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STANDING COMMITTEE ON COAL AND STEEL (2016-2017) SIXTEENTH LOK SABHA

MINISTRY OF STEEL

Action Taken by the Government on the Observations/ Recommendations contained in the Twenty-First Report of the Standing Committee on Coal and Steel (Sixteenth Lok Sabha) on "Research and Development in Iron and Steel Sector"

THIRTIETH REPORT

LOK SABHA SECRETARIAT
NEW DELHI
MARCH, 2017/CHAITRA, 1939 (Saka)

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Presented to Lok Sabha on 24.03.2017

Laid in Rajya Sabha on 24.03.2017

LOK SABHA SECRETARIAT
NEW DELHI
MARCH, 2017/CHAITRA 1939 (Saka)

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COMPOSITION OF THE STANDING COMMITTEE ON COAL AND STEEL (2016-17)

Shri Rakesh Singh- Chairperson

Name of the Member

Lok Sabha

2. Shri A Arunmozhithevan
3. Shri Kalyan Banerjee
4. Shrimati Jyoti Dhurve
5. Shri Nagesh Godam
6. Shri Shailesh Kumar
7. Dr. Banshilal Mahato
8. Shri Kamalbhan Singh Marabi
9. Shri Ajay Nishad
10. Shrimati Riti Pathak
11. Shrimati Ranjit Ranjan
12. Dr. Ravindra Kumar Ray
13. Shri Chandu Lal Sahu
14. Shri Tamradhwaj Sahu
15. Shri Tathagata Satpathy
16. Shri Janardan Singh "Sigriwal"
17. Shri Pashupati Nath Singh
18. Shri Rama Kishore Singh
19. Shri Sunil Kumar Singh
20. Shri Sushil Kumar Singh
21. Shri Krupal Balaji Tumane

Rajya Sabha

22. Shri Ali Anwar Ansari
23. Dr. Pradeep Kumar Balmuchu
24. Shri Ranjib Biswal
25. Shri Md. Nadimul Haque
26. Shri B.K Hariprasad
27. Shri Ranvijay Singh Judev
28. Shri Ram Vichar Netam
29. Shri Dilip Kumar Tirkey
30. Vacant
31. Vacant

SECRETARIAT

1. Shri U.B.S. Negi - Joint Secretary
2. Shri Ajay Kumar Garg - Director
3. Shri Arvind Sharma - Additional Director
4. Smt. Vandana P. Guleria - Executive Officer

INTRODUCTION

I, the Chairperson, Standing Committee on Coal and Steel having been authorised by the Committee to present the Report on their behalf, present this Thirtieth Report (Sixteenth Lok Sabha) on Action Taken by the Government on the observations/recommendations contained in the Twenty-First Report of the Standing Committee on Coal and Steel (Sixteenth Lok Sabha) on "Research and Development in Iron and Steel Sector" pertaining to the Ministry of Steel.

2. The Twenty-First Report (Sixteenth Lok Sabha) of the Standing Committee on Coal and Steel was presented to Lok Sabha on 10.08.2016. Replies of the Government to all the observations/recommendations contained in the Report were received on 28.10.2016.

3. The Standing Committee on Coal and Steel considered and adopted this Report at their sitting held on 02.03.2017.

4. An analysis on the Action Taken by the Government on the observations/ recommendation contained in the Twenty-First Report (Sixteenth Lok Sabha) of the Committee is given at **Annexure-II.**

5. For facility of reference and convenience, the observations and recommendations of the Committee have been printed in bold letters in Chapter-I of the Report.

NEW DELHI;
2 March, 2017
11 Phalguna, 1939(Saka)

RAKESH SINGH
Chairperson
Standing Committee on Coal and Steel

REPORT

CHAPTER I

This Report of the Standing Committee deals with Action Taken by the Government on the observations/recommendations contained in the Twenty-First Report (Sixteenth Lok Sabha) of the Standing Committee on Coal and Steel(2015-16) on the subject, "Research and Development in Iron and Steel Sector" relating to the Ministry of Steel which was presented to Lok Sabha and laid in Rajya Sabha on 10.08.2016.

2. The Action Taken Replies have been received from the Ministry of Steel on 28.10.2016 in respect of all the 18 observations/recommendations contained in the Report. These have been categorised as follows:-

(i) Observations/Recommendations which have been accepted by the Government:

Serial Nos. 2, 3, 5, 6, 8, 9, 10, 11, 12, 14, 15, 16 and 18

Total : 13
Chapter-II

(ii) Observations/Recommendations which the Committee do not desire to pursue in view of the replies of the Government:

Serial No.1, 13

Total : 02
Chapter-III

(iii) Observations/Recommendations in respect of which replies of the Government have not been accepted by the Committee:

Serial Nos. 7 and 17

Total : 02
Chapter-IV

(iv) Observations/Recommendations in respect of which final replies of the Government are still awaited:

Serial Nos. 4

Total : 01
Chapter-V

3. The Committee trust that utmost importance would be given to implementation of the Observations/Recommendations accepted by the Government. In case, where it is not possible for the Ministry to implement the recommendations in letter and spirit for any reason, the matter should be reported to the Committee with reasons for non-implementation. The Committee desire that final Action Taken replies on the Observations/Recommendations contained in Chapters-I & V of this Report be furnished to them within three months.

