

P. I. INDUSTRIES LIMITED

237, GIDC, Panoli, Bharuch

(Gujarat)

Unit Profile

PI Industries Limited (Div of Pesticides India) is One of the Largest Producer in India of Crop Protection Products with Wide Range of Products that include Fumigants, Fungicides, Insecticides, Rodenticides and Herbicides.

Spread in 22 Acre Land, Established in 1993, Manufacturing Site of PIIL is Located at Panoli, in Gujarat, between Surat and Baroda (350 kms from Mumbai) on National Highway No.8.

PIIL is an ISO 9001, ISO 14001 and OHSAS 18001 Certified Company.

The Unit Sales Turnover was Rs: Crores 342.04, 329.04, 393.46 in year 2004-05, 2005-06 and 2006-07 respectively.

PIIL is First in India to Introduce Granular Formulation, One of India's First Pesticides Exporters, to export Basic Engineering Technical Know-how for Setting Up Pesticides/Fine Chemical Plants based on R&D recognized by Government of India-Department of Science since 1976.

PIIL is One of the First Producers of Thermo Polyurethane in India. With 02 new Patented Products launched in year 06-07, PIIL has built and continue to operate through Network across the Globe – Japan, Europe, America, and Asia Pacific.

P. I. INDUSTRIES LIMITED
Panoli (Gujarat)

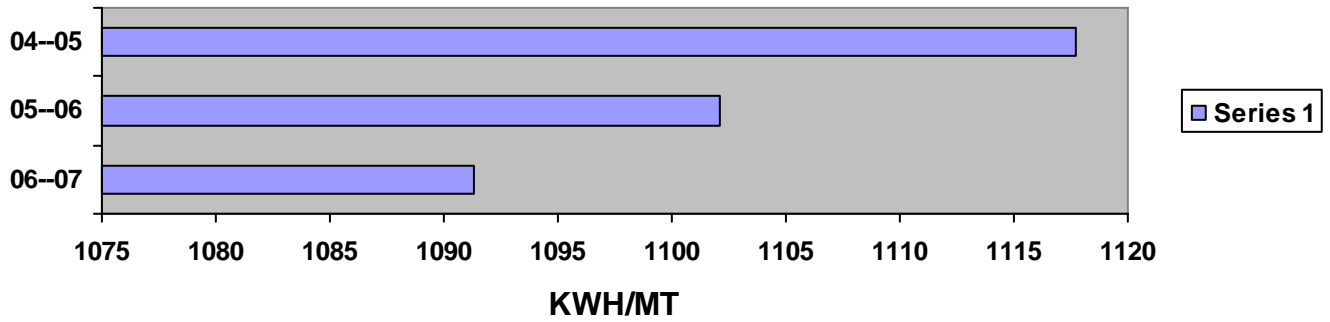
Energy Consumption

The Specific Energy Consumption of Main Products are on Declining Trend due to various Energy Conservation measures taken, innovations, R&D for Yield Improvement, Process Improvements Measures etc. The Specific Energy Consumptions Scenario of PIIL-Panoli in the past Three Years is as given below:

