BRPL Bongaigaon

1.0 COMPANY PROFILE

Bongaigaon Refinery & Petrochemicals Limited was set up as a Government of India undertaking in February 1974. Government of India disinvested its entire shares holding (74.46%) in BRPL in favour of Indian Oil Corporation Limited (IOCL) w.e.f 29.3.2001. With sustained growth, BRPL has consolidated as a vibrant business organization in the entire country, and more particularly in the North-East.

BRPL is in the business of refining crude oil for production of petroleum fuels and other value added petrochemicals. The Refinery sector has a capacity to process 2.35 million tonnes of crude oil per annum. It produces various types of domestics, industrial and automotive fuels.

The Refinery was designed to process 1.0 million tonnes per annum of Assam Crude Oil. The processing capacity of the Refinery was augmented to 2.35 MMTPA by debottelenecking the Crude Distiller Unit-I in March 1987 and commissioning of new Crude Distillation Unit (CDU-II) in May 1995. There are 4 units in the Refinery Complex, namely Crude Distillation Unit-I & II (CDU-I &II), Delayed Coking Unit-I &II (DCU-I &II) along with Naphtha Splitter and LPG Recovery unit.

The basic unit of Petrochemicals sector is a Xylene plant of 107,000 tonnes per annum naphtha processing capacity. The Para-Xylene produced in the Xylene plant is further processed in the DMT plant. The major part of DMT produced is consumed for production of various grades of Polyester Staple Fibre (PSF) in the PSF plant.

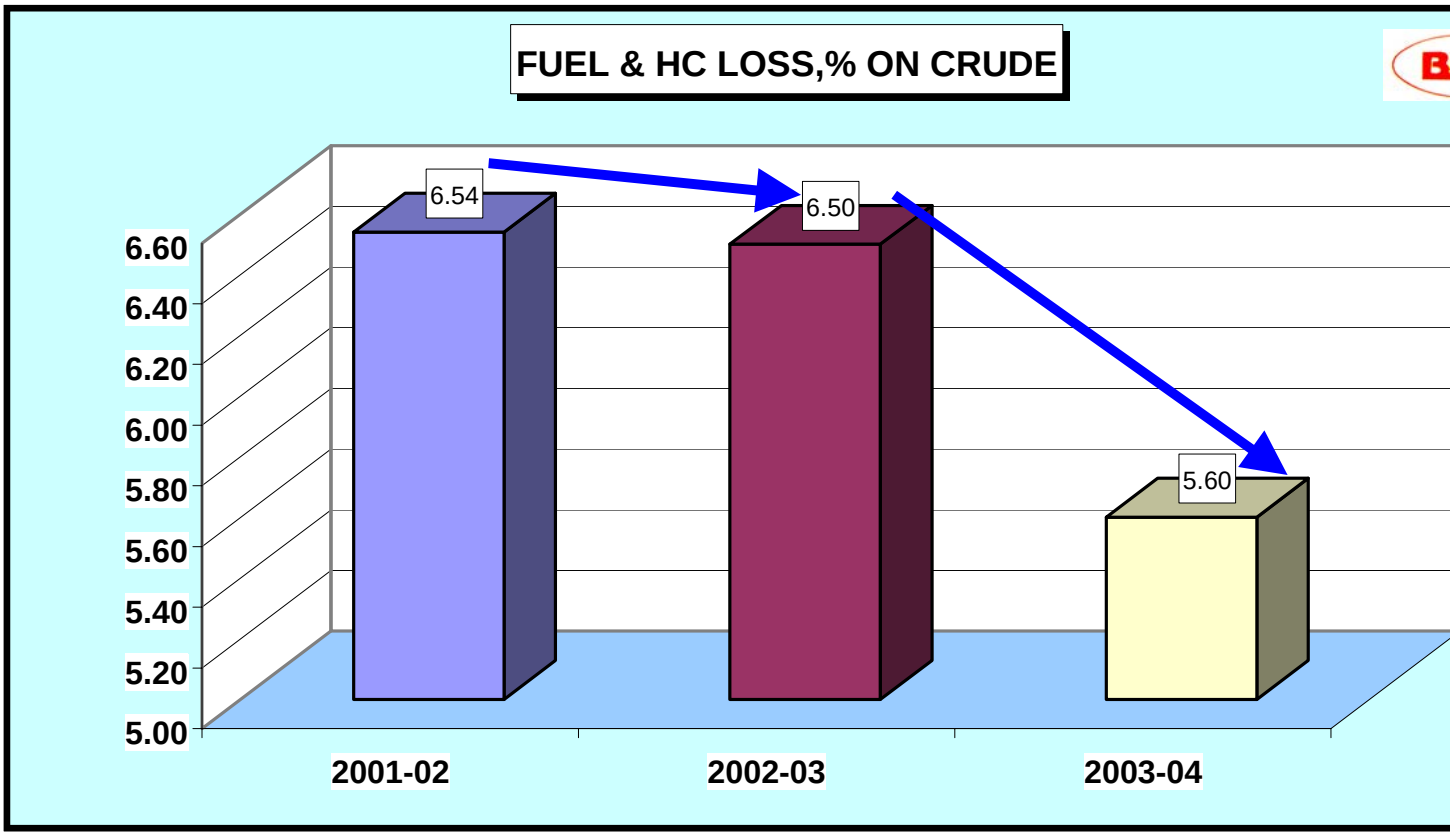
2.0 ENERGY CONSUMPTION:

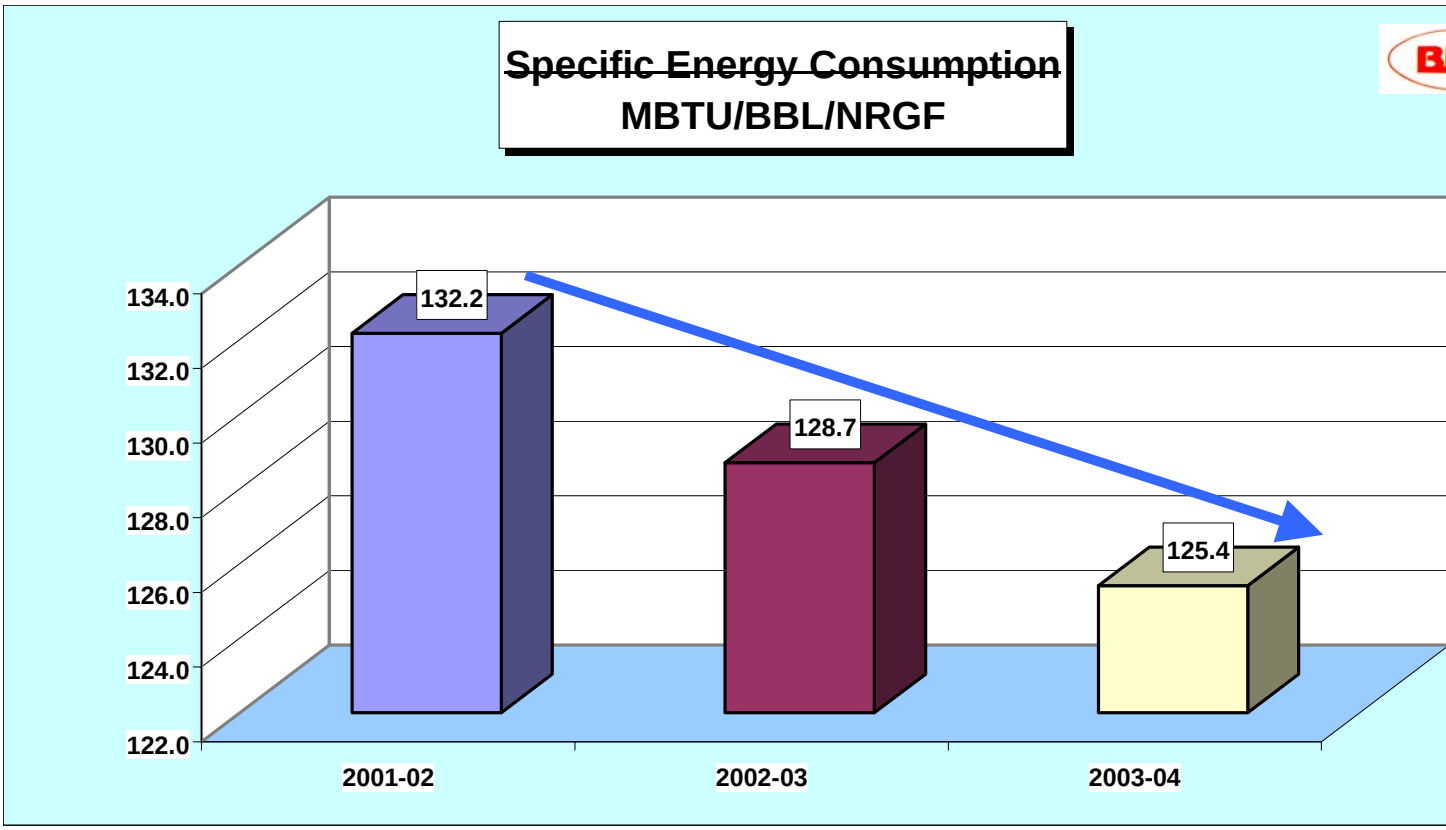
BRPL is putting continuous efforts on Energy conservation through continuous monitoring and control of operational activities.

