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**STANDING COMMITTEE ON
COAL, MINES AND STEEL
(2021-2022)**

SEVENTEENTH LOK SABHA

MINISTRY OF MINES

**"DEVELOPMENT OF ALUMINIUM AND
COPPER INDUSTRIES IN THE COUNTRY"**

THIRTY FIRST REPORT



LOK SABHA SECRETARIAT

NEW DELHI

MARCH, 2022/CHAITRA 1944(Saka)

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INDUSTRIES IN THE COUNTRY**

Presented to Lok Sabha on 22.03.2022

Laid in Rajya Sabha on 22.03.2022



**LOK SABHA SECRETARIAT
NEW DELHI
MARCH, 2022/CHAITRA, 1944(Saka)**

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**COMPOSITION OF THE STANDING COMMITTEE ON
COAL AND STEEL(2019-2020)**

Chairperson - Shri Rakesh Singh

Lok Sabha

2. Shri Balubhau Dhanorkar alias Suresh Narayan
3. Shri Vijay Kumar Hansdak
4. Shri Kunar Hembram
5. Shri Raghurama Krishnaraju Kanumuru
6. Shri C. Lalrosanga
7. Shri S. Muniswamy
8. Shri Ajay Nishad
9. Shri Basanta Kumar Panda
10. Smt. Riti Pathak
11. Shri Komati Reddy Venkat Reddy
12. Shri Chunni Lal Sahu
13. Shri Arun Sao
14. Dr. Beesetti Venkata Satyavathi
15. Shri Sushil Kumar Singh
16. Shri Pashupati Nath Singh
17. Shri Sunil Kumar Singh
18. Dr. Alok Kumar Suman
19. Dr. Thirumaavalavan Thol
20. Shri Shyam Singh Yadav
21. Shri Tokheho Yephthomi

Rajya Sabha

22. Dr. Vikas Mahatme
23. Shri Mukut Mithi@
24. Shri Prashanta Nanda
25. Shri Ram Vichar Netam
26. Shri Samir Oraon
27. Shri Dhiraj Prasad Sahu
28. Shri Prabhakar Reddy Vemireddy
29. Shri B. Lingaiah Yadav*
30. Shri Anil Desai#
31. Shri Venkataramana Rao Mopidevi^

*Nominated as a Member to this Committee w.e.f. 3rd December, 2019

Nominated as a Member to this Committee w.e.f. 21st December, 2019

@ Retired w.e.f. 23.06.2020

^ Nominated as a Member to this Committee w.e.f. 23rd July, 2020

**COMPOSITION OF THE STANDING COMMITTEE ON
COAL, MINES AND STEEL (2021-2022)**

Chairperson - Shri Rakesh Singh

Lok Sabha

2. Shri Balubhau Dhanorkar *alias* Suresh Narayan
3. Shri Vijay Kumar Hansdak
4. Shri Kunar Hembram
5. Shri Chandra Prakash Joshi
6. Shri Saumitra Khan
7. Shri C. Lalrosanga
8. Shri S. Muniswamy
9. Shri Ajay Nishad
10. Shri Basanta Kumar Panda
11. Smt. Riti Pathak
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13. Shri Komati Reddy Venkat Reddy
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17. Shri Sunil Kumar Singh
18. Shri Sushil Kumar Singh
19. Dr. Beesetti Venkata Satyavathi
20. Dr. Thirumaavalavan Thol
21. Shri Ashok Kumar Yadav#

Rajya Sabha

22. Shri Subrata Bakshi
23. Dr. Vikas Mahatme
24. Dr. Prashanta Nanda
25. Shri Ram Vichar Netam
26. Shri Samir Oraon
27. Shri Deepak Prakash
28. Shri Dhiraj Prasad Sahu
29. Shri Shibu Soren
30. Shri Prabhakar Reddy Vemireddy
31. Shri B. Lingaiah Yadav

SECRETARIAT

- | | | |
|----|----------------------------|---------------------|
| 1. | Smt. Anita B. Panda | Joint Secretary |
| 2. | Shri Arvind Sharma | Director |
| 3. | Smt. Uttam Chand Bharadwaj | Additional Director |
| 4. | Smt. Madhu Tandon | Under Secretary |

#Nominated to the Committee w.e.f 07.02.2022 vice Dr. Lorho S. Pfoze

INTRODUCTION

I, the Chairperson, Standing Committee on Coal, Mines and Steel having been authorized by the Committee to present the Report on their behalf, present this Thirty-First Report (Seventeenth Lok Sabha) on the subject "Development of Aluminium and Copper industries in the Country " relating to the Ministry of Mines.

2. The Standing Committee on Coal and Steel (2019-20) had selected the subject for detailed examination and report to the Parliament. The Committee took oral evidence of the representatives of the Ministry of Mines and Mine PSUs at their sitting held on 20.08.2020. However, due to paucity of time, the Committee in their previous term could not finalize the Report on the subject. The Standing Committee on Coal, Mines and Steel (2020-21) and (2021-22) have again selected the subject for examination and carried forward the unfinished work of the predecessor Committee(s). The Committee took further oral evidence of the representatives of the Ministry of Mines and Mine PSUs on their sitting held on 30.12.2021. Based on the oral and written testimony submitted to the Committee, a report on the subject was prepared.

3. The Committee wish to express their sincere thanks to the predecessor Committee(s) for the significant contribution made by them in examination of the subject.

4. The Committee wish to express their thanks to the representatives of the Ministry of Mines and Mine PSUs for placing before them and in furnishing material/information from time to time as desired by the Committee.

5. The Committee considered and adopted the Report at their sitting held on 21.03.2022.

6. The Committee place on record their profound appreciation for the valuable assistance rendered to them by the officials of the Lok Sabha Secretariat attached to the Committee.

7. For facility of reference and convenience, the observations and recommendations of the Committee have been printed in bold letters in Part-II of the Report.

NEW DELHI;
21 March, 2022
Phalguna, 1943(Saka)

RAKESH SINGH
Chairperson
Standing Committee on Coal,
Mines and Steel

REPORT
PART-I
CHAPTER-I
INTRODUCTORY

India is well endowed with natural resources, particularly minerals, which serve as raw material for many industries, paving a path for rapid industrialization and infrastructural development. This, in turn, will facilitate the economy's ascent of the country to a path of sustained growth and a five trillion-dollar economy.

1.2 Minerals are valuable natural resources. They constitute the vital raw materials for many basic industries and are a major resource for development. The history of mineral extraction in the Country dates back to the days of the Harappan civilization. The wide availability of the minerals provides a base for the growth and development of the mining sector.

1.3 The country is blessed with huge resources of many metallic and non-metallic minerals. Mining sector is an important segment of the Indian economy. Since Independence, there has been pronounced growth in the mineral production both in terms of quantity and value. The country produces as many as 95 minerals, which includes 4 fuels, 10 metallic, 23 non-metallic, 3 Atomic and 55 minor minerals (including building and other minerals).

Role, Functions and Organisation of the Ministry

1.4 The Ministry of Mines is responsible for survey, exploration and mining of all minerals, other than natural gas, petroleum, atomic minerals and coal. In the case of atomic minerals and coal, activities of the Ministry are limited to regional exploration. The nodal Ministry is responsible for the administration of the Mines and Minerals (Development and Regulation) Act, 1957 (67 of 1957) and rules made there under in respect of all mines and minerals other than coal, natural gas and petroleum. The Ministry also

administers the Offshore Areas Mineral (Development and Regulation) Act, 2002 and rules made there under.

Development of Minerals

1.5 During last six years, the Government has introduced important reforms to open up the mineral sector to ensure its contribution in achieving the national policy goals. Major reforms include enactment of the Mines and Mineral (Development & Regulations) (MMDR) (Amendment) Act, 2015, which has made the process of allocation of mineral concessions completely transparent by introducing public auctions with active participation of the State Governments. In the federal set up, States are owners of mineral wealth in their respective domain. For realizing the benefits of mineral wealth, States have primary and significant role to come up with auctionable mineral blocks that have clearance, to start production.

Legislation and Regulation

1.6 The List of the Subjects allocated to the Ministry of Mines are as under:

- (a) Legislation for regulation of mines and development of minerals within the territory of India, including mines and minerals underlying the ocean within the territorial waters or the continental shelf, or the exclusive economic zone and other maritime zones of India as may be specified, from time to time by or under any law made by Parliament;
- (b) Regulation of mines and development of minerals other than coal, lignite and sand for stowing and any other mineral declared as prescribed substances for the purpose of the Atomic Energy Act, 1962 (33 of 1962) under the control of the Union as declared by law, including questions concerning regulation and development of minerals in various States and the matters connected therewith or incidental thereto;

- (c) All other metals and minerals not specifically allotted to any other Ministry/ Department, such as aluminium, zinc, copper, gold, diamonds, lead and nickel;
- (d) Planning, development and control of and assistance to all industries related to mineral wealth dealt with by the Ministry;
- (e) Administration and management of Geological Survey of India;
- (f) Administration and management of Indian Bureau of Mines; and
- (g) Metallurgical grade silicon.

