



# C O N T E N T S

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# Bharat Heavy Electricals Limited

Regd. Office: BHEL House, Siri Fort, New Delhi-110049

## NOTICE

Notice is hereby given that the 41<sup>st</sup> Annual General Meeting of the Members of BHARAT HEAVY ELECTRICALS LIMITED will be held on 'Thursday', the 29<sup>th</sup> September, 2005 at 10.00 A.M. at FICCI Auditorium, Barakhamba Road (Tansen Marg), New Delhi-110001, to transact the following business:-

### ORDINARY BUSINESS

1. To receive, consider and adopt the audited Balance Sheet of the Company as at 31<sup>st</sup> March, 2005 and the Profit & Loss Account for the financial year ended on that date together with the Reports of the Directors and Auditors thereon.
2. To declare dividend.
3. To appoint a Director in place of Shri Ramji Rai, who retires by rotation and being eligible, offers himself for re-appointment.
4. To appoint a Director in place of Shri S. K. Jain, who retires by rotation and being eligible, offers himself for re-appointment.
5. To fix the remuneration of the Auditors.

### SPECIAL BUSINESS

6. To consider and, if thought fit, to pass with or without modification, the following resolution as an **Ordinary Resolution**:  
"RESOLVED THAT Shri A. K. Mathur, who was appointed as a Director pursuant to Article 67 of the Articles of Association of the Company read with Section 260 of the Companies Act, 1956 and who holds Office upto the date of this Annual General Meeting and in respect of whom, the Company has received a notice in writing, from the Director himself pursuant to the provisions of Section 257 of the Companies Act, 1956, be and is hereby appointed as a Director of the Company."
7. To consider and, if thought fit, to pass with or without modification, the following resolution as an

### Ordinary Resolution:

"RESOLVED THAT Shri K. Ravi Kumar, who was appointed as a Director pursuant to Article 67 of the Articles of Association of the Company read with Section 260 of the Companies Act, 1956 and who holds Office upto the date of this Annual General Meeting and in respect of whom, the Company has received a notice in writing, from the Director himself pursuant to the provisions of Section 257 of the Companies Act, 1956, be and is hereby appointed as a Director of the Company."

8. To consider and, if thought fit, to pass with or without modification, the following resolution as an **Ordinary Resolution**:

"RESOLVED THAT Dr. Surajit Mitra, who was appointed as a Director pursuant to Article 67 of the Articles of Association of the Company read with Section 260 of the Companies Act, 1956 and who holds Office upto the date of this Annual General Meeting and in respect of whom, the Company has received a notice in writing, from the Director himself pursuant to the provisions of Section 257 of the Companies Act, 1956, be and is hereby appointed as a Director of the Company."

9. To consider and, if thought fit, to pass with or without modification, the following resolution as an **Ordinary Resolution**:

"RESOLVED THAT Shri C. S. Verma, who was appointed as a Director pursuant to Article 67 of the Articles of Association of the Company read with Section 260 of the Companies Act, 1956 and who holds Office upto the date of this Annual General Meeting and in respect of whom, the Company has received a notice in writing, from the Director himself pursuant to the provisions of Section 257 of the Companies Act, 1956, be and is hereby appointed as a Director of the Company."

10. To consider and, if thought fit, to pass with or without modification, the following resolution as a **Special Resolution**:

“RESOLVED THAT pursuant to Section 31 and other applicable provisions, if any, of the Companies Act, 1956, and subject to approval of the Department of Heavy Industry, Ministry of Heavy Industries and Public Enterprises, Government of India, the Articles of Association of the Company be and is hereby altered in the following manner:

- A) By deletion of existing Article 69 (22) together with all the conditions vide (i) to (iii) provided thereunder and substituting therefor Article 69 (22) with marginal notes reading as “To establish Joint Ventures and Wholly Owned Subsidiaries” as follows:

69 (22)	To establish financial Joint Ventures and Wholly Owned Subsidiaries in India or abroad provided the equity investment of the Company is limited to the following: i) 15 per cent of the networth of the Company in one project limited to Rs.1000 Crores. ii) 30 per cent of the networth of the Company in all projects put together.
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- B) By insertion of new sub-clause 23 under existing Article 69 numbered as Article 69(23) immediately after Article 69 (22) with the marginal notes reading as “Mergers and Acquisitions”.

69 (23)	To approve Mergers & Acquisitions subject to conditions that: (i) It shall be as per the growth plan and in the core area of functioning of the Company. (ii) Conditions / limits shall be as in the case of establishing joint ventures / subsidiaries, and within the overall ceiling of 30 per cent of the networth of the Company for Joint ventures/subsidiaries, Mergers & Acquisitions put together. (iii) The Cabinet Committee on Economic Affairs (CCEA) shall be kept informed in case of investments abroad.
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- C) By insertion of new sub-clause (d) under existing Article 69 (4) numbered as Article 69 (4) (d) with the marginal notes reading as “Sub-delegation of powers relating to Human Resource Management”.

69(4)(d)	to further delegate the powers relating to Human Resource Management (appointments, transfer, posting, etc.) of below Board level executives to sub-committees of the Board or to executives of the Company, as may be decided by the Board of Directors.”
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By Order of the Board of Directors

Sd/-  
( N. K.SINHA)  
COMPANY SECRETARY

New Delhi

Dated: 1st September, 2005

Registered Office:

**"BHEL House", Siri Fort, New Delhi-110 049.**

#### **NOTES:-**

1. A MEMBER ENTITLED TO ATTEND AND VOTE AT THE MEETING IS ENTITLED TO APPOINT A PROXY TO ATTEND AND VOTE INSTEAD OF HIMSELF AND THE PROXY NEED NOT BE A MEMBER OF THE COMPANY. PROXY FORM DULY COMPLETED SHOULD BE DEPOSITED AT THE REGISTERED OFFICE OF THE COMPANY NOT LESS THAN FORTY-EIGHT HOURS (48 HOURS) BEFORE THE SCHEDULED TIME OF THE ANNUAL GENERAL MEETING. BLANK PROXY FORM IS ENCLOSED.
2. Relevant Explanatory Statement pursuant to Section 173(2) of the Companies Act, 1956, in respect of Special Business as set out above is annexed hereto.
3. Brief resume of each of the Directors proposed for appointment and re-appointment is given as Annexure- 2 to the Directors' Report.
4. Shri Ramji Rai and Shri S.K. Jain, Directors retire by rotation and being eligible, offer themselves for reappointment. However, as per terms of their appointment, the tenure of Shri Ramji Rai is upto 31.08.2006 and Shri S.K. Jain upto 31.08.2007.
5. The Register of Members and Share Transfer Books of the Company shall remain closed from 9<sup>th</sup> September, 2005 to 29<sup>th</sup> September, 2005 (both days inclusive) for the purpose of payment of dividend, if any, approved by the Members.



6. Members are advised to submit their Electronic Clearing Service (ECS) mandates in the form (given elsewhere in the Annual Report) duly filled in and signed, to enable the Company to make remittance by means of ECS.
7. The dividend on the Equity Shares as recommended by the Board of Directors for the year ended 31<sup>st</sup> March, 2005 when sanctioned at the Annual General Meeting of the Company will be payable within 30 days from the date of declaration of dividend by the members i.e. on or before 28<sup>th</sup> October, 2005, to those shareholders whose name appears on the Company's Register of Members or as the beneficial owner of shares in the records of the Depository as on Friday, the 9<sup>th</sup> September, 2005.
8. Pursuant to Section 205A read with Section 205C of the Companies Act, 1956, as amended, the dividend amounts which remain unpaid / unclaimed for a period of 7 years, are required to be transferred to the Investors Education & Protection Fund of the Central Government. After that there remains no claim of the members whatsoever on the said amount. Accordingly, the dividend for the Financial year 1997-98 which remains unclaimed is due to be transferred to the said account after 30<sup>th</sup> September 2005 and for the further years commencing from 1998-99 onwards on their respective due dates.

Members who have not claimed / encashed their Dividend so far for the financial year ended 31<sup>st</sup> March 1998 or any subsequent financial year(s) may approach the Company for obtaining payments thereof before expiry of the stipulated 7 years period.
9. Members may avail facility of nomination in terms of Section 109A of the Companies Act, 1956, by nominating in the Form-2B (given elsewhere in the Annual Report) any person to whom their shares in the Company shall vest in the event of their death.
10. Pursuant to Section 619(2) read with Section 224 (8) (aa), the Companies Act, 1956, the Auditors of a Government Company shall be appointed or Meeting. The appointment of Statutory Auditors of the Company for the year 2005-2006 is awaited from C&AG of India. The General Meeting may, authorise the Board to fix up an appropriate remuneration of Auditors for the year 2005-2006 after taking into consideration the increase in volume of work and prevailing inflation.
11. A corporate member shall be deemed to be personally present only if it is represented in accordance with Section 187 of the Companies Act, 1956 i.e. only if the corporate member sends certified true copy of the board resolution / power of attorney authorizing the representative to attend and vote at the Annual General meeting.
12. Members are requested to notify immediately any change of address:
  - i. to their Depository Participants (DPs) in respect of their electronic share accounts, and
  - ii. to the Company at its Registered Office in respect of their physical shares, if any , quoting their folio number, Banker's name and account number to ensure prompt and safe receipt of dividend warrants.
13. Members attending the meeting are requested to complete the enclosed Attendance Slip and deliver the same at the entrance of the meeting venue. However, entry to the Auditorium will be strictly on the basis of the entry slip available at the counters at the venue and to be exchanged with attendance slip.
14. Members desirous of getting any information about the accounts and operations of the Company are requested to address their queries to the Company atleast a week prior to the date of the meeting, so that the information required can be made readily available at the meeting.

15. Members are requested:-

- i) to bring their copies of Annual Report, Notice and Attendance Slip at the time of the meeting.
- ii) to quote their Folio Nos. in all correspondence.
- iii) to note that no briefcase or bag will be allowed to be taken inside the auditorium for security reasons.
- iv) to note that no gifts will be distributed in the AGM.

By Order of the Board of Directors

Sd/-  
( N. K. SINHA )  
COMPANY SECRETARY

#### **ANNEXURE TO THE NOTICE**

#### **EXPLANATORY STATEMENT PURSUANT TO SECTION 173(2) OF THE COMPANIES ACT, 1956**

The following explanatory statement sets out the material facts relating to the business mentioned in item Nos. 6 to 10 of the accompanying Notice dated 1st September, 2005.

##### **ITEM NO. 6**

Shri Arun Kumar Mathur aged 58 years is a Mechanical Engineer. As per the direction of the Govt. of India, Shri Mathur was appointed as Director (IS & P) of the Company w.e.f. 16.05.2005 till the date of superannuation (31.08.2007) or until further orders, whichever event occurs the earliest, vice Shri H.W. Bhatnagar. Having been so appointed, Shri Mathur holds office till the date of ensuing Annual General Meeting by virtue of Section 260 of the Companies Act, 1956 read with Article 67(iv) of the Articles of Association of the Company, and is eligible for re-appointment.

In terms of Section 257 of the Companies Act, 1956, the Company has received a Notice in writing along with a deposit of Rs.500/- from the Director himself, proposing his candidature for the Office of Director of the Company.

None of the Directors of the Company except Shri A. K. Mathur is, in any way, concerned or interested in the resolution.

The Board of Directors commends the resolution for approval of the shareholders.

##### **ITEM NO. 7**

Shri Krishnaswamy Ravi Kumar aged 56 years is M. Tech. As per the direction of the Govt. of India, Shri Ravi Kumar was appointed as Director (Power) of the Company w.e.f. 16.05.2005 till the date of superannuation (30.06.2009) or until further orders, whichever event occurs the earlier. Having been so appointed, Shri Ravi Kumar holds office till the date of ensuing Annual General Meeting by virtue of Section 260 of the Companies Act, 1956 read with Article 67(iv) of the Articles of Association of the Company, and is eligible for re-appointment.

In terms of Section 257 of the Companies Act, 1956, the Company has received a Notice in writing along with a deposit of Rs.500/- from the Director himself, proposing his candidature for the Office of Director of the Company.

None of the Directors of the Company except Shri K. Ravi Kumar is, in any way concerned or interested in the resolution.

The Board of Directors commends the resolution for approval of the shareholders.

##### **ITEM NO. 8**

Dr. Surajit Mitra, aged 53 years is the Joint Secretary to the Government of India, Ministry of Heavy Industries & Public Enterprises, Department of Heavy Industry. As per the direction of the Govt. of India, Dr. Mitra was appointed as Director of the Company w.e.f. 28.07.2005 vice Shri D. R. S. Chaudhary. Having been so appointed, Dr. Mitra holds office till the date of ensuing Annual General Meeting by virtue of Section 260 of the Companies Act, 1956 read with Article 67(iv) of the Articles of Association of the Company, and is eligible for re-appointment.

In terms of Section 257 of the Companies Act, 1956, the Company has received a Notice in writing along with a deposit of Rs.500/- from the Director himself, proposing his candidature for the Office of Director of the Company.

None of the Directors of the Company except Dr. Surajit Mitra, is in any way concerned or interested in the resolution.



The Board of Directors commends the resolution for approval of the shareholders.

**ITEM NO. 9**

Shri C. S. Verma aged 46 years is M. Com., MBA, FCS and AICWAI. As per the direction of the Govt. of India, Shri Verma was appointed as Director (Finance) of the Company for a period of five years with effect from the date of assumption of charge of the post i.e. 01.09.2005 or till the date of his superannuation or until further orders, whichever event occurs the earliest. Having been so appointed, Shri Verma holds office till the date of ensuing Annual General Meeting by virtue of Section 260 of the Companies Act, 1956 read with Article 67(iv) of the Articles of Association of the Company, and is eligible for re-appointment.

In terms of Section 257 of the Companies Act, 1956, the Company has received a Notice in writing along with a deposit of Rs.500/- from the Director himself, proposing his candidature for the Office of Director of the Company.

None of the Directors of the Company except Shri Verma is, in any way concerned or interested in the resolution.

The Board of Directors commends the resolution for approval of the shareholders.

**ITEM NO. 10**

The Department of Public Enterprises, Ministry of Heavy Industries & Public Enterprises, Government of India vide their Office Memorandum (OM) No. 18(24)/2003-GM- GL.64 dated 05.08.2005 have enhanced the delegated powers to Boards' of Navratna Public Sector Enterprises (PSEs).

Accordingly, in conformity with the guidelines stipulated in the aforesaid O.M. dated 05.08.2005, your Directors consider it necessary to effect alteration / addition in the Articles of Association of the company.

A copy of the existing Memorandum and Articles of Association of the Company together with the proposed alterations are available for inspection between the hours of 3 PM to 5 PM on all working days upto the date of the Annual General Meeting.

Your Directors, therefore, place before you the proposal and recommend amendments of the Articles of

Association of the Company, as listed out in the proposed resolution, which are self-explanatory.

None of the Directors of your Company is interested or concerned in this Resolution.

By Order  
of the Board of Directors  
Sd/-  
(N. K. SINHA)  
COMPANY SECRETARY

New Delhi.

Dated: 1st September, 2005

Registered Office:

**"BHEL House", Siri Fort, New Delhi-110 049.**

# BHEL AT A GLANCE

(Rs. in million)

	<u>2003-04</u>	<u>2004-05</u>	<u>CHANGE (%)</u>
Turnover	86625	103364	19.32
Value Added	36800	42540	15.60
Employee (Nos.)	43952	43302	-1.48
Profit Before Tax	10148	15816	55.85
Profit After Tax	6582	9534	44.85
Dividend	1469	1958	33.29
Dividend Tax	190	266	40.00
Retained Earnings	4923	7310	48.49
Total Assets	116564	144915	24.32
Net Worth	52781	60269	14.19
Total Borrowings	5400	5370	-0.56
Debt : Equity	0.10	0.09	-10.90
Per Share (in Rupees) :			
- Net worth	215.64	246.24	14.19
- Earnings	26.89	38.95	44.86
- Dividend	6.00	8.00	33.33

(US \$ in million)

Turnover	1976	2371	19.98
Profit Before Tax	232	363	56.71
Profit After Tax	150	219	45.65

**Conversion Rates** (Rate as on 31st March):

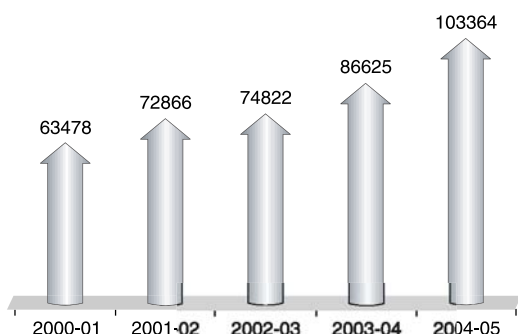
1 US \$ = Rs. 43.83 for 2003-04

1 US \$ = Rs. 43.59 for 2004-05



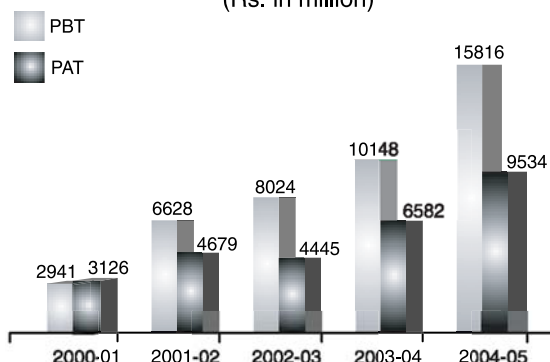
## TURNOVER

(Rs. in million)



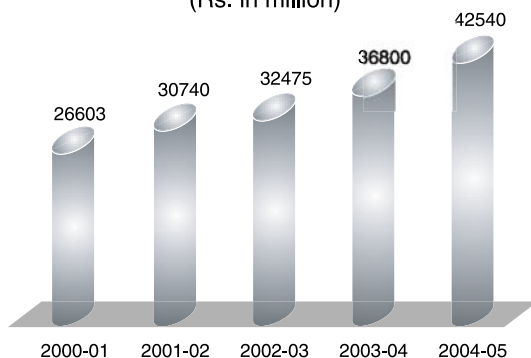
## PROFIT

(Rs. in million)



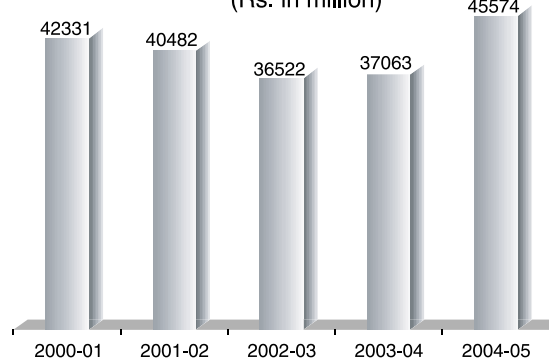
## VALUE ADDED

(Rs. in million)



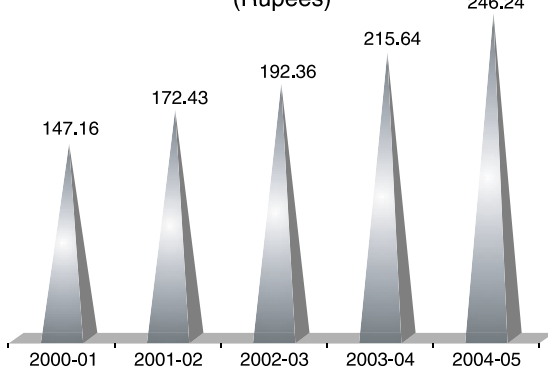
## CAPITAL EMPLOYED

(Rs. in million)



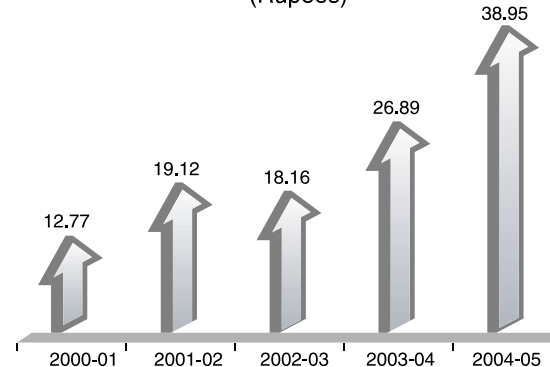
## NET WORTH PER SHARE

(Rupees)



## EARNINGS PER SHARE

(Rupees)



## FIVE YEAR SUMMARY

(Rs.in million)

	2004-05	2003-04	2002-03	2001-02	2000-01
<b>EARNINGS</b>					
Sale of products & services to customers	103364	86625	74822	72866	63478
Other Income	6556	5127	5087	4940	5054
Changes in stock	5398	-306	-453	-373	2507
Total Earnings	115318	91446	79456	77433	71039
Materials	50977	36347	31604	33068	30496
Personnel Payments	16504	16395	15046	14446	21702 *
Other mfg., admn. & selling expenses	29018	25975	22380	20629	13884 **
Outgoings before interest & depr.	96499	78717	69030	68143	66082
Profit before depreciation, interest & tax	18819	12729	10426	9290	4957
Depreciation	2189	1980	1854	1692	1578
Gross Profit	16630	10749	8572	7598	3379
Interest	814	601	548	970	438
Profit before tax	15816	10148	8024	6628	2941
Provision for tax	6282	3566	3579	1949	-185
Profit after tax	9534	6582	4445	4679	3126
Dividend (incl.dividend tax)	2224	1659	1104	979	809
Retained Profit	7310	4923	3341	3700	2317
* includes arrears of wage revision of Rs. 7078 million from 1.1.97 to 31.3.2000					
**after withdrawal of provision in respect of wage arrears Rs. 5140 million					
<b>WHAT THE COMPANY OWNED</b>					
Gross Block	36289	34596	33493	31820	30040
Less : accumulated depreciation & lease adj.	25847	23655	21788	20054	18614
Net Block	10442	10941	11705	11766	11426
Capital WIP	953	1086	587	567	612
Investments	90	290	103	103	103
Current Assets, Loans & Advances	133430	104247	83484	80514	75762
Total assets	144915	116564	95879	92950	87903
<b>WHAT THE COMPANY OWED</b>					
Borrowings (incl. Credits for assets taken on lease)	5370	5400	5310	6658	10256
Current liabilities & provisions	84459	63369	47561	47135	41630
Total liabilities	89829	68769	52871	53793	51886
<b>NET WORTH OF THE COMPANY</b>					
Share Capital	2448	2448	2448	2448	2448
Reserves & Surplus	57821	50512	45589	42248	35856
Less : Deferred Revenue Expenditure	0	179	955	2493	2286
Net Worth	60269	52781	47082	42203	36018
<b>CAPITAL EMPLOYED</b>	45574	37063	36522	40482	42331
<b>VALUE ADDED</b>	42540	36800	32475	30740	26603
<b>RATIOS</b>					
PBDIT to total assets (%) #	14.4%	12.0%	11.0%	10.3%	5.8%
Gross profit to capital employed (%) #	40.2%	29.2%	22.3%	18.3%	9.1%
Earnings per share (Rs.)	38.95	26.89	18.16	19.12	12.77
Net worth per share (Rs.)	246.24	215.64	192.36	172.43	147.16
Current Ratio	1.58	1.65	1.76	1.71	1.82
Total Debt / Equity	0.09	0.10	0.11	0.16	0.28

# On the basis of average net assets and capital employed



## DIRECTORS' REPORT

Your Directors have pleasure in presenting their 41st Annual Report together with audited accounts of the Company for the year ended March 31, 2005.

### PERFORMANCE HIGHLIGHTS

Your company has completed another successful year in 2004-05 and has registered a net profit of Rs. 9534 million. Net worth of the company has gone up from Rs. 52781 million in 2003-04 to Rs. 60269 million in 2004-05 registering an increase of 14.2%. NAV per share has increased from Rs. 215.6 in 2003-04 to Rs. 246.2 in 2004-05.

Major highlights of performance during 2004-05 are summarised below:

	(Rs. in million)		
	2004-05	2003-04	Increased by
Turnover	103364	86625	19.32%
Profit Before Tax	15816	10148	55.85%
Profit After Tax	9534	6582	44.85%
NAV per share (Rs.)	246.2	215.6	14.19%

The details of appropriation of profit for the year are as follows:

	(Rs. in million)	
	2004-05	2003-04
Profit after tax	9534	6582
Add : – Balance of Profit b/f from last year	1035	519
– Transfer from Foreign Project Reserve	32	106
	<u>10601</u>	<u>7207</u>
Appropriations:		
– Foreign Project Reserve	NIL	14
– Bond Redemption Reserve	1000	1000
– Dividend – Interim	857	734
– Final	1101	734
– Corporate Dividend Tax	267	190
– Transfer to General Reserve	5000	3500
– Carried to Balance Sheet	2376	1035
	<u>10601</u>	<u>7207</u>

Dividend of 80% (including an interim dividend of 35% approved by the Board and already paid), amounting to Rs. 1958 million, on the paid up capital of Rs. 2447.60 million has been recommended for 2004-05, as compared to 60%

dividend (including an interim dividend of 30%) declared for 2003-04. In addition, a provision of Rs. 154.47 million has been made for Corporate Dividend Tax on the final dividend proposed. Corporate Dividend Tax of Rs. 111.96 million has already been paid on the interim dividend.

### ORDERS RECEIVED

Orders received during the year increased by 10.64% from Rs. 164775 million in 2003-04 to Rs. 182300 million in 2004-05. Sector wise orders booked are as follows:

	(Rs. in million)	
	2004-05	2003-04
Power Sector	134750	126785
Industry Sector	41170	35670
International Operations	6380	2320
Total Orders Booked	182300	164775
Order Book outstanding as at the end of the year	320000	236500

### RATING OF BHEL VIS-À-VIS MOU TARGETS

Performance of BHEL for the year 2003-04 has been rated as 'Excellent' in terms of the MOU signed with the Government of India. The MOU rating for 2004-05 is under finalization by the Government.

### MANAGEMENT DISCUSSION AND ANALYSIS

A report on Management Discussion and Analysis is placed at Annexure-1.

### BOARD OF DIRECTORS

The following changes took place in the constitution of the Board of Directors of the Company since last report:

#### Appointment

Shri Ashok K. Puri was appointed as Chairman & Managing Director w.e.f. 22nd September, 2004, by the President of India vide order dated 22.09.2004, of the Department of Heavy Industry, Ministry of Heavy Industries & Public Enterprises, Govt. of India.

S / Shri Arun Kumar Mathur and Krishnaswamy Ravi Kumar were appointed as Director (IS & P) and Director (Power), respectively with effect from 16th May, 2005.

Dr. Surajit Mitra, Joint Secretary to the Govt. of India, Department of Heavy Industry, Ministry of Heavy Industries & Public Enterprises, was appointed as Part-time Official

Director of the Company w.e.f. 28<sup>th</sup> July, 2005 vice Shri Dilip Raj Singh Chaudhary.

Shri C.S. Verma took charge of the post of Director (Finance) with effect from 1<sup>st</sup> September 2005.

In accordance with Article 67 (iv) of the Articles of Association of the Company, S/Shri Arun Kumar Mathur, Krishnaswamy Ravi Kumar, Dr. Surajit Mitra and C.S. Verma shall hold office as Directors upto the ensuing Annual General Meeting of the Company and are eligible for re-appointment.

### **Cessation**

Pursuant to Article 116 of Articles of Association of BHEL, the remaining tenure of S/Shri Sudhir Shridhar Supe and Ranjan Pant, Part-time Non-official Directors, was discontinued by the President of India vide Order dated 27.09.2004, of the Department of Heavy Industry, Ministry of Heavy Industries & Public Enterprises, Govt. of India. Accordingly, they ceased to be Directors of the Company with effect from 27th September, 2004.

Shri Sharad Upasani, who was appointed as Part-time Non-official Director with effect from 26th December, 2001 ceased to be Director of the Company on completion of his tenure on 25th December, 2004.

Shri Akbar Hameed Jung, who was appointed as Part-time Non-official Director with effect from 1st March, 2004 resigned from the Board of Directors of BHEL with effect from 23rd February, 2005.

Shri Dilip Raj Singh Chaudhary, Joint Secretary to the Govt. of India, Department of Heavy Industry, Ministry of Heavy Industries & Public Enterprises, ceased to be Director of the Company w.e.f. 28<sup>th</sup> July, 2005.

The Board of Directors places on record its deep appreciation for the valuable advice and guidance given by S/Shri Sudhir Shridhar Supe, Ranjan Pant, Sharad Upasani, Akbar Hameed Jung and Dilip Raj Singh Chaudhary during their tenure as Directors of the Company.

Shri H.W.Bhatnagar laid down the office of Director (IS & P) on attaining the age of superannuation on 28th February, 2005.

Shri C.Srinivasan laid down the office of Director (Finance) on attaining the age of superannuation on 31st May, 2005.

The Board of Directors records its sincere appreciation for the long, dedicated and distinguished services rendered by S/Shri H.W.Bhatnagar and C.Srinivasan during their respective tenures.

In accordance with Article 67 (i) of the Articles of Association of the Company, Shri Ramji Rai and Shri S.K.Jain retire by rotation at the ensuing Annual General Meeting and, being eligible, offer themselves for re-appointment.

In compliance of revised Clause 49 IV (G) of the Listing Agreement, brief resume of the Directors proposed for appointment and re-appointment, nature of their expertise in specific functional areas and names of Companies in which they are Directors are given at Annexure - 2 forming part of the Directors' Report.

### **OFFICIAL LANGUAGE IMPLEMENTATION**

Official Language Implementation Committees have been constituted in all the regional offices/units of BHEL. All the committees meet regularly and appropriate steps are taken to promote the use of Hindi. Manuals and all the forms/proformas of the company are available in bilingual form. Annual Report, MOU, Performance Budget, Press Releases, Advertisements, Promotion Orders, Calendars and Diaries are also published bilingually.

As in other years, All BHEL Hindi Co-ordinators' Meet was held this year too. With a view to accelerate the implementation of Official Language by motivating the employees, amount of Cash incentives, being awarded on passing Hindi Prabodh, Praveen, Pragya and Hindi Typing & Stenography Exams conducted by Govt. of India, have been made attractive by enhancing the same. Cash incentive scheme for doing Official work in Hindi is also in operation. Under this scheme, the work done by the officers/employees in Hindi is evaluated and winners are awarded. A number of Hindi Workshops were conducted to encourage employees to work in Hindi. In addition, a series of lectures on various topics in Hindi were also organised. Various Hindi competitions for BHEL employees as well as for the employees of Member offices of Town Official Language Implementation Committee (TOLIC) were conducted.

Entries are being made in Confidential Reports of the employees for the praise-worthy work done in Hindi.

BHEL has introduced Inter-Unit Rajbhasha Puraskar Yojana to encourage the use of Hindi and to create the competitive atmosphere in all its Units/Offices. Rajbhasha Awards were given away by Chairman & Managing Director of BHEL on 16.04.2005 to Units/Offices securing 1st and 2nd place for the best performance in implementation of Rajbhasha during the year 2003.



With a view to provide working knowledge of Hindi to the employees, training is being imparted at various Units of the company. This is done on a large scale at south based Units located in Bangalore, Hyderabad and Tiruchirapalli. Central Translation Bureau had organized five day translation training programmes for the employees of Corporate Office and Haridwar Unit. In addition, Hindi computer training programmes were conducted in the company covering a large number of employees.

Committee of Parliament on official language visited Corporate office and EPD, Bangalore Unit to review the status of implementation of official language. Necessary follow up action has been taken on their suggestions for bringing about further improvements.

## **PARTICIPATION IN THE GLOBAL COMPACT OF THE UNITED NATIONS**

Bharat Heavy Electricals Limited (BHEL), once again expresses its intent to support and advance United Nation's (UN's) Global Compact (GC) principles within the company's sphere of influence and commit to make the ten principles—on human rights, labour standards, environment and anti-corruption— as part of its strategy, culture and day-to-day operations.

Significantly, BHEL took a lead role in forming the Global Compact Society (GCS) – an apex level forum of Indian Organizations/Institutions, committed to UN's Global Compact Programme. Through this association, BHEL has got a unique opportunity of networking with other corporates and sharing experiences related to social responsibilities, on a global level. At the National Convention, Delhi and the GC Regional Conclave for South Asia Region, Jamshedpur, BHEL actively participated in the conferences and also highlighted its Corporate Social Responsibility (CSR) activities. BHEL's initiatives were appreciated by Mr. Georg Kell, Executive Head, UNGC, besides other dignitaries and participants from India & abroad.

Following is a brief report of how the company has addressed each of the ten principles during 2004-05. This Communication of Progress (COP), is also available on BHEL's web site (<http://www.bhel.com>).

### **Human Rights:**

- 1) Business should support and respect the protection of internationally proclaimed human rights &*

- 2) Make sure they are not complicit in human rights abuses.*

BHEL practices the above principles in letter and spirit and has framed its policies in consonance with upholding the dignity of its employees.

### **Labour Standards**

- 3) Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining*

BHEL has an apex level bipartite forum wherein workers are represented by members of recognized unions and the leaders of Central Trade Union Organizations and the Management is represented by Chairman & Managing Director, functional Directors and the Heads of Units.

This forum is used to settle the problems concerning the workers. In addition, BHEL as a true corporate citizen takes pride in implementing various labour laws protecting the interests of the working class.

- 4) The elimination of all forms of forced and compulsory labour &*
- 5) The effective abolition of child labour*

BHEL neither practices compulsory labour nor has child labour.

- 6) Eliminate discrimination in respect of employment and occupation*

BHEL does not discriminate its employees on the basis of factors such as sex, caste, religion, race, etc.

### **Environment**

- 7) Businesses should support a precautionary approach to environmental challenges,*
- 8) Undertake initiatives to promote greater environmental responsibility &*
- 9) Encourage the development and diffusion of environmentally friendly technologies*

All BHEL Units have been certified to ISO-14000 on Environment Management System and OHSAS-18000 on Occupational Health & Safety, after stringent audits by an international certifying agency.

During the year, all major units of BHEL have achieved 'Zero Effluent Discharge' status. Other major achievements included, rain water harvesting systems

in all the townships of the Company, mass afforestation involving the employees and surrounding community besides conservation of natural resources, generation of energy from waste and efficient water management.

As part of its commitment towards the society and as a responsible corporate citizen, BHEL is involved in a host of community development programmes in various parts of the country.

- The schools set up for mentally challenged children in various BHEL Units cater to the aspirations and requirements of the under privileged children to help them to become self-dependant citizens.
- As a responsible corporate citizen, BHEL has involved itself in the rural development of the villages in the vicinity of its manufacturing plants. The activities include free medical aid, provision for street lights, drinking water and infrastructure support to schools, etc.
- BHEL family has risen in solidarity with the fellow citizens and victims of natural calamities such as flood, tsunami, etc. in various parts of the country by contributing its mite.

In the area of development and diffusion of environment friendly technology, BHEL is setting up 'Stand Alone' Solar Photovoltaic (SPV) power plants and Solar Power Systems in the rural areas.

#### **Anti-Corruption**

*10) Business should work against all forms of corruption, including extortion and bribery.*

BHEL has initiated a host of 'transparency measures' which will help the Company to avoid corruption. The Company focuses more on the preventive and educative aspects, rather than investigative/ punitive ones.

#### **VIGILANCE**

The Company's vigilance set-up is headed by CVO supported by senior officials heading vigilance departments in the individual Units.

During 2004-05 the Company focused more on Preventive Vigilance. Training programmes were organized to impart basic philosophy of preventive vigilance. Some other activities during the year include system study in the area of vigilance administration, interactive session with line and functional executives to enhance the knowledge about the Company's rules, policies and procedures.

In line with the directions of the Central Vigilance Commission and department of Personnel and Training, "Disciplinary Cases Monitoring and Management Information System (DCM & MIS)" has been developed and all the vigilance cases have been put on the system for better monitoring and generation of MIRs.

#### **SECURITY**

The security of the Company, its plants, installations and offices are managed by the Central Industrial Security Force (CISF), Company's own security, security personnel taken on deputation from the Central Police Organisations, security agencies sponsored by Directorate General of Resettlement (DGR) and in a few cases by private security.

Security audit of major Plants is being carried out by the Intelligence Bureau. Review of security is also done internally from time to time.

The management, security staff and employees of the Company are sensitized to the security needs of the Company.

#### **DIRECTORS' RESPONSIBILITY STATEMENT**

Pursuant to Section 217(2AA) of the Companies Act, 1956, it is hereby confirmed:

- (i) that in the preparation of the annual accounts for the financial year ended 31<sup>st</sup> March, 2005 the applicable Accounting Standards have been followed along with proper explanation relating to material departures;
- (ii) that the directors have selected such accounting policies and applied them consistently and made judgments and estimates that were reasonable and prudent so as to give a true and fair view of the state of affairs of the Company at the end of the financial year 2004-05 and of the profit or loss of the company for that period;
- (iii) that the directors have taken proper and sufficient care for the maintenance of adequate accounting records in accordance with the provisions of the Companies Act, 1956 for safeguarding the assets of the Company and for preventing and detecting fraud and other irregularities;
- (iv) that the directors have prepared the annual accounts for the financial year ended 31<sup>st</sup> March, 2005 on a 'going concern' basis.

#### **AUDITORS**

The Auditors of your Company are appointed by the Comptroller and Auditor General of India. The names of



auditors appointed for the year 2004-05 are printed separately in the Annual Report.

The replies to the points referred to in the Auditors' Report and to the Comments of the Comptroller and Auditor General of India are given at Annexure 3. The Review of Accounts of the Company for the year ended 31<sup>st</sup> March, 2005 by the Comptroller and Auditor General of India is also given at Annexure 3.

### **CORPORATE GOVERNANCE**

As per Clause 49 of the Listing Agreement, a detailed report on Corporate Governance together with a certificate from the Company's Auditors is given at Annexure 4.

### **OTHER DISCLOSURES**

Information in accordance with the provisions of Section 217(1)(e) of the Companies Act, 1956 read with Companies (Disclosure of Particulars in the Report of the Board of Directors) Rules, 1988 regarding conservation of energy, technology absorption and foreign exchange earnings and outgo is given at Annexure 5.

None of the employees of the Company is drawing remuneration in excess of the limits prescribed under section 217(2A) of the Companies Act, 1956 read with Companies (Particulars of employees) Rules, 1975.

### **ACKNOWLEDGEMENTS**

The Board places on record its sincere appreciation towards the Company's valued customers in India and abroad for the

support and confidence reposed by them in the organisation and looks forward to the continuance of this mutually supportive relationship in future.

The Board also gratefully acknowledges the support and guidance received from various ministries of the Government of India, particularly the Department of Heavy Industry, in Company's operations and developmental plans. The Directors express their grateful thanks also to the Comptroller and Auditor General of India, Chairman and Members of Audit Board, Statutory auditor and branch auditors. The Company also wishes to place on record its appreciation of the continued co-operation received from all the Technology Collaborators and Suppliers and support provided by the Financial Institutions and bankers. The Board wishes to record its deep gratitude to all members of the BHEL family whose enthusiasm, dedication and co-operation has made the achievement of a satisfying performance possible.

**For and on behalf of the Board of Directors of  
BHARAT HEAVY ELECTRICALS LTD.**

**Sd/-  
ASHOK K. PURI  
CHAIRMAN & MANAGING DIRECTOR**

Place : New Delhi  
Dated : 01.09.2005

## MANAGEMENT DISCUSSION AND ANALYSIS

### FINANCIAL OPERATIONS

Turnover for the year has touched a new high for the fourth year in succession thereby reaching the figure of Rs. 103364 million against Rs.86625 million in 2003-04, an increase of 19.32%.

Value addition for the year 2004-05 stood at Rs. 42540 million as against Rs. 36800 million for the year 2003-04, registering an increase of 15.60%.

Profit before tax for the year stood at Rs. 15816 million and is higher by 55.85% as compared to profit before tax of Rs. 10148 million in 2003-04. Gross margin as a percentage of value of production (net of excise duty) increased to 18.76% as against 16.14% in 2003-04. Profit before tax as a percentage of value of production increased from 12.87% in 2003-04 to 15.77% in 2004-05.

