

asian paints

National Energy Conservation Award 2007

Asian Paints Ltd. Kasna

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Unit Profile

Asian Paints: An Introduction

Asian Paints is India's largest and the third largest paint company in Asia today, with a turnover of Rs 36.7 billion (around USD 851 million). The company has an enviable reputation in the corporate world for professionalism, fast track growth, and building shareholder equity. Asian Paints operates in 21 countries and has 29 paint manufacturing facilities in the world servicing consumers in over 65 countries. Besides Asian Paints, the group operates around the world through its subsidiaries Berger International Limited, Apco Coatings, SCIB Paints and Taubmans.

The high service level demands in the Indian market is met through strategically located manufacturing plants near respective zones as mentioned below: (1) Ankleshwar, Gujarat (2) Bhandup, Maharashtra (3) Patancheru, Andhra Pradesh (4) Sri Perambudur, Tamil Nadu (5) Kasna, Greater Noida

Kasna Plant

Kasna plant services the northern zone of Indian market, which amounts to a quarter of total sales of Asian Paints. Spread over a plot size of 25 acres of Land, located in the heart of Surajpur Industrial belt, employing about 800 people, Kasna plant is producing 50000 KI of paints every year. It has witnessed 44 % increase in annual production (i.e. from 40369 KI to 58035 KI in the last 4 yrs) in spite of maintaining the same connected load (i.e. 55 KW). In this journey of capacity expansion Kasna plant has evolved itself into a world class manufacturing hub meeting the stringent parameters of quality, service, safety environment and energy conservation. The prove of the same comes from the various awards and accolades which have been time and again awarded to Kasna Plant. The highlights of the same are as mentioned below:

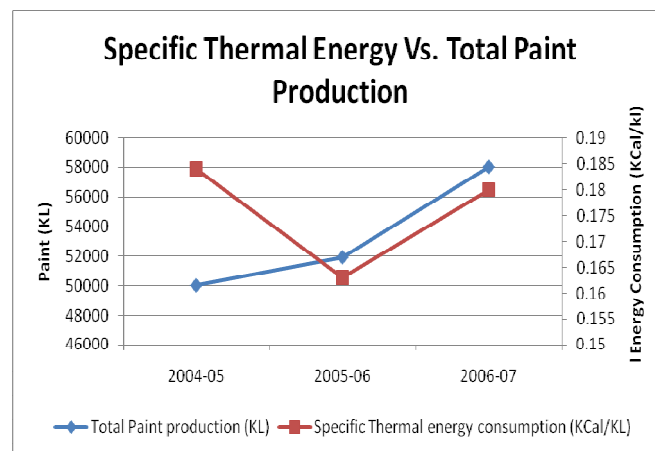
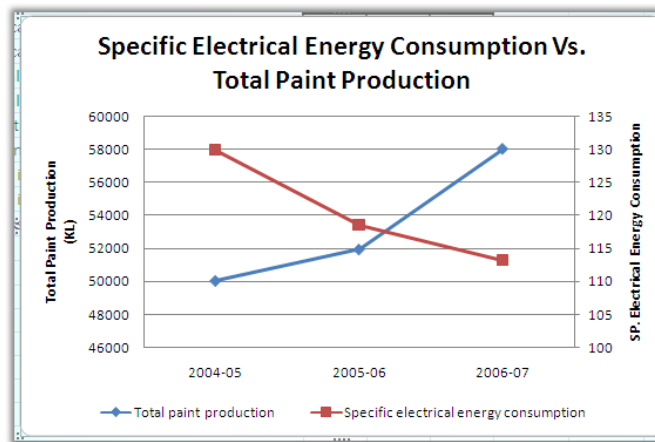
- BSC Sword Of Honour : 2004 & 2005 (In the area of safety), The British Safety council is the world's leading occupational health, safety and environmental organizations, working closely with the world's leading companies in developing safe systems for work. The 'Sword of Honour', instituted by BSC, is recognized the world over as a pinnacle of achievement in safety management systems.
 - Golden Peacock National Quality Award: This was awarded in the year 2003 on the account of various initiatives undertaken to Kasna Plant as well its other manufacturing facilities. This is on of the most coveted quality award in the country.
 - Green-Tech Safety Award: Conferred for Best Safety Processes & System in Industry to Kasna Plant in the year 2007.
 - Energy Conservation: Conducted by Bureau of Energy Efficiency for Best Practice & Focus on Energy Conservation Asian Paints Kasna, has won the 1st prize in Paints & Allied Section in year 2005-06.
 - Awarded Certificate in Recognition of Excellence in Environment Management by the Paryavaran Mitra Samman at the hands of the Governor Sh Romesh Bhandari
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- ISO 1400: Certification for Environment Management Standards since Past six years
- ISO 9000: Consistent award in the field of Quality Management System