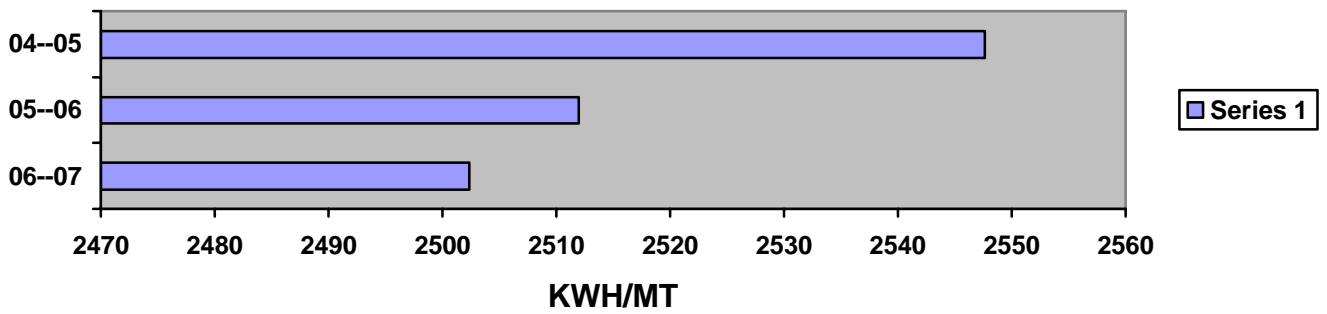
Description	PRODUCT	UNIT	2004-05	2005-06	2006-07
Annual Production of Main Products	PHORATE	MT	1948.13	2118.26	3628.37
	PFT	MT	1602.76	1383.1	1321.74
	KPP	MT	60.2	62.245	86.16
Specific Energy Consumption - Electrical	PHORATE	KWH/MT	1117.72	1102.07	1091.31
	PFT	KWH/MT	2547.66	2511.99	2502.38
	KPP	KWH/MT	21443.96	21143.74	21103.32
Specific Energy Consumption - Thermal	PHORATE	Million Kcal / MT	1.38	1.35	1.31
	PFT	Million Kcal / MT	3.88	3.81	3.79
	KPP	Million Kcal / MT	71.90	70.53	70.05
Total Manufacturing Cost Total Energy Cost Energy Cost as % age of Total Manufacturing Cost	PHORATE	Lakhs Rs	22372	16643	20600
	PFT	Lakhs Rs	1051.14	887.68	973.17
	KPP	%	4.7	5.4	4.7

P. I. INDUSTRIES LIMITED
Panoli (Gujarat)

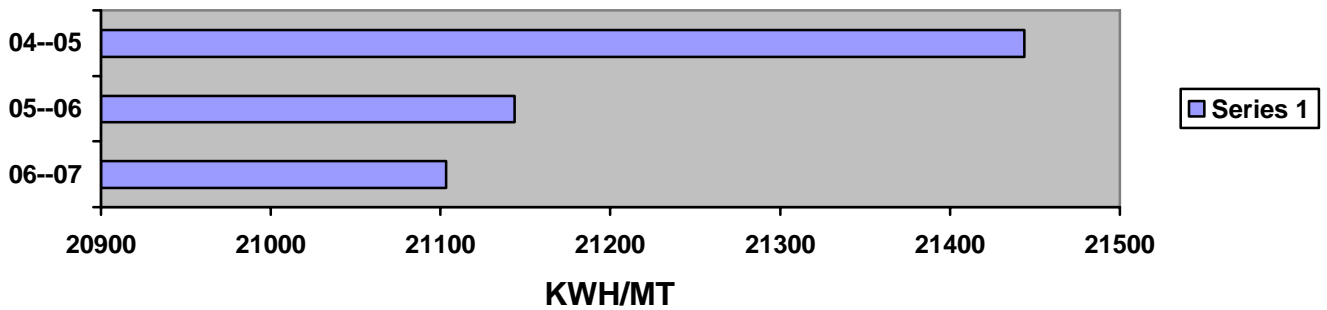
Specific Power Consumption PHT



Specific Power Consumption PFT



Specific Power Consumption KPP



P. I. INDUSTRIES LIMITED

Panoli (Gujarat)

Energy Conservation Commitment, Policy and Set up:

PIIL is committed for Total Energy Conservation, Prevention of Energy Wastages, New Technologies Implementation and R&D for Quality to Reduce Specific Energy Consumptions for their Main Product Lines. One of the Main Objectives of the Company is to Reduce overall Energy Bill by 10 %.

Energy Management Set Up is comprising of Three Groups:

- The Apex Group indicates the Commitment of the Top Management. It gives proper Guidelines, Support, and Encouragement the Energy Conservation Activities.
- The Core Group forms the Middle Management including VP (Operation), Dept heads.
- The Working Group comprises of various Process Engineers at all Plant Levels. By-Monthly Meeting is conducted, where various Energy Conservation Proposals are put, analyzed, discussed. Proposals involving No Investments are implemented immediately and those requiring Investment are reported to the Apex Group. Monthly Reports of Energy Savings and Proposals are put up to the Management in MIS.

