National Aluminium Company Limited (NALCO)

10.1 NALCO, a schedule–A Central Public Sector Undertaking which has been conferred Navratna status in April, 2008 is the largest integrated alumina & aluminium complex in the country. Its operating units consist of bauxite mines, alumina refinery, aluminium smelter & captive power plant located in Orissa.

10.2 The Company is one of the lowest cost producers of alumina & aluminium in the world due to highly efficient operation and very high asset utilisation with benchmark in smelting technology in its category and two patents in alumina technology. With sustained quality products, the Company’s export earnings account for nearly 40% of the sales turnover. The 2nd phase expansion of the Company is nearing completion and with the expansion, the production capacity of the units will increase by about 33%.

10.3 The company has already embarked upon de-bottlenecking in mines and refinery beyond 2nd phase expansion, at an outlay of Rs. 409 crores, for which, consultant has been appointed and further actions are under process.

10.4 For value addition and simultaneous utilisation of surplus alumina of its refinery, the Company is examining possibilities to set up a 5 lakh tonnes per annum (TPA) smelter at an investment of USD 2.1 billion and 1250 MW coal based power plant at an investment of USD 1.3 billion in Indonesia and 1.55 lakh TPA smelter in first phase and a 1.55 lakh TPA smelter alongwith gas based power plant in second phase at an estimated cost of USD 3 billion in Iran. The Company exports its products to more than 30 countries worldwide. The Company has also opened stockyards in various parts of India to facilitate domestic marketing. With its consistent track record in capacity utilization, technology absorption, quality assurance, exports performance and posting of profits, NALCO is a bright example of India’s industrial capability.

Bauxite Mines

10.5 Located on the Panchpatmali hills of Koraput district in Orissa, a fully mechanised open-cast mine is in operation since 1985. The mining capacity of 4.8 million tonnes per annum (MTPA) is being further expanded to 6.3 MTPA under 2nd phase expansion. Beyond 2nd phase, the capacity will be further augmented to 6.8 MTPA under de-bottlenecking project.

Alumina Refinery

10.6 Alumina refinery is located at the foot hills of Panchpatmali hills, Orissa. The capacity of refinery is 1.575 MTPA. It is being expanded to 2.1 MTPA under 2nd phase expansion. The capacity will be further enhanced to 2.275 MTPA under de-bottlenecking project.

Aluminium Smelter

10.7 The aluminium smelter is located at Angul, Orissa having a capacity of 0.345 MTPA. The product profile is mainly primary aluminium in the form of ingots, sows, wire rods, billets and cast strips. The primary aluminium product is LME registered. The capacity is being further expanded to 0.46 MTPA under 2nd phase expansion.

Captive Power Plant

10.8 Captive power plant (CPP) with a capacity of 960 MW (8X120 MW) is located at Angul. The capacity of the CPP is being expanded to 1200 MW (10X120 MW) in the 2nd phase expansion which is nearing completion.
### Table 10.1
**Physical Performance of NALCO**

*(In tonnes)*

<table>
<thead>
<tr>
<th>Product</th>
<th>2006-07 Actual</th>
<th>2007-08 Actual</th>
<th>2008-09 Target</th>
<th>2008-09 Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bauxite</td>
<td>4,623,278</td>
<td>4,684,684</td>
<td>4,900,000</td>
<td>4,700,027</td>
</tr>
<tr>
<td>Alumina</td>
<td>1,475,200</td>
<td>1,575,500</td>
<td>1,590,000</td>
<td>1,576,500</td>
</tr>
<tr>
<td>Aluminium</td>
<td>358,734</td>
<td>360,457</td>
<td>355,000</td>
<td>361,262</td>
</tr>
</tbody>
</table>

### Table 10.2
**Financial Performance of NALCO**

*(Rs. in crore)*

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Details</th>
<th>2006-07 Actual</th>
<th>2007-08 Actual</th>
<th>2008-09 Target</th>
<th>2008-09 Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Income</td>
<td>6354</td>
<td>5576</td>
<td>5660</td>
<td>5631</td>
</tr>
<tr>
<td>2.</td>
<td>Operating Cost</td>
<td>2412</td>
<td>2822</td>
<td>3419</td>
<td>3427</td>
</tr>
<tr>
<td>3.</td>
<td>Interest etc.</td>
<td>0</td>
<td>2</td>
<td>77</td>
<td>4</td>
</tr>
<tr>
<td>4.</td>
<td>Depreciation &amp; Amortization</td>
<td>322</td>
<td>285</td>
<td>283</td>
<td>273</td>
</tr>
<tr>
<td>5.</td>
<td>Net Profit before Tax &amp; Dividend (PBT)</td>
<td>3620</td>
<td>2467</td>
<td>1881</td>
<td>1927</td>
</tr>
<tr>
<td>6.</td>
<td>Net Profit after Tax but before Dividend (PAT)</td>
<td>2381</td>
<td>1632</td>
<td>1250.51</td>
<td>1272</td>
</tr>
</tbody>
</table>

### Table 10.3
**Sales Performance of NALCO**

*(In tonnes)*

<table>
<thead>
<tr>
<th>Items</th>
<th>2006-07 Actual</th>
<th>2007-08 Actual</th>
<th>2008-09 Target</th>
<th>2008-09 Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminium Export</td>
<td>92,678</td>
<td>101,723</td>
<td>102,000</td>
<td>81,936</td>
</tr>
<tr>
<td>Domestic Aluminium Sale</td>
<td>261,636</td>
<td>251,612</td>
<td>250,000</td>
<td>270,071</td>
</tr>
<tr>
<td>Total Aluminium Sale</td>
<td>354,314</td>
<td>353,334</td>
<td>352,000</td>
<td>352,007</td>
</tr>
<tr>
<td>Total Alumina/Hydrate Sale</td>
<td>773,573</td>
<td>887,276</td>
<td>865,000</td>
<td>851,886</td>
</tr>
</tbody>
</table>
On-Going Projects

Utkal-E Coal Block

10.9 NALCO has been allotted “UTKAL-E” coal block for its 9th and 10th units of CPP. Investment decision, at a capital cost of Rs.214.89 crores (at October’06 price level) has been taken. EPCM consultant has been appointed for implementation of the project. For over burden removal and mining operation, another consultant has been appointed to select agency for mining operation. All major environmental studies based on the Terms of Reference conditions have been complied with and EIA/EMP report was presented before EAC of Ministry of Environment and Forests (MOEF) on 27.11.2008. All the points raised by them were complied and sent to MoEF on 03.03.2009 for grant of Environmental Clearance.

10.10 The modified authenticated mining lease map along with land schedule for an area of 526.0624 Ha, was submitted to Director of Mines, Government of Orissa on 20.03.2009, who has forwarded it to Additional Secretary, Department of Steel and Mines, Orissa.