Profit after tax at Rs. 9534 million has increased by 44.85% over the previous year's Profit after tax of Rs. 6582 million.

Net working capital (other than cash and bank balances) increased by Rs. 2910 million during the year. The factors contributing to the increase are:

- a) Increase in Sundry Debtors by Rs. 13636 million over previous year.
- b) Increase in Inventory by Rs. 8122 million.
- c) Increase in Other Current Assets and Loans and Advances by Rs. 2242 million.

However, increase in Current Liabilities and Provisions by Rs. 21090 million has marginally offset the increase in working capital.

Sundry Debtors increased from Rs. 46085 million in 2003-04 to Rs. 59721 million in 2004-05, an increase of 29.59%. In terms of number of sales days, Sundry Debtors increased from 194 days in 2003-04 to 211 days in 2004-05. The increase is mainly attributable to predominance of sale of long cycle time power projects, change in payment terms by State utilities leading to a higher percentage of deferred payment, delay in payments by Government departments and long process of verification of documents in case of exports.

Inventory increased by 38.60% over previous year, i.e. from Rs. 21039 million in 2003-04 to Rs. 29161 million in 2004-05. Inventory, in number of days of turnover, increased

### ANNEXURE-1 TO THE DIRECTORS' REPORT

from 89 days in 2003-04 to 103 days in 2004-05. The increase is mainly attributed to higher inventory holding for steel and pipes on account of uncertainty of availability, longer deliveries from vendors, steel price increase and to meet higher turnover targets for the year 2005-06. The increase is also due to some finished goods awaiting customer clearance.

Cash and bank balances, including short term deposits, at the year-end stood at Rs. 31779 million as against Rs. 26596 million at the end of last year. Equity remained at Rs. 2448 million. Net worth increased by Rs. 7488 million to Rs. 60269 million. Debt-Equity Ratio improved from 0.10 in 2003-04 to 0.09 in 2004-05.

### POWER SECTOR

- Power Sector booked orders worth Rs. 134750 million for supply and installation of total 5518 MW of Generating Equipment as well as Services and supply of Spares. This is the highest ever order booking by Power Sector in terms of financial and physical terms, in any financial year. Orders for 8 Coal based projects have been received, out of which 6 projects namely Mejia, Chandrapura, Santaldih, Amarkantak, Bakreshwar and Bhilai have to be executed on Turnkey/EPC (Engineering, Procurement & Construction) basis. It is the highest number of Turnkey/EPC orders received in a year.
- Orders worth Rs. 12856 million towards Spares and Service business are also the highest amount of orders received in this category in a year.
- More than 50% of the orders by Power Sector during the year were won through International Competitive Bidding (ICB).

Significant orders booked during the year were :

#### Coal (3630 MW)

(a) Turnkey orders:

- 2 x 250 MW Mejia Extn Unit 5 & 6 of Damodar Valley Corporation (DVC)
- 2 x 250 MW Chandrapura Extn. Unit 7 & 8 of DVC
- 1 x 250 MW Santaldih from West Bengal Power Development Corporation Limited (WBPDCCL)
- 2 x 210 MW Bakreshwar Unit 4 & 5 from WBPDCCL
- 2 x 250 MW Bhilai TPS from Bhilai Electric Supply Company Limited (BESCL)





(b) EPC orders :

- 1 x 210 MW Amarkantak Unit 5 from Madhya Pradesh State Electricity Board (MPSEB)

(c) Power Plant Packages :

- 1 x 250 MW Paras TPP (SG, TG and other packages) from Maharashtra State Electricity Board (MSEB)
- 3 x 660 Sipat stage-1 (ESP Package including supply & erection) from National Thermal Power Corporation (NTPC)
- 4 x 250 MW (SG and TG Packages) from Jindal Power Ltd., Raigarh – first major break-through in Independent Power Producer (IPP) segment

**Gas (330 MW)**

- 330 MW gas based Combined Cycle Power Plant (CCPP) at Dholpur from Rajasthan Rajya Vidyut Utpadan Nigam Limited (RVUNL)

**Hydro (1558 MW)**

- 2x9 MW Mukerian HEP (Electro Mechanical Pkg) from Punjab State Electricity Board (PSEB) – largest Bulb Generating Set to be executed by BHEL in India
- 3x40 MW Sewa HEP II (Electro Mechanical Pkg) from National Hydro Power Corporation (NHPC)
- 4x200 MW Koldam HEP (Electro Mechanical Pkg) from NTPC – this prestigious mega project marks the entry of NTPC into the hydro power sector
- 4x150 MW Kameng HEP (Electro Mechanical Pkg) from North Eastern Electric Power Corporation (NEEPCO) – the Hydro Turbine is of Francis type, with highest Head, ever offered by BHEL

**Other Hydro orders :**

- 1x20 MW Madikheda HEP (EM Package) from MSEB
- Patel Engg/ Kalwakutty Lift Irrigation Scheme Stage-I (5x30 MW Pumps & Motors)

**PPI and R&M Orders**

- Major Renovation & Modernisation project for Ukai 2x120 MW from Gujrat State Electricity Corporation Limited (GSECL) for revamping all major packages (including balance of plant) to restore the designed rating of the sets

- Renovation & Modernisation project from Bhakra Beas Management Board (BBMB) for uprating Left Bank Power House from 5x108 MW to 5x126 MW

**Erection & Commissioning Order – Non BHEL Nuclear Sets**

- Order worth Rs. 830 million from Nuclear Power Corporation of India Limited (NPCIL) for installation of TG Package and Secondary Cycle Piping works for 2 x 1000 MW Nuclear Project in Kudankulam, near Kanyakumari, Tamilnadu

**Service After Sales (SAS)**

- Orders worth Rs. 8169 million for supply of Operation and Maintenance (O&M) spares, Rs. 2471 million for Renovation and Modernisation (R&M), and Rs. 1385 million for services works. This is the highest amount of orders received in SAS area in a year.

**Commissioning**

- During the year, BHEL added 21 utility sets totaling 3547.92 MW to the country's installed electric power generating capacity. With this, BHEL built sets now account for 74780 MW, which is nearly 65% of Country's total installed capacity in utility sector. Thermal sets commissioned during the year were Panipat 7 & 8 (2x250 MW) in Haryana, Mejia 4 (1x210 MW) in West Bengal, Talcher 5 & 6 (2x500 MW) in Orissa, Ramagundam 7 (1x500 MW) in Andhra Pradesh and Rihand 3 (1x500 MW) in Uttar Pradesh. Four diesel sets of 22.92 MW at Bairabi (4x5.73 MW) in Mizoram were also taken into capacity addition by Central Electricity Authority (CEA) this year.

In addition to above, 10 hydro sets of 815 MW and 17 industrial sets of 437 MW were commissioned in the country.

Following sets were also commissioned in overseas locations during the year:

- 55 MW GT at PDO Oman (Qarn Alam)
- 2x10.8 MW STGs at Indonesia
- There has been a constant endeavour on part of BHEL to meet customer demand through quicker delivery. During the year, BHEL set a new bench mark by

commissioning Ramagundam 7 (500 MW) in 37 months 22 days. Rihand 3 (1x500 MW) was an additional set commissioned during the year over and above the CEA's current year commissioning plan.

- BHEL uprated coal based unit of Andhra Pradesh Generation Company (APGENCO) at Kothagudam–7 from its original capacity of 110 MW to 120 MW. With this, rating of all four 110 MW sets of Kothagudam Power Plant have been increased to 120 MW each.

### Performance of BHEL Sets

- The overall performance of BHEL supplied thermal sets was better than the national average.
- BHEL has contributed to 65% of the Country's installed Power generating capacity by March '05, which in turn has contributed to 73% of the electric energy generated during the year 2004-05, a testimony to the excellent performance of BHEL sets.
- BHEL thermal sets achieved **highest ever Plant Load Factor (PLF) of 75.7 %**, which is 0.9% higher than national average. The combined PLF of BHEL 500 / 250 / 200 / 210/195 MW thermal sets which form the backbone of country's electric power generating capacity registered the **highest ever PLF of 81.0%**. Operating Availability (O.A.) of these sets was at 88.5% maintaining its peak value same as last year. 250 MW and 500 MW BHEL Thermal sets recorded the PLF of 91% and 84.5% respectively during the year.
- 132 BHEL thermal sets clocked uninterrupted operation of more than 90 days, out of which 20 sets ran continuously for more than 200 days during the year.
- Unit availability of BHEL hydro sets during the year was 98.8%.
- BHEL continued its efforts to render efficient customer service aimed at facilitating uninterrupted power supply and keeping power plants in good running condition. During the year, Power Sector overhauled 91 thermal utility and industrial sets including 4 non-BHEL sets covering various products like boilers, TGs and auxiliaries.

## INDUSTRY SECTOR

Highest ever orders of Rs. 41170 million have been received by Industry Sector in 2004-05 as against Rs. 35670 million in the previous year.

### Major orders received are as under:

#### A. Captive Power Segment

Coal based :

- 2 x 125 MW Captive Power Plant at Duburi, Orissa from Jindal Stainless Ltd.
- 1x43 MW STG from Arasmeta Captive Power Co. Pvt. Ltd.
- 1x40 MW STG from DCM Sriram Vinyl & Chemicals, Kota
- 1x40 MW STG from Aarti Steel Ltd.
- 1x22 MW STG+1x18 MW STG from EID Parry
- 1x15 MW STG from Bhilai Steel Plant
- 2 nos. 135 TPH CFBC Boiler from Gujarat Ambuja Cement
- 675 TPD Chemical Recovery Boiler from Sirpur Paper Mills

Gas based :

- 2 x Fr5 GTG from Cogen Plant of HPCL, Vizag
- 1 x Fr9 GTG from Esson Energy, Mumbai
- 1 x Fr6 GTG and 18.75 MW STG from Regency Power Corporation Ltd.
- 2 x Fr6 GTG and 1 x Fr6 GTG from Reliance, Jamnagar & Hazira respectively

#### B. Transmission Business

- 400/220 kV sub-station from PGCIL at Muzaffarpur, Bihar
- 220/132/33 kV sub-station from Uttaranchal Power Corporation at Pantnagar and Haridwar
- 13x82 MVA Generator Transformers from NTPC Koldam
- 3x200 MVA Auto Transformers from NTPC Sipat
- 4x315 MVA Auto Transformers from PGCIL Kahalgaon-II
- 12x50 MVA Shunt Reactors from PGCIL at Vindhyachal and Balia



- Turnkey order for 3 x 5 MW Head Power House for Indira Sagar Left Bank Canal from Narmada Valley Development Authority, Bhopal

### C. Others

- Refurbishment of 12 nos. drilling rigs from ONGC
- BCL 600 series compressor from IOCL for their MSQ (motor spirit quality) Project at Gujarat Refinery. These compressors are typically required for handling high volumes of high pressure, low molecular weight gases – A break through
- Wet Gas Compressor and Main Air Blower from HPCL Mumbai Refinery
- 50 nos. Alternators from various turbine OEMs like TEIL, Kessel Engg and Belliss secured – An all time high
- 15 Nos. of 350 HP to 1400 HP shunting locos
- Order for 2x110 kW and 3x55 kW Solar Photovoltaic Power Plants received from West Bengal Renewable Energy Development Agency (WBREDA) to be setup in the Sunderbans Region of West Bengal
- 2 nos. Ballast Cleaning Machines from Railway Board– This is the first of this type of machine for BHEL bagged against stiff competition from a world leader in this area

### COMMISSIONING

- Captive/industrial sets totaling to 437 MW were commissioned during the year – an all time high
- 40 MLD Sewage Treatment Plant of Chennai Metropolitan Water Supply & Sewerage Board at Nesapakkam, Chennai, commissioned ahead of schedule, meeting all the pollution control norms
- Coal Handling Plant for feeding coal to unit III of NTPC, Rihand STPP, Stage II (2x500MW) expansion project
- Ash Handling Plant and Coal Handling Plant (Extension) at Mejia TPS, unit IV (1x210MW) for Damodar Valley Corporation
- 17.5MW 11KV 4P Alternator for Khanna Paper Mills through Alstom – designed, developed and manufactured by BHEL Bhopal for the first time
- EPD, Bangalore has successfully completed station post insulators upto 220 kV ratings. Efforts are being made to develop 400 kV range during 2005-06.

- 8064 nos. 300 KN disc insulators executed and orders for 7550 nos. 300KN disc insulators and 9300 nos.-300KN & 7000 nos.-190 KN tension insulators under execution for TYCO, UK

### INTERNATIONAL BUSINESS

BHEL achieved physical export order inflow of Rs. 6380 million during the year.

#### Major Achievements during the year include :

- BHEL secured the following prestigious orders, each one of which signifies a major step forward towards consolidation in international business:
  - 2x60 MW Steam Turbine based Thermal Power Plant from PT Merak, Indonesia
  - Compressors - one for Lekhwair and three for Yibal Projects of Petroleum Development Oman – Largest overseas orders
  - Main line Diesel Electric Locomotives for Sudan Railways – This is the first ever export order for Locomotives
  - 15.3 MW STG package (Supply & Supervision) from Thai Carbon Black Co. Ltd., Thailand
  - Solar cells & PV Modules to Italy & Germany. These were largest ever orders secured from SE Projects, Italy & IRRON Germany, further expanding BHEL's presence in export market for photovoltaics
  - Orders for Spares & Services from Bangladesh, South Korea, Kazakhstan, Cyprus, Oman, Sri Lanka, Malta, Malaysia, Greece, Thailand & China – A continued focus area
  - 19 Nos. motors for Nigeria/Bangladesh/ UAE/Africa
  - 5 Nos. 3MW LT Alternators for Indonesia and Bangladesh through M/s. TEIL & M/s Belliss
- **Execution of Major overseas orders:**
  - A significant landmark was achieved with the completion and handing over of the Qarn Alam Power Project of Petroleum Development Oman, equipped with the first ever Advanced Class Gas Turbine Generators (2x70 MW ISO), exported from India
  - BHEL's first Steam Cycle Project in South East Asia, 2x10.8 MW Plant for PT Indo Bharat Rayon Indonesia, was commissioned

## **CAPITAL INVESTMENT :**

In our sustained thrust towards continuous modernisation of the manufacturing technology and facilities and augmentation of manufacturing capacity, a capital investment of Rs.1550 million was made during the year 2004-05. Out of this, an investment of Rs. 1010 million was towards acquiring latest “state of the art” manufacturing facilities for upgrading the technology and increasing capacity of various products in the manufacturing units and Rs. 540 million for modernizing and upgrading equipment at various power plant sites to gear up for the enhanced erection & commissioning plans. These investments will facilitate the capacity augmentation for different products, modernization of manufacturing facilities, cycle time reduction, up gradation/ replacement of ageing facilities and modernization/up-gradation of erection & commissioning related equipment. Thrust, in the coming years, is also directed towards these objectives both at Units and at sites.

### **Schemes Completed**

- Modernisation of Steam Turbine Manufacturing facilities, Phase-I at HEEP, Haridwar
- Facilities to enable in-house manufacture of GT Nozzles & Buckets at HPEP, Hyderabad
- Fume extraction and Dust Collection system at CFFP/ Haridwar for a cleaner environment and to meet statutory emission norms

### **In addition, following major approved schemes were under implementation:**

#### **At Bhopal unit**

- Modernisation of Hydro Products manufacturing facilities to improve quality and enhance manufacturing capacity to 2500 MW
- Augmentation of facilities for Transformer manufacturing operations to enhance the capacity to 20,000 MVA (At Bhopal and Jhansi)

#### **At Haridwar unit**

- Modernisation of Steam Turbine Manufacturing facilities, Phase-II and Generator Manufacturing facilities to reduce manufacturing cycle and improve quality
- Steam Turbine and Generator facilities augmentation to 5200 MW per annum

- New Blade Shop Phase-II, to augment capacity to 3500 MW

#### **At Hyderabad unit**

- Modernisation of manufacturing facilities for Pumps, Generators and Heat Exchangers
- Augmentation of facilities for advanced class and large size gas turbines, facilities for repair of Fr-9E Compressor rotor and establishment of Assembly & Test facilities for Fr9FA GTs
- Capacity augmentation of Pulveriser manufacturing facilities

#### **At Electronics Division – Bangalore unit**

- Augmentation of manufacturing facilities for maxDNA technology
- Development of Poly Crystalline Silicon Solar Cells technology with Anti- reflection Coating to increase the conversion efficiency

These investment schemes will enable the company to modernise and upgrade its manufacturing facilities with state of art machines, enhance the manufacturing capacity, reduce cycle time and improve product quality to meet the growing market challenges and opportunities and above all to enhance customer satisfaction.

### **Cutting Edge Technologies**

In our endeavour to develop new frontier/cutting edge technologies for the existing and new products/ systems, the company has established Centres of Excellence for Computational Fluid Dynamics (CFD), for Simulators, and for Permanent Magnet Machines at Corporate R&D, Hyderabad, and has up-graded the existing Integrated Gasification Combined Cycle (IGCC) plant at Trichy with a total outlay of about Rs.130 million. Further, a Centre of Excellence for Surface Engineering, with an outlay of Rs. 90 million, is also under implementation.

Investments are also being made towards Information Technology in manufacturing.

### **10th Plan Period Capital Investment :**

BHEL had drawn-up plans to invest more than Rs. 11000 million during the 10th plan period for its various products in the Units and for Erection & Commissioning equipment for various power plant sites. During the first three years of the



10th plan, about Rs. 4600 million worth capital expenditure has already been made for all these areas. Further, investment of about Rs. 3100 million has been planned for these during 2005-06 which includes following major schemes besides addition of power plant site facilities :

- Blade Shop Phase III at Haridwar to introduce latest state of art facilities and expand the capacity to 5200 MW p.a.
- Blade shop at Hyderabad with latest state of the art facilities, capacity augmentation of Generator and Pump shops at Hyderabad
- Capacity augmentation for PV cells and modules in the area of non-conventional energy sources at Electronics Division, Bangalore to augment the capacity to above 35 MW/50 MW p.a.
- Gas Insulated Sub-stations for 145 kV and higher voltage applications at Bhopal

#### **Reconditioning & Retrofitting Efforts :**

Continuous thrust is also being given towards enhancing the life and quality of existing facilities, for restoration of accuracies and reliability leading to enhanced productivity by way of re-conditioning, renovation, up-gradation and retrofitting. In the year 2004-05, Rs. 392 million were spent on such activities and more than Rs. 500 million is planned for the year 2005-06.

#### **JOINT VENTURES**

The two Joint Venture Companies promoted by BHEL viz. "BHEL-GE Gas Turbine Services Ltd." (BGGTS) with GE, USA for repair & servicing of GE designed Gas Turbines and "Power Plant Performance Improvement Ltd." (PPIL) with Siemens AG, Germany for plant performance improvement of old fossil fuel power plants, have now completed seven full financial years of operation.

- During the year, PPIL has refurbished and uprated the fourth unit at Kothagudem TPS from 110 MW to 120 MW. In addition, the second 120 MW unit of Korba (East) was also synchronized after refurbishment. PPIL has so far successfully uprated four Kothagudem units and enhanced performance of units at Neyveli, Durgapur and Korba (East) Thermal Power Stations after carrying out refurbishment work. The total income and expenditure of PPIL during 2004-05 were Rs. 58.58 million

(unaudited) and Rs. 67.68 million (unaudited) respectively.

- BGGTS achieved a sales turnover of Rs. 2405 million during the year 2004-05 with profit after tax of Rs. 270 million. Orders for Rs. 2508 million were booked during the year. BGGTS has bagged break-through retrofit orders for Mark VI controls for the first time in India, besides successful completion of fuel conversion project for 2 x Fr 5 gas turbines from gas to naphtha for BPCL, Mumbai. During the year, BGGTS has enhanced the coating facility at its Repair Shop by adding Robot and HVOF (High Velocity Oxy Fuel) process to sustain its edge over competition in terms of technology and quality. BGGTS has paid a final dividend of 425% for the year 2004-05.

#### **R&D AND TECHNOLOGICAL ACHIEVEMENTS**

A turnover of Rs. 9422 million was achieved in 2004-05 from products and systems commercialized during the last five years developed through in-house Research and Development (R&D).

An amount of Rs. 1252 million was spent on R&D programmes. Of this, Rs. 977 million was spent on revenue expenditure, focusing on new product and system developments and improvements in existing products for cost effectiveness and higher reliability, efficiency, availability, quality, etc. In addition, an expenditure of Rs. 275 million has been incurred for purchase of capital assets for R&D.

Significant achievements during the year included :

- A Centre of Excellence for Computational Fluid Dynamics (CFD) has been established at BHEL's Corporate R&D Division, Hyderabad. The Centre will enhance BHEL's capability in the field of CFD, which has emerged as an important tool capable of giving designers valuable insights into the behavior of fluid flow in complex geometries. With advanced software and manned by technically capable and trained personnel, the Centre will cater to a wide variety of products of the power and industrial sectors. It will enable BHEL to design hydro turbines of high efficiency and carry out performance improvement of various thermal power components like boiler furnaces, bowl mills, electrostatic precipitators, steam turbine and compressor blading, pumps, fans and heat recovery steam generators etc.

- BHEL has established a Centre of Excellence for development of Permanent Magnet Machines at its Corporate R&D Division, Hyderabad. This centre is dedicated to the development of compact and efficient permanent magnet machines of high capacity with maintenance-free operation, suitable for industrial and strategic applications.
- For the first time an indigenously designed optimised Bowl Mill named BHEL 280 mill, of 91 tons per hour capacity for pulverising coal in thermal power stations has been designed, manufactured and successfully commissioned at Maharashtra State Electricity Board 500 MW Chandrapur site. The optimised capacity will result in reducing the number of mills required for thermal power stations. It can also be used in thermal power plants of higher capacity.
- BHEL has developed in-house, the largest 60 MW Bubbling Fluidised Bed Combustion Boiler for power generation against the maximum size of 40 MW, being supplied so far. A vast potential of replacement of old pulverized fuel boilers of 60 MW rating with these new boilers exists, which can regain the original generating capacity even with poor coal quality. This development has opened a new line of business for the company.
- The first total impregnated turbo generator stator for 250 MW Parichha Unit-3 was successfully manufactured and tested. With this achievement, BHEL has entered a new era of generator design and manufacturing technology. The machine has several design and technological features, namely state-of-the-art insulation technology (totally Vacuum Impregnated Stator) leading to higher thermal stability, increased electrical life and larger operating life. BHEL already has orders for 14 sets of this design.
- BHEL has developed a 260 MW steam turbine designed to suit combined cycle power plants that are considered to be the most efficient as they have the highest fuel to electric power conversion efficiency. This design has been offered for NTPC's combined- cycle plant at Kawas.
- To meet the requirement of greenfield projects where auxiliary steam is not available and to reduce commissioning time, a new eco-friendly, cost effective and less hazardous chemical cleaning system process

for boilers using an organic chemical 'Ethylene Diamine Tetra Acetic Acid (ETDA)' has been developed as an alternative to conventional Hydrochloric Acid (HCl), and successfully implemented in boilers of 210/250 MW at Panipat and Mejia TPS. The process has resulted in a cycle time reduction of nearly 20 days.

## **HUMAN RESOURCE MANAGEMENT**

### **Industrial Relations**

Thrust on participative culture continued during the year and the Industrial Relations at various Units and Service Divisions of the Company remained harmonious and cordial. A unique meeting of the apex level bipartite forum (Joint Committee) was held in Workshop format for two days in the month of July, 2004. The theme of the Workshop was "Roadmap to Excellence". The leaders of the Central Trade Unions and Unions' representatives from all the Units of BHEL participated very enthusiastically in the Workshop. Various issues concerning the economic and business environment and the challenges before the Company were discussed. Syndicate Groups formed during the meeting on different topics gave valuable suggestions and recommendations concerning effective utilisation of men and machinery.

Apart from the above Workshop, two more meetings of the Joint Committee were held during the year. Similarly, 76 meetings of the Plant Councils and 386 meetings of the Shop Councils were held during the year in various Units of the Company.

The Company and its employees showed their solidarity with our fellow countrymen on account of natural calamities which rocked our nation during the year and contributed amounts as per details given below:

- a) Unprecedented floods in the Country - Rs. 28.5 million
- b) Seismic Sea Waves (Tsunami) - Rs. 30 million  
triggered by massive undersea  
Earthquake

### **BHEL Excel Awards**

Our objective to recognize, reward and place on record outstanding contribution by an employee towards growth, profitability and image of the Company is being amply fulfilled by BHEL Excel Awards Scheme which celebrated its fourth year in November 2004.



The fast changing competitive business environment is throwing up many challenges which require the exposition of zeal to excel in different areas. Rightly, BHEL Excel Awards Scheme is evolving and is maturing to include opportunities and vistas for showing excellence. Towards this effort "Pratibaddhata Puraskar", a new category of award to recognize extraordinary sense of commitment shown by the employees in critical situations was introduced last year.

A well defined set of criteria for each category of award focusing on essential attributes and results thereof helps in maintaining the element of objectivity and fairness.

The tremendous response which has been the order for the past two years continued in the year 2003-04. The 109 nominations received from various units/divisions under ten categories of awards were scrutinized and short listed by Screening Committee. The short listed entries were evaluated by a high level Jury and awards announced to a total of 56 employees. Tiruchy Complex emerged as the winner scoring highest points in Intellectual Property Related Activities for the year 2003-04 thereby bagging CMD's Award.

#### **Awards won by BHEL Units & Employees**

- **Prime Minister's Shram Awards – 2004 (given by Ministry of Labour)**

Prime Minister's Shram Awards are given to workmen in Private and Public Sector of Central & State Governments in recognition of their distinguished performance, innovative abilities, outstanding contribution in the field of Productivity and exhibition of exceptional courage and presence of mind.

For the year 2004, 14 workmen of BHEL have got 8 PM's Shram Awards (highest in any year), including the only Shram Bhushan award declared this year. Private Sector participated in these awards for the first time, which made the competition tougher. BHEL managed to get 50% of the total awards won by all PSUs put together. The awards have been won by employees from Haridwar, Trichy, Hyderabad, Bhopal and Electro-Porcelains Division.

- **Vishwakarma Rashtriya Puruskar (given by Ministry of Labour)**

Vishwakarma Rashtriya Puruskars are given to recognize outstanding contribution made by a worker or a group

of workers in an organization (covered under The Factories Act, 1948) through his/her/their suggestions to improve productivity.

These Awards for the year 2003 were declared during 2004-05. 11 BHEL employees have won 5 awards for the year 2003.

- **National Safety Awards (given by Ministry of Labour)**

National Safety Awards are given to recognize good safety performance on the part of Industrial undertaking (covered under The Factories Act, 1948) and to stimulate and maintain interest of both the management and the workers in accident prevention programmes.

4 National Safety Awards in the winner category have been won by BHEL for the year 2003 which have been declared during 2004-05.

- **Padma Shree**

Govt. of India has conferred Padma Shree award to Shri B.L. Chouksey of Bhopal Unit. The award is in the field of Science & Technology and was declared on Republic Day 2005. Shri Chouksey has earlier won Prime Minister's Shram awards and Vishwakarma Rashtriya Puruskars on various occasions.

- **Indian National Suggestion Schemes' Association Award (INSAAN Award)**

These awards are given by Indian National Suggestion Schemes' Association for Excellence in Suggestion Scheme. Awards for this year were given in December 2004. Out of 14 awards given for the contest –2004, 4 awards have been won by BHEL (one each by Bhopal, Haridwar, Trichy and Hyderabad).

- **CII Energy Excellence Award**

This award is given by CII and this year the award has been won by HEEP-Haridwar Unit for "Excellence in Energy Management". Total of 18 entries were awarded.

#### **Human Resource Development**

During the year 2004-05 over 41359 participants were exposed to different training programmes in HRDI at Noida and HRDCs at Units. The training mandays per employee rose to 4.12% during the year. As part of our social commitment, over 4500 Act Apprentices were trained. Programmes for customers/external organizations were also

held. During the year 371 Engineer/Executive Trainees were inducted who are undergoing one year induction programme at different Units. 1916 participants from customer and other organizations were trained in BHEL Human Resource Development Centers (HRDCs) and Human Resource Development Institute (HRDI).

**Activities of the company for welfare and advancement of Scheduled Castes (SCs), Scheduled Tribes (STs) and Other Backward Classes (OBCs)**

The company has been following the Presidential Directives and guidelines issued by the Government of India from time to time regarding reservation for SCs, STs and OBCs in letter and spirit. During the year various Community Development activities focussed on Socio- Economic development of SCs and STs have been carried out by BHEL in the adopted villages.

**Representation of SC/ST/OBC employees**

The representation of SC/ST/OBC employees in total manpower was 18.45%, 4.01% and 6.61% for SCs, STs and OBCs respectively as on 1/1/2005.

The Annual Statement in the revised prescribed format showing the representation of SCs, STs and OBCs as on 01/01/2005 and number of appointments made during the preceding calendar year as furnished to the government is given at Annexure-A.

**Manpower strength of Physically Challenged employees as on 1st Jan., 2005.**

The group wise manpower strength of Physically Challenged employees in the Company as on 01/01/2005 is given at Annexure-B.

**Manpower Strength of BHEL as on 31/03/2005**

The manpower strength of BHEL as on 31.03.2005 was 43302.





## ANNEXURE-A

Annual Statement showing the representation of SCs, STs and OBCs as on 01.01.2005 and No. of appointments made during the preceding calendar year

	Representation of SCs/STs/OBCs (As on 01.01.2005)				No. of appointments made during the calendar year 2004									
					By Direct Recruitment				By Promotion			By Deputation/Absorption		
Groups	Total No. of Employees	SCs	STs	OBCs	Total	SCs	STs	OBCs	Total	SCs	STs	Total	SCs	STs
Group A	11350	1433	463	805	375	59	25	109	0	0	0	0	0	0
Group B	11239	1586	322	210	0	0	0	0	0	0	0	0	0	0
Group C	18314	4187	875	1511	27	5	1	11	0	0	0	0	0	0
Group D (Excl. Sanitary Workers)	2178	525	76	334	9	5	0	0	0	0	0	0	0	0
Group D (Sanitary Workers)	311	275	3	9	0	0	0	0	0	0	0	0	0	0
Total	43392	8006	1739	2869	411	69	26	120	0	0	0	0	0	0

## ANNEXURE - B

Group wise status of physically challenged in the total manpower as on 1st Jan., 2005

Group	Total No. of employees	No. of Physically Challenged
A	11350	76
B	11239	74
C	18314	245
D	2489	26
<b>Total</b>	<b>43392</b>	<b>421</b>

## INTERNAL CONTROL SYSTEM

The company has adequate internal control procedure prescribed in the form of various codes, manuals and procedures, issued by the management covering all critical and important areas of activities viz. Budget, Purchase, Material, Stores, Works, Accounts, Personnel, etc. These codes, manuals and procedures are updated from time to time and are subject to strict compliance which is monitored by Internal Audit. The company has full fledged Internal Audit Cells located at manufacturing units and regional offices of the company which carry out audit as per annual audit programme approved by Director (Finance) / Board Level Audit committee and monitored by Corporate Internal Audit. The prime objective of internal audit is to check the adequacy and effectiveness of Internal Control System. Functioning of Internal Audit and adequacy of Internal control system is reviewed by Board Level Audit Committee, supported by Unit Level Audit Committees.

## OPPORTUNITIES & THREATS

### World

The global power industry is looking at market growth mainly in the region of Asia Pacific. In addition, investments for new power plant equipment are likely in countries of the Middle-East and Gulf Cooperation Council (GCC). Many energy traders & IPP developers are revisiting their investments leading to a fall in new orders for power plant equipment in the global market. As such, the total world-wide demand for power plant equipment has been much below the manufacturing capacity, leading to aggressive marketing by major global power plant equipment manufacturers. The recent steep rise in oil & gas prices are drawing attention of countries towards alternatives of clean coal & non-conventional energy sources. As per a recent market research report, World Power Transmission & Distribution equipment demand is expected to rise by 4.5% per year in the medium term.

### India

#### Power Sector

Subsequent to the enactment of the Electricity Act 2003, National Electricity Policy has been formulated which aims at providing access to electricity to all households in next five years, fully meeting demand for power by 2012, supply of reliable and quality power of international standards at reasonable rates to be achieved by 2012, etc. Ministry of Power is also working on National Tariff Policy and has recently come out with a draft scheme. Distribution sector has also received a major fillip. Short/Long term objectives have been identified for district level distribution circles and

are being monitored.

Compared to previous plan periods, there has been a marked improvement in the progress of Power capacity addition in the X plan. Further a capacity addition of over 60,000 MW has been projected during XI Plan.

While Coal will continue to be the main stay of power generation in the medium and long term, there is a need to improve hydro-thermal mix and developing hydropower at a faster pace. A 'Hydro policy' evolved by the Government outlines various initiatives in this regard like higher budgetary allocations and speedier clearances process. With the recent gas findings in the private & public sector, gas can emerge as a major source of power generation. Life extensions, higher capacity factors, and capacity up-rating programmes are expected to offset some of the derated/lost capacity in the electric power sector.

### Industry Sector

Industrial output, as measured by Index of Industrial Production (IIP) is progressing steadily. Index of capital goods production under use-based classification has registered double digit growth in the first six months of 2004-05. With India's industrial activity picking up in recent years, companies are using up their capacities which could trigger capital investments in an effort to build size and improve efficiencies.

There are signs of increased activity in Infrastructure, Oil & Gas, Steel, Petro-chemicals, Cement, Sugar, etc. The principal sectors in which investments could be made are metals, petroleum products, synthetic textiles, fertilizers, paper & paper products, among others, such as food products, drugs & pharmaceuticals, organic chemicals, etc. The Captive Power segment of the industry, has been witnessing expansion of capacities and the trend is likely to continue.

Manufacturing Sector is looking at investments to scale up the production capacities as heavy industries like oil, cement, steel and aluminum have increased their capacity utilization and are now looking at future demand. Along with mega infrastructure projects underway, the revival of private investment is expected to give a further boost to the multipliers in the economy.

## POSITIONING FOR THE FUTURE

- The dynamics of Indian energy sector has undergone a sea change over the past few years. The Indian power sector is on the threshold of transformation to a self-sustaining and viable sector as various monitoring and reforms measures have been put in place by the government.

Generation capacity addition has picked up steam and a substantial portion of the Power capacity addition of 41,000 MW by end of X Plan, is likely to happen. Projects are under various stages of formulation & finalization for the XI Plan capacity addition programme of over 60,000 MW.

- Various policy initiatives and other positive impulses have led to an improved investment climate in the infrastructure sector. This has mandated BHEL to rise to the challenge, re-align with fast changing market requirements and evolve strategies to tackle issues related to growth and value creation. BHEL is fully equipped to capitalize on these emerging opportunities.
- As part of the implementation of the 'Strategic Plan 2007', BHEL has already taken various strategic initiatives keeping in view its core strengths to face the emerging challenges. The strategic focus areas include: repositioning the organisation, globalisation / export strategies, engineering and technology initiatives, continuing initiatives for maintaining competitive edge, IT initiatives and HRM and financial management initiatives. Major initiatives undertaken include:-
  - ◆ Capacity enhancement : In order to cope up with the Country's ambitious target of capacity addition BHEL is gearing up to enhance its equipment manufacturing capacity from present 6000 MW to 10,000 MW annually by March 2007. Various schemes for capital investment in new facilities and also in modernization programmes, are underway.
  - ◆ Enhancement of competitive edge : BHEL has embarked on a major exercise of 'Positioning BHEL for Accelerated Growth' to address all aspects of its operations to enhance its strategic positioning. These include initiatives on competitiveness like Design-to-cost, Purchasing and Supply Management, Lean manufacture, focus on project deliveries and cycle time reduction, enhancing system design capability, etc.
  - ◆ New Technologies & R&D : BHEL is pursuing induction of technologies for introducing higher capacity sets viz., 800 MW thermal sets, 250 MW Hydro sets and 256 MW Advanced class Gas Turbines. Development of products with improved features, establishment of R&D centres of excellence and linkage of R&D efforts with market needs are the focal areas.

- ◆ With the services sector emerging as the growth engine of the economy, a focussed approach has been adopted to tap opportunities like EPC, O&M and After-market services. The marketing activities of spares & services is being consolidated and a separate group has been formed to focus on this sector.

BHEL has been taking steps for re-orienting itself to meet the demands of the competitive market economy including globalisation, and addressing issues to accelerate growth with suitable strategies to meet the objective of enhancement of value for its stake-holders.

## RISKS AND CONCERNS

A major concern of developing countries to meet their goals in the electricity sector is how quickly the sector can become more investment friendly through reforms and thereby usher in capital inflows.

The domestic power sector has not kept pace with the growth in demand with the result the country has faced energy & peaking shortages. Only 19,015 MW power generating capacity addition against a target of 40,245 MW was achieved during the 9th Plan. In the 10th Plan, there is an improvement in the position of ordering of Power Projects against 41,110 MW of planned capacity. However, further substantial amount of resources would be required to be mobilized and invested in the Power Sector. Restoration of the financial health of SEBs and improvement in their operating performance continues to be a critical issue. In this context, speed of implementation of state level policies would be a key factor.

The downturn in world Power Plant Equipment (PPE) market is driving a fresh round of mergers & acquisitions for the already dwindling number of OEMs. Licensing restrictions of market access constrains opportunities for BHEL, in select parts of the world. In the domestic market, BHEL is facing stiff international competition from the major global PPE manufacturers having financial muscle, economies of scale, technology leadership and global reach in their favour. Since a number of projects in industry are being planned on BOO/BOOT basis, issues like business model of the Project, revenue collection, operation and maintenance, etc. would need to be suitably addressed. Despite this, the growth in power sector, industries & other segments in the market place would provide enough opportunities for obtaining adequate business.

The steep rise in the prices of energy and input materials such as steel, aluminium, copper, etc., in the global and Indian markets, has impacted margins and productivity improvements are a continuing focal point for equipment manufacturers.

## ***ANNEXURE-2 TO THE DIRECTORS' REPORT***

### **Brief resume of Directors proposed for appointment and re-appointment as per Listing Agreement [Clause 49 IV (G) (i)]**

#### **WHOLE TIME FUNCTIONAL DIRECTORS**

**Shri Ramji Rai**, aged 59 years, is a Mechanical Engineering Graduate from Banaras Hindu University.

Shri Rai joined BHEL in 1969 and played a pivotal role in various fields viz. Planning, Project Management, Manufacturing Technology and various other disciplines within BHEL. A specialist in Electrical Machines, he made significant contribution in the area of rotating electrical machines. He was also primarily responsible for absorption and assimilation of Siemens advance technology for manufacture of 210MW, 250MW and 500MW sets.

Prior to his appointment as Director (Engineering, Research & Development) in February 2004, Shri Rai was Executive Director heading BHEL's Electronics Division at Bangalore.

Under Shri Rai's stewardship, BHEL's Electronics Division was accredited with the prestigious ISO-14001 and OHSAS-18001 certifications and as Head of BHEL's Power Sector-Eastern Region, many landmarks were achieved including the successful execution and commissioning of 2 cylinder 120 MW steam turbine set for the first time in the country.

Shri Rai has widely travelled abroad to countries like USA, France, Germany, Netherlands and Brazil for business promotion.

**Shri Santosh Kumar Jain**, aged 58 years, is a Mechanical Engineering Graduate (1969) from Raipur Engineering College.

Shri Jain joined BHEL in 1970. During his over three decades association with BHEL, he has brought about several major changes in technical as well as managerial attributes leading to significant value addition.

During his stints at BHEL's Bhopal and Jhansi plants, Shri Jain spearheaded major breakthroughs and improvements in the areas of Traction Commercial, Insulation Division, Electrical Machines Division and Transformer Division, through his professional approach and administrative skills.

