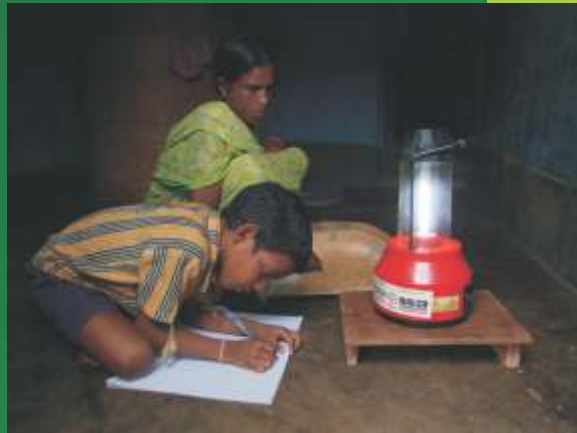


A Commitment that's making a difference



Sustainable Development in NALCO is a long-term goal with an evolving agenda, adopting new environmentally and socially conscious sustainability approaches. Initiatives taken up include working with communities in the vicinity of NALCO units as partners for Sustainable Development taking up projects to support education, health, drinking water, basic amenities and promoting art, culture, heritage and sports.

Happy Tomorrow Begins Today





PRELUDE

About this Report

National Aluminium Company Limited (NALCO) is a Navratna Central Public Sector Enterprise (CPSE) under the Ministry of Mines, Govt. of India and presently, has one of the largest integrated alumina-aluminium complex in India.

NALCO was incorporated in 1981 to utilize a part of the large bauxite deposits discovered in East Coast, in technological collaboration with Aluminium Pechiney of France (now Rio-Tinto-Alcan). Considered to be a turning point in the history of the Indian Aluminium Industry, NALCO has not only addressed the need for self sufficiency in aluminium but also given the country a technological edge in producing this strategic metal at par with world standards.

The Company is one among the lowest-cost producers of alumina in the world. With sustained quality products, the Company's export earnings accounted for about 47% of the sales turnover in the year 2012-13.

Further, with Mines, Smelter, Refinery and CPP being ISO 9001, ISO 14001, OHSAS 18001 and SA 8000 certified and products registered at the London Metal Exchange, NALCO enjoys the status of a premier trade house. NALCO's Captive Power Plant is certified to ISO 50001 : 2011, the international Energy Management System Standard.

This is NALCO's second annual sustainability disclosure and the report covers the period from 1st April, 2012 to 31st March, 2013 (FY 2012-13). This report is prepared for communicating to stakeholders NALCO'S approach to corporate sustainability, management of the vital sustainability issues, report its performance based on Global Reporting Initiative Sustainability Reporting Guidelines version 3.1 (GRI G3.1) indicators including the Metals and Mining Sector Supplement and the achievements during the period.

The Securities and Exchange Board of India (SEBI), vide an order passed on 13th August 2012, has directed the top 100 listed companies in the country (by market capitalisation) to report on their governance, social and environmental performance based on the principles of the National Voluntary Guidelines (NVG). A detailed NVG based Business Responsibility Report (BRR) is available as a part of the Annual Report – 2012-13, on the Company's website.

With due consideration to the major operations of the organization, this report is limited to activities and sustainability performance of the following units:

- Mines (Panchpatmali)
- Refinery (Damanjodi)
- Smelter (Angul)
- Captive Power Plant (Angul)
- Port Facility (Vizag)

The organization has also entered into joint ventures considering business needs. Such ventures are in nascent stages. The level of impact of joint ventures is not significant at this moment as they are yet to become fully operational. Accordingly, joint ventures have been excluded from the scope of this report. We also do not have any subsidiary firms.

M/s Det Norske Veritas AS (now DNV GL and represented by DNV Business Assurance India Private Limited) has been appointed to independently review the contents of this report. The results of the independent review have also been presented in the appendix. The report meets the requirements of application level 'A+'.

There are no re-statements of any data or facts of the previous report in this communication. For all the reported data, where any calculations or underlying assumptions are involved, such considerations have been explained along with the reported data.

We welcome any comments/clarifications on this report, which may be submitted to the following authorised personnel:

Name	: Shri V. Balasubramanyam
Designation	: Executive Director - Production
E-mail	: sustainability@nalcoindia.co.in
Postal address	: NALCO Bhawan, Plot No. P/I, Nayapalli, Bhubaneswar - 751013, Odisha, India



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Message from Chairman-cum-Managing Director



Dear Stakeholders,

The concept of sustainable and inclusive development is ingrained in our very DNA and reflects in the manner we conduct every aspect of our business. As we carry forward this legacy, an attempt has been made through this report to present to you our achievements, progress and challenges faced in the recent times.

When NALCO started in the early eighties, it was a challenging task to build NALCO against those heavy odds of yester-years, including lack of infrastructure and basic amenities. But with passage of time, NALCO has moved on. One achievement has led to another. And today, we have many credentials to feel proud about. While efforts are on to optimise profit and maintain a successful track record as a Navratna Company, NALCO is now looking beyond its core operations, with a view to achieve a new level of corporate distinction. Three decades and beyond, the Company is now focusing to move forward through expansions, diversifications, social commitments and thereby enhance sustainability coupled with stakeholders' satisfaction.

We have come a long way since our humble inception, over thirty years ago. The Company has carved a niche for itself in the Aluminium industry at a global level with its quality products. Over the years, we have received all-round appreciation for our efforts in furthering growth along the triple bottom-lines : people, planet and profits.

Macro Economic Scenario

During the last five years, the global economy was hit by the US sub-prime crisis, the sovereign debt crisis in Europe and the slow-down in the Chinese economy which have affected the Aluminium industry and resulted in highly volatile LME prices for aluminium. During 2012-13, average monthly LME cash prices have fluctuated widely between 1838 and 2087 USD /MT. The average LME cash price for aluminium during 2012-13 was 1976 USD/MT. The outlook for the global aluminium market continues to remain somewhat subdued, largely on account of supply-demand imbalance and the abundance of stocks in LME warehouses. Against a backdrop of declining aluminium prices and soft market sentiments, alumina prices have also fallen and market conditions are subdued. Low alumina prices have prompted some alumina refineries to cut production, which may have an impact on alumina demand.

Domestic Market

The aluminium demand in India is poised to grow, largely in line with the annual GDP growth rate of 5.5-6.5% per annum. Domestic consumption is expected to increase with corresponding increase in usage of aluminium in various application areas. Demand growth is likely to be highest in transport, building and construction sectors, but other sectors are also expected to grow simultaneously. With stress on infrastructure and Government's thrust on rural electrification, consumption from power sector is likely to get a boost. With the country experiencing high growth in urban housing (both residential and commercial) and automobiles besides food processing and packaging industries, offtake of aluminium is expected to grow fast.

Performance Highlights

In the backdrop of the above mentioned economic scenario and aluminium industry position, the Company has performed satisfactorily in the previous fiscal.

In 2012-13, the Company continued its robust economic performance, riding on record high productions from our Mines and Alumina Refinery. The Company registered its highest ever gross sales turn-over of Rs. 7247 crores in 2012-13. NALCO is proud to state that 47% of its revenue i.e. Rs. 3410 crores is from exports.

Our Workforce

NALCO owes much of its success to its workforce. Our people are passionate and highly committed to the organization. We ensure that we have the right people for the right job. We further invest in suitable functional and developmental trainings for employees. Emphasis is now being placed on specific position related training needs and there is an attempt to customize programmes, to the extent possible. During the year 2012-13, 6003 employees underwent various trainings cumulatively accounting for about 21,205 man-days. All the production units of the Company and Corporate Office have been certified under Social Accountability standard SA 8000 to ensure that we provide a safe and decent workplace.

Renewable Energy Initiatives

In pursuit of harnessing renewable energy sources, the Company has entered into the new business of wind power generation with commissioning of 50.4 MW Wind Power Plant at Gandikota in Andhra Pradesh at an investment of Rs. 274 crores. This was synchronised in December, 2012 and the sale of power has commenced. The second Wind Power of 47.6 MW capacity being installed at Jaisalmer of Rajasthan at an investment of Rs. 283 crores, is also partly commissioned.

Diversification

NALCO continuously strives to create maximum value for all our stakeholders. From the current position of being a leading producer of alumina and aluminium in the country, in the longer run, the

Company aspires to be a reputed global Company in metals and energy sector. To this effect, the Company has started making investments in diversification projects. For full details of such ventures, please refer the Company's annual report, available in the Company's website.

Community Initiatives

NALCO continuously works for the betterment of the communities around its units. The Company allocates 2% of its net profit for CSR activities. 1% is spent on peripheral development activities through Rehabilitation and Peripheral Development Advisory Committees (RPDACs), set up by the State Government of Odisha and the rest is used by the NALCO Foundation for undertaking developmental activities. Besides allocating funds linked to profit, NALCO also spends on various CSR activities directly.

We continuously work with the local communities to assess and understand their needs. Accordingly, our community development projects are focused on education, healthcare, local infrastructure and employability (vocational trainings). In the reporting period, NALCO invested Rs. 30.99 crores in CSR activities. Our good work has been recognized at several forums in the past.

Enhancing Competitiveness

The competitive edge of the organisation has been buttressed by implementing an Integrated Management Systems (IMS) on Quality (ISO 9001), Environment (ISO 14001), Health & Safety (OHSAS 18001) in all units. Energy Management System (ISO 50001) is also implemented at our Captive Power Plant. The positive effects of the IMS is not only sustained but also continually improved through employee involvement initiatives like quality circles, energy management core team meetings etc. During the year, a premier state level convention – the All Odisha quality circle convention was also organized by NALCO, involving industries across the state. One quality circle from our organization also participated in the International Convention on quality circles at Kuala Lumpur, Malaysia.

On the energy & environment front, our focus lies on pollution control and abatement, energy and resource efficiency, renewable energy and water conservation. A rain water harvesting project is under implementation at our mining facility. We have taken up pollution control measures that go beyond regulatory requirements. In the Green Energy front, in addition to our Wind Power Plants, we have envisaged initiatives in the Solar energy front, with an immediate plan for installing Rooftop Solar Panels at our Corporate Office. Our Captive Power Plant (CPP) in Angul has commissioned a pilot scale Carbon sequestration project using algae – which is a first-of-its-kind initiative in the country.

Overall Performance

NALCO enters into an annual 'Memorandum of Understanding'(MoU) with the Ministry of Mines, Government of India. Accordingly, the performance of the organization is assessed based

on several indicators of financial and non-financial performance. The Company has been a consistently high performing Navratna.

With a score of 1.50 for the year 2012-13, the Company has received an 'Excellent' rating.

Further details of our activities, progress and accomplishments are presented in the subsequent sections of this report. As we continue the journey of being a responsible corporate citizen, we realise much work remains to be done.

Growth Plans

The ongoing process of economic globalisation has opened up a new arena of opportunities and challenges for industries across the globe. It is, therefore, imperative for the Company to seek new ways to improve the environment for productivity, sustainability and growth. Undoubtedly, the capability to innovate, diversify and grow is going to be a crucial determinant of global competitiveness of NALCO in years to come.

In this background, considering the developments in last couple of years, the general industry scenario and the Company's core strengths, the Company's corporate plan is being reviewed so as to prioritize the goals with regard to expansions, diversification and backward integration. The ongoing initiatives include projects like Alumina Refinery - upgradation project, Utkal-E Coal Block, and future plans like plans to obtain Pottangi bauxite mines, which has a mineable reserve of about 70 million tonnes; 1 million ton 5th Stream at Alumina Refinery, Damanjodi, a greenfield alumina refinery in Gujarat with 1 MTPA capacity; 1400 MW nuclear power plant in JV with Nuclear Power Corporation of India Ltd. (NPCIL) at Kakrapar, Gujarat; a 0.5 MTPA capacity smelter and power plant of 1260 MW capacity in Sundargarh, Odisha; wind power plant- III in the mined out area of its Bauxite Mines in Damanjodi; 100 MW wind power plant at other viable locations, caustic soda project; aluminium and aluminium alloy conductor plant.

I am confident that, with the continued support of all our stakeholders, the Company will move forward in the coming years with the same passion that has brought us thus far.

Ansuman Das
Chairman-cum-Managing Director
NALCO



VISION

VISION

“To be a reputed global company in the metals and energy sectors.”

MISSION

- To achieve sustainable growth in business through diversification, innovation and global competitive edge.
- To continuously develop human resources, create safe working conditions, improve productivity and quality and reduce cost and waste.
- To satisfy the customers and shareholders, employees and all other stakeholders.
- To be a good corporate citizen, protecting and enhancing the environment as well as discharging social responsibility in order to ensure sustainable growth.
- To intensify Research and Development for technology development.

ORGANISATION PROFILE

3



The National Aluminium Company Limited was incorporated in the year 1981, under the Companies Act (1952). The Company owned by the Govt. of India, is under the administrative control of the Ministry of Mines. The primary products of the Company includes:

Alumina

- Calcined Alumina
- Alumina Hydrate
- Specialty Alumina & Hydrates
 - Detergent Grade Zeolite

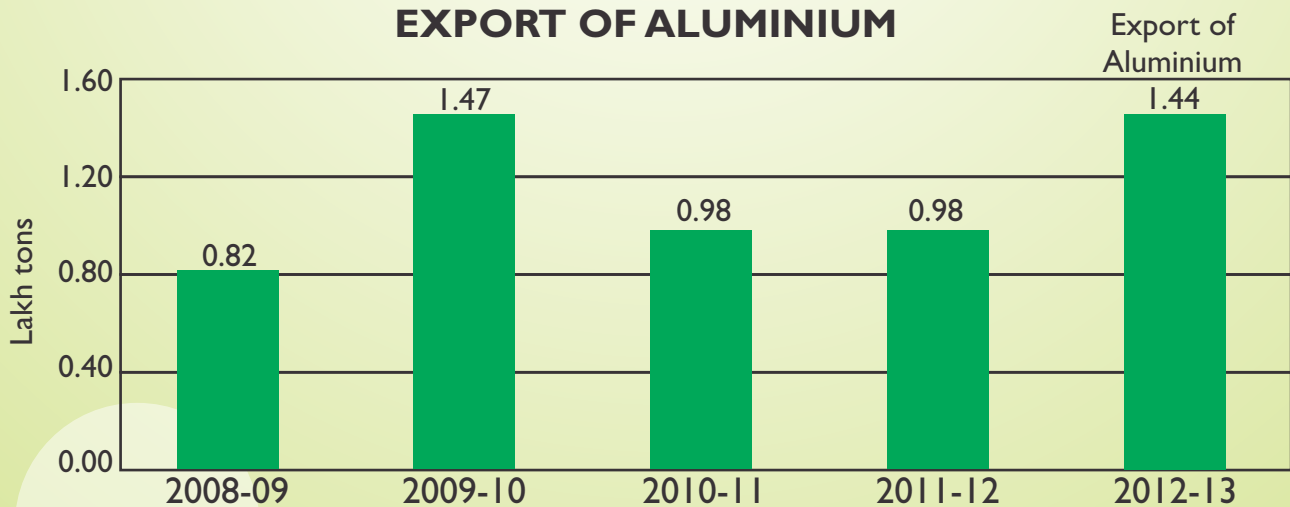
Aluminium

- Standard Ingots
- Sow Ingots
- Wire Rods
- Billets
- Cast Strip
- Flat Rolled Products (Coils, Sheets & Chequered Sheet)
- T-Ingots

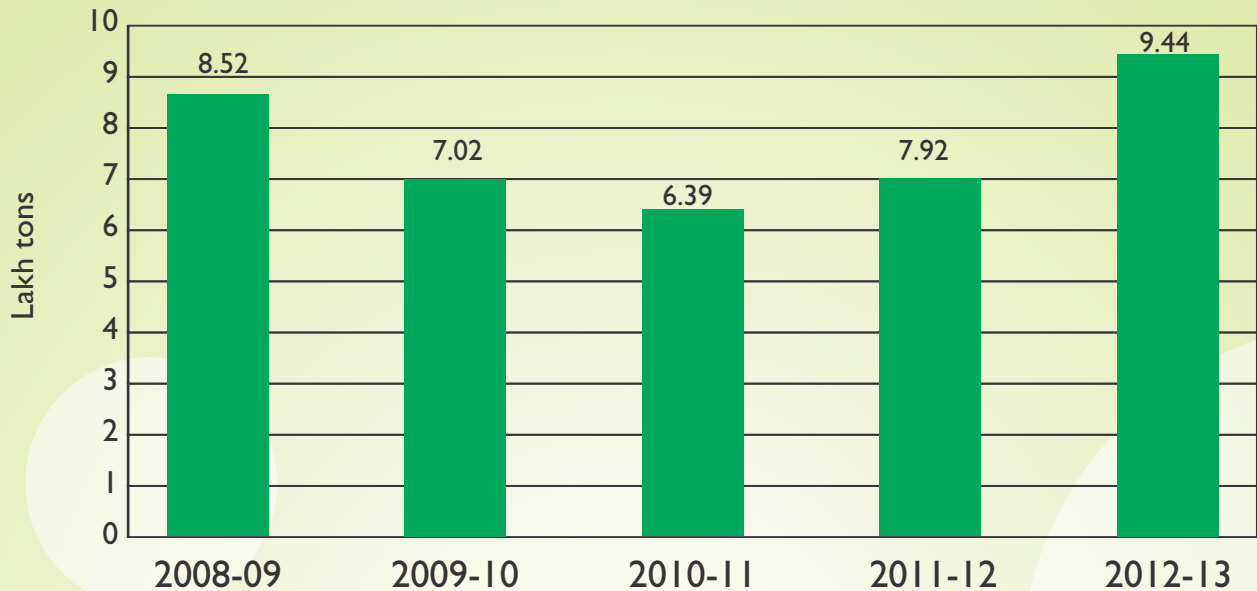


NALCO is a leading producer of aluminium metal in the country and is headquartered at Bhubaneswar (Odisha). Aluminium markets served by the Company (in addition to India) include : Bangladesh, Korea, Malaysia, Singapore, Vietnam, Turkey, Thailand, Indonesia, China, UAE, Israel, Taiwan, Sri Lanka, etc. Calcined Alumina produced in excess of our own requirement is exported to : China, Egypt, Georgia, Romania, UAE, Ukraine, Bahrain, Qatar, etc.

EXPORT OF ALUMINIUM



EXPORT OF ALUMINA



The Company employs 7555 people and registered a gross turn-over of about 7247 crores INR for FY 2012-13.

