

CASTROL INDIA LIMITED
Tondiarpet Plant, Chennai , Tamilnadu.

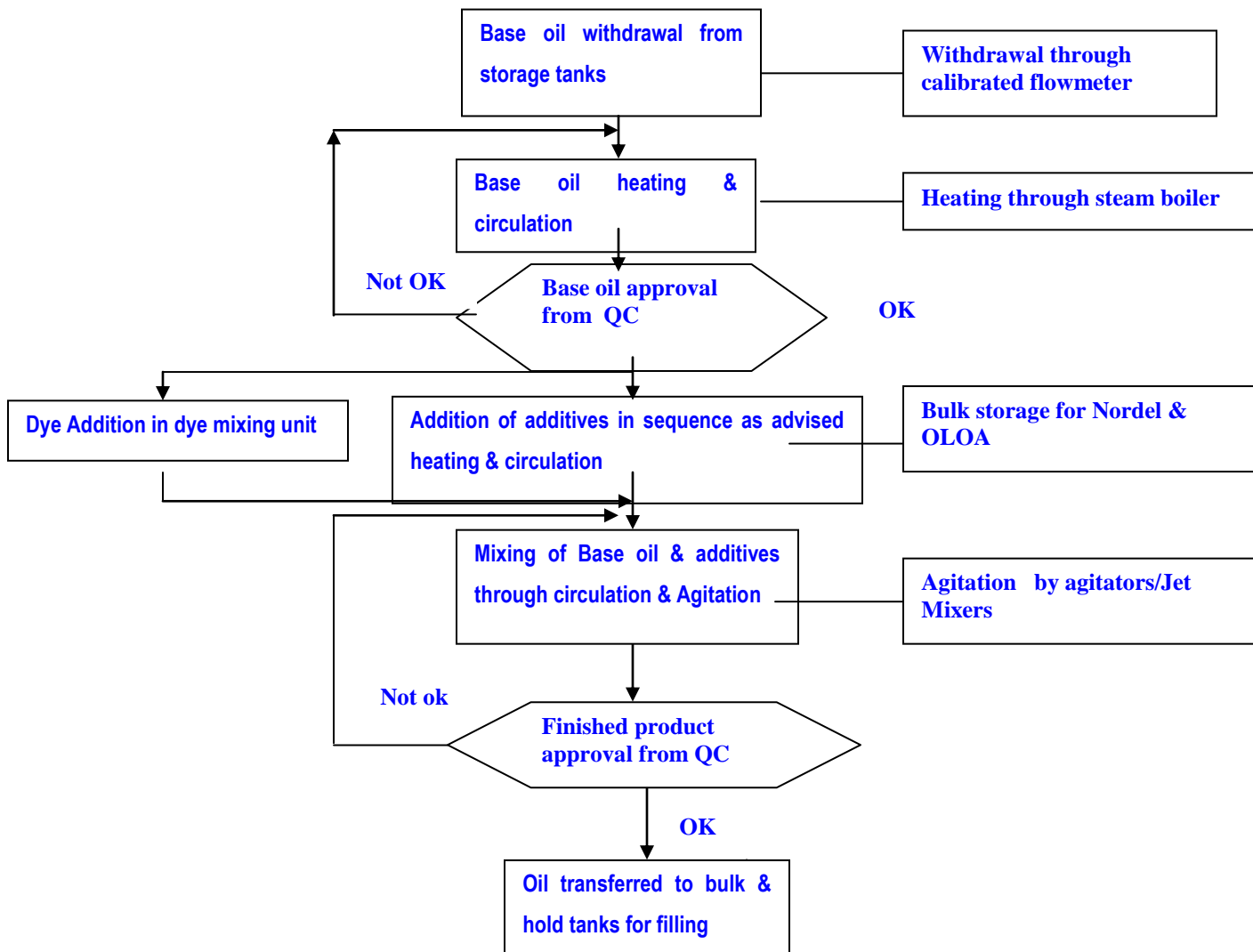
Unit Profile

Castrol India Ltd., manufacturer of Automotive, Industrial & Marine Lubricating oils, Brake Fluids, Greases & Coolants started its Tondiarpet Plant operations in the year 1962 at No. 10, Elaiya Mudali Street, Tondiarpet, Chennai. The plant manufactures both Automotive and Industrial lubricants. The plant is spread over 2 acres of land and carries out both blending and filling operations. The plant has an installed capacity to blend around 4000 KL Per Month and supplies around 15% of the overall lubricants manufactured by Castrol India Ltd.