Energy Consumption by Industries across the globe accounts for half of the total world's energy consumption. To optimize the energy consumption requirements is the only way out to meet future growth demands of Human Civilization with the ever decreasing energy resources. Keeping this in mind, Kasna Plant has always remain the Torch Bearer for the Energy Conservation & resource minimization, which can be seen through rigorous efforts put in for Implementing new Ideas or sustenance of existing initiatives

Energy Consumption

	2004-05	2005-06	2006-07
Total Paint production (KL)	50022	51929	58035
Total Electrical energy consumption (Lakhs KWH)	65.13	61.52	65.65
Total Electrical energy consumption (Lakh Rupees)	280.02	335.44	344.82
Total Thermal energy consumption units (M Kcal)	9236.02	8461.84	10400.23
Total Thermal energy consumption units (Lakh Rupees)	152.71	139.04	201.5
Specific Electrical energy consumption (KWH/KL)	129.87	118.47	113.2
Specific Thermal energy consumption (KCal/KL)	0.184	0.163	0.18
% Reduction in Sp.Electrical energy consumption	-	8.7	4.44
% Reduction in Sp.Thermal energy consumption	-	11.4	-10.42
Energy cost as % of mfg cost	26.72	27.32	28.1



20(iii). ENERGY CONSERVATION COMMITMENT, POLICY AND ORGANIZATIONAL SETUP:**Energy Policy**

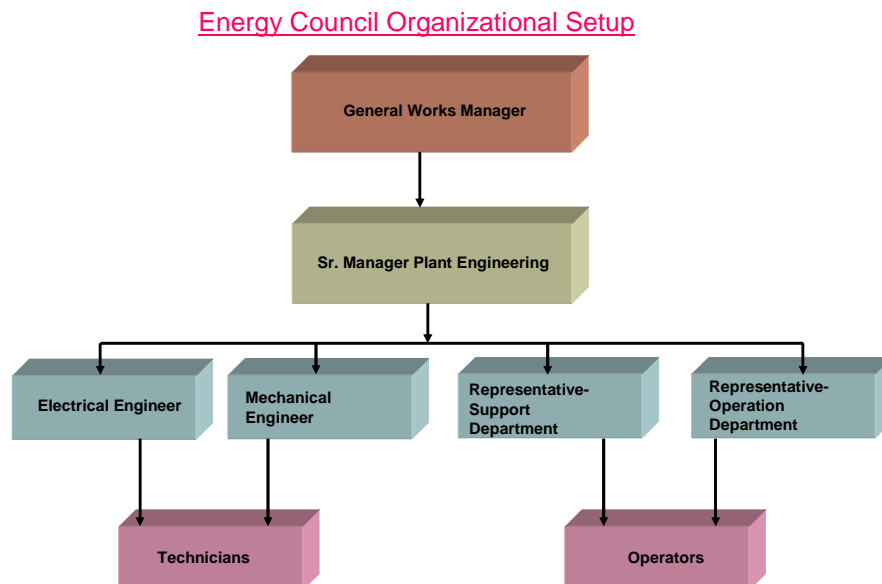
We are committed to continuously improve energy efficiencies in all our manufacturing processes:

To achieve our goal we shall

- Treat energy as one of the very vital inputs to our manufacturing processes.
- Measure energy consumption, benchmark and monitor against entitlements.
- Review and update entitlements at least once in a year.
- Continuously explore and implement energy conservation technologies and practices. This will include opportunities to use renewable energy.
- Enrich our experience and knowledge by actively participating in energy conservation forums to promote and exchange best practices.
- Promote awareness among all our employees and their families about the need for energy conservation.