Prior to his appointment as Director (Human Resources) in March 2004, Shri Jain was heading BHEL Hardwar Unit. He is a pioneer in evolving new 'Business Policy' and identifying 'Critical Success Factors' through Annual Top Management Workshops. A keen Observer of Quality in all walks of life, he propounded the unique method of 'Quality through Measurement' which earned him the coveted BHEL 'Excel' award.

In addition, Shri Jain introduced many creative initiatives like Root Cause Analysis, Critical to Quality, 'Grahak Safal - Hum Safal', MoU with Vendors, Auto-Indenting and B2B portal etc. Under his stewardship, the Hardwar Unit was awarded CII's 'Commendation Award for Strong Commitment to TQM', in November, 2003.

As a crusader for Total Quality movement, Shri Jain is associated with many leading organisations. He is also a member of the Technical Committee for the CII Exim Bank Award.

**Shri Arun Kumar Mathur**, aged 58 years, is a Mechanical Engineering Graduate from the National Institute of Technology, Durgapur.

Shri Mathur took over the charge as Director (Industrial Systems & Products) of BHEL in May 2005. As Director (IS&P), he holds the responsibility for spearheading BHEL's business for Power Transmission Projects, Captive Power Plants, Transportation, Compressors and Mechanical systems, Motors, Non-conventional Energy products, Distributed Power Generation and Ceramics Business.

He started his career in BHEL, as a Graduate Apprentice at Tiruchirapalli in 1968, and after acquiring years of experience across diverse assignments in Production, Project Management and construction of Power Projects, both in India and abroad,



he rose to position of Chief of Power Sector, Northern Region (PS-NR) in 1996, where he was responsible for Construction, After-Sales-Service and Renovation jobs of Power and Industrial projects.

Shri Mathur has an outstanding track record in the field of both project and construction management of Thermal, Hydro, Nuclear and Gas based power plants. He has set benchmarks in reducing the erection and commissioning cycles of power plants of unit size up to 500 MW, including turnkey installations. In 2002, under his stewardship PS-NR was accredited with prestigious ISO-14001 and OHSAS-18001, the first ever in the service sector to get such accreditations. PS-NR was also awarded the esteemed Rajiv Gandhi Award for Quality Excellence instituted by the Bureau of Indian Standards.

Of special significance is his tenure as Executive Director, Tiruchirapalli complex. Tiruchi Complex comprises High Pressure Boiler Plant and Seamless Steel Tube Plant at Tiruchi, Boiler Auxiliaries Plant at Ranipet, Piping Centre at Chennai and Industrial Valves Division at Goindwal. Tiruchy Complex is one of the largest manufacturing facility of Power Generation equipment and employs more than 13,000 persons. It was under Shri Mathur's distinguished leadership that the complex achieved the highest ever turnover. Special focus was given on control of input costs, product quality, optimum utilization of resources, project cycle time reduction. Tiruchi unit in this period implemented Enterprise Resource Planning across all the products and operations. It was due to his managerial acumen that the operations of seamless steel tube plant have shown remarkable improvement. Major Research & Development projects in clean coal technologies were initiated and steps taken for bridging the technology gaps of once-through boilers. Tiruchi unit received the CII-EXIM award for significant improvement in Total Quality Management for three years in succession.

Shri Mathur has been trained in Management of Complex Projects by PriceWaterhouse in UK and has the unique distinction of leading the project, manufacturing and marketing segments in the organization. He has represented BHEL in various national and international committees including Carbon Sequestration Forum. He is a life member of Indian Welding Society and Honorary Fellow of Indian Society of Non-destructive Testing.

**Shri Krishnaswamy Ravi Kumar**, aged 56 years, is an M. Tech. from IIT Madras and has Post Graduate Diploma in Business Administration to his credit.

Prior to assuming charge as Director (Power) in BHEL, Shri Ravi Kumar has 33 years of professional experience which include three years of experience in the private sector prior to joining BHEL in 1975.

In BHEL, Shri Ravi Kumar joined the Energy Systems and New Products Division (R&D) and worked in various disciplines viz., Engineering of Control Equipment Products in Electronics Division - Bangalore, Construction and Project Management of Thermal, Hydro, Nuclear, Industrial sets in of Power Sector - Southern Region (PS-SR) and Head of Marketing of Power Sector, New Delhi.

Shri Ravi Kumar was instrumental in achieving many firsts for BHEL namely first 1000 MW coal based turnkey project of NTPC at Simhadri in Andhra Pradesh completed in a record 39 months, first 350 MW gas based turnkey project of NTPC at Kayamkulam in Kerala involving dredging and dynamic compaction of 14 lakh cu m of sand again in a record time and synchronization of 210 MW Raichur unit 7 of KPCL in a record 25 months besides introduction of a host of innovative erection techniques. Under his stewardship, new technologies in the field of coal and gas based power plants were introduced for the first time into the country were meticulously executed. Some of these were Tower type boilers at Vijayawada, Advance Class Gas Turbines at Kovilkalappal in Tamil Nadu, Once through boilers at Talcher etc.

As Head of Power Sector-Marketing, record Order booking of about Rs.13,500 Crores in 2004-05 in the Power

Sector business has been achieved, which is an all time high, mostly secured against stiff international competition.

He has presented papers in the fields of Electronics and Energy in National and International Seminars.

**Shri C.S. Verma**, aged 46 years, who holds a Master's degree in Commerce, a Master's degree in Management and a Bachelor's degree in Law, is a Fellow Member of the Institute of Company Secretaries of India as also an Associate Member of the Institute of Cost & Works Accountants of India.

He last served as Director (Finance) on the Board of ITI, the country's premier telecom Company under the administrative control of Department of Telecommunications, Ministry of Communications & IT, Government of India. During his service of more than three years in the Telecom major, Shri Verma through adroit management of funds and strategic deployment of scarce resources, lent the much needed financial muscle required for ITI to operate in the highly competitive telecom markets. With over 2 decades of professional experience behind him, he is credited to be an expert in funds mobilisation having raised huge resources for the Indian Railway Finance Corporation, where he served as Group General Manager before taking over as Director (Finance) in ITI in February 2002. He has handled a number of foreign issues, swap transactions and derivative products. His earlier assignments include a stint in Delhi Stock Exchange (DSE) as its General manager where he worked for about 4 years and in a Financial Institution where he worked for about 9 years.

Shri Verma has widely travelled abroad and has visited a number of countries.

#### **PART-TIME OFFICIAL DIRECTORS**

**Dr. Surajit Mitra**, aged 53 years, is an IAS officer of 1977 batch from Assam-Meghalaya cadre.

He is at present Joint Secretary in the Department of Heavy Industry, Ministry of Heavy Industries & Public Enterprises, Govt. of India.

He has experience of working in Ministries / Departments of Govt. of India like Ministries of Commerce, Petroleum, Rural Development, Tourism, Communication, Defence, Home and North East Development, Govt. of India. He has also working experience in State Governments i.e. as Principal Secretary, Planning Commissioner and Secretary to the Departments of Tourism, Culture, Home, Rural Development, Mines & Minerals, Social Welfare, Industry, Education, Revenue and Rehabilitation.

Dr. Mitra is a Doctorate in Economics from University of Cambridge, U. K.

Dr. Mitra has been given administrative & academic recognition as Fellow of Queen Elizabeth House, University of Oxford (International Trade) and Honorary Professor in the Centre for Policy Research (South-South Cooperation).

Presently, Dr. Mitra is Chairman on the Board of Fluid Control Research Institute and Director on the Boards of Maruti Udyog Limited, Scooters India Limited and Bharat Bhari Udyog Nigam Limited.



**ANNEXURE-3 TO THE DIRECTORS' REPORT  
MANAGEMENT'S REPLY**

**AUDITORS' REPORT**

**TO THE MEMBERS OF BHARAT HEAVY  
ELECTRICALS LIMITED**

We have audited the attached Balance Sheet of Bharat Heavy Electricals Limited as at 31<sup>st</sup> March, 2005 and also the Profit and Loss Account and the cash flow statement for the year ended on that date annexed thereto. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with the Auditing Standards generally accepted in India. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatements. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in financial statements. An audit also includes assessing the accounting principles used and significant estimates made by the management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

I. As required by the Companies (Auditors' Report) Order, 2003, issued by the Company Law Board in terms of Section 227 (4A) of the Companies Act, 1956, we enclose in the Annexure a statement on the matters specified in paragraphs 4 & 5 of the said Order.

II. Further to our comments in the Annexure referred to in paragraph I above, we report that:

(1) Excess depreciation of Rs. 263.10 lakhs has been provided, due to charging off "Fixed Assets" costing upto Rs. 10,000/- and those whose written down value is Rs. 10,000/- or less at the beginning of the year, on account of Accounting Policy No.9(iii). (Refer Note No. 3 of Schedule 19).

(2) The balances of Sundry Debtors, Creditors, Contractors, Advances, Deposits and Stocks/materials lying with Sub-contractors/Fabricators are subject to confirmation and reconciliation. The consequential impact thereof, if any, on the accounts remains unascertained (Refer Note No. 23 of Schedule 19).

(1) The policy referred by the auditors is being followed by the company consistently for several years along with necessary disclosures in the accounts.

(2) Requests for confirmations are sent and reconciliations with the parties are carried out as an ongoing process and the management does not envisage any significant impact on the accounts due to this.

(3) Provision and payment of service tax has not been made in respect of commissioning and installation services upto 9<sup>th</sup> September 2004 as referred to in Note No. 20 of Schedule 19. Acceptance of the claims on account of reimbursement of service tax liability after 9<sup>th</sup> September 2004 and confirmation of dues on this account is pending from the customers as reported in para 2 above. Further no provision has been made in respect of service tax liability, if any, on account of amount collected by the company towards freight and insurance from the customers in view of the legal opinion obtained as mentioned in Note No.20 of Schedule 19.

In view of the above uncertainties, the impact on the Profit & Loss Account, on account of non-provision of service tax and non-recoverability is indeterminable.

(4) Provision for Contractual obligations is made @2.5% of contract value as in previous years in accordance with the Accounting Policy No. 14. Accounting Standard 29 (AS-29) which is mandatory from 1<sup>st</sup> April 2004 requires inter alia that the provision should reflect the current best estimate of expenditure to be incurred on this account and that the expected timing of any resulting outflows of economic benefits is to be disclosed. We are expected to obtain sufficient appropriate audit evidence as to whether the accounting estimate is reasonable. In the absence of sufficient data regarding the appropriateness of the above provision, we are unable to express an opinion as to whether the provision made is in line with AS-29.

(5) Attention is drawn to :

- (i) Note No. 8 of Schedule 19 regarding disputed Income Tax demand amounting to Rs. 24,974.61 lakhs.
- (ii) Note No.19 (i) of Schedule 19 regarding revision in accounting practice relating to recognition of Terminal Excise Duty Benefits resulting in increase in profit for the year by Rs. 5,934.46 lakhs.
- (iii) Note No 19(ii) of Schedule 19 regarding change in accounting practice relating to valuation of non-moving inventory resulting in decrease in profit for the year by Rs. 79.20 lakhs.
- (iv) Note No. 19 (iii) of Schedule 19 regarding change in

(3) Provision and payment of service tax has not been made in respect of commissioning and installation services upto 9<sup>th</sup> September, 2004 in light of the legal opinions obtained and pronounced legal judgments. There is no demand from the Tax authorities for service tax on the above.

In respect of liability of service tax arising after 9<sup>th</sup> September, 2004, income on account of service tax has been recognized based on terms and conditions of the contracts with customers. In some cases, the amount of service tax billed on the customer has already been collected.

As per the legal opinion, the amount collected by the Company towards insurance and freight will not attract Service Tax since the Company is not providing Services as a "Goods Transport Agency" or as an "Insurer".

In view of the above, the treatment given in the accounts is in order.

(4) The disclosure requirement of AS-29 has been complied with by giving the required information at appropriate place in the accounts. The Company's policy of providing for contractual obligation @ 2.5% of contract value is consistent over a period and is on a conservative basis. However, adequacy or otherwise of the above will be reviewed during 2005-06.



accounting practice relating to long term export contracts resulting in decrease in profit for the year by Rs.117.15 lakhs.

- (v) Note No. 19 (iv) of Schedule 19 regarding change in accounting policy relating to revenue recognition in respect of erection and project management services resulting in increase in profit for the year by Rs. 768.76 lakhs.

- (6) We further report that, without considering the effect of paragraphs 2 to 4 above and impact of earlier years on depreciation as mentioned in paragraph 1 above, the effect of which could not be determined, had the observation made by us in paragraph 1 above been considered, the Profit before tax for the year would have been Rs. 1,58,426.66 lakhs (as against the reported figure of Rs. 1,58,163.56 lakhs), Reserve & Surplus would have been Rs. 5,78,476.48 lakhs (as against the reported figure of Rs.5,78,213.38 lakhs), and total Net Block of fixed assets would have been Rs. 1,04,687.25 lakhs (as against the reported figure of Rs. 1,04,424.15 lakhs).

Subject to the foregoing and consequential effect thereof:

- (a) We have obtained all the information and explanations which to the best of our knowledge and belief were necessary for the purpose of our audit.
- (b) In our opinion, proper books of account as required by law have been kept by the Company so far as appears from our examination of the books and proper returns adequate for the purposes of our audit have been received from the branches not visited by us.
- (c) The Branch Auditor's Reports have been furnished to us and have been appropriately dealt with while preparing our report.
- (d) The Balance Sheet and Profit and Loss Account and cash flow statement dealt with by this report are in agreement with the books of account and with the audited returns received from the branches.
- (e) In our opinion, the Balance Sheet and Profit and Loss Account and cash flow statement dealt with by this report comply with the Accounting Standards referred to in sub Section (3C) of Section 211 of the Companies Act, 1956.
- (f) In terms of Notification No. GSR 829(E) dated

21.10.2003 issued by the Department of Company Affairs, Government of India, the provisions of Section 274(1)(g) of the Companies Act, 1956 are not applicable to the Company.

- (g) In our opinion and to the best of our information and according to the explanations given to us, the said accounts read together with the Accounting Policies and Explanatory Notes in Schedule-19, give the information required by the Companies Act, 1956, in the manner so required and give a true and fair view in conformity with the accounting principles generally accepted in India:
- (i) In the case of the Balance Sheet, of the state of affairs of the Company as at March 31, 2005; and
  - (ii) In case of Profit & Loss Account of the profit for the year ended on that date; and
  - (iii) In the case of cash flow statements of the cash flows for the year ended on that date.

**For J.C. BHALLA & CO.  
CHARTERED ACCOUNTANTS**

**Sd/-  
(SUDHIR MALLICK)  
PARTNER  
Membership No. 80051**

**Place : New Delhi  
Dated : 1st June, 2005**



## ANNEXURE TO THE AUDITORS' REPORT

## MANAGEMENT'S REPLY

(Referred to in Para I of our report of even date)

i) (a) The Company has generally maintained proper records showing full particulars including quantitative details and situation of its fixed assets.

(b) Except in respect of assets given on lease, the management has generally carried out the physical verification of a portion of the fixed assets in accordance with their phased programme of physical verification, which is considered reasonable having regard to the size of the Company and nature of its business and no material discrepancies were noticed on such verification to the extent verification was made during the year.

(c) There has been no disposal of substantial part of the fixed assets affecting the going concern concept.

ii) (a) Physical verification of inventory has been conducted by the management under Perpetual Inventory System at regular intervals during the year except stock of work in progress and finished goods in few units where these are verified at the year end with reference to the inspection reports and production reports of the Planning Department of such units.

As regards the service divisions, the stores, spare parts etc., are purchased for immediate consumption and unused stocks have been physically verified at the year end.

In regard to stocks lying with contractors/fabricators and other parties, confirmations were received in a few cases only.

Subject to the above, in our opinion the frequency of verification is reasonable.

(b) In our opinion procedures of physical verification of inventory, followed by the management are generally reasonable and adequate in relation to the size of the Company and the nature of its business.

(c) On the basis of our examination of the records of the inventory, in our opinion, the company has generally maintained proper records of inventory and the discrepancies noticed on physical verification of inventory having regard to the size and nature of operations of the company were not material and have

BHEL has supplied 53 AC/DC locomotives of Type WCAM-3 and 12 AC/DC locomotives of Type WCAG-1 to Indian Railways on lease. As per terms of Lease Agreement with the Indian Railways, a certificate confirming physical possession of these locomotives has been obtained from Indian Railways like in the past.

Requests for confirmations are sent and reconciliations with the parties are carried out as an ongoing process and the management does not envisage any significant impact on the accounts due to this.

been properly dealt with in the books of account of the Company.

- iii) a) According to the information given to us, the company has not granted any loans, secured or unsecured to companies, firms and other parties covered in the register maintained under section 301 of the Companies Act, 1956. Accordingly, clauses (iii) (b) to (iii)(d) of paragraph 4 of the Companies (Auditor's Report) Order, 2003 are not applicable to the company for the current year.

(b) According to the information given to us, the company has not taken any loans, secured or unsecured, from companies, firms or other parties covered in the register maintained under Section 301 of the Companies Act, 1956. Accordingly, clauses (iii) (f) and (iii) (g) of paragraph 4 of the Companies (Auditor's Report) Order, 2003 are not applicable to the company for the current year.

- iv) We have been informed that Electronics Division, Bangalore of the company has deployed SAP R3 as its Enterprise Solution Software. Adequate licences have not been procured and consequently many individuals use a single licence. There is inherent risk with more than one person using an identity as the level of security under SAP could be compromised. Furthermore the erstwhile system of passing document manually is still in vogue. There is a possibility of authorizations in the SAP systems being more than the manual authorizations. Subject to above, in our opinion and according to the information and explanation given to us, there are adequate internal control procedures, commensurate with the size of the company and the nature of business with regard to purchase of inventory and fixed assets and sale of goods and services. Further on the basis of our examination of the books and records of the company and according to the information and explanation given to us, we have neither come across nor have been informed of any instances of major weaknesses in the aforesaid internal control procedures. During the course of our audit we have not observed any continuing failure to correct major weaknesses in internal control.
- v) In our opinion and according to the information and explanation given to us, there are no contracts and

Additional SAP license requirement is presently under review and shall be procured shortly, based on finalization of end user requirements. However, apart from the internal checks and data validation existing in ERP system, the necessary checks and approval processes are kept in place, as per legacy system, as second level checks. As such management is of the opinion that overall security is adequate and risk is not envisaged.

arrangements referred to in Section 301 of the Act during the year that need to be entered in the register maintained under that Section. Accordingly, clause (v)(b) of paragraph 4 of the Companies (Auditor's Report) Order, 2003 is not applicable to the company for the current year.

- vi) The company has not accepted any deposits from public during the year within the meaning of sections 58A and 58AA or any other relevant provisions of the Act and the Companies (Acceptance of Deposits) Rules 1975 framed there under.
- vii) In our opinion, the Internal Audit System of the Company is largely commensurate with the size and nature of its business.
- viii) Prima facie, the Company has maintained cost accounts and records prescribed for the manufacture of Electric Motors, Seamless Steel Tubes, Electric Generator, Power Transformers, Power Driven Pumps, Power generation through windmills, Control Instrumentation and Automation Equipment, pursuant to the rules made by the Central Government under Section 209(1) (d) of the Companies Act, 1956. No detailed examination of the records was, however, made with a view to determine whether they are accurate or complete. To the best of our knowledge and according to the information given to us the Central Government has not prescribed the maintenance of the cost records under Section 209(1)(d) of the Companies Act 1956 for other products of the Company.
- ix) (a) According to the information and explanation given to us, and according to the books and records as produced and examined by us, in our opinion, undisputed statutory dues including Provident Fund, Investor Education and Protection Fund, Employees State Insurance, Income Tax, Sales Tax, Wealth Tax, Service Tax, Excise Duty, Customs Duty, Cess and any other statutory dues except Service Tax as stated in Para II (3) of our report of even date have generally been regularly deposited with the appropriate authorities.
- (b) According to the information and explanation given to us, there are no arrears of outstanding statutory dues as at 31<sup>st</sup> March, 2005 for a period of more than six months from the date they become payable except

The matter of ground rent has been taken up with DDA for early settlement.

The sales tax amount represents provision created in 2003-04 for the years 2000-01, 2001-02 and 2002-03 and is

Service Tax as stated in Para II (3) of our report of even date, ground rent and sales tax of Rs.288.22 lakhs and Rs.8.43 lakhs respectively.

expected to be adjusted against anticipated refund after final assessment of sales tax for these years.

- (c) According to the information and explanation given to us, there are no amounts in respect of Custom Duty, Wealth Tax and Cess which have not been deposited with the appropriate authorities on account of any dispute. Details of Sales Tax, Income Tax, Excise Duty and Service Tax which have not been deposited on account of dispute are as under.

Sl. No.	Name of the Statute	Nature the of Statute	Amount (Rs./ lakhs)	Forum where dispute is pending
1.	Central Sales Tax and Sales Tax Act of various states	Sales Tax	277.64 2,076.48 11,459.47 2,392.05 1.65 9,116.19	Assessing Officer Commissioner (Appeals) Appellate Tribunal High Court Supreme Court Various Appellate Authorities
2.	Income Tax Act, 1961	Income Tax	127.20 1,105.80 143.68	Assessing Officer Commissioner (Appeals) High Court
3.	Central Excise Act, 1944	Excise Duty	917.65 3,960.74 99.93	Commissioner (Appeals) Appellate Tribunal High Court
4.	Finance Act, 1994	Service Tax	221.30	Assessing Officer
		<b>Total</b>	<b>31,899.78</b>	

- x) The company has no accumulated losses as at March 31, 2005 and it has not incurred any cash losses in the financial year ended on that date or in the immediately preceding financial year.
- xi) According to the records of the company examined by us and the information and explanations given to us, the company has not defaulted in repayment of dues to financial institutions, banks or debenture holders, except that Rs. 60.35 Lakhs is outstanding for a period varying upto 69 days on account of overdue bills discounted with the banks and not honoured by the customers on the due date as informed to us.
- xii) The company has not granted any loans and advances on the basis of security by way of pledge of shares, debentures and other securities.
- xiii) In our opinion, the company is not a chit fund or a *nidhi*/mutual benefit fund/society. Therefore, the provisions of clause 4(xiii) of the Companies (Auditor's Report) Order, 2003 are not applicable to the company.

The payment has since been made.

- xiv) In our opinion, the company is not dealing in or trading in shares, securities, debentures and other investments. Accordingly, the provisions of clause 4(xiv) of the Companies (Auditor's Report) Order, 2003 are not applicable to the company.
- xv) In our opinion and according to the information and explanations given to us, the company has not given any guarantee for loans taken by others from banks or financial institutions during the year.
- xvi) As per information and explanations given to us, the company has not obtained any term loan during the year.
- xvii) According to the information and explanations given to us and on an overall examination of the balance sheet of the company, we report that no funds raised on short-term basis have been used for long term investment.
- xviii) The company has not made any preferential allotment of shares to parties and companies covered in the register maintained under section 301 of the Companies Act, 1956 during the year.
- xix) In our opinion, the company has not issued any debentures during the year.
- xx) The company has not raised any money by public issue during the year.
- xxi) During the course of our examination of the books and records of the company, carried out in accordance with the generally accepted auditing practices in India, and according to the information and explanations given to us, we have neither come across any instance of fraud on or by the company noticed or reported during the year nor have we been informed of any such case by the management, that causes the financial statements to be materially mis-stated.

**For J.C. BHALLA & CO.  
CHARTERED ACCOUNTANTS**

**Sd/-  
(SUDHIR MALLICK)  
PARTNER  
Membership No. 80051**

**Place : New Delhi  
Dated : 1st June, 2005**

**Comments of the Comptroller and Auditor General of India under section 619(4) of the companies Act, 1956 on the accounts of Bharat Heavy Electricals Limited, New Delhi for the period ended 31 March 2005**

<i>Comments of C &amp; AG</i>	<i>Management's Reply</i>								
<p><b>A. Profit &amp; Loss Account</b></p> <p><b>Profit after tax – Rs. 953.40 crore</b></p> <p>Profit of the company was overstated by Rs.12.76 crore on account of following:</p> <table border="1"> <thead> <tr> <th></th><th>Rs. in crores</th></tr> </thead> <tbody> <tr> <td>1. Short-provision of contractual obligation for renovation and modernization work done in Kothagodam Project (at a rate of 2.5 per cent of Rs. 172.58 crore).</td><td>2.64</td></tr> <tr> <td>2. Non provision of contractual obligation at a rate of 2.5 per cent of spares valuing Rs. 34.42 crore supplied to various customers during the year 2003-04 by HEEP, Hardwar</td><td>0.86</td></tr> <tr> <td>3. Non provision of liability towards liquidated damages levied by Pragati Power Corporation Limited.</td><td>9.26</td></tr> </tbody> </table>		Rs. in crores	1. Short-provision of contractual obligation for renovation and modernization work done in Kothagodam Project (at a rate of 2.5 per cent of Rs. 172.58 crore).	2.64	2. Non provision of contractual obligation at a rate of 2.5 per cent of spares valuing Rs. 34.42 crore supplied to various customers during the year 2003-04 by HEEP, Hardwar	0.86	3. Non provision of liability towards liquidated damages levied by Pragati Power Corporation Limited.	9.26	<p>This does not have a material impact on the Company's PBT of Rs. 1581.64 crores.</p> <p>Noted. Existing provision of Rs. 1.68 crores will take care of balance obligations in the project, if any.</p> <p>The company has been consistently following the practice of providing for contractual obligation at 2.5 per cent of the total turnover for supply of spares made during the year, which the management feels is adequate to meet the obligation, if any, on the spares.</p> <p>As abundant caution provision has been made in the first quarter of 2005-06 though the matter is still under discussion with the customer.</p>
	Rs. in crores								
1. Short-provision of contractual obligation for renovation and modernization work done in Kothagodam Project (at a rate of 2.5 per cent of Rs. 172.58 crore).	2.64								
2. Non provision of contractual obligation at a rate of 2.5 per cent of spares valuing Rs. 34.42 crore supplied to various customers during the year 2003-04 by HEEP, Hardwar	0.86								
3. Non provision of liability towards liquidated damages levied by Pragati Power Corporation Limited.	9.26								
<p><b>B. General</b></p> <p>(i). Contingent Liabilities (Note no. 5 (v) of Notes to Accounts) do not include a sum of Rs. 11.39 crore claimed by four customers towards liquidated damages.</p> <p>(ii).A reference is invited to comment No. B 2 of the comments of the Comptroller and Auditor General of India under section 619(4) of the Companies Act, 1956 on the accounts of the Company for the period ended 31 March 2004 relating to withdrawal of provision for contractual obligation. Based on the assurance given last year, the Company revised its accounting guidelines for withdrawal of contractual obligation so as to avoid any discretion in this regard.</p> <p>According to the revised guidelines, the contractual obligation may be vacated if, inter-alia, there is no shortfall in performance as per the report submitted to the customer and no claim of the customer on account of performance of equipment is pending. However, the customer's acceptance of performance guarantee test has not been envisaged in these guidelines, in the absence of which there is scope for exercising discretion in the withdrawal of provision for contractual obligation.</p>	<p>Noted for review in 2005-06.</p> <p>The management is of the view that guidelines issued are adequate since guidelines also provide for retention of contractual obligation or suitable provision in case of shortfall in performance.</p>								





# **REVIEW OF ACCOUNTS OF BHARAT HEAVY ELECTRICALS LIMITED, NEW DELHI FOR THE YEAR ENDED 31ST MARCH 2005 BY THE COMPTROLLER AND AUDITOR GENERAL OF INDIA.**

Note: The Review of Accounts has been prepared without taking into account comments under section 619 (4) of the Companies Act 1956 and qualification contained in the Statutory Auditor's Report.

## **1. FINANCIAL POSITION**

The table below summarises the financial position of the Company under broad headings for the last three years.

	(Rs. in crore)		
	<u>2002-2003</u>	<u>2003-2004</u>	<u>2004-2005</u>
<b>LIABILITIES</b>			
(a) Paid-up Capital			
(i) Government (including share application money pending allotment)	165.76	165.76	165.76
(ii) Others	79.00	79.00	79.00
(b) (i) Free reserves and surplus	4556.14	5048.43	5779.38
(ii) Capital reserves	2.77	2.75	2.75
(c) Borrowings			
(i) From Financial Institution	4.69	1.56	0.00
(ii) Cash Credit	0.00	0.00	0.00
(iii) Others	500.00	500.00	500.00
(iv) Interest accrued and due	2.33	2.33	2.33
(d) (i) Current liabilities & provision	4752.93	6336.85	8445.90
(ii) Credits for assets taken on lease	27.20	36.13	34.65
<b>TOTAL</b>	<b>10090.82</b>	<b>12172.81</b>	<b>15009.77</b>
<b>ASSETS</b>			
(e) Gross block	3349.31	3459.60	3628.94
(f) Less: Depreciation	2230.28	2411.51	2619.35
Add : Lease Adjustment A/c	51.47	46.04	34.65
(g) Net block	1170.50	1094.13	1044.24
(h) Capital work-in-progress	58.70	108.56	95.32
(i) Investments	10.33	28.98	8.95
(j) Current assets, loans and advances	8348.40	10424.70	13342.98
(k) Deferred tax assets	407.39	498.52	518.28
(l) Miscellaneous expenditure not written off	95.50	17.92	0.00
<b>TOTAL</b>	<b>10090.82</b>	<b>12172.81</b>	<b>15009.77</b>
m) Working Capital (j-d(i)-c(iv))	3593.14	4085.52	4894.75
n) Capital employed (g+m)	4763.64	5179.65	5938.99
o) Net worth (a+b(i)-l)	4705.40	5275.27	6024.14
p) Net worth per rupee of capital	19.22	21.55	24.61

## 2. SOURCES AND UTILISATION OF FUNDS

Funds amounting to Rs.1212.43 crore from internal and external sources were realised and utilised during the year as detailed below:

	(Rs. in crore)	
<b>Sources of Funds</b>		
(a) Funds from operations :		
Profit after tax	953.40	
Add : Depreciation	207.84	1161.24
(b) Decrease in Miscellaneous Expenditure not written off		17.92
(c) Decrease in Investments		20.03
(d) Decrease in CWIP		13.24
<b>TOTAL</b>		<b>1212.43</b>
<b>Utilisation of Funds</b>		
(a) Increase in Fixed Assets		157.95
(b) Dividend paid (incl. Dividend Tax)		165.85
(c) Increase in Deferred Tax Assets		19.76
(d) Increase in Working Capital (excluding proposed dividend & tax thereon)		865.82
(e) Decrease in Borrowed funds		3.05
<b>TOTAL</b>		<b>1212.43</b>

## 3. WORKING RESULTS

The working results of the Company for the last three years are given below :

	(Rs. in crore)		
	2002-2003	2003-2004	2004-2005
i) Sales	7482.22	8662.47	10336.40
ii) Less : Excise Duty	551.92	643.44	809.26
iii) Net Sales	6930.30	8019.03	9527.14
iv) Other or Misc. Income	508.72	512.77	655.70
v) Profit before tax and prior period adjustments	812.24	1027.50	1583.66
vi) Prior period adjustments	9.81	12.75	2.03
vii) Profit before tax*	802.43	1014.75	1581.63
viii) Tax provisions	357.92	356.60	628.23
ix) Profit after tax	444.51	658.15	953.40
x) Proposed Dividend	110.45	165.86	222.45

\* Unit-wise working results are given in annexure.

## 4. RATIO ANALYSIS

Some important financial ratios on the financial health of the company at the end of last three years ending 31st March:

	(Rs. in crore)		
	2002-2003	2003-2004	2004-2005
A. Liquidity ratio:			
Current ratio(j/d(i)+c(iv))	1.76	1.64	1.58



B. Debt Equity Ratio			
Long term debt/Equity[c(i)to (iii) excl. short term loans/o]	0.11	0.10	0.08
C. Profitability ratios:			(in Percentage)
(a) Profit before tax to			
(i) Capital employed	16.84	19.59	26.63
(ii) Net Worth	17.05	19.24	26.25
(iii) Sales	10.72	11.71	15.30
(b) Profit after tax to Equity	181.61	268.90	389.52
(c) Earnings per share (in Rupees)	18.16	26.89	38.95

## 5. INVENTORY LEVELS

The inventory levels at the close of the last three years ending 31st March are as under:

	(Rs. in crore)		
	2002-2003	2003-2004	2004-2005
(a) Raw materials	719.66	853.06	1109.28
(b) Store, spares and loose tools	80.86	87.25	96.21
(c) Work-in-progress and semi-finished goods	938.43	943.96	1405.67
(d) Finished goods	274.81	235.82	309.04
(e) Scrap	13.30	13.60	24.07
<b>TOTAL</b>	<b>2027.06</b>	<b>2133.69</b>	<b>2944.27</b>

The stock of finished goods represented 0.44 , 0.33 & 0.36 month's sales in 2002-03, 2003-04 & 2004-05 respectively.

## 6. SUNDRY DEBTORS

The sundry debtors and sales in the last three years ending 31st March are as follows :

As on 31st March	Sundry Debtors			Sales (including excise duty)	%age of Sundry debtors to sales
	Considered Good	Considered Doubtful	Total		
2003	4075.78	677.56	4753.34	7482.22	63.53
2004	4608.48	686.27	5294.75	8662.47	61.12
2005	5972.14	754.57	6726.71	10336.40	65.08

Agewise analysis of sundry debtors as on 31.03.2005 is as follows:

	(Rs. in crore)
i) Less than 6 months	3949.07
ii) 6 months to 1 year	654.31
iii) 1 year to 3 years	1188.02
iv) More than 3 years	935.31
<b>TOTAL</b>	<b>6726.71</b>

Sd/-  
(VIJAYA MOORTHY)

New Delhi  
Date : 26.08.2005

PRINCIPAL DIRECTOR OF COMMERCIAL AUDIT  
AND EX-OFFICIO MEMBER, AUDIT BOARD-III, NEW DELHI

## WORKING RESULTS OF BHEL UNITS

	ANNEXURE (Rs. in crore)		
	2002-03	2003-04	2004-05
Heavy Electricals Equipment Plant, Hardwar	117.05	127.98	229.62
Heavy Power Equipment Plant, Hyderabad	136.80	157.73	321.18
High Pressure Boiler Plant, Trichy	131.21	150.27	139.15
Heavy Electricals Plant, Bhopal	56.13	131.37	156.38
Central Foundry Forge Plant, Hardwar	-9.65	4.48	10.33
Transformer Plant, Jhansi	1.44	3.28	8.02
Electronics Division, Bangalore	78.61	101.92	193.00
Industrial Valves Plant, Goindwal	1.79	2.02	2.09
Industrial Systems Group, Bangalore	-9.81	3.17	8.82
Boiler Auxiliary Plant, Ranipet	20.41	15.87	21.40
Electro Porcelains Division, Bangalore	1.45	1.43	3.52
Insulator Plant, Jagdishpur	-6.90	-5.10	0.75
Power Group (Four Regions and PEM)	220.72	299.85	413.65
Overseas Project Co-ordination, New Delhi	13.38	5.55	14.89
Centre of Technology Transfer, Hyderabad	2.50	3.63	6.09
Component Fabrication Plant, Rudrapur	-1.32	-2.28	-1.99
Heavy Equipment Repair Plant, Varanasi	1.67	3.87	6.66
Advance Research Project, New Delhi	0.28	0.48	0.46
Transmission Projects Group, Bhopal	2.40	2.07	1.28
EMRP & OSB, Mumbai	0.12	-5.53	-5.53
Distributed Power Generation Business Group, Hardwar	-	-1.01	-0.70
Corporate & Other Adjustments	44.15	13.70	52.57
<b>TOTAL</b>	<b>802.43</b>	<b>1014.75</b>	<b>1581.63</b>



## ***ANNEXURE-4 TO THE DIRECTORS' REPORT***

### **CORPORATE GOVERNANCE**

#### **1. COMPANY'S PHILOSOPHY ON CODE OF CORPORATE GOVERNANCE**

BHEL's Vision is to build a World-class Engineering Enterprise committed to enhancing Stakeholder Value and Mission is to be an Indian Multinational Engineering Enterprise providing total business solutions through quality products, systems and services in the fields of Energy, Industry, Transportation, Infrastructure and other potential areas.

BHEL has adopted the following core values:

- Zeal to Excel and Zest for Change
- Integrity and Fairness in all matters
- Respect for Dignity and Potential of individuals
- Strict Adherence to Commitments
- Ensure Speed of Response
- Foster Learning, Creativity and Team-work
- Loyalty and Pride in the Company

BHEL has a long history of respecting the laws and ethical standards of the places where we do business. We strive to be a good business partner. Though our business environment will change, our commitment to ethical and moral standards of business conduct must remain constant.

BHEL has committed to conducting its business in a manner that exemplifies each of these core values. These values should serve as meaningful guides to all of our Employees and Directors as the Company goes about its mission. Sound corporate governance is an important component of our commitment to these values, and our philosophy on corporate governance begins with our Board of Directors.

- The composition of the Board of Directors comprises 50% of the Independent Directors.
- The Audit Committee is comprised exclusively of independent directors.
- The Investors / Shareholders Grievance Committee is chaired by Independent director.
- Our Board has established terms of reference for its operation and the operation of its Committees in line with Clause 49 of the Listing Agreement and Section 292A of the Companies Act, 1956 mentioned elsewhere in this report.

BHEL believes that conducting business in a manner that complies with the corporate governance procedures and Code of Conduct, exemplifies each of our core values, positions us to deliver long-term returns for our shareholders, favorable outcomes for our customers and attractive opportunities for our employees.

Realizing the need for strengthening the Corporate Governance norms, SEBI amended clause 49 of the Listing Agreement based on the recommendations made by the N. R. Narayana Murthy Committee. The revised code will come into force from 1<sup>st</sup> January 2006. As part of its initiative, BHEL has taken proactive steps to adhere to the revised code in this report.

Our reputation is a priceless asset. Safeguarding our reputation requires each of us to make sound judgments every day. Consistently operating by the highest standards of code of Corporate Governance in all our relationships generates trust in us as individuals and as a Company.

## 2. BOARD OF DIRECTORS

### 2.1 Composition & category of Directors

Pursuant to Section 617 of the Companies Act, 1956, BHEL is a 'Government Company'. Presently 67.72% of the total paid-up share capital of the Company is held by the President of India.

The Board of Directors has appropriate mix of executives represented by functional directors and non-executive directors represented by Government Nominees and Independent Directors to maintain the independence of the Board, and to separate the Board functions of management and control. The Chairman is an executive director. Therefore, Independent Directors comprise half of the strength of the Board.

The composition of the Board of Directors is as follows:

Chairman & Managing Director	1
Whole-time Executive (Functional) Directors	5
Part-time Official Directors (Government Nominees) representing the Ministry of Heavy Industries & Public Enterprises, Government of India	2
Part-time Non-official (Independent) Directors	8
Total	16

However, as on 31.03.2005, the posts of Director (IS&P) and Director (Power) were vacant, which were subsequently filled up on 16<sup>th</sup> May 2005 and as against the number of 8 Independent Directors, only one was in position. The vacancies of 7 Independent Directors still exist and necessary action to fill up the same is being taken by the Government of India.

The Board is chaired by Shri Ashok K. Puri, Chairman & Managing Director w.e.f. 22<sup>nd</sup> September 2004.



