

# ANNUAL REPORT 1998-1999



**BINANI INDUSTRIES LIMITED**

# Binani

## BOARD OF DIRECTORS

Mr. Gokul Binani      Chairman  
Mr. Braj Binani      Vice Chairman &  
                                 Managing Director

Mr. S. Padmakumar  
Dr. V. C. Shah  
Mr. S. Mukhopadhyay  
Mr. A. C. Chakraborti

## SECRETARY

Mr. T.R.C. Nair

## AUDITORS

S.R. Batliboi & Co., Mumbai

## LEGAL ADVISORS

Menon & Pai-Ernakulam, Kerala

## BANKERS

Bank of Baroda  
State Bank of Travancore  
IndusInd Bank Limited  
Bank of India  
Allahabad Bank  
The South Indian Bank Ltd.  
Punjab National Bank

## LOCATIONS

### REGISTERED OFFICE

"Binani Buildings",  
38, Strand Road,  
Calcutta 700 001.

### CORPORATE OFFICE

"Mercantile Chambers",  
12, J. N. Heredia Marg,  
Ballard Estate,  
Mumbai 400 001.

### MUMBAI OFFICE

702/703, Regent Chambers,  
Nariman Point,  
Mumbai 400 021.

### UDAIPUR OFFICE

226(3A) Sardarpura,  
Udaipur 313 001.

### PROJECT OFFICE

703-704 Sakar II, Ellisbridge,  
Ahmedabad 380 006.

### WORKS

Binani Zinc  
Binanipuram, Ernakulam,  
Kerala.

## CORPORATE MANAGEMENT

Mr. Braj Binani      - Co-ordinator  
Mr. Sushil Bhatler      - President (Projects)  
Mr. S.S. Khandekar      - President (Binani Cement Ltd.)  
Mr. N. Mohan      - President (Zinc Divn.)  
Mr. Rajesh Patel      - President (Glass Fibre Divn.)  
Mr. Deo Hirawat      - Joint President (Resource  
Mobilisation)  
Mr. T.R.C. Nair      - Executive Vice President  
                                 (Corporate Affairs)

## ADVISORS TO CORPORATE

Mr. Ibrahim Ali  
Mr. V. Subramanian  
Mr. S.P. Saigal  
Mr. Ram Mohan

## DIVISIONS

### MUMBAI OFFICE

Mr. M.K. Chattopadhyaya - Asst. Vice President  
                                 (Corporate Accounts)

### PROJECT

Mr. K. Vijayan      - Vice President  
                                 (Project & Tech. & Serv.)  
Mr. Roy Kurian      - Asst. Vice President  
                                 (Projects)

### BINANI ZINC

Mr. George Thomas      - Executive Vice President  
Dr. K. Sasi      - Vice President (R&D)  
Mr. K. Roshan      - Asst. Vice President  
                                 (Commercial)

### UDAIPUR

Mr. V. K. Ranka      - Vice President

## WHOLLY OWNED SUBSIDIARIES

### BINANI CEMENT LIMITED

Registered Office  
"Binani Buildings", 38, Strand Road,  
Calcutta 700 001.

### Works

Binanigram, Pindwara,  
Sirohi, Rajasthan.

### GOA GLASS FIBRE LIMITED

(Formerly Vishakha Enterprises (India) Ltd.)

### Registered Office

"Binani Buildings", 38, Strand Road,  
Calcutta 700 001.

### Works

Colvale, Bardez  
Goa

## GOODWILL EQUITY AND FINANCE LTD.

### Registered Office

"Binani Buildings",  
38, Strand Road,  
Calcutta 700 001.

## Binani Industries Limited

## NOTICE TO SHAREHOLDERS

NOTICE is hereby given that the **Thirty Sixth Annual General Meeting** of the Company will be held at 10.15 a.m at "Kala Mandir", 48, Shakespeare Sarani, Calcutta - 700 017 on Friday, the 10th December, 1999 to transact the following business:

**ORDINARY BUSINESS:**

1. To receive and adopt the Directors' Report and Audited Accounts in respect of the year ended 31<sup>st</sup> March, 1999.
2. To declare dividend.
3. To appoint a Director in place of Mr. A.C. Chakrabortti who retires by rotation and being eligible offers himself for reappointment.
4. To appoint Auditors and fix their remuneration.