NALCO has a paid-up capital of 1288.62 crores INR and is listed in the National Stock Exchange and the Bombay Stock Exchange. Until last year, the Honorable President of India held 87.15% shares in the Company. In order to comply with an order passed by SEBI, stating that promoter share holding is not to exceed 75%, the government has sold 6.09% of the shares through the single window system exclusively established for this purpose.

Joint Ventures :

1. A Joint Venture Company named NPCIL-NALCO Power Company Ltd. was incorporated on 2nd March, 2012 by NPCIL and NALCO. The JV is to set up a 1400 MW nuclear power plant in Gujarat, Kakrapar Atomic Power Station (KAPS) 3 & 4 of 700MW capacity each, at an estimated cost of 11,500 crores INR. The construction work has started and project is scheduled to be completed by December 2015. However, approval from Government of India for the joint venture and equity pattern, is awaited.
2. Similarly, an MoU was signed on 19th September, 2009 between NALCO and IDCO to develop an 'Aluminium Park' at Angul. This would promote the development of downstream and ancillary industries and add value to the aluminium industry in the state. A joint venture Company named Angul Aluminium Park Ltd. was floated for implementation of the project. NALCO and IDCO are having equity partnership of 50% each.

The Company has also been making investments in the renewable energy and power sector initiating the diversification process. A complete list of such diversification / expansion projects as well as joint ventures and the organization's structure has been presented in the Company's annual report*.

* <http://nalcoindia.com/download/Annual-Report-2012-13.pdf>

or

* <http://nalcoindia.com/invdefault.aspx>



Achievements for the Year 2012-13

- Highest ever production since inception at Bauxite Mines :54.19 lakh MT
- Highest ever production since inception at Alumina Refinery, alumina hydrate production of 18.02 lakh MT
- Highest ever sales turnover of Rs.7247 crores
- Highest ever export earnings of Rs.3410 crores
- 50.4 MW Wind Power Plant Commissioned in Gandikota, AP. & 14 Million Unit of wind power generated
- CPP Energy Management System was certified to ISO 50001
- 401 children were enlisted from tribal dominated peripheral villages of Damanjodi for residential education
- The first Sustainable Development Report of NALCO was released during the year
- All modules under ERP including HR, e-procurement and service contracts were implemented

AWARDS AND RECOGNITIONS



1. NALCO bagged the Dun & Bradstreet's **Best PSU Award** in Non-Ferrous Metal Category at New Delhi on 28 May 2012.
2. NALCO has received the **Performance Excellence Award 2010-11** instituted by Indian Institute of Industrial Engineering (IIIE), Mumbai.
3. NALCO bagged the **Best Mother Plant award** for the year 2012 in appreciation of its dedicated efforts to promote Micro, Small and Medium Enterprises in Odisha at the 26th Annual State Level Convention and Seminar organized by Odisha Assembly of Small & Medium Enterprises (OASME) held at Cuttack on 12 August 2012.
4. NALCO received the **Think Odisha Leadership Award** from the Times of India Group on 25 August 2012 for the education initiative in tribal belt of Koraput.
5. NALCO has received the prestigious **“Non-ferrous Best Performance Award:2011-12”** in the category of large integrated plants, instituted by the Indian Institute of Metals on 16 November 2012 at Jamshedpur.
6. NALCO bagged the **IPE- CSR Corporate Governance Award** in a function in Mumbai on 24 November 2012.
7. NALCO bagged the **Global HR Excellence Award** at World HR Congress in Mumbai on 17 February 2013.
8. NALCO received the **Caring Company Award** at World CSR Congress in Mumbai on 18 February 2013.
9. NALCO received the **EEPC INDIA (Eastern Region)'s Gold Trophy** as Top Exporter from Eastern Region in Large Enterprise category for the year 2010-11 at Kolkata on 06 February 2013.
10. NALCO bagged the **Star Performer Award** for highest export in the category of Aluminium and Articles for 2011-12.
11. NALCO was selected to receive the **Gem Granites Environment Award-2012-13** instituted by Federation of Indian Mineral Industries(FIMI), for outstanding environmental performance.



CORPORATE GOVERNANCE



Corporate Governance is an institutional framework with proper checks and balances to undertake, co-ordinate and oversee the interest of all stakeholders. We consider the establishment and maintenance of a strong culture of value, ethics, integrity, reliability and fairness in all dealing, within and outside the organisation, as an important cornerstone in our business.

The Board of Directors is the apex body for overseeing the overall functioning of the Company. It formulates strategies, policies and reviews performance periodically to manage the Company. The Board strives to ensure that the management is doing its best towards performance and profitability while at the same time not compromising our values.

Size of the Board

Articles of Association of the Company provides for not less than 4 and not more than 18 Directors on the Board. Being a government Company, the power to appoint directors vests with Honourable the President of India. The constitution of the Board is as follows:

- i. 6 full time Directors including Chairman-cum-Managing Director (CMD)
- ii. 2 part time official directors, basically nominee Directors from Government of India.
- iii. 8 part time non-official (Independent) Directors appointed by the Government of India through a search committee.

The CMD and the full time directors, ably assisted by other directors as detailed above, lead the process of formulating the long term policies, strategies & plans. The directors, with the help of the hierarchy of managers working with them, ensure that the day to day operations of the Company are in-line with the intent of the policies and strategies. The details of the structure of the board of directors and the nature of their association with the organisation have been listed in the Annual Report available on the website.

<http://nalcoindia.com/download/Annual-Report-2012-13.pdf> (Annexure-IV page 36) or
<http://nalcoindia.com/invdefault.aspx>

The Board and its Committees

The Board is headed by the Chairman-cum-Managing Director who is also the Chief Executive Officer. Keeping in view the business needs and legal requirements, the Board has constituted the following committees to assist in its operations:

1. Audit Committee(also acts as Shareholders' Grievance Committee)
2. Human Resources Committee
3. Remuneration Committee
4. Technology Committee
5. Share Transfer Committee
6. Investment Committee
7. Committee of Directors for Consideration of Unaudited Results

8. Committee of Directors for sales
9. Committee of Directors for Procurements
10. Ethics & Corporate Governance Committee
11. Risk Management Committee
12. CSR & Sustainability Development Committee
13. Committee of Directors for Projects and New Ventures

The annual report details out the constitution and functions of the above committees.

At the beginning of each financial year, the Board receives disclosures from each director about their interest in other companies. Directors abstain from participating in discussions of any specific item in the Board meeting in which they may have any interest.

Being a PSU, Directors are selected by the Public Enterprises Selection Board (PSEB). Further, the designated committees are formed by the Board by considering directors having experience and expertise in that particular field.



CSR & Sustainability Development Committee

The CSR & SD Committee was constituted in 2011. The present committee comprises of 2 functional directors and 2 independent directors. During the reporting period, the Committee met on 22nd February 2013. The Committee members, as on 31 March 2013, are as follows :

Name	Designation	DIN Number
Shri Sanjiv Batra	Independent Director and Chairman of Committee	00602669
Shri S.S. Mahapatra	Director (Production)	03619725
Shri S.C. Padhy	Director (HR)	02594088
Shri Qaiser Shamim	Independent Director	03560915

Director (Production) spearheads the Sustainable Development (SD) initiatives whereas Director (HR) leads the CSR activities undertaken by the Company.

Corporate Ethics

Code of conduct for prevention of Insider Trading

Pursuant to SEBI (Prohibition of Insider Trading) Regulations, 1992 as amended from time to time, the Company has formulated a 'Code of Conduct for Prevention of Insider Trading' with an objective to prevent dealing in shares of the Company by an insider on the basis of unpublished price sensitive information. All insiders i.e. directors, officers, designated employees and their dependants are prohibited from dealing in shares of the Company when the trading window is closed. Permission of compliance officer is required to deal in the securities of the Company beyond the specified limit. All directors/officers/designated employees are also required to disclose their holdings periodically as per the code and in turn these are forwarded to Stock Exchanges.



Code of Conduct

The Board has adopted a comprehensive code of business conduct prescribed by the Department of Public Enterprises. The code is circulated to all the directors and management personnel and compliance of the same is affirmed annually. The model business code of conduct is posted on the NALCO website : <http://www.nalcoindia.com/policies.aspx>

A declaration is also signed by Chairman-cum-Managing Director to this effect as produced below :

“I hereby confirm that the Company has obtained from the members of the Board and senior management (key executives), affirmation that they have complied with the code of conduct for directors and senior management in respect of the financial year 2012-13.”

The Company has also developed a fraud prevention policy which is available at the following web-link : <http://www.nalcoindia.com/NALCOFRAUDPREVENTIONPOLICY.pdf>

Shareholders use every annual general meeting and extraordinary general meetings, if any, as the platform to provide suggestions and recommendations to the Board. Similarly, several policies including the Whistle Blower Policy and the Fraud Prevention Policy have been put in place for employees to report to the management any concerns that they may have.

The Company enters into a Memorandum of Understanding (MoU) with the Administrative Ministry i.e. Ministry of Mines on annual basis setting targets in financial and non-financial parameters including Sustainable Development activities. The compensation of directors is also linked partially to MoU performance.

Vigilance and prevention of corruption

Every year about 200 executive employees and 150 non-executives are covered in various preventive vigilance training programmes. Sessions on vigilance awareness are also conducted during other trainings modules at suitable opportunities. Also various circulars of CVC are circulated to all concerned, as and when required. CVC guidelines are also suitably addressed in various manuals i.e. Purchase manual, Contract manual.

Prevention of corruption in procurement transactions

All high value contracts and purchases are analysed by the vigilance department. Some of them are selected for intensive examination. Selected contract and purchase cases are also analysed during routine as well as surprise checks. When any irregularity is established, suitable disciplinary action is initiated through concerned disciplinary authority. During 2012-13, 116 vigilance complaints were received. In addition to this, 52 complaints were pending from the previous. From the total 168 complaints, 122 have been resolved satisfactorily and 46 are pending. After completion of investigation, critical observations along with system improvement suggestions if any, are given to management depending on the irregularities

Risk Management

NALCO follows DPE guidelines on risk management which inter-alia stipulate that the Board should ensure the integration and alignment of the risk management system with Corporate and operational objectives and also that risk management is undertaken as a part of normal business practice and not as a separate task. NALCO has a Board level sub-committee on risk management, details of which is given below. An integrated Risk Management Policy approved by Board is in place for implementation and compliance. The Board level sub-committee reviews the exceptional risk reports and advises remedial measures from time to time. Risk mitigation measures are periodically reviewed to ensure that executive management controls risks through the means of a properly defined frame work. For the identified risks the nominated risk officers maintain risk registers in the prescribed format. Such risk registers are also audited at frequent intervals by internal auditors and deviation if any, are reported to the Audit Committee. Periodical report on implementation of integrated Risk Management Policy is being placed before the Risk Management Sub-Committee of the Board.

Risks & Concerns

The fluctuations in US Dollar/Euro, rising oil & coal prices, power shortages and weak growth in traditionally strong economies, debt contagion, rise in interest rates, drop in credit rating of certain developed economies and its effect on the global economy in general are causes for concern. The fluctuation in LME prices, exchange rate, rising oil and coal prices, restricted availability of linkage coal, uneconomical power purchase are causes of concern to the Company.

Aluminium, not being in the priority sector, would be adversely affected by the increase in cost of coal. For viability of second greenfield smelter, allotment of the coal block may be essential. Delay in establishment of greenfield smelter in India and the recent developments in the coal project of the identified coal mining Company are a cause of concern with respect to its growth plan.

We have taken adequate steps to address the various risks that have been identified.

Risk Management Committee

A Committee for Risk Management, comprising of three independent Directors and two functional Directors, operates with the following terms of reference :

- ❖ Assisting the Board of Directors in overseeing the responsibilities with regard to the identification, evaluation and mitigation of operational, strategic and external environment risks.
- ❖ Overall responsibility for monitoring and approving the risk policies and associated practices of the Company.
- ❖ Reviewing and approving risk disclosure statements in any public documents or disclosures.

Shri S.S. Khurana, Independent Director, is the Chairman of the Committee.

The Top Management



Shri Ansuman Das
Chairman-cum-Managing Director



Shri R. Sridharan, IAS
Official Director



Shri D.S. Mishra, IAS
Official Director



Shri S.S. Mohapatra
Director (Production)



Shri N. R. Mohanty
Director (Project & Technical)



Shri S.C. Padhy
Director (HR)



Shri K. C. Samal
Director (Finance)



Ms. Soma Mondal
Director (Commercial)



Shri P. K. Mohanty, IAS
Chief Vigilance, Officer

Independent Directors



Shri Ved Jain



Shri P.C. Sharma



Shri G.P. Joshi



Shri S. S. Khurana



Shri Madhukar Gupta



Shri G. H. Amin



Shri Qaiser Shamim



Shri Sanjiv Batra



Adoption of the Integrity Pact

In a momentous step to bring about further transparency in procurement transactions, the Company has adopted the Integrity Pact Programme in September 2012. Integrity Pact is used in respect of procurement transactions and contracts to make the whole system more transparent. This is in compliance with the guidelines of Dept. of Public Enterprises, in consultation with the Ministry of Mines, Govt. of India.

According to this pact, for all procurement transactions of 50 crores INR and above NALCO would enter into an agreement with the bidder, in order to avoid all forms of corruption by following a system that is fair, transparent and free from any influence or prejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into.



STAKEHOLDER ENGAGEMENT

6



As a responsible corporate citizen, NALCO considers it important to understand the expectations of its stakeholders. Stakeholder engagement at NALCO is not limited to isolated events, but is an on-going activity. The Company is actively engaging with all its stakeholders through formal and informal platforms and has developed a comprehensive approach to address stakeholder concerns.

Reaching out to Stakeholders

NALCO has identified its stakeholders as those who have either any impact on us or are impacted by our operation at any location and its vicinity. Stakeholders are reached out to and their concerns and perceptions on the operations are assessed through various means, including the following :

- Formal and informal meetings
- Suggestion boxes
- Online channels (Share Registry)

The following table lists entities/individuals who have been identified as our stakeholders, the means adopted for engagement with them, topics of their interest that have been discussed in the past and the teams/ units at NALCO responsible for engagement with stakeholder groups. Approaches for engagement of stakeholders also provide opportunities for various stakeholders to provide their feedback to the appropriate management authority in NALCO. The frequency of these engagements is not fixed and it is carried out on the need basis. The customer survey, though, is done biennially to gauge customer satisfaction levels and identify the scope of improvements.

Stakeholder Groups	Approaches for engagement of stakeholders and frequency, where applicable	Stakeholders' concern/ topics of interest	Unit/ team at NALCO responsible for interaction with stakeholder group	Response to concerns
Customers	<ul style="list-style-type: none"> ♦ By information sharing, frequent interactions and periodic surveys over the year. 	<ul style="list-style-type: none"> ♦ Product quality, cost, and delivery ♦ Product performance including environmental aspects ♦ Customer satisfaction ♦ Customer complaint resolution 	<ul style="list-style-type: none"> ♦ Marketing dept. along with concerned technical depts. 	<ul style="list-style-type: none"> ♦ Product information through website. ♦ Biennial customer satisfaction surveys ♦ Customer complaint resolution system. ♦ In person customer facility visits and engagements to jointly address any technical issues, as and when necessary
Shareholders and financial institutions	<ul style="list-style-type: none"> ♦ Interactions with financial institutions, shareholders as per statutory need. ♦ Communications/ sharing information with share holders/ investors on all key concerns including regarding grievance, if any. 	<ul style="list-style-type: none"> ♦ Economic performance and health of the organization ♦ Dividend, results and other issues ♦ Grievance resolution 	<ul style="list-style-type: none"> ♦ Corporate finance and Company secretariate 	<ul style="list-style-type: none"> ♦ Analyst meet & conference calls with analysts ♦ Analyst briefings ♦ Quarterly results ♦ Annual general meeting ♦ Annual report ♦ Press releases ♦ Website updates ♦ Shareholder's grievance committee

Stakeholder groups	Approaches for engagement of stakeholders and frequency, where applicable	Stakeholders' concern/ topics of interest	Unit/ team at NALCO responsible for interaction with stakeholder group	Response to concerns
Employees	<ul style="list-style-type: none"> ♦ Communication to employees on all key concerns including grievance, if any. ♦ Interactions with unions, association. 	<ul style="list-style-type: none"> ♦ Employee benefits and compensation ♦ Performance management and recognition ♦ Employee grooming and development 	<ul style="list-style-type: none"> ♦ Corporate communications ♦ HRD 	<ul style="list-style-type: none"> ♦ Bulletin boards ♦ Newsletters, mailers ♦ Grievance redressal mechanism ♦ Employee committees ♦ Intranet portal ♦ Periodic meetings with officer's association ♦ Meeting with workmen unions
Vendors	<ul style="list-style-type: none"> ♦ Sharing information with vendors. ♦ Improvement of the vendor capability. 	<ul style="list-style-type: none"> ♦ Anti-corruption practices ♦ Quality of goods and services ♦ Inventory management ♦ Process of adopting integrity pact programme 	<ul style="list-style-type: none"> ♦ Materials ♦ Contracts ♦ Vigilance 	<ul style="list-style-type: none"> ♦ National level vendor development programme and annual exhibition –cum-buyer seller meet ♦ Participation in exhibitions organised by industry associations , state government ♦ Plant level sub- committee meet at Angul & Damanjodi ♦ Plant level advisory committee meeting at Bhubaneswar
Service providers and job contract workers	<ul style="list-style-type: none"> ♦ Sharing information with job contractors & workers engaged by them. ♦ Improvement of their competence/ capability. 	<ul style="list-style-type: none"> ♦ Health and safety at workplace ♦ Working hours and overtime (wages) 	<ul style="list-style-type: none"> ♦ Environment, Health and Safety (EHS) department ♦ Human Resources department. 	<ul style="list-style-type: none"> ♦ On the job counselling and feedback ♦ Trainings during induction ♦ Tool box talk ♦ Periodic meetings with production facility in-charge
Government and their representatives	<ul style="list-style-type: none"> ♦ Structured communication on performance, social issues, peripheral development work 	<ul style="list-style-type: none"> ♦ Local developmental priorities and infrastructure amenities needs assessment 	<ul style="list-style-type: none"> ♦ Administration department. 	<ul style="list-style-type: none"> ♦ MoU with the Ministry of Mines. ♦ Periodic government submissions ♦ Meetings with Govt. ♦ Parliamentary Committee visits ♦ District administration on peripheral development work
Regulatory authorities	<ul style="list-style-type: none"> ♦ Regular meetings & communication ♦ Structured communication regarding compliance with various regulations. 	<ul style="list-style-type: none"> ♦ Renewable purchase obligations ♦ Energy efficiency requirements under Perform -Achieve-Trade ♦ Forest & Environmental compliance ♦ Other applicable acts like Factory and Boiler regulations, Mines and mineral conservation act, Factory act etc. 	<ul style="list-style-type: none"> ♦ Company secretary. ♦ Energy managers ♦ EHS dept ♦ Taxation cell ♦ HRD & Admn. 	<ul style="list-style-type: none"> ♦ Annual reports and regulatory filings. ♦ Supporting visits as required by regulatory authorities to plants, units, offices.