## 2.2 Attendance of each director at the Board meetings and at the last AGM

Director's name S/Shri	No. of Board meetings		Last AGM (held on 28.09.04)
	Held	Attended	
Ashok K. Puri Chairman & Managing Director	12	12	Yes
H. W. Bhatnagar Director (IS&P) (Upto 28.02.2005)	11	10	Yes
C. Srinivasan Director (Finance)	12	12	Yes
Ramji Rai (Director (ER&D))	12	11	Yes
S.K. Jain Director (HR)	12	11	Yes
A. Didar Singh Part-time Official Director (Upto 23.08.2004)	6	6	-
Naresh Chaturvedi Part-time Official Director (From 29.07.2004)	7	6	No
D. R. S. Chaudhary Part-time Official Director (From 23.08.2004)	6	5	Yes
A. C. Wadhawan Part-time Non-Official (Independent) Director (Upto 14.06.2004)	4	4	-
Dr. Anand Patkar Part-time Non-Official (Independent) Director (Upto 14.06.2004)	4	4	-
G. P. Gupta Part-time Non-Official (Independent) Director (Upto 13.08.2004)	6	6	-
Sharad Upasani Part-time Non-Official (Independent) Director (Upto 25.12.2004)	10	7	No
A. H. Jung Part-time Non-Official (Independent) Director Upto 23.02.2005)	11	8	No
Sudhir Shridhar Supe Part-time Non-Official (Independent) Director (Upto 27.09.2004)	8	6	-
Ranjan Pant Part-time Non-Official (Independent) Director (Upto 27.09.2004)	8	3	-
Vineet Nayyar Part-time Non-Official (Independent) Director	12	8	Yes

**2.3 No. of other Boards or Board Committees in which Director of BHEL is a member or Chairman on 31.03.2005**

<b>Director's name S/Shri</b>	<b>Details of Directorships in other Public Limited Companies</b>	<b>Details of Committee Memberships and Committee Chairmanship</b>
Naresh Chaturvedi	<ol style="list-style-type: none"> <li>1. Bharat Bhari Udyog Nigam Limited</li> <li>2. HMT Limited</li> <li>3. Heavy Engineering Corporation Limited</li> <li>4. Engineering Projects India Limited</li> <li>5. Dishergarh Power Supply Company Limited and</li> <li>6. Cement Corporation of India Limited</li> </ol>	- NIL -
D. R. S. Chaudhary	<ol style="list-style-type: none"> <li>1. Hindustan Paper Corporation Limited</li> <li>2. Bharat Yantra Nigam Limited</li> <li>3. Andrew Yule &amp; Company Limited</li> </ol>	<b>Member:</b> <i>Audit Committee</i> <ol style="list-style-type: none"> <li>1. Hindustan Paper Corporation Limited</li> <li>2. Andrew Yule &amp; Company Limited</li> </ol>
Vineet Nayyar	<ol style="list-style-type: none"> <li>1. Mahindra British Telecom Limited</li> <li>2. Indian Oil Corporation Limited</li> <li>3. Kotak Mahindra Old Mutual Life Insurance Limited</li> <li>4. Great Eastern Shipping Company Limited</li> <li>5. Vidya Investments Private Limited</li> <li>6. MBT International Inc</li> <li>7. MBT Gmbh</li> </ol>	- NIL -

No Director of the company is a member in more than ten (10) committees or is a Chairman of more than five (5) committees across all companies in which he is a Director.

**2.4 No. of Board Meetings held, dates on which held**

The meetings of the Board are normally held at the Company's Registered Office in New Delhi and are scheduled well in advance. The Company Secretary in consultation with Chairman and Managing Director, sends notice of each Board meeting in writing to each Director. The Board agenda is circulated to the Directors in advance.

The members of the Board have access to all information of the Company and are free to recommend inclusion of any matter in agenda for discussion. In case of need, the senior management is invited to attend the Board Meetings to provide additional inputs relating to the items being discussed and / or giving presentation to the Board. The Board meets at least once in a quarter to review the quarterly results and other items on the agenda. Additional meetings are held, when necessary.



During the year under review, the Board met twelve times on the following dates:

(i) April 2, 2004	(ii) April 21, 2004	(iii) April 26, 2004
(iv) June 8, 2004	(v) July 29, 2004	(vi) August 5, 2004
(vii) August 23, 2004	(viii) September 22, 2004	(ix) October 28, 2004
(x) December 10, 2004	(xi) January 31, 2005	(xii) March 7, 2005

The maximum time gap between any two meetings was not more than three calendar months.

## 2.5 Board's Responsibilities

The Board's mandate is to oversee the Company's strategic direction, review and monitor corporate performance, ensure regulatory compliance and safeguard the interests of shareholders.

## 2.6 Role of Independent Directors

The Independent Directors play an important role in deliberations at the Board and Committee meetings and bring to the Company their expertise in the fields of engineering, finance, management, law and public policy.

The Board has established various committees such as the Audit committee, Shareholders / Investors grievance committee and Share Transfer committee.

In terms of Clause 49 of the Listing Agreement, the Audit Committee and Shareholders / Investors Grievance Committee are chaired by an Independent Director and the said committees' functions are within the defined terms of reference. The minutes of committee meetings are circulated and discussed in the Board meetings.

## 2.7 Information placed before the Board of Directors

The information under the following heads, are usually presented to the Board of Directors of BHEL either as part of the agenda papers or are tabled / presented during the course of Board meeting:

- ✓ Annual operating plans and budgets and any updates.
- ✓ Capital budgets and any updates.
- ✓ Quarterly results for the company and its operating divisions or business segments.
- ✓ Minutes of meetings of audit committee and other committees of the Board.
- ✓ The information on recruitment and remuneration of senior officers just below the Board level.
- ✓ Details of any joint venture or R&D project or technical collaboration agreement requiring approval of Board of Directors.
- ✓ Significant labour problems and their proposed solutions. Any significant development in Human Resources/ Industrial Relations front like signing of wage agreement, implementation of Voluntary Retirement Scheme etc.
- ✓ Sale of material nature, of investments, subsidiaries, assets, which is not in normal course of business.
- ✓ Action Taken Report on all pending matters.
- ✓ Disclosure of Interest by Directors about directorships and committee positions occupied by them in other companies.
- ✓ Quarterly report on Compliance of various laws.
- ✓ Information relating to major legal disputes.
- ✓ Short term Investment of surplus funds.
- ✓ Any contract(s) in which Director(s) are deemed to be interested.
- ✓ Status of shareholder's grievances on quarterly basis.
- ✓ Information/status in respect of Power & Industry Sectors and International Operations division on quarterly basis.

- ✓ Significant Capital Investment proposals.
- ✓ Detailed presentation on performance of various units/functions.
- ✓ Any other information required to be presented to the Board either for information or approval.

## **2.8 Selection of new directors**

As per Articles of Association of BHEL, the President of India through Department of Heavy Industry, Ministry of Heavy Industries & Public Enterprises, appoints Chairman & Managing Director, Functional Directors and Part-time Official Directors on the Board of BHEL and also nominates Part-time Non-official Directors (Independent Directors) on the Board of BHEL.

The Independent Directors are selected by the Department of Heavy Industry in consultation with the Search Committee of the Department of Public Enterprises who maintain a panel of eminent personalities having wide experience of Management, Finance, Engineering, Administration and Industry.

## **2.9 Membership term & Retirement policy**

The appointment of Chairman & Managing Director and Functional Directors are on such terms & conditions, remuneration and tenure as the President may from time to time determine.

Two Part-time Official Directors i.e. the Joint Secretary of Department of Heavy Industry and Additional Secretary & Financial Advisor to the Ministry of Heavy Industries & Public Enterprises are nominated by the Government of India on the Board of BHEL. They continue to be on the Board of BHEL at the discretion of Government of India.

The tenure of Part-time Non-official (Independent) Directors is decided by the Department of Heavy Industry. Normally, an Independent Director is appointed for a period of three years. All such appointees are liable to retire by rotation in terms of the provisions of the Articles of Association of BHEL.

## **2.10 Definitions**

**2.10.1 Chairman** means Chairman of the Board of Directors

**2.10.2 Managing Director** means a director who, by virtue of an agreement with the company or of a resolution passed by the company in general meeting or by its Board of directors or, by virtue of its memorandum or articles of association, is entrusted with substantial powers of management which would not otherwise be exercisable by him, and includes a director occupying the position of a managing director, by whatever name called:

**Provided** that the power to do administrative acts of a routine nature when so authorised by the Board such as the power to affix the common seal of the company to any document or to draw and endorse any cheque on the account of the company in any bank or to draw and endorse any negotiable instrument or to sign any certificate of share or to direct registration of transfer of any share, shall not be deemed to be included within substantial powers of management.

**Provided further** that a managing director of a company shall exercise his powers subject to the superintendence, control and direction of its Board of directors.

**2.10.3 Director** includes any person occupying the position of director, by whatever name called.

**2.10.4 Functional Director** means whole-time Director of the Company.

**2.10.5 Independent Director** means a non-executive director of the company who:

- a. apart from receiving director's remuneration, does not have any material pecuniary relationships or transactions with the company, its promoters, its directors, its senior management or its holding company, its subsidiaries and associates which may affect independence of the director;
- b. is not related to promoters or persons occupying management positions at the board level or at one level below the board;

- c. has not been an executive of the company in the immediately preceding three financial years;
- d. is not a partner or an executive or was not partner or an executive during the preceding three years, of any of the following:
  - i) the statutory audit firm or the internal audit firm that is associated with the company, and
  - ii) the legal firm(s) and consulting firm(s) that have a material association with the company.
- e. is not a material supplier, service provider or customer or a lessor or lessee of the company, which may affect independence of the director; and
- f. is not a substantial shareholder of the company i.e. owning two percent or more of the block of voting shares.

#### **Explanation**

- a. **“Associate”** shall mean a company which is an “associate” as defined in Accounting Standard (AS) 23, “Accounting for Investments in Associates in Consolidated Financial Statements”, issued by the Institute of Chartered Accountants of India.
- b. **“Senior management”** shall mean personnel of the company who are members of its core management team excluding Board of Directors. Normally, this would comprise all members of management one level below the executive directors, including all functional heads.
- c. **“Relative”** shall mean “relative” as defined in section 2(41) and section 6 read with Schedule IA of the Companies Act, 1956.

### **3 AUDIT COMMITTEE**

#### **3.1 Brief description of terms of reference:**

The terms of reference of the Audit Committee specified by the Board are in conformity with the requirements of revised Clause 49 of the Listing Agreement as well as Section 292A of the Companies Act, 1956. They are as follows:

1. Oversight of the company’s financial reporting process and the disclosure of its financial information to ensure that the financial statement is correct, sufficient and credible.
2. Recommending to the Board, the appointment, re-appointment and, if required, the replacement or removal of the statutory auditor and the fixation of audit fees.
3. Approval of payment to statutory auditors for any other services rendered by the statutory auditors.
4. Reviewing, with the management, the annual financial statements before submission to the board for approval, with particular reference to:
  - a. Matters required to be included in the Director’s Responsibility Statement to be included in the Board’s report in terms of clause (2AA) of section 217 of the Companies Act, 1956
  - b. Changes, if any, in accounting policies and practices and reasons for the same.
  - c. Major accounting entries involving estimates based on the exercise of judgment by management.
  - d. Significant adjustments made in the financial statements arising out of audit findings.
  - e. Compliance with listing and other legal requirements relating to financial statements.
  - f. Disclosure of any related party transactions
  - g. Qualifications in the draft audit report.
5. Reviewing, with the management, the quarterly financial statements before submission to the board for approval.

6. (i) Reviewing, with the management, performance of statutory and internal auditors, adequacy of the internal control systems.  
(ii) To ensure compliance of internal control systems.
7. Reviewing the adequacy of internal audit function, if any, including the structure of the internal audit department, staffing and seniority of the official heading the department, reporting structure coverage and frequency of internal audit.
8. Discussion with internal auditors any significant findings and follow up there on.
9. Reviewing the findings of any internal investigations by the internal auditors into matters where there is suspected fraud or irregularity or a failure of internal control systems of a material nature and reporting the matter to the board.
10. (i) Discussion with Statutory Auditors / Internal Auditors periodically about internal control systems.  
(ii) Discussion with statutory auditors before the audit commences, about the nature and scope of audit as well as post-audit discussion to ascertain any area of concern including observations of the Auditors.
11. To look into the reasons for substantial defaults in the payment to the depositors, debenture holders, shareholders (in case of non payment of declared dividends) and creditors.
12. To review the functioning of the Whistle Blower mechanism, in case the same is existing.
13. To review the Audit paras referred to BLAC by the Internal Audit / Board and / or Govt. of India and to provide its suggestions / guidance / comments on the issues referred to it.
14. Carrying out any other function as is mentioned in the terms of reference of the Audit Committee.

Explanation (i): The term “related party transactions” shall have the same meaning as contained in the Accounting Standard 18, Related Party Transactions, issued by The Institute of Chartered Accountants of India.

Explanation (ii): If the company has set up an audit committee pursuant to provision of the Companies Act, the said audit committee shall have such additional functions / features as is contained in this clause.

### **3.2 Composition of Committee, name of members and Chairman:**

#### **3.2.1 Composition**

- (i) The Audit Committee shall have minimum three directors as members. Two-thirds of the members of audit committee shall be independent directors.
- (ii) All members of Audit Committee shall be financially literate and at least one member shall have accounting or related financial management expertise.

Explanation 1: The term “financially literate” means the ability to read and understand basic financial statements i.e. balance sheet, profit and loss account, and statement of cash flows.

Explanation 2: A member will be considered to have accounting or related financial management expertise if he or she possesses experience in finance or accounting, or requisite professional certification in accounting, or any other comparable experience or background which results in the individual's financial sophistication, including being or having been a chief executive officer, chief financial officer or other senior officer with financial oversight responsibilities.

- (iii) (a) The Members of the Audit committee shall elect a Chairman from amongst themselves.  
(b) The Chairman of the Audit Committee shall be an independent director;
- (iv) The Chairman of the Audit Committee shall be present at Annual General Meeting to answer shareholder queries;

- (v) The audit committee may invite such of the executives, as it considers appropriate (and particularly the head of the finance function) to be present at the meetings of the committee, but on occasions it may also meet without the presence of any executives of the company. The finance director, head of internal audit and a representative of the statutory auditor shall be present as invitees for the meetings of the audit committee. They shall attend and participate at meetings of the Audit Committee but shall not have right to vote.
- (vi) The Company Secretary shall act as Secretary to the committee.

### 3.2.2 Name of members and Chairman

The details of names of members & Chairmen of the Audit Committee and their tenure are as under:

Name of the Director S/ Shri	Position	
	Member	Chairman
A.C. Wadhawan	Upto 14.06.2004	Upto 14.06.2004
Dr. Anand Patkar	Upto 14.06.2004	---
G P. Gupta	Upto 13.08.2004	From 11.07.2004 to 13.08.2004
Sharad Upasani	From 25.06.2004 to 25.12.2004	---
A. H. Jung	From 25.06.2004 to 23.02.2005	From 28.10.2004 to 30.01.2005
Vineet Nayyar	From 28.10.2004 to contd.	From 31.01.2005 to contd.

### 3.3 Meetings & attendance of Audit Committee during 2004-05

The Committee met 10 times during the year under review. The details of attendance of members and Chairmen are as under:

Date of meeting	Shri A.C. Wadhawan	Dr. Anand Patkar	Shri G P. Gupta	Sharad Upasani	A. H. Jung	Vineet Nayyar
26.04.2004	Present	Present	Present	-	-	-
08.06.2004	Present	Present	Present	-	-	-
11.07.2004 & 12.07.2004	-	-	Present	Present	Present	-
19.07.2004 & 20.07.2004	-	-	Present	Present	Present	-
29.07.2004	-	-	Present	Present	Present	-
30.07.2004	-	-	Present	Present	Present	-
04.08.2004	-	-	Present	Present	Absent	-
28.10.2004	-	-	-	Present	Present	-
10.12.2004	-	-	-	Present	Present	Absent
31.01.2005	-	-	-	-	Present	Present

Director (Finance) was present in all Audit Committee meetings and General Manager (Internal Audit) was also present in all Audit Committee meetings, except on 31<sup>st</sup> January, 2005, held during the year under review, as invitees as per the requirement of Listing Agreement. As and when required, the representative of the Statutory Auditors of the Company also attended the Audit Committee Meetings.

#### 4. REMUNERATION COMMITTEE

##### 4.1 Remuneration policy

BHEL being a Public Sector Undertaking, the appointment, tenure and remuneration of Directors are decided by the President of India. Hence, the Board does not decide the remuneration of Directors. Independent Directors are paid only sitting fees for attending the Board Meetings as well as Committee Meetings. However, as required by Clause 49 (IV) (E), necessary disclosure with regard to remuneration of Directors is made in 4.2.

##### 4.2 Details of remuneration of functional Directors during the year 2004-05 are given below:-

(in Rs.)

Sl.No.	Name of the Director S/Shri	Salary	Benefits	Arrears, if any	Performance Linked Incentives	Total	Service Contract/ Notice Period Severance Fee
1.	Ashok K. Puri	614850	249629	0	17206	881685	Not liable to retire by Rotation.
2.	H W Bhatnagar (Upto 28.02.2005)	1296065	360168	0	17206	1673439	Retired on attaining the age of superannuation.
3.	C Srinivasan (Upto 31.05.2005)	494234	335782	0	17206	847222	Retired on attaining the age of superannuation.
4.	Ramji Rai	607215	244988	0	17346	869549	Retirement by Rotation.
5.	S. K. Jain	537288	260551	0	17153	814992	Retirement by Rotation.

##### 4.3 Details of payments made to Non- Executive Directors during the year 2004-05 are given below: -

Name of the Non-Executive Directors  S/Shri	Sitting Fees		Total
	Board Meeting	Committee Meeting	
A.C Wadhawan	20,000/-	15,000/-	35,000/-
Dr. Anand Patkar	20,000/-	10,000/-	30,000/-
G.P. Gupta	30,000/-	35,000/-	65,000/-
Sharad Upasani	35,000/-	35,000/-	70,000/-
A. H. Jung	40,000/-	45,000/-	85,000/-
Sudhir Shridhar Supe	30,000/-	Nil	30,000/-
Ranjan Pant	15,000/-	Nil	15,000/-
Vineet Nayyar	40,000/-	5,000/-	45,000/-

Independent Directors are entitled for sitting fee at Rs.5000/- per meeting of Board or Committee.

##### 4.4 Equity Shares held by Directors

Except as stated hereunder, none of the Directors, hold any Equity Shares in BHEL (as on 31<sup>st</sup> March 2005):

Name of the Director	No. of shares held
Shri Ashok K. Puri	200



## 5. **SHAREHOLDERS' COMMITTEES**

### 5.1 **Share Transfer Committee**

The Board constituted a Share Transfer Committee long ago, which comprises the Chairman & Managing Director, Director (Power) and Director (Finance) of the Company.

The Share Transfer Committee considers and approves all share-related issues, transfer / transmission of shares, issue of duplicate share certificate etc., in physical mode besides taking note of beneficiary position under demat mode.

#### **Meetings during 2004-05**

During the year 2004-05, the Share Transfer Committee met 26 times and transacted business relating to share related issues. The work relating to Share Transfer etc., is looked after by Karvy Computershare Private Limited. The minutes of the Share Transfer Committee meetings are periodically placed before the Board of Directors.

Since 99% shares of the disinvested portion of 32.28% of the total paid-up share capital is in dematerialised form, transfer of shares in the physical segment was significantly lower during the year and the meetings of the Share Transfer Committee were held as per requirement of the transfer.

### 5.2 **Shareholders/Investors' Grievance Committee**

#### **5.2.1 Name of Non-executive Director heading the Committee**

Shri A.C. Wadhawan, acted as Chairman of the Committee upto 14.06.2004 and Shri A. H. Jung acted as Chairman from 27.10.2004 to 23.02.2005.

#### **Meetings & attendance during 2004-05**

The Committee met 3 times during the year under review. The details of attendance of members and Chairmen are as under:

S. NO.	NAME OF DIRECTOR & POSITION  S/Shri	MEETINGS/ATTENDANCE		
		10.06.2004	27.10.2004	19.02.2005
1.	A. C. Wadhawan (Chairman)	Present	- N. A. -	- N. A. -
2.	A. H. Jung (Chairman)	- N. A. -	Present	Present
3.	C. Srinivasan (Member)	Present	Present	Present
4.	S. K. Jain (Member)	Present	Present	Present

#### **5.2.2 Name and Designation of Compliance Officer**

Shri N.K. Sinha, Company Secretary is the Compliance Officer in terms of Clause 47 of the Listing Agreement.

#### **5.2.3 Number of shareholders' complaints received so far**

As reported by Karvy Computershare Private Limited (RTA) to SEBI; 303 complaints were received from shareholders during the year under review and all of which were redressed up to March 31, 2005.

#### **5.2.4 Number not solved to the satisfaction of shareholders**

Nil

### 5.2.5 Number of pending complaints

As on March 31, 2005, no complaint was pending.

## 6. GENERAL MEETINGS

### 6.1 Location and time, where last three AGMs were held:

Particulars	FY 2001-02 (38 <sup>th</sup> AGM)	FY 2002-03 (39 <sup>th</sup> AGM)	FY 2003-04 (40 <sup>th</sup> AGM)
Date	30 <sup>th</sup> September, 2002	30 <sup>th</sup> September, 2003	28 <sup>th</sup> September, 2004
Time	10.00 a.m.	10.00 a.m.	10.00 a.m.
Venue	FICCI Auditorium, Barakhamba Road (Tansen Marg) New Delhi-110001	FICCI Auditorium, Barakhamba Road (Tansen Marg) New Delhi-110001	FICCI Auditorium, Barakhamba Road (Tansen Marg) New Delhi-110001

### 6.2 Whether any special resolutions passed in the previous 3 AGMs.

Yes. In the 40<sup>th</sup> AGM held on 28.09.2004, the Company passed special resolution for delisting of its equity shares from the Stock Exchanges of Ahmedabad, Chennai, Delhi and Kolkata.

### 6.3 Whether any special resolutions passed last year through postal ballot - details of voting pattern

No special resolutions were put through postal ballot last year.

### 6.4 Person who conducted the postal ballot exercise

Not Applicable.

### 6.5 Whether any special resolution is proposed to be conducted through postal ballot

No Special Resolutions are proposed to be conducted through Postal Ballot.

### 6.6 Procedure for postal ballot

Not Applicable.

## 7. DISCLOSURES

### 7.1 Disclosures on materially significant related party transactions that may have potential conflict with the interests of Company at large

The Company does not have any related party transactions, which may have potential conflict with its interest at large.

### 7.2 Details of non-compliance by the Company, penalties, strictures imposed on the Company by Stock Exchange or SEBI or any statutory authority, on any matter related to capital markets, during the last three years

The Company has complied with all the requirements of the Listing Agreement of Stock Exchanges as well as Regulations and Guidelines prescribed by SEBI. There were no penalties or strictures imposed on the Company by any statutory authorities for non-compliance on any matter related to capital markets, during the last three years.

### 7.3 Details of compliance with mandatory requirements and adoption of the non-mandatory requirements of this clause

Clause 49 of the Listing Agreement mandates us to obtain a certificate from either the auditors or practicing Company Secretaries regarding compliance conditions of corporate governance as stipulated in the Clause and annex the certificate with the Director's report, which is sent annually to all our shareholders. We have obtained a certificate to this effect and the same is given as an annexure to the Directors' report.





The clause further states that the non-mandatory requirements may be implemented as per the discretion of the Company. However, the disclosures of compliance with mandatory requirements and adoption (and compliance)/ non-adoption of the non-mandatory requirements shall be made on need basis.

## 8. MEANS OF COMMUNICATION

### 8.1 Quarterly Results

The Company has furnished unaudited financial results along with the notes on a quarterly basis as per the format prescribed in Clause 41 of the Listing Agreement within one month from the end of quarter to the Stock Exchanges.

The Company has also published the above results within 48 hours of the conclusion of the Board in the Indian Express/The Economic Times/The Times of India (English), daily newspaper circulating in the whole or substantially the whole of India and in Jansatta/Nav Bharat Times (Hindi). The Company informs the Stock Exchange where its securities are listed about the date of the Board Meeting at least 7 days in advance and also issues immediately a press release in at least one national newspaper and one regional language newspaper about the date of aforesaid Board Meeting.

### 8.2 Newspapers wherein results normally published

The Unaudited quarterly results along with the notes published normally in the following Newspapers

Newspapers	Date of publication of results for the quarter ended				
	31.03.2004	30.06.2004	30.09.2004	31.12.2004	31.03.2005
Indian Express, New Delhi (English)	28.04.2004	30.07.2004	29.10.2004	—	29.04.2005
Jansatta, New Delhi (Hindi)	28.04.2004	30.07.2004	29.10.2004	—	29.04.2005
The Economic Times New Delhi (English)	—	—	—	01.02.2005	—
Times of India, New Delhi (English)	—	—	—	01.02.2005	—
Nav Bharat Times, New Delhi (Hindi)	—	—	—	01.02.2005	—

### 8.3 Any website, where displayed

<http://www.bhel.com>

### 8.4 Whether it also displays official news releases, the presentations made to Institutional Investors or to the Analysts

Yes. The achievements and important events taking place in the Company like receipt of major orders are announced through press and electronic media and posted on the Company's website also.

The Company's other press coverage and corporate presentations made to Institutional Investors and Analysts are also available on the website. The means of communication between the Company and the shareholders are transparent and investor friendly.

## 9. GENERAL SHAREHOLDER INFORMATION

### 9.1 AGM (Date , Time and Venue)

Date	Time	Venue
29 <sup>th</sup> September, 2005	10.00 A.M.	FICCI Auditorium, Barakhamba Road (Tansen Marg), New Delhi-110 001.

**9.2 Financial year** - 1<sup>st</sup> April 2004 to 31<sup>st</sup> March 2005

**9.3 Dates of Book Closure** - 9<sup>th</sup> September, 2005 to 29<sup>th</sup> September, 2005 (Both days inclusive)

**9.4 Dividend payment date** - On or before 28<sup>th</sup> October 2005.

### 9.5 Dividend History :

BHEL has been following ***“Stability cum Growth”*** policy with regard to dividend payment. The details of dividend paid by BHEL during the last ten years and the amount of unclaimed dividend as on 31.03.2005 are summarized as under:

Year	Rate of Dividend	No. of Shares	Total Amount of Dividend Paid (Rs.)	Date of AGM in which Dividend was declared	Date of Payment	Unclaimed Dividend as on 31.03.2005 (Rs.)	Proposed date for transfer to IEPF
1994-1995	15%	244760000	367140000	28.09.1995	08.11.1995	Already transferred to Investor Education & Protection Fund	
1995-1996	20%	244760000	489520000	30.09.1996	11.11.1996	Already transferred to Investor Education & Protection Fund	
1996-1997	20%	244760000	489520000	29.09.1997	10.11.1997	Already transferred to Investor Education & Protection Fund	
1997-1998	25%	244760000	611900000	30.09.1998	11.11.1998	240025	17.11.2005
1998-1999	25%	244760000	611900000	30.09.1999	11.11.1999	277791	17.11.2006
1999-2000 (Interim)	15%	244760000	367140000	19.05.2000*	31.05.2000	784356	06.07.2007
1999-2000 (Final)	15%	244760000	367140000	29.09.2000	10.11.2000	748043	16.11.2007
2000-2001	30%	244760000	734280000	28.09.2001	03.10.2001	545271	03.11.2008
2001-2002	40%	244760000	979040000	30.09.2002	07.10.2002	666390	05.11.2009
2002-2003	40%	244760000	979040000	30.09.2003	06.10.2003	545636	05.11.2010
2003-2004 (Interim)	30%	244760000	734280000	01.03.2004*	22.03.2004	323668	06.04.2011
2003-2004 (Final)	30%	244760000	734280000	28.09.2004	04.10.2004	263394	03.11.2011
2004-2005 (Interim)	35%	244760000	856660000	10.12.2004*	26.12.2004	344173	15.01.2012

\* Date of Board of Directors' meeting in which interim dividend was declared.

### 9.6 Status of listing on Stock Exchanges

BHEL's shares are listed on the following Stock Exchanges for which listing fees for 2005-06, has been paid:

#### **Name & address of the Stock Exchange**

#### **Stock Code**

1. The Stock Exchange, Mumbai (BSE),  
Phiroze Jeejeebhoy Towers,  
Dalal Street, Mumbai- 400 001.

500103

2. National Stock Exchange of India Limited (NSE),  
Exchange Plaza, Plot No.C/1, G Block,  
Bandra-Kurla Complex, Bandra(E),  
Mumbai - 400051.

BHEL



## 9.7 Delisting of Equity shares

The equity shares of the Company have been delisted from The Delhi Stock Exchange Association Limited, Madras Stock Exchange Limited and The Stock Exchange, Ahmedabad w.e.f. 10.12.2004, 19.01.2005 and 28.01.2005 respectively.

The Company has complied with all the requirements required for delisting of equity shares of the Company from the Calcutta Stock Exchange Association Limited and the approval for delisting is awaited from this Stock Exchange. Company has neither paid listing fee for 2005-06 nor sending any returns / reports / documents etc., required to be sent as per Listing Agreement to the Calcutta Stock Exchange with effect from 01.04.2005.

## 9.8 Market Price Data & performance in comparison to broad-based indices such as BSE Sensex, BSE PSU Index and S&P CNX Nifty Index

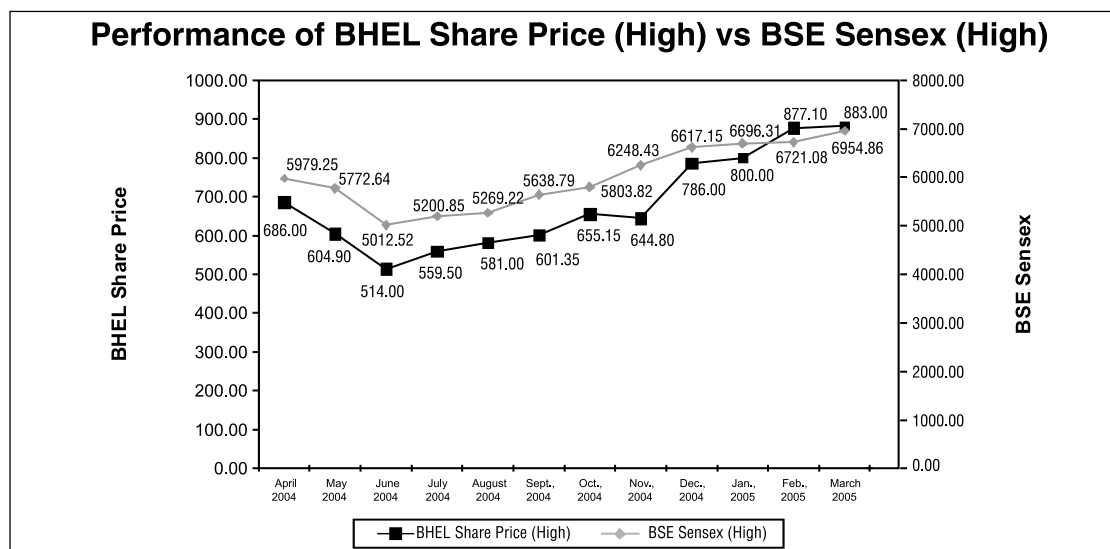
Market capitalization of BHEL is included in the computation of BSE-30 Sensitive Index (Sensex), BSE PSU Index and S&P CNX Nifty Index.

### 9.8.1. BHEL Vs. BSE Sensex

High and low of BHEL market share price on the Stock Exchange, Mumbai (BSE) vis-à-vis BSE Sensex, No. of shares traded and Net turnover, during each month in last financial year ended March 31, 2005 are summarized as under:

Month	BHEL Share Price (Rs.)		BSE Sensex		No. of shares traded	Net Turnover (Rs. in Lakhs)
	High	Low	High	Low		
April 2004	686.00	580.25	5,979.25	5,599.12	5778198	36320.50
May 2004	604.90	375.00	5,772.64	4,227.50	8370050	41463.04
June 2004	514.00	400.00	5,012.52	4,613.94	9893742	46337.16
July 2004	559.50	496.15	5,200.85	4,723.04	4879489	25905.72
August 2004	581.00	505.15	5,269.22	5,022.29	3917568	21499.83
September 2004	601.35	554.00	5,638.79	5,178.57	4461091	25853.44
October 2004	655.15	575.50	5,803.82	5,558.14	2544513	15752.73
November 2004	644.80	598.60	6,248.43	5,649.03	1481735	9196.46
December 2004	786.00	614.05	6,617.15	6,176.09	2835406	19408.22
January 2005	800.00	669.05	6,696.31	6,069.33	1738997	12586.21
February 2005	877.10	749.00	6,721.08	6,508.33	1889911	15612.26
March 2005	883.00	741.60	6,954.86	6,321.31	2533413	20396.72

\* Source: www.bseindia.com

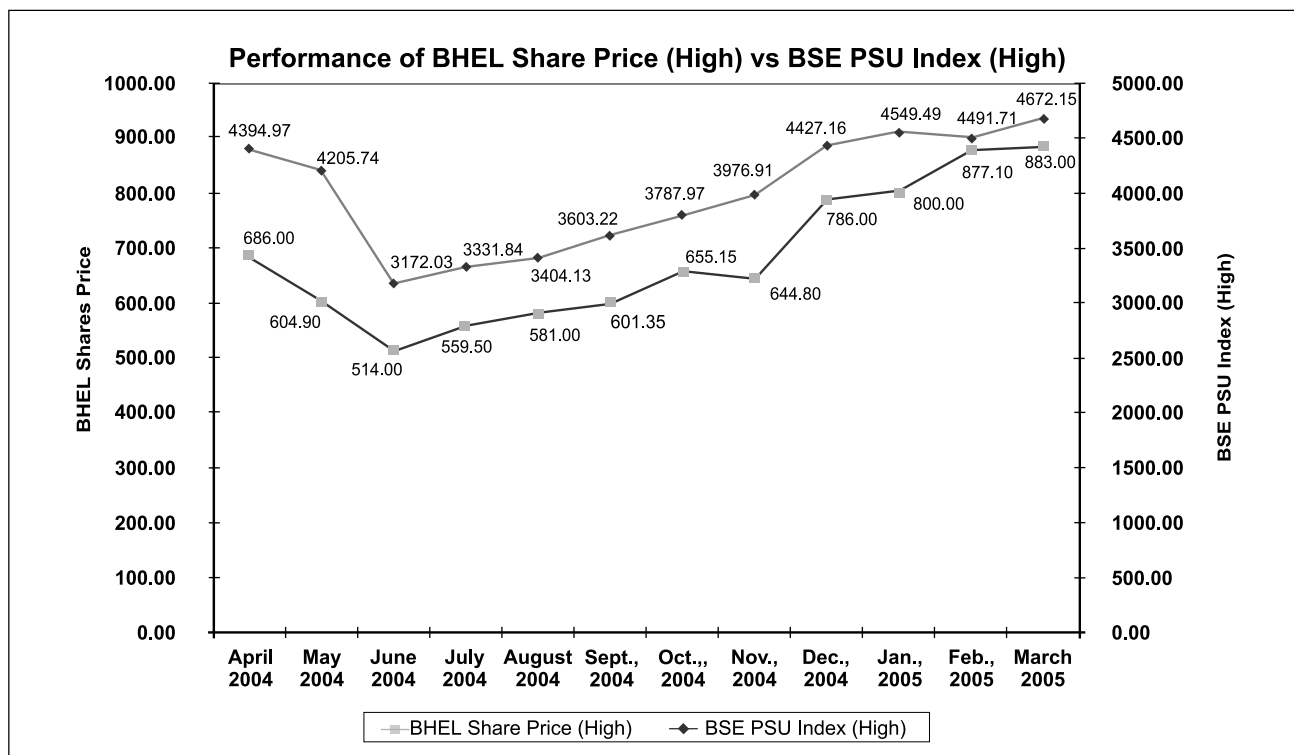


### 9.8.2. BHEL Vs. BSE PSU Index

High and low of BHEL market share price on the Stock Exchange, Mumbai (BSE) vis-à-vis BSE PSU Index, during each month in last financial year ended March 31, 2005 are summarized as under:

Month	BHEL Share Price (Rs.)		BSE PSU Index	
	High	Low	High	Low
April 2004	686.00	580.25	4,394.97	3,906.85
May 2004	604.90	375.00	4,205.74	2,458.60
June 2004	514.00	400.00	3,172.03	2,820.95
July 2004	559.50	496.15	3,331.84	2,861.15
August 2004	581.00	505.15	3,404.13	3,122.36
September 2004	601.35	554.00	3,603.22	3,310.94
October 2004	655.15	575.50	3,787.97	3,550.20
November 2004	644.80	598.60	3,976.91	3,594.47
December 2004	786.00	614.05	4,427.16	3,927.72
January 2005	800.00	669.05	4,549.49	3,920.82
February 2005	877.10	749.00	4,491.71	4,225.15
March 2005	883.00	741.60	4,672.15	4,093.70

\* Source: www.bseindia.com



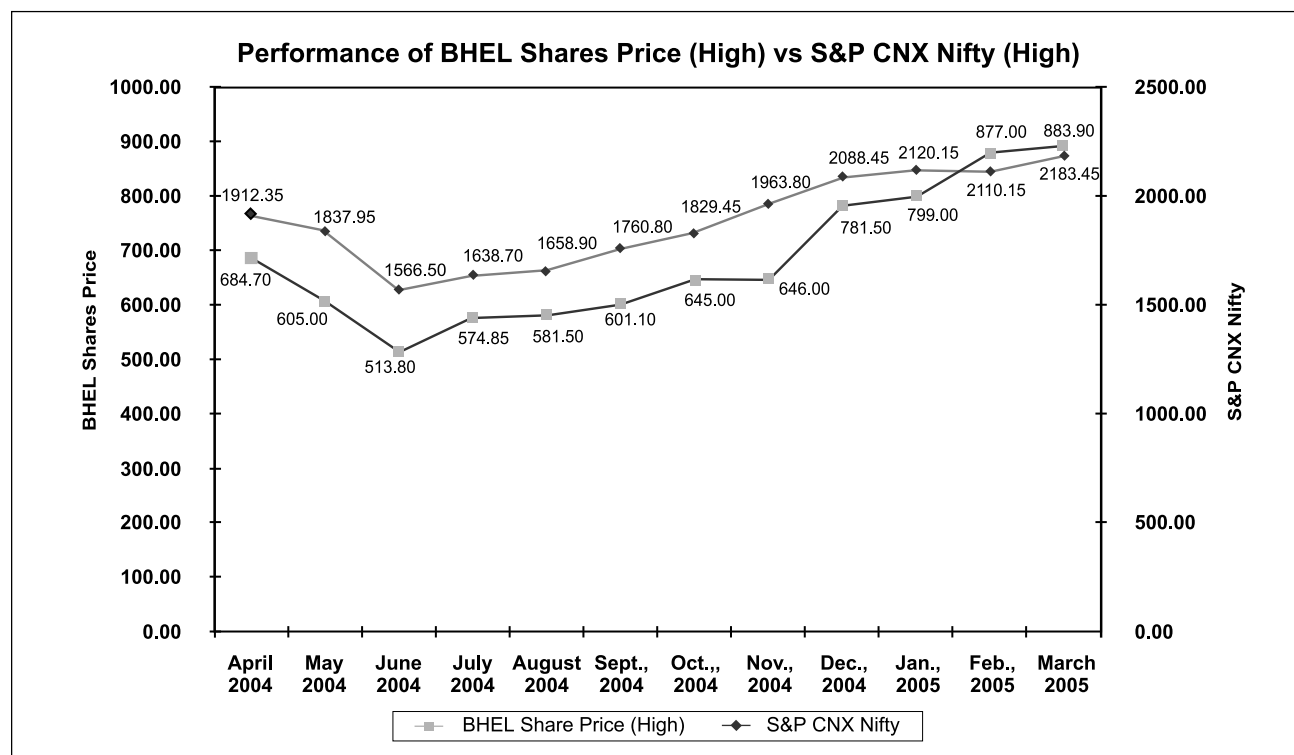


### 9.8.3. BHEL Vs. S&P CNX Nifty

High and low of BHEL market share price on the **National Stock Exchange of India Limited (NSE)** vis-à-vis S&P CNX Nifty, No. of shares traded and Net turnover, during each month in last financial year ended March 31, 2005 are summarized as under:

Month	BHEL Share Price (Rs.)		NSE Nifty		No. of shares traded	Net Turnover (Rs. in Lakhs)
	High	Low	High	Low		
April 2004	684.70	581.25	1912.35	1771.45	17852051	111968.51
May 2004	605.00	375.00	1837.95	1292.20	23328224	116343.49
June 2004	513.80	420.30	1566.50	1437.90	23975480	113118.08
July 2004	574.85	425.00	1638.70	1472.55	16840953	89440.43
August 2004	581.50	519.00	1658.90	1573.70	13708031	75345.25
September 2004	601.10	547.00	1760.80	1619.90	12842975	74377.10
October 2004	645.00	575.95	1829.45	1737.85	6998666	43375.34
November 2004	646.00	591.10	1963.80	1776.70	6000016	37158.11
December 2004	781.50	532.00	2088.45	1944.50	7967878	54990.29
January 2005	799.00	630.00	2120.15	1894.40	7146718	51923.61
February 2005	877.00	745.00	2110.15	2036.60	8223168	67761.62
March 2005	883.90	740.25	2183.45	1971.15	8079927	64896.57

\* Source: www.nseindia.com



## 9.9 Policy on Insider Trading

BHEL has adopted the Code of Conduct for prevention of Insider Trading in accordance with the guidelines specified under the SEBI (Prohibition of Insider Trading) Regulations, 1992 and amended from time to time. The objective of the Code is to prevent purchase and / or sale of shares of the Company by an Insider on the basis of unpublished price sensitive information. Under this Code, Insiders (Directors, Designated Employees and other concerned persons) are prevented to deal in the Company's shares beyond specified limits and are required to disclose related information periodically as defined in the code. The Board has appointed Director (Finance) as the Compliance Officer under the Code.