Vikram Jaisinghani
G.M-Manufacturing
Dated 29th August 2005

Energy Conservation Cell Organizational Set up



Energy Conservation Achievement

1. Replacement of Old low efficiency Motors with energy efficient Motors

Before Installation

Earlier the installed motors were very old & of low efficiency.

Total Motors Capacity = 228.5 KW
 Total Loading of Motors = 137.1 KW
 Motors efficiency = 0.75
 Running Cost = **25.09 lacs/annum**

After Installation

After replacing all these motors with energy efficient motors:

Total Motors Capacity = 228.5 KW
 Total Loading of Motors = 137.1 KW
 Motors efficiency = 0.9
 Running Cost = **20.9 lacs/annum**

Total saving/annum = 4.18lacs

Total Investment Incurred=5.21 lacs



2. Optimization of Heating Cycle Time through DCS Automation in 3 Reactor of Resin House

Before Installation

Manual Controlled Valves were used to control the Heating Cycle Time of Reactors

Heating Cycle Time of Trade Reactor = 8 hours/Batch

Heating Cycle Time of Emulsion Reactor = 7 hours/Batch

After Installation

Optimization of Heating Cycle of 3 Reactors was done by installing Pneumatic Control Valves & connecting the same to DCS Automation.

Heating Cycle Time of Trade Reactor with Automation = 7 hours 40 min

Heating Cycle Time of Emulsion Reactor with Automation = 6 hours 40 min

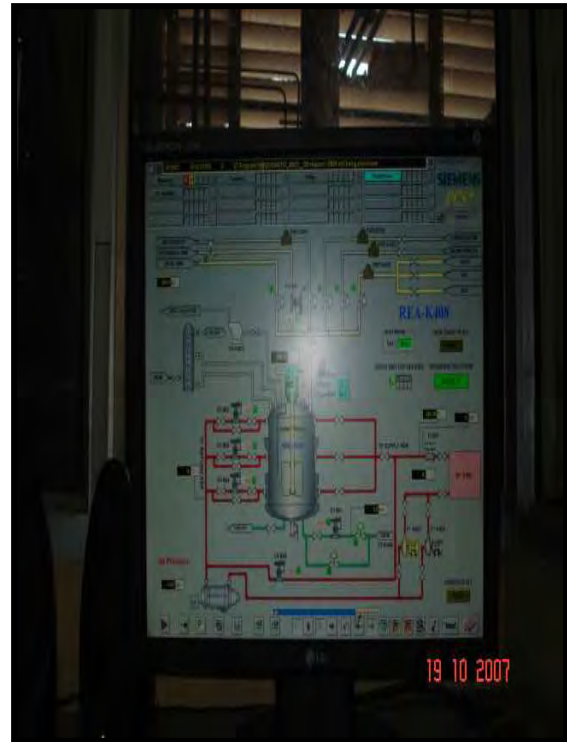
Reduction in Cycle Time of all 3 Reactor= 20 mins

Total FO saved =46.3 Klt/annum

Total Thermal Energy saved =450 M Kcal/annum

Total saving/ annum = 9.45 lacs

Total Investment Incurred = 34 lacs



3. Forced Draft Ventilator with Variable Frequency Drive

Before Installation

Earlier the forced draft ventilator was running on full load with 2 Blowers of motor rating of 30KW with flow controlled by manual throttling.

Motor Capacity = 30 KW

Power Consumption = 134693.6 KWh/annum

Running Cost = 5.52 lacs/annum

After Installation

After proper study of the requirement of Air flow, VFD were installed on Blower Motors to replace manual throttling .