National Mineral Policy

1.7 The aim of National Mineral Policy 2019 is to have a more effective, meaningful and implementable policy that brings in further transparency, better regulation and enforcement, balanced social and economic growth as well as sustainable mining practices.

1.8 The National Mineral Policy, 2019 includes provisions which will give boost to mining sector such as:

- introduction of Right of First Refusal for RP/PL holders;
- encouraging the private sector to take up exploration;
- auctioning in virgin areas for composite RP cum PL cum ML on revenue share basis;
- encouragement of merger and acquisition of mining entities;
- transfer of mining leases and creation of dedicated mineral corridors to boost private sector mining areas;
- proposes to grant status of industry to mining activity to boost financing of mining for private sector and for acquisitions of mineral assets in other countries by private sector;
- proposes to auction mineral blocks with pre-embedded clearances to give fillip to auction process
- proposes to make efforts to harmonize taxes, levies & royalty with world benchmarks to help private sector.

Vision of the Ministry

1.9 As per Annual Report of the Ministry of Mines, the Vision is to double the production of important minerals in next 5 years with resultant reduction in import dependency, by allocating and regulating minerals in a transparent and sustainable manner and to promote exploration and mining of deep-seated minerals to meet country's needs and to effectively implement other policy goals stated in the National Mineral Policy, 2019, thereby enabling the country to progress towards attaining self-sufficiency in major mineral production.

Aluminium/Bauxite Ore

1.10 Bauxite is the primary ore of aluminium. Almost all aluminium is extracted from bauxite. India made a low key entry into aluminium arena with the commissioning of a 2500 TPY smelter by Indian Aluminium (INDAL) (then an ALCAN venture) in 1943. However, only after 1960, the country witnessed significant developments in aluminium production capabilities. Hindustan Aluminium Company Limited (HINDALCO) came into operation in 1962. Bharat Aluminium Company Limited (BALCO) in the public sector was commissioned in 1975 (which was subsequently privatized in the year 2001). However the situation of deficit with regular import of aluminium continued till National Aluminium Co. Ltd. (NALCO) came into operation in 1987. At present National Aluminium Company Limited (NALCO) is the only Public Sector Enterprise engaged in production of alumina and primary aluminium in India. The other two primary producers M/s HINDALCO and M/s Vedanta Ltd. are in the private sector. NALCO initiated export of alumina and aluminium from India for the 1st time in 1988.

1.11 Removal of price and distribution control in 1989, general reforms on licensing policy in 1991 and the subsequent economic policy reforms aimed at competitive growth in corporate sphere have changed the outlook of the Indian aluminium industry.

1.12 State-wise bauxite(an Aluminium Ore) reserves & remaining resources in India are as follows:

Figures in million tonnes

State	Reserves (proven & probable)	Remaining Resources	Total
Odisha	325	1669	1,994
Andhra Pradesh	0	615	615
Gujarat	185	165	350
Chhattisgarh	15	159	174
Madhya Pradesh	24	150	174
Jharkhand	63	176	239
Maharashtra	26	158	184
Goa	14	41	55
Others	4	107	111
Total	656	3240	3,896

(Source: Indian Mineral Year Book 2019 published by Indian Bureau of Mines)

Sustainability of the Resource:

1.13 The Committee were informed that Mineral resources are non-renewable and hence sustainability of the resources is essential keeping in mind the need of the future generation. The National Mineral Policy 2019 emphasizes on sustainable development in the mining sector which envisions mining as financially viable; socially responsible; environmentally, technically and scientifically sound; with a long-term view of development; uses mineral resources optimally; and, ensures sustainable post-closure land uses through scientific rehabilitations mechanism. A star rating system has also been developed by Ministry of Mines to encourage and evaluate mines against sustainability development framework. The mines of NALCO have been rated as a 5 star mines as per the framework, due to adoption of eco-friendly and sustainable mining processes.

Copper

1.14 Copper is a malleable and ductile metallic element that is an excellent conductor of heat and electricity as well as being corrosion resistant and antimicrobial. Copper occurs naturally in the Earth's crust in a variety of

forms. It can be found in sulfide deposits (as chalcopyrite, bornite, chalcocite, covellite), in carbonate deposits (as azurite and malachite), in silicate deposits (as chrysocolla and diopside) and as pure "native" copper. The Committee are informed that Copper is the second largest non-ferrous metal by usage, with global demand of refined copper was about 25.04 million tonnes in 2020. Most commercial copper ore deposits contain average grade of 0.8% copper, while copper ore in India has an average copper content of around 1%.

1.15 Copper finds widespread use in a wide range of application in all major sectors namely, constructions, electric & electronic products, industrial machinery & equipment, transportation equipment & consumer and general products.

1.16 At present, the demand for copper minerals in the country for primary copper production is met through two sources i.e. copper ore mined from indigenous mines and imported concentrates. The indigenous mining activity among the primary copper producers is limited to only Hindustan Copper Limited (HCL). The other primary copper producers in the private sector import the required mineral in the form of concentrate.

1.17 Currently, three major players dominate the Indian Copper Industry, Hindustan Copper Limited (HCL) in Public Sector, M/s Hindalco Industries and M/s Sterlite Industries in Private Sector. HCL is the only vertically integrated copper producer in the country, while M/s Hindalco Industries at Dahej in Gujarat and M/s Sterlite Industries in Tuticorin in Tamil Nadu (closure order issued to Vedanta Smelter/refinery plant by Tamil Nadu government in May 2018) have set up port-based smelting and refining plants.

1.18 The capacity wise details are furnished below: -

S.No	Company	Refined Copper Production Capacity (Tonne)	Type of Copper Producer	Location
1.	HCL	68,500	CPSE (integrated producer)	Ghatsila, Jharkhand&Jhagadia, Gujarat
2	Birla	5,00,000	Private (Port based customsmelter)	Dahej, Gujarat
3	Sterlite	4,60,000	Private (Port based customsmelter)	Tuticorin, Tamilnadu&Silvasa,Daman and Diu
4	Kutch Copper Limited (M/s Adani)	Under implementation stage	Private (Port based customsmelter)	Mundra, Gujarat
	Total	10,28,500		

CHAPTER –II

DEVELOPMENT OF ALUMINIUM INDUSTRY

The Committee have been informed that aluminium, a recyclable and environment-friendly metal, has a host of applications in a number of diverse sectors – power, transportation, building, construction, packaging and many more. In the era of growing environmental concerns and move towards greater use of recyclable materials, increasing application of Aluminium is driving growth in the world aluminium market. Aluminium represents the second largest metal market in the world, in volume terms, after iron and steel. The aluminium industry encompasses the extraction of the ore (bauxite) as well as primary and secondary processing of this metal.

A. Bauxite Reserves and Production

2.2 The Ministry of Mines has informed that as per Indian Bureau of Mines data, India's bauxite (reserve + remaining resources) stand at 3896 million tonne: out of which 656 million tonne are of reserved category (proven and probable) and balance 3240 million tonne are yet to be fully explored. India occupies 6th place (Source: Wood Mackenzie) in the world in bauxite reserve in 2016 with 5.8 % of world Reserves.

2.3 Break-up of the Bauxite (Aluminium Ore) reserves in the country is as under:-

- (i) Proven reserve: 434 million tonne
- (ii) Probable reserve: 222 million tonne
- (iii) Total reserve: 656 million tonne
- (iv) Remaining resources: 3,240 million tonne
- (v) Total Reserve/resources: 3,896 million tonne

2.4 India's reserves constitute only 17% of its resources and hence there is a need to convert resources into proven reserves. Government of India has recently taken steps to encourage exploration by allowing private

investment and incentivizing exploration. Central Govt. through MMDR Act, 2015 has created National Mineral Exploration Trust to create fund for exploration activities and the National Mineral Policy now facilitates for FDI investment in mineral exploration.

2.5 While replying to a query about the granting of mining lease to the Aluminium Producers, the Ministry of Mines informed that Ministry is taking several steps for bringing new mining leases of bauxite. For this Ministry brought MMDR Amendment Act 2021 in March 2021. Salient Points of the amendment are:

- a. to increase the pace and participation of private sector in exploration and to bring advance technology in exploration of mineral by giving level playing field for government and private agency.
- b. NMET to be made Autonomous body to ramp up exploration by engaging public and private entities.
- c. Under seamless prospecting licence cum-mining lease, exploration activity is seamlessly integrated with mining
- d. Validity of statutory clearances of expired mining leases to continue even after expiry or termination of mining lease and shall be transferred to next lessee of the mine. This will ensure continuity in mining operations and production despite change in lessee.

2.6 Bauxite production in the country is as under:

(Figures in million tonnes)

Year	2017-18	2018-19	2019-20 (P)	2020-21 (P)
Total	22.79	23.69	21.82	20.13

(P) – Provisional,

Source: Ministry of Mines & IBM

Panchpatmali Bauxite mines of NALCO rated as **lowest cost producer** in the world in 2020- *Wood Mackenzie Report*.