Brown Field Expansion

Status of 2nd phase expansion

10.11 As on March, ‘09, orders have been placed for 148 packages out of 155 packages of mines & refinery, 130 packages out of 135 packages for smelter and 27 packages out of 28 packages for CPP. Boiler light up of unit-IX, an important milestone of CPP expansion was done on 26th October’08. The 1st pot of 4th pot line under the ongoing 2nd phase expansion of the aluminium smelter was taken under pre-heating on 26.12.2008 which marks the starting of commissioning of the pot line. As of March’09, 120 pots out of total 240 pots have been commissioned. With this 57,500 MT of production capacity has been added to existing 3.45 lakh MT capacity Aluminium Smelter. Captive Power Plant (CPP) with a capacity of 960 MW (8X120 MW) is located at Angul. The capacity of the CPP is being expanded to 1200 MW (10X120 MW) in the 2nd phase expansion which is in advanced stage of completion. Total financial commitment upto 31.3.2009 was Rs. 3933 crore and expenditure upto the same period was Rs. 3202 crore.

Table 10.4
Status on physical progress upto March,’09 of 2nd phase expansion of NALCO

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Project Segment</th>
<th>Actual up to March,’09</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Mines &amp; Alumina</td>
<td>91.30%</td>
</tr>
<tr>
<td>2.</td>
<td>Smelter</td>
<td>94.10%</td>
</tr>
<tr>
<td>3.</td>
<td>CPP</td>
<td>92.50%</td>
</tr>
</tbody>
</table>

Up-gradation of Mines & Refinery

10.12 Expansion of mines to 6.8 MTPA and of refinery to 2.275 MTPA from 6.3 MTPA & 2.1 MTPA respectively has been approved by its Board at an outlay of Rs.409 crore. EIL was appointed as EPCM Consultant for the project. Design and engineering and procurement activities are in progress.

Table 10.5
MoU Rating achieved during last three years by NALCO

<table>
<thead>
<tr>
<th>Year</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005-06</td>
<td>Excellent</td>
</tr>
<tr>
<td>2006-07</td>
<td>Excellent</td>
</tr>
<tr>
<td>2007-08</td>
<td>Very good</td>
</tr>
</tbody>
</table>

Business Development

10.13 Growth Projects

- NALCO has planned to set up new projects in the country and abroad. NALCO proposes to build a 5 lakh TPA aluminium smelter and 1260 MW CPP near Brajarajnagar in Orissa at an investment of Rs. 8500 crores. Pre-feasibility study has been done. NALCO has submitted an application to Government of Orissa for allotment of water.
- NALCO plans to set up a mines & refinery complex in Andhra Pradesh involving an investment of Rs.7000 crores. The proposed complex will have a 42 lakh TPA bauxite mines and 14 lakh TPA
alumina refinery. MoU is under negotiation with Government of Andhra Pradesh. Feasibility study of the project is under progress. Exploration drilling of the mining blocks is being taken up through MECL.

- NALCO has signed a MoU with the Government of South Sumatra, Indonesia to set up a 5 lakh TPA smelter and a 1250 MW CPP in Indonesia. Government of Indonesia has approved the foreign investment proposal. Feasibility study of the project will be completed shortly. The expected investment is Rs.14,000 crores.

- In Iran, an MoU has been signed with Kerman Development Organisation (KDO) to set up a 3.1 lakh TPA aluminium smelter and 750 MW gas based power plant in two phases as a joint venture with ALPHA Co. in which KDO is the major partner at an investment of Rs.8000 crores.

10.14 New Schemes

- NALCO has entered into an agreement with Bharat Earth Movers Limited (BEML) for the production of aluminium rail wagons. As per the agreement, products would be jointly developed by these two leading PSUs.

10.15 Energy Conservation Measures

- Various energy conservation measures that have been adopted for optimal utilization of energy resources in different units of the Company are given below:

Mines
- 65 meters high wind masts have been installed at hill top of Panchapatmali to study the wind energy potential.

Alumina Refinery
- reduction of differential pressure(DP) across Feed Regulating Station of Boiler Feed Pump (BFP);
- reduction in specific fuel oil consumption in calcination by installing hydrate by-pass system;
- installation of mill DP level controller in boiler-3;
- reducing voltage profile of lighting transformer by 3%;
- optimization of Induced Draft (ID) fan scoop control; and
- installation of Variable Frequency Drive(VFD) in digestion area.

Smelter
- stoppage of idle running of furnace hydraulic pump motors in Cast House-A and induction furnace
- controlling operation hours of Ingot Casting Machine (ICM) pump house motors
- auto control of S/S-38 lighting with door proxy
- replacement of the existing cooling water pumps of cooling tower-2 in Cast House-A area with correct head pumps
- reduction in bath (bubble) voltage drop by using slotted anode trial run in 6 pots
- reduction in anode pin to carbon voltage drop by increasing stub hole depth trial in Potline-2 and
- closing the valve connecting 6 bar and 5 bar headers.
Captive Power Plant

- reduction of DP across Feed Regulating Station of BFP
- installation of soft touch radial seals at the hot end of units # 4 & 5 air pressure heater (APH) – A&B
- the Auxiliary Cooling Water (ACW) outlet line from Condensate Extraction Pump (CEP) thrust bearing was modified
- installation of online condenser cleaning system in Unit-3
- improving quality of DM water by timely acid soaking & treatment of resins, etc;
- overhauling of Air Compressor and
- replacement of correct size (head) pump.

Computerisation

10.16 In today’s digital net worked economy, organizations are increasingly dependent on Information Technology (IT) to deliver their strategic business objectives to increase sales, maximize operational efficiency, reduce operational risks or improve productivity. In this direction, a strong centralized information base integrating all functions and business process of the Company and a knowledge base to assist the managers to be pro-active in their decision process is the need of the hour. Keeping this in view, the Company has taken a decision to implement Enterprise Resource Planning (ERP). Orders have already been placed and it is expected to be implemented in one year’s time. During 2008-09, e-tendering activities for investment of surplus fund has also been implemented and e-tendering for export sales and procurements of materials are ready for use.