**SPECIAL BUSINESS :**

5. To consider and if thought fit to pass, with or without modification the following resolution as a **SPECIAL RESOLUTION**:  
 "RESOLVED THAT the Equity Shares of the Company which are listed in the Stock Exchanges at Chennai and Kochi being non-regional exchanges, be delisted from these exchanges, subject to the necessary approvals and permissions".  
 "RESOLVED FURTHER THAT the Board of Directors of the Company be and is hereby authorised to take such steps and do such acts or deeds or things necessary, incidental and consequential to give effect to the above resolution".
6. To consider and if thought fit to pass, with or without modification, the following resolution as a **SPECIAL RESOLUTION**:  
 "RESOLVED THAT pursuant to Section 149 (2) (a) and other applicable provisions, if any, of the Companies Act, 1956, the consent of the Company be and is hereby accorded to the Board of Directors of the Company for commencing and undertaking new business as and when deemed fit, as enumerated in the Sub-clause 30 of Clause III of the Memorandum of Association 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 pursuant to the provisions of Section 257 of the Companies Act, 1956, Mr.Jagdish Prasad Saha who has offered himself for appointment as a Director be and is hereby appointed as a Director of the Company."

By Order of the Board

Binanigram, Pindwara  
29<sup>th</sup> October, 1999

**T. R. CHANDRAMOHANAN NAIR**  
Executive Vice President (Corporate Affairs) & Secretary

**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 A PROXY NEED NOT BE A MEMBER OF THE COMPANY.
2. Instruments appointing proxies should be deposited at the Registered Office of the Company not less than 48 hours before the time fixed for the meeting.
3. The Register of Members and Share Transfer Books of the Company will remain closed from Wednesday, the 1<sup>st</sup> December 1999 to Friday, the 10<sup>th</sup> December 1999 (both days inclusive).
4. Dividend, if declared, will be paid to those members whose names appear on the Company's Register of Members on 10<sup>th</sup> December, 1999 on the paid-up Equity capital of the Company as on 31<sup>st</sup> March, 1999.
5. Pursuant to the provisions of Section 205 A of the Companies Act, 1956, all Unclaimed dividends up to and inclusive of financial year 1995-1996 have been transferred to the General Revenue Account of the Central Government. Shareholders who have not encashed the dividend warrants for the said period are requested to claim the amount from The Registrar of Companies, West Bengal, Nizam Palace, II M.S.O Building, 234/4, AJC Bose Road, Calcutta - 700 020. Those members who have not encashed their dividend warrants for the financial years ended 31<sup>st</sup> March, 1996, 31<sup>st</sup> March, 1997 and 31<sup>st</sup> March, 1998 may claim or approach the Company as the balance will be transferred to the fund established by the Central Government on or before the respective dates indicated below:
 

Dividend for the year 31.03.1996	27.08.2003
Dividend for the year 31.03.1997	07.11.2004
Dividend for the year 31.03.1998	25.01.2005
6. Explanatory Statement pursuant to Section 173(2) of the Companies Act, 1956 in respect of item nos.5 to 7 of the notice as set above is annexed hereto.
7. The practice of distributing copies of Annual Reports at the Annual General Meeting has been discontinued as a measure of economy. Members are therefore requested to bring their copy of the Annual Report and Attendance Slip duly completed to the meeting.
8. The accounts, the reports and all other documents required under the law to be annexed thereto will be available for inspection during working hours at the Registered Office of the Company on any working day except Saturdays and Sundays prior to the date of the Annual General Meeting.

# Binani

9. SHAREHOLDERS WHO ARE STILL HOLDING SHARE CERTIFICATES OF RS.100/- EACH ARE REQUESTED TO SURRENDER THEM IMMEDIATELY FOR EXCHANGE INTO SHARES OF RS.10/- EACH TO THE REGISTERED OFFICE OF THE COMPANY.
10. Members who are holding shares in identical names under different ledger folios are requested to apply for consolidation of such folios and send the relevant equity share certificates to M/s MCS Ltd. Only one Annual Report is being sent to those Shareholders who have common address.
11. Members who are holding shares in single name are advised, in their own interest to get the shares transferred in joint names. There is a facility now available for nomination and shareholders are advised in their own interest to nominate persons for transferring the interest on those shares.
12. Those shareholders who have not received the adhesive stickers for affixing in the share certificates consequent upon change of name are advised to write to the Registered Office indicating the number of share certificates held.
13. Members may note that the Company has been admitted to the National Securities Depository Limited (NSDL) and the shares are available for scripless trading in the electronic format.
14. Members may note that the Company is accessible on the internet at the website www.binani.com
15. Members are requested to send all correspondence relating to shares including requests for transfers, change of address, change of status, change of mandate, fresh mandate etc. to our Share Registrars and Transfer Agents