2.7 As regards the details of Bauxite Production, Consumption, Export & Import scenario in India during last 3 years, the Committee have been informed as under:-

(Million tonne)

	2018-19	2019-20 (P)	2020-21 (P)
Production	23.69	21.82	20.13
Consumption	22.19	20.07	17.31
Export	1.51	0.52	0.064
Import	2.26	2.25	3.03

(P) – Provisional, Source: IBM (Statistical profile of Minerals) and Ministry of Mines website

2.8 About the challenges being faced by domestic bauxite production companies during the course of oral evidence, a representative of the Ministry submitted before the Committee as under:

"There are certain challenges which in mining of bauxite we face. The first challenge is that we have resources available, but they have not been converted to proven reserves. So, here we require a lot of exploration activities. The auction regime has started in the last five years. However, the auction has not been done by the State Governments. So, this is another kind of challenge. Then we have land acquisition issues, environmental clearances and forest clearances issues. These are the issues which mining face".

B. Aluminium Production and Consumption

2.9 The Indian primary Aluminium industry consists of three major players i.e. National Aluminium Company Limited (NALCO), Hindalco Industries and Vedanta Ltd., having a total production capacity of approximately 4 million tonne. The total production of Primary Aluminium metal during FY 2019-20 was about 3.62 million tonne and in FY 20-21, it is expected to shrink

slightly to 3.56 million tonnes. During 2019-20, the total domestic sales of primary metal by the major primary producers, i.e., NALCO, Hindalco and Vedanta was 1.55 million tonne, which is likely to shrink to 1.33 million tonne during the 2020-21, as per trend. Aluminium has been continuously finding new applications due to rising price competence since it is cheaper than copper, has a superior weight to strength ratio, is resistant to corrosion, has better formability, better recyclability etc.

Indian Aluminium Industry

2.10 The Indian aluminium industry consists of three primary producers of aluminium metal and a number of secondary/ downstream players. The three primary producers are:

- National Aluminium Company (NALCO)
- HINDALCO Industries
- Vedanta Ltd. (consisting of Vedanta Ltd. & BALCO)

India's primary aluminium production during 2020-21 was about 3.614 million tonnes, accounting for nearly 5.5% of global production (65.59 million tonnes) while consumption was 3.404 million tonnes which constitutes about 5.2% of global consumption (65.19 million tonnes).

2.11 The total domestic production of aluminium metal during 2020-21 stayed at about the same level of 3.61 million tonnes as in 2019-20. Due to the onset of Covid-19 pandemic and the lockdown, there was severe demand destruction for Aluminium in the country. Total domestic consumption of Aluminium during FY 2020-21 has decreased to 3.40 million tonnes as compared to FY 2019- 20 levels of 3.70 million tonnes i.e. fall of about 8%. Primary aluminium exports by Indian producers has increased sharply by about 15% from 2.0 million tonnes in 2019-20 to 2.3 million tonnes in 2020-21. The demand for Aluminium has recovered since then and there is improved demand in the domestic market.

2.12 The Committee have been informed that the per capita consumption of Aluminium in India is low and is about 2.5 kg (FY 20-21) to 2.9 kg (FY 18-19) only as compared to global average of 11 kg (FY 2020). There is significant scope for increase in consumption of Aluminium in India and as the economy matures it is expected that Aluminium consumption will increase significantly.

2.13 It is predicted that the demand growth of Aluminium in the next few years is going to be substantially higher due to projected high GDP growth in the coming years. However, the projected growth in GDP has been adversely affected by COVID pandemic. Multiple initiatives of Govt. of India like Make in India, 100% rural electrification, Housing for All, Smart Cities, National infrastructure pipeline of Rs 100 lakh Crore, renewable energy and FAME (Faster adoption of manufacturing of Hybrid and EV) schemes for electric vehicles, increase in FDI etc. will boost the consumption of the metal in the country.

2.14 Regarding domestic aluminium consumption during the course of oral evidence, a representative of the Ministry of Mines has submitted before the Committee as under:

"the domestic aluminium consumption in 2020-21 was 34.03 lakh tonne. Out of this, 20 lakh tonne was from the import. If we see the import figure, about 13 lakh tonne was from import of scrap. So, scrap is contributing as far as domestic consumption is concerned. The primary aluminium to the extent of 13 lakh tonne was used in the country".

C. Marketing

2.15 Highlighting the important contribution of NALCO in aluminium production and the steps taken to increase marketing network during the

last three years, the Ministry of Mines has informed in a written reply as under:

"NALCO is a manufacturer of Aluminium metal, with an annual production capacity of 4,60,000 MT. At present NALCO is operating 8 stockyards across the Country as a part of their marketing network. These stockyards are situated in Jaipur, Visakhapatnam, Chennai, Bengaluru, Kolkata, Faridabad, Baddi, Bhiwandi, Vadodara and New Delhi. The Company has recently opened a master stockyard at Raipur in May' 2021 for cargo handling, stockyard warehousing, for domestic sales and stock transfer/trans-shipment. This will help the Company attract new customers. NALCO is also doing transport through Rail mode, eliminating high cost road transportation and leading to lower costs to Customers, thus attracting more domestic customers."

D. Research & Development in Aluminium Industry

2.16 The Committee desired to know about the efforts being made by the Government to promote R&D activities to create new applications of aluminium. In this regard, the Ministry has stated as under:

"they provide funds to academic institutions, universities, national institutes and R&D institutions recognized with the Department of Scientific and Industrial Research, Government of India for implementing R&D projects under Science and Technology Programme of Ministry of Mines with the vision to promote research in applied geosciences, mineral exploration, mining and allied areas, mineral processing, optimum utilization and conservation of the mineral resources of the country, for the benefit of the nation and its people."

2.17 The Committee were further apprised that "during FY 2019-20, 11 projects and during 2020-21, 3 projects have been considered as relevant to the identified priorities have been approved for grant-in-aid by the Ministry under this Programme. Further, an autonomous body named Jawaharlal Nehru Aluminium Research Development and Design Centre (JNARDDC) is functioning under the administrative control of Ministry of Mines, which is devoted to research in Aluminium Sector. The R&D efforts by JNARDDC for development of Aluminium Alloys for their usage in various other products and manufacturing process is as below:-

- a. Development of high speed extrusion alloys for the Indian Aluminium Industry to improve plant productivity
- b. Indigenization and development of wrought Aluminium Alloys for Indian Defence sector to reduce import dependency.
- c. Development of Super Thermal Aluminium (STAL) Conductor for Indian Power Sector for enhancing energy distribution using existing infrastructure.
- d. National Facility for R&D on Extrusion of Aluminium Alloys to support the MSME sector working in the area of aluminium extrusion.
- e. Production and certification of certified reference materials (CRMs) for the analysis of aluminium alloy to reduce the import dependency for CRMs.
- f. Development of a laboratory scale universal direct chill casting setup for indigenizing aluminium alloys.
- g. Development of aluminium seat frame for passenger buses to enhance energy efficiency
- h. Develop technology for making high quality aluminium alloys from recycled aluminium suitable for SMEs
- i. Development of high strength and thermally stable aluminium alloys for automobile applications
- j. Indigenous development of lead free Aluminium alloy for machined components.

NALCO has also undertaken R&D towards development of Aluminium Alloy & increasing its applications in various sectors which are as under:

- a. Developed new grade Aluminium alloy billets, CH 90- High Speed Extrusion alloy (HAS) in 2017-18. The new product has been commercialized.
- b. Developed new grade Strontium modified alloy billets CH 91 in 2018-19. The new product has been commercialized."

Import of Aluminium

2.18 Further, the imports have remained consistently high. Around 60% of the total domestic consumption in the year 2020-21 was mostly dominated by import of scraps, constituting around 66% of total imports. The total aluminium imports including scrap during Financial Year 2020-21 was 2.06 million tonne as compared to 2.15 million tonne in previous year. The imports of scrap have been on an upward trend increasing from 0.867 million tonnes in FY 2015-16 to 1.37 million tonnes in FY 2020-21 i.e., CAGR (Compound Annual Growth Rate) of 9.6%.

2.19 Asked about the adverse effect of import of Aluminium from China, Malaysia and middle east countries as on indigenous production of Aluminium, the Ministry of Mines in a written reply have suggested as under:

"there is a need to reduce the custom duty on Aluminium specifically to protect this Sector at least while implementing 'Make in India' Scheme. The Ministry in their written response has stated that the Customs Duty of imported Aluminium should be enhanced further, which will act as a deterrent for import of Aluminium in the country and will consequently increase Aluminium production in the country. The Ministry of Mines further submitted that they are working towards promotion of the Aluminium Industry, as well as protection of the downstream Aluminium sector from imported products

through making the recommendations for appropriate changes in the custom duty, reduction in freight slabs etc, which is within the purview of the Ministry of Finance and Ministry of Railways."

2.20 As regards the Scrap Import Policy, the Ministry of Mines has informed in a written reply as under:

"Ministry has notified National Non-Ferrous Metal Scrap recycling Framework on 31/3/2021 which will help to make India's Scrap Recycling industry a formal and organized sector and to provide a good opportunity to cut down scrap imports. The framework also recommends establishing standards for quality of scrap used for recycling and recycling products, along with standard procedures for recycling and processing of scrap in the country.