Pollution Control and Environment

10.17 The performance of the Company with respect to pollution control, safety, health & environment management, forest & plantation activities are satisfactory. As on date the followings have been achieved:

- All the units have valid consent to operate under Air & Water Act. All the 5 units are certified with for Environment Management System (EMS) as per ISO-14001:2004 and Occupational Health & Safety Management System (OHSMS) as per OHSAS 18001:1999.
- Four major units have valid authorization to handle hazardous wastes materials.
- Both the hospitals at Damanjodi and Angul complex have valid authorization for handling biomedical wastes.
- 16 Ha. mined out area has been rehabilitated by plantation of 42,000 saplings. 3,03,600 saplings have been planted in M&R and S&P complexes.
- Zero discharge construction of oil and water separator unit and canteen waste water treatment facility at mines have been completed and are in operation.
- Municipal solid waste treatment facility at Damanjodi township has been commissioned and is in operation.
- Stand post type water-cum-foam monitors (4 numbers) installed in Fuel Oil Pump house at CPP 10.18 To further strengthen the environment management systems, the following measures are under implementation:

- Additional effluent pond in alumina refinery is under implementation.
- Pre-construction activities on secured engineering land fill of 40,000 tonnes capacity have started in smelter unit for management of hazardous waste.
- Installation of on-line monitoring system in old fume treatment plant (1&2) in smelter unit is in progress.
- Action initiated for complete waste water recirculation system in smelter unit.
- Emergency control room for control of disaster at CPP was established.
Research and Development Activities

10.19 Thrust has been laid on patenting of process know-how developed in the Company either through in-house or collaborative R&D efforts. So far 16 national & international patents have been filed by NALCO. During the year, 3 patents have been filed. Board level technology committee meetings are being held once in a quarter to review the R&D activities of the Company including technological upgradation and modification carried out in different units and benefits derived thereon for further improvement in the process and productivity.

Special Grade Alumina & Hydrate Pilot Plant Facilities

10.20 Special grade alumina pilot plant facilities (600 TPA) were run to its full capacity. Different products developed and produced from the facilities are supplied regularly to the user industries. 4221 MT of special grade alumina and 10,960 MT of special grade hydrate were produced during the year up to end March, 2009.

10.21 In-house R&D Activities

Alumina Plant

- Defoamer testing and trials using defoamer samples from different sources.
- Modification in the Zeolite-A plant to reduce cost of production.
- Studies on Crystal Growth Modifier (CGM) of different suppliers.
- Studies on utilisation of fly ash.
- Circuit sampling study was carried out in order to assess the actual behaviour of the process.
- Effect of lime from various sources on the quantity and quality of aluminate liquor output vis-a-vis CaO content in the product alumina.
- Study on the recovery of alumina from settler underflow mud by M2M Technology.
- Development and application of high temperature resistant resin for condensate polishing.
- Innovative process for extraction of alumina from bauxite-process has been optimized & patent filed.

Smelter Plant

- Anode bench scale studies
- Impact of different qualities of CP coke received by NALCO on anode quality
- Impact of under calcined CP coke on anode quality
- Impact of blending of different quality of CP coke on anode quality
- Characterisation of baked anodes for process monitoring.
- Plant trial & large scale trial for using anodes with additives in pot line
- First stage implementation of increasing Grain/Sand ratio in GAP2.
- Plant trial with anodes of deeper stub hole depth (+20mm) with 10mm increased pin length to reduce pin to carbon voltage drop.
- Setting up of metallographic laboratory for improvement of product
- Developing and commissioning of inclusion analysis system
- Vendor development for cathode block.
- Mathematical modeling
- Simulation studies at different amperage, when pot lines operated at low kA.
- Simulation study for optimum metal height at different amperage.
- Simulation studies to predict pin & clad temperatures at various anodes cover heights.
10.22 Collaborative R&D Activities

- Laboratory scale development of constructional blocks, bricks & chips from Red mud. Pilot scale development is in progress in collaboration with JNARDDC, Nagpur.

- Establishing empirical relationship between physical properties of alumina through computer simulation and modeling in collaboration with SIT, Bhubneshwar.

- Lab. Scale optimization of extraction of alumina from PLK (partially lateratic khondalite), collaborative project with MESIS, Russia. Pilot scale development is in progress.

- Preparation & certification of reference material for selected ores in collaboration with JNARDDC, Nagpur.

- Study on Impurity build up & its effect in Bayer Liquor chemistry in collaboration with JNARDDC, Nagpur.

- Plasma smelting of red mud for production of Pig/Cast iron and Alumina rich slag in collaboration with IMMT, Bhubneshwar.

- Recovery of Carbon value from SPL (spent pot lining) in collaboration with IMMT, Bhubneshwar.

- Utilisation of SPL as a co-fuel in boiler in collaboration with CFRI, Dhanbad.

- Evaluation of grain refining efficiency of commercially available grain refiner alloy in collaboration with JNARDDC, Nagpur.

- Development of a process for extraction of Vanadium sludge from Green liquor in collaboration with JNARDDC, Nagpur.

- Preparation of TEFR for extraction of Gallium from spent liquor of alumina refinery in collaboration with NLN/JFEST, Japan has been completed by EIL and the IRR was not found to be encouraging.

10.23 Benefits derived as a result of the above R&D activities (In-House & Collaborative)

- Defoamers development helped in smooth operation of plant thereby reducing maintenance & operating down time.

- Reduction in the cost of production of Zeolite has been addressed.

- Fly ash utilization has been increased.

- Right quality and quantity of lime required has been optimized

- Reduction in the loss of alumina and increase its recovery

- Utilisation of return condensates in the plant.

- Plant trial with anodes with additives has shown significant improvement in anode reactivity properties. Net carbon consumption has reduced by 14kg/tonne of aluminium.

- Implementation of higher grain to sand ratio in GAP2 has resulted in improvement of G/S ratio from 2.5-3 to 3.8-4.

- The studies on impact of different qualities of CP coke on anode quality showed that CP coke with higher density & less impurities is most beneficial for smelting operations.

- Limited pot trial with deeper stub hole anodes with increased pin length has shown a reduction of pin to carbon voltage drop by 27 mV per pot.

- Regular inclusion analysis in cast products will help to improve product quality.

- Outcome of the research findings on use of empirical relationship derived by simulation and modeling study has been employed in day to day analysis of physical parameters of alumina in refinery

- After successful completion of Lab. Scale studies, development of Red mud bricks on pilot scale trials would emerge as one of the most important
projects to be addressed on red mud utilization & also reducing cost of production of alumina. Process has been patented.

- Development of reference material for ores such as bauxite culminated in saving revenue towards procurement of standard samples for the company as an effort for import substitution.

- Study on the liquor impurities build up has helped the Refinery in assessing the impurities level and its implication in Bayer liquor chemistry.

- Studies on vanadium recovery from Bayer liquor revealed that due to presence of low percentage of vanadium in NALCO liquor, the process was not found to be viable. As such, low percentage of vanadium in Bayer liquor is a plus point for alumina refinery.

- About 80% recovery of carbon value from SPL has been established and the viability for a higher scale demonstration plant is being explored.

- It has been established that about 1% of SPL can be utilized as a co-fuel in the Boilers. In-house trials are being explored in CPP boilers.

10. 24 Future Plan of Action

- Setting up of a world class Research & Technology Centre at Bhubaneswar.

- Pilot scale production of construction bricks from Red mud for commercialization.

- Commercialization of few R&D processes.