Stakeholder groups	Approaches for engagement of stakeholders and frequency, where applicable	Stakeholders' concern/ topics of interest	Unit/ team at NALCO responsible for interaction with stakeholder group	Response to concerns
Local communities and civil society organisations	<ul style="list-style-type: none"> ♦ Interactions for need assessment and sharing information on the performance. 	<ul style="list-style-type: none"> ♦ Community needs on infrastructure, education and health ♦ Community environmental and social impacts 	<ul style="list-style-type: none"> ♦ Administration department ♦ NALCO Foundation 	<ul style="list-style-type: none"> ♦ Operating mobile health units for periphery villages ♦ Organising health camps in periphery villages ♦ Sponsoring children from periphery villages of Damanjodi for formal education ♦ Water and energy study in periphery villages of Damanjodi
Intellectual community	<ul style="list-style-type: none"> ♦ Interactions for information on technological developments ♦ Collaboration on developmental activities. 	<ul style="list-style-type: none"> ♦ Technology adoption ♦ GHG emission estimation/ monitoring in our operations 	<ul style="list-style-type: none"> ♦ R&D dept. 	<ul style="list-style-type: none"> ♦ Need based interactions and discussion with academic institutions ♦ Internships as well as participation in projects
Industry associations	<ul style="list-style-type: none"> ♦ Interactions on common issues for shaping/ influencing policy matters. 	<ul style="list-style-type: none"> ♦ Policy issues ♦ Technological developments 	<ul style="list-style-type: none"> ♦ Multiple departments 	<ul style="list-style-type: none"> ♦ Participation in developing industry and issue centric programmes and action plans as member of the CII, ♦ Utkal Chambers of Commerce and Aluminium Association of India.
Industries in vicinity	<ul style="list-style-type: none"> ♦ Interactions for implementation of initiatives and maintaining communication. 	<ul style="list-style-type: none"> ♦ Better and proper usage of common facilities ♦ Offsite emergency plan 	<ul style="list-style-type: none"> ♦ Business Development (BD) dept. ♦ Risk management ♦ EHS dept. 	<ul style="list-style-type: none"> ♦ Industrial area development cooperation ♦ Preparedness for risk mitigation and action plan
Business partners/ New ventures	<ul style="list-style-type: none"> ♦ Review of business, technical presentations. 	<ul style="list-style-type: none"> ♦ Management decisions and operational aspects 	<ul style="list-style-type: none"> ♦ BD dept. ♦ Materials dept. 	<ul style="list-style-type: none"> ♦ Meetings ♦ Official communication between the parent and joint venture entities

Right to Information:

NALCO being a government owned entity, the provisions of the Right to Information Act (RTI) apply to the organisation. Accordingly NALCO has appointed a Public Information Officer, who is responsible for the provision of accurate and timely information that may be sought by stakeholders. In the reporting period (2012-13), a total of 227 queries were received, out of which 198 were serviced and the remaining are in different stages of processing.



DETERMINING MATERIALITY

7



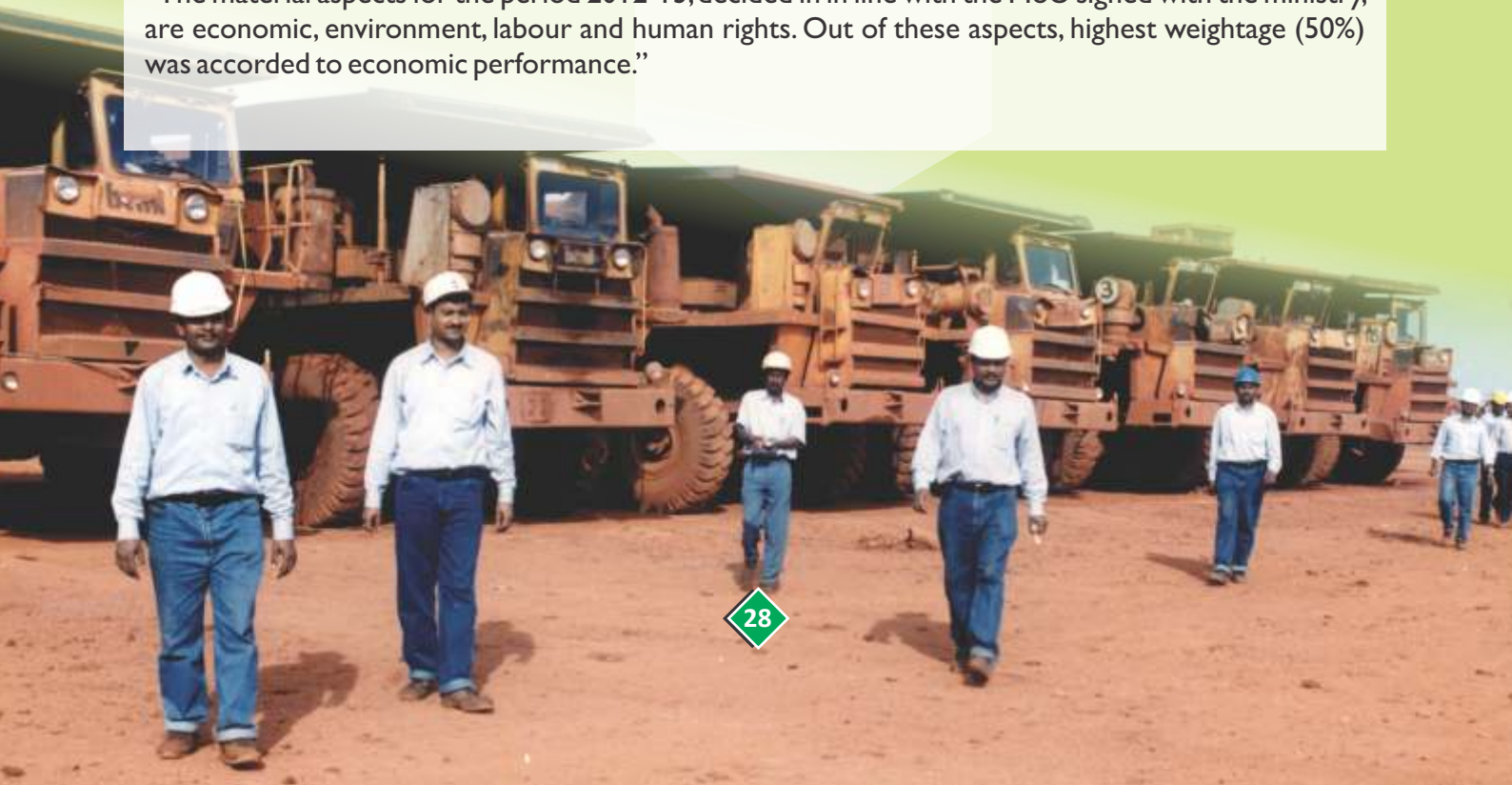
Determining Materiality

Every year NALCO enters into a Memorandum of Understanding (MoU) with the Ministry of Mines, Government of India. The MoU with the Ministry of Mines, Government of India, finalised based on the guidelines of the Department of Public Enterprise (DPE) and priorities set by the top management, form the basis for determination of materiality and governs the evaluation of the Company's performance during a financial year. Since 2011, performance of all PSU's within the domains of sustainability, CSR, R&D, HRD etc. are also being assessed in addition to usual financial and physical parameters.

The priority for the materiality issues are fixed based on the weightage given to the different aspects in the MoU. The process followed for MoU finalisation is :

- HODs/ DGMs propose the different parameters.
- Top Management team comprising of GMs, Executive Directors, finalise the draft annual MoU considering the operational factors, the stakeholders' expectations (DPE guidelines / Govt. of India directives), statutory requirements, changes in the regulatory landscape etc, (mentioned at the end).
- The draft document is reviewed by the Directors. Based on the advice received from the Directors, the draft is suitably revised and submitted for the approval of Board.
- This approved annual MoU document is submitted to the Ministry of Mines for review and approval, after which the MoU is sent to DPE, Govt. of India
- A designated Committee consisting of industry, financial experts & Top administrators known as "Task Force" deliberates the draft MoU in presence of ministry officials & Company management.
- After incorporating suggested modifications the draft MoU is ready for signature after authentication by DPE

"The material aspects for the period 2012-13, decided in line with the MoU signed with the ministry, are economic, environment, labour and human rights. Out of these aspects, highest weightage (50%) was accorded to economic performance."



SUSTAINABILITY BUSINESS RISKS AND PERFORMANCE IN 2012-13

For the year 2012-13, the prioritised aspects i.e. economic (financial performance), environment, labour practices, human rights and few vital performance indicator in safety & waste utilisation i.e. fly ash utilisation have been identified as key issues through internal discussions. These performance indicators and achievements are placed below.

Priority	Business Risk	Key Stakeholder	Performance Indicator	Achievement 2012-13
Economic	Falling price of aluminium Subdued market sentiment	Employees, Shareholders	Gross sales in Rs.Crores	7247
			Added value/Gross sales in %	5.73
			Gross margin/ Gross block in %	10.01
			Gross profit/ Capital employed in %	9.22
Environment	Material conservation	Community, Government Customers, NGOs	Aluminium fluoride consumption at Smelter in Kg/MT	18.5
			Lime consumption at Alumina Refinery in Kg/MT	32.14
	Energy Efficiency	NGOs, Community, Government	DC Power consumption at Smelter in KWHr/MT	13394
			Anode stub hole and pin length increase by 20mm in no. of pots	394
			Introduction of slotted anodes in no. of pots	433
			Certification of Energy Management System at CPP to ISO 50001	Certified
	Water management	NGOs, Community, Government	Rain water harvesting System at Units	Initiatives at all Units
	Carbon consumption	Community, Government Customers, NGOs	Net carbon consumption in Kg/MT of hot metal	434
	Waste utilisation	NGOs, Community, Government	Fly Ash-Utilisation in CPP	66.07%
Labour Practices	Safety	Employees	No. of fatal accidents (Employees + Contractors)	Nil
	Employee satisfaction and retention	Employees	Attrition rate %	0.19
Human Rights	SA 8000 Compliance	Employees, Contractor, Workers, Community	Compliance to SA 8000 standard	All production units comply to SA 8000

MoU Performance

Based on the overall performance and achievement of parameters laid down, NALCO has been rated 'Excellent' with rating score of 1.50 for FY 2012-13.

Details of NALCO's performance in sustainability arena are presented in the appendix. Following are the selected important aspects related to sustainability covered in the MoU :

- Financial Performance
- Product Quality
- Energy Management
- Customer Satisfaction
- Innovation
- Material Stewardship
- R&D
- Employee Involvement
- Human Resource Management
- Sustainable Development & Corporate Social Responsibility



External Initiatives

It is vital for NALCO to work together with other organisations in order to learn, share and work collaboratively towards common goals. With this in view, Company plays an active role in many reputed professional bodies, such as Aluminium Association of India, Federation of Indian Mineral Industries, National Safety Council, Standing Conference of Public Enterprise & Confederation of Indian Industry etc. Executives of NALCO occupy significant positions in the technical and executive committees of these bodies.

Precautionary Approach

The merit of every proposed project or process is evaluated based on financial, environmental & social impacts before implementation. Environmental Impact assessments are carried out for all projects to be implemented and necessary environmental management plans are taken up to mitigate the impact.

There are several regulatory changes which impact our day-to-day operations. Some such landmark Indian regulations of recent time impacting us include:

National Action Plan on Climate Change

Specifically the National Mission on Enhanced Energy Efficiency, under the aegis of which the Bureau of Energy Efficiency (BEE) has come up with a market-based energy efficiency enhancement program – Perform, Achieve and Trade; NALCO units have been assigned energy efficiency improvement targets under this program.

Renewable Purchase Obligation

Captive consumers are mandated to source a portion of their power requirement through renewable sources

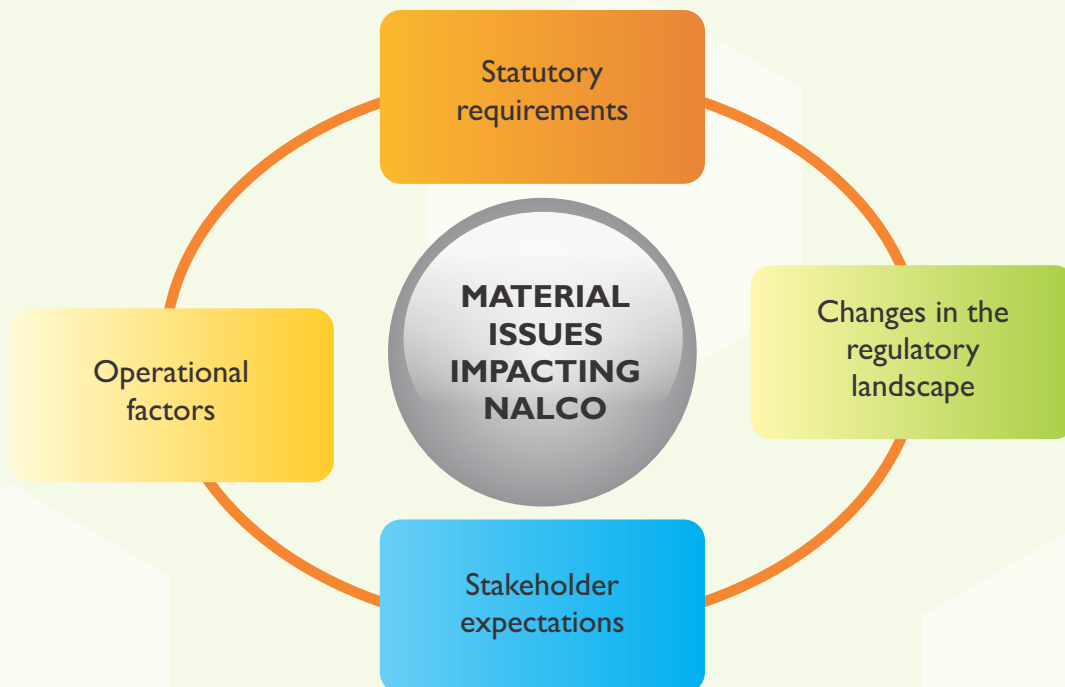
SEBI Directive on ESG disclosure

The market regulators has mandated top-100 companies in the country by market cap (which includes NALCO) to disclose their performance on Environmental, Social and Governance (ESG) performance

Companies' Bill 2012

The recently enacted bill has forward looking provisions on corporate governance and also obligate organizations to undertake CSR activities.

A more structured process including inputs from external stakeholders will be developed for reporting in future based on materiality matrix developed considering the regulations impacting our operations, our stakeholders' expectations and other operational considerations.





Economic Aspects	<ul style="list-style-type: none"> ❖ Ethics, transparency in pricing and business relationships ❖ Raw material availability and quality ❖ Reducing uncertainty in energy sources availability ❖ Vendor and ancillary development ❖ Infrastructure, shipping and logistics
Environment Aspects	<ul style="list-style-type: none"> ❖ Energy management - Energy efficiency, renewable energy, specific energy consumption requirements as per government of India schemes ❖ Greenhouse gas emissions and climate change ❖ Water management - fresh water withdrawal and effluent discharges ❖ Environmental management - Noise, air emissions, effluent and waste management ❖ Land rehabilitation
Labour Practices	<ul style="list-style-type: none"> ❖ Talent and skill management of our workforce ❖ Labour management relations ❖ Occupational Health and Safety
Human Rights	<ul style="list-style-type: none"> ❖ Adherence to human rights in employee relations ❖ Adherence to human rights with service providers ❖ Adherence to human rights in investment and procurement
Society	<ul style="list-style-type: none"> ❖ Taking appropriate operational safeguards, minimizing community impacts due to our operations in Angul, Damanjodi and Visakhapatnam. ❖ Peripheral development projects along with government appointed bodies ❖ Community projects, grants based on needs assessment
Product Responsibility	<ul style="list-style-type: none"> ❖ Tackling the energy intensive nature of aluminium production. ❖ Public policy advocacy on aluminium recycling ❖ Customer satisfaction practices

PERFORMANCE HIGHLIGHTS

8



The following sections describe our performance in important sustainability dimensions.

8.1: Environmental Performance

Disclosure on management approach

Responsibility to the environment ranks high in the organisation's agenda. All the units are ISO 14001 certified and exercise due care in every operation to ensure that environmental impacts, if any, is minimal. All units are completely compliant to applicable environmental norms on water use and effluent discharge, emissions and waste handling. In our mining operations, all the overburden produced is recycled (used in the closure of used sites). Further, the mines have developed and operationalised a wildlife management plan. The Company actively pursues measures for recovery of material from waste generated.

Mitigation of Environmental Impacts

Environmental management is an integral part of NALCO's operations. The nature of operations of the mining industry is such that it has a significant impact on the environment. NALCO strives to ensure that the impact of its operation on the environment is minimal – to this effect, the Company has installed proper checks and safeguards. This may be through the installation of state-of-the-art technology in our operations (including pollution prevention and abatement) and through the incorporation of proper management systems. Some of the initiatives that we have taken to mitigate the adverse impacts of our products are presented in the table:

Product	Potential Environmental Risks	Mitigation initiatives
Bauxite	Air pollution, Noise pollution	Afforestation in barren area after mining.
Calcined Alumina	Air pollution, Caustic spill-over, Ash	Utilising waste like red mud, fly ash
Aluminium	Fluoride contamination	Utilising spent potline in cement industry
Electricity	Air pollution, Ash spillage	Fly ash utilization in brick making, cement plant etc.

As a leader in the industry, also many specific initiatives are taken, the major ones being : Pilot project for carbon sequestration by algae formation in CPP, rainwater harvesting in all our units, zero effluent discharge in all the units etc. The organisation comply with all applicable regulations, and continuously strive to 'go beyond compliance' in its performance.

NALCO has a defined environmental policy which is available in its official website (<http://www.nalcoindia.com/Policies.aspx>).