4. The Committee will now deal with the Action Taken by the Government on some of their observations/recommendations made in the Twenty-First Report.

STEEL DEVELOPMENT FUND

Recommendation at Serial No. 3

5. The Committee were unhappy to note that Steel Development Fund which was set up in 1997-98 for R&D initiatives with an annual expenditure target of Rs. 150 crore to be pursued by public and private steel companies for development of innovative/path breaking technologies, beneficiation/ upgradation of low grade iron ore, achieving, global benchmarks in productivity, quality, etc. had failed to yield desired results even after funding of 91 R&D projects costing Rs. 950.75 crore under the scheme. Although, 55 of these 91 R&D projects had been completed and 24 projects are in progress, the Committee were concerned to note that even after expending Rs. 950.75 crore on these 91 R&D activities, during 2014-15, 9.32 MT of finished steel was imported. While deprecating the non-focused approach on R&D activities by the Government and domestic steel Industry during the last 2 decades, the Committee felt that it is high time now that Indian Steel Industry focus on R&D on better resource utilization, better cost efficiency and production of world class products. The Committee would, therefore, like to be apprised of the sustained efforts made by the Ministry of

Steel and domestic steel companies to produce quality steel for automotive sector, electrical equipment and ship building etc.

6. In its action taken reply, the Ministry of Steel has stated as under:-

"In the recent past, the country has been producing normal grades of automotive steels and also CRNO electrical steels for quite some time. The steel companies are also engaged in development & production of steel required for the strategic sector like ship building, oil & gas, defence sector etc. Of late, several steel companies are engaged in production of most of the auto grade steel sheets as well as CRNO steel sheets. However, CRGO electrical steel is hardly produced in the country as the technology is closely held by a handful of leading steel manufacturers worldwide. One company produce around 10,000 Tonnes of CRGO steel based on imported inputs.

Government has accordingly decided to pursue an R&D project namely "Development of Technology for Cold Rolled Grain Oriented Electrical (CRGO) Steel Sheets", for indigenous development of the technology for CRGO steel sheets. Salient features of the project are given below:

- This is a joint collaborative research project by NML Jamshedpur (CSIR), Tata Steel, RINL& Ministry of Steel.
- The estimated cost of the CRGO Pilot project is Rs. 494.63 crore out of which Rs. 117.65 crore is to be provided from Plan Fund.
- MECON has prepared the DPR of the project which has been approved by stakeholders in September 2016.
- A Memorandum of Agreement is expected to be signed by the stakeholders shortly.
- Project is likely to be in initiated in 2016-17 after necessary final approval in Ministry of Steel and giving go ahead to MECON for the Project Management Consultancy & Supervision services."

7. To the recommendation of the Committee that domestic steel industry should make sustained efforts to produce quality steel for automotive sector and electrical equipment, etc., the Ministry of Steel in their action taken reply have submitted that the country has already been producing normal grades of automotive steels and CRNO electrical steels but Cold Rolled Grain Oriented (CRGO) electrical steel is hardly produced in the country as the technology is closely held by a handful of leading steel manufacturers worldwide. In this regard, the Committee are happy to note that the Government has decided to pursue an R&D project namely "Development of Technology for Cold Rolled Grain Oriented Electrical (CRGO) Steel

Sheets", for indigenous development of the technology for CRGO steel sheets for which a joint collaborative research project is being undertaken by National Metallurgical Laboratory (NML) Jamshedpur (CSIR), Tata Steel, RINL & Ministry of Steel. The estimated cost of the CRGO Pilot project is Rs. 494.63 crore out of which Rs. 117.65 crore is to be provided from Plan Fund. The Committee are further apprised that MECON has prepared the Detailed Project Report (DPR) of the project which has been approved by stakeholders in September 2016 and a Memorandum of Agreement is expected to be signed by the stakeholders shortly. As the Committee are very keen to see these sustained efforts by the Ministry to fructify, they would like to be apprised of the latest status in this regard including signing of the Memorandum of Agreement by the stakeholders concerned.

