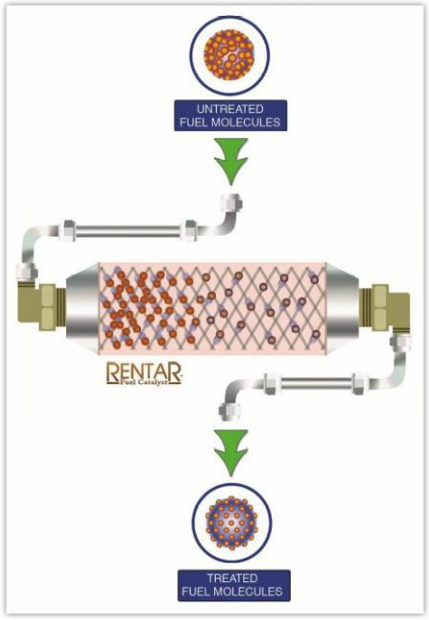
Designed and manufactured by using unique TITANIUM & NOBEL METAL ELECTRODES, it separates the water [H2O] into its components of Hydrogen & Oxygen [HHO].

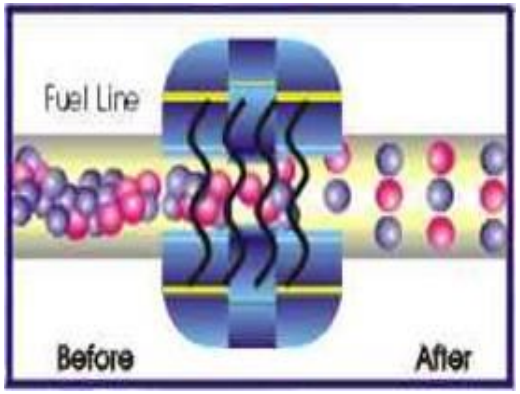
HHO is added into the air intake manifold of the engine and helps the engine to burn energy more resourcefully.

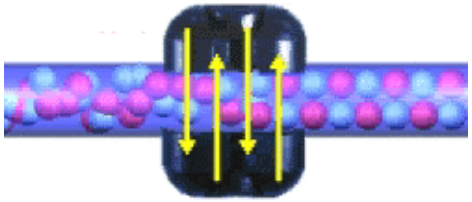
HydroGen equipment fitted in two nos. of Forklift at BI Polambakkam to reduce HSD consumption of 100 litres / month & reduce emission level significantly. Planned to extend two more Forklifts.

RENTAR Catalyst

2 nos. of RENTAR Catalyst in HPHW generator at BI Polambakkam to reduce the SKO (Superior Kerosene Oil)