The Plant is ISO 9001-2000, ISO 14001- 2004 & OSHAS 18001 Certified.

This Plant is a part of the global Lubricants Supply Chain business of BP Group, with unique Quality, HSSE and Environmental Policies.

Process Flow Chart

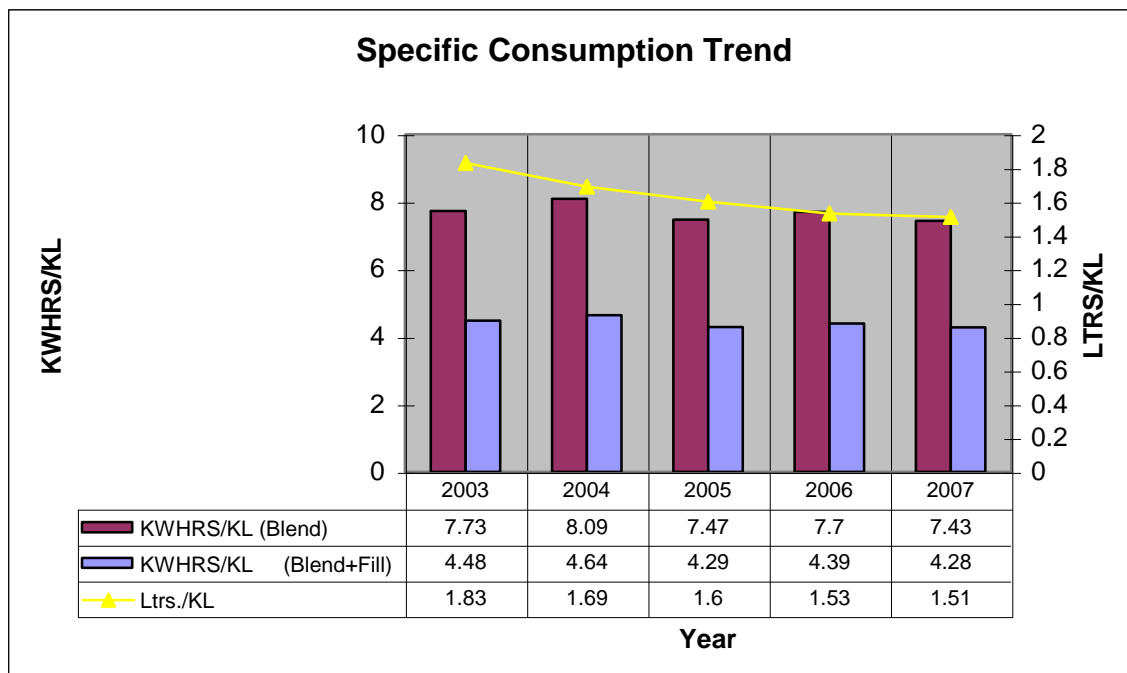


Energy Consumption

By implementing various energy conservation projects there has been a consistent decrease in the specific Electrical & Thermal Energy consumption.

Description	Unit	2003	2004	2005	2006	2007
1. Blending (Auto + Indl.)	KL	24662	25941	26013	24038	26123
2. Filling	KL	19520	20338	19269	18480	19122
3. Total Electricity Consumption	KWHRS	190592	209860	194222	185125	193622
4. Total Thermal (Fuel:HSD) Consumption	Ltrs.	45226	43886	41600	36745	39420
5. Specific Consumption (Blend)	KWHRS/ KL	7.73	8.09	7.47	7.70	7.43
6. Specific Consumption (Blend+Fill)	KWHRS/ KL	4.48	4.64	4.29	4.39	4.28
7. Specific Consumption (Fuel)	Ltrs./KL	1.83	1.69	1.60	1.53	1.51

The graph below shows the Specific Consumption trend from 2003 to 2007.