Objectives of the framework

To promote a formal recycling ecosystem for end of life products.

To minimize the effect of end of life products on landfills and environmental pollution by promoting an environmentally sound processing and recycling system for secondary industry.

To work towards economic wealth creation, job creation and increased contribution to GDP.

To promote 6 Rs principles of Reduce, Reuse, Recycle, Recover, Redesign and Remanufacture.

To produce high quality scrap for quality secondary production thus minimizing the dependency on imports.

To shift towards a circular economy in the next 10 years for base metals, critical raw materials and other essential materials.

Create a mechanism for treating waste streams and residues produced from dismantling and shredding facilities in compliance to Hazardous & Other Wastes (Management & Trans-boundary Movement) Rules, 2016 issued by MoEF&CC."

E. Future Expectations of Aluminium in Different Sectors

2.21 The three key sectors namely construction, automotive & electrical sector are under pressure. However, there is positive news that the demand for transmission wires is going to see a surge with the announcement of PGCIL transmission project of ₹ 2,579 crore. The country has set a target of achieving 175 GW of renewable installation by 2022 which will increase renewables share from 6% in 2018 to 9% in 2022. This will be positive for aluminium demand. Moreover, the stimulus packages announced by the Government will increase aluminium demand in the near future. The details of aluminium consumption growth opportunities in different sectors are:

1. **Railways:** ₹ 8.5 Lakh crore committed over the 5 year period with focus on:
 - ✓ Enhancing safety of passenger cars
 - ✓ Increasing speed of the trains
 - ✓ Driving energy and cost efficiency
2. **Transport :**
 - ✓ Target to increase automotive sector's consumption in GDP to 12% from existing 7.5%.
 - ✓ The transport sector's contribution in aluminium consumption is estimated to increase to 21% in 2021 from the present 15%.
3. **Power:**
 - ✓ Power consumption estimated to increase from 1160 to 1895TWh in 2022.
 - ✓ As per National Electricity Plan, targeted capacity addition of transmission system of 62,800 CKM during 2017-22.
4. **Defence:**
 - ✓ The country has plans to spend \$130 billion on military modernization in next 5 years.
5. **Consumer Durables/ Packaging:**
 - ✓ Aluminium consumption in consumer durables estimated to grow to 16% in 2021 from present level of 7%.

- ✓ Packaging industry to grow at a CAGR of 5.6% during 2017-22

6. Aerospace & Civil Aviation:

- ✓ India is set to surpass UK and become the third largest aviation market around 2024.
- ✓ Increasing indigenization by ISRO will raise aluminium demand in aerospace & civil aviation Sector.

F. Initiatives for Promotion of Aluminium

2.22 Aluminium has been used in many sectors in Western World while most of the usage in India is limited to the Electric and Electronic Sectors. The Committee also note that the future growth prospects for aluminium in the country are seen in aerospace sector. Demand will also be seen for products like beverage cans, Alloy wheels, Automobile Bodies, railway coaches etc. Another big opportunity for aluminium in the country shall be in the housing sector, in view of the growing emphasis on protection of environment and curtailment of deforestation.

In this context when asked what efforts are being taken by the Ministry to help the aluminium sector, the Ministry of Mines informed in a written reply as under:-

(i) Introduction of Non-Ferrous Metal Import Monitoring System (NFMIMS) mechanism for Aluminum, (ii) NFMIMS to assist Aluminum industry to plan its pricing and production strategy by providing advance and accurate import information like exact quantity of material being imported etc.; (iii) Ministry is also working on improving ease of doing business and reducing compliance burden; (iv) Ministry has developed a Non-Ferrous Metal Scrap Recycling Framework which focuses on developing a sustainable non-ferrous metal recycling eco system with special focus on recycling of scrap metal; (v) Ministry is regularly following up with State Govt. at highest

level for increasing, number of auction of bauxite mines and thus increasing production of bauxite; and (vi) Ministry has also requested Ministry of Railways to consider request for reduction in freight for bauxite and alumina to make Indian manufacturer's cost effective and globally competent.

2.23 The installed capacity of the Indian primary aluminium producers are given below:

Company	Smelting Capacity (Lakh tonnes)	Location	Remarks
NALCO	4.60	Angul, Odisha	
HINDALCO	13.54	Renukoot, UP & Hirakud, Odisha	Renukoot: 4.30 Lakh tones Hirakud: 2.06 Lakh tonnes Mahan, Madhya Pradesh: 3.59 Lakh tonnes, Aditya Aluminium, Odisha: 3.59 Lakh tonnes
BALCO	5.75	Korba, MP	
Vedanta Ltd.	17.40	Jharsuguda, Odisha	Jharsuguda I: 5.50 Lakh tonnes Jharsuguda II: 11.90 Lakh tonnes
TOTAL	41.29		

2.24 Details of Indian aluminium production, consumption and exports are given in the following tables:

Production of Aluminium in India (in Lakh tonne)

Company	2017-18	2018-19	2019-20	2020-21
NALCO	4.25	4.40	4.18	4.18
HINDALCO	12.88	12.97	13.12	12.41
Vedanta Ltd.	16.70	19.58	18.88	19.55
TOTAL	33.83	36.95	36.18	36.14

Source: Company Data

2.25 Domestic Primary Aluminium Consumption :

(in Lakh tonnes)

	2017-18	2018-19	2019-20	2020-21
Company wise domestic sale/import				
NALCO	3.50	4.02	3.39	2.30
HINDALCO	6.41	6.36	5.85	4.80
Vedanta Ltd.	6.72	6.16	6.24	6.33
Imports (primary aluminium)(HS Code-7601)	3.60	3.17	2.66	2.65
Total Consumption of Primary Aluminium	20.23	19.71	18.14	16.08
Import of Scrap (HS Code- 7602)	11.21	13.49	13.48	13.69
Import of other aluminium Products (HS Code-7603 to 7616)	4.76	6.51	5.38	4.26
Total Domestic Consumption	36.20	39.71	37.00	34.03

2.26 Indian Primary Producers Export Sale:

(in Lakh tonnes)

Company	2017-18	2018-19	2019-20	2020-21
NALCO	0.75	0.38	0.56	1.92
HINDALCO	6.50	6.59	7.07	7.80
VEDANTA LTD.	9.99	13.40	12.41	13.32
Total Export Sale	17.24	20.37	20.04	23.04

2.27 The following measures were reportedly undertaken by the Ministry for Aluminium Industry:

- I. The National Mineral Policy 2019 was issued in February 2019 which, inter-alia, provides that efforts shall be made to export minerals in value added form as far as possible.
- II. Ministry of Mines has introduced Non-Ferrous Metal Import Monitoring System (NFMIMS) for Aluminum. NFMIMS will assist Aluminum industry to plan its pricing and production strategy by providing advance and accurate import information like exact quantity of material being imported etc.

- III. Ministry is also working on improving ease of doing business and reducing compliance burden.
- IV. Ministry has developed a Non-Ferrous Metal Scrap Recycling Framework which focuses on developing a sustainable non-ferrous metal recycling eco system with special focus on recycling of scrap metal.
- V. Ministry is regularly following up with State Govt. at highest level for increasing auction of bauxite and thus increasing production of ore.
- VI. Ministry has also requested Ministry of Railways to consider request for reduction in freight for bauxite and alumina to make Indian manufacturer's cost effective and globally competent.

CHAPTER-III

DEVELOPMENT OF COPPER INDUSTRY

3.1 Copper is one of the most recycled of all metals. Recycled copper (also known as secondary copper) cannot be distinguished from primary copper (copper originating from ores), once reprocessed. Recycling of copper extends life span of the metal, results in energy efficiency as well as contributes in ensuring sustainable sourcing of the metal for future generations. Recycled copper loses none of its chemical or physical properties. It is widely recognized that recycling is not in opposition to primary metal production, but is an essential and beneficial complement.

3.2 The need of circular economy in copper becomes more important and relevant for India as very limited reserves of ore is available in the country. This is one of the main reasons of high dependency on import of copper concentrate, scrap and even copper itself. In view of the limited capacity available for integrated Copper production in India hence emphasis is needed for secondary copper sector. The scarce resource of copper metal in India needs special attention for exploration to identify new deposits.

A. Reserves & Resources:

3.3 As per information submitted by the Ministry of Mines, Copper is the second largest non-ferrous metal by usage, with global demand of refined copper at about 25.04 million tonne in 2020, the growth rate as compared to 2018 declined by around 0.13%. Most commercial copper ore deposits contain average grade of 0.8% copper, while copper ore in India has an average copper content of 1%.

3.4 The details of copper reserves and resources are given below:-

- i) India's share of world reserve is 0.31 % only. Total known reserves of copper in world are estimated to be around 870 million metric tonne (in metal terms).
- ii) India has very limited known reserves of copper ore exploitable for copper production. As per the data of Indian Bureau of Mines (IBM) as of 1.4.2015, total reserves are estimated (in metal terms) at 2.73 million tonnes.
- iii) As per updated information, Rajasthan has the largest reserves/resources of copper ore in the country, followed by Jharkhand and Madhya Pradesh. In fact, these States account for 92.1% of the total copper ore reserves with Andhra Pradesh, Gujarat, Haryana, Karnataka, Maharashtra, Meghalaya, Nagaland, Odisha, Sikkim, Tamilnadu, Telangana, Uttarakhand and West Bengal accounting for remaining 7.9%.