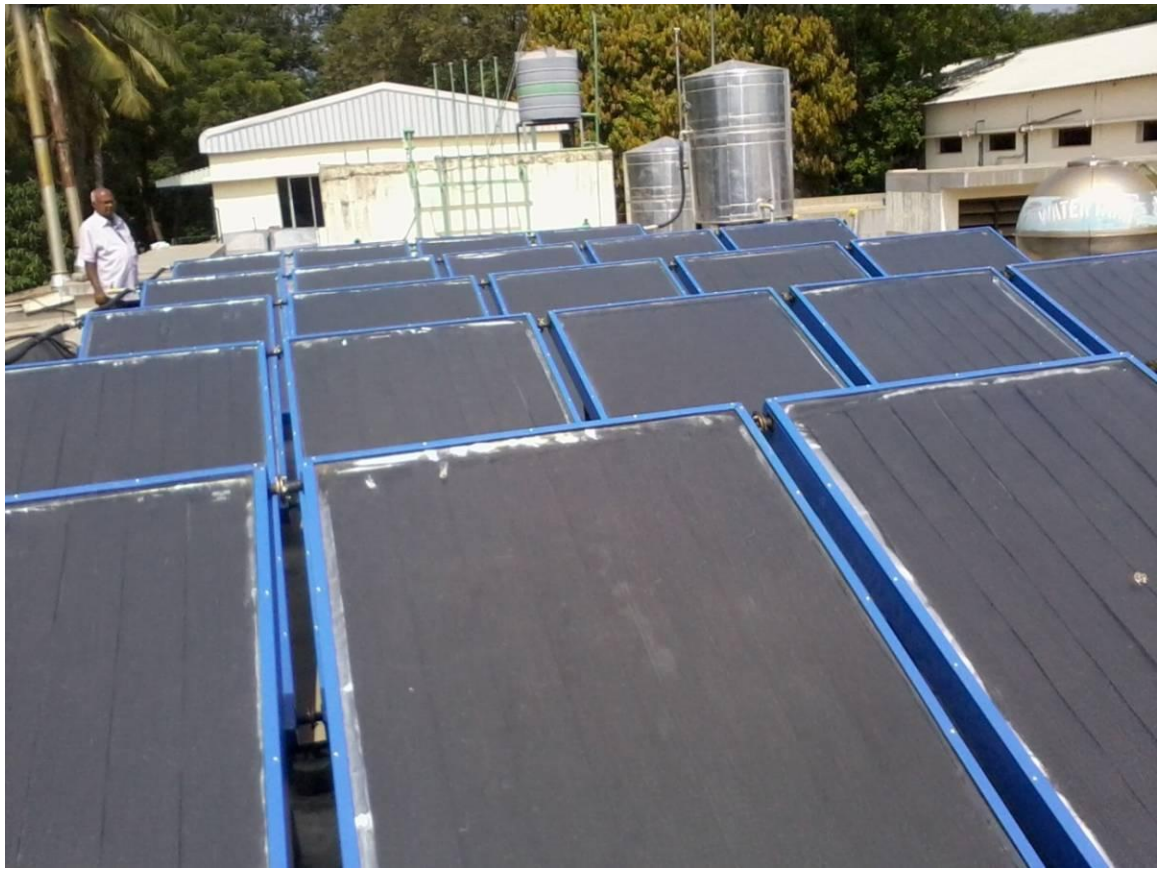


How RENTAR Catalyst works?:

- Fuel is passed through the catalyst, which is a combination of metallic and rare earth elements.
- Separates the cluster molecules and gives uniform flow and thus reduces fuel consumption & air pollution.

Renewable Energy Resource

Brakes India limited



Solar systems installed at canteen to generate hot water for cooking.

This has reduced diesel consumption from 5000 to 4500 litres / month (Padi)

Reusable metal pallets

Elimination of 20,000 nos. of Carton boxes / month in receipt from Lining suppliers, M/s Rane & M/s SBL by introducing Flexol reusable metal pallets at Sholinghur.

Before

Carton boxes

After

Flexol reusable metal pallet

Shredder machine

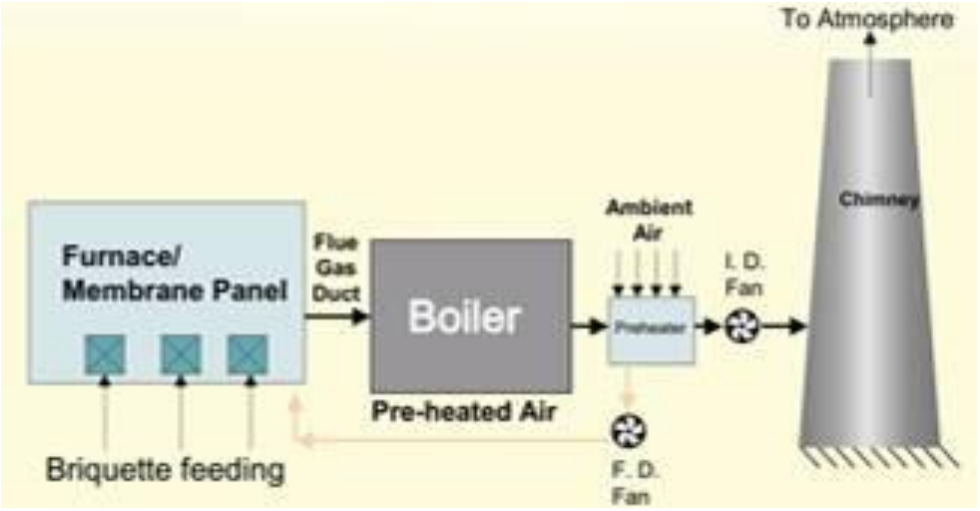
To shred the tree branches, fallen leaves, etc.

Disposing the biodegradable wastes only at in house.