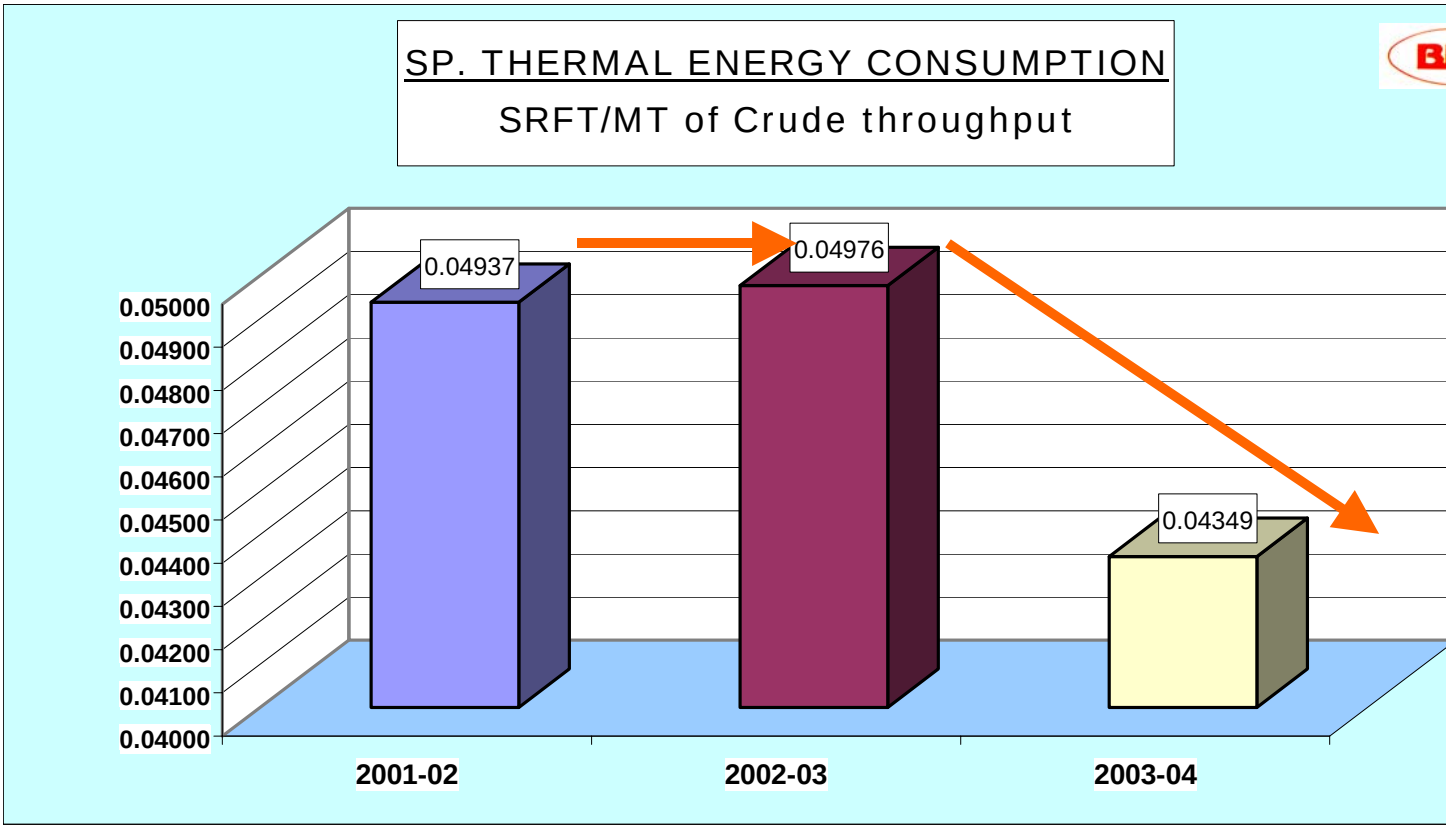
The fuel consumed in the entire complex is the combination of the liquid fuel oil and the fuel gas generated from the different units of the refinery sector.