- Pilot scale development of a process for extraction of alumina from PLK.

- Setting up of a 10,000 TPA Nickel Carbonate Production Plant based on the Know-how of modified Caron Process developed by IMMT, Bhubaneswar.

10.25 New Projects

- Developing Green Liquor Filtration Aid.

- Infrared Thermography studies at Alumina plant and Estimation of Scaling

- Height in Precipitators at Alumina Plant

- Implementation of high resistance resin for condensate recovery.

- Reduction of reactivity losses in anodes by addition of inhibitors.

- Anode quality improvement studies in anode bench scale plant

- Reduction in bubble voltage drop with slotted anodes in aluminium electrolytic pots of Nalco’s smelter plant, Angul by installing anode slot cutting machine in rodding shop-1. Waste heat recovery using recuperator in RP Melting furnace

- Intermediate demand side controller in compressed air network for energy savings.

- Trial with composite (semi-graphite & SiC) side block for preventing side lining failure so as to increase pot life.

- Trial with fuel oil additives for reduction of specific fuel consumption

Hindustan Copper Limited

10.26 Hindustan Copper Limited (HCL) was incorporated on 9th November, 1967, under the Companies Act, 1956. It was established as a Government of India Enterprise to take over all plants,
projects, schemes and studies pertaining to the exploration and exploitation of copper deposits, including smelting and refining from National Mineral Development Corporation Ltd.

10.27 The Government of India nationalised the only copper producing company in the private sector, Indian Copper Corporation Ltd. at Ghatsila in Jharkhand in March, 1972 and handed over its management and ownership to Hindustan Copper Limited.

10.28 The Smelter Plant at Khetri Copper Complex (KCC) in Rajasthan with capacity of 31000 tonnes was dedicated to the nation on 5th February, 1975.

10.29 In November, 1982, Malanjkhand- Copper Project comprising of a large and fully mechanised open pit mine and Concentrator plant was dedicated to the nation.

10.30 The Continuous Cast Copper Rod plant at Taloja-Copper Project of Hindustan Copper Ltd. was commissioned in December, 1989 with an installed capacity of 60,000 tonnes. The Company has selected Southwire SCR-2000 technology for the plant and using natural gas as fuel.

Table 10.6
The capital structure of the Company on 31st March, 2009

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Authorised Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>180 crore equity shares of Rs.5/- each</td>
</tr>
<tr>
<td>2.</td>
<td>20 lakh preference shares of Rs.1000/- each</td>
</tr>
<tr>
<td>TOTAL</td>
<td>Rs. 1100 crore</td>
</tr>
</tbody>
</table>

Issued, Subscribed and Paid-Up Capital

92,52,18,000 equity shares Rs. 462. 60 crores of Rs.5/- each

Table 10.7
Present capacities of HCL’s Mines and Smelters

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Location of Mines</th>
<th>Ore Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Khetri Copper Complex,</td>
<td>12.00</td>
</tr>
<tr>
<td></td>
<td>Rajasthan</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Malanjkhand Copper</td>
<td>20.00</td>
</tr>
<tr>
<td></td>
<td>Project, Madhya pradesh</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Indian Copper Complex,</td>
<td>NA(#)</td>
</tr>
<tr>
<td></td>
<td>Jharkhand</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>32.00</td>
</tr>
</tbody>
</table>

(#) All mines at ICC, Jharkhand have been closed. Out of the closed mines at ICC, Company has since re-opened the mine at Surda in association with an Australian Mining Company, viz. M/s. Monarch Gold Co. Ltd/IRL. The mine has already started production of Copper ore and its beneficitation into copper concentrate from January, 2008. Metal-in-concentrate (MIC) production from Surda mine during 2007-08 and 2008-09 was 314 MT and 2692 MT respectively.

Table 10.8
Physical Performance of HCL

Production of ore, Metal -in-concentrates, refined Copper (cathode ) and wire rod are given in Table 10.8.

Financial Performance

Financial Performance of the Company is given in Table 10.9.
The Company has achieved total sales of 36,962 MT of copper during 2008-09. This includes export of 597 MT of cathode.

<table>
<thead>
<tr>
<th>Year</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005-2006</td>
<td>Very good</td>
</tr>
<tr>
<td>2006-2007</td>
<td>Very good</td>
</tr>
<tr>
<td>2007-2008</td>
<td>Very good</td>
</tr>
</tbody>
</table>

Government of India approved the financial restructuring proposal in respect of Hindustan Copper Limited. The salient features of the Financial restructuring of Hindustan Copper Limited was as under:

- Conversion of non-plan loan amounting to Rs.50.00 crore into equity (Rs. 25 crore each released in 2005-06 and in 2006-07).
- Waiver of 7.5% non-cumulative redeemable preference share amounting to Rs. 180.73 crore and its adjustment against accumulated losses.
- Restructuring of capital through reduction of face value of equity share from Rs. 10 to Rs. 5 amounting to Rs. 382.21 crore and its adjustment against the accumulated losses.
- Restoration of superannuation age to 60 years to preserve skills and provide a breathing time to the...
organization for formulation of proper succession plan.

• Creation of post of Director (Mining) to drive the growth agenda in the mining domain.

Actions initiated

10.33 Share capital reduction (under BRPSE sanctioned scheme)

• The approval of the Ministry of Corporate Affairs was received for reduction of share capital vide their letter dated 06.05.2008. The order approving capital reduction has been registered by the Registrar of Companies, (ROC) West Bengal, Kolkata on 13.05.08. The effect of capital reduction has been given in the annual accounts for the financial year 2007-08, adopted by the Board of Directors in the Board meeting held on 27.06.2008.

• Increase of superannuation age to 60 years has already been enforced.

• Shri R. C. Singla has joined HCL as Director (Mining) on 18.02.2009 (FN).

• As per the approval of the Re-structuring Scheme, HCL has kept a target of 100% capacity utilization of Cathode and 95% capacity utilization of Wire rod in the MOU 2008-09 (under Excellent category).

Energy Conservation

10.34 HCL continues to give priority for energy conservation measures at various stages of process from mining of ore to extraction of copper metal and other byproducts. Special efforts were made in making the operations energy efficient. For quantifying savings in energy and to improve energy efficiency in the all units, M/s Petroleum Conservation Research Association (PCRA) was appointed as technical consultant to carry out energy audit work and to identify and recommend various saving options during 2006-07. Most of the recommendations as projected by M/s PCRA in reports of different units have been implemented to save energy and balance is in progress. Energy audit cells of all the units are also constantly monitoring the energy consumption in mines, plants and township for overall reduction in energy consumption. Constant thrust was also given to improve power factor.