Energy Conservation Commitment, Policy & Set Up.

The Energy Conservation drive was started as an integral part of Environmental Management System with the objectives of improving environmental performance & reducing energy cost. It is the continual improvement measure undertaken by the plant to comply environmental management system requirements. Accordingly, various energy conservation projects were undertaken to reduce the use of natural resources, minimization of wastage and create awareness amongst employees on energy conservation.

The importance of energy conservation was emphasized through various forums. Kaizens, Small Group Activities, EMPs focus on energy conservation, elimination of wastage, process improvements and environmental performance.

Major Projects Executed in 2007

1. Replaced five small capacity reciprocating air compressors by energy efficient screw type air compressor with in built VFD.



Two Screw type air Compressors to run in synchronization. The small 48 CFM compressor driven by 15 HP motor runs on full load at pressure range 6.5 to 7.5 bar. When the pressure drops down to 6.0 bar due to higher consumption, higher capacity compressor with VFD starts to meet the additional requirement. As a result five nos. inefficient small capacity compressors were dismantled.

Total Savings per annum : 9,000 KWHRS.

Investment : Rs. 8.0 lacs/-.

Monetary Savings per annum : Rs. 0.34 lacs/-

2. Replaced two nos. inefficient pumps by energy efficient internal gear pumps for higher viscosity additives.



Two nos. inefficient pumps were used to unload and transfer additives. The flow rates of these pumps were around 100 lpm. These were replaced by energy efficient Internal Gear Pumps of 400 lpm capacity.

Consumption Before : 5,625 KWHS
Consumption After : 2,812 KWHS

Power Savings p.a : 2,813 KWHS.

Investment : Rs. 4.40 lacs/
Monetary Savings : Rs. 0.11 lacs/-.

3. Replaced two nos. inefficient pumps by energy efficient twin screw pumps for lower viscosity lubricating Oils.



Two inefficient pumps driven by 20 HP motors replaced by Twin Screw Pumps of same capacity driven by 15 HP Motor.

Consumption Before : 14,400 KWHS

Consumption After : 10,800 KWHS

Power Savings p.a : 3,600 KWHS.

Investment : Rs. 2.0 lacs/-

Monetary Savings : Rs. 0.13 lacs/-

4. Conventional Tubelights (30 Nos) replaced by Energy Efficient Tubelights .

Electrical Consumption for Conventional Tube-light = 54 Watts
 Electrical Consumption for Energy Efficient Tube-light = 28 Watts.

Hence, Savings per annum through Energy Efficient Tubelights :
 26 Watts X 30 Nos. X 300 Days X 10 Hrs/ day : 2,340 KWHRS.