The following sections describe our approach to management of important environmental dimensions.

8.1.1: Material Use

In the reporting period, 4.03 lakh MT of aluminium was produced, consuming about 7.95 Lakh MT of alumina, with specific consumption of 1.972 MT/MT of cast metal. The total alumina production for the year 2012-13 was 18.02 lakh MT and 55.65 Lakh MT of bauxite was consumed, at a specific consumption of 3.088 MT/MT of alumina. The prevalent lower Alumina Tri Hydrate (ATH) content in feed bauxite i.e. 38.16% against the norm of 39.2%, is a matter of concern. NALCO operates a coal based Captive Power Plant to meet its demand for electrical energy. The power plant generated 6076 million units (MU) consuming 5709496 tonnes of coal.

Based on the above and past data, specific consumption figures have been presented below:

Material	Unit	2010-11	2011-12	2012-13
Bauxite (wet) per MT of Alumina	MT/MT	3.03	3.12	3.088
Alumina	MT/MT	1.93	1.96	1.972
Aluminium Fluoride	Kg/MT	18.7	20.04	18.5
Caustic Soda per MT of Alumina	Kg/MT	70.96	83.89	87.39
Calcined Petroleum Coke	Kg/MT	384	387	386
Coal Tar Pitch	Kg/MT	89	93	91



The Company constantly look out for alternatives to reduce its raw material consumption and minimise the burden on nature and natural resources. Production of aluminium is an energy & resource intensive process. Being in the field of producing primary aluminium the thrust is given to recycle the inevitable process wastes to the maximum possible extent. The aluminium dross generated in melting furnaces are processed in autogenous mills where metal is separated from bath material and the recovered metal is recycled. The aluminium wedges used for bypassing pots, pot hoods, pot cowl, residual metal pad etc. are melted and recycled through potline scrap melting furnace saving both material and energy.

8.1.2 : Sustainable Mining

As a good mining practice, the lateritic overburden and top soil that are generated in our bauxite mines are completely used for backfilling of the mined out area. In the reporting period 19,94,563 MT of overburden material was generated which was completely used for this purpose. To achieve a successful and sustainable outcome, NALCO has been addressing the principles of sustainability during each phase of the lifecycle. i.e. the stages of exploration, design & development, construction, production, closure, and post-closure in the currently active Central & North block of mines.



The impacts at various stages had been identified and necessary corrective and preventive action had been taken. Exploration-phase activities has brought an influx of new jobs, economic development through the purchase of local goods and services, and, development to near by areas and change to the day-to-day lives of those who live in the vicinity. During the design and development stage, the initial project report had addressed the safe operations of mines being environmentally sound, economically profitable and socially acceptable while adhering to all regulatory requirements. Tribal populations are present in the vicinity of our facilities at Damanjodi. NALCO's operations are in harmony with these populations. During construction phase NALCO has implemented programmes with the support of the local community to mitigate the impacts related to the significant changes the project has on local society. The Company has fulfilled its environmental stewardship obligations while keeping the workforce and community safe from adverse impacts. The Company has rolled out training programs, entered in to partnerships with NGOs and government agencies to bring about economic empowerment in the community. During different phases of expansions, environment impact assessments (EIA) were carried out by reputed consultants and the recommended measures have been implemented to mitigate potential impacts. The workforce has steadily increased due to expansion of production capacity. There has been continuous improvement in the condition of communities around the operations. The mine has had a multitude of regulatory and compliance commitments to which it has a strong and single-minded focus. The mine and communities are working together to implement plans to protect human health and the environment. We hold regular consultation with them with the assistance of the district administration. The people are also encouraged to bring any grievances to our notice as and when they arise. Such grievances are tracked and resolved on an ongoing basis.

□ Progressive Mine Closure Plan of Panchpatmali Bauxite Mine

The Central and North Block of Panchpatmali Bauxite Mine which is the mine under operation now has a Progressive Mine Closure Plan approved by Indian Bureau of Mines. As per the approved closure plan, detailed methodology has been laid out for closure of mined out land, water quality management, air quality management, waste management, top soil management, disposal of mining machinery, disaster management, safety and security. The progressive mine closure plan is being implemented and monitored

successfully. The life of Central and North block is approximately 20 years. A period of 3 years will be required tentatively for abandonment of Mine even after the cessation of mining and mineral processing in the lease area. Till 31 March 2013, 221 hectares of mined out land has been suitably rehabilitated.

❑ **Sustainable Environmental Practices At Panchpatmali Bauxite Mine**

General

- ❖ Adoption of an environment-friendly state-of-the-art technology right from the design stage from M/s Aluminium Pechiney, now Rio Tinto Alcan.
- ❖ Approved mining plan
- ❖ Scientific mining and optimisation of resources

Eco-friendly Mining

- ❖ Concurrent mining and backfilling of mined out areas
- ❖ Rehabilitation of mined out area with overburden, top soil and plantation so as to match the topography of the pre-mining area
- ❖ Selective mining for maximum extraction of mineral, avoiding secondary blasting and extensive use of rock breakers

Air Pollution Control

- ❖ Peripheral barrier of 7.5 m width plantation to retain dust particles
- ❖ Water spraying on haul roads and stock pile area with 6 mobile sprinklers and fixed sprinklers along the haul road
- ❖ Suitable blast design and delayed blasting to minimise dust generation
- ❖ Implementation of dry fog system at crusher and conveyor to suppress dust & fully covered conveyor to prevent dust generation
- ❖ Adoption of vacuum suction in all drill machines

Water Pollution Control

- ❖ In-situ peripheral barrier all around the active mining area to prevent silt laden rain water to go out
- ❖ Check dams at strategic points to retain muddy water if any from mining areas
- ❖ Collection of rain water in mining area in sumps and percolation of collected water into ground
- ❖ Water from toilets treated in septic tanks and disposed in soak pits, canteen waste water treated in biological treatment unit, wash water from vehicle washing area treated in oil water separator
- ❖ Treated water from canteen and vehicle wash area fully recycled for dust suppression and plantation

Noise and Vibration Control

- ❖ Suitable blast design including delayed blasting to minimise the impact of blast and noise

- ❖ Peripheral plantation to prevent propagation of noise
- ❖ Selection of suitable equipment generating less noise & provision of noise proof cabins.

Afforestation

- ❖ Existence of barren hilltop mining area with sparse vegetation having a rocky surface prior to mining
- ❖ Mined out area covered with greenery and gradually converted to a forest area to sustain the ecosystem
- ❖ Mine access roads, hill slopes, vacant areas, sides of conveyors, mine periphery, etc. also covered with plantation
- ❖ As on 31 March 2013, 28,89,117 trees have been planted with an approximate survival rate of 70%.
- ❖ Scheme and fund provided to statutory authorities for compensatory afforestation

Flora and Fauna

- ❖ Wild life management plan prepared for both south and central-north blocks

Solid Waste Management

- ❖ Top soil and overburden fully reused for back filling
- ❖ Hazardous waste are burnt in incinerators

RainWater Harvesting

- ❖ Construction of four rain water harvesting ponds in lease area and one roof top RWH system at mines administration building for conservation of rain water and ground water recharging.

8.1.3: Energy & Emissions

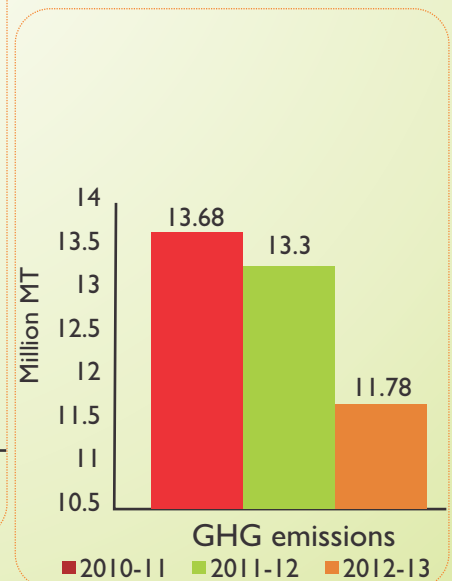
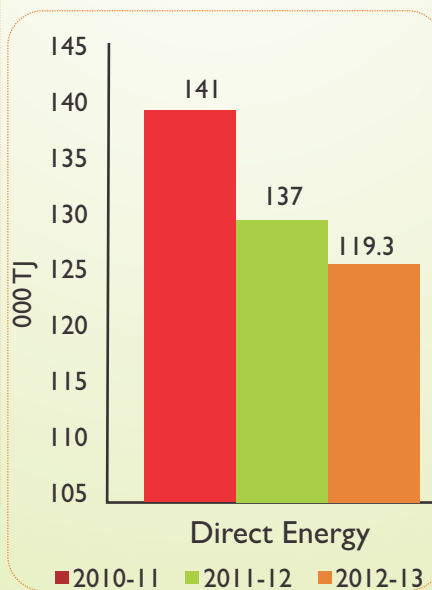
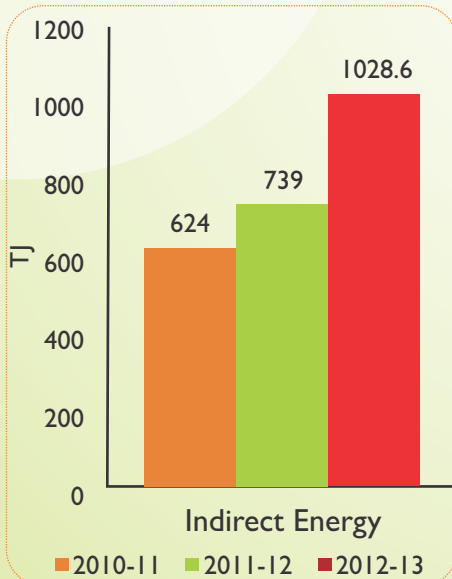
Over the past decade, growth in Indian economic has led to a significant rise the country's energy demand. Growing demand for energy directly impacts natural resource and also causes increase in the greenhouse gas emissions which in turn leads to global warming.

Aluminium itself is an excellent metal, which owing to its versatile metallic properties finds varied industrial applications. However, the production of aluminium is an energy intensive process. Consequently, the processing of aluminium results in considerable greenhouse gas emissions.

The International Aluminium Institute (IAI) reports that new stocks of aluminium account for 1% of total man-made greenhouse gas emissions globally, including the emissions due to generation of electricity that is used in the Aluminium making process. Please refer the following weblink for details, <http://www.world-aluminium.org/media/flipublic/2013/01/15/fl0000181.pdf>

As a sector leader, NALCO continuously strives to minimize energy consumption at various steps through technological innovation and use of energy efficient technologies. Consumption of primary fuels (including fossil fuel) leads to direct GHG emissions and consumption of electrical energy leads to associated, indirect GHG emission. Company's total direct and indirect energy consumption stood at 119335.4 TJ and 1028.6 TJ respectively. NALCO's direct greenhouse gas emissions are attributed to the use of fossil fuels such as coal and heavy fuel oil. The direct greenhouse gas emission in the reporting

period was 11.56 million tonnes of CO₂ and our indirect greenhouse emission in the same period was estimated to be 0.22 million tonnes of CO₂ (result of electricity purchased from the grid – this has been calculated using the emissions factors published by the Central Electricity Authority of India). The other relevant indirect greenhouse gas emissions are insignificant considering the scale of operation. NALCO's smelting operation consumed 549 kg of M-22 refrigerant gas (ODS) and mining used 14.5 kg of R22 gas (ODS) to make up for the leakages. The smelter operations lead to the release of following PFCs (Per Fluoro Carbon) : CF₄ -126 tons, C₂F₆ - 126.18 tons. SO_x and NO_x emissions are measured in all units in terms of microgram per cubic meter and are within compliance limits as prescribed by the Pollution Control Board. However, quantification of SO_x and NO_x emissions in tons, is not being done at present.



Renewable Energy Use

As a responsible corporate citizen, NALCO has been moving towards the progressive use of renewable energy. NALCO commissioned a 50.4 MW Wind Power Plant at Gandikota, Andhra Pradesh at an investment of Rs.274 crore in the year 2012. On the back of successful implementation of this project, the Company has decided to further invest in wind power. We have commenced commissioning of yet another wind power project of 47.6 MW, at Jaisalmer, Rajasthan. This project involves an investment of Rs. 283 crores.

India is blessed with abundant incident solar energy. The Government of India has undertaken several policy initiatives for the promotion of solar energy in the country. On its part, NALCO has taken initiatives like installation of solar heaters at common facilities(Guest Houses, Hospital etc) in the townships at Angul and Damanjodi. Further installations planned are : roof-top solar PV panels at Corporate office building at Bhubaneswar and plant buildings at units , to meet requirements under the RPO scheme.

Renewable Purchase Obligation (RPO)

As per the provisions of Odisha Electricity Regulatory Commission (OERC) notification, NALCO, being an 'obligated entity' has the obligation to generate 5.50% (previous year 5.00%) of its total consumption from renewable sources comprising of 3.95% (previous year 3.70%) from co-generation, 0.15% (previous year 0.10%) from solar renewable source and 1.40% (previous year 1.20%) from non-solar renewable source. The Company has fulfilled the requirement of its co-generation obligation for the year 2012-13 through co-generation of power from Steam Power Plant at Refinery Unit. The Company is in the process of establishing other renewable energy projects. The Company has provided an amount of Rs.19.59 crore (previous year Rs.29.29 crores) towards Renewable Purchase Obligation (RPO) for the year due to non-fulfillment of the obligation to generate power from renewable source of solar and non-solar.

GHG Abatement

NALCO has commissioned a unique pilot scale project for carbon sequestration by algae at the CPP in association with Indo-Can Technology Solutions. The algae directly consume the carbon dioxide present in the flue gas for their growth. Algal cultures are grown in special tanks spread over an area of 0.2 acres. The potential for GHG absorption of this setup is 20 tons/annum. The algal bio-mass thus produced may be used as a high protein food for cattle, as a fuel to the boilers or in the production of bio-diesel. The algae produced from the pilot plant is under testing for establishing biomass characteristics to assess carbon sequestration efficiency.

Energy Efficiency

The refinery facility in Damanjodi has embarked on a project to install Variable Frequency Drives (VFD) in washer overflow pumps and seal air fans for conservation of energy through enhanced energy efficiency. As on 31 March 2013, 23 of such drives have been commissioned with estimated energy savings of 709.432 Mega Watt-hour/annum. This also translates into GHG emission abatement of over 650 tons (based on combined margin estimations provided by the Central Electricity Authority).

NALCO units constantly strive to identify opportunities for undertaking energy efficiency projects. A complete list of Initiatives that have been taken by our units for conservation of energy have been presented in Annexure - II.

8.1.4: Water Use

Water is an important resource for industries and individuals alike. India is already facing the challenge of managing the conflicting demand for water by domestic, agricultural and industrial sectors. The report of the working group of Ministry of Water Resources has indicated that demand for water is going to see a 100% increase in demand for drinking water, a 50% rise for irrigation purposes and a 400% rise for water for industrial use by 2050.

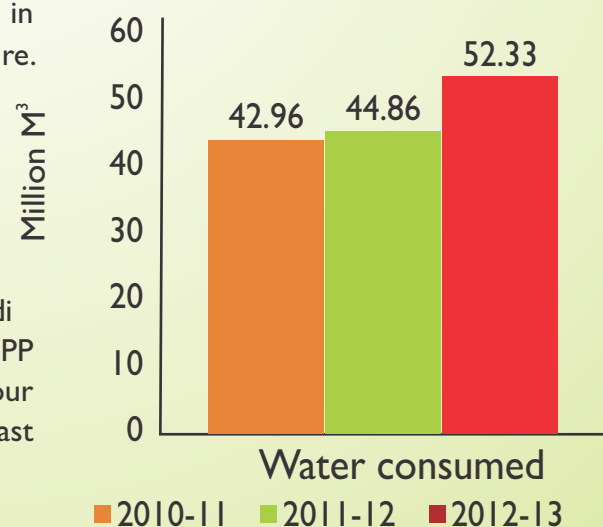
The secure and stable supply of the appropriate quality and quantity of water is essential for the sustainability of operations. The Company realises this and hence water conservation, recycling & management is one of its key focus areas. We continue to use this critical resource responsibly. All our production units are zero discharge units with

respect to their waste water and sewerage water management. The treated waste water was reused in process and sewerage water is used for horticulture. Augmentation of recycling by reverse osmosis of waste water at Smelter is planned.

NALCO's total water withdrawal for the year 2012-13 was 5,23,33,317 m³. The main source of water was surface water. NALCO draws water from the rivers/ stream i.e. Jholaguda stream for Mines, Kerndi river for Alumina Refinery and Brahmani river for CPP & Smelter operations. Rain water harvesting is done at our CPP / Smelters site and 2830 m³ water was harvested last year which was reused in our operations.



Total volume of water withdrawn (m ³ /year)	
Surface water (river, lakes, oceans etc.)	5,23,19,444
Municipal water / Other water supply	10,843
Rain water	2,830



Some of the water conservation initiatives that were undertaken at our units were:

- ◆ Rooftop rainwater harvesting and recharge system in administrative building at Mines, pump house buildings at CPP, Administrative building and Training centre at Refinery and some public buildings of township at Angul.
- ◆ Rain water harvesting at the top of Mines for emergency usage and consumption by wildlife
- ◆ Reuse of treated waste water from canteen and vehicle wash area for dust suppression in Mines and also for horticulture in all units
- ◆ Use of sensor based taps in toilets

Utmost efforts are taken to minimize our water consumption and reduce requirement for fresh water through recycling initiatives. Waste water generated is discharged after proper treatment which meets the required standards as per applicable pollution control board norms.

Waste water generated in our refinery operations is completely recycled and used in various processes. Sewage water is treated in sewage water treatment plant and then it is used for horticultural purposes. In CPP the ash pond overflow water is recycled and reused in the ash disposal system. In the year 2012-13, 1,87,64,710 M³ of ash water was recycled, from the ash pond.

8.1.5: Biodiversity

NALCO strive to create a positive impact on the ecological system wherever it's operating through responsible natural resource management and preserving biodiversity. The organisation is conscious of the necessity of managing its land and enhancing its biodiversity. Community support is a strong challenge in the industry and hence requires a greater deal of land stewardship.