NEED FOR HIGHER INVESTMENTS IN R&D

Recommendation at Serial No.7

8. The Committee noted that steel PSUs like NMDC Ltd., MECON Ltd., MOIL Ltd. and KIOCL Ltd. also carry out independent R&D works in the field of ore beneficiation, mineral processing and safety and productivity in mines etc. The Steel Companies like SAIL, TATA Steel, JSW Steel and ESSAR Steel had accomplished some significant R&D works in the area of raw material beneficiation, agglomeration and product development. However, the actual investment on R&D by the Steel Companies in India had remained very low in the range of 0.05-0.5% of the sales turnover compared to R&D investments in Steel Companies abroad. For instance, in the countries like China, Japan and South Korea etc., annual R&D investments were very high and varies in the range of 1-2% of their sales turnover whereas during the year 2014-15, the SAIL's share of expenditure was only 0.56% of the turnover of the company. Similarly, the expenditure on R&D by RINL, NMDC Ltd., MOIL Ltd. and MECON Ltd. during 2014-15 was 0.28 %, o.15%, 0.73% and 0.53% respectively of their total turnover. The Committee noted that as per Department of Public Enterprises guidelines, Maharatna and Navratna

category of CPSEs were required to invest 1% of their PAT and Miniratna Companies had to invest 0.5% of their PAT in R&D. Besides that, the Working Group on Steel Industry for the 12th Five Year Plan had also recommended a minimum 1% investment in R&D by the steel companies of their sales turnover. While the main focus of R&D by Indian Steel Companies had remained on improving internal processes like saving costs and improving plant efficiency, want of adequate R&D investments for development of high end technologies and products remains a major concern for the Committee. The Committee felt that enhanced R&D investments and adoption of new technologies were imperative for competitiveness of Indian Steel Industry. The Committee, therefore, recommended that taking into account the requirement of laying focus on indigenous development of technology, continuous and augmented efforts should be made for R&D initiatives by all concerned including the Ministry of Steel, Public and Private Sector Companies, Institutes of Technological Research and Advancements, etc. The Committee also recommended that the Indian Steel Companies, both public and private enterprises should make an attempt to benchmark their R&D spending with internationally prevalent best practices in the Sector. The Committee would like to be apprised of the steps taken by all Steel PSUs and private sector companies in this regard.

9. In its action taken reply, the Ministry of Steel has stated as under:-

> "In addition to the present R&D schemes pursued by Ministry to Steel, to augment the R&D initiatives of the Indian Steel Sector, Ministry of Steel is facilitating the setting up of an Industry led Institutional Mechanism to pursue joint collaborative research in the Iron & steel sector and spearhead R&D of national importance.
>
> With regard to benchmarking R&D investments by the Indian steel companies to the global best practices, it is submitted that setting up of SRTMI which is an industry led mechanism for joint collaborative research, and will run from the contributions of the steel companies, will facilitate increasing the R&D investment. Besides, the PSU steel companies individually are also giving more thrust on R&D and have set up strategies to enhance the R&D investment. The steel companies in the private sector also are engaging in enhancing their R&D capabilities which are expected to enhance the R&D investment.

There has been a significant increase in R&D expenditure of SAIL from Rs.110.43 crore in 2013-14 to Rs.264.20 crore in 2014-15, further to Rs 277 crore in 2015-2016. In terms of turnover net of excise, R&D expenditure has increased from 0.24% (2013-14) to 0.58% (2014-15), further to 0.72% in 2015-16, which is the highest among all steel plants in the country.

SAIL has undertaken R&D Master Plan programme with an aim to increase the R&D Expenditure to 1% of turnover. Under R&D Master Plan, new innovation projects have been undertaken in SAIL Steel Plants and Units.

RINL strives for indigenous development of technology through R&D spending to match with the international practices in the Iron & Steel Sector. Major R&D initiatives to achieve an R&D expenditure of 1% of Sales Turnover at RINL – VSP are given under:

1. A collaborative R&D program on "Development of the technology and produce CRGO steel and other value added steels" with CSIR – National Metallurgical Laboratory, Jamshedpur, Tata Steel, Jamshedpur and Ministry of Steel at an estimated cost of Rs.495 crore over a period of five years. RINL's contribution for this project is Rs.129.4 crore.
2. Setting up additional facilities for existing R&D Centre at an expenditure of Rs.3.4 crore towards infrastructure and with additional research equipment of Rs.15 crore.
3. Setting up a separate R&D Centre over a period of six years with a proposed expenditure of about Rs.150 Crore (Rs.25 crore per year).
4. Participation in "Steel Research and Technology Mission of India" (SRTMI) involving an expenditure of approx. Rs.8 crore per year."