The Unit has conducted External Audit from Envy Energy Consultants & ECT Engineers and Associates. Both are Approved Energy Auditors from Government of Gujarat.

Unit Energy Management Policy is as given below:

The Unit shall Strive for Continuous Energy Economy through:

- Employ Cleaner & more Efficient Technologies.
- Adopting Appropriate Energy Conservation Technologies to all New Projects.
- Replacement of Energy Inefficient Euiqment/Processes with Energy Efficient Equipment/Processes.
- Carry out Regular Internal & External Audits to identify Areas for Improvements.
- Improved Capacity Utilization.
- To inculcate the Principles of Energy Conservation in its People and Processes on continuous basis.
- Encourage Employees to Participate in Suggestion Schemes for Energy Conservation.
- Formulation of Overall Energy Strategy & Targets.

P. I. INDUSTRIES LIMITED
Panoli (Gujarat)

As part of the Energy Conservation and Environment Protection, the Unit is committed to Reduce Specific Energy Consumption.

Energy Conservation Achievements:

Description	Unit	2004-05	2005-06	2006-07
Energy Saving Activities	Nos	8	7	8
Savings Achieved	Rs Lac	408.65	142.65	53.23
Investment	Rs Lac	753.8	753.8	60

Major Energy Saving Schemes Implemented in 2006-07:

- The Unit implemented total 8--Major Energy Efficiency Project in year 2006-07, inclusive of in-house R & D Efforts, Innovations. The Themes of these Projects were based on following ideas:
- Screw type Air Compressor in place of Two Reciprocating Compressors.
- One Secondary Condenser installed in R-7901 to save Refrigeration Brine Load.
- Two Nos. of Brine Pumps replaced by 90 M3/Hr Capacity pump.
- Plate Type Heat Exchanger for Voltas Chilled Water Plant.
- Utility New Cooling Tower 120 HP pump is replaced by 75 HP.
- New 250 N/m3 Capacity Nitrogen Plant Installed.
- Replacement of 160 watt MLL lamps with CFL Lamps.
- RVD Ejector Nozzle Replacement with Efficient Ejector Nozzle.

P. I. INDUSTRIES LIMITED
Panoli (Gujarat)
PROJECT -1



Screw Air Compressor in place of Two Reciprocating Air Compressors

Capacity	195 CFM
Total saving /Annum	3.9 Lacs
Total Investment	5.5 Lacs
Payback Period	1 year & 5 Months

Impact of Implementation

Electrical Energy saved

P. I. INDUSTRIES LIMITED
Panoli (Gujarat)
PROJECT -2



Installation of Secondary Condenser to reduce Brine load.

Total saving /Annum 2.57 Lacs

Total Investment 1.5 Lacs

Payback Period 7 Months

Impact of Implementation

Energy saving.

P. I. INDUSTRIES LIMITED
Panoli (Gujarat)
PROJECT -3



Primary Brine pumps (2 nos) replaced.

Total savings /Annum	4.3 Lacs
Total Investment	1.9 Lacs
Payback period	6 months

Impact of Implementation

Energy saving.

P. I. INDUSTRIES LIMITED
Panoli (Gujarat)
PROJECT -4



New PHE Installed Voltas VAM.

Total saving /Annum	29 Lacs
Total Investment	4.5 Lacs

Impact of Implementation

Capacity Utilisation and Waste Heat consumed.

P. I. INDUSTRIES LIMITED
Panoli (Gujarat)
PROJECT -5



Cooling Tower Pump replaced

Total saving /Annum	4.1 Lacs
Total Investment	0.9 Lacs
Payback Period	3 Months

Impact of Implementation

Energy saving.

P. I. INDUSTRIES LIMITED
Panoli (Gujarat)

PROJECT- 6



Installation of Energy Efficient 250 Nm³/Hr Screw Compressor (INOX make) Nitrogen plant in place of Reciprocating compressor of 60 Nm³/Hr.

Capacity	250 Nm ³ /Hr
Total saving /Annum	7.2 Lacs
Total Investment	43.1Lacs

Impact of Implementation

Commercial Nitrogen Cylinders were obtained from outside for Nitrogen application for process requirements. The use of Nitrogen Cylinders is totally stopped.