## 9.10 Registrar & Share Transfer Agent (RTA)

### Delhi Address

M/s. Karvy Computershare Private Ltd.  
UNIT: BHEL  
105-108, Arunachal Building,  
19, Barakhamba Road,  
New Delhi - 110 001  
Tel. : 011-23324401 / 09  
Fax: 011-23730743  
E-mail : delhi@karvy.com  
michealg@karvy.com

### Hyderabad Address

M/s. Karvy Computershare Private Ltd.  
UNIT : BHEL  
Karvy House, 46, Avenue 4,  
Street No. 1, Banjara Hills,  
Hyderabad-500 034.  
Tel. : 040-23312454, 23320251/751/752  
Fax : 040-23311968, 23323049  
E-mail : mailmanager@karvy.com  
madhusudhan@karvy.com

RTA's performance in servicing shareholders has been satisfactory. All the investor grievances have been promptly attended to.

## 9.11 Share Transfer System

Entire Share Transfer activities under physical segment are being carried out by Karvy Computershare Private Limited. The share transfer system consists of activities like receipt of shares along with transfer deed from transferees, its verification, preparation of Memorandum of Transfers, its approval by the Share Transfer Committee and dispatch of transferred certificates to the respective transferees within the prescribed time as per the Listing Agreement.

## 9.12 Distribution of Shareholding

### (i) Distribution of shares according to size of holding as on 31st March 2005

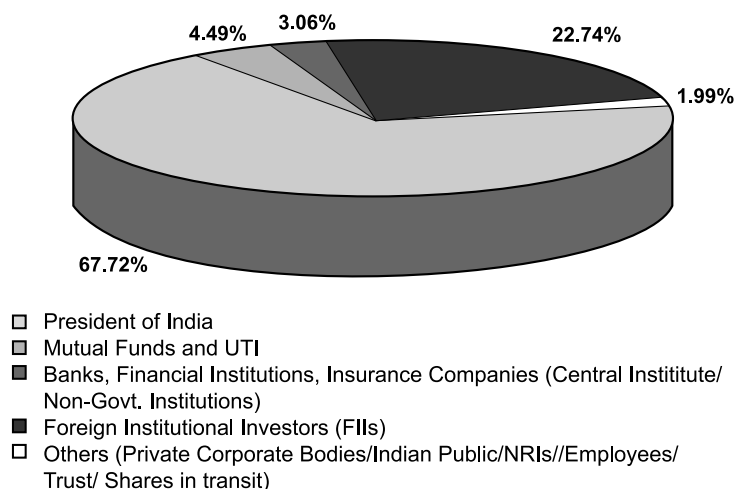
No. of equity shares held	No. of shareholders	% of shareholders	No. of shares	% of shareholding
1-500	21341	94.81	1782468	0.73
501-1000	492	2.19	372129	0.15
1001-2000	213	0.95	313754	0.13
2001-3000	59	0.26	152464	0.06
3001-4000	30	0.13	108015	0.05
4001-5000	20	0.09	96258	0.04
5001-10000	52	0.23	395118	0.16
10001 and above	303	1.35	241539794	98.68
<b>Total</b>	<b>22510</b>	<b>100.00</b>	<b>244760000</b>	<b>100.00</b>



(ii) Shareholding Pattern as on 31st March

Category	2005		2004	
	Voting strength (%)	No. of shares held	Voting strength (%)	No. of shares held
<b>Promoters Holding Indian Promoters</b>				
- President of India (POI)	67.72	165755000	67.72	165755000
- Nominees of POI	0.00	200	0.00	200
<b>Persons acting in concert</b>				
- Directors & their relatives	0.00	1100	0.00	350
<b>Total Promoter holding</b>	<b>67.72</b>	<b>165756300</b>	<b>67.72</b>	<b>165755550</b>
<b>Non-promoters Holding</b>				
<b>Institutional Investors</b>				
- Mutual Funds and UTI	4.49	10982375	6.00	14686092
- Banks, Financial Institutions, Insurance Companies (Central/State Govt. Institutions/ Non-Govt. Institutions)	3.06	7498260	3.48	8529702
- Foreign Institutional Investors	22.74	55658902	21.00	51389433
<b>Others</b>				
- Private Corporate Bodies	0.92	2240772	0.52	1274394
- Indian Public	0.89	2179865	0.96	2353052
- NRIs/OCBs	0.05	121275	0.03	76249
- Employees	0.12	291655	0.15	368840
- Trusts	0.00	10239	0.00	3455
- Shares in Transit (NSDL/CDSL)	0.01	20357	0.13	323233
<b>Total Non-promoter holding</b>	<b>32.28</b>	<b>79003700</b>	<b>32.28</b>	<b>79004450</b>
<b>Grand Total</b>	<b>100.00</b>	<b>244760000</b>	<b>100.00</b>	<b>244760000</b>

Shareholding Pattern as on 31st March 2005

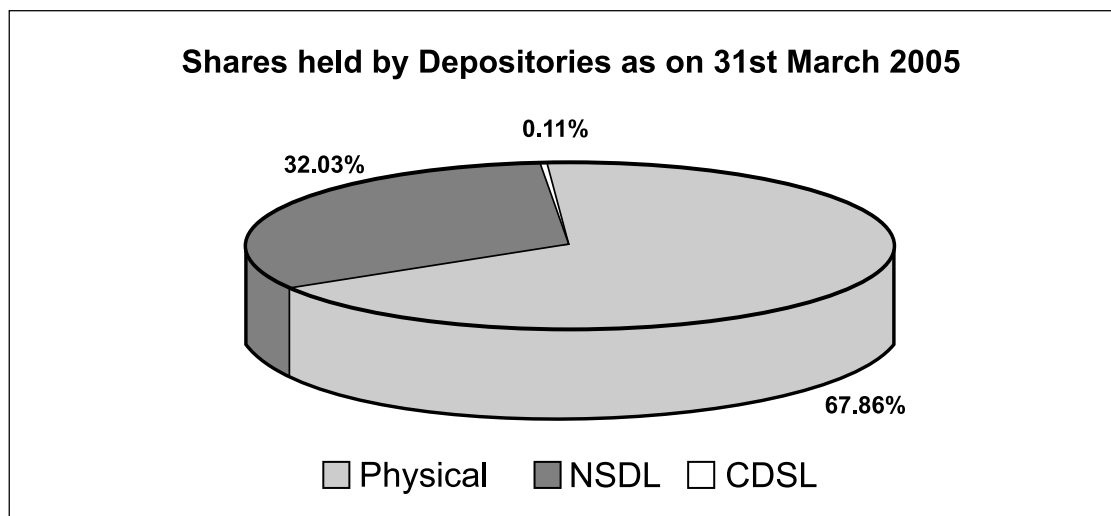


(iii) List of shareholders who are holding more than 1% of the shares of the Company as on 31<sup>st</sup> March

Category & Shareholder's name	2005		2004	
	Voting strength (%)	No. of shares held	Voting strength (%)	No. of shares held
<b>Promoters Holding</b>				
1. President of India	67.72	165755000	67.72	165755000
<b>Non-promoters Holding</b>				
<b>Banks, Financial Institutions, Insurance Companies (Central/ State Govt. Institutions/ Non-Govt. Institutions)</b>				
1. Life Insurance Corporation of India	1.66	4074795	1.64	4010637
<b>Foreign Institutional Investors</b>				
1. Capital Research and Management Company.	1.70	4164125	-	-
2. J.P. Morgan Fleming Asset Management.	1.25	3050000	-	-
3. HSBC Global Investment Funds A/c HSBC Global Investment Funds	1.19	2902109	-	-
4. Emerging Markets Growth Fund Inc.	1.02	2505145	3.18	7780445
5. Merrill Lynch Capital Markets Espana S.A. SVB	-	-	1.08	2647980
6. Capital International Emerging Markets Fund	-	-	1.04	2534100

**9.13 Dematerialisation of shares and liquidity**

In accordance with the directions of the Securities & Exchange Board of India (SEBI) trading in BHEL shares by all categories of investors in demat form has been made compulsory w.e.f. 5th April 1999. BHEL has executed agreement with both the depositories of the country i.e. National Securities Depository Limited (NSDL) and Central Depository Services (India) Limited (CDSL) for admission of its securities under demat mode. As on 31st March, 2005, 32.14% of the total equity share capital of BHEL has been dematerialised by the shareholders and held in the name of the NSDL / CDSL. International Securities Identification Number (ISIN) allotted to Company is INE 257 A01018.







**9.14 Outstanding GDRs /ADRs / Warrants or any convertible instruments, conversion date and likely impact on equity**

- Nil -

**9.15 Plant locations**

- Heavy Electrical Equipment Plant, Hardwar
- Central Foundry Forge Plant, Hardwar
- Heavy Power Equipment Plant, Hyderabad
- High Pressure Boiler Plant, Trichy
- Heavy Electricals Plant, Bhopal
- Transformer Plant, Jhansi
- Electronics Division, Bangalore
- Boiler Auxiliaries Plant, Ranipet
- Industrial Valves Plant, Goindwal
- Electro-Porcelains Division, Bangalore
- Insulator Plant, Jagdishpur
- Component Fabrication Plant, Rudrapur
- Heavy Equipment Repair Plant, Varanasi
- Oil Sector Business & Electrical Machine Repair Plant, Mumbai

**9.16 Address for correspondence**

Shareholders can send their queries regarding Transfer / Dematerialisation of shares, Non-receipt of dividend, Revalidation of Dividend Warrants and any other correspondence relating to the shares of the Company either to:

**N. K. Sinha**  
**Company Secretary**  
**BHARAT HEAVY ELECTRICALS LIMITED**  
**Regd. Office: BHEL House, Siri Fort**  
**New Delhi - 110 049**

**Phone : 91-11-26001046**  
**Fax : 91-11-26001102**  
**Email : csynks@bhel.co.in**

**OR**

**KARVY COMPUTERSHARE PVT. LTD.**  
**UNIT : BHEL**

**Delhi Office : 105-108, Arunachal Building**  
**19, Barakhamba Road**  
**New Delhi - 110 001**

**Phone : 91-11-23324401 / 09**  
**Fax : 91-11-23730743**  
**E-mail : delhi@karvy.com**  
**michealg@karvy.com**

**Hyderabad : Karvy House, 46, Avenue 4,**  
**Office Street No. 1, Banjara Hills**  
**Hyderabad - 500 034**

**Phone : 91-40-23312454, 23320251/751/752**  
**Fax : 91-40-23311968, 23323049**  
**Email : mailmanager@karvy.com**  
**madhusudhan@karvy.com**

**Note:** Shareholders holding shares in electronic mode should address all correspondence to their respective depository participants.

# AUDITOR'S CERTIFICATE ON CORPORATE GOVERNANCE

The Members

**Bharat Heavy Electricals Limited**

BHEL House, Siri Fort

New Delhi

We have examined the compliance of conditions of corporate governance by Bharat Heavy Electricals Limited, for the year ended on March 31, 2005 as stipulated in clause 49 of the Listing Agreement of the said company with stock exchanges.

The compliance of conditions of corporate governance is the responsibility of the management. Our examination was limited to procedures and implementation thereof, adopted by the company for ensuring the compliance of the conditions of the Corporate Governance. It is neither an audit nor an expression of opinion on the financial statements of the company.

In our opinion and to the best of our information and according to the explanations given to us, subject to the following:

- i) Clause 49.I (A) of the listing agreement requires that not less than fifty percent of the Board of Directors of the company should comprise of non-executive directors being independent. The company had complied with the condition of composition of Board of Directors as laid down under the condition of Corporate Governance. However due to casual vacancy in the Board either on account of expiry of the term of Independent Directors or resignation from the Board, during the year the company is unable to meet the condition. Accordingly, the company did not have an optimum combination of executive and non-executive directors being independent on its Board of Directors during the year.
- ii) Clause 49.II (A) of the listing agreement requires that the Audit Committee shall have minimum three directors as members and also two thirds of the members of Audit Committee shall be independent directors. However, during the year the company did not have minimum three directors as members of Audit Committee from 26.12.04 to 31.03.05.

We certify that the company has complied with the conditions of Corporate Governance as stipulated in the above mentioned Listing Agreement.

We further state that no shareholder/investor grievance is pending for a period exceeding one month against the company as per the information furnished by the Registrar and Share Transfer Agent (RTA) of the company and reported to the Shareholders/investors grievance committee.

We further state that such compliance is neither an assurance as to the future viability of the company nor the efficiency or effectiveness with which the management has conducted the affairs of the company.

For and on behalf of  
**J.C. BHALLA & COMPANY**  
**CHARTERED ACCOUNTANTS**

Place : New Delhi  
Date : 29.08.2005

Sd/-  
**(SUDHIR MALLICK)**  
PARTNER



## **ANNEXURE-5 TO THE DIRECTORS' REPORT**

### **CONSERVATION OF ENERGY**

Energy Conservation is an important thrust area in BHEL. During the year savings due to implementation of Energy Conservation projects was Rs. 28 million.

The steps taken to reduce the cost of energy by various BHEL units during the year 2004-05 are as follows:

1. Reduction in Maximum Demand of Power by proper load planning.
2. Installation of Variable Speed Drive Motors.
3. Use of Day Lighting.
4. Adoption of Automatic switching off of Lights.
5. Modification of Lighting system using Energy Efficient Lamps etc.
6. Optimum utilisation of Furnaces.
7. Reduction in consumption of Fuel by providing Ceramic Lining in Furnaces.
8. Arresting leakages in Compressed Air Piping and Steam Piping.
9. Recovery of waste heat.
10. Procurement of energy efficient office equipments.
11. Training employees for creating awareness about energy conservation.
12. Use of non-conventional energy.

As a result of the above steps, energy cost as a percentage of turnover, net of excise, has declined to 2.31% as against about 2.45% in the previous year, despite increase in fuel cost and power tariff during 2004-05.

### **TECHNOLOGY ABSORPTION AND RESEARCH & DEVELOPMENT**

#### **Research & Development**

- |   |   |                                |
|---|---|--------------------------------|
| 1. Specific areas in which R&D carried out by the Company | } | Given in the Directors' Report |
| 2. Benefits derived as a result of the above R&D          | } | under "R&D and Technology"     |

3. Future plan of action:

The following are the major thrust areas for R&D and technology:

- Advanced control and instrumentation platform for thermal power plant and industrial application
- Performance Analysis, Diagnostics and Optimization (PADO) systems for thermal power plant application
- More efficient conventional thermal power plants using supercritical parameters
- Integrated Gasification Combined Cycle (IGCC) power plants
- Atmospheric and Circulating Fluidized Bed Combustion (CFBC) boilers
- Hydro power plants with higher efficiency and longer life
- HVDC transmission systems
- Flexible AC Transmission systems, including devices such as Thyristor Controlled Series Compensation, phase shifting transformer, static synchronized compensator (STATCOM), controlled shunt reactor, etc.
- Gas insulated switchgear
- 765 kV Transmission system

- Industrial steam turbines
- Pulverisers
- Compressors
- High efficiency boiler feed pumps
- Reduction of emissions
- Efficient, reliable and cost effective transportation systems like three-phase AC drive system for diesel electric locos
- Non-conventional energy systems
- Simulators
- Welding technologies
- Surface coatings
- Vibration and noise reduction
- Residual life assessment studies
- Cycle time and cost reduction
- Specialized engineering software applications
- Specialized software for Utilities

#### 4. Expenditure on R&D

Total	....	Rs.1252 million
a) Recurring	....	Rs. 977 million
b) Capital	....	Rs. 275 million
Expenditure as a percentage of total turnover	....	1.21%

#### TECHNOLOGY ABSORPTION AND ADOPTION

Details of technology imported during the last 5 years:

Technology	Year of import	Absorption status
Fabric filters	1999	Technology absorbed. Orders executed.
New generation C&I automation platform	2000	Technology absorption in progress. Orders executed.
Axial Fans	2002	Technology absorption in progress. Orders executed.

#### Foreign Exchange earnings and outgoings

- a) Activities relating to export information given in Directors' Report under "International Business".
- b) Total foreign exchange used and earned:

	(Rupees in million)	
	<b>2004-05</b>	<b>2003-04</b>
i Foreign exchange used	17721	12577
ii Foreign exchange earned	16082	17637

## SIGNIFICANT ACCOUNTING POLICIES

1 The financial statements have been prepared as of a going concern on historical cost convention and on accrual method of accounting in accordance with the generally accepted accounting principles and the provisions of the Companies Act, 1956 as adopted consistently by the Company.

### 2 **Fixed Assets**

Fixed assets (other than land acquired free from State Government) are carried at the cost of acquisition or construction or book value less accumulated depreciation.

Cost includes value of internal transfers for capital works, taken at actual / estimated factory cost or market price, whichever is lower. Effect of extraordinary events such as devaluation / revaluation in respect of long term liabilities / loans utilised for acquisition of fixed assets is added to / reduced from the cost.

Land acquired free of cost from the State Government is valued at Re.1/- except for that acquired after 16<sup>th</sup> July 1969, in which case the same is valued at the acquisition price of the State Government concerned, by corresponding credit to capital reserve.

### 3 **Borrowing Costs**

Borrowing costs that are attributable to the manufacture, acquisition or construction of qualifying assets, are included as part of the cost of such assets.

A qualifying asset is one that necessarily takes more than twelve months to get ready for intended use or sale.

Other borrowing costs are recognised as expense in the period in which they are incurred.

### 4 **Investments**

(i) Long-term investments are carried at cost. Decline, other than temporary, in the value of such investments, is recognised and provided for.

(ii) Current investments are carried at cost or quoted/fair value whichever is lower. Unquoted current investments are carried at cost.

(iii) The cost of investment includes acquisition charges such as brokerage, fees and duties.

Any reduction in the carrying amount & any reversals of such reductions are charged or credited to the Profit & Loss Account.

### 5 **Revenue Recognition**

Sales are recorded based on significant risks and rewards of ownership being transferred in favour of the customer. Sales include goods dispatched to customers by partial shipment.

A. For construction contracts entered into on or after 1.4.2003.

Revenue is recognized on percentage completion method based on the percentage of actual cost incurred upto the reporting date to the total estimated cost of the contract.

B. For all other contracts

(i) Recognition of sales revenue in respect of long production cycle items (Hydro and Thermal sets including gas-based power plants, boilers, boiler auxiliaries, compressors and industrial turbo sets) is made on technical estimates. When the aggregate value of shipments represents 30% or more of the realizable value, they are considered at 97.5% of the realizable value or in its absence, quoted price. Otherwise, they are considered at actual/estimated factory cost or 97.5% of the realizable value, whichever is lower. The balance 2.5% is recognized as revenue on completion of supplies under the contract.

(ii) Income from erection and project management services is recognized on work done based on : Percentage of completion; or

The intrinsic value, reckoned at 97.5% of contract value, the balance 2.5% is recognized as income when the contract is completed.

- (iii) Income from engineering services rendered is recognized at realizable value based on percentage of work completed.
- (iv) Income from supply/erection of non-BHEL equipment/systems and civil works is recognized based on dispatches to customer/work done at project site.

## 6 **Leases**

### **FINANCE LEASE**

#### **A) i) Assets Given on Lease Prior to 1<sup>st</sup> April 2001**

Assets manufactured and given on finance lease are capitalised at the normal sale price/fair value/contracted price and treated as sales.

Depreciation on the same is charged at the rate applicable to similar type of fixed assets as per Accounting Policy on 'Depreciation'. Against lease rentals, matching charge is made through Lease Equalisation Account.

Finance income is recognised over the lease period.

#### **(ii) Assets Given on Lease on or after 1<sup>st</sup> April 2001**

Assets manufactured and given on finance lease are recognised as sales at normal sale price / fair value / NPV.

Finance income is recognised over the lease period.

Initial direct costs are expensed at the commencement of lease.

#### **B) Assets Taken on Lease on or after 1<sup>st</sup> April 2001**

Assets taken on lease are capitalised at fair value / NPV / contracted price.

Depreciation on the same is charged at the rate applicable to similar type of fixed assets as per Accounting Policy on 'Depreciation'. If the lease assets are returnable to the lessor on expiry of lease period, the same is depreciated over its useful life or lease period, whichever is shorter.

Lease payments made are apportioned between finance charges and reduction of outstanding liability in relation to assets taken on lease.

### **OPERATING LEASE**

#### **Assets Given on Lease:**

Assets manufactured and given on operating lease are capitalised. Lease income arising therefrom is recognised as income over the lease period.

**Assets Taken on Lease :** Lease payments made for assets taken on operating lease are recognised as expense over the lease period.

## 7 **Inventory Valuation**

- (i) Inventory is valued at actual/estimated cost or net realisable value, whichever is lower.
- (ii) Finished goods in Plant and work in progress involving Hydro and Thermal sets including gas based power plants, boilers, boiler auxiliaries, compressors and industrial turbo sets are valued at actual/estimated factory cost or at 97.5% of the realisable value, whichever is lower.
- (iii) In respect of valuation of finished goods in plant and work-in-progress, cost means factory cost; actual/estimated factory cost includes excise duty payable on manufactured goods.
- (iv) In respect of raw material, components, loose tools, stores and spares cost means weighted average cost.
- (v) a) For Construction contracts entered into on or after 01.04.2003:  
Where current estimates of cost and selling price of a contract indicates loss, the anticipated loss in respect of such contract is recognised immediately irrespective of whether or not work has commenced.

b) For all other contracts:

Where current estimates of cost and selling price of an individually identified project forming part of a contract indicates loss, the anticipated loss in respect of such project on which the work had commenced, is recognised.

c) In arriving at the anticipated loss, total income including incentives on exports/deemed exports is taken into consideration.

(vi) The components and other materials purchased / manufactured against production orders but declared surplus are charged off to revenue retaining residual value based on technical estimates.

## 8 **Terminal Benefits**

A) Provident Fund and Employees' Family Pension Scheme contributions are accounted for on accrual basis. Liability for gratuity, half pay leave, leave encashable at the time of retirement, travel claims on retirement and post retirement medical benefits are accounted for in accordance with actuarial valuation. The actuarial liability is determined with reference to employees at the beginning of each calendar year.

B. Compensation under Voluntary Retirement Scheme before 1.4.2003 are treated as Deferred Revenue Expenditure and amortised over the period during which the benefits are expected to be derived by the Company.

Compensation under VRS after 1.4.2003 is charged off in the year of incurrence on a pro-rata monthly basis.

## 9 **Depreciation**

(i) Depreciation on fixed assets (other than those used abroad under contract) is charged upto the total cost of the assets on straight-line method as per the rates prescribed in Schedule XIV of the Companies Act, 1956, except where depreciation is charged at rates determined on the basis of the technically assessed estimated useful lives shown hereunder:-

	<b>Single Shift</b>	<b>Double Shift</b>	<b>Triple Shift</b>
General Plant & Machinery	8%	12%	16%
Automatic/Semi			
Automatic Machines	10%	15%	20%
Erection Equipment,			
Capital Tools &Tackles	20%		
Township Buildings			
–Second Class	2.5%		
–Third Class	3.5%		
Railway Sidings	8%		
Locomotives &Wagons	8%		
Electrical Installations	8%		
Office & Other Equipments	8%		
Drainage, Sewerage & Water supply	3.34%		
Electronic Data Processing Equipment	20%		

In respect of additions to/deductions from the fixed assets, depreciation is charged on pro-rata monthly basis.

(ii) Fixed assets used outside India pursuant to long term contracts are depreciated over the duration of the initial contract.

(iii) Fixed assets costing Rs.10,000/- or less and those whose written down value as at the beginning of the year is Rs.10,000/- or less, are depreciated fully. In so far as township buildings are concerned, the cost per tenement is the basis for the limit of Rs.10,000/-.

- (iv) At erection/project sites: The cost of roads, bridges and culverts is fully amortized over the tenure of the contract, while sheds, railway sidings, electrical installations and other similar enabling works (other than purely temporary erections, wooden structures) are so depreciated after retaining 10% as residual value.
- (v) Purely Temporary Erection such as wooden structures are fully depreciated in the year of construction.
- (vi) Leasehold Land and Buildings are amortised over the period of lease. Buildings constructed on land taken on lease are depreciated over their useful life or the lease period, whichever is earlier.
- (vii) Where the carrying amount on any fixed assets has undergone a change in accordance with the policy for Foreign Currency Transactions, the depreciation on the unamortised depreciable asset is spread over the residual useful life of the asset.

#### **10 Intangible Assets**

- A. Intangible assets are capitalised at cost if
  - a. it is probable that the future economic benefits that are attributable to the asset will flow to the company, and
  - b. the company will have control over the assets, and
  - c. the cost of these assets can be measured reliably and is more than Rs.10,000/-.

Intangible assets are amortised over their estimated useful lives not exceeding three years in case of software and not exceeding ten years in case of others on a straight line pro-rata monthly basis.
- B.
  - a. Expenditure on research including the expenditure during the research phase of Research & Development Projects is charged to profit and loss account in the year of incurrence.
  - b. Expenditure incurred on Development including the expenditure during the development phase of Research & Development Project meeting the criteria as per Accounting Standard on Intangible Assets, is treated as intangible asset.
  - c. Fixed assets acquired for purposes of research and development are capitalised.

#### **11 Claims by/against the Company**

- (i) Claims for liquidated damages against the Company are recognised in accounts based on management's assessment of the probable outcome with reference to the available information supplemented by experience of similar transactions.
- (ii) Claims for export subsidy, duty draw back, refund of customs duty and insurance are taken into account on accrual.
- (iii) Amounts due in respect of price escalation claims and/or variations in contract work are recognised as revenue only when there are conditions in the contracts for such claims or variations and/or evidence of the acceptability of the same from customers. However, escalation is restricted to intrinsic value.

#### **12 Accounting for Foreign Currency Transactions**

Transactions in foreign currencies are recorded at the exchange rates prevailing on the date of the transaction. Foreign currency monetary assets and liabilities are translated at year end exchange rates. Exchange difference arising on settlement of transactions and translation of monetary items are recognized as income or expense in the year in which they arise, except in respect of the liabilities for the acquisition of fixed assets, where such exchange difference is adjusted in the carrying cost of fixed assets.

#### **13 Translation of Financial Statements of Integral Foreign Operations**

- (i) Items of income and expenditure are translated at average rate except depreciation, which is converted at the rates adopted for the corresponding fixed assets.





- (ii) Monetary items are translated at the closing rate; non-monetary items carried at historical cost are translated at the rates in force on the date of the transaction; non-monetary items carried at fair value are translated at exchange rates that existed when the value were determined.
- (iii) All translation variances except in relation to fixed assets are taken to Profit & Loss Account.

#### **14 Provision for Warranties**

i) **For construction contracts entered into on or after 01.04.2003:**

Provision for contractual obligations is maintained at 2.5% of the contract value on completion of trial operation.

ii) **For all other contracts:**

Provision for contractual obligations in respect of contracts under warranty at the year end is maintained at 2.5% of the value of contract. In the case of contracts for supply of more than a single product 2.5% of the value of each completed product is provided.

- (iii) Warranty claims/ expenses on rectification work are accounted for against natural heads as and when incurred and charged to provisions in the year end.

#### **15 Government Grants**

Government Grants are accounted when there is reasonable certainty of their realisation.

Grants related to fixed depreciable assets are adjusted against the gross cost of the relevant assets while those related to non-depreciable assets are credited to capital reserve. Grants related to revenue, unless received as compensation for expenses/losses, are recognised as revenue over the period to which these are related on the principle of matching costs to revenue.

Grants in the form of non-monetary assets are accounted for at the acquisition cost, or at nominal value if received free.

# BALANCE SHEET

As at March 31, 2005

	SCHEDULE	AS AT 31.3.2005		(Rs. in lakhs) AS AT 31.3.2004	
SOURCES OF FUNDS					
Shareholders' Funds					
Share Capital	1	24476.00		24476.00	
Reserves & Surplus	2	578213.38	602689.38	505118.00	529594.00
Loans Funds					
Secured Loans	3	50000.00		50000.00	
Unsecured Loans	4	3698.29	53698.29	4002.63	54002.63
			656387.67		583596.63
APPLICATION OF FUNDS					
Fixed Assets					
Gross Block		362893.72		345960.40	
Less: Depreciation/Amortisation to-date		261934.71		241150.79	
		100959.01		104809.61	
Add : Lease Adjustment Account		3465.14		4604.48	
Net Block	5	104424.15		109414.09	
Capital Work-in-Progress	6	9531.80	113955.95	10855.74	120269.83
Investments	7		895.26		2898.26
Deferred Tax Assets (Refer note no. 16 of Schedule 19)			51827.90		49851.88
Current Assets, Loans and Advances					
Current Assets	8				
Inventories		291610.73		210388.36	
Sundry Debtors		597214.22		460848.04	
Cash & Bank Balances		317786.21		265963.89	
Other current assets		4717.63		1350.59	
Loans and advances	9	122969.20		103919.05	
		1334297.99		1042469.93	
Less :					
Current Liabilities & Provisions					
Liabilities	10	712044.68		519691.07	
Provisions	11	132544.75		113994.26	
		844589.43		633685.33	
Net current assets			489708.56		408784.60
Miscellaneous expenditure	12		0.00		1792.06
			656387.67		583596.63

## Notes to Accounts

19

Schedules 1 to 19 & Significant accounting policies form an integral part of the Accounts.

Sd/-  
**N.K.Sinha**  
Secretary

Sd/-  
**C.Srinivasan**  
Director(Finance)

Sd/-  
**Ashok K. Puri**  
Chairman & Managing Director

As per our report of even date  
For J C Bhalla & Company  
Chartered Accountants

Sd/-  
Sudhir Mallick  
Partner

Date : 01.06. 2005  
Place : New Delhi



# PROFIT & LOSS ACCOUNT

For the year ended 31st March 2005

	Schedule	For the year ended 31.03.2005	(Rs. In lakhs) For the year ended 31.03.2004
<b>EARNINGS</b>			
Turnover (Gross)	13A	1033639.72	866246.98
Less Excise Duty & Service Tax		80926.18	64343.78
Turnover (Net)		952713.54	801903.20
Other operational income	13B	42004.31	31270.44
Other income	13C	10172.14	11911.07
Interest Income	13D	13393.45	8095.13
Accretion/Decretion to Work-in-progress & Finished Goods		53977.49	-3062.60
		1072260.93	850117.24
<b>OUTGOINGS</b>			
Consumption of raw Material & components		489178.66	345152.65
Consumption of stores & spares		20589.10	18313.00
Erection and Engineering expenses			
- payment to subcontractors		77361.82	59445.87
Employees' remuneration & benefits	15	165037.98	163950.91
Other expenses of manufacture, Administration, selling and distribution	16	115995.42	108364.15
Interest & other borrowing costs	17	8140.65	6008.05
Exchange variation		3194.03	3629.69
Depreciation & amortisation	5	21886.56	19800.11
Provisions	18	12624.50	2084.42
Less : Cost of jobs done for internal use		1913.46	2362.97
		912095.26	724385.88
Profit before prior period adjustments and extra-ordinary items		160165.67	125731.36
Less : Extra-ordinary items	18A	1799.03	22981.24
Profit before prior period adjustments		158366.64	102750.12
Add/-less : Prior period Adjustments (Net)	18B	-203.08	-1274.84
<b>Profit before tax :</b>		158163.56	101475.28
Less: Provision for taxation	18C	62823.09	35660.12
<b>Profit after tax</b>		95340.47	65815.16
Add: Balance of profit brought forward from last year		10345.25	5192.47
Foreign project reserve written back		323.18	1061.92
Profit available for appropriation		106008.90	72069.55
<b>Less: Appropriation-</b>			
- Foreign Project Reserve		0.00	138.30
- Bonds Redemption Reserve		10000.00	10000.00
- General Reserve		50000.00	35000.00
- Dividend (Incl. Interim Dividend Rs. 8566.62 lakhs, Prev. year Rs.7342.80 lakhs)		19580.80	14685.60
- Corporate Dividend tax (incl. Rs.1119.55 lakhs on interim dividend prev. year Rs. 940.79 lakhs)		2664.29	
		82245.09	1900.40
<b>Balance carried to Balance Sheet</b>		23763.81	10345.25
<b>Basic and Diluted Earning per share (in Rs.)</b>		38.95	26.89
<b>Basic and Diluted Earning per share excluding Extra Ordinary items (in Rs.)</b>		39.42	32.91

## Notes to Accounts

Schedules 1 to 19 & Significant accounting policies form an integral part of the Accounts.

Sd/-  
**N.K.Sinha**  
Secretary

Sd/-  
**C.Srinivasan**  
Director(Finance)  
As per our report of even date  
For J C Bhalla & Company  
Chartered Accountants

Sd/-  
**Ashok K. Puri**  
Chairman & Managing Director

Date : 01.06. 2005  
Place : New Delhi

Sd/-  
**Sudhir Mallick**  
Partner

## SCHEDULE 1 – SHARE CAPITAL

	AS AT 31.3.2005	(Rs. in lakhs) AS AT 31.3.2004
<b>Authorised</b>		
32,50,00,000 (Previous Year 32,50,00,000) equity shares of Rs. 10/- each	32500.00	32500.00
<b>Issued,Subscribed &amp; Paid up</b>		
24,47,60,000 (Prev. Year 24,47,60,000) Equity shares of Rs. 10/- each fully paid up, of which 7,41,11,200 (Previous Year 7,41,11,200) shares allotted for consideration other than cash	24476.00	24476.00
	<b>24476.00</b>	<b>24476.00</b>

## SCHEDULE 2 – RESERVES & SURPLUS

Capital Reserve				
Opening Balance	274.81		276.98	
Less:Adjusted for sale of asset	0.00	274.81	2.17	274.81
Foreign Project Reserve				
Opening Balance	1518.70		2442.32	
Add: Transferred from Profit & Loss Account	0.00		138.30	
Less: Written back	323.18	1195.52	1061.92	1518.70
Bonds Redemption Reserve Account				
Opening Balance	30000.00		20000.00	
Add: Transferred from Profit & Loss Account	10000.00	40000.00	10000.00	30000.00
General Reserve				
Opening Balance	462979.24		427979.24	
Add: Transferred from Profit & Loss Account	50000.00	512979.24	35000.00	462979.24
Profit & Loss Account		23763.81		10345.25
	<b>578213.38</b>		<b>505118.00</b>	



### SCHEDULE 3 – SECURED LOANS

	AS AT 31.3.2005	(Rs. in lakhs) AS AT 31.3.2004
8.85% Non-convertible, secured, Redeemable Taxable Bonds	50000.00	50000.00
	<b>50000.00</b>	<b>50000.00</b>

### SCHEDULE 4 – UNSECURED LOANS

From financial Institutions (due within one year nil Lakhs (previous year Rs. 2.80 Lakhs)	0.00	2.80
Post Shipment credit		
-- From Exim Bank (Due within one year Rs. nil lakhs (Previous year Rs.153.64 lakhs)	0.00	153.64
Credits for Assets taken on lease (Due within one year Rs. 1328.35 lakhs (Previous year Rs. 1055.07 lakhs)	3449.98	3579.87
Interest accrued and due on:		
--State Government Loans	233.29	233.29
--Credits for Assets taken on lease	15.02	33.03
	<b>3698.29</b>	<b>4002.63</b>

## SCHEDULE 5

(Rs. in lakhs)

Fixed Assets	Gross Block				Net Block				
	Cost as at 01.04.2004	Additions/ adjustments during the year	Deductions/ adjustments during the year	Cost As at 31.03.2005	Lease adjustment Account upto 31.03.2005	Depreciation/ Amortisation upto 31.03.2005	As at 31.03.2005	As at 31.03.2004	Depreciation/ Amortisation for the year
Factory/ Office Complex									
Freehold land (incl. development exp.)	741.69		297.24	444.45			444.45	741.69	
Leasehold land (incl. development exp.)	664.00		48.72	615.28		39.24	576.04	614.38	1.58
Roads, bridges and culverts	693.04	24.33		717.37		263.44	453.93	442.11	12.55
Buildings	26758.53	1444.33	1047.14	27155.72		16,265.87	10889.85	11329.62	1165.88
Leashold buildings	308.77		8.11	300.66		92.21	208.45	219.46	4.99
Drainage, sewerage and water supply	1261.18	0.22		1261.40		869.62	391.78	425.23	33.66
Railway siding	764.51			764.51		750.65	13.86	15.63	1.77
Plant & Machinery	198239.64	10392.76	829.31	207803.09		165,462.74	42340.35	44085.77	11814.38
Construction equipment	13409.85	1872.06	292.54	14989.37		12,510.77	2478.60	1360.32	754.35
Electronic data processing equipments	7140.82	1765.57	68.37	8838.02		6,864.82	1973.20	1569.16	702.15
Electrical installations	7946.32	230.06	9.10	8167.28		6,104.01	2063.27	2105.88	279.06
Locomotives and wagons	1600.67			1600.67		1,388.57	212.10	253.15	41.09
Vehicles	1794.17	48.39	35.81	1806.75		1,392.68	414.07	472.72	104.11
Furniture & fixtures	737.12	38.55	0.59	775.08		430.01	345.07	337.90	31.22
Office & other equipments	5704.84	225.83	29.51	5901.16		4,271.36	1629.80	1694.29	287.70
Fixed assets costing upto Rs.10000/-	3885.85	257.19	18.17	4124.87		4,124.87			257.20
Locomotives given on lease	49714.88			49714.88	3465.14	28,716.19	24463.83	29580.36	3977.19
Capital expenditure	44.05			44.05		44.05		3.67	3.67
EDP Equipment taken on lease	4770.02	993.14	684.88	5078.28		2,158.70	2919.58	3208.48	1093.31
Office & other equipment taken on lease	701.95	4.26		706.21		277.10	429.11	517.01	84.05
Intangible Assets									
-Internally developed									
-Patents and Trade Marks									
-Others		18.43		18.43		0.93	17.50		0.93
-Others									
-Software	494.32	1215.10	0.67	1708.75		501.78	1206.97	422.92	430.37
-Technical Know-how	181.61	380.36		561.97		166.17	395.80	159.86	144.42
-Others		425.69		425.69		141.88	283.81		141.88
	327557.83	19336.27	3370.16	343523.94	3465.14	252837.66	94151.42	99559.61	21367.51
Township/ Residential									
Freehold land (incl. development exp.)	215.02			215.02			215.02	215.02	
Leasehold land (incl. development exp.)	189.53	14.00		203.53		43.86	159.67	147.74	2.07
Roads, bridges and culverts	487.52			487.52		235.54	251.98	260.02	8.00
Buildings	12193.41	772.80	-0.84	12967.05		4777.85	8189.20	7746.11	308.14
Leasehold buildings	33.17	8.11		41.28		20.85	20.43	15.65	1.24
Drainage, sewerage and water supply	1660.24			1660.24		1138.13	522.11	562.80	40.69
Plant and Machinery	887.87	19.63	0.57	906.93		679.60	227.33	252.92	45.21
Electrical installations	1224.22	26.27	0.04	1250.45		1199.00	51.45	58.42	26.52
Vehicles	108.62			108.62		93.14	15.48	20.35	4.90
Furniture & fixtures	6.54	1.94	0.26	8.22		4.11	4.11	2.78	0.35
Office & other equipments	1228.20	119.93	0.44	1347.69		731.74	615.95	572.67	76.83
Fixed assets costing upto Rs. 10000/-	168.23	5.10	0.10	173.23		173.23			5.10
Capital expenditure									
	18402.57	967.78	0.57	19369.78		9097.05	10272.73	9854.48	519.05
Total of factory & township	345960.40	20304.05	3370.73	362893.72	3465.14	261934.71	104424.15	109414.09	21886.56
Previous year	334930.69	12935.63	1905.92	345960.40	4604.48	241150.79	109414.09	117050.16	19800.11

Gross Block excludes cost of assets purchased out of grant received from Government of India Rs. 3046.27 lakhs (Prev. Yr Rs. 2940.05 lakhs) for research and assets as executing agency since the property does not vest with the Company.