## M/s MCS Ltd.

Unit: Binani Industries Limited  
 "Sri Venkatesh" Bhavan,  
 Plot no.27, Road no 11,  
 M.I.D.C Area,  
 Andheri (East),  
 Mumbai - 400 093.

## EXPLANATORY STATEMENT UNDER SECTION 173(2) OF THE COMPANIES ACT, 1956

### Item No. 5

The Company's shares are listed at Calcutta, Mumbai, Kochi, Chennai Stock Exchanges and also traded at the National Stock Exchange and the Calcutta Stock Exchange is the Regional Stock Exchange. During the last one year, the Company's shares have been sparsely traded in the Chennai and Kochi Stock Exchanges. As the Company's Equity shares are traded at the National Stock Exchange, shareholders from all over the country have greater access to trade in their shares. In view of this the Company proposes to delist its shares from Kochi and Chennai Stock Exchanges. Since it is necessary to obtain the approval of the shareholders, special resolution as appearing in Item No. 5 is recommended for adoption.

The Directors may be deemed to be concerned or interested to the extent of the shareholdings or that of the Institutions they represent.

### Item No. 6

The Company is presently engaged in the manufacture of Zinc. The Company has plans to undertake or promote various other activities like infrastructural projects or establishment of a green field Lead Smelter. Sub-Clause 30 of the Clause III of the Memorandum of Association of the Company does permit the Company to undertake such activities. It is therefore proposed to bring the same Clause as one of the main objects so that the Company can undertake such activities in future. Accordingly, your Directors recommend the passing of the resolution.

The Directors may be deemed to be concerned or interested to the extent of the shareholdings or that of the Institutions they represent.

### Item No. 7

Mr. Jagdish Prasad Saha has by his letter dated 22<sup>nd</sup> October, 1999 given notice to the Company under Section 257 of the Companies Act, 1956 proposing himself as a candidate for the office of Director of the Company.

The resolution for the appointment of Mr. Jagdish Prasad Saha is being included in the notice of the Annual General Meeting as required by law.

The management however does not support this resolution.

The notice under Item No.7 and Memorandum & Articles of Association of the Company are available for inspection by the members of the Company at the Registered Office of the Company between 10.00 a.m and 1.00 p.m. on any working day of the Company except Saturdays and Sundays upto the date of the meeting.

