

RELIANCE INDUSTRIES LIMITED

BARABANKI MANUFACTURING DIVISION

(FORMERLY INDIAN PETROCHEMICALS CORPORATION LIMITED , BARABANKI COMPLEX)

Dewa Road, P.O. Somaiya Nagar,

BARABANKI 225 123

COMPANY PROFILE

Reliance Industries Limited, Barabanki Manufacturing Division (Formerly Indian Petrochemicals Corporation Limited, Barabanki Complex) , situated at Barabanki (U.P), 28 Kms from Lucknow, started commercial production in January, 1987. The Company is engaged in manufacturing of Polyester Staple Fibre, Polyester & Tow with technology from Du Pont, USA. The initial installed capacity was 15,000 MT per annum but with its own development programmes, the Company has been able to enhance its capacity to 19400 MT per annum in 1994-95, 22400 in 1997-98, 31000 in 2002-03 and to 40000 MT in 2004-05.



In the year 1999, Company developed specialty polyester staple fibre "dope dyed black PSF",

In the year 2002, it had carried out plant revamping for modernisation of plant, increase production capacity and enhancing product quality. Following benefits were derived:

- Production of Dope Dyed Black Polyester Staple Fibre of international quality on continuous and sustained basis.
- Increase in production capacity of Dope Dyed Black Polyester Staple Fibre from 54 MT per day to 80 MT per day.
- Increase in production capacity of Semi Dull Polyester Staple Fibre from 65 MT per day to 90 MT per day.

In the year 2004-05, it had developed and regularised production of Dope Dyed Super Black PSF

In year 2005-06, the company has added new PSF products based on Extrusion Process

QUALITY AND ENVIRONMENT MANAGEMENT SYSTEMS

RIL, Barabanki Manufacturing Division (Formerly IPCL, Barabanki Complex) obtained ISO-9002 Certification in June, 1994. The Certification has been renewed in 1997 & 2000. The certification was upgraded to ISO 9001 : 2000 version in May 2003 and renewed in May 2006.

The Company has obtained ISO 14001 : 2004 certification for Environment management system in September 2005 and OHSAS 18001:1999 certification in June,2006.

ENERGY CONSUMPTION

RIL, Barabanki Manufacturing Division consumes fuels viz. FO in Steam Boilers & Dow Vaporiser and LDO/HSD for own power generation. In addition the company purchases electricity from UPPCL to meet their power requirements.

During the last 2 years, the energy consumption pattern was as below:

DESCRIPTION	UNIT	2005-06	2006-07
Electrical Energy	KWh/T	656	663
Thermal Energy	Mkcal/T	2.24	2.28
Total Manufacturing Cost	Rs Lacs	23863.78	26717.38
Total Energy Bill	Rs Lacs	2651.05	2879.80
Energy as % of Total Manufacturing Cost	%	11.11	10.78

ENERGY CONSERVATION COMMITMENT, POLICY AND SET-UP

RIL recognizes the need of energy conservation in national perspective and is highly committed for it. This has been defined clearly in Company's Energy Management Policy.



Reliance Industries Limited Energy Management Policy

Reliance Industries Limited plays a leading role in the national and global economy by providing quality goods and services in the materials and energy value chain.

Our Mission is:

- ❖ To become the lowest specific energy consumer in the industry.
- ❖ To widen our options for energy sources and
- ❖ To minimize the adverse impact of our operations on the environment.

We plan to achieve the above within the framework of sustaining the business by:

- ❖ Integrating energy management with the business management and establishing performance driven goals.
- ❖ Upgrading hardware, deploying new technologies and improving our practices to increase energy efficiency, reduce greenhouse gas emissions and minimize environmental impacts.
- ❖ Supporting scientific research and technological efforts to deliver new sources of energy including renewable and alternate fuels.
- ❖ Carrying out regular audits and training employees to promote energy conservation as a culture across the entire business functions.
- ❖ Continuously benchmarking our energy efficiency and energy productivity against others.
- ❖ Promoting awareness on energy conservation among all members of the Reliance family and the community at large.

A handwritten signature in blue ink, appearing to read 'M. D. Ambani'.