None of our mining operations are within 10km of protected areas or areas of high biodiversity value. Also no protected or sensitive area exist nearby our other units like Alumina Refinery, Smelter, CPP and the Port Facilities. NALCO has already initiated a vegetation survey for crops and vegetables in the nearby area of our Alumina Refinery. The total leased area in central and north block is approximately 1315 hectares of which 911 hectares is earmarked for mining. NALCO have so far been able to rehabilitate 221 hectares of mining land. As per the directives given by Ministry of Environment and Forests, Company have prepared a wildlife management plan for both central and north block of the mine and also for the south block of Panchpatmali Bauxite mines.

NALCO has prepared a plan for conservation of wildlife in the core and buffer zone of mines and site specific wild life conservation plan for South Block exists. The Wild Life Management Plan for Central North Block has been prepared and has been submitted to State Forest Department for approval. A biodiversity study was conducted for mines in 1993. A fresh study to find out the impact of the mining operation on biodiversity and developing a plan for taking necessary corrective and preventive measures is planned.

Bio-diversity Management Plans at Our Mines

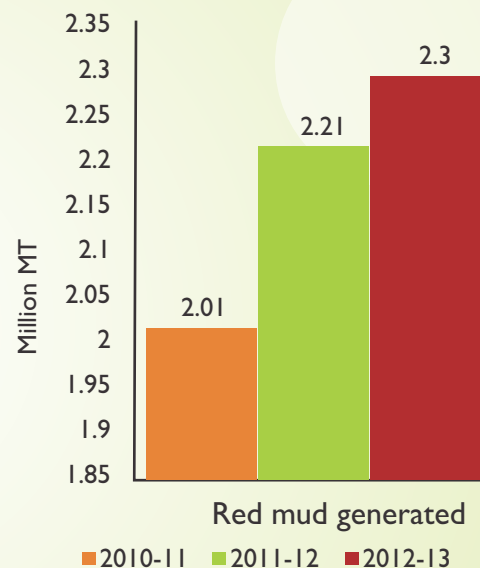
As per the survey conducted by M/s CEMC, Bhubaneswar for preparation of wildlife management plan for the Central and North Block of Panchpatmali Bauxite mine, the mines lease area (core area) is devoid of tree growth, the vegetation consists of scrub only, which supports only a few small animals. In the core area, there are 5 mammals, 4 reptiles and 9 bird species present. No schedule I species, as per the Wildlife Conservation Act - 1972, are present within the core zone. In the buffer zone, there are 16 mammals, 9 reptiles and 29 bird species present out of which, two mammalian species belong to Schedule – I category. Apart from the above species, there are 6 insects found during our field survey, belonging to different species : butterflies-3, crickets-2 and grass hopper-1. Only two of the Schedule – I mammals (Elephant and Sloth bear) are found in this area. The wildlife management plan is awaiting approval by appropriate authorities and then, the plan will be implemented involving State Forest Department.

8.1.6: Managing Waste

Mining of bauxite and its refining generates various kinds of hazardous and non hazardous wastes like used oil, spent resin, fly ash, ETP sludge etc. NALCO have waste management plans in place for all our operations to effectively manage its waste – in terms of waste minimisation and appropriate disposal methods. Company is also attentive to opportunities for recycling and reusing generated waste at our plants. Please refer to the Annexure-III for categorisation of waste, their quantities and disposal methods used.

Red mud is typical to the aluminium industry and is generated as a waste in refinery. The quantity of red mud waste generated depends on bauxite composition and technology involved. Approximately one to two tonnes of red mud may be produced per tonne of alumina. Company's annual operations result in the generation of around 2.3 million MT of red mud.

Red mud essentially contains highly alkaline water and poses a threat to the environment. Sodium oxide (Na_2O) is then reclaimed from the superannuated liquor (red mud pond return water) for reuse in the process thereby recovering about 500 to 800 MT of Na_2O per month. In the year 2012-13, 7261 MT of Na_2O was recovered. Red mud is stored in red-mud pond with zero overflow to avoid any incidents of soil/ ground water contamination. The organisation uses 84.7% of lime grit that is being generated as a waste during refining for low land filling and fly ash brick manufacturing. Fly ash produced in our CPP are used in brick making, cement making, stone query filling, low lying area reclamation etc. Recycling & utilisation of waste are summarised below :



Unit	Utilisation	Percentage
Bauxite Mines	Overburden is utilized for reclamation for mined out areas	100%
Alumina Refinery	Caustic Soda is recycled from red mud	5-10%
	Ash utilization	29.76%
Smelter	Aluminium dross recycled as input to process	>10%
CPP	Ash Utilisation	66.07%

8.2: Health & Safety at Work

Disclosure on Management Approach : Labour

NALCO strives to be responsible to all stakeholders and to this effect has incorporated SA-8000 Management System. In the operations (including subcontracted work), we strive to ensure addressing labour related issues (child labour, forced labour, discrimination, harassment etc). There are systems for all employees and stakeholders to report any grievances, which are duly acted upon. Workplace rights and safety are given utmost attention. There are recognized labour unions and a significant percentage of non-management staff are enrolled in these unions. Adequate and necessary trainings are provided to employees at all levels. The organization also exceeded the number of man-days of training targets that were set in the MoU for 2012-13.

Management System

Health and safety of the employees is of foremost importance for us. There is a strong OHSAS policy in place, the implementation of which is overseen by our plant safety personnel and plant heads. All facilities are OHSAS 18001 certified. Safety audits are being done regularly to assess performance. All employees are always encouraged to participate in various trainings and sessions pertaining to health and safety issues that are conducted by in house and external experts.

Process, engineering and administrative controls have been incorporated suitably to ensure an accident free workplace. NALCO's efforts have culminated to significant success over the years. It constantly tries to instil the notion that safety is an individual's responsibility and everybody has a role to play in the safety of themselves and their co-workers' safety. Noise induced hearing loss and Pneumoconiosis are the two probable occupational diseases possible from Alumina Refinery plant work environment. However, no such disease was noticed during the reporting period. As such there were no occupational diseases reported from any of our operations in the reporting period.

There was no reportable accident at Mines & Port Facilities.

Our safety performance for the reporting period is provided in the table below:

Unit	Reportable Accidents	Man-days worked	Man-days lost	Man-hours worked	Lost days rate	Rate of Injury	Absentee Rate
Mines	Nil	*	Nil	*	Nil	Nil	Nil
Refinery	1	496170	11	3969360	0.002	0.252	2.771
Smelter	4	2143895	363	17151160	0.017	0.233	21.165
CPP	5	1047002.5	245	8376020	0.023	0.597	29.250
Port Facility	Nil	*	Nil	*	Nil	Nil	Nil

* Man days & man hour etc. will be tracked at Mines & Port Facilities from the next reporting cycle.

Some of the safety awareness activities undertaken at units are:

- ❖ **Road Safety Week** : It is observed from 1st Jan to 7th Jan every year for creating Road Safety Awareness among all the employees as well as among the residents of local Areas.
- ❖ **National Safety Day/Week** : It is observed from 4th to 9th March every year for creating Safety awareness among the employees. During this period, programmes like meetings, seminars, display of banners, competitions are organized.



- ❖ **Fire Safety Day** : It is observed on 14th April to build awareness on fire safety. A field demonstration on various methods of firefighting is conducted.

The organisation conducted several education and counselling programmes at our training centres at units and HRD centre of excellence, Bhubaneswar for employees and their families.

Sl. No.	Programme description	No. of programme conducted	No. of employees / spouses	No. of man days covered
1	First aid	5	108	324
2	Safety awareness training for employees	29	682	1019
3	Occupational health & stress management	6	109	122
4	Quality of life (for family members)	8	153	323

There is a safety code for contractors working in our units. It explains in detail all the safety related precautions and procedures that a contract worker involved in various kinds of work environment needs to follow. Total 3717 number of workmen engaged by job contractor were covered under the training programme on safety which is 34.7% of total strength.



During the reporting period following activities were carried out with regard to health & safety management



Periodical Medical Examination

Sl.	Activities	No. of persons
1	Total no. of employees covered under the periodical medical examination	3758
2	Total no. of workmen engaged by job contractor covered under the periodical medical examination	2775

Health Camp

Sl.	Activities	No. of persons
1	Total no. of mobile health camps organised in the surrounding villages	1517
2	Total no. of persons of surrounding villages covered under the medical treatment	67727
3	Total no. of awareness programmes conducted in surrounding villages on health aspects	1517

Medicated mosquito kits and water filters were distributed to the people belonging to peripheral villages.

8.3: Community Initiative

The organisation firmly believes that long term success lies in the sustained development of society where it operates. It is committed to creating a lasting positive social impact on the communities where it operate and has ensured a better quality of life for neighbouring communities. It also believe in an open and transparent engagement with all the stakeholders.

The organization has an established mechanism for local community engagement and for assessing impacts of all our development programmes. Varied viewpoints and concerns of the community are considered before decision making in order to achieve a mutually beneficial outcome.

Rehabilitation and resettlement are at the convergence of the organisation's business and inclusive growth agendas. Complying with the regulatory norms on resettlement and rehabilitation provides the starting point. Building on it, NALCO strive to promote an equitable society co-existing with the operations. As a case in point there were no significant disputes relating to land use or with local communities which underlines participatory approach. There were no resettlements of any household and livelihood during the reporting period. Also none of our mining sites are located in the vicinity of artisanal and small scale mining.

The NALCO Foundation

The NALCO Foundation was established in 2010 specifically for undertaking CSR activities. The foundation is based on the CSR guidelines issued by the Department of Public Enterprises, Govt. of India for the Central Public Sector Enterprises. The NALCO Foundation ensures community participation, accountability, sustainability and measurable results, through:

- Baseline surveys & needs assessment
- Identification of projects
- Selection of implementing agencies
- Monitoring and evaluation
- Social auditing by independent bodies
- Documentation of experience

The organisation has allocated 2% of net profit for CSR activities, of which 1% is spent for peripheral development activities and another 1% is spent through the NALCO Foundation.

The NALCO Foundation executes, monitors and evaluates the CSR projects in the vicinity of our operating locations.

The NALCO Foundation

Vision

"To be an agent to engineer holistic development"

Mission



To work with communities in the vicinity of the company's projects as partners for sustainable development;

To take up sustainable development projects to support education, health, drinking water and basic amenities along with income generation programmes;

To empower women to find a rightful place in nation building;

To empower children, differently abled persons (including physically and/or mentally challenged), old and destitute persons for a dignified living;

To promote art, culture, heritage and sports with emphasis on tribal art and culture in the vicinity of company's projects;

To promote environmental conservation measures.



Major CSR Initiatives Undertaken by NALCO Foundation:



Creating awareness about malaria and distribution of mosquito Nets



Propagation of safe drinking water by distributing water filters

Assisting establishments of remedial schools for drop-out children in the 5 peripheral villages of Damanjodi

Funding Rs.4.08 Cr for setting up an ITI at Marichamal

Distribution of sports kits and educational kits in 16 periphery villages



Provision of drinking water through community-managed gravity fed water supply systems in 7 villages of Gudem Kotha Veedhi Mandal (Visakhapatnam)

Renovation of existing community water structures at Bodapadu village (Pottangi)



Drinking water provision in Eklavya Model Residential School at Punger (Pottangi)

Economic development through goat rearing in Bhitargarh and Kapsiput (Damanjodi)

Promotion of solar energy in rural households by distribution of solar lanterns in periphery villages of Damanjodi

The foundation is focused on development of villages located within a 15 kilometer radius of our mines and plants in Damanjodi, Angul and also for proposed mining areas in Pottangi (Koraput) and Visakhapatnam district. The CSR activities are divided into focus areas ie. promotion of education, providing for improving facilities on health & sanitation i.e. drinking water, mobile health units, promotion of renewable energy, building community infrastructure & promoting cultural activities of local community, enhancing vocational skills & promoting livelihood, providing relief measures during calamities etc. The emphasis is on projects which provide safe and potable water, healthcare facilities and awareness programmes, sponsoring children for primary education, livelihood trainings to foster better income generation opportunities and infrastructure development.

Peripheral Development Activities

For peripheral development activities, the Govt. of Odisha has constituted the Rehabilitation and Periphery Development Advisory Committee (RPDAC) for Damanjodi and Angul separately under the Chairmanship of concerned Revenue Divisional Commissioner. The committee also includes members from district administration, people's representatives (MPs, MLAs, etc.), local NGOs and representatives from NALCO. The RPDAC finalises the annual periphery development projects and its estimates. The RPDAC decides the projects to be executed by the district administration and by NALCO. Monitoring and evaluation of these projects are also done by the RPDAC.

The funds so allocated for the periphery development activities are distributed as under:

- * 40% for Damanjodi sector, where the mines and refinery are located;
- * 40% for Angul sector, where the smelter and power plant are located; and
- * 20% for corporate level activities and other areas

Major Peripheral Development Activities Undertaken in 2012-13

A special training programme on apparel stitching was given to 177 candidates, where 80% of the beneficiaries were females, mostly belonging to SC/ST and below poverty line category

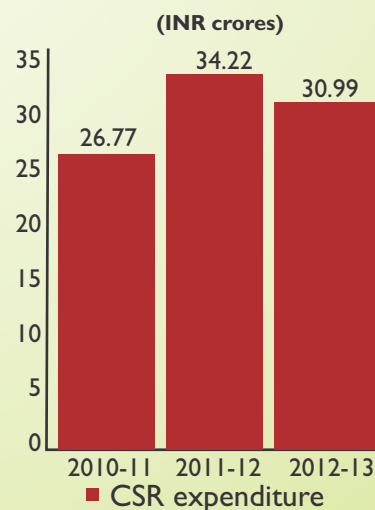
Financial assistance for construction of a public library building in Balasore Municipality

Provided essential drugs and anti venom injection vials to the Health and Family Welfare Department of Govt. of Odisha during the Monsoon Season

Plantation of 5000 nos of trees in Vishakhapatnam under the "Green Visakha" project

Investments in Community Development

In the previous sustainability report the expenditure incurred on schooling for local population at Damanjodi, was not taken into consideration while calculating total community investment 2011-12. Total CSR expenditure in 2011-12 was Rs.34.22cr considering such direct expenses. The CSR expenditure in 2010-11 was Rs.26.77cr & in 2012-13 was Rs.30.99cr.



Mobile Health Units

NALCO is operating six Mobile Health Units (MHUs) in the periphery villages of its units, covering 43 villages at S&P Complex Angul & 142 villages at M&R Complex Damanjodi. The 3 MHUs at Damanjodi are being operated through Wockhardt Foundation. These MHUs provide primary health service at the villagers' doorsteps, comprising free medicine, diagnostics and awareness building through Information, Education and Communication (IEC) activities. In the financial year 2012-13, 1,517 camps were conducted and over 67,727 patients from periphery villages of Damanjodi and Angul were treated free of cost.

Sponsoring formal education of children living in peripheral villages of Damanjodi

The Company has sponsored residential education for 401 children from 16 periphery villages of the Mines & Refinery Complex at Damanjodi, in the tribal dominated district of Koraput. The foundation's funding covers all the costs related to study, lodging and boarding of the students in 3 residential schools in Bhubaneswar (Kalinga Institute of Social Sciences) and Koraput (Koraput Development Foundation and Bikash Vidyalaya). The funding for residential education for the enrolled students is planned till their completion of schooling.

Water and Energy Study in 142 Periphery Villages of Damanjodi

To take up projects which will have long term impact, the NALCO Foundation has engaged Centre for Rural Energy and Water Access (CREWA) in Damanjodi. CREWA has completed the study in the periphery villages of M&R Complex spread over 5 blocks of Koraput i.e. Laxmipur, Narayanpatna, Koraput, Dasmantpur and Semiliguda (including Sunabeda NAC) and also submitted a draft report. It is a comprehensive baseline survey capturing basic socio-economic dimensions along with the possibility of undertaking interventions related to water and energy solutions. This information will be used in planning of short term and long term interventions by Nalco Foundation.



8.4: Human Rights

NALCO is conscious of its responsibility, as a leading Company, to uphold fundamental human rights and also promote them. The organisation is committed to ensure that none of our operations are in violation of the fundamental human rights. The policies are in line with the international norms and they act as guiding principles for us.

All the manufacturing units & the corporate office as certified to SA 8000 & regularly undergo audit covering various aspects of human rights.

Disclosure on management approach: Society

The Company actively contributes to the development of the local communities where it operates. The Company has developed a dedicated CSR policy and also operates the NALCO foundation whose mandate is to engage with local communities and undertake need-based community development projects. All the units also have mechanisms in place to receive and address grievances of the local communities, if any. The Company has also put in place a code of conduct which addresses issues like bribery, corruption and ethics. All the manufacturing units & the corporate office as certified to SA 8000.

Screenings during projects and procurements

Before commencing any new project or signing any contract, the organisation takes adequate steps to make sure that there are no negative impacts on human rights and well-being of the society. It has an established screening process in place to evaluate and select suppliers/sub-contractors on their ability to meet our standards and requirements. It has formulated a SA 8000 based questionnaire which helps in screening all vendors on various human rights and social accountability aspects. All agreements and tenders are in compliance with all the relevant statutory obligations and national laws. NALCO strives to protect fundamental human rights across our value chain. We consider regulatory requirements with respect to human rights as a minimum standard - abiding by which is deemed non-negotiable. Clauses to this effect are incorporated in selected purchase enquires.

The organisation prohibits any form of child labour in its' units as well as at supplier's operations. It also strongly prohibits any kind of forced/compulsory labour in the organisation under any circumstances. It has a strict policy in place and it's also well communicated to all the concerned parties internally and externally.

Facilitating human rights through trainings

NALCO conducts regular training programmes to train employees on human rights and socially accountable policies. Training of minimum half a day duration on SA-8000 is imparted covering various aspects of human rights, to the executive and non-executive staff. As on date almost all the executives and most of the nonexecutives have received training about SA8000. In the reporting period, 220.5 man days of training on SA 8000 was provided to 195 non-executive and 27 executive employees. The Company continues to focus on training and development of our people taking care of employee diversity, shown below:

Training on Human Rights (SA 8000 Training)
(For the F.Y. 2012-13)

Unit	Executive				Non-Executive			
	Male		Female		Male		Female	
	No.	Mandays	No.	Mandays	No.	Mandays	No.	Mandays
Mines	1	1	-	-	30	30	-	-
Refinery	22	22	-	-	152	152	-	-
Smelter	2	4	-	-	-	-	2	2
CPP	1	2	1	2	-	-	-	-
Vizag PF	-	-	-	-	-	-	-	-
Corporate & Regional Office	-	-	-	-	-	5	2.5	63
Total	26	29	1	2	187	184.5	8	5

Discrimination of any kind, be it based on age, gender, caste, race or religion etc. is strongly discouraged. The Human Resources department ensures that policies and procedures related to hiring, promotion, training are non-discriminatory.