By Order of the Board

Binanigram, Pindwara  
 29<sup>th</sup> October, 1999

**T. R .CHANDRAMOHANAN NAIR**  
 Executive Vice President (Corporate Affairs) & Secretary

**Binani Industries Limited****SHAREHOLDER'S DIARY**

1. DATE OF ANNUAL GENERAL MEETING : **FRIDAY 10<sup>TH</sup> DECEMBER, 1999**
2. TIME AND VENUE : **10.15 A.M AT " KALAMANDIR"  
48, SHAKESPEARE SARANI,  
CALCUTTA - 700 017.**
3. DATE OF BOOK CLOSURE : **1<sup>ST</sup> DECEMBER, 1999 TO 10<sup>TH</sup> DECEMBER, 1999  
(both days inclusive)**
4. DIVIDEND PROPOSED : **RS. 1.50 PER SHARE (15%)**
5. TAX ON DIVIDEND : **DIVIDEND WOULD BE TAX FREE IN THE HANDS  
OF THE SHAREHOLDER.**
6. DIVIDEND PAYMENT : **ON OR BEFORE 21<sup>ST</sup> JANUARY, 2000 TO MEMBERS WHOSE  
NAMES APPEAR ON THE REGISTER OF MEMBERS ON 10<sup>TH</sup>  
DECEMBER, 1999, ON THE PAID UP CAPITAL OF THE  
COMPANY AS ON 31<sup>ST</sup> MARCH, 1999.**
7. SHARE DETAILS
  - MARKET LOT : **50**
  - LISTED AT :
    - 1) **CALCUTTA STOCK EXCHANGE ASSOCIATION LIMITED  
7, LYONS RANGE, CALCUTTA 700 001.**
    - 2) **THE STOCK EXCHANGE, MUMBAI  
PHIROZE JEEJEEBHOY TOWERS,  
DALAL STREET, MUMBAI 400 001.**
    - 3) **THE MADRAS STOCK EXCHANGE LTD.  
EXCHANGE BUILDING, POST BOX NO.183 11,  
SECOND LINE BEACH,  
CHENNAI 600 001.**
    - 4) **THE COCHIN STOCK EXCHANGE LTD.  
POST BOX NO.3829, VEEKSHANAM ROAD, ERNAKULAM,  
KOCHI 682035.**
  - MEMBER AT : **NATIONAL SECURITIES DEPOSITORY LTD.  
TRADE WORLD, 2nd FLOOR,  
KAMALA MILLS COMPOUND,  
SENAPATI BAPAT MARG,  
LOWER PAREL, MUMBAI 400 013**
  - TRADED AT : **NATIONAL STOCK EXCHANGE  
TRADE WORLD, 4<sup>TH</sup> FLOOR,  
KAMALA MILLS COMPOUND,  
SENAPATI BAPAT MARG,  
LOWER PAREL, MUMBAI 400 013**
8. SHARE TRANSFER AND OTHER COMMUNICATIONS TO BE ADDRESSED TO :- : **M/S MCS LTD  
UNIT: BINANI INDUSTRIES LIMITED  
"SRI VENKATESH" BHAVAN, PLOT NO.27,  
ROAD NO 11, M.I.D.C AREA,  
ANDHERI (EAST), MUMBAI - 400 093.**

# Binani

## DIRECTORS' REPORT TO THE SHAREHOLDERS

Your Directors have pleasure in presenting the Thirty Sixth Annual Report together with the Audited Statement of the Accounts for the year ended 31<sup>st</sup> March 1999.

### 1. FINANCIAL RESULTS

	(Rs.Lakhs)	
	1998-99	1997-98
Sales and Related Income	26544	22580
Profit before Tax	934	1356
Provision for Taxation (MAT)	(99)	(143)
Profit after Tax	835	1213
Balance of Profit B/F	1258	369
Transfer from Investment Allowance Reserve	—	257
Available for appropriation	2093	1839
<b>APPROPRIATIONS:</b>		
Proposed Dividend	417	417
Tax on Dividend	46	42
Transfer to General Reserve	78	122
Balance carried to Balance Sheet	1552	1258

### 2. RESTRUCTURING OF GLASS FIBRE BUSINESS

Pursuant to the Board Meeting held on 23<sup>rd</sup> February 1999, the Board of Directors of the Company at their Meeting held on 16<sup>th</sup> March 1999 have approved a Scheme of Arrangement between the Company and Vishakha Enterprises (India) Limited (VEL) as part of your Company's strategy of restructuring and refocusing for transfer of the Glass Fibre Division of the Company to a wholly owned subsidiary (VEL). The said scheme was approved by the Shareholders on 24<sup>th</sup> June 1999 and with the approval of Hon. High Court, Calcutta, vide its order dtd. 3<sup>rd</sup> August 1999 the Glass Fibre Division has been hived off from the Company and transferred to VEL with effect from 1<sup>st</sup> October 1998. Accordingly, the Audited Accounts have not incorporated the Assets and Liabilities of the Glass Fibre Division as of 31<sup>st</sup> March 1999 and Operating Results for the period from 1<sup>st</sup> October 1998 to 31<sup>st</sup> March 1999. The name of the said VEL has since been changed to Goa Glass Fibre Limited.

In this context, the requisite approval has been obtained for holding the Annual General Meeting in December 1999.

### 3. REVIEW OF OPERATIONS DURING 1998-99

#### I. Zinc

Zinc production during the year was 31176 MT which is the highest achieved so far representing a capacity utilisation of 103.92%. The year also witnessed record production of Sulphuric Acid, lowest Power Consumption rate and record co-generation of power and sale of zinc metal. However the downward trend in international prices of Zinc Metal resulted in lower realisation.