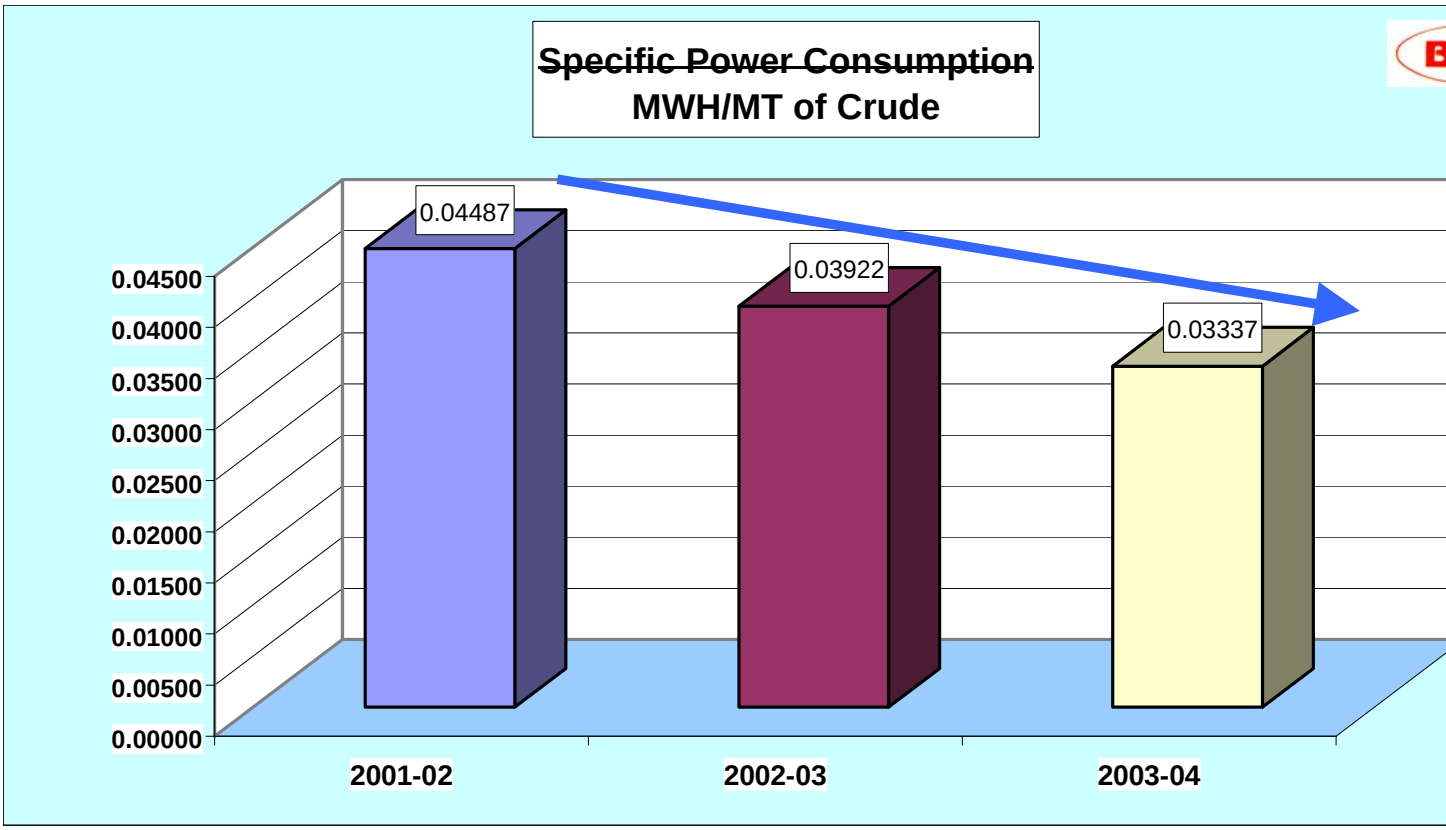
The various energy parameter for the past three years is given below:

Parameters	2001-02	2002-03	2003-04
Fuel & Hydrocarbon Loss:			
Fuel,% on crude	6.31	6.25	5.35
Hydrocarbon Loss,% on crude	0.23	0.25	0.25
Fuel & Loss,% on crude	6.54	6.50	5.60
% Improvement over 2001-02	-	0.6 %	14.4 %
MBTU/BBL/NRGF	132.2	128.7	125.4
% Improvement over 2001-02	-	2.6 %	5.1 %
Specific Power Consumption	0.044487	0.03922	0.03337
% Improvement over 2001-02	-	12.6 %	25.6 %
Specific Steam consumption	0.21905	0.20911	0.16584
% Improvement over 2001-02	-	4.5 %	24.3 %
Specific Direct fuel consumption	0.03165	0.03134	0.02925
% Improvement over 2001-02	-	1.0 %	7.6 %
Sp. Thermal Energy Consumption	0.04937	0.04976	0.04349
% Improvement over 2001-02	-	(0.8 %)	11.9 %


FUEL & HC LOSS,% ON CRUDE
6.54
6.50
5.60
6.60
6.40
6.20
6.00
5.80
5.60
5.40
5.20
5.00
2001-02
2002-03
2003-04


Specific Energy Consumption
MBTU/BBL/NRGF
132.2
128.7
125.4
134.0
132.0
130.0
128.0
126.0
124.0
122.0
2001-02
2002-03
2003-04


SP. THERMAL ENERGY CONSUMPTION
SRFT/MT of Crude throughput
0.05000
0.04900
0.04800
0.04700
0.04600
0.04500
0.04400
0.04300
0.04200
0.04100
0.04000
0.04937
0.04976
0.04349
2001-02
2002-03
2003-04


Specific Power Consumption
MWH/MT of Crude
0.04500
0.04000
0.03500
0.03000
0.02500
0.02000
0.01500
0.01000
0.00500
0.00000
0.04487
0.03922
0.03337
2001-02
2002-03
2003-04

3.0 ENERGY CONSERVATION COMMITMENT,POLICY AND ORGANISATIONAL SET UP

BRPL continued its efforts on energy Conservation through continuous monitoring and control of operational activities and implementing new energy conservation schemes. The fuel & loss, specific energy consumption in terms of MBTU/BBL/NRGF and Thermal Energy Consumption during the year 2003-04 was the lowest ever against the previous years.

The monthly energy & loss performance is being reviewed by **Director (Operation)** in the **Production Co-ordination Meeting (PCM)**. Presentation are made on the energy related topics such as steam & power balance, Refinery & Captive Power performance, Furnace performance, slop analysis, cooling tower analysis, status of Joint Energy Audit recommendations etc. These things are further reviewed in the **Chairman Review Meeting (CRM)** being chaired by **Chairman & Managing Director**.

Energy Management Cell of BRPL has a dedicated certified Energy Manager who is responsible for the energy management activities of company.

BRPL has published its Energy Management Policy, the copy of the same is enclosed.

4.0 ENERGY CONSERVATION ACHIEVEMENTS

Various energy conservation measures have been adopted in the plants/processing complex to make the operations more efficient. Major projects implemented during the year 2003-04 :

4.1 Destaging of wash water pump (11-P-160 BB) in Crude Distillation Unit-I was done in March,2004.

		Before destaging	After Destaging
No. of Stage	=	12	9
Discharge pressure	=	47.5 Kg/cm^{2}g	37 Kg/cm^{2}g
Current drawn	=	50 Amps	34 Amps
Savings in current	=	16 Amps	
Power savings	=	11 KW	

4.2 Destaging of one of the Crude oil pump (11-P001E) was done in April,03.

		Before destaging	After Destaging
No. of Stage	=	4	3
Discharge pressure	=	39 Kg/cm^{2}g	30 Kg/cm^{2}g
Current drawn	=	37 Amps	30 Amps
Savings in current	=	7 Amps	
Power savings	=	68 KW	

4.3 Condensate recovery from the steam heater (E-30) of CDU-II furnace, which has been diverted to wash water tank of Desalter, resulting in the savings of 12 M3/day of raw water consumption. The scheme was implemented in September,2003.

4.4 Diversion of FD/ID fan (CDU-II) furnace) lube cooler & bearing cooling water to wash water tank of Desalter, resulting in the saving of 230 M3/day raw water consumption. The scheme was implemented in November,2003.

4.5 Replacement of 1151 indicating filament lamps with LED lamps resulting in savings of 33 MWH power.

4.6 Taking service water as once through wash medium against DM water in Coker Naphtha Wash Column (C-007) in DCU-I&II resulted in 8400 M3 of DM water saving and power saving in pumping the DM water.

4.7 Other measures:

- BRPL prepared a road map to achieve the specific energy consumption of 110 MBTU/BBL/NRGF.
- A training programme was organized on Energy & Hydrocarbon minimization.
- Increase of coke chamber cycle from 24 hrs to 30 hrs in DCU-I&II resulting in reduction of energy consumption & loss due to extended chamber cycle on account of lower steam consumption, power consumption, slop generation and flare loss.
- Isolation of steam to the tank base coils of 3 RCO tanks resulted in steam savings of 21.5 MTPD.