Mukesh D. Ambani
March 2007

We have set the following energy targets for 2007 - 2008:

Power - from 663 to 656 kWh per Ton of PSF
Fuel - from 0.228 to 0.225 MT per Ton of PSF

We shall achieve our objective by:

- ? Monitoring and controlling energy consumption on daily basis
- ? Creating awareness to the employees on efficient use of energy.
- ? Imparting training on energy conservation and energy efficiency
- ? Regular checking of steam, air, nitrogen & water leaks
- ? Improving insulation on pipes & vessels by regular checking
- ? Receiving, evaluating and implementing suggestions from in-plant personnel
- ? Continuous improvement of process, instrumentation and utilities to optimise the energy cost.
- ? Planning internal and external energy audits to identify areas of improvement.
- ? Adopting energy efficient and environment friendly technologies.
- ? Periodical review of energy efforts by C E C

Company's Health, Safety and Environmental Policy also emphasises on making judicious use of natural resources & raw materials and minimising waste.

To effectively monitor energy consumption and implementation of energy conservation programs, RIL, Barabanki Manufacturing Division has established an Energy Management Setup.

A **Central Energy Conservation Cell** headed by the **President** meets at regular interval to;

1. Set key monitoring and target indices,
2. Monitor energy consumption,
3. Discuss and evaluate various proposals for energy conservation.
4. Approve and review progress of action plans.

5. Decide for the training of people and awareness programs on Energy Conservation.

There are three Sub-Energy Cells having membership from all levels, and having the following responsibilities :

1. to study equipments & processes and evaluate their performance.
2. to receive suggestions, proposals from in-plant personnel, carry out feasibility study and develop an action plan for submission to Central Energy Conservation Cell.
3. to monitor steam, air, nitrogen, water leakages and steam traps on regular basis and also monitor plant lighting,
4. to explore energy conservation opportunities by debugging process equipments and processes.

Help of external agency like PCRA is also taken for energy audits.

To support the above system, RIL, Barabanki Manufacturing Division has nominated Energy Manager and Energy Auditor who are certified by BEE.

In the last 17 years specific energy consumptions were as below:

<u>YEAR</u>	<u>FUEL IN MT/ TON OF FIBRE</u>	<u>POWER IN KWH/ TON OF FIBRE</u>
1989-90	0.464	1293
1990-91	0.430	1206
1991-92	0.338	971
1992-93	0.314	868
1993-94	0.276	721
1994-95	0.278	684
1995-96	0.271	676
1996-97	0.274	647
1997-98	0.273	637
1998-99	0.221	548
1999-00*	0.251	661
2000-01*	0.255	663
2001-02*	0.253	701
2002-03	0.245	630
2003-04	0.227	620
2004-05*	0.239	643
2005-06*	0.225	656
2006-07	0.228	663

* Note : (1)The sp. consumption in 99-00, 00-01 and 01-02 were marginally high due to change in product mix, i.e. from the standard Semi-dull polyester staple fibre to Dope Dyed Black fibre. However, in 02-03 and 03-04, it has been brought down substantially due to energy conservation measures taken by the company. The sp. consumption in 2004-05 was high due to installation of new facilities under diversification project & stabilization of the plant.

(2) Till the year 2004-05, our products were being produced with the technology based on Continuous Polymerisation Process. In year 2005-06, we have added new PSF products based on Extrusion Process. The Specific power consumption on extrusion process is higher compared to continuous polymerisation process. For example, in year 2005-06 Sp.Power consumption on Cont. Poly. Process was 605kWH/MT, while on Extrusion Process it was 888 kWh/MT.

Therefore, the trend of data for 2005-06 is different than the previous years.

ENERGY CONSERVATION PLANS AND TARGETS

In last 17 years, the Company has made a total expenditure of Rs. **649 Lacs**, but has achieved larger savings in rupee term as well as in power and fuel.

YEAR	EXPEN DITURE MADE	CONSUMPTION PER MT OF FIBRE		SAVINGS IN POWER		SAVINGS IN FUEL		TOTAL SAVIN GS
	Rs.in Lacs	Power KWH	Fuel MT	Lacs Kwh	Rs.in Lacs	MT	Rs.in Lacs	Rs.in lacs
1991-92	–	971	0.338					
1992-93	0.40	868	0.314	12.76	24.75	297.5	13.37	38.12
1993-94	3.24	721	0.276	26.91	57.85	695.7	36.30	94.15
1994-95	9.03	684	0.278	7.57	20.21	--	--	20.21
1995-96	4.00	676	0.271	1.51	4.27	132.2	7.51	11.78
1996-97	1.02	647	0.274	5.53	17.30	--	--	17.30
1997-98	0.67	637	0.273	1.86	7.27	18.6	1.28	8.55
1998-99	0.63	548	0.221	21.32	85.28	1245.7	77.83	163.11
1999-00	2.04	661	0.251	1.21	4.97	154.02	23.16	28.13
2000-01	7.95	663	0.255	2.27	11.35	1.4	0.15	11.50
2001-02	306.83	701	0.253	5.32	25.97	627.8	60.29	86.26
2002-03	61.02	630	0.245	19.39	76.81	54.50	6.39	83.20
2003-04	97.30	620	0.227	12.78	51.52	233.60	28.00	79.52
2004-05	154.69	643	0.239	5.68	24.56	187.27	31.00	55.60
2005-06	0.67	656	0.225	8.89	47.15	287.5	47.24	94.39
2006-07	0	663	0.228	3.90	14.43	0	0	14.43
TOTAL	649.49			136.90	473.69	3935.79	332.52	806.25