5. Other Energy Conservation Measures implemented.

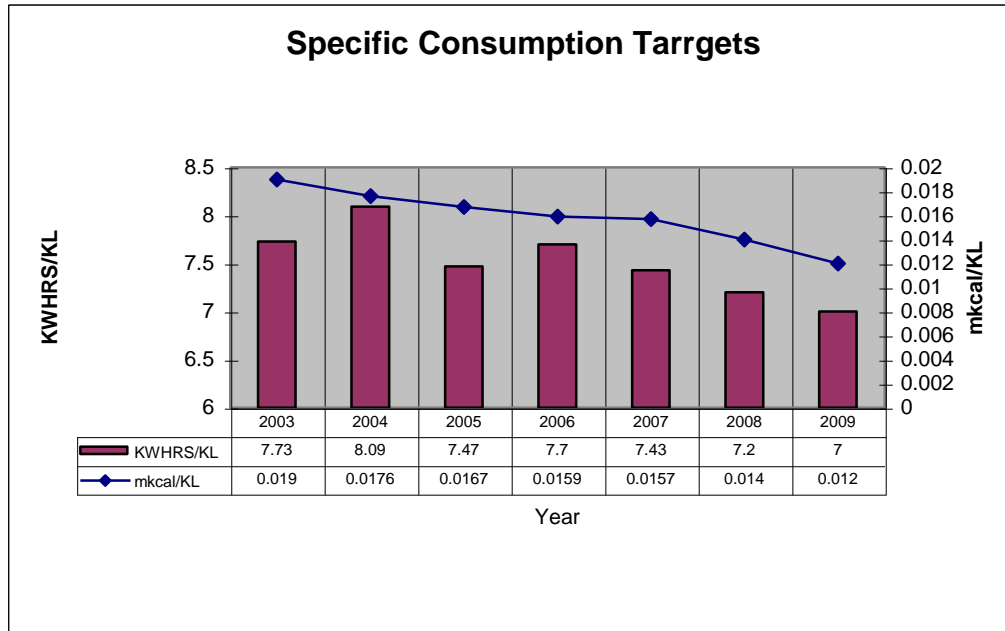
- a. Modification of Induction Sealing Machine to improve performance, reliability & energy conservation.
- b. Three nos. old split air-conditioners were replaced by new air-conditioners with higher EER.
- c. Timer installed for auto cut off of air-conditioners at admin. bldg.
- d. Insulation Jackets fitted on steam line flanges.

Energy Conservation Plans & Targets

The following are major Energy Conservation Projects under progress or streamlined for the year 2008.

Energy Conservation Measures (Planned)	Anticipated savings in		Approx. investment (Rs.lakhs)	Project Commencement & Completion year
	<u>Energy Value</u> (specify units)	<u>Rs. Lakhs</u>		
Temperature Controller for Blenders	19.13 mKcal	0.68	10	Already Completed in July, 2008
Solenoid Valves for air supply lines to filling machines	540 KWHRS	0.02	0.75	December, 2008
Replacement of two nos. Split Airconditioners with energy efficient Air-Conditioners.	120 KWHRS	0.005	0.75	December, 2008
Replacement of two nos. Pumps by energy efficient Pumps	1375 KWHRS	0.05	4.5	December, 2008
VFD System for three nos. transfer Pump.	12650 KWHRS	0.44	4.5	December, 2008

The Specific Energy Conservation targets set by the plant for the year 2008 & 2009, are as below.



Safety & Environment

Various initiatives on safety awareness including safety audit, job risk analysis, monitoring & measurement, health check up of employees, road safety awareness programs, safety meeting, near miss reporting, golden safety rules, risk assessed permit systems, tool box meeting, safety week celebrations to meet our core objective:

No Accidents, No Harm to People and No Damage to Environment.

Safe Operating Procedures are in existence for

1. Permit to Work
2. Energy Isolation.
3. Ground Disturbance.
4. Confined Space Entry
5. Hot Work
6. Management of Change.
7. Lifting Operations
8. Vehicle safety.

The plant uses Risk Assessed Permit System (RAP) for assessing and managing the risk associated with jobs and to monitor and control the work.

Focus is also given to Road Safety. All accidents are tracked, recorded, analysed and corrective action taken to prevent reoccurrence. Defensive Driving Training Programme and toolbox meetings are conducted regularly to increase defensive driving awareness amongst drivers and employees.

In the plant, Safety Slogan / Poster / Suggestion Competition were conducted during safety week celebration from 4th to 11 March.

The plant is ISO 14001: 2004 certified and various Environment Management programs & Operational Control Procedures are in place to improve environmental Performance. Environmental performance parameters are tracked and recorded. The plant celebrates environmental week every year. Employees and their families were encouraged to participate in drawing, slogan & essay competitions. Around 50 Saplings were planted & maintained in a nearby school.

The requirements related to various environmental legislations & environment protection were duly complied by the company.