5.0 ENERGY CONSERVATION PLANS AND TARGETS

BRPL is committed for improvement in the energy conservation areas. The various ENCON projects under consideration/implementation is already given under sl. No. 13(c). Targets for the future years are also given 19(b).

6.0 ENVIRONMENT & SAFETY

ENVIRONMENT

Protection of the environment within and around the operational areas with a view to enhance the quality of air and water as well as to protect the flora and fauna has remained one of the basic premises of operating the various plants of BRPL.

By remaining proactive to the environment needs of the region and maintaining a strict vigil on the various environmental parameters, the company has been able to remain well within the standards prescribed for emissions and effluents by the statutory authorities.

The Environment Management System (EMS) adopted by the company received ISO-14001 certification in February,2001. After unification of ISO-9001 and 14001Quality and Environment Management documents, fresh certification of EMS was received on 22nd October,2003 and is valid for three years. While processing for re-certification, goals and target were reassessed to further improve the environmental performance of the company.

The company is reusing treated effluent for fire fighting and cooling water makeup in cooling towers inside the complex. The tertiary treatment plant put up for polishing the effluent to make it suitable for reuse in the cooling tower has contributed significantly in increased reuse of effluents resulting in reduction of effluent discharge from the complex. Consequently fresh water consumption has been reduced.

All major storm water channels and the open drains, which generally do not carry any major pollutants, are connected to an ecological park constructed inside the complex, thereby facilitating natural oxidation. The ecological park, besides acting as a storage pond for the

storm water drainage system inside the complex, helps in exercising tighter control on the quality of the storm water emanating from the complex. The quality of water flowing out of the ecological park is monitored regularly. Eco-park has become a shelter to a variety of birds and aquatic life.

SAFETY

BRPL has been consistently aiming to invoke among the employees the highest possible standards of Safety consciousness. Training and education of the operational staff and officers at regular intervals are being carried out to drive home the need to achieve productivity without sacrificing safety in operation. In addition, BRPL regularly conducts onsite and offsite Mock drills with a view to assess the preparedness of employees as well the external agencies including district administration, Army, civil defense etc.

The recommendation of the surprise safety check of the company carried out by OISD in Februrary,2004 are under implementation.

Internal Safety Audit (ISA) of the plants and facilities was conducted during the year by inter multidisciplinary audit teams.

As a reflection of these measures, the company did not have any lost time accident since 24.02.2002 and achieved continuous 767 days (8.45 million man-hours) without any lost time accident as on 31.03.2004.

Due to its effort, BRPL was given Oil Industry Safety Award, 2002-03 -Third best overall Safety performance award amongst Refineies by Ministry of Petroleum & Natural Gas.

21 Whether any dispute pertaining to statutory requirements of safety and pollution control is pending with any Government agency. If yes give details.

Ans. There is no dispute pertaining to statutory requirements of safety and pollution control is pending with any Government agency.

23.0 DOCUMENTS ATTACHED

I. Copies of Certificates (with year wise marking) pertaining to statutory requirements such as safety and pollution control for the period 2001-04 are enclosed.

II. One copy each of the audited annual reports for the years,2001-02 , 2002-03 and 2003-04 are enclosed.

III. A brief write-up of the unit has been mentioned at Sl.No. 22 alongwith photographs depicting equipment/locations where energy efficiency have been undertaken and a Floppy Diskette/CD containing the entire write-up is enclosed.

(B.K.Gogoi)
Chairman & Managing Director

Date:
Place: Delhi

(Organisation seal)

Ref : TSD/EMC/BEE/01 27 September 2004

Director-General
Bureau of Energy Efficiency
Hall No. IV, 2nd Floor, NBCC Tower,
15, Bhikaji Cama Place,
New Delhi - 110066

Subject : National Energy Conservation Award, 2004

Dear Sir,

We are enclosing herewith two sets of filled-up questionnaire along with Annual Report of the company for the years 2001-02, 2002-03 and 2003-04 for consideration of the National energy Conservation Award,2004.

Yours faithfully,

(B. K. Gogoi)
Chairman & Managing Director

Enclosures : As above

Copy to :

Director (Energy Conservation)
Ministry of Power,
Shram Shakti Bhawan,
Rafi Marg,
New Delhi - 110001