#### II. Glass Fibre

Glass Fibre Division produced a record 5748 MT during 1998-99 including 2868 MT in the post hive off period as against 2514 MT during the previous year. The total sales was 5092 MT including 2751 MT in the post hive off period as against 3818 MT during 1997-98. The total Sales were Rs.32.99 Crores as against Rs.21.80 Crores during the previous year. The market conditions continued to be depressed affecting the operations.

The division's products Chopped Strand Mats, Woven Rovings and spray up rovings received the prestigious accreditation of DNV. The division also received ISO 9002 Certification during the year under review. As stated earlier, the division has been hived off with effect from 1<sup>st</sup> October, 1998 pursuant to the Scheme of Arrangement.

As part of the strategy of Restructuring and Refocusing, the Company strengthened its presence by increasing its stake substantially in BT Composites Limited to increase captive consumption of Glass Fibre and get better value addition in exports.



## Binani Industries Limited

### III. Binani Cement Limited (BCL)

Binani Cement Limited the wholly owned subsidiary has performed well during the last year. For the 12 months period April 1998 to March 1999 the production of Cement was 1.40 Million MT and sales 1.39 Million MT representing a capacity utilisation of 85%.

The Demand has shown an upward trend resulting in slightly improved prices. It is hoped that Binani Cement Limited will show better operational results in the current year as it is targeting to achieve 100% production of 1.65 Million Tonne during 1999-2000.

### 4. FUTURE PROSPECTS

The year 1998/99 was marked by a slow down of the economy. However, there are encouraging signs of economic revival in the current year. This is expected to have a favourable impact on the company and its subsidiaries.

The production of Zinc Metal during the first 6 months of the current year has been lower due to problems relating to raw material and mechanical problems which have since been resolved satisfactorily. The sales value has also been lower compared to last year because of lower realisation. However, there is marginal improvement in the price from the 2<sup>nd</sup> half of the current year. Your company has successfully implemented various cost economy measures. While there has been steep increase in power tariff, your company's performance is likely to be satisfactory with improved profitability as a result of various measures stated earlier.

### 5. DEVELOPMENT PLANS

The company's future growth plans, would focus on its core business i.e non-ferrous metals, zinc, lead & cement.

As a part of diversification plan, the project for setting up a 75000/100000 TPA, Primary Lead Smelter in Western Region with refinery and alloy making facility, has been finalised. The process of firming up the technological tie-up and financial structure is underway. As regards expansion of our zinc smelter operations, steps have been initiated for technological tie up. The Company had two options either to put up a green field zinc project in Gujarat or to expand the existing smelter at Binanipuram, Kerala. The proposal to expand it in a single phase would have its advantages in terms of economies of scale. After the techno-economic and operational pre-feasibility and in view of scope for technological improvements of the existing plant, it has been considered appropriate and prudent to expand the existing smelter capacity at Binanipuram from the existing 30,000 TPA to 100000 TPA in two phases.

The management is continuing its efforts to consolidate and increase its strength in Cement. BCL has firming up its plans for setting up 1.5 million tonne clinker unit with 500000 TPA grinding facility in Gujarat.

The Company's joint venture project of 0.500 Million TPA Cement/Slag grinding facility at Dubai has been completed and commissioning activities are underway. Commercial production is expected to commence at the end of 1999 and will be on full stream in the new millennium.

As regards Navlakhi Jetty facility, financial tie-up and the necessary statutory clearances are under way.

### 6. INDUSTRIAL RELATIONS

With the excellent support and cordial relations extended by all its employees, your Company could achieve satisfactory levels of performance.

### 7. DIVIDEND

In view of overall performance and prospects during the current year, your Directors recommend a dividend of 15% for the year subject to the necessary approvals.

### 8. BOARD OF DIRECTORS

During the year Dr. Dara P. Antia who has been associated with the Company for more than three decades passed away and Mr. K. A. Varugis who also had a long association with the Company resigned due to ill health.

The Directors placed on record their deep sense of appreciation for the valuable guidance received from Dr. Dara P. Antia and Mr. K. A. Varugis during their tenure of Directorship.

In accordance with Article 100 of the Articles of Association of the Company, Mr A. C Chakraborti retires by rotation and being eligible offers himself for re-appointment.

# Binani

## 9. AUDITORS' OBSERVATIONS

Observations made in the Auditors' Report are dealt with in the Notes to the Accounts at appropriate places and being self explanatory, no further explanation is necessary.