Mining and Development of Copper

3.5 Hindustan Copper Limited (HCL) was the sole producer of refined copper till 1995 and the focus was on vertical integration so that the entire quantity of ore produced in its mines was converted into copper cathode and ultimately, wire rod. After liberalization of the economy, the copper segment of industry has transformed significantly. Currently, three major players dominate the Indian copper industry. Hindustan Copper Limited (HCL) in Public Sector, M/s Hindalco Industries Ltd. and M/s Vedanta in private sector, having current total installed refined copper capacity in the country is 10.28 lakh tonne, having current total installed refined copper capacity in the country is 10.28 lakh tonne. It is reported that M/s Kutch copper limited promoted by M/s Adani Group is installing a port based custom smelter plant near Mundra port, Gujarat.

3.6 The Committee are apprised that Copper ore production of HCL in last ten years has been in the range of about 4.0 million tonne per annum(Mtpa) which is equivalent to 4.5 % of the country's requirement. HCL owns all the

operating mining leases in the country, mine expansion is under way, significant mining capacity expansion to be achieved from 4.0 Mtpa to 12.2 Mtpa in phase I by Financial Year 2028-29 and thereafter from 12.2 Mtpa to 20.2 Mtpa in Phase II. India is not self-sufficient on Copper mineral because of its low reserve/resource base and Custom smelters in Pvt. sector, imports copper concentrate as raw material to convert it into Refined copper. Currently, the refined copper produced in India meets the Country's demand to a certain extent and balance requirement is fulfilled by import.

3.7 Replying to a query of the Committee about the steps taken by HCL to increase the mining capacity from 4.0 million tonne per annum to 12.2 million tonne per annum in phase-I upto the year 2028-29, the Ministry has stated as under:

"The detail of mine wise expansion plan with status and estimated expenditure is appended below:

Name of Mine	Location	Current Ore production capacity (million tonne /annum-MTPA)	Ore production capacity after Phase-I expansion (MTPA)	Estimated expenditure (*) (Rs. in Crore)	Mining lease status
Malanjkhand	Madhya Pradesh	2.54	5.0	1856	Valid till 27.08.2023 (renewal of mining lease already applied)
Khetri (including Banwas) &Kolihan	Rajasthan	1.12	2.9 (Banwas development completed &production started)	533	Valid till 31.03.2040
Surda	Jharkhand	0.31	0.9	219	State Govt. has ordered extension of Surda Mining Lease upto 31.03.2040 vide

					order dated 06.01.2022.
Kendadih	Jharkhand	(Development completed. Production will start soon)	0.4	94	Valid till 03.06.2023 (renewal of mining lease already applied)
Rakha (including Chapri - Sidheswar)	Jharkhand	Closed. To be reopened	3.0	732	Under process and yet to be extended by State Govt (validity expired on 28.08.2021) (renewal of mining lease already applied)
Total		4.0	12.2	3434	
* As per cost estimate 2011					

The progress of mine expansion plan at MCP Unit, Malanjkhand where the reserves in the open pit mine is going to exhaust soon and the construction of the underground mine below the open pit mine has been affected due to non-performance of contractor M/s IVRCL who has been referred to NCLT. In other unit of HCL, the availability of fund was another constraint which affected the progress of mine expansion and that is why company is planning to expand the mine capacity through MDO (Mine Developer and Operator) route at Jharkhand. The statutory clearances of the various mine projects also came in very late."

3.8 In this context, when asked about any specific steps taken by the Ministry to increase the capacity and production of Copper Ore, the Ministry of Mines has stated that HCL has planned to expand its mining capacity in

phases to increase its mine production from 4MTPA to 12.2MTPA which will meet around 11 to 12 percent of the country's demand.

3.9 Further, the Committee were informed that following action have been taken by Ministry of Mines for increased exploitation of Mineral Wealth of the country:-

(i) Ministry has brought MMDR Amended Act 2021 with following highlights:-

- (a) which will help to increase the pace and participation of private sector in exploration and will bring advance technology in exploration of mineral by giving level playing field for government and private agency.
- (b) NMET to be made Autonomous body to ramp up exploration by engaging public and private entities.
- (c) Under seamless prospecting licence cum-mining lease, exploration activity is seamlessly integrated with mining
- (d) Validity of statutory clearances of expired mining leases to continue even after expiry or termination of mining lease and shall be transferred to next lessee of the mine. This will ensure continuity in mining operations and production despite change in lessee.

(ii) Ministry is also working on improving ease of doing business and reducing compliance burden.

(iii) The copper ore reserve and resources in India are limited. Ministry is regularly following up with State Govt. at highest level for increasing auctions and thus increasing production of ore. Auction of two new copper mines for composite license in Maharashtra has already done. With the follow up with States, 4 more copper blocks have been identified for auction.

Production of Ore & Metal:

3.10 At present, production capacity of HCL is 51.0 lakh tonne. The ore and metal-in-concentrate (MIC) production of the company during last five years is shown in the table below: -

Item	2016-17	2017-18	2018-19	2019-20	2020-21
Ore (lakh tonne)	38.45	36.75	41.22	39.68	32.72
Metal-in-Concentrate (MIC) (tonne)	30,587	31,793	32,439	26,502	23,866

Refined Copper – Capacity and Production:

3.11 The installed capacity and production data of the three producer companies of refined copper during last five years are given below:-

(Unit: Tonne)

Company	Capacity	2016-17	2017-18	2018-19	2019-20	2020-21
HCL	68,500	18,602	25,949	16,215	5,340	Nil*
Sterlite	4,60,000	4,02,000	4,03,206	90,000	77,490	1,01,435
Birla	5,00,000	3,76,000	4,13,806	347,000	3,25,568	2,62,203
Total	10,28,500	7,96,602	8,42,961	4,53,000	4,08,398	3,63,638

Source: Annual report of Companies & Monthly Summary on Non – Ferrous minerals & Metals, March 2021, Ministry of Mines

*HCL is presently focusing on direct sale of copper concentrate.

3.12 The Committee note that in comparison with HCL's installed capacity of 68,500 tonne, the company produced 16,215 tonne of Refined Copper during the year 2018-19 and only 5,340 tonne of Refined Copper during the year 2019-20. It has also been observed that though private companies such as Sterlite and Birla are also producing Refined Copper below their rated capacity, the production of HCL is much less than its installed capacity.

3.13 Replying to a query about the low production of Refined Copper than the Installed Capacity and vision of the Company to make the country self-

reliant in the production of Refined Copper, the Ministry has stated as under:

"HCL has two Refinery plants, one at Gujarat Copper Project (GCP) unit in Gujarat having capacity of 50,000 tonne per annum and another at Jharkhand having capacity of 18,500 tonne per annum. Gujarat plant operation requires scrap copper material for running the secondary smelter & refinery. The operation at GCP has been suspended due to profitability issue principally arising out of non-availability of suitable scrap material through import/domestic supply at a desired price. Additionally, the copper concentrate which is produced in mining Units of HCL is not suitable as feed material for the GCP plant."

3.14 It was further stated as under:

"Refinery plant at Indian Copper Complex (ICC) Unit at Jharkhand has also been kept suspended due to economic and viability reasons and requirement of additional capex investment for the pollution control Unit. In view of this and for the better cash management & profitability, HCL has taken decision to temporarily suspend the operations of both the Smelter & Refinery plants and sell majority of the copper concentrate to domestic custom copper smelter plant. This action will help the country to reduce the import bill by way of less import by domestic custom smelter. With the expansion of mine in future, HCL will start producing more copper concentrate which can be utilised either by domestic custom smelter or by its own smelter plant in order to reduce the overall import bill of the country and higher utilisation of plant capacities. As regards the delay in extension of Mining lease of Surda Mine at Jharkhand, the Ministry has stated that HCL has planned to expand part of the

mine capacity through MDO (Mine Developer and Operator) route at Jharkhand as it has been very difficult to fund the expansion project. The statutory clearances of the various mine projects also came in very late and in recent past the delay in extension of Mining lease of Surda mine at Jharkhand resulted stoppage of Mine production by more than 20 months. Govt. of Jharkhand has ordered extension of Surda Mining Lease upto 31.03.2040 vide order dated 06.01.2022. Environmental Clearance for Surda Mine has also been applied by HCL."

3.15 Further, the Committee have been informed that the mining lease of Surda mine had expired on 31.03.2020 although HCL had applied for its lease extension much earlier as per regulations. The delay in extension of Mining lease of Surda mine at Jharkhand resulted stoppage of mine production by more than 20 months. The work at Surda mines will be started soon. HCL is still waiting for extension of mining lease for Rakha mine at Jharkhand which expired on 28.08.2021 and application for extension was submitted more than one year ago i.e. much earlier than stipulated period. HCL is consistently following up with State Government for early approval. HCL will put all efforts to empower the Units for achieving production.