The Company's contribution or expenditure towards construction, development of assets not owned by the Company is capitalised under the general head 'Capital Expenditure' and written off to revenue in five years.

Building includes enabling works at erection/project sites the net block of which is Rs. Nil lakhs (previous year Rs. 738.71 lakhs).

There is no impairment loss in Intangible assets during the year.



## SCHEDULE 6 CAPITAL WORK- IN- PROGRESS (AT COST)

	AS AT 31.3.2005	(Rs. in lakhs) AS AT 31.3.2004
Construction work-in-progress -Civil	1406.71	730.52
Construction Stores (including in transit)	197.33	162.65
Plant & Machinery and other equipments		
-Under Erection/ Fabrication/awaiting erection	3181.14	8932.92
-In transit	4544.44	536.59
Intangible Assets under development	202.18	493.06
	<b>9531.80</b>	<b>10855.74</b>

## SCHEDULE 7 INVESTMENTS

### LONG TERM

#### Shares:

UNQUOTED (Fully Paid up)

#### TRADE:

360 (previous year 360) Equity shares of Rs. 38.95 each (previous year Rs. 38.95 each) of Engineering Projects (India) Ltd.

728960 (previous year 728960) Equity shares of Rs. 10/- each of AP Gas Power Corporation Ltd.

5000000 (Previous year Nil) Equity shares of Rs.10/- each of Neelachal Ispat Nigam Ltd.(Refer Note No.18 in Sch-19)

Nil (Previous year 5000000) Equity shares of Rs.10/- each of Konark Met Coke Ltd.(Refer Note No.18 in Sch-19)

Shares in Joint Ventures Companies

—19,99,999 (previous year 1999999) Equity Shares of Rs. 10/- each of Powerplant Performance Improvement Ltd.

Less: Provision for dimunition in value

—2379,999 (previous year 2379999) Equity Shares of Rs. 10/- each of BHEL-GE Gas Turbine Services Pvt. Ltd.

#### OTHER THAN TRADE :

3 (Previous year 3) shares of Rs.100/- each at par of BHEL House Building Cooperative Society Ltd., Hyderabad

#### CURRENT:

UNQUOTED (Fully Paid up)

#### OTHER THAN TRADE

Nil (Previous year 20) Secured Non convertible debentures of Rs. 100 lakhs each of GE Capital Services India

0.14	0.14
91.12	91.12
500.00	
0.00	500.00
591.26	591.26
200.00	200.00
134.00	131.00
66.00	69.00
238.00	304.00
238.00	307.00
	*
	*
0.00	2000.00
895.26	2898.26

\* Value less than Rs. 1000/-

#### Details of investments purchased and sold during the year

Nil (prev. year 175) secured non convertible debentures of Rs. 100 lakhs each of GE Capital Services India costing Rs.Nil (prev. year Rs.17500 lakhs).

## SCHEDULE 8 CURRENT ASSETS

	AS AT 31.3.2005	(Rs. in lakhs) AS AT 31.3.2004
<b>Inventories @</b>		
(As certified by the management)		
Stores & Spare parts		
-Production	7249.45	6168.59
-Fuel stores	820.38	917.95
-Miscellaneous	640.83	670.94
	8710.66	7757.48
Raw Material & Components	81135.59	55711.73
Material-in-transit	23480.93	25146.18
Materials with Fabricators/Contractors	6310.93	4447.93
Loose Tools	910.31	967.83
Scrap (at estimated realisable value)	2406.54	1359.72
Finished Goods	26216.22	19051.84
Inter division transfers in transit	4688.00	4530.63
Includes:		
– Rs. 140.25 lakhs (previous year Rs. 140.25 lakhs) towards non-BHEL spares held on behalf of various SEBs /NTPC (pool members) monitored by CEA		
– Rs. 41.45 lakhs (previous year Rs. 36.24 lakhs) Finished Goods in transit.	30904.22	23582.47
Work-in-progress (including items with sub-contractors)	140567.38	94396.14
	294426.56	213369.48
Less : Provision for non-moving stock	2815.83	2981.12
	291610.73	210388.36
@ Valued as per Significant Accounting Policy Number 7		
<b>Sundry Debtors*</b>		
-Debts outstanding for a period exceeding six months	277763.86	236175.38
-Other debts	394907.45	293299.80
	672671.31	529475.18
Less : Provision for doubtful debts	75457.09	68627.14
	597214.22	460848.04

\* Includes deferred debts Rs. 178114.75 lakhs  
(Previous year Rs.154118.02 lakhs)





## SCHEDULE 8 (Contd.)

			AS AT 31.3.2005	(Rs. in lakhs) AS AT 31.3.2004
Particulars of Sundry debtors :				
Debts considered good for which the Company holds no security other than the debtors' personal security			597214.22	460848.04
Debts considered doubtful and provided for			75457.09	68627.14
			<b>672671.31</b>	<b>529475.18</b>
<b>Cash and Bank Balances</b>				
Cash & stamps in hand			68.30	74.79
Cheque, Demand Drafts in hand			3951.31	41675.99
Remittances in transit			972.80	143.11
Balances with Scheduled Banks				
Current Account			133268.87	106908.44
Deposit Account			178500.70	115500.66
Balance with non-scheduled Banks				
	Maximum Balance during the year			
	(Rs. in lakhs) 2004-05	(Rs. in lakhs) 2003-04		
Current Accounts				
-Arab Bank ,Jordan	0.29	20.71	0.00	0.29
-Standard Chartered Bank, Libya	28.12	0.00	0.00	0.00
-Bank Muskat, Oman	2963.70	4989.80	403.38	1093.14
-Barclays Bank Ltd., Zambia	0.68	0.68	0.68	0.68
-Bhumiputra Commerce (Bank of Commerce) Malaysia	262.40	58.93	79.99	43.46
-Indo Jambia Bank ,Lusaka	227.67	336.92	227.67	147.14
-Jamahouria Bank, Libya	504.50	365.83	302.18	365.82
-National Bank of Egypt	11.33	11.06	10.33	10.37
			<b>317786.21</b>	<b>265963.89</b>
<b>Other Current Assets</b>				
Interest Accrued on Banks Deposits and investments			4717.63	1350.59
			<b>4717.63</b>	<b>1350.59</b>
<b>Summary of Current Assets</b>				
Inventories			291610.73	210388.36
Sundry Debtors			597214.22	460848.04
Cash & Bank Balances			317786.21	265963.89
Other Current Assets			4717.63	1350.59
			<b>1211328.79</b>	<b>938550.88</b>

## SCHEDULE 9 LOANS AND ADVANCES

	<b>AS AT 31.3.2005</b>		<b>(Rs. in lakhs) AS AT 31.3.2004</b>	
<b>Loans</b>				
Loans to Employees	260.16		440.88	
Loans to others	29.66		38.46	
Interest accrued and or due on loans	<u>1635.33</u>	1925.15	<u>2119.43</u>	2598.77
<b>Advances</b>				
(Recoverable in cash or in kind or for value to be received)				
To employees	1412.16		1568.54	
For purchases	10733.85		6462.55	
To others	58328.24		40348.73	
For capital expenditure	<u>235.81</u>	70710.06	<u>57.29</u>	48437.11
<b>Deposits</b>				
Balance with customs, Port Trust and other Govt. Authorities [includes Rs. 534.99 lakhs (Previous Year Rs. 4.71 lakhs) by pledge of Post Office pass book with Central Excise Authorities)	14399.52		13637.47	
Inter Corporate Deposits/Loans	7500.00		8083.00	
Interest accrued on inter-corporate Deposits/Loans	291.84		119.77	
Others	<u>30832.28</u>	<u>53023.64</u>	<u>33679.13</u>	<u>55519.37</u>
		125658.85		106555.25
Less: Provision for doubtful loans & advances		2689.65		2636.20
		<b><u>122969.20</u></b>		<b><u>103919.05</u></b>
Particulars of Loans & Advances :				
Loans & Advances considered good in respect of which the Company is fully secured		743.56		822.19
Loans & Advances considered good for which the Company holds no security other than the Debtors' personal security		122225.64		103096.86
Loans & Advances considered doubtful & provided for		2689.65		2636.20
		<b><u>125658.85</u></b>		<b><u>106555.25</u></b>

Maximum Balance  
during the year  
(Rs. in lakhs)

	<u>2004-05</u>	<u>2003-04</u>		
Due from Directors of the Company	0.71	0.75	0.23	0.50
Due from Officers of the Company	22.01	17.12	13.48	11.78



## SCHEDULE 10 CURRENT LIABILITIES

	AS AT 31.03.2005	(Rs. in lakhs) AS AT 31.03.2004
Acceptances	3411.24	2301.87
Sundry Creditors		
-Total outstanding dues of SSI undertakings (incl. interest)	12624.34	9247.99
-Other Sundry Creditors	<u>197343.70</u>	<u>164549.10</u>
Advances received from customers	209968.04	173797.09
Deposits from Contractors	458498.91	313302.70
Investor Education & Protection Fund shall be credited by the following amount:	8905.93	6844.02
-Unclaimed dividend *	47.39	71.45
Other liabilities	29524.55	21661.40
Interest accrued but not due	1688.62	1712.54
	<u>712044.68</u>	<u>519691.07</u>

\*There is no amount due & outstanding as at Balance Sheet date to be transferred to Investor Education & Protection Fund.

## SCHEDULE 11 PROVISIONS

Provision for Taxation (Net of Income Tax payments Rs.147546.41 lakhs (Previous year Rs. 106354.87 lakhs)	12284.50	12819.72
Dividend	11014.18	7342.80
Corporate Dividend Tax	1544.74	959.61
Contractual Obligation	47515.56	40491.12
Retirement benefits	43884.43	34398.68
Others	16301.34	17982.33
	<u>132544.75</u>	<u>113994.26</u>

## SCHEDULE 12 MISCELLANEOUS EXPENDITURE

(to the extent not written off or adjusted)

Lump sum payment under Voluntary Retirement Scheme	0.00	1792.06
	<u>0.00</u>	<u>1792.06</u>

## SCHEDULE 13 A TURNOVER (Gross)

	For the year ended 31.03.2005	(Rs. in lakhs) For the year ended 31.03.2004
Sales less returns (incl. Despatches made to customers Rs. 405437.64 lakhs (Previous year Rs. 355376.78 lakhs))	885253.62	757660.91
Income from external erection & other services	138021.81	102091.72
Revenue from Works Contract	10364.29	6494.35
	<b>1033639.72</b>	<b>866246.98</b>

## SCHEDULE 13 B OTHER OPERATIONAL INCOME

Export Incentives	19700.92	10904.08
Rental income on leased assets	8528.81	8608.35
Less: Lease equalisation account	1139.33	542.97
Scrap	8117.17	6156.38
Receipt from sale/transfer of surplus stock	46.51	137.07
Others	6750.23	6007.53
	<b>42004.31</b>	<b>31270.44</b>

## SCHEDULE 13 C OTHER INCOME

Profit from sale of fixed assets	146.56	236.65
Dividend on Investment (Long term-Trade)	975.82	654.50
Others (including grants of Rs.6.60 lakhs (previous year Rs. 2.00 lakhs) from Government of India for Research & Development Projects)	9049.76	11019.92
	<b>10172.14</b>	<b>11911.07</b>

## SCHEDULE 13 D INTEREST INCOME\*

From customers	8.18	52.10
From employees	62.52	60.54
From banks	12601.03	6154.23
From Investments (Current- Other than trade)	45.08	263.64
Others	676.64	1564.62
*(TDS Rs. 2576.09 lakhs (prev year Rs. 1175.53 lakhs))	<b>13393.45</b>	<b>8095.13</b>



## SCHEDULE 14 ACCRETION/(DECRETION) TO WORK-IN-PROGRESS & FINISHED GOODS

	For the year ended 31.03.2005		(Rs. in lakhs) For the year ended 31.03.2004	
Work -in -progress				
Closing Balance	140567.38		94396.14	
Opening Balance	94396.14	46171.24	93757.82	638.32
Finished Goods				
Closing Balance	26216.22		19051.84	
Opening Balance	19051.84	7164.38	22846.26	-3794.42
Inter-division transfer in transit		641.87		93.50
		<b>53977.49</b>		<b>-3062.60</b>

## SCHEDULE 15 EMPLOYEES REMUNERATION & BENEFITS

Salaries, Wages, Bonus, Allowances & other benefits	124840.23	120443.03
Contribution to gratuity fund	9926.68	12193.27
Contribution to Provident and other funds	10485.27	10208.04
Group Insurance	200.31	156.91
Staff Welfare Expenses	19585.49	20949.66
	<b>165037.98</b>	<b>163950.91</b>
Directors (including Chairman & Managing Director)*		
-Salaries & Allowances	36.36	33.23
-CPF	3.13	3.65
-Contribution to Gratuity Fund	2.88	3.78
-Others	8.51	38.00

\*The above amount includes leave encashment on payment basis and excludes group insurance premium.

### Notes:

The Chairman & Managing director and functional Directors have been allowed the use of staff car for both duty and non-duty journeys. The ceiling of the non-duty journey is 1000 Kms per month against recovery of prescribed amount in accordance with their terms & conditions of appointment. The monetary value of the above perquisite for the use of car if calculated in accordance with the provisions of Income Tax Rules, 1962 would amount to Rs. 0.71 lakhs (Previous year Rs.0.81 lakhs).

**SCHEDULE 16**  
**OTHER EXPENSES OF MANUFACTURE,**  
**ADMINISTRATION, SELLING & DISTRIBUTION**

	For the year ended 31.03.2005	(Rs. in lakhs) For the year ended 31.03.2004
Resident Consultant's Charges	105.83	108.30
Royalty, technical documentation & other consultancy charges	1344.02	1498.69
Rent (includes Rs. 2248.91 lakhs for residential rent- Previous year Rs. 2253.58 lakhs)	3042.24	3048.55
Excise Duty	23368.42	21300.04
Power & Fuel	22053.85	19680.71
Rates & Taxes	2034.77	2683.61
Insurance	4285.11	3009.31
Repairs:		
Buildings	2073.46	1475.07
Plant & Machinery	1551.18	1285.14
Others	4184.07	3997.43
Other expenses in connection with exports	2559.34	464.08
Bad debts and amount written off	1282.79	1598.43
Investment written off (long term-Trade)	0.00	3.46
Carriage outward	13355.78	7897.38
Travelling & conveyance	10958.65	11001.70
Miscellaneous Expenses	22767.08	21188.35
Cash discount	42.27	0.44
Liquidated damages charged off	773.88	8080.11
Donations	197.83	5.64
Village development & social expenses	14.85	37.71
	<b>115995.42</b>	<b>108364.15</b>
<b>Notes :</b>		
Repairs do not include expenditure on departmental maintenance which are as under:		
Plant & Machinery	7658.47	8461.51
Buildings	1975.21	2037.01
Others	<u>1394.98</u>	<u>1467.67</u>
	11028.66	11966.19
Agency Commission on exports included in expenses in connection with exports	2274.27	153.17
Expenditure on Research & Development	8960.08	9002.17



## SCHEDULE 16 (Contd.)

	For the year ended 31.03.2005	(Rs. in lakhs) For the year ended 31.03.2004
Payment to Auditors (Net of service tax credit claimed)		
— Fees (includes Rs.3.37 lakhs (previous year Rs.0.56 lakhs) to auditors abroad)	23.57	19.40
— Expenses	8.59	10.12
— Income tax matters (incl Rs.0.85 lakhs (Previous year Rs.1.36 lakhs) to auditors abroad)	4.65	6.17
— Certification work (includes Rs. Nil lakhs (Previous year Rs. Nil lakhs) to auditors abroad)	11.13	10.30
— Other Professional services includes Rs. Nil lakhs (Previous year Rs.Nil) to auditors abroad	0.06	0.07
Payment to Cost Auditors	0.96	0.95
*Expenditure on entertainment	410.52	404.98
*Expenditure on foreign travel (for 517 tours (previous year 541 tours))	574.84	898.85
Expenditure on Publicity and Public relations		
Salaries allowances & other benefits	360.96	392.41
Other expenses	564.42	513.69
Director's Fees	3.75	4.20
*As certified by the management		

## SCHEDULE 17 INTEREST AND OTHER BORROWING COSTS

Interest on:

Bonds	4425.00	4425.00
Banks/financial Institutions borrowings	135.28	119.83
Others	3579.27	1462.13
Other Borrowing Costs	1.10	1.09
	<b>8140.65</b>	<b>6008.05</b>

## SCHEDULE 18 PROVISIONS

Doubtful debts, Liquidated Damages and Loans & advances

-Created during the year	17743.29	27872.31	
-Less written back during the year	14680.75	22749.09	5123.22
Contracutral Obligations			
-Created during the year	19127.37	10510.52	
-Less written back during the year	12096.24	14291.52	-3781.00
Others			
-Created during the year*	7809.80	5403.03	
-Less written back during the year	5278.97	4660.83	742.20
	<b>12624.50</b>	<b>2084.42</b>	

\*Includes Rs. 3 lakhs (Previous year Rs. 131 lakhs) towards dimunition in the value of long term trade investment.

## SCHEDULE 18A EXTRA-ORDINARY ITEMS

	For the year ended 31.03.2005	(Rs. in lakhs) For the year ended 31.03.2004
<b>Expenditure</b>		
Amortisation of Lump sum payment under Voluntary Retirement Scheme	1799.03	22981.24
	<b>1799.03</b>	<b>22981.24</b>

## SCHEDULE 18B PRIOR PERIOD ITEMS

<b>INCOME</b>			
Turnover	-66.93		-800.08
Other Operational income	166.67		
Other Income	151.98		41.69
Interest	-95.10	<b>156.62</b>	-52.75
			-811.14
<b>EXPENDITURE</b>			
Consumption of Raw material & components	0.00		14.24
Employees' Remuneration and benefits	0.00		40.61
Depreciation	0.00		4.21
Payment to Sub-contractors	2.06		9.51
Interest	0.00		1.12
Other expenses	357.64	<b>359.70</b>	394.01
Prior period adjustments (Net)		<b>-203.08</b>	<b>463.70</b>
			<b>-1274.84</b>

## SCHEDULE 18C PROVISION FOR TAXATION

For Current Year			
-Current Tax	63606.15		44004.87
(incl. wealth tax Rs. 6.15 lakhs (Previous year Rs. 4.87 lakhs))			
-Deferred Tax	-1976.02	<b>61630.13</b>	-9112.36
For earlier years			
-Tax		<b>1192.96</b>	767.61
		<b>62823.09</b>	<b>35660.12</b>

### Disclosure as per Accounting Standard-29 of Institute of Chartered Accountants of India

Particulars:	Opening Balance	Additions	Usage Write off	Withdrawal/ Adjustments	Closing Balance
Liquidated Damages (Note 1, 3 & 4)	34466.22	7879.23	773.88	6607.84	34963.73
Contractual Obligation (Note 2)	40491.12	21039.49	1912.12	12120.93	47515.56

#### Notes :

- As per the terms and conditions of the contract, with the customer, liquidated damages are provided for in line with the Accounting Policy of the company and the same is dealt suitably in the accounts on settlement or otherwise.
- The provisions for contractual obligation is made on a conservative basis at the rate of 2.5% of the contract value in line with significant Accounting policy No. 14 to meet the warranty obligations as per the terms and conditions of the contract. The same is retained till the completion of the warranty obligations of the contract. The actual warranty obligation may vary from contract to contract and on year to year depending upon the terms & conditions of the respective contract.
- Contingent liability relating to Liquidated Damages is being shown in Note No. 5 of Schedule-19.
- Includes Rs. 2461.70 lakhs for earlier year.



## SCHEDULE - 19

### NOTES TO ACCOUNTS

1. Estimated amount of contracts, net of advances, remaining to be executed on capital account and not provided for is Rs.14093.68 lakhs (previous year Rs. 3731.08 lakhs) including Rs. Nil (previous year Rs. 10.21 Lakhs) for acquisition of intangible assets.
2. Land and buildings include :
  - a) 13882.180 acres of land (previous year 13938.660 acres), 52 flats (previous year 52 flats) and one building (previous year one building) for which formal transfer/lease deeds have not been executed including for 51.520 acres of land (previous year 101.520 acres) for which the cost paid is provisional; registration charges and stamp duty net of provision already made thereon ,would be accounted for on payment.
  - b) 79.936 acres of land (previous year 79.936 acres) leased to Ministry of Defence, Government Departments and others.
  - c) 180 acres of land including 100 acres given on licence valid upto 30th November, 1990 (previous year 180 acres and 100 acres respectively) being used by the Ministry of Defence and for which further approval of the competent authority for continuance of licensing of this land is awaited.
  - d) 106.858 acres (previous year 159.507 acres) of land is under adverse possession.
3. The impact on the profit of providing 100 percent depreciation on fixed assets upto Rs.10000/- each, without considering such impact of earlier years, is as under:

	(Rs. in lakhs)	
	2004-2005	2003-2004
100% depreciation on assets upto Rs.10,000/- charged off in the accounting year	392.28	354.61
Normal depreciation on above	129.18	127.73
Excess amount charged off	263.10	226.88

4. Sales and despatches to customers :
  - (a) Includes Rs. 21169.99 lakhs (previous year Rs. 17544.90 Lakhs) based on provisional prices.
  - (b) Includes Rs. 37449.54 lakhs (previous year Rs. 23390.65 lakhs) for escalation claims raised in accordance with the sales contracts, inclusive of escalation claims on accrual basis to the extent latest indices were available;
  - (c) Includes despatches of equipment valued at Rs. 5233.17 lakhs (previous year Rs. 5404.60 lakhs) held on behalf of customers at their request for which payment has been received by the Company; and
  - (d) Excludes Rs. 1375.00 lakhs (previous year Rs.1216.56 lakhs) for price reduction due to delay in delivery as per terms of the contract.
5. Contingent Liabilities :
  - (a) Claims against the company not acknowledged as debt :
    - (i) Income Tax pending appeals (net of provisions) Rs. 18173.12 lakhs (previous year Rs. 17073.25 lakhs) against which Rs 26287.65 lakhs (previous year Rs 26278.81 lakhs) has been paid under protest and included under the head deposits- others.
    - (ii) Sales Tax demands Rs. 31800.18 lakhs (previous year Rs. 33264.13 lakhs) against which Rs. 8121.55 lakhs (previous year Rs. 7346.72 lakhs) has been paid under protest/court orders and included under the head advances recoverable.
    - (iii) Excise Duty demands Rs. 6534.32 lakhs (previous year Rs. 19301.27 lakhs), against which Rs. 992.62 lakhs (previous year Rs. 1284.58 lakhs) has been paid under protest/court orders and included under the head advances recoverable.
    - (iv) Court / Arbitration cases Rs. 5946.56 lakhs (previous year Rs. 5054.74 lakhs)
    - (v) Liquidated Damages Rs.1025.27 lakhs (previous year Rs. 4355.21 lakhs).
    - (vi) Counter claim by contractors Rs. 4077.88 lakhs (previous year Rs. 4108.25 lakhs).

(vii) Others Rs. 1941.26 lakhs (previous year Rs. 1329.42 lakhs).

In view of the various court cases / litigations and claims disputed by the company financial impact as to outflow of resources is not ascertainable at this stage.

- (b) Bills discounted under IDBI scheme outstanding at the close of the year amount to Rs. 1580.76 lakhs (previous year Rs. 3498.27 lakhs).
  - (c) Bank Guarantees outstanding at the close of the year amount Rs. 29374.89 lakhs (previous year Rs. 68781.24 lakhs)
  - (d) Corporate Guarantees issued on behalf of joint ventures outstanding at the close of the year amounting to Rs 3082.33 lakhs (previous year Rs.4169.08 lakhs)
6. Cash credit limit from banks aggregating to Rs 10000 lakhs (previous year Rs 40000 lakhs), company's bill discounting limit in respect of IDBI scheme aggregating to Rs 4000 lakhs (previous year Rs 20000 lakhs) and company's counter guarantee/ indemnity obligations in regard to banks guarantee/ letter of credit limits aggregating to Rs 1200000 lakhs (previous year Rs 850000 lakhs) sanctioned by consortium of banks are secured by first charge by way of hypothecation of raw materials, components, work in progress, finished goods, Stores, book debts and other current assets both present and future.
7. 8.85% Non convertible, secured, redeemable taxable Long Term Bonds of face value of Rs. 100 lakhs each amounting to Rs. 50000 lakhs were issued on 15.11.2001 for a period of 7 years with put/call option at the end of 5 years. These are secured by way of a legal mortgage and charge in favour of trustees on the immovable properties of the company situated at Apartment No.A/T-1 on 3rd Floor in Shrikrishna Apartments, Nr.Gowan Square, Nagpur, by equitable mortgage by deposit of title deeds in respect of the Company's immovable properties situated at Hardwar and Ramachandrapuram, Hyderabad Units and by hypothecation of the whole of the movable properties of the company of these units including its movable plant & machinery, machinery spares, tools and accessories and other movables both present and future (except specific assets on which exclusive first charge had already been created and book debts).
8. The company has filed an appeal in Income Tax Appellate Tribunal contesting the non-acceptance of claim of normal and extra ordinary exchange variation loss of Rs.37745.00 lakhs (previous year Rs.37745.00 lakhs) on accrual basis relating to the assessment year 1992-93. The demand of Rs.24974.61 lakhs (previous year Rs.24974.61 lakhs) raised by the income tax department in respect of the said income tax liability has been adjusted by the income tax department against the refunds due to the company and the same is shown as "other deposits" in Schedule-9 - Loans and Advances in the balance sheet. Based on the legal decisions, as the demand is likely to be deleted, the same to the extent unprovided is included as contingent liability as in the past in para 5(a)(i) above.
9. Amorphous Silicon Solar Cell Plant (ASSCP), Gurgaon was taken from Ministry of Non-conventional Energy Sources on lease for a period of 30 years. The lease agreement with the Government is yet to be finalised.
10. Other liabilities include a sum of Rs.10051.51 lakhs (previous year Rs.10051.51 lakhs) towards guarantee fee demanded by the Government of India in respect of foreign currency loans taken by the company at the instance of the Government upto 1990-91. The matter for its waiver has been taken up with the Government since there was no stipulation for payment of such guarantee fee at the time the loans (guaranteed by Government) were taken.
11. Liability due to small scale industrial undertakings shown in Schedule-10 has been determined from database maintained at units/divisions of the company, and updated to the extent responses received from such undertakings as to their SSI status. Name of SSIs to whom company owes sum for more than 30 days are included in Annexure.
12. The amount of exchange differences adjusted in the carrying amount of fixed assets during the accounting period is Rs. 91.74 lakhs (Previous year Rs. 34.77 lakhs).
13. Related Party Transactions:
- i) Related Parties where control exists (Joint Ventures):
    - Powerplant Performance Improvement Ltd
    - BHEL-GE Gas Turbine Services Pvt Ltd.
  - ii) Other related parties (Key Management Personnel- Functional Directors):
    - S/Shri Ashok K. Puri, H W Bhatnagar, C. Srinivasan, Ramji Rai, and S K Jain
  - iii) Details of transactions:



(Rs. in lakhs)

Particulars	Joint Ventures		Key Management Personnel (KMP)		Relatives of KMP	
	2004-05	2003-04	2004-05	2003-04	2004-05	2003-04
Purchase of Goods and Services	9.47	280.42				
Sales of Goods and services	2456.01	595.07				
Rendering of Services	48.74	69.01				
Receiving of Services	424.38	524.85				
Dividend income	975.80	654.50				
Royalty income	34.78	31.16				
Amounts due to BHEL at end of the year	682.01	251.48	0.23	0.50		
Amounts due from BHEL at end of the year	57.92	289.20				
Provision for Doubtful debts	14.49	14.82				
Amount written back	4.24	-				
Guarantees given on behalf of	3082.33	4369.08				
Payment of Salaries			50.88	78.66		
Loans/Advances given			-	0.16		

14. Lease:

a. Details of assets taken on finance lease after 1st April, 2001 are as under:

(Rs. in lakhs)

		As on 31-3-2005	As on 31-3-2004
a.	Outstanding balance of Minimum Lease payments		
	-not later than one year	1623.93	1489.16
	-later than one year and not later than five years	2667.97	3059.60
	-later than five years	4.57	0.23
	Total minimum lease payments at the balance sheet date	4296.47	4548.99
b.	Present Value of (a) above		
	-not later than one year	1193.01	1055.07
	-later than one year and not later than five years	2253.18	2524.57
	-later than five years	4.46	0.22
	Total minimum lease payments at the balance sheet date	3450.65	3579.86
c.	Finance charges	845.82	969.13
	Present value of Residual value, if any	3.87	

b. The company is in the practice of taking Office & Other Equipment, houses for employees, office buildings and EDP equipment on operating lease both as cancellable and non-cancellable.

c. The future minimum lease payments under non-cancellable operating lease as on 31.3.2005 is :

(Rs in Lakhs)

	As on 31-3-2005	As on 31-3-2004
- not later than one year	851.87	186.41
- later than one year and not later than five years	1329.51	438.24
- later than five years	-	3.51

d. Details regarding rentals in respect of assets taken on lease prior to 1.4.2001 is as given below:

(Rs. in lakhs)

Assets	Cost of Assets		Rentals payable over unexpired period of lease	
	2004-2005	2003-2004	2004-2005	2003-2004
Computers & Peripherals	4125.92	7038.99	144.91	679.71
Land & Buildings	4.56	6.05	1.47	1.73
Office equipments	250.70	657.72	42.26	126.33
Others	2.30		1.22	
<b>TOTAL</b>	<b>4383.48</b>	<b>7702.76</b>	<b>189.86</b>	<b>807.77</b>

15 Earning per Share:

			2004-05	2003-04
Weighted average number of Equity shares				
outstanding during the year	(A)	No. in lakhs	2447.60	2447.60
Nominal value of Equity share		(Rs.)	10	10
Net profit for the year	(B)	(Rs. in lakhs)	95340.48	65815.16
Add : Extra ordinary Items		(Rs. in lakhs)	1799.03	22981.24
Less : Tax on Extra ordinary items		(Rs. in lakhs)	658.31	8244.52
Net profit for the year excl. extra ordinary items net of tax	(C)	(Rs. in lakhs)	96481.20	80551.88
<b>Basic and Diluted Earning per share</b>	(B)/ (A)	(Rs.)	38.95	26.89
<b>Basic and Diluted Earning per share before extra ordinary items</b>	(C)/ (A)	(Rs.)	39.42	32.91

16. The break up of net deferred tax asset on account of timing differences are as under:

(Rs. in lakhs)

	As on 31.3.2005	As on 31.3.2004
<b>Deferred Tax Assets</b>		
Provisions	48703.77	47612.55
Deferred Revenue Expenditure of Voluntary Retirement Schemes	4560.24	7925.50
Statutory dues	8784.50	6556.95
Modvat Adjustments	952.73	239.72
Others	1680.98	1791.60
	<b>64682.22</b>	<b>64126.32</b>
<b>Deferred Tax Liabilities</b>		
Depreciation	12854.32	14274.44
<b>Net Deferred Tax Assets</b>	<b>51827.90</b>	<b>49851.88</b>



17. Disclosures relating to Joint ventures are as follows:

- | a) Names of joint ventures             | Country of<br>Incorporation | Proportion of<br>Ownership |
|--|-----------------------------|----------------------------|
| Powerplant Performance Improvement Ltd | India}                      | One share less than        |
| BHEL-GE Gas Turbine Services Pvt Ltd   | India}                      | 50%                        |
- b) (i) company's share of the contingent liabilities of the joint ventures themselves is Rs. 586.37 Lakhs (previous year Rs. 212.72 Lakhs)
- (ii) company's share of the capital commitments of the joint ventures themselves is Rs.14.65 Lakhs (previous year Rs. 5.88 lakhs)
- (iii) Guarantees given on behalf of Joint Venture outstanding at the close of the year amounting to Rs 3082.33 lakhs (Previous year Rs 4369.08 lakhs)
- (iv) Aggregate amount of company's interests in the joint ventures as per accounts are as under:

(Rs. in lakhs)

	2004-2005	2003-2004
Fixed Assets	527.50	475.66
Net Current Assets	1375.11	764.67
Misc. Expenditure (not written off)	0	2.68
Secured loans	44.04	83.96
Deferred Tax Liability	41.95	43.28
Shareholders Funds	1816.64	1115.76
Income	12414.22	13288.80
Expenses	11106.74	12049.80

(v) Information for 2004-05 is based on the unaudited accounts of the Joint Ventures

18. The company invested a sum of Rs . 500 lakhs towards equity shares of Rs. 10/- each (at par) in erstwhile Konark Met Coke Ltd. (KMCL) Bhubneshwar, to secure orders for equipment being supplied by the company to KMCL and Neelachal Ispat Nigam Ltd (NINL). Government approval of investment in equity shares of KMCL is awaited. The equity participation in erstwhile KMCL and NINL is restricted to 7.5% of the value of the orders received with a maximum of Rs. 1732 lakhs.

Pursuant to Order passed by Hon'ble Orissa High Court during the year, KMCL has been amalgamated with NINL u/s 391 read with section 394 of the Companies Act, 1956. In terms of the scheme of amalgamation sanctioned by the Hon'ble High Court, Orissa, NINL has allotted fresh equity shares aggregating to Rs.500 lakhs to the company.

19. (i) The company has revised its accounting practice relating to recognition of Terminal Excise duty rebate from against 'Payment Receipt Certificate/Goods Received Certificate' basis to "goods despatch basis on accrual concept". The effect of this change on Profit before tax is increase of Rs. 5934.46 lakhs.
- (ii) The company has revised its accounting practice relating to valuation of non-moving inventory for more than 8 years, valuing it at 5% of the value against earlier practice of valuing at estimated scrap value. The effect on Profit before tax due to this change is a decrease of Rs. 79.20 lakhs.
- (iii) The company has changed its accounting practice relating to long term export contracts (other than AS-7 Contracts)

in line with significant accounting policy 5 B (i), as against the earlier practice of 100% revenue recognition. The effect on Profit before tax due to this change is a decrease of Rs. 117.15 lakhs.

- (iv) The company has revised the accounting policy 5 B (ii) relating to revenue recognition on erection and project management services. The effect on profit before tax due to this change is an increase of Rs.768.76 lakhs.
- (v) The introduction of SAP in two units resulted in certain refinement in the ascertainment / absorption of expenditure/ overheads having an overall impact of decrease in profit before tax for the year by Rs.59.39 lakhs.

20. Service Tax relating to Commissioning and Installation including insurance of equipments transported for commissioning and installation have been accounted in accordance with opinion obtained from legal expert and in line with Tribunal / Supreme Court judgements and no demand on this account has arisen. Further claims, if any, under normal contract terms and as confirmed by legal opinion is recoverable from the customers.

With effect from 10.9.04 by an amendment 'erection' has also been included as taxable services alongwith commissioning and installation. Accordingly service tax expenses have been accounted and income recognized based on the terms and conditions of the contracts with customer.

As per the legal opinion obtained, the amount collected by the company towards freight & insurance from the customers will not fall under 'business auxiliary service' or under any other service attracting service Tax as the company is neither providing services as a 'goods transport company' nor as an 'insurer'.

21. Balances with Scheduled Banks under the head "Cash and Bank Balances" as on 31.03.05 in Schedule 8 includes cheques in hand as well as amounts received in various bank accounts maintained by the company in its units/regions/ sites and are under transfer to the Centralised Cash Credit account maintained with banks in Delhi.
22. The disclosures relating to Construction Contract entered on or after 01.04.2003 as per the requirement of Accounting Standard -7(Revised) are as follows:

	<b>(Rs. in lakhs)</b>	
	<b>2004-05</b>	<b>2003-04</b>
Contract revenue recognized as per revised AS-7	345017.76	36305.93
In respect of Contract in progress as on 31.03.2005:		
- Cost incurred and recognised profits (less recognized losses)	378805.75	39610.69
- Amount of advance received	194665.84	40106.34
- Amount of retentions (deferred debts)	46106.75	9563.91
In respect of dues from customers after appropriate netting off		
- Gross amount due from customer for the contract work as an asset	36191.33	2476.56
- Gross amount due to customer for the contract work as a liability	18400.85	9500.92
- Contingencies	--	--

23. Responses to confirmation of outstanding balances and stocks held by sub-contractors/ fabricators were received only in a few cases, some of them seeking details.



## 24. SEGMENT INFORMATION

(Rs. in lakhs)

### A. PRIMARY SEGMENT - BUSINESS SEGMENTS

#### I. SEGMENT REVENUE

- Operating Revenue (External)
- Inter-Segment Revenue
- Segment Revenue (a) - (b)

For the year ended 31.3.2005		
Power	Industry	Total
750386.38	334705.26	1085091.64
0.00	31751.00	31751.00
750386.38	302954.26	1053340.64

For the year ended 31.3.2004		
Power	Industry	Total
600941.03	298057.15	898998.18
2482.00	19365.12	21847.12
598459.03	278692.03	877151.06

#### II. SEGMENT RESULTS

- Segment Results
- Unallocated Expenses (Net of income)
- Profit before Interest, DRE & Income tax (a) - (b)
- Interest
- Deferred Revenue Expenditure Written Off
- Net Profit before Income Tax (c) - (d) - (e)
- Income Tax
- Net Profit after Income Tax

160813.57	38623.37	199436.94
		31333.70
		168103.24
		8140.65
		1799.03
		158163.56
		62823.09
		95340.47

137941.44	28604.63	166546.07
		36081.50
		130464.57
		6008.05
		22981.24
		101475.28
		35660.12
		65815.16

#### III. ASSETS & LIABILITIES

- Segment Assets
- Unallocated Assets
- Total Assets
- Segment Liabilities
- Unallocated Liabilities
- Total Liabilities

745801.22	304171.81	1049973.03
		451004.07
		1500977.10
617277.59	179494.90	796772.49
		101515.23
		898287.72

517339.40	299931.67	817271.07
		398218.83
		1215489.90
435210.03	159653.07	594863.10
		84522.45
		679385.55

#### IV. OTHER INFORMATION

- Cost incurred during the period to acquire fixed assets
- Depreciation
- Non Cash Expenses (other than depreciation)

11398.68	4657.62
10267.21	5807.18
10328.42	3842.03

11393.44	3174.42
9028.58	5498.08
8287.24	3066.14

### B. SECONDARY SEGMENT - GEOGRAPHICAL SEGMENTS

- Net Sales / Income from Operations
- Total Assets
- Cost incurred during the period to acquire Fixed Assets

Within India	Outside India	Total	Within India	Outside India	Total
973218.51	80122.13	1053340.64	830218.06	46933.00	877151.06
1434095.77	66881.33	1500977.10	1192333.60	23156.30	1215489.90
17350.23	1.15	17351.38	17241.49	0.60	17242.09

#### Notes :

- The products and services of the company have been grouped under 'Power' and 'Industry' segments depending upon the sector to which they are predominantly identified in the market.
- Power sector includes products and services relating to various power generating sets and its auxiliaries.
- Industry sector includes products and services relating to transportation and transmission, electric machines, industrial sets and DG sets and telecommunications and other industrial products and systems.
- Inter segment transfers have been carried out at mutually agreed prices.