P. I. INDUSTRIES LIMITED
Panoli (Gujarat)
PROJECT -7



160W MLL Lamps replaced by 2X28 W CFL

Total saving /Annum	4.1 Lacs
Total Investment	0.9 Lacs
Payback Period	3 Months

Impact of Implementation

Energy saving,

P. I. INDUSTRIES LIMITED
Panoli (Gujarat)
PROJECT -8



Energy Efficient Ejector Nozzles changed.

Total saving /Annum	9.9 Lacs
Total Investment	2.1 Lacs
Payback Period	3 Months

Impact of Implementation

Energy saving.

In house R & D Efforts / Technology Innovations / Process Up Gradations:

1. Common solvent purification circuit

P. I. INDUSTRIES LIMITED
Panoli (Gujarat)

Energy Conservations Plans and Targets:

P I INDUSTRIES LIMITED, PANOLI unit is committed to improve Energy Performance on Continual basis by innovations in the field of Electrical and Thermal Energy. For the year 2007-08, the Unit has planned / ordered few Major Energy Reduction Proposals as part of its main objectives.

SN	Energy Conservation Targets	Expected savings in Rs Lacs	Investment in Rs Lacs	Traget date (2007-08)
1	Replacement of cooling water pump for MPP1 circulation	2.80	2.30	Nov
2	Replacement of primary chilled water pumps	7.42	4.00	Dec
3	Replacement of Secondary chilled water pumps	4.82	4	Sep
4	Plate type Heat exchanger	3.03	1.75	May
5	FRP fans in cooling towers	2.12	1.54	Dec
6	Frequency reduction of CPP to 49.5	9.38	0.00	Jan
7	Changing of rotary switches to timer based push buttons for vessel lamp of Reactors	0.90	0.80	Dec
8	Replacement of 600TR Cooling Tower by 1200TR Cooling Tower	4.0	10.0	Aug
9	Soft water for cooling towers	1.2	3.8	Jan
10	New VFD for Air Compressor Drives	5.0	3.5	Feb
11	Installation of Desuperheater for Brine Screw Compressors	6.65	5.95	Mar
12	Replacement of Conventional Crossflow Cooling Tower with Mist type Cooling Tower	20.0	20.0	Mar
13	New Generation PLCs for Effective Energy Utilisation	3.5	2.0	Mar
14	Power Distribution Improvement	34.32	20.0	Nov

For Year 2007-2008:

Planned Investment: 79.64 Lakhs

Savings Expected: 105.14 Lakhs

Safety Health and Environment:

Environment:

P I Industries Limited is an ISO 14001 certified Company. In our Environment Policy, we are committed to maintain Safe WorkPlace, Environment by Minimizing Adverse Effects due to its Industrial Chemicals and Agrochemicals Manufacturing and Marketing Operations. The Company aims to Achieve Continual Improvements in areas of Waste Minimization, Optimum Use of Resources by Proactive Management and Good Housekeeping.

P. I. INDUSTRIES LIMITED
Panoli (Gujarat)

Water:

- Hot Condensate is recycled as Boiler Feed Water.
- All Waste Water Streams in plant are treated in ETP for COD reduction and purification and sent to CEPT.

Air:

- Scrubbers to all stacks are provided for completely Scrubbing all vent Gases.
- High Volume Samplers are provided for Ambient Air Monitoring.
- Work Place Monitoring is carried out for Gase and Noise to Ensure they are Well Within Limits.

Solids:

- All Solid Waste from Plants is sent to Bharuch Environment and Infrastructure Limited to incinerate.
- We have set up Landfill Facility to cater our Needs and other small scale units.

Safety:

We are OHSAS 18001 certified. We are Active Member in Local Crisis Group and played Major Role in Off Site Mock Drill for the District.

As per Health & Safety Policy, the Management is committed to safeguard the Safety, Health & Environment for All and to comply with all Relevant Statutory Requirements. The Company believes that Safety Concern & Statutory Compliance override all Activities including Production Targets and that all Accidents are Preventable.