During the examination of Demands for Grants (2022-23) of the Ministry of Mines, the Committee have now been informed that the extension of Surda Mining lease has since been granted by the State Government of Jharkhand and once the CTO (Consent to Operate) is granted, the mine shall be ready for operations.

3.16 India is an importer of copper concentrate. It is self-sufficient in refined copper production. Import and Export of Refined Copper in India during last three years is given below:

Item (in million USD)	2017-18	2018-19	2019-20
Import: Copper ore concentrate	4319.07	1753.58	1225.34
Import: Copper and articles thereof	4507.59	5268.23	5098.68
Total import	8826.66	7021.81	6324.02
Export: Copper and articles thereof	3418.77	999.67	854.16
Net import	5407.89	6022.14	5469.86

B. Copper Consumption

3.17 The Committee have been informed that copper consumption in the country is very low as compared to other countries. During the year 2020, total consumption of refined copper was 6.60 lakh tonne in the country and per capita consumption is only 0.6 kg against the world per capita consumption of 3.2 kg. Asked to furnish the reasons for lower consumption, the Ministry of Mines in a written reply submitted that Electrical/Electronic Industry is the largest consumer of copper, where it is used in the form of cables, winding wires because it is the best non-precious metal conductor of electricity as it encounters much less resistance and is safe for electrical distribution system from high voltage transmission cables to micro-circuits. Copper demand in electrical segment is growing due to demand in infra sector as a result of affordable housing schemes, rural electrification and more urbanization.

3.18 Further, Copper demand in India is expected to grow due to increased thrust of Govt. of India towards "make in India" and "Smart City"

programmes, AatmaNirbhar Bharat in Defence, 100 GW targets for Renewable Energy by 2022, PLI schemes for Consumer electronics industry, accelerated growth for Electric Vehicles which will drive the demand of copper in the Country. Copper is essential to EV technology and its supporting infrastructure and the increase in the demand of electric vehicles in the market will have a substantial impact on copper demand. Therefore, the per capita copper consumption in India is expected to increase from the current level of 0.6 Kg to 1 kg in coming years. The average copper consumption in the world is much higher because of more urbanisation, better infrastructure, more industrialisation, higher power consumption & manufacturing base of Industrial equipment in the developed countries etc.

PART-II

OBSERVATIONS/RECOMMENDATIONS OF THE COMMITTEE

Utilisation of Mineral Resources

1. The Committee note that India is well endowed with natural resources, particularly minerals which serve as raw material for many industries, paving a path for rapid industrial, infrastructural and economic development. Minerals being valuable natural resources, constitute the vital raw materials for many basic industries. The wide availability of the minerals provides a base for the growth and development of the mining sector in India, which is an important segment of the Indian economy. The Committee also note that India produces as many as 95 minerals, which includes 4 fuels, 10 metallic, 23 non-metallic, 3 Atomic and 55 minor minerals (including building and other minerals).

The Committee further note that the Government has introduced important reforms to open up the mineral sector to ensure its contribution in achieving the national policy goals like: introduction of Right of First Refusal for RP/PL holders; encouraging the private sector to take up exploration; transfer of mining leases and creation of dedicated mineral corridors to boost private sector mining areas; proposes to make efforts to harmonize taxes, levies &

royalty with world benchmarks to help private sector; etc. Major reforms included enactment of the Mines and Mineral (Development & Regulations) (Amendment) Act, 2021, which made the process of allocation of mineral concessions completely transparent by introducing public auctions with active participation of the State Governments. While appreciating the efforts of the Government to ensure contribution of Mineral Sector in achieving the national policy goals, the Committee recommend that greater transparency should be ensured in auction of mineral concessions with pre-embedded clearances to give fillip to auction process and to achieve optimal utilization of India's mineral resources for rapid industrial growth and socio-economic development of the country.

Reserves and Production

2. The Committee find that only 656 million tonne (17%) bauxite (an aluminium ore) are under (proven & probable) category and balance 3240 million tones are yet to be fully explored out of 3896 million tonne bauxite resources. The Committee note that Grant of mining lease, environmental clearance, land acquisition and forest clearance have been the major constraints in development of new mines. As the wide availability of the minerals provides a base for the growth and development of the mining sector of the Country, the Committee expect the Ministry to facilitate the development of more bauxite

mines and ensure that the mining industry get a continuous support of the Government/State Governments and other supporting agencies to ensure timely clearance of the environment and forest, land acquisition and consent to operate. The Committee would like to be apprised of the steps taken by the Government in this regard so that industries do not encounter any problem on these account.

3. While appreciating the National Mineral Policy vision to double the mineral production in the country in the next 5 years, the Committee are of the considered view that the urgent measures should be taken for early clearances on procedural, administrative, legal and environmental fronts for the uninterrupted development of the bauxite mines in the country. The Committee also desire the Government to take concrete steps to bring the remaining 3240 million tonne of unproved bauxite reserves in different States under proven and probable category. The Committee would like to be apprised of the action plan of the Government in this regard.

Aluminium Production Capacity

4. The Committee note that Aluminium represents the second largest metals market in the world after iron and steel. The aluminium industry encompasses the extraction of the ore (bauxite) as well as primary and secondary processing of the metal. The Committee also note that the Indian primary Aluminium

industry consists of three major players i.e. National Aluminium Company Limited (NALCO), Hindalco Industries and Vedanta Ltd., having a total production capacity of about 4.0 million tonne. The total production of primary Aluminium metal during Financial Year 2019-20 was about 3.62 million tonne and in Financial Year 2020-21, it was 3.56 million tonne. At present National Aluminium Company Limited (NALCO) is the only Public Sector Enterprise engaged in production of alumina(bauxite) and primary aluminium in India. The other two primary producers i.e. M/s HINDALCO and M/s Vedanta Ltd. are in the private sector. Having holistic view of the performance of Aluminium Sector, which could not achieve production to the desired level of installed capacity, the Committee feel that the Ministry should step up the extra efforts for overall improvement in its physical performance so as to make the country self reliant for Aluminium metal.

Consumption and Demand

5. The Committee observe that per capita consumption of Aluminium in the country is low at about 2.5 kg (Financial Year 2020-21) to 2.9 kg (Financial Year 2018-19)only as compared to global average of 11 kg. There is significant scope for increase in consumption of Aluminium in the country and as the economy

matures, it is expected that Aluminium consumption will increase significantly. It has also been informed that the demand growth of Aluminium in the next few years is going to be substantially higher due to high GDP growth projected in the coming years. The Ministry has also informed that multiple initiatives have been taken by the Government like 'Make in India', 100% rural electrification, Housing for All, Smart Cities, National infrastructure pipeline of ₹ 100 lakh Crore, renewable energy and FAME (Faster adoption of manufacturing of Hybrid and EV) schemes for electric vehicles, increase in Foreign Direct Investment (FDI), etc. which in the opinion of the Committee will certainly boost the consumption of the metal in the country.

Appreciating the new initiatives like National Mineral Policy, 2019 and MMDR (Amendment) Act, 2021, the Committee hope that the Ministry of Mines and aluminium companies would be able to achieve the requisite demand for the aluminium in view of the proposed rapid urbanization and growth in the manufacturing sector in India. They, however, are of the view that to achieve the desired growth potential, and to increase per capita consumption of aluminium in the country, the Government should prepare a plan to ensure year-wise increase in consumption targets to achieve global

per capita consumption average of 11 kg and they be apprised of the same.

Research & Development in Aluminium Industry

6. The Committee find that the efforts are being made by the Government to promote R&D activities to create new applications of aluminium. The Ministry provide funds to Academic institutions, universities, national institutes and R&D institutions recognized with the Department of Scientific and Industrial Research, Government of India for implementing R&D projects under Science and Technology Programme of Ministry of Mines with the vision to promote research in applied geosciences, mineral exploration, mining and allied areas, mineral processing, optimum utilization and conservation of the mineral resources of the country, for the benefit of the nation and its people. The Committee have been informed that during the year 2019-20, 11 projects have been identified and approved for grant-in-aid by the Ministry under this Programme. The Committee have been further apprised that the Jawaharlal Nehru Aluminium Research Development and Design Centre (JNARDDC), an autonomous body, functioning under the administrative control of Ministry of Mines is devoted to research in Aluminium Sector. The Committee appreciate the research work undertaken by JNARDDC which inter-alia include development of high speed extrusion alloys,

indigenization and development of wrought Aluminium Alloys, development of Super Thermal Aluminium (STAL) Conductor, National Facility for R&D on Extrusion of Aluminium Alloys, production and certification of certified reference materials (CRMs), development of high strength and thermally stable aluminium alloys, indigenous development of lead free Aluminium alloy, etc. NALCO has also undertaken R&D towards development of Aluminium Alloy & increasing its applications in various sectors. etc.

While appreciating the JNARDDC and NALCO for promoting R&D, the Committee desire that attention should also be paid for completion of the 11 and 3 projects for which grant-in-aid were approved by the Ministry of Mines under R&D programme during 2019-20 and 2020-21 respectively. The Committee would therefore like to be apprised of the status of the said 14 Research and Development projects sponsored by them.