The Company Management and employees are highly committed for continuous energy conservation programs and are confident of further improving upon their achievements.

Future Plans

Energy Conservation Measures	Anticipated Savings in Rs. Lakhs	Approx. Investment (Rs Lakhs)	Project Commencement & Completion Year
Installation of Rice husk fired boiler	823	590	2007-08 & 2008-09
Installation of FO fired DG Set	355	588	2007-08 & 2008-09

SAFETY AND ENVIRONMENT

RIL, Barabanki Manufacturing Division is quite conscious of its environment and social commitments. The Company has obtained ISO 14001:2004 certification in September 2005.

RIL, Barabanki Manufacturing Division's Policy gives management commitment to the safety of human life and property from the risks of manufacturing operations. The Company has obtained OHSAS 18001: 1999 in May'06

Company's HSE Policy has been defined as under,

RIL, Barabanki Manufacturing Division's Health, Safety and Environmental Policy

RIL, Barabanki Manufacturing Division is committed to:

- ? Conduct all its activities in such a manner as to avoid harm to employees, contractors, visitors and the community.
- ? Promote occupational health of its employees and contractors.
- ? Continual improvement of Health, Safety and Environment performance and prevention of pollution.
- ? Minimize adverse impact on environment and OH &S risks to the community that arise due to its operations.
- ? Utilize and conserve energy resources in an efficient manner so as to reduce emissions and generation of effluent and waste products.
- ? Comply with all applicable legal and other requirements concerning Health, Safety and Environment.

- ? Create a culture of learning and practicing Health, Safety and Environment systems, procedure and practices among all its employees and contractors.
- ? Make this policy available to public.

RIL, Barabanki Manufacturing Division strives to achieve these objectives by:

- ✍ Ensuring plants with proper and adequate safeguards for process safety.
- ✍ Investigating all incidents relating to Health, Safety and Environment followed by implementation of corrective measures.
- ✍ Carrying out process and operational changes through well-defined systems and strict adherence to the same.
- ✍ Communicating learning from investigations of incidents to all employees and taking steps to prevent such occurrences.
- ✍ Following effective use of safe working procedures and practices for operation, maintenance, inspection and emergency situations.
- ✍ Carrying out pre-employment and periodic medical check-up of its employees.
- ✍ Reviewing regularly and updating of systems and procedures.
- ✍ Implementing programs and appropriate protective measures to control such OH &S risks and environmental impacts.
- ✍ Training employees and contractors on health, safety and environment practices.
- ✍ Continuously monitoring work environment and plant effluents-gas, liquid and solid and taking measures to achieve better environmental performance.
- ✍ Conducting all work in a safe manner by providing personal protective equipment, tools and tackles.
- ✍ Keeping abreast of latest standards and practices and adopting the same where applicable.
- ✍ Auditing periodically work procedures and practices.

For a clean environment, the Company has planted more than 10,000 trees on its land all around the plant and runs an efficient Effluent Treatment Plant.

It monitors its air and water regularly. To check O₂ in Flue Gas, the Company has installed on-line oxygen gas analyzers with boilers and dowtherm vaporiser for better monitor and control of fuel-air mix.

In a significant step to keep environment clean, the Company had installed an Incinerator in March 2001 for the disposal of solid wastes.

In the year 2004-05, the Company has installed a Wet Scrubbing System for reduction of SPM from incinerator exhaust.

The Company is reusing the treated effluent water for horticulture purposes.

The documented HSE Management Procedures ensure,

Prevention and Control of Air and Water Pollution, Control on Waste disposals and Compliance to other statutory regulations

A high level Apex HSE Committee and Eight Sub-Committees monitor implementation of safety policies and procedures at regular intervals and plan improvement measures.

The Safety Manager along with Plant HSE Co-ordinators, co-ordinates the safety activities in the plant and maintains all necessary records.

ENCLOSURES

- i) Graphic representation of Consumption of Electricity and Fuel Oil per unit of production for last 18 years.

A N N E X U R E S