<table>
<thead>
<tr>
<th>Physical Consumption</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09 (prov.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power(Lakh KWH)</td>
<td>2316</td>
<td>2405</td>
<td>2135</td>
</tr>
<tr>
<td>Fuel(Kilo litres)</td>
<td>25311</td>
<td>26413</td>
<td>20722</td>
</tr>
<tr>
<td>Natural Gas (’000 NM³)</td>
<td>2341</td>
<td>2657</td>
<td>2507</td>
</tr>
</tbody>
</table>

Science & Technology

10.35 R&D Activities

• During the year, Company concentrated on improving the operational practices with a view to reduce processing cost. Towards R&D, HCL in collaboration with Institute of Minerals and Materials Technology (IMMT), Bhubaneswar has taken up a project on bio-heap leaching under Department of Science & Technology (S&T), Government of India.

• Earth Resources Technology Consultants was engaged for optimisation of blasting fragmentation at MCP for productivity improvement. Various suggestions/recommendations given by consultant have been implemented at MCP.

• Supply of 300 Cu.ft cells to replace existing cleaner – I & Scavenger cells in flotation circuit of KCC Concentrator plant for improving recovery and grade of Copper has been received at site and installation job is under progress.

• Action has been initiated for procurement of Ceramic Vacuum filters for reducing moisture percentage in copper concentrate (11% to 8%) in ore beneficiation plants of MCP and KCC.
• During major shutdown of ICC (Indian Copper Complex) Smelter, CJD burner, modified cooling elements and Oxygen enrichment system in flash Smelter of Indian Copper Complex towards technology-upgradation and also to enhance the capacity of flash Smelter. Plant has been commissioned in September, 2008.

Computerisation

10.36 Besides regular operations of all on going applications at Head office, Units and Sales offices of the Company, following specific activities were taken up with reference to IT related Jobs during the period under review:

• Company has upgraded IT infrastructure and networking in all units, Head office and Sales offices.
• Company has implemented ERP, Oracle 12i ERP solution integrating all functional areas for faster information flow and efficient decision making and gone live on 1st Oct., 2008.
• Centralised data centre has been setup at Head office by installing high-end servers, Data storage area and Wide area communication equipments with high security features by installing Firewall and routers as suggested by CERT-IN.

Pollution Control and Environment Management Efforts

10.37 Air Pollution Control Measures

The air pollution control projects which were commissioned for meeting Pollution Control Board standards for gaseous emission from HCL’s Smelter and other plants were operational during the year. The ambient air quality at all the units of HCL was regularly monitored at various points in the mines, works and residential areas throughout the year.

• Statutory norms of dust control at its operating units are being maintained. For further improvements in ventilation in the underground mines of Kolihan and Khetri at KCC, ISM, Dhanbad has been appointed for conducting a ventilation audit. Recommendations of the consultant would be implemented for further improvement in the working conditions.

10.38 Water Pollution Control Measures

• During the year, effluent treatment facilities provided in all units of HCL worked satisfactorily and met regulatory norms set for discharge water by the State Pollution Control Boards. The schemes for recycling the process discharged water for use in the plants, after treatment, also continued to function throughout the year.
• HCL is working on the concept of “zero discharge” of water in its units. As water availability is scarce at KCC and operation of the plant is affected due to inadequate availability of water, total recycle of water is practiced.
• For further improvement in water availability and conservation of water resources, consultants were engaged for detailed study at KCC and MCP and suggest ways and means for increased availability of water from existing resources and identifying new resources. The study report has been obtained for KCC and its recommendations are under implementation including creation of rain-harvesting facility.
• As a further effort towards water conservation and to sustain increased mine production and improve the tailing dam capacity at KCC, Thickened Tailing disposal System (TTD) has been planned and M/s. Engineers India Ltd. had been appointed as a consultant for preliminary project activities. The preliminary project activities for TTD system have already been completed.

Afforestation

10.39 In addition to lumpsum payments towards compensatory afforestation by HCL for diversion of forest lands for mining purpose at all its units, separate afforestation work like all previous years continued during the year. Plantation in ultimate benches, slopes of waste dumps, plant areas, tailing dumps and townships of the units were carried out to uplift environment.

Mineral Exploration Corporation Limited (MECL)

10.40 Mineral Exploration Corporation Limited (MECL), since its inception in the year 1972, is carrying out mineral exploration activities. MECL is the premier exploration agency in the country and carries out its exploration activities under promotional programme funded by Government of India and contractual programme on behalf of other agencies including Public Sector, Private Sector and State Governments on agreed terms and conditions. So far, upto 31.3.2009, it has added 136,367 million tonnes of mineral reserves to National Mineral Inventory.

10.41 The authorised share capital and paid up equity of the Company are Rs. 125.00 crores and Rs. 119.55 crores, respectively. The equity is fully held by Government of India.

10.42 Company’s registered office is at Nagpur in Maharashtra. To facilitate the prompt maintenance of plants and machineries deployed at various projects, three Regional Maintenance Centres at Ranchi, Nagpur and Hyderabad are being operated. Technical guidance to the projects, finalisation of geological reports, close liaisoning with the clients and looking for new business opportunities are being carried out through the Zonal Offices located at Ranchi, Nagpur and Hyderabad. The commercial activities of the Company are being looked after by Business Development and Planning Division. In addition, two Business Development Centers are in operation at Delhi and Kolkata.

10.43 In addition to mineral exploration activities, MECL has taken up diversification programme in the field of slim hole drilling for Coal Bed Methane (CBM), coal sampling and analysis as a referral agency and supply of ballast stone to Railways.

Physico-Financial Performance, 2008-09

10.44 The physical and financial performance in drilling, developmental mining and geological reports for 2006-07, 2007-08 and 2008-09 is given in Table 10.12 and Table 10.13 respectively.

| Table 10.12 |
| Physical Performance of MECL |

<table>
<thead>
<tr>
<th>Product</th>
<th>2006-07 Actual</th>
<th>2007-08 Actual</th>
<th>2008-09 MoU Target</th>
<th>2008-09 Achievement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drilling Meterage (Mtrs)</td>
<td>1,96,979</td>
<td>2,05,860</td>
<td>2,10,000</td>
<td>2,21,847</td>
</tr>
<tr>
<td>Mining (Mtrs)</td>
<td>7,811</td>
<td>6,640</td>
<td>8,000</td>
<td>5,900</td>
</tr>
<tr>
<td>Final Geological Reports (Nos.)</td>
<td>41</td>
<td>34</td>
<td>25</td>
<td>32</td>
</tr>
</tbody>
</table>
Monitoring System

For effective monitoring of the projects, regular management level meetings are held to review the performance of projects and actions initiated for implementation of remedial measures at projects. Each project was closely monitored on day-to-day basis and corrective measures were taken to achieve the set monthly targets. Further, all the units of MECL have been well connected through effective communication system.