10. Taking note of the fact that investment in R&D by major steel PSUs are much below the R&D investment by major steel producing companies in the world, the Committee had emphasized on the need for both private and public enterprises to benchmark their R&D investments with international standards where companies annual R&D investments vary in the ratio of 1-2% of their sales turnover. The Committee appreciate the fact that there has been a significant increase in R&D expenditure of SAIL from Rs.110.43 crore in 2013-14 to Rs.264.20 crore and Rs 277 crore in 2014-15 and 2015-2016

respectively whereby the R&D expenditure of SAIL increased in terms of turnover net of excise from 0.24% in 2013-14 to 0.58% in 2014-15, further to 0.72% in 2015-16, which is the highest among all steel companies in the country. Further, SAIL has also reported to undertake R&D Master Plan programme with an aim to increase the R&D Expenditure to 1% of turnover wherein new innovation projects have been undertaken in SAIL Steel Plants and Units. Similarly, RINL has also enumerated major R&D initiatives taken up by it to achieve R&D expenditure of 1% of sales turnover. Although, the Committee appreciate that sustained efforts are being made to raise the R&D investment benchmark by steel PSUs by setting up institutional mechanism like SRTMI, they would like to be apprised of the details of the master plan of the steel PSUs as well as private sector steel companies to achieve minimum 1% investment in R&D in a time bound manner as recommended by Working Group on Steel Industry.

NEED FOR FRESH MAPPING FOR IRON ORE DEPOSITS

Recommendation at Serial No.10

11. Considering the prospects of growth of steel sector in our country and the ambitious production target of 300 MT by 2025, the Committee felt that in addition to the already identified/proven iron ore reserves, there was an imperative need for exploration of new iron ore reserves. In this regard, the Committee, however noted that the data of iron ore mapping available had become old and obsolete. The Committee had also been given to understand that NMDC Ltd. was equipped with state of the art/ latest technologies for drilling and exploration work but the work is pending in some of the mining areas pending forest clearances. The Committee, therefore, recommended that the process of exploring fresh iron ore deposits should be initiated at the earliest so that latest data was made available and exploration work did not suffer on account of lack of availability of data. Taking note of the fact that exploratory works were held up pending statutory clearances and that substantial R&D works in the field of mapping and exploration of iron ore had

not been done in the past, the Committee felt that this aspect should no longer remain neglected and immediate steps be taken for updation of mapping data of iron ore and pending forest clearances. The Committee also desired that the Government should not only take advance action to ensure availability of raw material for production of 300 million tonne of steel by 2025 but should also explore the prospects of acquiring iron ore assets abroad.

12. In its action taken reply, the Ministry of Steel has stated as under:-

I. "In coherence with the plan of Ministry of Steel of achieving 300 MTPA steel production by 2024-25, NMDC plans to become a major Iron Ore supplier in the Country. As a part of our strategic planning, NMDC is embarking upon to increase its Iron Ore production capacity to 50 Million Tonnes by 2018-19 and 67 Million Tonnes by 2021-22 from existing and new mines to meet the requirement of steel production.

II. The Iron Ore Production of 67 Million Tonnes by 2021-22 can be achieved by allocation of new Iron Ore Deposits in other States , early Statutory clearances for Bailadila Deposit-4 & Deposit-13 and expansion Projects with the support from the Government.

III. The section 17A(2A) of MM(D&R) Amendment Act, 2015 provides for Reservation for Government / PSUs. The matter is being pursued to reserve the area for NMDC with concerned State Govt. for 196 Ha & 154.50 Ha areas contiguous to KIOM & DIOM MLs and Ramandurg in Karnataka, Mankadnacha & Malangtoli in Odisha, Ghatkuri in Jharkhand, Ramgiri in Andhra Pradesh.

Abroad:

IV. NMDC has 78.56% equity in Legacy Iron Ore Ltd. Legacy Iron Ore is a Perth-based Australian exploration company, focused on the development of iron ore, gold and base metal deposits. Currently Legacy has 19 tenements- Iron ore (01 tenement), Gold (17 tenements) and Base Metals (01) tenements.

V. Mt Bevan Magnetite project is a joint venture between Legacy Iron (60%) and Hawthorn resources (40%). Total JORC magnetite resource is 1.17 billion tonnes @30.6% Fe out of which, 322Mt is in indicated category and 847Mt is in inferred category. The resource size can be further extended by drilling in eastern banded iron ore formation.

VI. SPV, the initiative of Ministry of Steel to boost steel production in India, NMDC is leading the formation of steel SPV in the state of Karnataka and Jharkhand.

VII. To provide iron ore to the steel plants, NMDC is in continuous engagement with Mysore Minerals Limited (MML) to sign a Memorandum of Understanding and form a Joint Venture

company to develop the iron ore resources in the state of Karnataka.