25. Previous year's figures have been regrouped/reclassified wherever practicable to conform to current year's presentation.

## 26. Other information required by Schedule VI of the Companies Act, 1956

### A. Sales, Opening Stocks & Closing Stocks

(Rs. in lakhs)

Product	Unit	Sales during the year 2004-2005		Op. Stock of Fin. Goods 1.4.2004		Cl. Stock of Fin. Goods 31.3.2005	
		Qty.	Value	Qty.	Value	Qty.	Value
<b>BHOPAL</b>							
<b>SWITCHGEAR, CONTROLGEAR, RECTIFIER, CAPACITORS</b>							
Switchgear-11 kv to 220 kv high speed air blast circuit breakers	Nos	2940.00 (2125.00)	6273.90 (7020.12)	140.00 (0.00)	251.98 (40.77)	206.00 (140.00)	508.73 (251.98)
Control Panels	Nos	848.00 (342.00)	1697.14 (1168.06)	6.00 (4.00)	3.50 (5.30)	11.00 (6.00)	7.15 (3.50)
Industrial controlgear	Nos	0.00 (0.00)	1612.14 (557.98)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	14.30 (0.00)
Traction controlgear for AC, DC & diesel system	Set	200.00 (175.00)	8557.03 (6404.24)	0.00 (0.00)	205.59 (0.00)	0.00 (0.00)	79.19 (205.59)
Rectifiers with Electronics	Nos	482.00 (380.00)	16612.67 (15263.47)	5.00 (0.00)	15.50 (0.00)	72.00 (5.00)	75.55 (15.50)
Capacitors	MVAR	2197.00 (2520.00)	1780.88 (1954.08)	125.00 (144.00)	185.71 (92.42)	253.00 (125.00)	229.96 (185.71)
Bushings			901.38 (828.76)	0.00 (0.00)	0.00 (11.42)	0.00 (0.00)	0.00 (0.00)
<b>TRANSFORMERS</b>							
Power transformers (upto 400 kv)	MVA/Nos	10361/65 (9202/63)	17354.90 (14503.40)	995/7 (945/5)	1017.72 (1634.22)	0.00 (995/7)	6.94 (1017.72)
Instrument, welding , transformers and reactors	MVA/Nos	0/703 (0/368)	1418.30 (874.04)	130.00 (0/41)	168.09 (52.78)	0.00 (0/130)	0.00 (168.09)
<b>INDUSTRIAL AND TRACTION MACHINES</b>							
Traction Motors for AC,DC & diesel system,main/auxiliary generators	Nos	2185.00 (1719.00)	30775.39 (24921.77)	9.00 (68.00)	49.74 (641.97)	29.00 (9.00)	134.40 (49.74)
Industrial machines, AC motors upto 1000 HP, DC motors & generators of all types	Nos	527.00 (297.00)	7037.41 (3977.76)	31.00 (0.00)	267.00 (0.00)	20.00 (31.00)	441.93 (267.00)
<b>HEAVY ROTATING PLANT &amp; TURBINES</b>							
Large electrical machines above 1000 HP	Nos	140.00 (109.00)	9805.03 (6732.03)	6.00 (1.00)	255.36 (56.41)	4.00 (6.00)	164.09 (255.36)
Water wheel alternators & water turbines & Mini micro turbines & generators	Nos/ MW Nos/	4/T 83.00 10/G	15124.08 9558.76		49.89 160.46		155.48 698.33
		745.00 (8/T) (700.00) (13/G) (955.00)	(20390.03) (17635.18)	0.00 (0.00) (0.00) (0.00)	(0.00) (0.00)	0.00 (0.00)	(49.89) (160.46)





## 26. Other information required by Schedule VI of the Companies Act, 1956 (Contd.)

### A. Sales, Opening Stocks & Closing Stocks

(Rs. in lakhs)

Product	Unit	Sales during the year 2004-2005		Op. Stock of Fin. Goods 1.4.2004		Cl. Stock of Fin. Goods 31.3.2005	
		Qty.	Value	Qty.	Value	Qty.	Value
Turbo Alternators & Steam turbines & Heat Exchangers	Nos	15 H.Ex (4.00) (6 H.Ex)	7792.63 (6662.05) (3074.22)		10.80 0.00 (0.00)	0.00 0.00 (0.00)	0.00 (10.80)
Others			4334.42 (5256.31)		2.69 (0.00)	0.00 (0.00)	0.00 (2.69)
<b>TOTAL</b>			<b>140636.06</b>		<b>2644.03</b>		<b>2516.05</b>
<b><u>JHANSI</u></b>							
Power transformers and special transformers	Nos	65.00 (70.00)	12389.68 (10085.65)	0.00 (2.00)	0.00 (249.51)	4.00 (0.00)	438.99 (0.00)
ESP Transformer	Nos	275.00 (198.00)	2680.02 (1679.53)				
ACEMU Transformer	Nos		0.00 (0.00)			4.00 (0.00)	66.96 (0.00)
Freight Loco transformers	Nos	22.00 (29.00)	935.61 (884.24)				
Instrument transformers	Nos	753.00 (1007.00)	1540.09 (1498.07)	7.00 (83.00)	7.10 (69.18)	45.00 (7.00)	92.04 (7.10)
Bus Duct	Nos/Set		3200.16 (3061.37)		0.00 (19.30)		203.75 (0.00)
Dry Type Transformer	Nos.	33.00 (50.00)	583.35 (749.06)	20.00 (8.00)	147.19 (16.02)	0.00 (20.00)	0.00 (147.19)
Diesel Shunters	Nos	5.00 0.00	594.00 (27.58)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
New Product Loco			3980.31 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Others/Misc.	Nos		1090.71 (1344.38)	0.00 (0.00)	33.40 (1.35)	0.00 (0.00)	4.04 (33.40)
<b>TOTAL</b>			<b>26993.93</b>		<b>187.69</b>		<b>805.78</b>
<b><u>HEEP, HARDWAR</u></b>							
Electrical Machines	MW/Nos	72/46 (90/76)	1908.67 (2505.76)	15/26 (15/44)	442.56 (535.77)	10/14 (15/26)	324.11 (442.56)
Industrial controls panels	Nos.	6.00 (12.00)	12.74 (21.90)	9.00 (3.00)	31.67 (19.24)	3.00 (9.00)	19.30 (31.67)
Turbo Sets	MW/Nos	1210/3 (1710/5)	55152.41 (56459.24)	0.00 (0.00)	1357.25 (205.79)	0.00 (0.00)	1185.75 (1357.25)
Hydro sets	MW/Nos	152/2 (236/4)	9280.72 (7821.07)	0.00 (0.00)	209.38 (0.00)	0.00 (0.00)	5.02 (209.38)
Super Rapid Gun Mount	Nos.	3.00 (2.00)	5838.02 (3420.19)	0.00 (0.00)	89.25 (89.15)	0.00 (0.00)	0.00 (89.25)
Gas Turbine		0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	220.50 (0.00)

## 26. Other information required by Schedule VI of the Companies Act, 1956 (Contd.)

### A. Sales, Opening Stocks & Closing Stocks

(Rs. in lakhs)

Product	Unit	Sales during the year 2004-2005		Op. Stock of Fin. Goods 1.4.2004		Cl. Stock of Fin. Goods 31.3.2005	
		Qty.	Value	Qty.	Value	Qty.	Value
Others		0.00 (0.00)	18720.39 (24786.30)	0.00 (0.00)	472.99 (81.04)	0.00 (0.00)	426.44 (472.99)
		<b>TOTAL</b>	<b>90912.95</b>		<b>2603.10</b>		<b>2181.12</b>
<b><u>CFFP, HARDWAR</u></b>							
Steel Castings	MT	0.00 (132.64)	27.45 (148.17)	28.43 (1.52)	79.20 (4.96)	0.00 (28.43)	0.00 (79.20)
Steel forgings	MT	33.26 (94.96)	89.33 (195.36)	0.00 (14.46)	0.00 (25.29)	0.00 (0.00)	0.00 (0.00)
NF Casting	MT		0.00 (0.00)	0.21 (0.00)	0.53 (0.00)	0.00 (0.21)	0.00 (0.53)
		<b>TOTAL</b>	<b>116.78</b>		<b>79.73</b>		<b>0.00</b>
<b><u>BOILER PLANT &amp; SSTP TRICHY</u></b>							
Boilers	MT	192531.00 +(149948)	196390.17 (175654.12)	1749.00 (1294.00)	2341.19 (1016.24)	6293.00 (1749.00)	5036.29 (2341.19)
Valves	Nos *	30823.00 (20500.00)	13545.18 (10485.43)	1441.00 (969.00)	402.75 (215.73)	2531.00@ (1441.00)@	247.62 (402.75)
Income from testing & other services			918.62 (6162.83)				
Seamless steel tubes	MT	197.00 (2048.00)	148.65 (852.23)	7.00 ** (4.00)	2.93 ** (1.66)	(7.00)	(2.93)
		<b>TOTAL</b>	<b>211002.62</b>		<b>2746.87</b>		<b>5283.91</b>
<b><u>BAP, RANIPET</u></b>							
Boiler auxiliaries	MT	5678.00 (8077.00)	5038.81 (5771.14)	2008.00 (2108.00)	1100.15 (741.84)	2993.00 (2008.00)	1777.00 (1100.15)
Wind Mill	MT		23.54 (31.27)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Income from testing & other services			174.32 (256.33)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Income from external erection & other services			167.47 (398.01)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
		<b>TOTAL</b>	<b>5404.14</b>		<b>1100.15</b>		<b>1777.00</b>
<b><u>HYDERABAD</u></b>							
60 MW Sets	MW	4+P	8118.53 (3880.89)	0.00 (0.00)	0.00 (0.00)	1+P (0.00)	1391.92
110/120 MW Sets	MW		5758.02 (1+P) (556.07)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Small & Medium Sets	MW	14+P (7+P)	24809.71 (18576.09)	2+P (1P)	525.93 (374.29)	(2+P)	(525.93)
Pumps and heaters	Nos	7+P (2+P)	18066.18 (12082.99)	7P (1P)	468.84 (12.66)	4.00 (7P)	87.65 (468.84)
Compressors	Nos	3+P (4+P)	2272.36 (23353.25)	1P	368.45 (0.00)	2.00 (1P)	791.84 (368.45)



## 26. Other information required by Schedule VI of the Companies Act, 1956 (Contd.)

### A. Sales, Opening Stocks & Closing Stocks

(Rs. in lakhs)

Product	Unit	Sales during the year 2004-2005		Op. Stock of Fin. Goods 1.4.2004		Cl. Stock of Fin. Goods 31.3.2005	
		Qty.	Value	Qty.	Value	Qty.	Value
Oil Rigs			3793.67 (6015.06)		0.00 (0.00)		0.00 (0.00)
Gas Turbine	Nos	3+P (3+P)	55558.71 (30097.55)	1+P (3P)	5586.66 (14234.82)	1+P (1+P)	7930.06 (5586.66)
Aux.Prodn.Breakers	Nos	91.00 0.00	1857.00 (1995.53)	33 (48.00)	176.60 (406.95)	18 (33.00)	125.03 (176.60)
Bowl Mills		11+P (3+P)	18858.24 (16801.03)		345.71		0.00 (345.71)
Heat Exchangers			81.66 (4+P) (200.97)	P	491.35 (0.00)		0.00 (P) (491.35)
Erection Income			(492.92)		0.00 (0.00)		0.00 (0.00)
Castings			1026.35 (936.92)		315.92 (291.10)		265.47 (315.92)
Others (serv.)			6112.25 (5630.65)		0.00 (0.00)		0.00 (0.00)
Breakers Spares			800.03 (632.16)		0.00 (0.00)		0.00 (0.00)
Spares Other than breakers			24509.09 (20494.35)		0.00 (0.00)		87.20 (0.00)
<b>TOTAL</b>			<b>171621.80</b>		<b>8279.46</b>		<b>10679.17</b>
<b>INDUSTRIAL SYSTEMS GROUP</b>							
Control panels		21.00 (5.00)	285.27 (103.70)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Motors & spares		94.00 (36.00)	211.75 (5.93)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Other Equipments		0.00 (0.00)	16708.93 (8286.61)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Other services		(0.00)	(2656.85)	(0.00)	(0.00)	(0.00)	(0.00)
<b>TOTAL</b>			<b>17205.95</b>		<b>0.00</b>		<b>0.00</b>
<b>ELECTRONICS DIVISION</b>							
Energy meters							
a/ Single Phase	Nos	36076.00 (211850.00)	213.55 (1325.28)	13969.00 (2076.00)	79.19 (13.60)	1207.00 (13969.00)	6.72 (79.19)
b/ Poly Phase	Nos	2902.00 (68144.00)	47.84 (980.69)	368.00 (7946.00)	3.73 (76.37)	3471.00 (368.00)	30.81 (3.73)
Capacitors-Electrolytic	Nos			7674.00 (7674.00)	0.00 0.00	7674.00 (7674.00)	0.00 0.00
Power devices	Nos	1559.00 (2096.00)	113.70 (119.29)	34.00 (530.00)	2.36 (16.08)	0.00 (34.00)	0.00 (2.36)

## 26. Other information required by Schedule VI of the Companies Act, 1956 (Contd.)

### A. Sales, Opening Stocks & Closing Stocks

(Rs. in lakhs)

Product	Unit	Sales during the year 2004-2005		Op. Stock of Fin. Goods 1.4.2004		Cl. Stock of Fin. Goods 31.3.2005	
		Qty.	Value	Qty.	Value	Qty.	Value
Photovoltaics	KWs	2910.00 (1077.00)	4909.62 (3796.83)	9.00 (66.00)	12.38 (437.73)	10.00 (9.00)	41.94 (12.38)
Simulators (Defence Electronics)	Sets	(55.00)	165.95 (131.68)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Control Equipments	Cubicles	1287.00 (1072.00)	44639.01 (35402.21)	0.00 (2.00)	0.00 (223.11)	31.00 (0.00)	517.51 (0.00)
Others			54.57				
	<b>TOTAL</b>		<b>50144.24</b>		<b>97.66</b>		<b>596.98</b>
<b><u>ELECTRO PORCELAINS</u></b>							
<b><u>DIVISION</u></b>							
Insulators & bushings	MT	7348.00 (7153.00)	6209.14 (5153.62)	535.00 (380.00)	350.77 (246.66)	1089.00 (535.00)	801.48 (350.77)
Ceralin	MT	2073.00 (1467.00)	2185.06 (1364.72)	20.00 (4.00)	0.13 (4.31)	55.00 (20.00)	40.00 (0.13)
Income from testing & other services		0.00 (0.00)	62.79 (43.85)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
	<b>TOTAL</b>		<b>8456.99</b>		<b>350.90</b>		<b>841.48</b>
<b><u>POWER GROUP</u></b>							
Income from erection & Other services & spares			199323.10 (141480.16)		140.25 (435.62)		847.52 (140.25)
	<b>TOTAL</b>		<b>199323.10</b>		<b>140.25</b>		<b>847.52</b>
<b><u>OVERSEAS PROJECTS</u></b>							
<b><u>CO-ORDINATION UNIT</u></b>							
Income from sales, erection Other services & spares Sales less return			74880.50 (44020.67) 3477.64 (1939.29)	0.00 (0.00) 0.00 (0.00)	0.00 (0.00) 0.00 (0.00)	0.00 (0.00) 0.00 (0.00)	0.00 (0.00) 0.00 (0.00)
	<b>TOTAL</b>		<b>78358.14</b>		<b>0.00</b>		<b>0.00</b>
<b><u>JAGDISHPUR</u></b>							
Insulators	CMT	6453.52 (6277.21)	5557.27 (4036.20)	807.08 (318.31)	693.73 (146.30)	604.90 (807.08)	556.05 (693.73)
Ceralin	MT	1218.08 (881.62)	1231.16 (882.47)	8.94 (8.30)	9.72 (10.69)	110.30 (8.94)	140.44 (9.72)
	<b>TOTAL</b>		<b>6788.43</b>		<b>703.45</b>		<b>696.49</b>
<b><u>IVP GOINDWAL</u></b>							
Industrial Valves	Nos	0.00 (0.00)	0.00 (0.00)	48.00 (150.00)	9.62 (31.13)	126.00 (48.00)	25.35 (9.62)
	<b>TOTAL</b>		<b>0.00</b>		<b>9.62</b>	<b>-</b>	<b>25.35</b>
<b><u>CENTRE OF TECHNOLOGY</u></b>							
<b><u>TRANSFER, HYDERABAD</u></b>							
MCBG for Railways	Lots	0.00 (6.00)	0.00 (37.58)		0.00 (0.00)		0.00 (0.00)



## 26. Other information required by Schedule VI of the Companies Act, 1956 (Contd.)

### A. Sales, Opening Stocks & Closing Stocks

(Rs. in lakhs)

Product	Unit	Sales during the year 2004-2005		Op. Stock of Fin. Goods 1.4.2004		Cl. Stock of Fin. Goods 31.3.2005	
		Qty.	Value	Qty.	Value	Qty.	Value
12000 RPM,3 Phase 400 HZ 30-40 KVA Alternator	Lots		0.00		0.00		0.00
Income from testing & services		(1P)	(65.00)		(0.00)		(0.00)
			174.65		0.00		0.00
			(121.73)		(0.00)		(0.00)
Software	Lot		21.54		0.00		0.00
		0.00	0.00		(0.00)		(0.00)
ASRS for Modernisation of Cod Kanpur	Lot	0.00	1291.00		0.00		2.27
		0.00	0.00		(0.00)		(0.00)
GTO Type West Gate Thyristors	Nos.	0.00	0.00		0.00		0.00
		0.00	0.00		(0.00)		(0.00)
Steam & Water Chemistry	Lot	0.00	0.00		0.00		0.00
Diagnostic Software		(1.00)	(13.57)		(0.00)		(0.00)
Solar Geysers	Nos.	195.00	34.72		0.00		0.00
		(5.00)	(0.85)		(0.00)		(0.00)
Microwave Sintering System	Nos.	4.00	10.85		0.00		0.00
		(5.00)	(9.80)		(0.00)		(0.00)
Cold Plates and Heat Exchangers	Nos.	0.00	0.00		0.00		0.00
		(14.00)	(83.63)		(0.00)		(0.00)
GPS Synchronisation of Master clock system software	Nos.	0.00	0.00		0.00		0.00
		(1.00)	(3.85)		(0.00)		(0.00)
8HP Permanent Magnet DC Motors	Nos.	0.00	0.00		0.00		0.00
		(2.00)	(9.57)		(0.00)		(0.00)
Strain Measurement Instrument	Nos.	0.00	0.00		0.00		0.00
		(1.00)	(3.37)		(0.00)		(0.00)
<b>TOTAL</b>			<b>1532.76</b>		<b>0.00</b>		<b>2.27</b>
<b>CFP RUDRAPUR</b>							
HAWM	Nos.	0.00	0.00	0.00	0.00	0.00	0.00
		(8.00)	(0.00)	(8.00)	(0.40)	(0.00)	(0.00)
SWHS	Nos.	2119.00	216.94	353.00	18.62	27.00	1.19
		(2389.00)	(288.55)	(71.00)	(2.45)	(353.00)	(18.62)
Solar Lantern	Nos.	6248.00	193.82	1472.00	17.22	172.00	1.83
		(6354.00)	(198.10)	(168.00)	(1.85)	(1472.00)	(17.22)
<b>TOTAL</b>			<b>410.76</b>		<b>35.84</b>		<b>3.02</b>
<b>HERP/VARANASI</b>							
Spares & Repairs for Boiler/ Turbine & Auxiliaries			2950.45		81.36		16.42
			(2263.26)		(85.13)		(81.36)
<b>TOTAL</b>			<b>2950.45</b>		<b>81.36</b>		<b>16.42</b>

## 26. Other information required by Schedule VI of the Companies Act, 1956 (Contd.)

### A. Sales, Opening Stocks & Closing Stocks

(Rs. in lakhs)

Product	Unit	Sales during the year 2004-2005		Op. Stock of Fin. Goods 1.4.2004		Cl. Stock of Fin. Goods 31.3.2005	
		Qty.	Value	Qty.	Value	Qty.	Value
<b><u>ADVANCE RESEARCH PROJECT</u></b>							
Others (Services)			123.54		0.00		0.00
			(128.46)		(0.00)		(0.00)
		<b>TOTAL</b>	<b>123.54</b>		<b>0.00</b>		<b>0.00</b>
<b><u>TPG BHOPAL</u></b>							
Spares(Including Services)			19113.20		0.00		0.00
			(15961.92)		(0.00)		(0.00)
		<b>TOTAL</b>	<b>19113.20</b>		<b>0.00</b>		<b>0.00</b>
<b><u>OSBG &amp; EMRP</u></b>							
Repair & Project work			1716.03		0.00		0.00
			(1794.70)		(0.00)		(0.00)
		<b>TOTAL</b>	<b>1716.03</b>		<b>0.00</b>		<b>0.00</b>
<b><u>Distributed Power Generation BG</u></b>							
Hydro Sets			862.97		0.00		0.00
			(0.00)		(0.00)		(0.00)
		<b>TOTAL</b>	<b>862.97</b>		<b>0.00</b>		<b>0.00</b>
<b><u>International Operations</u></b>							
Income from Sales			12.37				
(Revenue Recognition Adjustment)							
		<b>TOTAL</b>	<b>12.37</b>				
<b><u>Industry Sector</u></b>							
Income from Sales			-47.49		0.00		-34.10
(Revenue Recognition Adjustment)			(379.95)		(0.00)		(0.00)
		<b>TOTAL</b>	<b>-47.49</b>		<b>0.00</b>		<b>-34.10</b>
<b>Adjustment for profit element on inventory</b>					<b>-8.27</b>		<b>-22.24</b>
					<b>(-34.99)</b>		<b>(-8.27)</b>
<b>GRAND TOTAL</b>					<b>1033639.72</b>	<b>19051.84</b>	<b>26216.22</b>

Figures in brackets represent previous year's figures

\* Correct weight particulars in terms of tonnage could not be ascertained.

		Nos.	Rs. in Lakhs
@	This excludes closing stock meant for Boiler treated as WIP	1140	142.57
		(2048)	(215.66)
	Valves drawn for Boilers	15263	2143.89
		(22438)	(3391.01)

\*\* This excludes opening stock of 17 MT of Rs. 3.73 lakhs and closing stock of 20 MT of Rs. 7.50 lakhs meant for Boiler Plant treated as WIP.

+ This includes 64824 MTs (Previous Year 45366 MTs) of BAP, Ranipet, composite turnover for Fossil Boiler 22821 MTs of SS tubes transferred to Boiler Plant for captive consumption.



## 26. Other information required by Schedule VI of the Companies Act, 1956 (Contd.)

### B. Licensed Capacity, Installed Capacity and Actual Production

(Rs. in lakhs)

SL NO	PRODUCT	UNIT	INSTALLED 2004-05	CAPACITY 2003-04	ACTUAL 2004-05	PRODUCTION 2003-04
<b><u>BHOPAL</u></b>						
1	Turbo Sets					
	-Steam Turbine	Nos.	3	3	0	4
		MW	360	360	0	60
	-Marine Turbine	Nos.	2	2	0	0
		MW	24	24	0	0
	-Nuclear Turbine	Nos.	1	1	0	0
		MW	236	236	0	0
	- Industrial Turbine	Nos.				
		MW				
2	Hydro Sets					
	-Hydro Turbine	Nos.	12	12	4	8
		MW	720	720	83	700
	-Hydro Generator	Nos.	12	12	10	13
		MW	720	720	745	955
3	Large Electrical Machine	Nos.	100	100	138	116
4	Traction Machines (Incl.TG/AG,Blower Motors,BPRV etc.)	Nos.	2850	2850	2269	1668
5	Power Transformers	Nos.	65	65	58	65
		MVA	12000	12000	9366	9567
6	Instrument Transformer	Nos.	200	200	573	457
7	Electrical Machines	Nos.	550	550	527	335
8	Switchgear	Nos.	3000	3000	3400	2431
9	Capacitor	MVAR	3200	3200	2325	2501
10	Industrial Controlgear	Nos.	250	250	0	0
11	Traction Controlgear	Set	220	220	200	175
12	Control Equipment	Nos	600	600	832	604
13	Heat Exchangers	Nos.	52	52	15	6
		MT	1100	1100		
14	Control Panels	Nos.	600	600	907	410
15	Cathodic Protection System	Tonne	2700	2700	0	0
<b><u>JHANSI</u></b>						
1	Power Transformers 33kv/ 132kv	Nos./MVA	65/4000	65/4000	79/5559	74/4597
2	<u>Other Transformer</u>					
	-Special Purpose Transformer (Dry Type Trfr. etc.)	Nos.	180	180	35	68
	-Traction Transformer. (Frt. Loco & ACEMU)	Nos.	140	140	90	77

## 26. Other information required by Schedule VI of the Companies Act, 1956 (Contd.)

### B. Licensed Capacity, Installed Capacity and Actual Production

(Rs. in lakhs)

SL NO	PRODUCT	UNIT	INSTALLED 2004-05	CAPACITY 2003-04	ACTUAL 2004-05	PRODUCTION 2003-04
	-Instrument Transformer	Nos.	1960	1960	967	1248
	-ESP Transformer	Nos.	*	*	275	201
3	Bus Duct	Set	@	@		
4	Diesel Shunters	Nos.	10	10	5	1
5	AC Locomotives (Upto 6500 HP)	Nos.	30	30	0	0

\* ESP Trfr. are being manufactured by using the installed capacity of instrument Trfs.

@ Bus duct manufacturing is being done within the existing capacity of Transformers.

Actual production for 2004-05 includes job done for internal use for the following Products :

Dry Type Trfr. : 10 Nos.

Instrument Trfr : 1 No.

Power Trfr : 1 No.

#### **HEEP - HARDWAR**

1	Turbo Sets	MW	3500	3500	1210	1710
2	Hydro Sets	MW	625	625	152	236
3	Electrical Machines	MW	450	450	68	94
4	Gas Turbine @@	MW			300	
5	Super Rapid Guns	NOS	3	3	3	2

@@ Capacity installed for manufacture of gas turbines components like rotor equivalent to 600 MW Gas Turbines. Balance Components for Gas Turbines from existing thermal sets facilities.

#### **CFFP HARDWAR**

1	Steel Castings	MT	6000	6000	3171	2870
2	Steel Forging					
	(a) Heavy Forgings	MT	2410	2410	630	697
	(b) Medium Forgings	MT	3000	3000	2285	1970
3	Billets and Blooms	MT	4000	4000	553	269
4	N F Casting	MT	250	250	53	34

#### **HYDERABAD**

1	Thermal Sets	MW	770	770	394	77
2	Industrial Turbines	MW	65	65	418.5	311
3	Gas Turbine & Accessories	MW			133.86	283.78
4	Compressors	Nos			4	7
5	Drive Turbines	Nos	12	12	6	11
6	Pumps	Nos	137	137	100	71
7	Breakers	Nos	1050	1050	75	75
	132 kv EQU		1035xx	1035xx	343.5	311.6





## 26. Other information required by Schedule VI of the Companies Act, 1956 (Contd.)

### B. Licensed Capacity, Installed Capacity and Actual Production

(Rs. in lakhs)

SL NO	PRODUCT	UNIT	INSTALLED 2004-05	CAPACITY 2003-04	ACTUAL 2004-05	PRODUCTION 2003-04
8	Bowl Mills	Nos	80	80	56	36
9	HP Heaters	Nos	20	20	29#	31#
10	De- aerators	Nos			2	7

# Includes LP Heaters, Gas Coolers, Spl. H Ex. manufactured using the capacity of H.P. Heaters

xx 132 kv Equivalent no. of Breakers.

Note: Installed Capacity for Sl. No. (3), (4), & (10) can not be stated separately since BHEL Hyderabad had diversified into these products without any additional / with addition of marginal facilities.

1) Sl. No. (3) Gas Turbine & Accessories is manufactured using facilities of Sl.No.(1) & (2).

2) Sl. No. (4) Compressor is manufactured using facilities of Sl.No.(5).

3) Sl. No. (10) De-aerators is manufactured using facilities of Sl.No.(9).

#### EDN - BANGALORE

1	Energy Meters	Nos.	600000	600000	32438	285672
2	Control Equipments	CUBICLE	1200	1200	1413	1201
3	Power Devices	Nos.	30000	30000	6695	6186
4	Photovoltaics	KWS	2000	2000	3106	1155
5	Simulators (Defence Electronics)	SETS	*	*	0	55

\* Not ascertainable as it varies in quantity depending upon product mix.

#### TIRUCHY

1	Boilers	MT	108000+*	108000+*	136450+*	108602+*
2	Valves	MT	2712*A	2712*A	4513	4115
		Nos			54769	55096
3	Nuclear Steam Generating Equipments	MW	382/500**	382/500**	XX	XXX
4	Seamless Steel Tubes	MT	40000	40000	24018	21995
5	Armoured Recovery Vehicles	Nos.	25	25	0	0

+ Including 5000 MT for manufacture of equipments for Process Industries.

\* Includes Sub-Contracting and Sub-Delivery.

A Excludes 788 MT of IVP/Goindwal

\*\* Corresponding to 6.5 Steam Generators and 6.5 Reactor Headers for 235 MW (or) 4 Steam Generators and 4 Reactor Headers for 500 MW

XX The capacity was utilised for manufacturing components for Nuclear Projects and other Heat Exchangers, Pressure Vessels. 1 Pressure Vessel & 1 Heat Exchanger were manufactured during 2004-05.

XXX The capacity was utilised for manufacturing components for nuclear Projects & other Heat Exchangers, Pressure Vessels, 2 nos. 500 MW Nuclear Steam Generators, 1 no. of evaporators, 2 nos. volume compensator, 9 nos hair-pin heat exchangers, 2 nos dished ends for reactive pressure vessels were manufactured during 2003-04.

**26. Other information required by Schedule VI of the Companies Act, 1956 (Contd.)**

**B. Licensed Capacity, Installed Capacity and Actual Production**

(Rs. in lakhs)

SL NO	PRODUCT	UNIT	INSTALLED 2004-05	CAPACITY 2003-04	ACTUAL 2004-05	PRODUCTION 2003-04
<b><u>BAP - RANIPET</u></b>						
1	Boiler Auxiliaries	MT	57000	57000	73919	53777
<b><u>I V P GOINDWAL</u></b>						
1	Industrial Valves	MT	788	788	704	682
		Nos.			5684	5506
<b><u>EPD - BANGALORE</u></b>						
1	Insulators & Bushings	CMT	6250	6250	6260	5981
2	Assembled Production	MT			10230	8975
3	Ceralin	CMT	745	745	1000	1000
4	Ceralin (Assembled)	MT			2571	2115
<b><u>IP - JAGDISHPUR</u></b>						
1	Insulators	CMT	6000	6000	6295	6787
2	Ceralin	MT	330	330	670	451
3	Ceralin(Assembled)	MT			1455	981
<b><u>CFP - RUDRAPUR</u></b>						
1	S W H S	Nos.	4000	4000	1793	2679
2	Solar Lanterns	Nos.	4000	4000	4948	7661



## 26. Other information required by Schedule VI of the Companies Act, 1956 (Contd.)

(Rs. in lakhs)

	For the year ended 31.03.2005	For the year ended 31.03.2004
<b>C. Value of imports</b>		
CIF basis		
Raw materials	68606.93	52776.00
Components and spare parts	99944.88	62806.05
Capital goods	4044.72	7157.73
<b>D. Expenditure in foreign currency</b>		
Royalty	1230.06	1105.15
Know-how	427.65	760.18
Professional & Consultation fees	13.99	
Interest and others (incl. on foreign sites)	2943.46	1167.61
Dividend :@		
a) number of non-resident shareholders	435	324
b) number of shares held	54536041	44069487
c) gross amount of dividend	1636.08	1762.78
- tax deducted at source		
d) year to which dividend relates	2003-04	2002-03
Interim Dividend : @	(Final Dividend)	(Final Dividend)
a) number of non-resident shareholders	513	346
b) number of shares held	56509305	52191873
c) gross amount of dividend	1977.83	1565.76
- tax deducted at source		
d) year to which dividend relates	2004-05	2003-04
	(Interim Dividend)	(Interim Dividend)
<p>@ The company has not made any remittance of dividend in foreign currency. The payments have been made to the Bankers/Power of Attorney holders of non-resident shareholders and as such the exact amount of dividend remitted by them in foreign currency cannot be ascertained.</p>		
<b>E. Value of consumption of raw materials, components, stores &amp; spare parts.</b>		
#Imported (including custom duty)	166112.89	131310.33
Indigenous	343654.87	232155.32
Percentage of total consumption		
Imported	33	36
Indigenous	67	64
<b>F. Earnings in foreign exchange</b>		
Export of goods (FOB basis) **	76433.83	44844.52
Interest	0.84	0.34
Erection & other services **	3495.64	2086.48
Miscellaneous	46.74	0.00

\*\*This does not include Rs. 80843.44 lakhs (previous year Rs. 129438.78 lakhs) on account of deemed exports.

# Includes canalised items wherever ascertained.

**26. Other information required by Schedule VI of the Companies Act, 1956 (Contd.)**

(Rs. in lakhs)

		<b>For the year ended 31.03.2005</b>	<b>For the year ended 31.03.2004</b>
<b>G. Statement for raw materials and components consumed</b>			
<b>Group of materials</b>	<b>Units</b>	<b>Quantity</b>	<b>Value</b>
Ferrous materials	MT	264308	195185
	Meters	3775037	4435218
	Nos	1689962	695654
	Sq.M	84	4674
	Kg.	36087600	29841594
	Others	10	273362
		<b>120684.81</b>	84808.29
Non-ferrous materials	MT	583	1232
	Meters	162521	253530
	Nos	93765	2937621
	Sq.M.	523	
	Kg.	3181488	3166607
	RL	16735	30906
	Others	0	10288
		<b>13568.95</b>	<b>9764.56</b>
Insulating materials	Meters	30523444	30473538
	MT	3430	4323
	Nos	104381	106703
	Sq.M.	688570	339780
	Kg	902974	808731
	LT	4030339	4231662
	RL	163819	128979
	M2	65465	55326
	KL	80	263
	ST	1614	1939
	Others	155	87
		<b>9135.03</b>	<b>7946.10</b>
Insulated cables and Magnet wires	Meters	252317	387138
	Nos	99	350
	Kg	2747	2046
	Others		
		<b>232.91</b>	<b>314.17</b>
Components		<b>300491.17</b>	<b>232745.91</b>
Others		<b>45065.79</b>	<b>9573.62</b>
		<b>489178.66</b>	<b>345152.65</b>



## 27. Balance Sheet Abstract and Company's General Business Profile

### i) Registration details :

Registration No. 

0	0	4	2	8	1
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 State Code 

5	5
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Balance Sheet 

3	1
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0	3
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0	5
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Date      Month      Year

### ii) Capital raised during the year (Amount in Rs. Lakhs)

Public Issue	Right Issue
NIL	NIL
Bonus Issue	Private Placement
NIL	NIL

### iii) Position of mobilisation and deployment of funds ( Amount in Rs. Lakhs)

<p>Total Liabilities</p> <table border="1" style="width: 100%; text-align: center;"> <tr><td>1</td><td>5</td><td>0</td><td>0</td><td>9</td><td>7</td><td>7</td><td>.</td><td>1</td><td>0</td></tr> </table> <p>Sources of Funds</p> <p>Paid Up Capital</p> <table border="1" style="width: 100%; text-align: center;"> <tr><td>2</td><td>4</td><td>4</td><td>7</td><td>6</td><td>.</td><td>0</td><td>0</td></tr> </table> <p>Secured Loans</p> <table border="1" style="width: 100%; text-align: center;"> <tr><td>5</td><td>0</td><td>0</td><td>0</td><td>0</td><td>.</td><td>0</td><td>0</td></tr> </table> <p>Application of Funds</p> <p>Net Fixed Assets*</p> <table border="1" style="width: 100%; text-align: center;"> <tr><td>1</td><td>1</td><td>3</td><td>9</td><td>5</td><td>5</td><td>.</td><td>9</td><td>5</td></tr> </table> <p>Net Current Assets</p> <table border="1" style="width: 100%; text-align: center;"> <tr><td>4</td><td>8</td><td>9</td><td>7</td><td>0</td><td>8</td><td>.</td><td>5</td><td>6</td></tr> </table> <p>Accumulated Losses</p> <p>Nil</p>	1	5	0	0	9	7	7	.	1	0	2	4	4	7	6	.	0	0	5	0	0	0	0	.	0	0	1	1	3	9	5	5	.	9	5	4	8	9	7	0	8	.	5	6	<p>Total Assets</p> <table border="1" style="width: 100%; text-align: center;"> <tr><td>1</td><td>5</td><td>0</td><td>0</td><td>9</td><td>7</td><td>7</td><td>.</td><td>1</td><td>0</td></tr> </table> <p>Reserves &amp; Surplus</p> <table border="1" style="width: 100%; text-align: center;"> <tr><td>5</td><td>7</td><td>8</td><td>2</td><td>1</td><td>3</td><td>.</td><td>3</td><td>8</td></tr> </table> <p>Unsecured Loans</p> <table border="1" style="width: 100%; text-align: center;"> <tr><td>3</td><td>6</td><td>9</td><td>8</td><td>.</td><td>2</td><td>9</td></tr> </table> <p>Investments</p> <table border="1" style="width: 100%; text-align: center;"> <tr><td>8</td><td>9</td><td>5</td><td>.</td><td>2</td><td>6</td></tr> </table> <p>Misc. Expenditure (Deferred Revenue Exp.)</p> <table border="1" style="width: 100%; text-align: center;"> <tr><td>N</td><td>I</td><td>L</td></tr> </table> <p>Deferred Tax Assets</p> <table border="1" style="width: 100%; text-align: center;"> <tr><td>5</td><td>1</td><td>8</td><td>2</td><td>7</td><td>.</td><td>9</td><td>0</td></tr> </table>	1	5	0	0	9	7	7	.	1	0	5	7	8	2	1	3	.	3	8	3	6	9	8	.	2	9	8	9	5	.	2	6	N	I	L	5	1	8	2	7	.	9	0
1	5	0	0	9	7	7	.	1	0																																																																															
2	4	4	7	6	.	0	0																																																																																	
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3	6	9	8	.	2	9																																																																																		
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N	I	L																																																																																						
5	1	8	2	7	.	9	0																																																																																	

\* It includes Capital WIP Rs. 9531.80 Lakhs

### iv) Performance of Company (Amount in Rs. Lakhs)

<p>Turnover *</p> <table border="1" style="width: 100%; text-align: center;"> <tr><td>1</td><td>0</td><td>3</td><td>3</td><td>6</td><td>3</td><td>9</td><td>.</td><td>7</td><td>2</td></tr> </table>	1	0	3	3	6	3	9	.	7	2	<p>Total Expenditure</p> <table border="1" style="width: 100%; text-align: center;"> <tr><td>9</td><td>1</td><td>4</td><td>0</td><td>9</td><td>7</td><td>.</td><td>3</td><td>7</td></tr> </table>	9	1	4	0	9	7	.	3	7
1	0	3	3	6	3	9	.	7	2											
9	1	4	0	9	7	.	3	7												

\* Inclusive of Excise Duty & Service Tax Rs. 80926.18 lakhs

Total earnings including accretion/decretion in inventory, other operational income, other revenue and adjustment of excise duty on turnover for the year is Rs. 1072260.93 Lakhs as against total expenditure.