MoU Performance

MoU Ratings of MECL

<table>
<thead>
<tr>
<th>Year</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005-2006</td>
<td>Excellent</td>
</tr>
<tr>
<td>2006-2007</td>
<td>Excellent</td>
</tr>
<tr>
<td>2007-2008</td>
<td>Excellent</td>
</tr>
</tbody>
</table>

ISO Certification

The Company has obtained ISO Certification as per MoU with the Ministry of Mines for the year 2008-09. The company is now an ISO 9001:2000 certified organisation.

Energy Conservation

The core activities of Mineral Exploration Corporation Limited comprise of exploratory drilling, exploratory and developmental mining and associated geological and laboratory studies. These works are carried out through temporary industrial establishments located in various parts of the country. The machineries and vehicles used are mainly run by diesel engines. The electrical energy consumption is limited to offices and at mining sites. MECL has taken up following steps for energy conservation:

- Maintenance of machineries used at different projects is done on regular basis to improve fuel efficiency.
- Machineries / vehicles consuming high POL are withdrawn from operations for immediate repair/overhauling. Movement of vehicles are restricted to minimum.

Table 10.13
Financial Performance of MECL

(Rs. in crores)

<table>
<thead>
<tr>
<th>Details</th>
<th>2006-07 Actual</th>
<th>2007-08 Actual</th>
<th>2008-09 MoU Target</th>
<th>2008-09 ** Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross Revenue</td>
<td>85.29</td>
<td>94.46</td>
<td>125.00</td>
<td>105.90</td>
</tr>
<tr>
<td>Operating Cost</td>
<td>74.08</td>
<td>81.62</td>
<td>95.35</td>
<td>99.54</td>
</tr>
<tr>
<td>Interest</td>
<td>—</td>
<td>—</td>
<td>0.23</td>
<td>—</td>
</tr>
<tr>
<td>Depreciation and amortisation</td>
<td>5.17@</td>
<td>3.28</td>
<td>10.60</td>
<td>2.93</td>
</tr>
<tr>
<td>Net profit after EOI &amp; taxes</td>
<td>59.57*</td>
<td>6.11</td>
<td>12.49</td>
<td>1.24</td>
</tr>
</tbody>
</table>

@ corrected
* Includes extra ordinary item i.e. waiver of interest on Government loan of Rs. 55.69 crores (net of taxes)
** Financial figures for the year 2008-09 are subject to CAG audit. Further, the shortfall in net profit after taxes is due to provision of Rs. 15.30 crores made for wage revision due from 1.1.2007
While selecting an electrical drive, care is being taken to match the power demanded by the load with nearest available KW for the drive. This reduces the wastage of electricity due to minimum loss on reactive power.

Running of idle motors is restricted and sequence control has been incorporated in the crushing plant at Birmitrapur.

At Company’s Headquarter, tube lights are being replaced by CFL bulbs in a phased manner to conserve energy.

The operating and maintenance personnel are trained to update their knowledge of energy conservation measures.

For developing more awareness of energy conservation, MECL is organising “Energy Conservation Week” every year. The experts on the subject are being invited to deliver lectures on new trend / matter for energy conservation.

Perspective on non-ferrous metals

During the year 2008-09, MECL has carried out exploration in Bhukia (East) for gold, Dhani-Basri for copper and gold, Parasi (Phase I and Phase II) for gold, Dhabani for copper, Satkui for lead & zinc, Rewara for lead & zinc, Ganeshpura for lead & zinc and Bajata-North for copper in Jharkhand & Rajasthan. The brief account of exploration by MECL is as under:

- **Bhukia (East) Gold Block, Distt. Banswara, Rajasthan**

  Based on the data of 2857 m of exploratory drilling in 9 boreholes with associated geological and laboratory work, MECL has submitted Exploration Report of Bhukia (East) block, Distt.Banswara, Rajasthan. MECL has estimated gold ore reserves of 11.741 million tonnes with 2.508 g/t Au, at cut-off of 1 g/t Au, over effective strike length of 800m in 14 co-relatable lodes. The Bhukia (East) gold deposit appears to have open cast potentiality in terms of thickness and grade of lodes. Reserves have been placed at 332 of United Nations Framework of Ore Resources Classification (UNFC). For its remaining areas work will be resumed after getting forest clearance from the competent authority, which is being pursued.

- **Dhani-Basri Block for Basemetal, Distt. Dausa, Rajasthan**

  Based on 4125 m of exploratory drilling in 16 boreholes with matching geological and laboratory work, MECL estimated 5.13 million tonnes of ore reserves with 1.17% Cu and 1.27 g/t Au in 0.50% cut-off in six lodes, over cumulative strike length of 530 m and vertical column of 270m. The reserve has been placed under 331 of UNFC.

- **Parasi Central (Gold) Block, Phase-I, Distt. Ranchi, Jharkhand**

  In the block, so far a total of 2786 m of drilling in 17 boreholes has been carried out. Data generated so far is very much encouraging. Thickness of mineralised zone vary from 2.00 to 10.0m with grade 1.20 g/t Au to 7.89 g/t Au in 3-4 lodes intersected in boreholes of Phase-1. The physical work of phase-I has been completed. Sampling and Laboratory work is in progress. Based on the results of Phase-I work, MECL has commenced the second Phase work in the block.

- **Parasi Central (Gold) Block, Phase-II, Distt. Ranchi, Jharkhand**

  The detailed exploration proposal for gold in Parasi Phase-II block, Distt. Ranchi, Jharkhand, was approved in September, 2008. The work involve 1500 m of drilling in 6 boreholes with matching geological and laboratory work in the block. During 2008-09, a total of 1542m of drilling in 7 nos. of boreholes has been carried out. Data generated so far is very much encouraging. Thickness of mineralised zone vary from 2.00 to 7.00m with grade 1.56 g/t Au to 3.31 g/t Au in 2-4 lodes intersected in boreholes. The exploration is under progress.

- **Dhobani Mine area for Copper, Distt. East Singhbhum, Jharkhand**

  Based on 4000m of drilling in 20 boreholes with associated geological and laboratory work, MECL has estimated 5.22 million tonnes of ore reserves with 1.31% Cu over 1370m strike length upto 250m vertical depth.

- **Satkui for Copper, Distt. Jhunjhunu, Rajasthan**

  A total of 2495 m of drilling in 12 boreholes along with associated geological and laboratory work have been completed. Geological report of the Satkui block has been submitted during December, 2008. MECL has estimated 3.33 million tonnes of ore reserves with 1.22% Cu over 500 m strike length upto 300 m vertical depth.
Rewara (Lead-Zinc) Block, Distt. Bhilwara, Rajasthan

The detailed exploration proposal for lead-zinc in Rewara block, Distt. Bhilwara, Rajasthan, was approved in July, 2008. The work involves 2300m of drilling in 8 boreholes with matching geological and laboratory work. MECL commenced the physical work in September, 2008 and during 2008-09 a total of 2300 m of drilling in 8 nos. of boreholes has been carried out. The average thickness of mineralised zone is 1.60 m with 3% Pb. Few rich zones having 7-10% Pb, were also intersected in few boreholes.