VIII. For allocation of iron ore resources and ore linkage to Steel SPV , NMDC had submitted the draft Joint Venture agreement to form a Joint venture company between NMDC and JSMDC in July 2015."

13. The Committee while acknowledging the need for expanding the iron ore availability across the country had desired that the work regarding exploration of fresh iron ore resources should be initiated expeditiously. The Committee had, therefore, stressed on the need for immediate action on updation of iron ore mapping data which has become old and obsolete. The Committee are unhappy to note that the reply of the Ministry is silent on this aspect. Keeping in view the compelling circumstances to achieve ambitious production target of 300 MT by 2025 in the country and pending exploration work due to obsolete mapping and exploration data, the Committee reiterate their earlier recommendation that immediate steps be taken for updation of mapping data of iron ore and desire that they be apprised of the steps taken by Ministry of Steel in this matter.

JOINT VENTURES FOR R&D

Recommendation at Serial No.14

14. The Committee noted that some of the steel companies in India had also been partnering with world leaders through joint ventures for acquiring technology and process know-how to enable them to improve their performance and produce value added products. For example, Steel Authority of India Limited (SAIL) had signed an MOU with Arcelor Mittal for development/production of automotive grade steel sheets. JSW steel had entered into partnership with JFE, Japan for technological support for development and production of value added steel products particularly automotive grade steel and electrical steel. Further, Tata Steel Limited had entered into partnership with Nippon Steel and Sumitomo Metals Corporation for development and production of automotive grade steel sheets. In addition, 2 renowned foreign companies namely POSCO, South Korea and

China Steel Corporation, Taiwan had set up their 100% subsidiaries in India to produce value added flat steel products. Though, the Committee appreciate these efforts and felt that with these initiatives India's dependence on import of value added products will substantially decrease, yet at the same time, the Committee desired that concerted efforts were also required not only for technological collaboration with such companies but for acquiring/transfer of high-end technologies pursued by them. The Committee would like to be apprised of the targeted investments and stipulated dates by which the aforementioned Joint Ventures by the Indian Steel Companies could be set up.

15. In its action taken reply, the Ministry of Steel has stated as under:-

"The information desired by the committee is given hereunder:

SAIL:

- SAIL and Arcelor Mittal have signed an MOU on May 22, 2015 to explore the possibility of setting up an automotive steel manufacturing facility under a Joint Venture (JV), in India. The MoU has a validity of two years.
- The proposed JV will construct a state-of-the-art cold rolling mill and other downstream finishing facilities in India that will offer technologically advanced steel products to India's rapidly growing automotive sector.
- The input material for the CRM shall be supplied from SAIL's upcoming Hot Strip Mill located at Rourkela Steel Plant. Thus, it would be a completely integrated indigenous supply chain for the Indian Automotive Sector.
- A task force team comprising representatives from both SAIL and Arcelor Mittal has been working on detailed due diligence and feasibility study, based on the outcome of which definitive agreements for setting up a JV Company shall be entered into.
- The investment and the timeline for setting up of production facilities shall be firmed up as a part of the due diligence and feasibility study.

Tata Steel:

- In early 2000, Tata Steel signed technological contracts with Nippon Steel and Arcelor for the development of cold rolled and galvanized products for automotive customers. Nippon Steel was appointed as a Technology Consultant for the selection of process and machinery in the cold rolling complex, which was established in the year 2000. Nippon Steel help was availed for the finalization of technology/process/ machinery in the green field project at Kalinganagar.

- Tata Steel and Nippon Steel put up a Continuous Annealing Line at Jamshedpur (0.54 MTPA) in 2014 for the production of high quality Cold Rolled material for automotive customers. This unit produces steel for internal as well as external applications up to a strength level of 590 MPa.
- Tata Steel and Bluescope, Australia established a Continuous Galvanizing unit and Colour Coating Line at Jamshedpur. The unit produces high quality Galvalume and Colour Coated Steel for construction application. TSL availed the help of CSM, Italy in 2015 for the development of high strength API grades.
- All the Technology collaborations and JVs have been completed successfully. These efforts have resulted in the development of new grades and substantial technology transfer has occurred on account of them.
- At present there is no ongoing Technology contract with any overseas Technology Partner. Discussions are in progress for JV with Nippon Steel & Sumitomo Metal for a 2.5 MTPA modern Cold Rolling Complex at Kalinganagar. It will be done only if the economics of doing it as JV are favorable.

JSW Steel:

- JSW entered into a JV with JFE Steel Corporation for a) transfer of Know-how to help JSW steel in production of high end products for automobile steels and Electrical steels b) Process improvement consultation and guidance for steel processes, and c) Testing & certification of advanced steels.
- Accordingly, to adopt the new technologies, JSW has invested in two major production facilities:

  a. About Rs 4,350 Crores in CRM-2 project for building the Country's largest and widest state-of-the art 2.3 MTPA capacity Cold Rolling Mill with continuous annealing and continuous galvanizing lines to produce high end automotive steels.

  b. About Rs 505 Crores in new facilities for production of Cold Rolled Non-grain Oriented (CRNO) electrical steel."