(Padi)

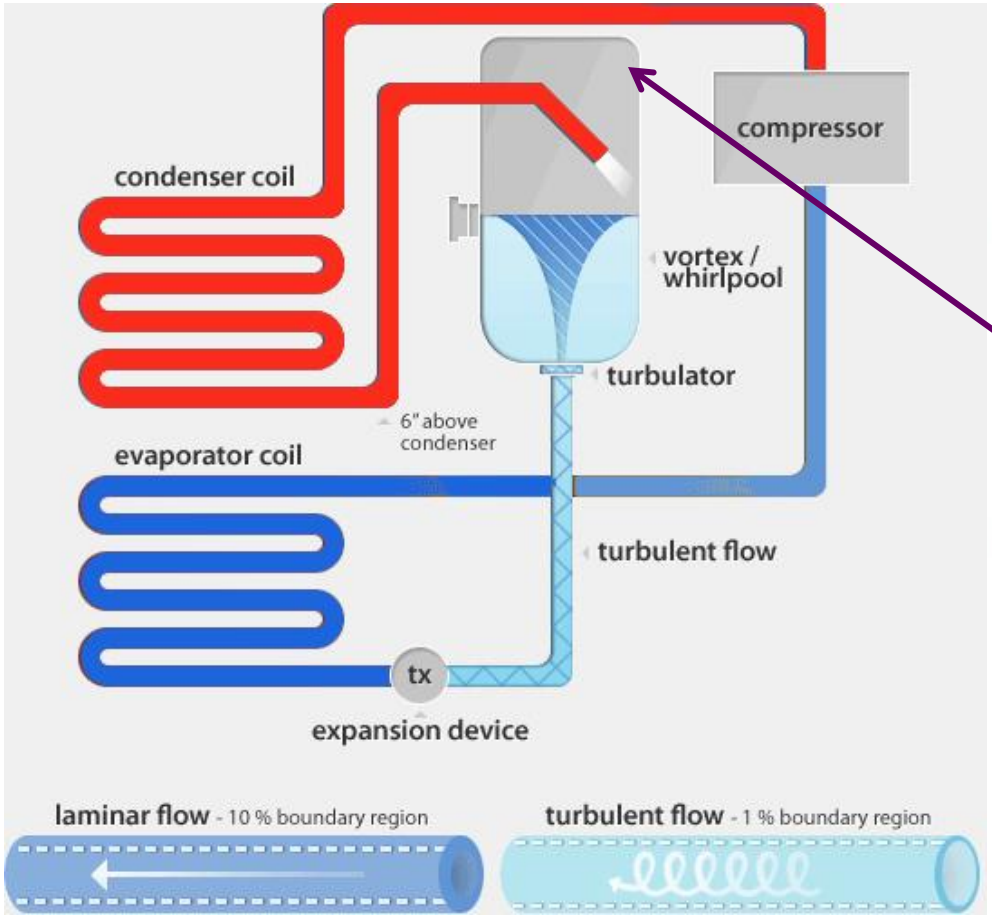
Phased out HSD / SKO (500 litres / day) by introducing Briquette fired Thermic Fluid heater at NHE, dedicated unit of Brakes India, Nanjangud. (Briquette consumption : 2,000 Kgs./day)

License for storing Class 'B' Petroleum, if store more than 2,500 litres at any point of time, is avoided.



Briquette

Reduction in Electrical energy consumption through Articmaster in chillers at U64 of BI Polambakkam in New Zinc plating line from 11 units / hr. to 3 Units / hr.



Articmaster

Fanless cooling tower

Brakes India limited

Before

Cooling tower with fan

Brakes India, Polambakkam

Energy saving is 3.3 Units / hr.

After

Cooling tower without fan

When hot water is sprayed from top of the cooling tower through jet nozzles.

Air and water travel in co current direction down to the basin.

During this travel, air cools down the water and the air escapes from the FRP louvers.

Heat recovery system

Brakes India limited

Before

Fuel (SKO) fired High Pressure Hot Water Generator

SKO consumption reduced by 6,500 litres / month (Polambakkam)

After

Waste Heat recovery from compressor

Thermal requirement for pre heating is recovered from waste heat from compressor

Reduction in consumption of HDPE woven sacks

Brakes India limited

Before

Effluent Treatment Plant sludge was packed in HDPE woven sacks and disposed off to hazardous waste landfill at Gummidipoondi.

Consumption of HDPE woven sacks:

Year 2009 : 8,000 nos.

Year 2010 : 7, 995 nos.

After

Effluent Treatment Plant sludge are taken in hazardous waste container of TNWML and disposed off to hazardous waste landfill at Gummidipoondi.

Consumption of HDPE woven sacks:

Year 2011 : 3,000 nos.