Ganeshpura (Lead-Zinc) Block, Distt. Ajmer, Rajasthan

The detailed exploration proposal for lead-zinc in Ganeshpura block, Distt. Ajmer, Rajasthan, was approved in September, 2008. The work involves 1040m of drilling in 5 boreholes with matching geological and laboratory work. MECL commenced the physical work in December, 2008. During 2008-09, a total of 1067 m of drilling in 5 nos. of boreholes has been carried out. Few boreholes have intersected good mineralised zones as per visual estimation. The sampling and analysis work is in progress.

Bajata-North (Copper) Block, Distt. Ajmer, Rajasthan

The detailed exploration proposal for copper in Bajata - north block, Distt. Ajmer, Rajasthan, was approved in September, 2008. The work involves 600 m of drilling in 3 boreholes with matching geological and laboratory work. MECL commenced the physical work in March, 2009. A total of 251 m of drilling in 2 nos. of boreholes has been carried out. One borehole has intersected good mineralised zone. The sampling and analysis work is in progress.

Sale of Reports

10.50 MECL is making all possible efforts for sale of reports of promotional projects completed on behalf of Ministry of Mines. MECL has participated in Mining Summit 2008 held at Agra from 13th October, 2008 to 15th October, 2008, where executive summary of 13 exploration reports were displayed. In addition, MECL has sent executive summaries of reports for different minerals to the Directorate of Mines & Geology of Government of Rajasthan, Karnataka, Andhra Pradesh, Jharkhand and Orissa for handing over the same to the prospective agencies.

MECL also participated in the Minerals Metal Metallurgy & Material 2008 exhibition from 13th to 16th November, 2008 held at Greater Noida, U.P. wherein the executive summaries of the prospective blocks were displayed along with their soft copies. Some of the agencies took interest in the reports. MECL has also uploaded the detailed executive summary of 35 exploration reports. Further, to download the executive summaries of exploration reports for sale, the website of MECL i.e. www.mecl.gov.in has been made user friendly. Executive summaries of reports are being modified as per the decision taken in the committee for categorisation of reports. So far, 9 reports have been sold out while 2 reports are under process of sale. Further, executive summary of four exploration reports have been taken by M/s. Hindustan Copper Limited (HCL).

Action Taken on Abatement of Pollution and Environment

10.51 The exploration activities of MECL do not cause any significant pollution. However, as a part of exploration work, MECL is carrying out environmental studies to generate baseline environmental data such as - geology & geomorphology, meteorology, air quality, noise, land use / land cover studies, soil quality, biota, water regime & socio-economic studies. For helping the exploration agencies to plan measures for abating possible pollution and environmental impact assessment (EIA) in various exploration projects, a report on the same is included as a part of geological report of various exploration projects.

Information Technology (IT)

10.52 Geological data processing of 32 exploration blocks explored by MECL, was carried out. These blocks include 12 of coal, 9 of lignite, 5 of base metals, 3 of salt, 1 of hydro-geological studies and 2 of CBM exploration. The work includes computerised database creation -both numerical and map database (map database was created using scanning & digitising surface features, contours, geological features & litho-contacts, administrative boundary, mine workings,
section line, etc. from geological and topographical plans), generation of graphical & numerical outputs, etc. Digital conversion of analog geophysical logs of 63 boreholes pertaining to lignite blocks and 48 boreholes pertaining to coal blocks have been done. This converted data and the digital data generated directly from geophysical logging units are brought into uniform format by using in-house developed utility interface. These geophysical logs are then plotted along with exploratory boreholes using indigenously developed software. Exploration data processing for 3 reports of Nagaur salt deposit on behalf of Oil and Natural Gas Commission (ONGC) and for 2 reports of CBM blocks (South Karanpura on behalf of ONGC and Litipara on behalf of Directorate General of Hydrocarbons (DGH) were completed. Hydro-geological studies of one of the borehole pertaining to Nagaur salt deposit on behalf of ONGC was also taken up and completed. Geological modeling for Talaipalli block, for M/s National Thermal Power Corporation Limited (NTPC) was completed. Geological modelling for Jayamkondam South Block for M/s Neyveli Lignite Corporation (NLC) was completed. This includes modeling of Lignite Seams and other Lithologies intersected in the boreholes. The 2 D plans viz Floor Contours, Seamfolios, Iso-pachytes of Overburden and Over & Inburden, Geological Cross sections etc. were generated from the model. Work for preparation of revenue plan of Dulanga Coal Mining Project (phase–I) comprising of 6 villages, on behalf of M/s NTPC was taken up and completed during this period. The work includes rectification of revenue maps with images, geo-referencing, edge matching and mosaicing, digital conversion of revenue maps and attribute attachments.

The phase-II work of creation of land record database and linking with the revenue maps were also taken up and completed. Work for geo-referencing of cadastral map and digital conversion on National Grid pertaining to Urimari Block on behalf of Central Coalfields Limited (CCL) was taken up and completed. A new website of MECL www.mecl.gov.in was launched during June, 2008. Maintenance and updation of MECL website were also carried out. The following works were done during the period:

- Coordination for domain registration, hosting, security auditing and website conversion with NIC and website maintenance agency.
- Updating of information of physical performance since inception.
- Designing and uploading of latest executive summaries of “Reports for Sale”.
- Configuring of email provided by NIC in various divisions.
- Updation of MECMINDEX (Mineral Inventory of MECL’s exploration reports) was done and various reports were generated as per the requirement of user division.

**Business Development Activity**

10.53 Through business development group, vigorous efforts are being made to obtain work from both private and public sectors through competitive bidding and a series of technical discussions. As a result, during 2008-09, a total of 49 number of work orders were received valued at Rs. 432.52 crores.

**Diversification Activity**

10.54 MECL diversified its activities in the following fields.

- Deep slim hole drilling for CBM studies on behalf of ONGC and other organisations.
- Remote sensing and environmental studies.
- Coal sampling and analysis.
- Supply of ballast stone to SE Railway.
- Deep drilling for hydrological investigation/evaporites.

Further, MECL plans to enter in the following new areas for its growth & business development:

- Drilling for geo-thermal energy & geo-technical studies
- Production support drilling for mine services.
• Production well drilling for CBM assessment.
• Drilling for underground coal gasification.
• Lumpsum turn key project implementation
• Production mining of minerals and their marketing.
• Services of work over rig, etc.