16. While observing that some of the Indian Steel Companies including PSUs had been partnering with other world companies through Joint Ventures for acquiring technology and process know-how adding value added products and improving performance etc. The Committee had observed that concerted efforts would be required not only for technological collaboration with such companies but also for acquiring/transfer of high end technologies

pursued by them. The Committee had also desired to be apprised of the targeted investments and stipulated dates of initiation of these joint ventures. In this regard, the Ministry in their action taken reply have informed that SAIL and Arcelor Mittal have signed an MOU on May 22, 2015 to explore the possibility of setting up an automotive steel manufacturing facility under a Joint Venture (JV), in India. This MoU has a validity of two years. A task force team comprising of representatives from both SAIL and Arcelor Mittal has been working on detailed due diligence and feasibility study, based on the outcome of which definitive agreements for setting up a JV Company shall be entered into. The investment and the timeline for setting up of production facilities shall be firmed up as a part of the due diligence and feasibility study. As regards private sector, the Ministry have informed about the initiatives being undertaken by Tata Steel & JSW for acquiring technology and production of high end steel products through JVs. Though, the Committee are satisfied with these initiatives for production of high grade steel in the country, the Committee desire that intensive efforts be made so that these processes are speeded up and the work on setting up of such JVs should be initiated at the earliest.

ANTI-DUMPING DUTY ON STEEL

Recommendation at Serial No.17

17. While reiterating their earlier recommendation in 20th Report on Demands for Grants (2016-17) of Ministry of Steel whereby the Committee appreciated the measures like hiking of import duty, imposition of provisional safeguard duty on certain items, imposition of anti-dumping duty, invoking the Steel and Steel products (Quality Control Order) etc. taken by the Government to protect the interest of beleaguered domestic steel industry, the Committee noted that India follows the lesser duty rule in anti-dumping investigations and subsidy investigations. As per this method, anti-dumping duty/countervailing duty was levied on the lesser of 'margin of

dumping/amount of subsidy' or margin of injury. According to the Ministry of Steel, major jurisdictions such as the United States of America, Canada and China, however, did not adopt the lesser duty rule. These jurisdictions were of the view that their domestic industry had to be protected from unfair dumping/subsidy at all costs and the most effective way to accomplish that would be if anti-dumping duty/countervailing duty was levied to the full extent of the margin of dumping/amount of subsidy. As a consequence, these countries did not give the benefit of lesser duty rule to erring exporters as they realize this method was not effective because it always leaves room for the exporters to continue dumping practices. Similarly, it gave less relaxation to exporters from countries that offer trade distortive subsidies. The Committee were further apprised that General Agreement of Tariffs and Trade, Agreement on Implementation of Article VI of the General Agreement on Tariffs and Trade 1994 (Anti-Dumping Agreement) and Agreement on Subsidies and Countervailing Measures permit WTO members to levy anti-dumping duty/countervailing duty to the full extent of the margin of dumping/amount of subsidy. In fact, WTO commitments do not mandate that countries should follow lesser duty rule in anti-dumping investigations. In view of the foregoing and the fact that the lesser duty rule was introduced in the WTO at the instance of import dependent countries, to give them an elbow for levying duties that were lower than the dumping margin, the Committee felt that the country which had a vibrant domestic industry capable enough of producing a wide spectrum of products with increase of steel production to give a boost to the 'Make in India' Vision should consider imposition of anti-dumping duty/countervailing duty to the full extent of the dumping margin/amount of subsidy and stop the practice of giving only partial protection against dumped imports/subsidized imports. According to the Ministry of Steel, scrapping of 'lesser duty' rule in relation to anti-dumping investigations and subsidy investigations do not require changes in the parent act and these charges could be effected by change in Rules alone. The Committee therefore, recommended the Ministry of Steel to take up the matter at the appropriate level in the Government so that elaborate policy

initiatives be taken and a level playing field and adequate and effective safeguards were provided to the domestic steel Industry.

18. In its action taken reply, the Ministry of Steel has stated as under:-

"It may be noted that industries have been constantly trying for removal of 'Lesser Duty Mechanism' for notification of Anti-Dumping Duty on Steel Products. Ministry of Steel vide DO No. 3/2(7)/2015-TTD dated 18th March 2016 has also requested for the same to Ministry of Commerce. To lend support to the stressed domestic industry, Government of India has notified a number of measures, viz. MIP, Anti-dumping duty, Safeguard duty, Quality Control to cover a wide range steel products affected by predatory pricing strategy of countries with excess steel making capacities."