After installation of two no's of VFD:

Motor Capacity = 30 KW

Power Consumption = 116629.2 KWh/annum

Running Cost = 4.78 lacs/annum

Total saving/ annum = 1.5 lacs

Total Investment Incurred=2.8 lacs



4. Optimization of cooling water in two DG sets cooling towers

Before Installation

Earlier 2 Pumps of 7.5 KW were used to provide Cooling Water supply for 4 DG sets through 2 Cooling Towers
 Pump capacity of DG cooling tower pump = 15 KW
 Power Consumption KWH/annum = 31536 units

After Installation

After proper study of Optimization Cooling water Supply 2 Pumps of 7.5 KW are replaced by single pump of 11 KW
 New Pump capacity of DG cooling tower pump = 11 KW
 Power Consumption KWH/annum=23126.2 units

Total Power Saving KWH/annum= 8409 units
Total Saving/annum =0.68 lacs
Total Investment Incurred =2.8 lacs



5. Replacement of the surface aerator with a diffused aerator

Before Installation

The aeration in the ETP used to happen with the help of a surface aerator using Blower, which used to agitate the water thereby getting it in contact with the air & hence enhancing oxidation.

Blower Capacity = 4.5 KW
 Power Consumption = 39420 KWH/annum

After Installation

The same is now replaced by a diffused aeration system which passes diffused air from Central Compressor through the effluent chamber thus causing oxygenation. The benefits of the system are use of Central Compressor air in place of Blower.

Power Consumption = Nil
Total saving/ annum = 1.49 lacs
Total Investment incurred = 3.63 lacs



6. Substitution of Electrical Heater in Oil Preheater with Thermic Fluid line

Before Installation

Earlier the Preheating of Furnace Oil in ThermoPack was done through electrical heater

Electrical heater capacity = 9.0 KW

Power Consumption =48960 KWH/annum

Running Running Cost =2.0 lacs/annum

After Installation

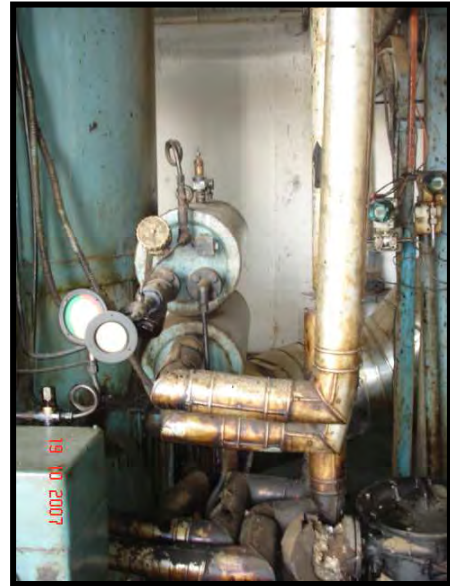
Substitution of Preheating of Furnace Oil from Electrical Heating by Thermic Fluid

Heating

Power Consumption = Nil

Total saving/ annum = 2.0 lacs

Total investment incurred= 1.42 lacs



7. Replacement of Analog APFC relay with Digital relay.

Before Installation

The Total Power Factor maintained with analog APFC relay was 0.98

Average Power Consumption = 2847636 units/year

After Installation

The analogous APFC relay has been replaced by micro processor based APFC relay. As a result the power factor is coming 0.99.

Average Power Consumption = 2818872 units/year

Total Investment Incurred = 0.46 lacs

Total saving/ annum = 1.17 lacs /annum



8. Replacement of High Wattage Electrical Heater with low wattage Electrical Heater in Process Engineering Lab

Before Installation

Earlier the installed capacity of three no's of electrical heater were high:

Installed heater capacity = 45 KW

Power Consumption = 27900 KWH/annum

After Installation

After proper study the high wattage heater has been replaced with low wattage heater:

Installed heater capacity = 27 KW

Power Consumption = 16740 KWH/annum

Total saving/annum = 0.46 lacs

Total Investment Incurred = 0.21 lacs



9. Replacement of Faulty Quick Release Coupling

Before Installation

Earlier we were using non Standard QRC in our plant which results in as high as 5% leakage of Compressed Air through them.