Manufacturing Unit

10.55 MECL has a well equipped central workshop and manufacturing unit at Nagpur to cater the needs of drilling and developmental mining projects and to provide engineering support to field operations. It carries out repairing/overhauling of drilling and mining equipments and light/heavy vehicles. It manufactures TC bits and spares & accessories for coring and non-coring drill machines. Also, it has sophisticated CNC lathe machine for the manufacturing of drill tubulars. During 2008-09, a total of 14212 items were manufactured, which include 4730 TC bits and 1541 other drill accessories and 7941 threading/re-threading of drill rods & casings.

Coal sampling and analysis

10.56 As a third party agency, MECL continued coal sampling and analysis work on behalf of various coal companies, steel plants, thermal power plants and electricity boards. In all, a total work of Rs. 121.09 lakhs was carried out in projects at different coalfields during the year 2008-09.

Disinvested and Other Companies

Disinvested Companies

Bharat Aluminium Company Limited (BALCO)

10.57 Bharat Aluminium Company Limited (BALCO) was incorporated on 27th November, 1965 as a Central Public Sector Undertaking with an integrated alumina / aluminium complex and a 270MW captive power plant at Korba presently in Chhattisgarh.

10.58 The Government of India disinvested 51% of equity in BALCO along with the transfer of management control in favour of M/s Sterlite Industries (India)Limited with effect from 2nd March, 2001 and consequently, the Company has ceased to be Public Sector Undertaking.

10.59 Post disinvestment, BALCO has implemented the expansion at a cost of over Rs.4000 crores. The smelter capacity has been increased to 3,45,000 TPA from 1,00,000 TPA and the capacity of the captive power plant from 270MW to 810 MW. The expanded capacity had been fully commissioned.

10.60 BALCO has signed a Memorandum of Understanding with the Government of Chhattisgarh in October, 2006 for setting up a 1200MW power plant at an estimated cost of Rs.4800 crores. BALCO has commenced implementation of the power project and the project is expected to be fully commissioned in 2010-11.

10.61 BALCO has also signed a Memorandum of Understanding with the Government of Chhattisgarh in August, 2007 for expanding its aluminium smelting by setting up of additional 6.5 lakh TPA aluminium smelter at an estimated cost of Rs.8100 crores, out of which setting up of 3.25 lakh TPA aluminium smelter at a cost of Rs. 3800 crores is envisaged in the first phase.

Physical and Financial Performance of BALCO

Table 10.14
Physical Performance of BALCO

(In tonnes)

<table>
<thead>
<tr>
<th>Particulars</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>313189</td>
<td>358671</td>
<td>356781</td>
</tr>
<tr>
<td>Sales</td>
<td>315002</td>
<td>358328</td>
<td>356513</td>
</tr>
</tbody>
</table>

Table 10.15
Financial Performance of BALCO

(Rs. in crores)

<table>
<thead>
<tr>
<th>Particulars</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Sales</td>
<td>4100</td>
<td>4169</td>
<td>3934</td>
</tr>
<tr>
<td>Profit before interest &amp; depreciation</td>
<td>1678</td>
<td>1439</td>
<td>972</td>
</tr>
<tr>
<td>Depreciation</td>
<td>478</td>
<td>490</td>
<td>385</td>
</tr>
<tr>
<td>Interest</td>
<td>151</td>
<td>100</td>
<td>126</td>
</tr>
<tr>
<td>Exceptional Items (VRS)</td>
<td>10</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Profit before Tax</td>
<td>1037</td>
<td>849</td>
<td>461</td>
</tr>
</tbody>
</table>
**Hindustan Zinc Limited (HZL)**

10.62 Hindustan Zinc Limited (HZL) is a leading producer of zinc and lead in the country. It was incorporated in January, 1966 as a Public Sector Company after the takeover of the erstwhile Metal Corporation of India Limited, to develop mining and smelting capacities to meet substantially the domestic demand of zinc and lead metals. The Government of India disinvested its 26% stake in the equity capital of the company along with transfer of management control in favour of Strategic Partner (SP) i.e. M/s Sterlite Opportunities and Ventures Ltd. (SOVL) and management control of the company has been transferred to SP with effect from 11th April, 2002. Presently, the stake of SOVL in the Company is 64.92% and the stake of Government of India is 29.54%. HZL with its headquarters at Udaipur operates lead-zinc mines with a total capacity of 7.1 million tones per annum and lead-zinc smelters with a total lead-zinc metal production capacity of 762,000 tonnes per annum.

**Other Companies**

**Bharat Gold Mines Limited (BGML)**

10.63 The Bharat Gold Mines Limited (BGML) was incorporated as a Public Sector Undertaking in 1972. Since its inception, BGML had been consistently making losses (except for a brief period of two years, namely, 1979-80 & 1980-81) due to depletion of reserves, deep level of mining, high cost of inputs and surplus manpower. BGML was referred to Board for Industrial and Financial Reconstruction (BIFR) in 1992 who passed its final order on 12.6.2000 concluding that it was just, equitable and in public interest to wind up BGML. The verdict of BIFR was also upheld by AAIFR. Ministry of Labour, Government of India, accorded permission of closure of BGML w.e.f. 1.3.2001 under Section 25(O) of the Industrial Disputes Act, 1947. The Employees’ Union challenged the orders of BIFR, AAIFR and Ministry of Labour before High Court of Karnataka. The cost of production of gold by BGML was about Rs.19,729/- per 10 grams at the time of closure. The total number of employees at the time of closure was 3580.

10.64 After prolonged litigation, the Division Bench of Karnataka High Court in its order dated 26.9.2003 upheld the winding up/closure orders passed by BIFR/AAIFR/Ministry of Labour. The High Court also made recommendations, inter-alia, allowing VRS package in terms of DPE’s O.M. dated 6.11.2001, sale of hutments/quarters to ex-employees at concessional rates, offering assets of the Company to the Society of ex-employees of BGML.

10.65 Government decided on 27.7.2006 not to approve the VRS package as per DPE’s O.M. dated 6.11.01. It approved a proposal regarding Special Terminal Benefit Package for ex-employees of Bharat Gold Mines Limited, sale of houses etc. and calling of global tender for sale of assets of BGML and giving purchase preference to the Employees' Co-operative Society/Society’s Company subject to the approval of the High Court of Karnataka (Company Court) and viability of the project. Company Application has been filed by BGML in the Hon’ble High Court of Karnataka (Company Court) in this regard which is being pursued.

10.66 As per the Government decision, STBP amount has been distributed to the ex-employees of BGML and allotment of the houses at the rates suggested by the High Court of Karnataka (Company Court) are under process. An Inter-Ministerial Group(IMG) was also constituted to oversee the tendering process of BGML. On the recommendations of the IMG, Consultant was appointed by BGML for assets’ valuation of the Company, preparation of global tender documents and assisting in global tendering process etc. The Consultant had submitted draft global tendering documents which have been placed before the Hon’ble High Court of Karnataka (Company Court) for approval. The matter has since been under consideration of the Hon’ble Court.