19. The Committee have time and again expressed concern and solidarity over the current state of the Indian Steel Industry. The Committee are also aware that domestically produced steel is at a disadvantage as compared to imported steel due to certain costs which are external to steel producers such as cost of power, cost of finance, cost of logistics, Government levies, etc. The Committee had noted that all major steel producing countries like USA, Canada and China protect their domestic industry from unfair dumping by levying the anti dumping/countervailing duty to the full extent as against the policy adopted by India which follows the lesser duty rule in anti-dumping investigations and subsidy investigations. Keeping these aspects in mind, the Committee had desired the Ministry of Steel to take up this matter at the appropriate level in the Government so that elaborate policy initiatives be taken in this regard. The Committee however, feel extremely disappointed at the action taken reply of the Ministry wherein it has merely mentioned a communication dated 18th March, 2016 quoting a request made to the Ministry of Commerce for removal of 'Lesser Duty Mechanism'. It is, therefore, evident to the Committee that after presentation of this original Report to the Parliament on 10.08.2016, the Ministry of Steel have failed to take any initiative on the Committee's recommendation. The Committee strongly lament this lackadiasical

approach of the Ministry and exhort the Ministry of Steel to take up the recommendation made by the Committee at the appropriate level in the Government so that elaborate policy initiatives be taken to safeguard the domestic steel industry. The Committee were also given to understand that there should be no major hurdles in implementing the full extent duty as the WTO commitments do not mandate the countries to follow lesser duty rule in anti-dumping investigations. As scrapping of 'lesser duty' rule in relation to anti-dumping investigations and subsidy investigations do not require changes in the parent act and these changes can be effected by change in Rules alone, the Committee reiterate its earlier recommendation for providing proper safeguards to the domestic steel industry and as informed by the Ministry of Steel that the matter was last taken up with the Ministry of Commerce on 18.03.2016. The Committee would like to be apprised of the further follow up action be taken in the matter within three months of presentation of this Report.

CHAPTER –II

OBSERVATIONS/RECOMMENDATIONS WHICH HAVE BEEN ACCEPTED BY THE GOVERNMENT

Recommendation at Serial No.2

The Committee observe that lack of seriousness on R&D in Indian Steel Sector has resulted in high capital cost for modernization and building new steel capacities as the country still depends on the western countries for import of major equipment and technologies. Also, the dependence on imported raw materials especially coking coal has discouraged the development of indigenous technologies compatible to resource endowment, threat to sustainability of resources especially adequacy of iron ore resources as the country is yet to develop cost effective beneficiation/pelletisation technologies suited to domestically produced iron ores. The Committee note that although an allocation of Rs. 118 crore was made during 11th plan period for 'Promotion of R&D in Iron and Steel Sector' with focus on development of innovative/path breaking technologies for utilization of iron ore fines and non-coking coal, beneficiation of raw materials like iron ore, coal etc. and agglomeration and improvement in quality of steel produced through the induction furnace, only Rs. 73.72 crore were released for R&D projects approved with a total cost of Rs. 123.27 crore involving plan fund of Rs. 87.28 crore. The Committee are unhappy to note that although 6 R&D projects have reportedly been completed, yet pilot plants for commercialization of processes/technologies are yet to be established by the steel industry. The Committee, therefore, recommend that there is an urgent need to speed up the implementation of technologies/processes developed by setting up of pilot plants/Industrial trials for beneficiation and pelletization of iron ore slimes, optimum coal blending, production of low phosphorous steel, production of quality steel through induction furnace route so that the country can become self reliant in utilization of raw material resources in producing quality steel.

Action Taken

The reasons for non utilization of the allocated funds are given below:

- Lack of quality R&D proposals being received in Ministry of Steel mainly due lack of qualified & competent R&D manpower and infrastructure in the iron & steel sector.
- The allocated grants in approved R&D projects could not be released due to delay in implementation of some of the R&D projects due to technical complexities and logistical constraints leading to non utilization of allocated funds.

With regard to the 6 R&D projects completed which were carried out in lab/ pilot scale, the knowledge gained have been sent to the steel companies to explore utilization of the know-how and implementation of the developed processes for commercialization.

SAIL has introduced appropriate iron ore slime beneficiation system through Research & Development projects. Slime beneficiation systems have been implemented and working at Dalli & Meghahatuburu mines and under stabilisation at Bolani & Kiriburu mines. At Barsua mines, a slime beneficiation system is in the process of implementation, which is being pursued with the support of plan fund of Ministry of Steel. Also with support from Ministry of Steel, another project is being pursued by RDCIS for setting up a state-of-art pilot Pelletisation unit. The system has been already commissioned and feasibility of pelletisation of Goethitic / Hematite iron ore is being tested.