<p>Profit Before Tax</p> <table border="1" style="width: 100%; text-align: center;"> <tr><td>1</td><td>5</td><td>8</td><td>1</td><td>6</td><td>3</td><td>.</td><td>5</td><td>6</td></tr> </table> <p>Earning Per Share in Rs.</p> <table border="1" style="width: 100%; text-align: center;"> <tr><td>3</td><td>8</td><td>.</td><td>9</td><td>5</td></tr> </table>	1	5	8	1	6	3	.	5	6	3	8	.	9	5	<p>Profit After Tax</p> <table border="1" style="width: 100%; text-align: center;"> <tr><td>9</td><td>5</td><td>3</td><td>4</td><td>0</td><td>.</td><td>4</td><td>7</td></tr> </table> <p>Dividend rate*</p> <table border="1" style="width: 100%; text-align: center;"> <tr><td>8</td><td>0</td><td>%</td></tr> </table>	9	5	3	4	0	.	4	7	8	0	%
1	5	8	1	6	3	.	5	6																		
3	8	.	9	5																						
9	5	3	4	0	.	4	7																			
8	0	%																								

\* incl interim dividend 35%.

## 27. Balance Sheet Abstract and Company's General Business Profile (Contd.)

v) Generic names of three principal products/services of Company (as per monetary terms)

1. Item Code No. : 

8	4	0	2	1	0
---	---	---	---	---	---

(ITC Code)

Product Description : Boilers other than parts

2. Item Code No. : 

8	5	0	2	3	9	0	2
---	---	---	---	---	---	---	---

(ITC Code)

Product Description : Complete generating sets including hydro turbines

3. Item Code No. : 

8	4	1	1	8	2	0	6
---	---	---	---	---	---	---	---

(ITC Code)

Product Description : Gas turbine of thrust exceeding 115000 KW.

Sd/-  
**N.K.Sinha**  
Secretary

Sd/-  
**C.Srinivasan**  
Director(Finance)

Sd/-  
**Ashok K. Puri**  
Chairman & Managing Director

As per our report of even date  
For J C Bhalla & Company  
Chartered Accountants

Sd/-  
Sudhir Mallick  
Partner

Date : 01.06. 2005

Place: New Delhi



## CASH FLOW STATEMENT FOR THE YEAR ENDED 31.03.2005

(Rs. in Lakhs)

	<u>2004-05</u>	<u>2003-04</u>
<b>A. CASH FLOW FROM OPERATING ACTIVITIES</b>		
Net Profit Before Tax as per Profit and Loss Account	<b>158163.56</b>	<b>101475.28</b>
Adjustment for		
Extraordinary items	1799.03	22981.24
Depreciation/Amortisation	21886.56	19804.32
Lease Equalisation	1139.33	542.97
Profit on sale of Fixed assets	-146.56	-236.65
Loss on investment	3.00	134.46
Interest paid	8140.65	6009.17
Interest/Dividend Income	-14274.17	-8696.88
Operating Profit before Working Capital changes	<b>176711.40</b>	<b>142013.91</b>
Adjustment for		
Trade & Other Receivables	-155549.84	-63283.52
Inventories	-81222.37	-10282.75
Trade Payable & Advances	207230.79	158517.78
Cash generated from operations	<b>147169.98</b>	<b>226965.42</b>
Direct Taxes Paid	-65334.33	-42190.66
Cash flow before Extra-Ordinary items	<b>81835.65</b>	<b>184774.76</b>
Extra-Ordinary Items	-6.97	-15223.06
<b>NET CASH INFLOW FROM OPERATING ACTIVITIES</b>	<b>81828.68</b>	<b>169551.70</b>
<b>B. CASH FROM INVESTING ACTIVITIES</b>		
Purchase of Fixed Assets	-19158.62	-17242.09
Sale and Disposal of Fixed Assets	2414.65	458.90
Purchase of Investment		-19500.00
Sale of Investments	2000.00	17500.00
Interest & Dividend Receipts	11219.16	7826.13
<b>NET CASH USED IN INVESTING ACTIVITIES</b>	<b>3524.81</b>	<b>10957.06</b>
<b>C. CASH FLOW FROM FINANCING ACTIVITIES</b>		
Short Term Borrowings	0.00	0.00
Long Term Borrowings	-286.33	559.98
Dividend Paid (including tax on dividend )	-18012.64	-19296.33
Interest paid	-8182.58	-5985.51
<b>NET CASH USED IN FINANCING ACTIVITIES</b>	<b>26481.55</b>	<b>24721.86</b>
<b>D. NET INCREASE IN CASH AND CASH EQUIVALENTS</b>	<b>51822.32</b>	<b>133872.78</b>
Opening Balance of Cash and Cash Equivalents	265963.89	132091.11
Closing Balance of Cash and Cash Equivalents	317786.21	265963.89

Sd/-  
**N.K.Sinha**  
Secretary

Sd/-  
**C.Srinivasan**  
Director(Finance)

Sd/-  
**Ashok K. Puri**  
Chairman & Managing Director

As per our report of even date  
For J C Bhalla & Company  
Chartered Accountants

Sd/-  
Sudhir Mallick  
Partner

Date : 01.06.2005  
Place : New Delhi

## NET INCOME UNDER US GAAP

	Notes	Rs. Crores	US \$ (Million)
<b>Profit after tax determined under Indian GAAP</b>		<b>953.40</b>	<b>218.52</b>
Adjustment to conform with US GAAP			
Rental Income (lease)	1	(39.77)	(9.12)
Income From investment in JV	2	3.32	0.76
Employee Remuneration & Benefits	3	4.98	1.14
Research & Development Expenses	4	(10.58)	(2.42)
Depreciation	5	50.35	11.54
Prior period items (incl. provision for taxation earlier years Rs. 11.93 crores)	6	38.58	8.84
Deferred Income Tax	7	(1.68)	(0.38)
<b>Net income in accordance with US GAAP</b>		<b>998.60</b>	<b>228.8</b>

1US \$ = Rs. 43.63 (Exchange rate as on 31.03.2005)

The above US GAAP reconciliation is subject to the following adjustments:-

- 1(a). Revenue Recognition - In respect of long term construction contracts entered before 1.4.2003

Recognition of revenue in respect of long production cycle items is made on technical estimates. When the aggregate value of shipment represents 30% or more of the realizable value, they are considered at 97.5% of the realizable value or in its absence, quoted price. Otherwise, they are considered at actual/estimated factory cost or 97.5% of the realizable value, whichever is lower. The balance 2.5% is recognized as revenue on completion of supplies under contract. Income from erection and project management services is recognised on work done based on : Percentage of completion; or the intrinsic value, reckoned at 97.5% of contract value, the balance 2.5% is recognised as income when the contract is completed. Income from engineering services rendered is recognised at realisable value based on the percentage of work completed. Income from Supply/erection of non-BHEL equipment/systems and civil works is recognised based on dispatches to customer/work done at project site.

As per US GAAP, Revenue is recognised on percentage-of-completion method for Construction Contracts. Impact on reconciliation of US GAAP is not ascertained.

- 1(b). Exchange variation to fixed assets is capitalised to relevant fixed assets and depreciation thereon is charged off as against the US GAAP exchange variation relevant to fixed assets are charged off during the year in income statement. Impact on reconciliation of US GAAP is not ascertained.

### **Notes to Reconciliation of Net Profit determined under Indian GAAP with Net Income in accordance with US GAAP**

The following notes show the difference between Indian GAAP and US GAAP and necessary adjustment to arrive at net Income under the US GAAP.

1. Rental Income (Lease)

As per Indian GAAP assets given on lease classified as finance lease prior to 1.4.2001 are capitalised at the normal sale price/fair value/contracted price and depreciation on the same has been charged. Lease rental income recognised after adjusting lease equalisation. Under US GAAP assets given on finance lease, finance income is recognised over the lease period.

2. Income from Investment in Joint Ventures

As per Indian GAAP Dividend income from joint ventures is recognised. Under US GAAP share of income/ loss generated by joint ventures is recognised in the income statement in proportion to holding.

3. Employees Remuneration & Benefits

As per Indian GAAP provision for leave encashment is accounted for on actuarial basis. Compensation to employees who have opted voluntarily retirement scheme prior to 1.4.2003 is amortised over a period of 3 years. As originally recommended by Accounting Standard 26 on 'Intangible Assets' issued by the ICAI. Compensation under voluntarily retirement scheme after 1st April 2003 have been charged off in the year of incurrence.





Under US GAAP provision for leave encashment is accounted on actual basis and Compensation towards voluntarily retirement scheme was charged in the year in which the employees accept the offer.

4. Research & Development Expenses

As per Indian GAAP revenue expenses incurred towards R&D is charged off, capital nature of expenses is capitalised and depreciation has been charged. Under US GAAP depreciation on R&D assets is charged as R&D expenses.

5. Depreciation

As per Indian GAAP depreciation is charged to Income statement on assets given on finance lease prior to 1.4.2001. Under US GAAP assets given on finance lease, finance income is recognised and depreciation on R&D assets is charged as R&D expenses to income statement.

6. Prior period items

As per Indian GAAP prior period items are reported separately in the income statement for the year. Under US GAAP prior period items are accounted by adjustment to prior years and retained profits.

7. Deferred Income Tax

Deferred Income tax adjustment has been provided for the future tax effect on temporary differences between book and tax basis of assets at the enacted tax rates on US GAAP adjustments.

As per our report of even date

For J.C. Bhalla & Co.

Chartered Accountants

Sd/-

Sudhir Mallick

Partner

New Delhi

Dated: 29.08.2005

Sd/-

Ashok K. Puri

Chairman and Managing Director

## Auditor's Report on US GAAP Reconciliation

We have audited the Reconciliation of Net Profit of Bharat Heavy Electricals Limited for the year ended 31<sup>st</sup> March, 2005 under Indian GAAP to Net Income in accordance with US GAAP ("the Reconciliation") subject to :

- i) Revenue recognition in respect of long term construction contracts entered before 01.04.2003 [Refer Note No. 1(a)];
- ii) Accounting of exchange variation related to fixed assets [Refer Note No. 1(b)].

Consequential impact, if any, of the above on the income as per US GAAP remains unascertained.

The Reconciliation is the responsibility of the Company's management. Our responsibility is to express an opinion based on our audit. In our opinion, such Reconciliation, when considered in relation to the basic financial statements taken as a whole, presents fairly in all material respects, the information set forth therein.

For JC Bhalla & Co.

Chartered Accountants

Sd/-

(Sudhir Mallick)

Partner

Membership No. 80051

Place: New Delhi

Date: 29.08.2005

**Annexure to Note No. 11**

**NAME OF THE SMALL SCALE INDUSTRIAL UNDERTAKING TO WHOM THE COMPANY  
OWES FOR MORE THAN 30 DAYS WITHIN THE AGREED TERMS (IN TERMS OF  
NOTIFICATION NO. G.S.R. 129 (e), DATED 22<sup>ND</sup> FEBRUARY, 1999**

A E C MARKETING PVT LTD  
A S B INDUSTRIES  
A S ENGINEERS  
A1 INDUSTRIES  
AAGFA INDIA  
AARTHI ENGINEERING INDUSTRIES  
AASIL ENGG INDUSTRIES  
AATHI INDUSTRIES  
ABMETAL FORMERS (P) LTD  
ACCURAATE ENGINEERING WORKS  
ACCURATE ENGINEERING INDUSTRIES  
ACCURATE INDUSTRIES  
ACCUSIZE GAUGES & TOOLS PVT LTD  
ACETECH MACHINERY COMPONENTS  
ACRO TRANS CONTROLS  
ADARSH ELECTRO PLATING WORK  
ADARSH FABRICATORS  
ADDISON & CO LTD  
ADITHYA ENGINEERS  
ADITHYA FERRO CAST INDIA PVT LTD  
ADVANCE COOLING SYSTEM PVT LTD  
ADVANCE VALVES LTD  
ADVANCED ELECTRONIC SYSTEMS  
AEROSPACE ENGG (I) (P) LTD  
AEROVENT PROJECTS PVT LTD  
AFNOMAN & CO  
AG MEASUREMATICS PVT LTD  
AGARWAL ENGINEERS & ASSOCIATES  
AGATE ELECTRO INSULATIONS PVT LTD  
AGILE HEAVY ENGG (P) LTD  
AGNICE FIREPROTECTION  
AGRO AUTO GRIND ENGINEERS (P) LTD  
AHSAN ALI ENGG WORKS  
AISHU CASTING PVT LTD  
AISHU CASTINGS PVT LTD  
AJAI GALVANISING WORKS  
AJANTHA FABRICATION WORKS  
AJMER MINERALS & GRINDING CORPN  
AKANKSHA  
AKILANDESWARI INDUSTRIES  
AKS ENGINEERING CO  
ALDEC CASTING  
ALERT ENGINEERING ENTERPRISES  
ALIASONS INDUSTRIES  
ALLIED CASTING SERVICES  
ALTEC FABRICATORS  
ALTOP CONTROLS  
ALUCOAT APLICATORS P LTD  
AMAR ENGINEERING WORKS  
AMARA ENTERPRISES  
AMARNATH INDUSTRIES  
AMBIGAI ENGINEERING WORKS  
AMBIKA INDUSTRIES  
AMCO INDUSTRIES HARDWAR  
AMIRTHALINGAM INDUSTRIES  
AMISONS CORPORATION  
AMMBAVIN  
AMPCONTROL EQUIPMENTS PVT LTD  
AN INSTRUMENTS  
ANABOND LTD  
ANAND AUTO ENGG WORKS GHAZIABAD  
ANAND ENGG INDUSTRIES

ANAND ENGG WORKS  
ANANDHA FABN(CBE) P LTD  
ANBU SONS  
ANDAVAR ENGG WORKS  
ANIL ENGG WORKS  
ANINSTRUMENTS PVT LIMITED  
ANITA FLUXES ALLOY SPECIALITY  
ANKIT EQUIPMENTS PVT LTD  
ANNAI VAILANKANNI FABRICATORS  
ANNAMALAI ASSOCIATES  
ANNAPURNA ENGINEERING WORKS  
ANOD TECH PROCESS  
ANTONY INDUSTRIES  
ANUPAM INDUSTRIES  
ANUPAM INDUSTRIES LIMITED  
APEX KNIVES PVT LTD  
APPLE REPROGRAPHICS  
APR ELECTRONICS PVT LTD  
AR ENGINEERING WORKS  
ARAMSONS INDUSTRIES  
ARAVALI MINERALS (P) LTD  
ARMSEL MHE PVT LTD  
ARPS ENGG ENTERPRISES  
ARUL MARIAMMAN TEXTILES LTD  
ARUN PLAST PVT LTD  
ARUN STRUCTURALS  
ARUNA ALLOY STEELS PVT LTD  
ARUNA ANCILLARY INDUSTRIES  
ARUNN ENTERPRISE  
ARUNODAYA ENGG WORKS  
ARUNODAYA ENGINEERS PVT LTD  
ARVIND FOOTWEAR PVT LTD  
ASAHI STEEL INDUSTRIES (P) LTD  
ASBA INDUSTRIES  
ASHOK MACHINE TOOLS CORPORATION  
ASHOKA ENTERPRISES  
ASHRAF WOOD INDUSTRIES  
ASHWIN INDUSTRIES (P) LTD  
ASIAN ANCILLARY CORPORATION, MUMBAI  
ASIAN INDUSTRIAL VALVES & INSTRUMENTS  
ASIAN STRUCTURALS  
ASK ENTERPRISES  
ASKAR MICRONS (P) LTD  
ASP PVT LTD HOWRAH  
ASSOCIATED ENGINEERING CORPORATION  
ASSOCIATED ENGINEERS  
ASUTOSH CASTINGS LIMITED  
ATLAS FASTENERS  
ATUL GRAM VIKAS SANSTHAN  
AUROBINDOO BUSINESS & COMPUTER  
AUTO INDIA  
AUTO PARTS & ACCESSORIES  
AUTOCAP INDUSTRIES  
AUTOSHELL CASTS P LTD  
AV ENGINEERS  
AVIDS TECHNOVATORS NEW DELHI  
AV ALLOYS LIMITED  
AXWEL (INDIA) PVT LTD  
B FOUR TECH INDUSTRIES  
B H E L LADIES CLUB  
BABU ENGG INDUSTRIES  
BABU INDUSTRIES



BABY ENGINEERING (P) LTD  
BABY INDUSTRIES  
BADRI INDUSTRIES  
BALAJI ENGINEERING ENTERPRISES  
BALAJI ENGINEERING WORKS  
BALAJI INDUSTRIAL PRODUCTS LTD  
BALAJI INDUSTRIES  
BALAMURUGAN ENGG WORKS  
BALAMURUGAN INDUSTRIES  
BALIGA LIGHTING EQUIPMENTS PVT LTD  
BALSARA FASTENERS PVT LTD  
BALZERS (INDIA) LTD  
BANGALORE MALLEABLE CASTINGS P LTD  
BANGALORE NONFERROUS CASTINGS  
BANNARI ENGG INDUSTRIES  
BANSAL FABWEL INDUSTRIES  
BARAKATH ENGG INDUSTRIES (P) LTD  
BARAKATH INDUSTRIES  
BAU FABS PVT LTD  
BDK PROCESS CONTROLS PVT LTD  
BEND JOINTS  
BERGER PAINTS INDIA LTD  
BEST HARDWARE STORES  
BEST HEAT TREATMENT SERVICES  
BGANESAN CONTRACTOR  
BHAARAT ENGGSALES AND SERVICE  
BHABA ENGINEERING UDYOG  
BHARAKATH ENGG INDS (P) LTD  
BHARAKATH METAL BUILDERS  
BHARAT BESTO FAB  
BHARAT ENGG ENTERPRISES  
BHARAT FABRICATORS  
BHARAT INDUSTRIES  
BHARAT METAL ABRATORS  
BHARAT MINERALS  
BHARAT STAMPING PRODUCTS  
BHARATH  
BHARATH ENGG WORKS  
BHARATH PRESSINGS  
BHARGAVA PRINTERS  
BHARTIA MINI SPRING & ENGGCO  
BHARTIYA ELECMECH CORPORATION  
BHATIA BANDHU PRINTER  
BHAVANI ERECTORS PRIVATE LIMITED  
BHUPENDRA ENGG ENTERPRISES  
BHUVANESSWARI ENGINEERING WORKS  
BHUVANESWARI INDUSTRIES  
BINDA METALS PVT LTD  
BINDU ENTERPRISES  
BINDU LABELS  
BINNY ENGG LIMITED  
BINNY ENGINEERING LIMITED  
BISHESWHAR GALVANISERS P LTD  
BISHNOI UDYOG  
BK ENTERPRISES  
BLUE MOUNT MACHINE WORKS  
BLUE SQUARE ENGG CO  
BM ENGINEERING WORKS  
BOLTMASER (I) PVT LTD  
BOMBAY OIL SEAL CO  
BOMBAY OIL SEALS CO.  
BORA BROTHERS  
BORA BROTHERS INDUSTRIES  
BOYS TOWN INDUSTRIAL TRAINING CENTRE

BRIGHT INDIA  
BRIGHT ENGINEERING CO  
BROWNS HITECH STRUCTURE PVT LTD  
BRUSH CENTRE  
BS & SONS  
BS ENGINEERING WORKS  
BUMPER INDIA PVT LTD  
BUNDEL KHAND INDUSTRIES  
BVK INDUSTRIES  
BVS METALLICS  
CAG EQUIPMENTS (P)LTD  
CALMET INDUSTRIES  
CANARA BANK, BBHAG AC MIKROFLO FILTERS PVT LTD  
CANDS ELECTRICALS PVT LTD  
CAPRONICS PVT LTD  
CAPSO ENGINEERS  
CAPSO ENGINEERS/FOUNDRY DIVISION  
CAPSULE INDS (P) LTD  
CARLO DYNATECH INDUSTRIES  
CASCY FORGE PRODUCTS  
CAST ALLOYS  
CAST WELL INDIA  
CAUVERY ENGINEERING WORKS  
CDC CARBOLINE INDIA LTD  
CG-PPI ADHESIVE PRODUCTS LTD  
CHAMAN ENG CORPN  
CHAMPAK MINERALS & CHEMICALS  
CHAMPION ENGG INDUSTRIES  
CHAMPION ENGINEERING INDUSTRIES  
CHANDEL ENGINEERING (P) LTD  
CHANDRA METALS PVT LTD  
CHAUDHARY & SONS(FORGINGS) PVT LTD  
CHAUHAN ENGINEERING  
CHECKMATE CHEMICALS (P) LTD  
CHELLA ENGG WORKS  
CHELLAM ENGG WORKS  
CHELLIAH ENTERPRISES  
CHEMTROLS ENGINEERING LIMITED  
CHHABI ELECTRICALS (P) LTD  
CHITRANJAN INDUSTRIES  
CHLORO CONTROL EQUIPMENT CO  
CHOURARIYA WIRENETTING IND  
CIMCO INDUSTRIES  
CINTHIYA INDUSTRIES  
CIRCLIPS INDIA PVT LIMITED  
CKV INDUSTRIES  
COIMBATORE SUPER ALLOYS(P) LTD  
COMET BRASS PRODUCTS  
CONNECT WELL INDUSTRIES PVT LTD  
CONTROL + SCHEMATICS PVT LTD  
CONTROLS & SCHEMATICS PVT LTD  
CONTURA WHEELS (P) LTD  
COPPER STRIPS PRIVATE LIMITED  
CORDS CABLE INDUSTRIES PVT LTD  
CORI ENGGRS  
COSMOS CONDUCTORS PVT LTD  
CO-TECH INDUSTRIES  
CRANEX LIMITED  
CREATIVE ENGINEERING  
CUB INDUSTRIES  
D S M INDUSTRIES  
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RAFFIULLAH KHAN CONTRACTOR  
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RAJSHI ENGINEERS  
RAJYA LAKSHMI ENGG WORKS  
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 SEKAR ENGINEERING  
 SELVAM ENTERPRISE  
 SELVAM ENTERPRISES  
 SELVI INDUSTRIES  
 SENTHIL ENGG WORKS  
 SENTHIL STRUCTURALS  
 SETHI STEEL CASTING & MOULDING WORK  
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SKH TOOLS  
SKILLMEN INDUSTRIES  
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SKS INDUSTRIES  
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SMK ENGINEERING INDUSTRIES  
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SRI RAMA ENGINEERING IND  
SRI RAMANA INDUSTRIES  
SRI RATHNA FABRICATORS  
SRI SABARI STRUCTURAL  
SRI SAI ENGINEERS & FABRICATORS  
SRI SAKTHI INDUSTRIES  
SRI SANTHANALAKSHMI ENGG WORKS  
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SRI SASTHA ENGINEERING ENTERPRISES  
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SRI SRI ENGG WORKS  
SRI SRINIVASA INDUSTRIES  
SRI SWAMI STRUCTURALS  
SRI VELMURUGAN FABRICATORS  
SRI VENKATESWARA INDUSTRIES  
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 STAR PAINT & OIL INDUSTRIES  
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 SUSHEEL ENGINEERING CORPN  
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 SWAMI ENGG WORKS  
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 TECHNO ENTERPRISES  
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UNIVERSAL ENGG WORKS  
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VENUS ENGG  
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VIJAYA ENGG WORKS  
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VISHNU FORGE INDUSTRIES LTD  
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VIVEK ENGG TOOLS & SERVICES  
VIVEKANANDA ENGG WORKS  
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VKN GALVANIZING INDUSTRIES  
VKN SHOT BLASTING INDUSTRIES  
VKN SHOT-BLASTING INDUSTRIES (P) LTD  
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VKN ENGG ENTERPRISES  
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VM CORPORATION  
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VORTEX ENGINEERING WORKS  
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VYJAYANTH ENGINEERING PVT LIMITED  
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WELD FABRICATORS  
WELD-VEL ENGINEERS PVT LTD  
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WIN CRAFT  
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WOOD FIELD  
WOOD WORLD  
WORTH  
XIMAX TECHNOLOGIES  
XL ENGINEERING  
YASHMUN ENGINEERS LTD  
YES GEES INDUSTRIES  
YESHA ELECTRICALS PVT LTD  
YHYDRO PACK  
YOGASHRI HEAVY ENGINEERING (P) LTD  
YOGESHWAR ALLOY CASTING PVT LTD  
YOGYA ENTERPRISES  
ZENTRONIC SYSTEMS

# PRODUCT PROFILE

## **THERMAL POWER PLANTS**

- Steam turbines, boilers and generators of up to 500 MW capacity for utility and combined-cycle applications; capability to manufacture boilers and steam turbines with supercritical steam cycle parameters and matching generators of up to 660 MW unit size. Facilities available for 1000 MW unit size.
- Steam turbines, boilers and generators for CPP applications; capability to manufacture condensing, extraction, back pressure, injection or any combination of these types of steam turbines.

## **NUCLEAR POWER PLANTS**

- Steam generator & Turbine generator up to 500 MW capacity.

## **GAS-BASED POWER PLANTS**

- Gas turbines of up to 260 MW (ISO) rating.
- Gas turbine-based co-generation and combined-cycle systems for industry and utility applications.

## **HYDRO POWER PLANTS**

- Custom-built conventional hydro turbines of Kaplan, Francis and Pelton types with matching generators, pump turbines with matching motor-generators.
- Mini/micro hydro sets.
- Spherical, butterfly and rotary valves and auxiliaries for hydro stations.

## **DG POWER PLANTS**

- HSD, LDO, FO, LSHS, natural gas/biogas-based diesel generator power plants, unit rating of up to 20 MW and voltage up to 11 kV, for emergency, peaking as well as base load operations on turnkey basis.

## **INDUSTRIAL SETS**

- Industrial turbo-sets of rating from 1.5 to 120 MW.
- Gas turbines and matching generators ranging from 3 to 260 MW (ISO) rating.
- Industrial steam turbines and gas turbines for drive applications and co-generation applications.

## **BOILERS**

- Steam generators for utilities, ranging from 30 to 500 MW capacity, using coal, lignite, oil, natural gas or a combination of these fuels; capability to manufacture boilers with supercritical parameters up to 1000 MW unit size.

- Steam generators for industrial applications, ranging from 40 to 450 t/hour capacity, using coal, natural gas, industrial gases, biomass, lignite, oil, bagasse or a combination of these fuels.
  - Pulverised fuel fired boilers.
  - Stoker boilers
  - Atmospheric fluidised bed combustion boilers.
  - Circulating fluidised bed combustion boilers.
- Heat-recovery steam generators.
- Chemical recovery boilers for paper industry, ranging from capacity of 100 to 1000 t/day of dry solids.
- Pressure vessels.

## **BOILER AUXILIARIES**

- Fans
  - Axial reaction fans of single stage and double stage for clean air application, with capacity ranging from 25 to 800m<sup>3</sup>/s and pressure ranging from 120 to 1,480 m of gas column.
  - Axial impulse fans for both clean air and flue gas applications, with capacity ranging from 7 to 600m<sup>3</sup>/s and pressure up to 700m of gas column.
  - Single and double-suction radial fans for clean air and dust-laden hot gases applications up to 400°C, with capacity ranging from 4 to 600m<sup>3</sup>/s and pressure ranging from 150 to 1,800 m of gas column.
- Air-Preheaters
  - Ljungstrom rotary regenerative air-preheaters for boilers and process furnaces.
  - Large regenerative air-preheaters for utilities of capacity up to 1000 MW.
- Gravimetric Feeders.
- Pulverisers
  - Bowl mills of slow and medium speed of capacity up to 100 t/hour.
  - Tube mills for pulverising low-grade coal with high-ash content.
- Pulse Jet and Reverse Air Type Fabric Filters (Bag Filters).
- Electrostatic Precipitators
  - Electrostatic precipitators of any capacity with efficiency up to 99.9% for utility and industrial applications.
- Mechanical Separators.
- Soot Blowers
  - Long retractable soot blowers (travel up to 12.2m), wall deslagers, rotary blowers and temperature probes and related control panels operating on pneumatic, electric or manual mode.
  - Swivel arm type soot blowers for regenerative air-preheaters.
- Valves
  - High-pressure and low-pressure bypass valves for utilities.

- High and medium-pressure valves, cast and forged steel valves of gate, globe, non-return (swing-check and piston lift-check) types for steam, oil and gas duties up to 600 mm diameter, 250 kg/cm<sup>2</sup> pressure and 540°C temperature.
- High-capacity safety valves and automatic electrically operated pressure relief valves for set pressure up to 200 kg/cm<sup>2</sup> and temperature up to 550°C.
- Safety relief valves for applications in power, process and other industries for set pressure up to 175 kg/cm<sup>2</sup> and temperature up to 565°C.
- Ceramic wear-resistant lining material for application in pulverised and coal piping components of thermal power stations as well as in cement, coal and steel industries.

### **PIPING SYSTEMS**

- Constant load hangers, clamp and hanger components, variable spring hangers for power stations up to 850 MW capacities, combined cycle plants, industrial boilers and process industries.

### **HEAT EXCHANGERS AND PRESSURE VESSELS**

- CS/AS/SS/Non-ferrous shell and tube heat exchangers and pressure vessels.
- Air-cooled heat exchangers.
- Surface condensers.
- Steam jet air ejectors.
- Columns.
- Reactors, drums.
- LPG/propane storage bullets.
- LPG/propane mounded storage vessels.
- Feed water heaters.

### **PUMPS**

- Pumps for various applications to suit utilities up to a capacity of 660 MW.
- Boiler feed pumps (motor or steam turbine driven).
- Boiler feed booster pumps.
- Condensate pumps.
- Circulating water pumps.
- Emergency oil pumps.
- Lubricating oil pumps.
- Standby oil pumps.

### **POWER STATION CONTROL EQUIPMENT**

- Microprocessor-based distributed digital control systems.
- Data acquisition systems.
- Man-machine interface.
- Sub-station controls with SCADA.
- Static excitation equipment/automatic voltage regulator.
- Electro-hydraulic governor control.
- Turbine supervisory system and control.
- Burner Management system.

- Controls for electrostatic precipitators.
- Controls for HP/LP bypass valves.
- Soot blower control.
- Auxiliary pressure reduction and de-superheating system.
- Balance of Plant station controls.
- Gas turbine control system.

### **SWITCHGEAR**

- Switchgear of various types for indoor and outdoor applications and voltage ratings up to 400 kV.
- Minimum oil circuit breakers (66kV - 132kV).
- SF<sub>6</sub> circuit breakers (132 kV - 400 kV).
- Vacuum circuit breakers (3.3 kV - 33 kV).
- Gas insulated switchgears (36 kV).

### **BUS DUCTS**

- Busducts with associated equipment to suit generator power output of utilities of up to 500 MW capacity.

### **TRANSFORMERS**

- Power transformers for voltage up to 400 kV.
- HVDC transformers and reactors up to ± 500 kV rating.
- Series and shunt reactors of up to 400 kV rating and 800 kV is under development.
- Instrument transformers :
  - Current transformers up to 400 kV.
  - Electro-magnetic voltage transformers up to 220 kV.
  - Capacitor voltage transformers up to 400 kV.
- Cast resin dry type transformers up to 10 MVA 33 kV.
- Special transformers for : earthing; furnace; rectifier; electrostatic precipitator; freight loco, AC EMU and traction.

### **INSULATORS**

- High-tension ceramic insulators.
  - Disc/suspension insulators for AC/DC applications, ranging from 45 to 400 kN electro-mechanical strength, for clean and polluted atmospheres.
  - Pin insulators up to 33 kV including radio free design.
  - Post insulators suitable for applications up to 220 kV stacks.
  - Hollow porcelains up to 400 kV for Transformers, SF<sub>6</sub> circuit breakers.
  - Solid core porcelain insulators for 25 kV Railway Traction.
  - Solid core insulators up to 400 kV for Bus Post & Isolators for substation applications.
  - Composite Insulators for 25 kV Railway Traction and up to 400 kV transmission lines.
  - Disc insulators for 800 kV AC and ± 500 kV HVDC

transmission lines (BHEL is the first Indian manufacturer to supply such insulators).

### **INDUSTRIAL AND SPECIAL CERAMICS**

- High-performance ceramics for special applications like : alumina, substrates, crucibles, pebbles, metal ceramic jointing components, etc.
- Cordierite Honeycomb 80 to 400 cpsi in different contours and lengths for various applications including petrol and diesel vehicles.

### **CAPACITORS**

- Power capacitors for industrial and power systems of up to 250 kVAR rating for application up to 400 kV.
- Coupling/CVT capacitors for voltages up to 400 kV.
- CAPSWITCH – solid state switch for on/off control of capacitor banks – for LT applications.

### **ENERGY METERS**

- Single-phase and 3-phase electro-mechanical energy meters with jewel bearing or magnetic suspension bottom-bearing.  
Single-phase and 3-phase electro-mechanical meters with stepper-motor driven counters and LCD's
- High-accuracy Trivector meter (0.2 class and 0.5 class).
- Single-phase and 3-phase prepaid meter and reading.
- Complete metering solutions with automatic meter reading.

### **ELECTRICAL MACHINES**

AC squirrel cage, slipring, synchronous motors, industrial alternators and DC machines are manufactured as per range summarised below. Special-purpose machines are manufactured on request.

- AC Machines for Safe Area Application
  - Induction Motors
 

Squirrel cage	150 to 35000 kW
Slipring	150 to 15000 kW
  - Synchronous motors 1000 to 17500 kW
  - Variable-Speed drives
 

Synchronous motors	1000 to 17500 kW
Induction motors	200 to 35000 kW
- AC Machines for Hazardous Area Application
  - Flame-proof motors (Ex.'D') 150 to 1600 kW
  - Pressurised (Ex. 'P') 150 kW and above
  - Non-sparking (Ex. 'N') Variable speed
  - Increased safety (Ex. 'E') Synchronous and Squirrel Cage
- DC Machines
  - Mill Duty 3.5 to 186 kW
  - Medium/Large 75 to 12000 kW
- Industrial Alternators
  - steam turbine, gas turbine 2000 kVA to
  - and diesel engine driven 60,000 kVA
- Voltage & Enclosure
  - Voltage AC-415 V to 13800 V
  - DC - up to 1200 V
  - Enclosure SPDP, CACW, CACA, TETV.

### **COMPRESSORS**

- Centrifugal compressors of varying sizes, driven by steam turbine/gas turbine/motor, for industrial applications handling almost all types of gases; range covers pressure up to 800 kg/cm<sup>2</sup> and capacity upto 350,000 Nm<sup>3</sup>/hour.

### **CONTROL GEAR**

- Industrial Control gear
  - Control panels and cubicles for applications in steel, aluminium, cement, paper, rubber, mining, sugar and petrochemical industries.
  - Liquid rotor starters for slipring induction motors of up to 2500 hp rating.
  - Liquid regulators for variable-speed motors
- Contactors
  - LT air break type AC for voltages up to 660 V.
  - LT air break type DC contactors for voltages up to 600 V.
  - HT vacuum type AC for voltages up to 11kV.
- Traction Control gear
  - Control gear equipment for railways and other traction applications.
- Control and Relay Panels
  - Control Panels for voltages up to 400 kV and control desks for generating stations and EHV sub-stations.
  - Control and relay boards.
  - Turbine gauge boards for thermal, gas, hydro and nuclear sets.
  - Turbine electrical control cubicles.
  - Outdoor-type control panels and marshalling kiosks, swinging type synchronising panel and mobile synchronising trolley.
  - Transformer tap-changer panels.

### **SILICON RECTIFIERS**

- Silicon power rectifiers with matching transformers for industrial applications like aluminium/copper/zinc smelting, for electrolysis in chemical industry and AC/DC traction application.

### **THYRISTOR GTO/IGBT EQUIPMENT**

- Thyristor converter/inverter equipment for DC drives and synchronous motors.
- Thyristor high current/high voltage power supplies.
- Static AC variable-speed drive systems using GTO/IGBT.
- Thyristor valves and controls for HVDC transmission.
- High frequency induction heating equipment.
- Thyristor valves and controls for reactive power management.

### **POWER DEVICES**

- High-power capacity silicon diodes, thyristor devices and solar photovoltaic cells.





## **TRANSPORTATION EQUIPMENT**

- AC electric locomotives.
- AC-DC dual voltage electric locomotives.
- Diesel-electric locomotives.
- Diesel hydraulic locomotives.
- OHE recording-cum-test car.
- Electric traction equipment (for conventional DC drive as well as 3-phase AC drives, diesel/electric locos, electric multiple units, diesel multiple units and urban transportation systems).
- Traction motors.
- Transformers smoothing reactors.
- Traction generators/alternators.
- Rectifiers.
- Bogies.
- Vacuum circuit breakers.
- Auxiliary machines.
- Microprocessor-based electronic control equipment.
- Power converter/inverter.
- Static inverter for auxiliary supply.
- Locomotive control resistances i.e. field diverters, dynamic braking resistors and inductive shunts.
- Dynamic track stabilizers.
- Ballast cleaning machines.
- Traction control gear.
- Vessel Traffic Management system.
- Ceramic catalytic converter for pollution control.

## **OIL FIELD EQUIPMENT**

- Oil Rigs –  
A variety of on-shore rigs, work-over rigs, mobile rigs, heli-rigs, desert rigs for drilling up to depths of 9,000 m, complete with matching draw-works and hoisting equipment including:
  - Mast and substructure.
  - Rotating equipment.
  - Mud System including pumps.
  - Power packs and rig electrics
  - Rig instrumentation.
  - Rig utilities and accessories
- Well Heads and Christmas Trees/sub-sea equipment:
  - Well Heads and X-Mas Trees for working pressures up to 10,000 psi.
  - Choke and kill manifolds.
  - Mud valves.
  - Full bore valves.
  - Block valves.
  - Mudline suspension system.
  - Casing support system.
  - Sub-sea Well Heads.

## **CASTINGS AND FORGINGS**

- Sophisticated heavy castings and forgings of creep-resistant alloy steels, stainless steel and other grades of alloy steels meeting stringent international specifications.

## **SEAMLESS STEEL TUBES**

- Hot-finished and cold-drawn seamless steel tubes with a range varying from outer diameter of 19 to 133 mm and wall thickness of 2 to 12.5 mm, in carbon steel and low-alloy steels to suit ASTM/API and other international specifications.
- Studded tubes
  - Extended surface tubes for high-performance heat transfer applications.
- Spiral finned tubes
  - High-frequency resistance welded finned tubes for heat recovery steam generators, economisers and heat furnaces.

## **DISTRIBUTED POWER GENERATION AND SMALL HYDRO PLANTS**

- Wind electric generator of up to 250 kW rating.
- Solar PV systems and power plants.
- Solar pumps.
- Solar water heating system.
- Solar lanterns, home lighting and street lighting.
- Small hydro power plants up to 25 MW station capacity.

## **SYSTEMS AND SERVICES**

- Power Generation Systems.
    - Turnkey power stations.
    - Combined-cycle power plants.
    - Cogeneration systems.
    - Modernisation and Rehabilitation of power stations.
  - Transmission systems
    - Sub-stations/switchyards.
    - HVDC transmission systems.
    - Shunt and Series compensation systems.
    - Power system analysis and controls.
    - FACTS & CSR.
  - Distribution systems
    - Substations
    - Automation
    - Remote metering
  - Transportation system
    - Traction systems.
    - Urban transportation systems.
  - Industrial systems
    - Industrial drives and control systems.
- Erection, commissioning, operation and maintenance services, spares management and consultancy services for all the above systems.