## 10. AUDITORS

M/s.S.R.Batliboi & Co. Chartered Accountants, retire as Auditors and are eligible for re-appointment. Necessary certificate has been obtained from the Auditors as per Section 224 (1) of the Companies Act, 1956.

In terms of the order of the Company Law Board, the Company is required to get its accounting records relating to manufacture of Sulphuric Acid audited for the year 1999-2000. Accordingly, an application has been submitted to the Company Law Board seeking their approval for the appointment of M/s.N.P.Gopalakrishnan & Company, Cost Accountants, Cochin as Cost Auditors.

## 11. SUBSIDIARY COMPANIES

The statement pursuant to Section 212 of the Companies Act 1956 relating to the subsidiaries etc. i.e. "Binani Cement Limited", "Goodwill Equity and Finance Ltd." and "Goa Glass Fibre Limited" (formerly Vishakha Enterprises (India) Limited) are annexed to this Report and the Audited Accounts of the said Companies are also annexed to this report.

## 12. PARTICULARS UNDER SECTION 217

Statement of particulars under Section 217(1) (e) regarding conservation of energy, technology absorption, foreign exchange and outgo and particulars of employees under Section 217(2A) of the Companies Act, 1956 are annexed.

## 13. STOCK EXCHANGES- COMPLIANCE OF LISTING AGREEMENTS.

The Equity shares of the Company are listed at Calcutta Stock Exchange which is the regional Stock Exchange and also at Mumbai, Kochi, Chennai and also traded at the National Stock Exchange. We also confirm that the Company has paid listing fee for the year 1999-2000 to Calcutta, Mumbai, Kochi and Chennai Stock Exchanges pursuant to the provisions of the listing agreement.

The shares of the Company are thinly traded at the Kochi and Chennai Stock Exchanges. Since the National Stock Exchange has established facilities all over the Country for trading in shares, the Shareholders all over the Country have greater access to share trading through the National Stock Exchange; it is therefore considered expedient that the shares of the company may be delisted from Kochi and Chennai Stock Exchanges which are non-regional Stock Exchanges. Necessary special resolution in this regard has already been included in the agenda for the ensuing Annual General Meeting seeking your approval.

The Company took appropriate and effective steps to address the issue including engaging the services of an external agency and the Company has achieved Y2K compliance by 30<sup>th</sup> September 1999. The Company does not envisage a system break down or failure due to Y2K problem. Nonetheless, the Company has an adequate contingency plan to meet any exigency.

## 14. ACKNOWLEDGEMENT

Your Directors wish to place on record their appreciation and thanks to the various departments of State and Central Government for the support extended by them during the year under review and also look forward to their continued co-operation and support to the Company in future.

Your Directors also wish to express their appreciation and thanks to all the Financial Institutions and Banks for their co-operation and continued support.

Your Directors also acknowledge the sustained support from all the contractors valued and esteemed customers, selling agents, dealers, distributors and marketing organisers.

Your Directors wish to express their appreciation of the services of all the employees and for their valuable contribution, dedication and loyalty.

Your Directors also place on record their deep sense of gratitude for the continued confidence and faith reposed by the Shareholders.

By order of the Board

Binanigram, Pindwara  
29<sup>th</sup> October 1999

**GOKUL BINANI**  
Chairman



## Binani Industries Limited

# ANNEXURE TO DIRECTORS' REPORT

## PARTICULARS UNDER SEC.217(1) (e)

**A) CONSERVATION OF ENERGY****a) Energy Conservation measures taken****Zinc Division**

1. Aluminium blades of Cooling Towers in Water Treatment, Acid & Captive Power Plants have been replaced with FRP blades resulting in substantial saving in electricity consumption.
2. Flat belts have been installed on two blowers at Melting Plant which resulted in reduction in electricity consumption.

**Glass Fibre Division\***

1. Optimisation of Oxygen feed to Melter by excess Oxygen analysis in flue gases.
2. A timer based factory lighting introduced.
3. Energy Audit scheduled to be conducted in the 1<sup>st</sup> half of 1999-2000.

**b) Additional investment proposals, if any, being implemented for reduction of consumption of energy.****Zinc Division**

1. Installation of Flat belts on more drives.
2. Installation of Auto Blowdown Control for improving steam & electricity generation from Waste Heat Boiler.
3. Replacing Process Air Compressor with single stage low pressure compressor.
4. Installation of inverter for Blower in Melting Plant.