Future Scope and Expectations

7. The Committee note that future growth prospects for aluminium in the country are seen in aerospace sector, products like beverage cans, alloy wheels, automobile bodies, railway coaches, etc. According to the Ministry, one of the major demand areas in the coming years would be in the high-end aluminium alloys which

propelled huge scope and they also observe that the stimulus packages announced by the Union Government for economic uplift will increase aluminium demand in the near future. The other significant areas for consumption of aluminium are Railways, Transport, Power, Defence, Consumer Durables/Packaging, Aerospace & Civil Aviation, etc.

In view of the fact that Aluminium is a recyclable and environment-friendly metal having a host of applications in a number of diverse sectors - power, transportation building, construction, packaging and many more, the Committee do hope that there is an urgent need that Aluminium manufacturing companies in the country identify newer aluminium value added products of mass consumption and achieve higher target of per capita aluminium usage in the country. The Committee recommend that the Ministry of Mines, in coordination and collaboration with Ministries of Railways, Defence, Transport, Power and Civil Aviation, etc should vigorously identify and explore the areas where aluminium can replace other metals without compromising quality, strength and cost. Acknowledging the significance of major steps taken by the Ministry for promoting aluminium industry to cater to the needs of different sectors of the economy, the Committee desire the Ministry of Mines/aluminium companies to have

consultations/deliberations with all the stakeholders/user industries to create the demand of aluminium for their projects. Simultaneously, the Committee endorse the view that mineral wealth of the country be used judiciously under the Prime Minister's Vision of 'Atmanirbhar Bharat' and desire that increase in export of finished aluminium goods should also be explored and promoted. The Committee would like to be apprised of the initiatives undertaken by the Ministry in this regard and progress made therein.

Import of Aluminium and Scrap Policy

8. The Committee observe that the imports have remained consistently high around 60% of the total domestic consumption in the year 2020-21 mostly dominated by import of scraps, constituting around 66% of total imports. The total aluminium imports including scrap during Financial Year 2020-21 was 2.06 million tonne as compared to 2.15 million tonne in previous year. The Committee note that Ministry has notified a National Non-Ferrous Metal Scrap recycling Framework on 31.3.2021 to enable indigineous Scrap Recycling industry to be a formal and organized sector by cutting down scrap imports particularly non-quality and low graded/standard scrap. The Committee appreciate such innovative and indigenous growth oriented steps to cut cost and improve quantity of Aluminium being produced in the country.

The Committee further note that the development and promotion of aluminium can be ensured only by way of encouraging aluminium producers to produce more by providing enabling environment and protecting this Sector from flooding of imported aluminium. In this regard, the Committee think that the Ministry of Mines should endorse the demand of domestic Aluminium Industry to suitably enhance custom duty on imported aluminium to discourage the import which acts as a deterrent to boost indigeous production in the country. As the mandate to increase/decrease custom duty lies with the Ministry of Commerce, the Committee are of the considered opinion, the matter of increasing custom duty on imported aluminium be taken up at the highest level in the Government to protect this sector and made the Country 'Atam Nirbhar' in Aluminium Production. The Committee also desire that Ministry of Mines need to work out a viable mechanism with the Ministry of Commerce so that negotiations for Free Trade Agreements (FTAs) are undertaken by the Ministry of Commerce keeping in view the interests of domestic industry.

Initiatives for Promotion of Aluminium

9. The Committee note that the total domestic production of aluminium metal during 2020-21 stayed at about the same level of

3.61 million tonnes as in 2019-20. According to the Ministry, due to the onset of Covid-19 pandemic and the resulted lockdown, there was a severe demand destruction for Aluminium in the country. They further note that total domestic consumption of Aluminium during FY 2020-21 has decreased to 3.40 million tonne as compared to FY 2019- 20 levels of 3.70 million tonne i.e. a fall of about 8%. For promoting aluminium industry, the Ministry of Mines has issued National Mineral Policy 2019 in February, 2019. This Policy inter-alia, provides that efforts shall be made to export minerals in value added form as far as possible and the indigenous mineral industry will be attuned to the international economic situation in order to derive maximum advantage from foreign trade by carefully anticipating technology and demand changes in the international market for minerals; making industry competitive with products worldwide, reducing the cost of critical raw materials and the custom duty on critical raw materials like Aluminium Fluoride, etc.

The Committee are of the view that this will assist the Aluminium Industry to plan its pricing and production strategy by providing advance and accurate import information.; improving ease of doing business and reducing compliance burden; issuing the guidelines for auction of mineral blocks with pre-embedded clearances for mining projects, directives for the implementation of

these guidelines to promote the ease of doing business in the mining sector and to expedite the auction process as well as operation of mining lease by the successful bidder; and preparing a Non-Ferrous Metal Scrap Recycling Policy which focuses on developing a sustainable non-ferrous metal recycling ecosystem with special focus on recycling of scrap metal. The Committee would like to be apprised of the focussed steps taken by the Government to implement National Mineral Policy, 2019.

Reserves, Production and Development of Copper

10. The Committee observe that Copper is the second largest non-ferrous metal by usage. Against the global copper demand of about 25.04 million tonne in 2020, the growth rate as compared to 2018 declined by around 0.13%. According to United States Geological Survey (USGS), total global copper reserves amount to 870 million tonne of copper. The Ministry of Mines have informed that our country has very limited known reserves of exploitable copper ore and currently India's copper share of world's reserve is only 0.31%. The total resources of copper ore in the country as on 1.4.2015 were estimated at 2.73 million tonne of copper metal. Although, Hindustan Copper Ltd. (HCL) is the only producer of copper ore in the country, the ore mined by it caters to its captive consumption. Copper ore production of HCL in last ten years has been in the range

of about 4.0 million tonne per annum which is equivalent to 4.5% of the country's requirement. The Committee have been apprised that Hindustan Copper Ltd. (HCL) has plans to increase its mining capacity from current level of 4.0 million tonne per annum to 12.2 million tonne per annum in phase-I (under implementation) and from 12.2 million tonne per annum to 20.2 million tonne per annum in phase-II through expansion of existing mines, re-opening of closed mines and opening of new mines by investing Rs. 3434.00 crore for Phase-I and Rs. 2066.00 crore for Phase-II. The Committee, therefore, recommend that a holistic plan be prepared by Ministry of Mines and HCL ensuring proportionate increase in production of copper ore on yearly basis so that the target of production of 12.2 million tonne per annum in phase-I and 20.2 million tonne per annum proposed target in phase-II shall be achieved. They also recommend that requisite expenditure allocation for this enhanced production plan be ensured to realize the outcome of this proposal. The Committee would like to be apprised of the steps taken and the yearly investment plan to increase production targets by the Company.

11. The Committee further note that Copper demand in India is expected to grow due to increased thrust of the Govt. towards "Make in India" and "Smart City" programmes, AatmaNirbhar Bharat in

Defence, 100 GW targets for Renewable Energy by 2022, etc. The Committee note with satisfaction that Ministry of Mines has taken up a slew of measures like MMDR Amendment Act 2021, which will help increase in the pace and participation of private sector in exploration and will bring advance technology in exploration of minerals by giving level playing field for government and private agency. The Committee have also been informed that NMET is to be made Autonomous body to ramp up exploration by engaging public and private entities to increase Mineral production in the country. Further, under seamless prospecting license cum-mining lease, exploration activity is seamlessly integrated with mining; validity of statutory clearances of expired mining leases are continued even after expiry or termination of mining lease and shall be transferred to next lessee of the mine. This will ensure continuity in mining operations and production despite change in lessee.

There is no denying the fact that as the global demand for electrical and electronic products, building construction, industrial machinery and equipment, transportation equipment and consumer and general products will increase, the demand of copper will also increase. Due to progress of implementation of electric vehicle, the demand of copper will also be derived in the country. To meet the enhanced demand of copper in the country, the Committee feel that

more copper deposits needed to be exploited. Hence, the Committee desire the Ministry of Mines to take initiatives accordingly and have consultations/deliberations with all the user industries across major sectors to generate and meet the requisite demand of copper for their projects. The Committee desire the Ministry of Mines to plan and take initiatives accordingly and they be apprised of the steps taken in this direction.

Consumption and Demand of Copper

12. The Committee note that the total consumption of refined copper in the country in 2020 was around 6.60 lakh tonne. The Committee were informed that Copper demand in electrical segment is growing due to demand in infra sector as a result of affordable housing schemes, rural electrification and more urbanization. As regards consumption of copper in the country, the Committee think that per capita consumption of copper in the country is expected to increase from the current level of 0.6 Kg to 1 kg in coming years against world per capita consumption level of 3.2 kg. In view of targeted per capita consumption in India is expected to increase from the current level of 0.6 kg to 1 kg in the coming years, the Committee feel that the Ministry of Mines should pursue with the Ministry of Finance and the Ministry of Commerce to give more incentives to the domestic copper industries so that more and more

capacity addition projects are commissioned under 'Make in India' campaign.