It has incorporated systems to check exploitation, abuse, sexual harassment etc. It has devices like suitably placed grievance box, complaint box etc. which allow employees to express their grievances irrespective of their position.

Training type	Executives		Non-executives	
	SC	ST	SC	ST
Nomination to in-house training programs	208	97	560	748
Nomination to external training programs	23	10	213	267

The organisation investigate and respond to any concerns raised with regard to conformance or non-conformance with the Company's policy and consequently if required implement corrective and preventive actions. In the reporting period, one complaint pertaining to sexual harassment was filed which was under investigation as on end of March 2013.

8.5.: Product Responsibility & Material Stewardship

The mining of bauxite and subsequent processes in the production of aluminium is highly material and energy intensive. The complex & extensive production process presents the Company with unique opportunities at various stages to conserve material by making operations more and more efficient.

In bauxite mining, explosives, diesel and lubricant oil are used in large quantities. The organisation has

taken various initiatives to ensure material efficiency in the related operations. At Alumina Refinery well developed procedures are followed to ensure that the end products are conforming to prescribed standards. Appropriate steps are taken during the storage and dispatch of products of certified quality. Environmental assessment covers aspects pertaining to air contamination, water pollution, soil/land contamination, climate change, noise pollution, health & safety. At present, special grade alumina and hydrate products are being manufactured for product diversification and value addition, taking care of the customers' requirement. The organisation is also in the process of producing an eco-friendly product called Zeolite-A, which will cater to the need of indigenous detergent manufacturers.

In case of Aluminium metal, the product grade, stack no., bundle no., net weight is displayed on the product label as required by law. In case of rolled products, name of the Company & production unit and place, coil no., grade, size in mm, net weight (in kgs.), signature of the inspecting authority, date of packaging, no. of sub-stacks and total no. of sheets per packet (for rolled sheets only) is displayed on the product label. All product related informations are provided per packaging requirements for the benefit of customers.

The organisation has dedicated R&D departments at units & Corporate. The focus areas of R&D include the following :

- * Quality improvement of raw materials, in-process materials and products
- * Introduction of technologies for energy reduction and process improvement
- * Development of process for safe disposal & recycle of wastes
- * Process efficiency improvement
- * Cost reduction
- * Development of new products
- * Development of new methods and tools for analysis and measurement

Use of Slotted Anode

Smelter Plant has started using slotted anodes in the electrolysis process. Prebaked anodes are passed through a slot cutting machine whereby two slots of 200mm height and 10mm width are made.

Slotted anodes have been found useful in expelling gas bubbles out of pot easily, thereby reducing ohmic voltage drop to the tune of 50 ~ 100mv. Reduction of instability has also been experienced due to reduction of bubble layer underneath the anode.

DC energy consumption has reduced considerably due to this initiative.

Red Mud Utilization

Low density hollow bricks ($0.9-1.2 \text{ gm/cm}^3$) & Light weight foamed bricks (LWFB) are prepared using red mud with minimal quantity of foaming agent (sodium hydroxide and aluminium powder) under different condition. Cost economics shows that the cost of above foaming brick is Rs 1.50/brick with Coal firing & strength 3.1-3.6 N/Sq mm. While the utilization could be proven with substantial quantity of red mud, the application is limited to partition, boundary etc due to lower strength than standard brick.

Fly Ash Utilization

The feasibility of using fly ash in making floor and wall tiles is being explored. Mixture of 60% to 70% fly ash, 5% to 20% red mud, 10% to 30% clay of different origins, 0.5-1% dextrin and required amount of water are prepared. Such mixtures are then compacted in a conventional hydraulic press for required shape and size with hydraulic pressure of 200Kg/cm². This is followed by slow drying the pressed green tiles from ambient to 900 degree C and holding for 2 hour at 900 degree Centigrade. Then the pressed and preheated tiles are sintered in a conventional heat treatment furnace at a temperature of 1200 degree C for one to two hour. Industrial scale trial is currently being to assess the cost economics.

Details of R&D activities undertaken by our units and our Corporate R&D are presented in Annexure-IV. The following table summarizes the total R&D expenditures during the past two years.

Expenditure on R&D :

	2012-13	2011-12
Total Expenditure	Rs.1892 Lakhs	Rs.1115 lakhs
Total Expenditure as % of total turnover	0.26 %	0.16 %

Aluminium Park

With our long term strategic objective of achieving sustainability throughout the life cycle of aluminium product, the organisation continue to look for opportunities to go beyond our traditional operations. It is developing "The Aluminium Park" in Angul in collaboration with the Industrial Infrastructure Development Corporation Odisha (IDCO) to promote aluminium specific downstream and ancillary units in the state. It is being designed to be the first of its kind in the sub continent to leverage on the conducive industrial environment of the Angul region in an eco friendly manner. It will result in significant savings in terms of energy costs for the downstream industrial units and better quality of the metal in terms of lesser impurities.

Recycling of Aluminium

Production of aluminium is an energy and resource intensive process. Recycling can mitigate some of these environmental impacts. By virtue of the value chain stage in which NALCO operates (i.e. primary metal production), recycling aluminium is not a feasible option. However, the organisation strongly advocate a proper recycling system to be in place in India. Through membership with the "Aluminium Association of India", it has submitted its observations on how recycling of aluminium can be enhanced in future to make to the most out of this sustainable metal.

8.6: Economic Performance

Disclosure on Management Approach: Economic Performance

The economic performance of the Company has been robust over the past few years. The Mines and the Alumina Refinery have reported record outputs of 54.19 lakh MT of Bauxite and 18.02 lakh MT of Alumina Hydrate respectively, which have contributed to highest annual sales and export earnings figures. Over the years, the Company has been making significant investments in renewable energy. The Company also continues to focus on contributing to local development – through its CSR initiatives and sourcing from local suppliers. To this effect, the Company has developed and implemented dedicated CSR and ancillary development policies.

The organisation's gross sales revenue in the reporting period was Rs.7247 crores, which is the highest ever since inception. It registered a growth of 4.62% in revenue over last year. It also achieved a total sale of 403,102MT Aluminium metal during the reporting period as against sale of 4,15,916 MT metal in the preceding year. In the reporting period Rs.103.72 crores was received as export incentive from Government of India for the export of alumina and aluminium metal.

Sl. No.	Particulars	2012-13 Rs. in Corers	2011-12 Rs. in Corers
1.	Direct Economic Value Generated		
a)	Revenues from operations (includes export incentive)	6916.48	6611.57
b)	Revenue from other sources	511.05	541.67
	Total :	7427.53	7153.24
2.	Economic Value Distributed		
a)	Operating expenses (excluding employee wages and benefits)	5368.56	4899.05
b)	Employee wages & benefits	1153.93	1056.44
c)	Payment to providers of capital	322.15	257.72
d)	Payment to Government		
	i. Corporate tax	312.21	348.25
	ii. Dividend distribution tax	53.26	41.31
	Total :	7210.11	6602.77
3.	Economic Value Retained (1 – 2)	217.42	550.47
4.	Additional information on Expenditures included in Operating expenses (2a above)		
a)	Environment & pollution control	1.15	0.64
b)	CSR expenses	30.99	34.22
c)	Horticulture (green belts within premises and in the vicinity of the plants)	5.84	4.57
	Total community investment (4b + 4c) :	36.83	38.79

8.6.1: Financial Implication of Climate Change

Regulatory framework in India to address the issue of climate change is in the evolving stage. The National Action Plan on Climate Change is a significant step taken by the Government of India towards achieving global commitments and driving the country in the path of sustainability. The action plan has nine national missions. Perform Achieve and Trade (PAT) scheme has been introduced as a part of National Mission for Enhanced Energy Efficiency. NALCO is covered in the PAT scheme which has identified energy intensive sectors, aluminium being one, which will be subject to energy efficiency targets. Under the PAT scheme, Smelter & Power Complex at Angul and the Alumina Refinery of M&R Complex, Damanjodi have been given average energy intensity improvement targets of 5.024% and 5.54%, respectively. We have been working to reduce our energy consumption and have identified opportunities to meet our obligation.

NALCO has already made significant investments in renewable power generation (please refer the environment section for details)

8.6.2: Ancillary Development

NALCO has always laid emphasis towards development of Micro & Small Enterprise (MSE) Units, by giving them opportunity to take up production of such products which could be used during the construction stage and also during operation. After successful commissioning of its units, NALCO continued to promote the MSE units under its Ancillary & Downstream Development Programme.

Time to time, NALCO adopts the policy and guidelines laid down by the Department of Public Enterprises (Government of India) for development of ancillary industries in public sector enterprises. A well-developed strategy is in place for encouraging local suppliers and the organisation supports, encourages and develops local vendors.

The Company provides special help and benefits for the development of ancillary units such as exemption from payment of tender fees and earnest money deposit, providing technical know-how and managerial guidance. The Company has MSE facilitation cells (Ancillary Development Cell) for disseminating relevant information and offering guidance to the interested prospective entrepreneurs. List of Goods and Services which can be procured from MSEs are displayed in NALCO's website. Besides, permanent display halls at S&P complex exhibit the materials required along with important informations i.e. Technical specifications, annual requirement, price in the last purchase order for information of Micro & Small Enterprises (MSE) vendors. It has already accorded "Ancillary" status to 53 MSE units so far.

In order to encourage local MSEs and improve their share in ordering, continuous efforts are being made by the Company. Plant level sub-committee meetings were organised alongwith State/ Central Govt MSE officials and SSI Units at Angul and Damanjodi separately to facilitate participation of SSI units. Besides above, Plant Level Advisory Committee (PLAC) meeting was organized at Bhubaneswar. Further, the Company participates in various industrial exhibitions conducted by State and Central Govt. MSE Deptt. and various industries associations of Odisha to enhance the level of interaction with the industry and project the Company's commitment for promotion of MSE units. The various inputs for mines, refinery, power plant and smelter which can be developed by MSEs are displayed in the exhibitions for the interested entrepreneurs.

In the 26th Annual State Level Convention & Seminar on Credit Flow to MSEs held during August, 12 at Cuttack, Odisha, the Company was felicitated with the “Best Mother Plant” award.

In the National Level Vendor Development Programme & Annual Exhibition-cum-Buyer

Year	Total value of orders placed on ancillary units in Odisha (Rs.lakhs)	Total value of orders placed on other Micro & Small Enterprises (MSE) units in Odisha (Rs.lakhs)	Total value of orders (Rs. lakhs)
2010-11	5,118	394	5,512
2011-12	10,199	694	10,893
2012-13	17,481	905	18,386

Seller's Meet held during November, 2012 at Cuttack, Odisha, NALCO bagged the “Best Display” award. The percentage of procurement from MSEs out of total procurement was 18.7% in the reporting period as compared to 17.6% in 2011-12.

8.7 : Managing Talent

Employee satisfaction and their continuous development is crucial for any organization's success. NALCO continues to try and maximise value for its people. Its commitment is reflected by the low attrition rate over the years, including the reporting period. It has multiple platforms and forums to regularly engage employees at various levels. It also reviews HR policies from time to time in pursuit of making it increasingly relevant to the employees.

It also brings out advertisements in local employment exchange, vernacular / national news papers / employment news for technical and unskilled positions. In hiring process, preference is given to local candidates with other things remaining the same. It has provided employment to one member from each land displaced family. Also for labour engaged through contractors, preference is given to the locals.

The following table summarises our total man-power:

Regular employees -

Currently there are 2425 regular employees working in our refinery and mining sites, out of which 769 are from local Koraput district and overall 2172 are from Odisha state. Also, 73% of the contract labours are from the local area. A significant number of senior executives are from the state of Odisha.

Category	Male	Female	Total
Executive	1731	68	1799
Supervisory	781	82	863
Skilled	3748	203	3951
Unskilled/semi skilled	942	0	942
Total	7202	353	7555

During 2012-13, total 7555 regular employees were engaged in our plant sites at Angul & Damanjodi, Port Facilities at Vizag, Corporate Office at Bhubaneswar, Regional offices at New Delhi, Mumbai, Chennai, Kolkata and offices at Paradeep & Bangalore. In the plant sites at Angul & Damanjodi, out of total 7031 regular employee's about 92% are recruited from Odisha. In the office areas, from the total strength of 524 regular employees, Odisha based employees constitute about 72% of the strength. Job Contractors are engaged in areas like hospitality, maintenance, sanitation, conservancy and project activities, The job contractors engaged 10,708 workers, in the reporting period, for discharge of their contractual obligations out of which, about 95% are from Odisha. There are several benefits that it extends to the contractual labours for their welfare. Some of them are listed below:

- ❖ Additional wages of Rs.32/- over and above the minimum wages fixed by the Central Govt.
- ❖ Terminal benefits on completion of job contract.
- ❖ Accident benefits of Rs.2 lakhs for the family in case the contract labour dies.
- ❖ Coverage under EPF and ESI benefits.
- ❖ Facilities for their children to study at schools in NALCO campus, at a concessional rate.
- ❖ Annual health check-up

Employee Trainings

NALCO provided 2.8 man days of training per employee in the reporting period. Human resource development is the key for the success of an organisation. Keeping this in mind, functional and developmental training needs are identified from competency needs, and other needs arising from organisation requirements. Emphasis is placed on specific position related training needs and there is an attempt to customise programmes. Training feedback and evaluation are done for improving the training programmes. Specific trainings are generally given in the field of health & safety, function specific & policy related needs. For the reporting period the breakup is

Training Statistics

Employee category	Persons			Man days		
	Male	Female	Total	Male	Female	Total
Executives	2038	90	2128	8372	198	8570
Non-executives	3745	130	3875	12393	242	12635
Total	5783	220	6003	20765	440	21205

- ❖ During 2010-11 : 7714 persons were trained, 23473 mandays of training done with 3.04 mandays of training per employee per year.
- ❖ During 2011-12 : 7728 persons were trained, 21195 mandays of training done with 2.74 mandays of training per employee per year.

Participating Management

Regular worker and workers engaged by job contractors, have the freedom to form or join any trade union of their choice. The rights and privileges of registered trade unions are given due respects. 28 registered trade unions are formed by regular workmen and 20 trade unions are formed by workmen of contractors in different units and offices of the Company. The rights and privileges of the trade unions are formalised in the policy framework of the Company finalised in consultation with the trade unions based on the ratio of their representation determined through secret ballot process. Almost 100% of the workmen participate in the secret ballot process conducted by the Central Labour Authorities and the union securing the majority is accorded the status of Recognised union as the collective bargaining agent of the workmen.

Important policy matters connected to issues like wages, incentives, benefits, standing order etc., are finalised through collective bargaining method. Apart from four layered i.e. unit level, complex level, corporate level (Directors level) and apex level (CEO level) system of participative management with recognised union, shop level, joint committees are also very effective in ensuring workers' participation in management. Authorised representatives of the recognised unions are invited to issue based discussions on all important matters affecting the service conditions of the employees and final decision is taken through mutual consultation, with formal settlement.

Although the executives of the Company are not covered under the dispute resolution machineries provided under the Industrial Disputes Act, 1947, the views of Officers' Associations covering almost 85% of Officers are taken into consideration while framing major policy decisions affecting Officers.

Before executing any major systemic change, NALCO consults all the concerned employees who might be affected because of the proposed changes through discussions with recognized unions. A notice period of 21 days is given, as per section 9 of the Industrial Dispute Act of 1947, prior to implementation of any significant operational change.

Employee Turnover

There were no new executive recruitments in the reporting period and only 13 non-executive male employees were hired. During the reporting period 124 employees have superannuated while 10 employees have resigned. Tables below provide details of the employees who left the organization in 2012-13

Superannuation

Unit	Superannuation (All after reaching 60 yrs)			
	Executive		Non-Executive	
	Male	Female	Male	Female
Mines	3	-	13	-
Refinery	7	-	13	1
CPP	5	-	19	-
Smelter	19	-	26	-
Port	1	-	1	-
Corporate	12	-	3	1
Total	47	-	75	2
Grand Total	124			

Resignation

Unit	Executive		Non-Executive		Age-wise breakup (years)		
	Male	Female	Male	Female	<30	30-45	>45
Mines	2	-	-	-	-	2	-
Refinery	1	-	-	-	-	1	-
CPP	1	-	-	-	-	1	-
Smelter	4	-	1	-	1	3	1
Port	-	-	-	-	-	-	-
Corporate	1	-	-	-	-	-	1

Non-Discrimination

NALCO doesn't engage in or support discrimination in compensation, promotion on the basis of race, caste, religion, gender, age etc. There are no gender based differences in basic salary and other remuneration in any position. It has well documented policies and procedures in this regard in the HR manual which are adhered to completely. The management ensures that employees have access to and are familiar with the procedure for filing complaints about discrimination. In case of any grievances, employees can use the Grievance Handling Procedure to register their grievances.

Employee Diversity

Currently, the Company tracks the number of Scheduled Caste (SC)/ Scheduled Tribe (ST) employees in our ranks as the key indicator of diversity.

Out of 7,555 employees (including Trainees) on the Company's roll as on 31.03.2013, there were 1,220 SCs, 1,361 STs, 763 OBCs and 79 Persons with Disabilities. The total number of lady employees in the Company stood at 353. Thus, 16.15% of the total employees are SCs, 18.01% are STs, 10.10% are OBCs and 1.05% are Persons with Disabilities. Every third employee in the Company belongs either to SC or ST category. The Gender wise breakup (in percentage) and age wise breakup for executives & non executives is given below

Category	Male(%)	Female(%)	Age-wise breakup		
			<30 yrs	30-45yrs	Above 45yrs.
Executive	96	04	145	538	1112
Non-executive	95	05	389	1886	3485
Total	95	05	534	2424	4597

Industrial Relations

NALCO maintained the tradition of resolving employee issues during the year through participative management, which resulted in a peaceful, healthy and conducive industrial relations climate for optimal utilisation of human resources. The recognised trade unions at all the major locations of Company played a very constructive and dynamic role in helping the management to tide over many critical issues relating to cost control and sustainability. It has an established system of workers participation at different levels starting from the shop level to the chief executive level to address various issues concerning with productivity, quality including quality of work life and employee related issues. Employee safety, welfare and grievance handling, both formal as well as informal remained the prime focus of the various joint committees formed with equal participation of representatives of workmen and the management.

Parental Leave

All permanent employees of the organization are entitled to maternity/ paternity leaves. The following table summarizes the number of people who have benefitted from this in the reporting period.