Benefits:

HDPE woven sacks consumption reduced

Solar stills to enhance solar evaporation to evaporate RO Reject (propsed)

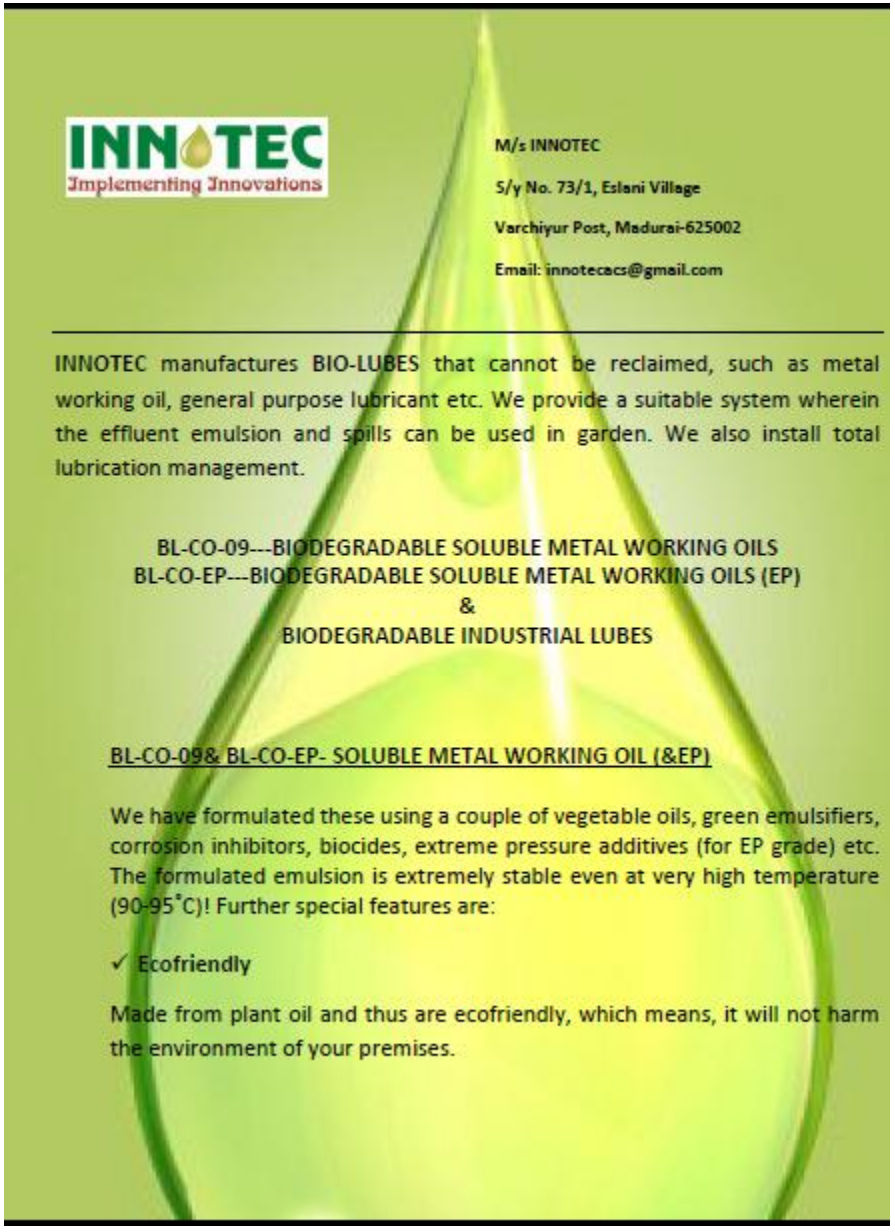
Recyclable UV stabilized film

Temp. difference in deg. centigrade:	
Atmosphere	Inside the chamber
30	60 to 70
27	40

How it works?

- Working in radiation principle.
- Ambient temp. is multiplied in side the Solar evaporator up to 60^0 C to 70^0 C.
- Exhaust arrangements are given with automatic controlling systems.

Phasing out of Non biodegradable coolant by introducing bio-degrable coolant (Proposed)







Site	No. of trees
Padi	6,400
Sholinghur	12,600
Polambakkam	46,000
Nanjangud	9,000

Story of re plantation of the tree

Peepal tree situated at one location was uprooted and replanted at another location in April, 2010 (Padi).

The area around the tree was marked

Story of re plantation of the tree

It was uprooted in such a way that its roots and stems were not damaged

Story of re plantation of the tree

The tree was on the way from one location to other location

Story of re plantation of the tree

Crane is in the process of replanting the tree

Story of re plantation of the tree

The tree is being replanted

Story of re plantation of the tree

The hard work ended with fruitful (leaf full) results

Our journey continues

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