MINUTES OF THE FOURTEENTH SITTING OF THE STANDING COMMITTEE ON COAL AND STEEL HELD ON THURSDAY THE 20 AUGUST, 2020 IN COMMITTEE ROOM NO. '1', BLOCK-A, FIRST FLOOR, PHA EXTENSION BUILDING, NEW DELHI.

The Committee sat from 1200 hrs. to 1400 hrs.

PRESENT

Shri Rakesh Singh- Chairperson

Lok Sabha

2. Shri Balubhau Dhanorkar alias Suresh Narayan
3. Shri S. Muniswamy
4. Shri Ajay Nishad
5. Shri Arun Sao
6. Shri Sushil Kumar Singh
7. Shri Sunil Kumar Singh
8. Dr. Alok Kumar Suman
9. Shri Shyam Singh Yadav

Rajya Sabha

10. Dr. Vikas Mahatme
11. Shri Samir Oraon
12. Shri B. Lingaiah Yadav

Secretariat

1. Shri Pawan Kumar - Joint Secretary
2. Shri Arvind Sharma - Director
3. Smt. Geeta Parmar - Additional Director

WITNESSES

MINISTRY OF MINES AND PSUs/ORGANIZATIONS

- 1 Shri Anil Kumar Jain, Secretary
- 2 Shri Satendra Singh, Joint Secretary
- 3 Shri Sridhar Patra, CMD, NALCO
- 4 Shri Arun Kumar Shukla, CMD, HCL

2. At the outset, the Chairperson welcomed the Secretary and other representatives of the Ministry of Mines and Public Sector Undertakings (PSUs) to the sitting of the Committee convened to have briefing with the representatives of the Ministry of Mines on the subject "Development of Aluminium and Copper Industries in India". The Chairperson then drew their attention to Direction 55 of the Directions by the Speaker, Lok Sabha regarding confidentiality of the proceedings.

3. Thereafter, the Secretary, Ministry of Mines briefed the Committee about the India's bauxite (reserve + remaining resources) stand at 3896 million tones; major aluminium producers in India are NALCO, BALCO, HINDALCO and VEDANTA; Hindustan Copper Ltd. is the only vertically integrated copper producer in the country; M/s Hindalco and M/s Sterlite Industries have port based smelting and refining plants; M/s Hindalco Industries and M/s Sterlite Industries import raw material in the form of copper ore or metal in concentrate and produce refined copper and copper products; efforts to increase copper production in the country by HCL; HCL chalked out an expansion plan to increase production; auction of two new copper mines for composite license in Maharashtra; Introduction of Copper Import Monitoring System; 13 projects have been sanctioned from NMET for copper exploration; auction of mineral blocks with Pre-embedded statutory clearance; formulation of non-ferrous metal recycling policy, etc.

4. The Committee then sought clarification on various issues like introduction of scrap recycling policy in aluminum and copper to control scrap and put this policy in public consultation; aluminum is not used much in India as it is in the world; aluminium widely used in transport, construction, packaging, electrical, machinery and equipment; aluminium and copper are of strategic nature; large use of copper in electric mobility;

the strategic nature of copper is very high; Nalco to receive Alumina World's Lowest Cost Producer Award in 2018; efforts to increase marketing network; efforts for R&D in aluminum sector; Import of scrap aluminium; setting up of plants to increase domestic production and export; the private sector is also expanding in the aluminum industry; copper and aluminum can be recycle; trying to merge HCL with Zero Debt Company like CIL and NMDC which are government PSUs; Excess copper import; Measures to be taken for the development of copper smelter unit plant; Closure of copper smelting refining plant in Tuticorin; HCL has an Indian Copper Complex unit at Ghatshila, which has been slow for the last three-four years; Need to create a recycling policy, etc.

8. The representatives of the Ministry replied to the queries of the Members. The Chairperson directed the representatives of the Ministry of Mines to furnish written replies to the queries raised by the Members which remained unanswered during the sitting of the Committee.

A copy of verbatim record of the sitting has been kept.

The Committee then adjourned.

MINUTES OF THE FOURTH SITTING OF THE STANDING COMMITTEE ON COAL, MINES AND STEEL (2021-2022) HELD ON THURSDAY, THE 30TH DECEMBER, 2021 IN COMMITTEE ROOM NO. '2', 'A' BLOCK, PHA EXTENSION BUILDING, NEW DELHI.

The Committee sat from 1130 hrs. to 1300 hrs.

PRESENT

Shri Rakesh Singh - Chairperson

Lok Sabha

2. Shri Saumitra Khan
3. Shri Ajay Nishad
4. Smt. Riti Pathak
5. Shri Arun Sao
6. Shri Thirumaavalavan Thol

Rajya Sabha

7. Dr. Vikas Mahatme
8. Shri Prashanta Nanda
9. Shri Ram Vihar Netam
10. Shri Samir Oraon
11. Shri Deepak Prakash
12. Shri Dhiraj Prasad Sahu

SECRETARIAT

- | | | | |
|----|----------------------------|---|---------------------|
| 1. | Shri Pawan Kumar | - | Joint Secretary |
| 2. | Shri Arvind Sharma | - | Director |
| 3. | Shri Uttam Chand Bharadwaj | - | Additional Director |
| 4. | Smt. Geeta Parmar | - | Additional Director |

WITNESSES

MINISTRY OF MINES

- | | | |
|---|-----------------------|------------------|
| 1 | Shri Alok Tandon | Secretary |
| 2 | Shri Upendra C. Joshi | Joint Secretary |
| 3 | Shri Shakil Alam | Economic Advisor |
| 4 | Shri Sanjeev Verma | Director |

MINES PSUs

- | | | |
|---|---------------------------|------------------------------------|
| 5 | Shri Arun Kumar Shukla | CMD, HCL |
| 6 | Shri Manasa Prasad Mishra | Director, NALCO |
| 7 | Dr. P.K.Pradhan | GGM (CA & Mktg.), NALCO |
| 8 | Shri Ramananda Adhikari | DGM & TA to CMD, HCL |
| 9 | Shri Sanjay Panjiyar | Director (operation & Mining), HCL |

2. At the outset, the Chairperson welcomed the Secretary, Ministry of Mines and the representatives of HCL and NALCO to the sitting of the Committee convened to take oral evidence on the subject "Development of Aluminium and Copper Industries in the Country". The Chairperson then drew their attention to Direction 55 of the Directions by the Speaker, Lok Sabha regarding confidentiality of the proceedings.

3. Thereafter, the Secretary, Ministry of Mines briefed the Committee about the subject and a power point presentation was made.

4. The Committee then sought clarifications on various subject related issues like introduction of Non-Ferrous Metal Scrap Import Monitoring System (NFMIMS); non ferrous metal recycling framework; necessary amendment in rules to reduce compliance burden of mining industry; expansion plan of Hindustan Copper Limited to increase ore production; reasons for less use of aluminium and copper in India as compared to other countries in the world; scope of increased use of aluminium in transport, construction, packaging, electrical, machinery and equipment sectors; increased use of copper in electrical equipments and vehicles; NALCO's efforts to increase its marketing network; efforts for R&D in aluminium sector; import of aluminium scrap; steps taken by Ministry for development of aluminium and copper sectors etc.

5. The Chairperson, thereafter, directed the representatives of the Ministry of Mines to furnish written replies within two weeks to all the queries raised by the Members during the sitting of the Committee.

A copy of verbatim proceedings of the sitting of the Committee has been kept on record.

The Committee then adjourned.

ANNEXURE-II

MINUTES OF THE EIGHTH SITTING OF THE STANDING COMMITTEE ON COAL, MINES AND STEEL (2021-2022) HELD ON MONDAY, THE 21ST MARCH, 2022 FROM 1530 HRS. TO 1615 HRS. IN HON'BLE CHAIRPERSON'S CHAMBER, ROOM NO. '210', B-BLOCK, PHA EXTENSION BUILDING, NEW DELHI.

PRESENT

Shri Rakesh Singh - Chairperson

Lok Sabha

2. Shri Kunar Hembram
3. Shri Chandra Prakash Joshi
4. Shri Ajay Nishad
5. Smt. Riti Pathak
6. Shri Chunni Lal Sahu
7. Shri Arun Sao
8. Shri Pashupati Nath Singh
9. Shri Sushil Kumar Singh
10. Dr. Beesetti Venkata Satyavathi

Rajya Sabha

11. Dr. Vikas Mahatme
12. Shri Samir Oraon
13. Shri Deepak Prakash

SECRETARIAT

1. Smt. Anita B. Panda - Joint Secretary
2. Shri Arvind Sharma - Director
3. Shri Uttam Chand Bharadwaj - Additional Director

2. At the outset, Chairperson welcomed the Members to the sitting of the Committee.

3. The Committee thereafter took up for consideration the following Reports:

- (i) *** *** *** ***
- (ii) *** *** *** ***
- (iii) *** *** *** ***

(iv) Draft Report on the subject "Development of Aluminium and Copper Industries in the Country" relating to the Ministry of Mines.

4. The Committee then authorized the Chairperson to finalise the Reports in the light of the factual verification received from the concerned Ministries and present/lay the same in both the Houses of Parliament.

5. *** *** *** ***

The Committee, then, adjourned.

***Not related to the Report.**