S. No	Details	Numbers
1	No. of employees who availed paternity leave	136
2	No. of employees who availed maternity leave	18
3	No. of employees who returned to work after availing parental leave	154 (All of those who availed parental leave returned to work)

Retirement Benefits

1. Full provident fund contribution in the Company along with matching contributions and interests accrued on the whole.
2. Gratuity upto a maximum limit of Rs. 10,00,000/-
3. Encashment of leave
4. Permission to retain the Company's quarters for a period of 2 months from the date of retirement on nominal rent.
5. Travelling allowance for self and family for proceeding to home town or to any other place of settlement limited to the distance to home town by entitled class. Reimbursement of actual expenses incurred on transportation of personal assets is also admissible as on transfer.
6. Employee and spouse receive medical benefits under contributory scheme.
7. Self Contributory pension scheme.



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Responsibility

Response
Status

REFERENCES

Teamwork

Vision

REFERENCE

GRI Index

GRI Ref	Descriptions	Response Status	Section reference
STANDARD DISCLOSURES PART I: Profile Disclosures			
Strategy and Analysis			
1.1	Statement from the most senior decision maker	Full	Chairman-cum-Managing Director
1.2	Key impacts, risks and opportunities	Full	Message from Chairman-cum-Managing Director Also, additional information is available in the Company's annual report available in the Company's website.
Organisational Profile			
2.1	Name of the organisation	Full	About the report
2.2	Brands, products and/or services	Full	Organisation profile
2.3	Operational structure	Full	Please refer the Company's website and the annual report for details of the organizational structure.
2.4	Headquarter location	Full	Organisation profile
2.5	Countries in operation	Full	Organisation profile
2.6	Nature of ownership	Full	Organisation profile
2.7	Markets served	Full	Organisation profile
2.8	Scale of organisation	Full	Organisation profile
2.9	Significant changes regarding size, structure or ownership	Full	Organisation profile
2.10	Awards received	Full	Awards and recognitions
3.1	Reporting period	Full	About this report

GRI Index

GRI Ref	Descriptions	Response Status	Section reference
3.2	Most recent previous report	Report of FY 2011-12 (based on the National Voluntary Guidelines)	About this report
3.3	Reporting cycle	Full	About this report
3.4	Contact point for questions	Full	About this report
3.5	Process for defining report content	Full	1. Stakeholder engagement 2. Determining materiality
3.6	Boundary of the report	Full	About this report
3.7	Limitations on the scope or boundary of the report	Full	About this report
3.8	Joint ventures, subsidiaries, and outsourced operations	Full	About this report
3.9	Data measurement	Have been explained where necessary along with data reported	About this report
3.10	Effects of re-statements of information provided in earlier reports	No restatements	About this report
3.11	Significant changes in the scope, boundary, or measurement methods	Nil	Not Applicable
3.12	GRI content index	Reported	This table
3.13	External assurance	The report has been assured by DNV GL (DNV Business Assurance India Private Limited)	Independent Assurance Statement

GRI Index

GRI Ref	Descriptions	Response Status	Section reference
Governance, Commitments and Engagement			
4.1	Governance structure	Full	Integrity in everything we do – Corporate Governance Further information is also available in the annual report.
4.2	Indication whether chairperson is also executive officer	Full	Integrity in everything we do – Corporate Governance
4.3	Independent members at the board	Full	Integrity in everything we do – Corporate Governance
4.4	Mechanisms for shareholders and employees to provide recommendations to the board	Full	Integrity in everything we do – Corporate Governance
4.5	Linkage between executive compensation and organisation's performance	Full	Integrity in everything we do – Corporate Governance
4.6	Processes to avoid conflicts of interest at the board	Full	Integrity in everything we do – Corporate Governance
4.7	Expertise of board members on sustainability topics	Full	Integrity in everything we do – Corporate Governance
4.8	Statements of mission, codes of conduct, and principles	Full	NALCO -Vision and Mission
4.9	Procedures for board governance on management of sustainability performance	Full	Integrity in everything we do – Corporate Governance
4.10	Processes for evaluation of the board's sustainability performance	Full	Integrity in everything we do – Corporate Governance
4.11	Precautionary approach	Our approach towards addressing business related risks has been explained in the relevant sections throughout this report	Determining materiality

GRI Index

GRI Ref	Descriptions	Response Status	Section reference
4.12	External charters, principles, or other initiatives	Partial	Determining Materiality
4.13	Memberships in associations	Full	Stakeholder engagement
4.14	Stakeholder groups	Full	Stakeholder engagement
4.15	Stakeholder identification and selection	Full	Stakeholder engagement
4.16	Approaches to stakeholder engagement	Full	Stakeholder engagement
4.17	Key topics and concerns raised through stakeholder engagement	Full	Stakeholder engagement
STANDARD DISCLOSURES PART II: Disclosures on Management Approach (DMAs)			
DMA EC	Disclosure on Management Approach - Economic	Full	Economic performance
DMA EN	Disclosure on Management Approach - Environmental	Full	Environmental Performance
DMA LA	Disclosure on Management Approach - Labour	Full	Health & Safety at Work
DMA HR	Disclosure on Management Approach – Human Rights	Full	Human rights
DMA SO	Disclosure on Management Approach - Society	Full	Community initiatives
DMA PR	Disclosure on Management Approach – Product responsibility	Full	Product responsibility & material stewardship
STANDARD DISCLOSURES PART III: Performance Indicators			
Economic			
Economic performance			
EC1	Direct economic value generated and distributed	Full	Economic performance
EC2	Financial implications due to climate change	Full	Financial implications of climate change
EC3	Coverage of the organisation's defined benefit plan	Full	Managing talent
EC4	Financial government assistance	Full	Economic performance

GRI Index

GRI Ref	Descriptions	Response Status	Section reference
Market presence			
EC5	Entry level wages	Full	Managing talent
EC6	Locally-based suppliers	Full	Ancillary development
EC7	Local hiring	Full	Employees
Indirect economic impacts			
EC8	Infrastructure investment and services for public benefit	Full	Community initiatives
Environmental			
Materials			
EN1	Volume of materials used	Full	Environmental performance – material use
EN2	Recycled materials	Full	Environmental performance – Material use
Energy			
EN3	Direct primary energy consumption	Full	Environmental performance – Energy & GHG emissions
EN4	Indirect primary energy consumption	Full	Environmental performance – Energy & GHG emissions
EN5	Energy conservation	Partial	Annexure II – Initiatives for conservation of energy
Water			
EN8	Total water withdrawal	Full	Environmental performance – Water use
EN9	Water sources significantly affected by withdrawal of water	Not Applicable	Not Applicable
EN10	Percentage and total volume of water recycled and reused	Partial	Environmental performance – Water use
Biodiversity			
EN11	Land assets in or adjacent to protected areas	Full	Environmental performance – Biodiversity
EN12	Impacts on biodiversity	Full	Environmental performance – Biodiversity
MM1	Landed distributed or rehabilitated	Full	Environmental performance – Biodiversity

GRI Index

GRI Ref	Descriptions	Response Status	Section reference
MM2	Number and percentage of sites requiring biodiversity management plans	Full	Environmental performance – Biodiversity
Emissions, effluents and waste			
EN16	Greenhouse gas emissions	Full	Environmental performance – Energy and GHG emissions
EN17	Other greenhouse gas emissions	Full	Environmental performance – Energy and GHG emissions
EN18	Initiatives to reduce GHG emissions	Full	Environmental performance – Energy and GHG emissions
EN19	Emissions of ozone-depleting substances	Full	Environmental performance – Energy and GHG emissions
EN20	NOx, SOx, and other air emissions	Partial	Environmental performance – Energy and GHG emissions
EN21	Water discharge	Full	Environmental performance – Water use
EN22	Waste by type and disposal method	Full	Environmental performance – Water use
MM3	Amount of overburden, rock, tailings and sludges and associated risks	Full	Environmental performance – Material use
EN23	Significant spills	Nil	Not Applicable
Products and services			
EN26	Initiatives to mitigate environmental impacts		Environmental performance – Managing waste
EN27	Packaging materials	Not applicable – no packaging material used	Not Applicable
Compliance			
EN28	Sanctions for noncompliance with environmental regulations	Nil	Not Applicable
Labour Practices and Decent Work			
Employment			
LA1	Workforce by employment type	Full	Managing talent
LA2	Employee turnover	Full	Managing talent

GRI Index

GRI Ref	Descriptions	Response Status	Section reference
LA3	Benefits provided to full time employees	Full	Managing talent
LA15	Return to work and retention	Full	Managing talent
Labour/management relations			
LA4	Employees with collective bargaining agreements	Full	Managing talent
LA5	Minimum notice period(s) regarding operational changes	Full	Managing talent
MM4	Number of strikes/ lock-outs exceeding one week	Nil – there were no such incidents	Managing talent
Occupational health and safety			
LA6	Formal joint management-worker health and safety committees		
LA7	Occupational diseases, lost days, and number of fatalities	Full	Health & Safety at work
LA8	Training on serious diseases	Full	Health & Safety at work
LA8	Training on serious diseases	Full	Health & Safety at work
Training and education			
LA10	Training per employee	Full	Managing talent
Diversity and equal opportunity			
LA13	Composition of governance bodies	Full	Managing talent
LA14	Gender pay disparity	Full	Managing talent
Human Rights			
Investment and procurement practices			
HR1	Investment agreements	Full	Human rights
HR2	Supplier screening on human rights	Full	Human rights
HR3	Human rights training	Partial	Human rights
Non-discrimination			
HR4	Incidents of discrimination	Partial	Human rights
Freedom of association and collective bargaining			
HR5	Freedom of association and collective bargaining	Full	Managing talent

GRI Index

GRI Ref	Descriptions	Response Status	Section reference
Child Labor			
HR6	Child labour	Full	Human rights
Prevention of forced and compulsory labor			
HR7	Forced labour	Full	Human rights
Indigenous rights			
MM5	Operations taking place adjacent to Indigenous people's territories	Full	Sustainable mining
Assessment			
HR10	Operations that have been subjected to human rights reviews	Full	Human rights
Remediation			
HR11	Grievances related to human rights	Full	Human rights
Society			
Local communities			
SO1	Impact on communities	Full	Community initiatives
MM6	Significant disputes relating to land use and customary rights of local people	Nil	Not Applicable
MM7	Extent to which grievance mechanisms were used to resolve disputes related to land use	There were no issues relating to land use or customary rights in the reporting period	Not Applicable
SO9	Operations with negative impacts on local communities	Full	Human rights
SO10	Prevention and mitigation measures	Full	Human rights
Artisanal and small scale mining			
MM8	Number and percentage of sites adjacent to which small-scale or artisanal mining takes place	There is no small scale/artisanal mining sites in the vicinity of our mining site.	Not Applicable

GRI Index

GRI Ref	Descriptions	Response Status	Section reference
Resettlement			
MM9	Sites where resettlement took place	Partial	Community Initiative
Closure planning			
MM10	Number and percentage of sites with closure plans	Panchpatmali is the only mine site currently operated by NALCO. This has a closure plan.	Sustainable mining
Corruption			
SO2	Corruption risks	Full	Integrity in everything we do – Corporate Governance
SO3	Anti-corruption training	Full	Integrity in everything we do – Corporate Governance
SO4	Actions taken in response to incidents of corruption.	Full	Integrity in everything we do – Corporate Governance
Public policy			
SO5	Public policy positions and participation in public policy development	NALCO contributes to public policy development through its participation in industry bodies. Also, please refer the Company's business responsibility report (AR 2012-13) for further details	Determining Materiality
Compliance			
SO8	Sanctions for noncompliance with laws and regulations	Nil	Not Applicable

GRI Index

GRI Ref	Descriptions	Response Status	Section reference
Product Responsibility			
Material stewardship			
MM11	Programs and process relating to material stewardship	Full	Product responsibility & material stewardship
Customer health and safety			
PR1	Health and safety impacts along product life cycle	Full	Product responsibility & material stewardship
Product and service labelling			
PR3	Product information	Full	Product responsibility & material stewardship
Marketing communications			
PR6	Marketing communication standards	The Company only adheres to its own marketing guideline.	Product responsibility & material stewardship
Compliance			
PR9	Sanctions for noncompliance with product and service related regulations	Nil	Not Applicable

General Information from Business Responsibility Report for 2012-13

General Information about the Company		
S.No	Particulars	Company Information
1	Corporate Identification Number (CIN) of the Company	L27203OR1981GOI000920
2	Name of the Company	National Aluminium Company Limited
3	Registered Address & Corporate Office	NALCO Bhawan, Plot No. P/I, Nayapalli, Bhubaneswar - 751013, Odisha, India
4	Website	www.nalcoindia.com
5	E-mail ID	knravindra@nalcoindia.co.in (Company Secretary)
6	Financial year reported	FY 2012-13
7	Sector(s) that the Company is engaged in (industrial activity code-wise)	Bauxite Mines : Industrial Group Code 072 Alumina Refinery : Industrial Group Code 201 Aluminium Smelter : Industrial Group Code 242 Electricity Generation : Industrial Group Code 351
8	List of three key products/services that the Company manufactures/provides Total number of locations where operations are undertaken by the Company:(1) Number of International Locations(2)Number of national locations	1. Alumina <ul style="list-style-type: none"> ● Calcined Alumina ● Alumina Hydrate ● Specialty Alumina & Hydrates 2. Aluminium <ul style="list-style-type: none"> ● Standard Ingots ● Sow Ingots ● Wire Rods ● Billets ● Cast Strip ● Flat Rolled Products (Coils, Sheets & Chequered Sheet) ● T-Ingots 3. Electricity

Section-A of Business Responsibility Report for 2012-13

Section A: General Information about the Company

S.No	Particulars	Company Information
9	<p>Total number of locations where operations are undertaken by the Company:</p> <p>(1) Number of International Locations</p> <p>(2) Number of national locations</p>	<p>1. No. of International Locations : NIL</p> <p>2. National Locations :</p> <p>a) Mines & Refinery Complex, Damanjodi-763008, Dist. Koraput, Odisha</p> <p>b) Smelter Plant, Nalco Nagar, Angul-759145, Odisha</p> <p>c) Captive Power Plant, Angul - 759122, Odisha</p> <p>d) Port Facilities, Port Area, Visakhapatnam – 530035, Andhra Pradesh</p> <p>e) Wind Power Plant-I : Gandikotta, Dist.-YSRKadappa, Andhra Pradesh</p> <p>f) Wind Power-II : Dist.-Jaisalmar, Rajasthan</p> <p>g) No. of Port Facilities : 03 (Visakhapatnam, Kolkata, Paradeep)</p> <p>h) No. of Regional Offices : 04 (New Delhi, Mumbai, Chennai, Kolkata)</p> <p>i) Branch Office : 01 (Bengaluru)</p> <p>No. of Stockyards : 09 (Jaipur, Faridabad, Baddi, Kolkata, Bengaluru, Chennai, Visakhapatnam, Bhiwandi & Silvassa)</p>



ANNEXURES

Important Sustainability Aspects : Targets and Achievements in 2012-13
(from MOU 2012-13)

Important Aspects	Performance Indicator	Target	Achievement
Finance	Gross Sales in Rs.Crores	7179	7247
	Added Value/Gross Sales in %	4.44	5.73
	Gross Margin/ Gross Block in %	9.91	10.01
	Gross Profit/ Capital Employed in %	8.57	9.22
Product Quality	Quality (Purity) of aluminium in %	99.76	99.77
Energy Management	Certification of ISO 50001 in CPP by	Jan.'13	Jan.'13
Customer Satisfaction	Achieving threshold satisfaction index from % of customers	90	100
Adoption of Innovative practices	Anode stub hole and pin length increase by 20mm in no. of Pots	200	394
	Introduction of slotted anodes in no. of pots	200	433
Material Stewardship	Smelter : DC power consumption (excluding start up power & wedge drop) in KWH/MT	13550	13394
	Net carbon consumption in Kg/MT of hot metal	430	434
	Aluminium fluoride consumption in Kg/MT	21	18.5
	Alumina extraction efficiency in %	97.5	97.02
	Lime consumption in Kg/MT	33	32.14
Research & Development	Total R&D expenditure as % of PAT	1.05	1.82
	Patent application to be filed in nos.	3	3
Employees Involvement	Number of suggestions generated per executive per year (Nos. per executive)	0.06	0.13
	% of Quality circle projects completed against total quality circle projects undertaken in a year in % fulfilment	85	100
HR Practices	Employee satisfaction survey – ESI measure in %	95	85.65
	Number of structured meetings with employees' representatives (no. of meetings)	4	10
	Organisation culture building initiatives in nos.	2	2
	Training days per employee per year	2.4	2.8
	Attrition as % of total employees in %	1	0.19

Annexure - I

Important Aspects	Performance Indicator	Target	Achievement
Sustainable Development	Pilot project for carbon sequestration by algae formation in CPP (20 tonnes of CO_2 /acre per year) commissioning by	31st Jan.'13	29th Oct.'12
CSR	Expenditure on CSR as % of PAT	2 %	3.64 %
	Providing formal education to tribal children in Damanjodi (starting 2012-13 academic session) in no. of children	250	401
	Coverage through mobile health units in no. of villages	25	142



Initiatives for Conservation of Energy

Various energy conservation measures that have been adopted for optimal utilization of energy resources in different units of the Company during the year 2012-13 are as under:

CAPTIVE POWER PLANT

1. Energy management certificate under ISO 50001: CPP was certified under ISO-50001 on 13.02.2013 and is valid for two years. The certification audit was carried out on 04.01.2013 by M/s.DNV.
2. Carbon sequestering project: CPP has undertaken a pilot project for carbon sequestering by algae. This is a latest technology for absorbing CO directly from flue gas and the same would be utilised for growth of algae which can be further utilised as bio-diesel, a high protein food for cattle or can be used as a fuel to the boilers. Process initiation of the said project was done on 29-10-2012 by member secretary, OSPCB. A team of sub-committee III of House committee on environment visited CPP on 07-02-2013 and during their visit to carbon sequestration project highly appreciated NALCO for the efforts towards reduction of carbon to the atmosphere.
3. Utilization of Effluent(Ash Pond): During the year 1,87,64,710 M³ of ash water was recycled from the Ash Pond.
4. Energy saving luminaries like 2 x 28W, T5 tube light fitting – 1000 Nos. in place of 2 x 40W TL fitting, Electronic tube light chokes 2500 Nos. in place of copper chokes and 70W HPSV fittings of 1250 Nos. in place of 125W HPMV fittings are replaced at different locations inside the plant.
5. Replacement of 900 KW old type PA fan motors with new design motors: The 900 KW motors of Unit#1 to Unit#5 are old type and failure was very frequent in 2009-10. It was decided to replace it with new design PA fan motors of BHEL make for improving the reliability. Finally six motors were procured. Already 4 nos. of motors in location of Unit #1 PA fan-A, Unit #3 PA fan-A and B and Unit #4 PA fan-B have been replaced. Another two nos. will be replaced in due course of time.
6. Energy audit of Unit #7 and Unit #8: Energy audit of Unit #7 was conducted by M/S Schneider during July-2012 and again of Unit #8 during October-2012. They have identified few of the areas where there is scope of energy saving like reduction of unburnt carbon in fly ash and bottom ash, improvement in performance of LPH-3 and HPH -6, reduction in leakage in air preheater.