Compressor Capacity = 495 CFM

Compressor Loading % = 67

Power Loss = 21892.1 KWH/annum

After Installation

All Non Standard Pneumatic Quick release coupling has been replaced with IS Standard approved QRCs

Total saving/ annum = 0.89 lacs

Total Saving Incurred = 1.26 lacs



10. Replacement of HPSV Streetlights with T-5 Multi light Streetlight

Before Installation

Earlier HPSV Street light with control gear 172 Watts were in used

Total Wattage of Streetlight = 172 Watts

Power Consumption = 30134.4 KWH/annum

After Installation

These HPSV Streetlights are being replaced with Energy Efficient T-5 Multi lamp Streetlights without reduction of Lux level.

Total Wattage of Streetlight = 104 Watts

Power Consumption= 18220 KWH/annum

Total saving/ annum = 0.488 lacs

Total Investment Incurred =1.29 lacs



11. Installation of Variable Frequency Drive on Metering Pump of Reactor Rea-K407

Before Installation

Earlier the Flow of monomer through metering pump was controlled be manual throttling in Reactor-K407

Metering Pump KW = 3.7KW

Power Consumption =16354 KWH/annum

After Installation

After proper study it was found that manual throttling can be removed by putting VFD.

After installation of VFD:

Power Consumption = 7277 KWH/annum.

Total saving/ annum = 0.37 lacs

Total Investment Incurred = 0.40 lacs



20(vi) ENVIRONMENT AND SAFETY

Asian Paints approaches the environment issue from the perspective of waste minimization and conservation of resources. Thus, the continued attempt is to reuse, recycle and eliminate waste, which results in less and less waste being generated. Accordingly, our material losses have been reduced substantially over the last few years. Further, the plant has the ISO 14001 certification for environment management standards for last 6 years.

Safety Management system of Kasna plant is governed by guidelines laid in British Safety Council. Kasna Plant has been twice awarded with the Prestigious Sword of Honour for the best Safety Standards.

The Safety policy outlines the commitment towards

- i. Statutory Requirement
- ii. Continuous Improvement of EH &S Policy
- iii. Training & awareness of personnel for Safe Working practices.

The Environmental Policy ensures our Resource Conservation & safe guarding of our environment. The tracking of energy consumption and reduction is achieved using the ISO 14001 EMS.

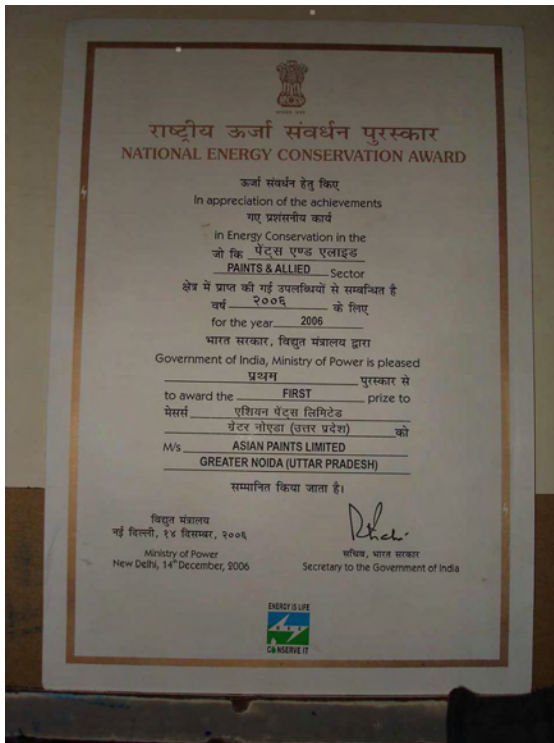
Periodic Audit of Environment Management System & Safety management System ensures sustenance of existing level & stride towards better Global standards as to fulfill the dream of World Class Manufacturing. Attached below are the glimpses of the various achievements awarded to Kasna Plant.



BSC 5 STAR Rating Certificate



BSC Sword of Honour certificate



**1st Prize National Conservation Award
In Paints & Allied Section**



**Gold Prize in Green
Tech Safety Award**

21 Whether any dispute pertaining to statutory requirements of safety and pollution control is pending with any Government Agency. If Yes, give details:

NO