**Glass Fibre Division\***

*These will be finalised in 1999-2000 following the findings of the proposed detailed energy audit.*

**c) Impact of measures at (a) and (b) above for reduction of energy conservation and consequent impact on the cost of production of goods.**

Due to various energy conservation measures, specific conservation levels have been showing a downward trend. Saving in electricity consumption on account of above measures equivalent to 4 lakh units (Rs.8 Lakhs.)

**B) TECHNOLOGY ABSORPTION, ADAPTATION AND INNOVATION****1) Efforts in, brief made towards technology absorption, adaptation and innovation****Zinc Division**

1. Removal of Thallium from Zinc Sulphate electrolyte
2. Treatment of stock piled residue, in residue treatment plant.
3. Optimisation studies on the separation of Lead-Silver residue from the neutral residue.

**Glass Fibre Division\***

1. Conversion of Forehearth Heating system from Electric to LPG Premix Fired.
2. Usage of mixture of Furnace Oil and HSD as Melter fuel, instead of HSD.
3. Configuration of winder ramp programmes in DCS for greater reliability
4. In house fabrication (assembly) of bushings.
5. In all lightduty cake winders, linear bearings replaced with non-lubricated bushes for greater reliability.
6. Cake winders spiral shaft end mountings modified for greater reliability.
7. Optimisation of usage of chemicals.

**2) Benefits derived as a result of above efforts (e.g product improvement, cost reductions, import substitutions.)****Zinc Division**

1. SSHG Ingots of 99.995% purity could be produced by properly controlling the Thallium level in the purified Zinc Sulphate electrolyte.
2. The Zinc present in the stock piled residue is being recovered, bringing down the cost of production substantially.
3. The process parameters for the separation of Lead-Silver residue are optimised and the residue thus generated could either be used as a charge to the Lead smelter or for producing, value added products.

**Glass Fibre Division\***

1. Increase in capacity utilisation of fibre forming.
2. Reduction in overall fuel costs.
3. Better control of filament tex.
4. Reduction in bushing fabrication costs.
5. Cost reduction, reduction of downtimes.
6. Product upgradation.

**TECHNOLOGY ABSORPTION -RESEARCH & DEVELOPMENT****1. Specific areas in which R & D work was carried out by the Company.****Zinc Division**

- a) Enhancement of the rate of treatment of stock piled residue, in residue treatment plant.
- b) Development of value added products like Lead Chloride from Lead-Silver residue, Copper Sulphate from Copper Cake, Zinc Sulphate/ Chloride from Zinc Ash etc.
- c) Fixation of Jarosite residue.
- d) Identification of alternate flocculants.
- e) Effect of punched Lead – Silver Anodes during electrolysis.
- f) Characterisation of different types of Zinc Concentrate.

**Glass Fibre Division\***

- a) Development of alternative / substitute chemicals for sizing and binders.
- b) Development of alternative sources of supply for Raw materials.

**2. Benefits derived as a result of above R & D.****Zinc Division**

- a) Better extraction of Zinc was obtained at higher dosage of purification reagents at lower concentrate input.
- b) Lead Chloride from Lead-Silver residue could be produced. Process parameters are to be optimised.
- c) Red Oxide of 95% purity was produced from jarosite residue.
- d) Flocculants of comparable quality of magna floc were identified and are being used in the plant. This has resulted in reduced cost of production.
- e) Optimised the concentrate blend feed to the roaster plant for smooth operation.

**Glass Fibre Division\***

- a) Cost reduction, reduced inventories.

**3) Future Plan of action**

- a) Optgimisation of reagents during hot purification when the treatment of stock piled residue is enhanced to ensure a better quality electrolyte.
- b) Studies on the production of Copper Sulphate from Copper Cake.
- c) Studies on the production of Cobalt from Cobalt Cake.
- d) Removal of Chloride from the system.

**4) EXPENDITURE ON R & D**

	Rs. Lakhs
A. Capital	13.46
B. Recurring	40.04
C. Total	53.50
D. Total R&D Expenditure as a % to total turnover	0.23

**C. FOREIGN EXCHANGE EARNINGS AND OUTGO**

Total Foreign Exchange Earnings	910.73
Total Foreign Exchange Outgo	13219.51

\* This relates to the period from 1.4.1998 to 30.9.1998.