SMELTER

1. The specific DC energy consumption in Smelter has reduced to all time best figure of 13394 KWHr/MT, which could be achieved by control of bath drop with ALPSYS advanced regulation system, reducing anodic problems, use of graphitised cathode block, use of slotted anodes in two potlines (433 pots), increasing anode stub hole and pin length in all running pots. The activities has lead to increase in overall current efficiency to 94.32% against 93.8% in 2011-12.

Annexure - II

- ❖ Annual saving of electrical energy is 63,411,192 KWHr.
 - ❖ Financial benefits for the year are Rs.1826.24 Lakhs @ Rs.3.10 per KWHr.
2. The specific fuel oil consumption is also achieved to be all time best figure of 71 LT/MT, through various controlling measures such as reduction of furnace idling time, incorporation of magnetic resonator in HFO line & semiautomatic firing with PID controller for optimum firing resulting in proper atomisation & combustion in the furnaces of Rolling plant.
 - ❖ Annual saving of fuel oil (thermal energy) :- 2016.920 KL.
 - ❖ Financial benefits for the year are Rs.822.70 Lakhs @ Rs.40,790 per KL.
 3. Smelter has taken up ten nos. of PAT projects (Perform, Achieve & Trade) to achieve the PAT target assigned. Out of 10 projects, 3 projects are completed contributing to above reduction in specific Energy consumption.
 4. Feasibility study for solar PV cells to harness the renewable energy in compliance to RPO obligation is underway through external consultant and final report will be submitted by end of Sept'13. Depending on the report, installation of solar PV cells on the roof of thirteen buildings of smelter plant & township having total area of 7500M². It is assessed to have solar potential for generation of 1.17 MW during peak hour.

REFINERY

1. Installation of VVFD in 23 nos. of drives at various locations of refinery and SPP resulting saving of power to the tune of 87 KW.
2. A new type of coupling i.e. Magnadrive coupling which transmits the torque using principle of magnetic induction was successfully installed in Conveyor-6A. With this unique feature of torque transmission, Magnadrive coupling has resulted many advantages over conventional fluid coupling like electrical Energy saving to the tune of 4%, vibration isolation, misalignment tolerance, shock load tolerance etc.
3. Suitable modification was carried out to eliminate the feed water loss from BFP (Boiler Feed Pump) warm up line. This has resulted in recovery of thermal energy and DM water.
4. Reduction in idle running of equipments was implemented in crusher and evaporator drives. Running of agitators in isolated tanks were standardized to 5 minutes daily and also trial run of drives were standardized for 10 minutes daily. This has resulted in saving in electrical energy.
5. Optimization of running of CW Pumps in old evaporator has resulted in saving in electrical energy and running the evaporator in 6-6 mode has resulted in reduction in steam consumption.

PANCHPATMALI BAUXITE MINES

1. Forty energy meters installed earlier have been hooked up with energy management system (EMS) using the existing LAN network & dedicated servers. The system has been fine tuned & now the same is capable of generating various analysis reports for energy consumption patterns.

Annexure - II

2. Detailed energy audit has been completed by M/s National Productivity Council (NPC). Out of their 13 recommendations with huge energy saving potential in Mines, one has been implemented while for the rest, the procurement & implementation actions are in progress.

Projects Under Implementation

Alumina Refinery- Upgradation Project

Capacity upgradation of 4th Stream of Alumina Refinery from 5.25 lakh TPY to 7.0 lakh TPY and that of Bauxite Mines from 6.3 Million TPY to 6.825 Million TPY at an estimated project cost of Rs. 409 crore is in progress since August, 2008. Commissioning activities have commenced in December, 2012. The plant is in the process of stabilization.

47.6 MW Wind Power Project-II in Rajasthan

Work order is placed on M/s. Gamesa Wind Turbines Pvt. Ltd. for setting up of 2nd wind power project of 47.6 MW at Jaisalmer, Rajasthan at an investment of Rs. 283 crore. 36 turbines out of 56 have already been commissioned and generating power and the balance are under commissioning.

Amperage increase at Smelter

Smelter pot lines are operating with AP's 180 KA technology for last two and half decades. Globally, most of the AP-18 Smelters have migrated from 180 KA to 220 KA technologies for enhancing pot productivity without major changes in the pot shell. Your Company has undertaken a comprehensive study for higher amperage i.e. 400 KA or above after dismantling the existing set up partially or fully vis-à-vis raising amperage to 195 / 220 KA, to improve productivity.



Annexure - III

Hazardous and Non-Hazardous Waste

1. Refinery

S.No.	Waste generated	Units	Type of waste	Quantity	Method of disposal
1	Used oil	KL	Hazardous	128.43	Disposal to authorized parties
2	ETP sludge	MT	Hazardous	5544	Reclaimed from ETP and disposed at Red mud pond
3	Alkaline residue	MT	Hazardous	2208690	Disposed at Red mud pond
4	Spent resin	MT	Hazardous	3	Disposed in impervious designated pit
5	Fly ash	MT	Non-hazardous	445742	Utilised for cement making, brick making, agriculture, road and area development, and filling of low lying area
6	Used containers	Nos	Non-hazardous	1944	Sold to different parties
7	Lime grit	MT	Non-hazardous	19812	Low line area filling & brick making

2. Smelter

S.No.	Waste generated	Units	Type of waste	Quantity	Method of disposal
1	Used oil	KL	Hazardous	976.595	Sold to authorised recycler
2	Waste containing oil	MT	Hazardous	120.84	Incineration
3	Cathode residues including pot-lining waste	MT	Hazardous	1900	Disposed in landfill
4	Tar containing wastes	MT	Hazardous	11.68	Recycled in anode making
5	Flue gas dust from bake Oven	MT	Hazardous	8.9	Recycled in bake oven
6	Waste water treatment sludge	MT	Hazardous	6.41	Disposed in landfill
7	Aluminium dross	MT	Hazardous	9300.669	Recycled in pots / Stored for selling to authorized agency in future
8	Floor sweeping waste	MT	Hazardous	453.8	Disposed in landfill
9	Rejected filter bags (FTP)	MT	Hazardous	21.6	Incinerated in the pots
10	Rejected AlF ₃ bags (Nos.)	Nos	Hazardous	36489	Incinerated in the pots
11	Asbestos waste	MT	Hazardous	17	Disposed in landfill
12	Coke dust	MT	Hazardous	615.16	Recycled in anode making
13	Green anode ridge waste	MT	Hazardous	2797.5	Recycled in anode making

Annexure - III

S.No.	Waste generated	Units	Type of waste	Quantity	Method of disposal
14	Green anode cooling decantation tank sludge	MT	Hazardous	2	Recycled in anode making
15	Carbon anode baking waste	MT	Hazardous	10.7	Recycled in anode making
16	Drain cleaning sludge (Potline area and Rodding Shop area)	MT	Hazardous	22.9	Disposed in landfill
17	Ladle cleaning residues	MT	Hazardous	500	Disposed in landfill
18	Spilled waste (FTP)	MT	Hazardous	1000	Recycled
19	Cotton & other residual waste	MT	Hazardous	0.011	Incineration
20	Induction furnace slag	MT	Hazardous	664.37	Disposed in landfill
21	Incineration ash	MT	Hazardous	8.47	Disposed in landfill
22	Spent anode	MT	Hazardous	63296	Recycled in anode making

3.CPP

S.No.	Waste generated	Units	Type of waste	Quantity	Method of disposal
1	Spent resin	KL	Hazardous	2.58	Stored in a impervious resin pit inside the plant
2	Used oil	KL	Hazardous	116.14	Disposed to authorised agencies
3	Fly ash	MT	Non-hazardous	2244539	Utilized for cement making, brick making, agriculture, road and area development, and filling of low lying area. Dumped in ash-pond

4. Mines

S.No.	Waste generated	Units	Type of waste	Quantity	Method of disposal
1	Overburden and top soil	MT	Non-hazardous	1994563	Reused in backfilling of mined out area
2	Used oil	KL	Hazardous	83.173	Disposed to authorised agencies
3	Oil filter and filter material	MT	Hazardous	0.25	Incineration, metallic part disposed off as scrap
4	Cotton waste, etc.	MT	Non-hazardous	2.6	Incineration

Annexure - IV

R&D Activities

Some of the major projects that have been undertaken by the in-house R&D teams at units and collaborative R&D by corporate are given below :

At Alumina Plant

1. Studies to establish solubility of CaO from different sources of lime. (Completed)
2. Installation of heating bundles in pre desilication tank. (one tank completed- performance is satisfactory)
3. Extraction of vanadium sludge from process liquor (continuing)
4. Rectification of rotary kiln to produce low soda high alpha special alumina for ceramic use. (project continuing)
5. Laboratory scale studies were carried out along with the suppliers of various flocculants for use in high rate thickeners and deep cone washers of new stream (Taken up as and when required)

At Smelter Plant

1. Production and use of slotted anodes and anodes with higher stub hole depth in potline
2. Magnetic resonators installed on trial basis in cast house furnaces for fuel oil saving
3. Measurement of melt loss in cast house furnaces
4. PFC measurement has been taken in potlines for the first time since inception
5. Plant scale studies carried out on reassessment of c.p.coke quality received from Nuamalgirh refinery vis a vis anode quality

By Corporate R&D Dept.:

Some of the collaborative R&D work in which substantial progress has been made during the year is as below:

1. Development of heat treatment process for destruction of toxic cyanide and recovery of valuables (Sodium, Fluorides, etc. from Spent Pot-Linings Materials (SPL) –completed.
2. Development of ceramic tiles from fly ash in collaboration with IIT, Kharagpur and lab scale work completed
3. Study of effect on alumina quality on solubility of electrolytic bath-continuing.
4. Assessment of billet quality in DC cast AA6063 alloys-continuing.
5. Up gradation of alumina in NALCO Fly ash through bio leaching of silica and subsequent recovery of alumina through piro/hydrometallurgical routes - just started with IMMT, Bhubaneswar.

Annexure - IV

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

1. Introduction of chequered sheet as a new product has resulted in variety and product mix and benefited smelter plant by added revenue.
2. Use of slotted anodes and anodes with higher stub hole depth in potlines have resulted in considerable savings due to reduction in DC energy consumption.
3. Due to R&D effort good quality coke has been used in green anode plant. Both green anode density & baked anode density has shown improvements. Potline performance has also improved due to better quality anodes.
4. Trial with non-wetting castable tapping ladles of potline has resulted in increase in average ladle life from 5.5 months to one yr. Expected annual savings approx Rs 7.95 lakhs.
5. Process developed for cyanide removal of spent potline for subsequent handling of spent potlines to recover valuables in carbon portion of SPL.

Future Plan of Action and New Projects:

1. Setting up of a world class NALCO Research & Technology Centre at Bhubaneswar, along with revamping of R&D centres at both sites.
2. Commercialization of few R&D processes.
3. Utilization of fly ash in ceramic tiles manufacturing, industrial investigation.
4. Development of a process know how for extraction of alumina from fly ash.
5. Extraction of aluminium from bauxite/red mud etc. in collaboration with M/s Orbite Inc, Canada.



INDEPENDENT ASSURANCE STATEMENT

Introduction

DNV GL represented by DNV Business Assurance India Private Limited, has been commissioned by the management of National Aluminium Company Limited ('NALCO' or 'the Company') to carry out an assurance engagement (Type I, Moderate) on its Sustainable Development Report ('the Report') for the year 2012-13 in its printed format, against the Global Reporting Initiative (GRI) 2011 Sustainability Reporting Guidelines Version 3.1 (GRI G3.1) and AccountAbility's AA1000 Assurance Standard 2008 (AA1000AS 2008).

The intended users of this assurance statement are the readers of NALCO's Sustainable Development Report 2012-13. The management of NALCO is responsible for all information provided in the Report as well as the processes for collecting, analysing and reporting that information. Our responsibility regarding this verification is to NALCO only, in accordance with the agreed scope of work. The assurance engagement is based on the assumption that the data and information provided to us is complete and true. DNV GL expressly disclaims any liability or co-responsibility for any decision a person or entity would make based on this Assurance Statement.

Scope, Boundary and Limitations of Assurance

The scope of work agreed upon with NALCO included the following:

- ❖ Evaluation of the disclosed information in the Report, the systems and the processes NALCO has in place for adherence to the three Accountability Principles (Inclusivity, Materiality and Responsiveness) as required for a Type I, moderate level of assurance, in accordance with AA1000AS (2008).
- ❖ Evaluation of the additional principles of Completeness and Neutrality, as set out in DNV GL's Protocol for Verification of Sustainability Reporting.

The reporting boundary is as set out in the report, covering sustainability performance of operations at Panchpatmali, Damanjodi, Angul and Visakhapatnam. The assurance engagement (Type I, Moderate) was carried out at the NALCO corporate office in Bhubaneswar and included site visits to Angul and Damanjodi. No external stakeholders were interviewed as part of this assurance engagement. We have not verified the accuracy and reliability of quantitative data and sustainability performance information stated in the Report.

Verification Methodology

Our assurance engagement was planned and carried out in May 2013 – March 2014, in accordance with the DNV GL Protocol for Verification of Sustainability Reporting. As part of the verification we have challenged the sustainability related statements/claims made in the Report and assessed the underlying systems and processes for adherence against the three AccountAbility Principles AA1000APS as referred under the 'Scope of Assurance and Limitations' of this Statement. We have:

- ❖ Conducted a desk review of NALCO's sustainability systems, processes and outputs, and other relevant information and documentation made available to us by NALCO as requested by us;
- ❖ Conducted interviews with the core team involved in preparing the Report and key decision-makers of NALCO;
- ❖ Performed sample-based reviews of the mechanisms for implementing the Company's policies, as described in the report, and for determining material issues to be included in the Report;
- ❖ Reviewed the documents of stakeholder engagement processes specifically undertaken for the purpose of the sustainability reporting exercise.

Conclusion

In our opinion, the Report is an appropriate representation of NALCO's sustainability-related policies and management systems. The report has disclosed its sustainability performance on material aspects from GRI G3.1 and the Mining and Metals Sector Supplement; however the performance disclosures could be further improved by fully reporting all core indicators for Application Level A+ as per GRI G3.1. We have evaluated the Report's adherence to the following principles on a scale of 'Good', 'Acceptable' and 'Needs Improvement'.

AA1000AS 2008 Principles

Inclusivity: The Company, has within its reporting boundary, put in place channels for engaging with various stakeholders and

capturing key concerns and responses to concerns, as highlighted in the report. The process may be further strengthened, and used for providing inputs for identification and prioritisation of material issues. In our view, the level at which the Report adheres to this principle is **'Acceptable'**.

Materiality: The Company has initiated a process of identifying and prioritising significant material issues to bring out in the Report, through an internal process, and based primarily on the Memorandum of Understanding which the Company has entered in with the Ministry of Mines, Government of India. The process may be further strengthened to bring out material issues having short, medium and long term impacts, and may be carried out at site levels to capture material issues specific to sites and other relevant inputs. In our view, the level at which the Report adheres to this principle is **'Needs Improvement'**.

Responsiveness: Within the reporting scope and boundary, the Report has adequately responded to major stakeholder concerns through its policies, processes and management systems. In our view, the level at which the Report adheres to this principle is **'Acceptable'**.

Additional Parameters as per DNV GL's Protocol

Completeness: The reporting boundary covers NALCO's operations in Angul, Damanjodi, Panchpatmali and Visakhapatnam, and does not include joint ventures which are at early stages of operation, and regional and branch offices across the country. Within the reporting boundary, we do not believe that the Report omits relevant information that would influence stakeholder assessments or decisions. The level at which the Report adheres to this principle is **'Acceptable'**.

Neutrality: The Company has reported its sustainability aspects in terms of content and presentation a neutral tone; in our view, the level at which the Report adheres to this principle is **'Good'**.

Opportunities for Improvement

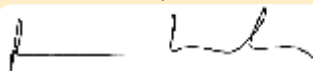
The following is an excerpt from the observations and opportunities for improvement reported to the management of the Company and are considered for drawing our conclusion on the report; however, they are generally consistent with the management's objectives:

- ❖ The GRI guidelines encourage supply chain related disclosures; NALCO may engage with wider range of stakeholders especially in the supply chain and outsourced operations if any, to enable better understanding of emerging issues. This may include a formal risk assessment of significant business partners.
- ❖ Systematic internal review and auditing of internal data management system may be implemented to ensure the reliability of reported sustainability performance data and to help in regular and timely disclosures of sustainability performance.
- ❖ The Company is diversifying and aims to be a reputed global Company in the energy sector; NALCO may bring out medium and long term targets for moving towards this vision for the benefit of the stakeholder.

DNV GL's Competence and Independence

We are a global provider of sustainability services, with qualified environmental and social assurance specialists working in over 100 countries. DNV GL states its independence and impartiality with regard to this assurance engagement. While we did conduct other third party audits work with NALCO in 2012-13, in our judgement this does not compromise the independence or impartiality of our assurance engagement or associated findings, conclusions and recommendations. The assurance team were not involved in the preparation of any statements or data included in the Report except for this Assurance Statement. We maintain complete impartiality towards any people interviewed.

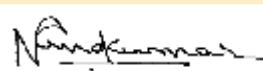
For DNV GL,



Prasun Kundu

Project Manager

Head-East Service Responsible-Social Accountability and Ethic
DNV Business Assurance India Private Limited, India

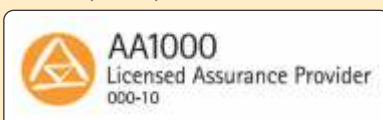


Vadakepatth Nandkumar

Technical Reviewer

Head-Sustainability and Climate Change Services
DNV Business Assurance India Private Limited, India.

Kolkata, India, 31 March 2014



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