The other Indian steel companies like Tata Steel, JSW and Essar has also commissioned beneficiation & pelletisation plants for utilisation of the low grade iron ore available in the country.

For the smaller Induction Furnace based steel units, Ministry of Steel has funded R&D by CSIR NML Jamshedpur for development/ production of low phosphorus steel as per the BIS specifications. Industrial trials of the process developed has been tested in Industrial Induction Furnaces of various sizes in association with Industry Association. Results have been encouraging. Further trials have been envisaged, which if successful, will go a long way in resolving an issue of national importance.

[Ministry of Steel O.M. No.11014 (9)/2016-Parl. Dated 28.10.2016]

STEEL DEVELOPMENT FUND

Recommendation at Serial No.3

The Committee are unhappy to note that Steel Development Fund which was set up in 1997-98 for R&D initiatives with an annual expenditure target of Rs. 150 crore to be pursued by public and private steel companies for development of innovative/path breaking technologies, beneficiation/ upgradation of low grade iron ore, achieving, global benchmarks in productivity, quality, etc. has failed to yield desired results even after funding of 91 R&D projects costing Rs. 950.75 crore under the scheme. Although, 55 of these 91 R&D projects have been completed and 24 projects are in progress, the Committee are concerned to note that even after expending Rs. 950.75 crore on these 91 R&D activities, during 2014-15, 9.32 MT of finished steel was imported. While deprecating the non-focused approach on R&D activities by the Government and domestic steel Industry during the last 2 decades, the Committee feel that it is high time now that Indian Steel Industry focus on R&D on better resource utilization, better cost efficiency and production of world class products. The Committee would, therefore, like to be apprised of the sustained efforts made by the Ministry of Steel and domestic steel companies to produce quality steel for automotive sector, electrical equipment and ship building etc.

Action Taken

In the recent past, the country has been producing normal grades of automotive steels and also CRNO electrical steels for quite some time. The steel companies are also engaged in development & production of steel required for the strategic sector like ship building, oil & gas, defence sector etc. Of late, several steel companies are engaged in production of most of the auto grade steel sheets as well as CRNO steel sheets. However, CRGO electrical steel is hardly produced in the country as the technology is closely held by a handful of leading steel manufacturers worldwide. One company produce around 10,000 Tonnes of CRGO steel based on imported inputs.
Government has accordingly decided to pursue an R&D project namely "Development of Technology for Cold Rolled Grain Oriented Electrical (CRGO) Steel Sheets", for indigenous development of the technology for CRGO steel sheets. Salient features of the project are given below:

- This is a joint collaborative research project by NML Jamshedpur (CSIR), Tata Steel, RINL& Ministry of Steel.
- The estimated cost of the CRGO Pilot project is Rs. 494.63 crore out of which Rs. 117.65 crore is to be provided from Plan Fund.
- MECON has prepared the DPR of the project which has been approved by stakeholders in September 2016.
- A Memorandum of Agreement is expected to be signed by the stakeholders shortly.
- Project is likely to be in initiated in 2016-17 after necessary final approval in Ministry of Steel and giving go ahead to MECON for the Project Management Consultancy & Supervision services.

[Ministry of Steel O.M. No.11014 (9)/2016-Parl. Dated 28.10.2016]

Comments of the Committee

(Please see para 7 of Chapter I of the Report)

R&D BY PUBLIC SECTOR STEEL COMPANIES

SAIL

Recommendation at Serial No.5

As regards the R&D by public sector steel companies, the Committee observe that Research & Development Centre for Iron & Steel (RDCIS) is the nodal centre for product development activities at SAIL. New product commercialization is being carried out by Chief Marketing Officer (CMO) in support of RDCIS & Plants for promotion of the product by intense customer interaction, arranging customer meets in different branches & regions. While observing a considerable increase in R&D expenditure from Rs. 106.05 crore in 2013-14 to Rs. 232.06 crore during 2015-16, the Committee are happy to note that out of 85 projects undertaken by RDCIS during 2015-16, 48 projects with thrust on cost reduction, value addition, quality improvement and development of new products were completed by March, 2016. Moreover, RDCIS has filed 19 patents and 26 copyrights from April to December, 2015. The Committee appreciate the research work undertaken

by RDCIS during the last 3 years and particularly the development of Soft iron magnetic grades developed for the first time in India for neutrino observatory and armour plates for bullet proof applications such as bullet proof / mines proof armoured vehicles. The Committee recommend that to achieve its operational and business goal, SAIL should continue to make concerted efforts in R&D Sector including consistent upgradation of its current steel technology thereby improving efficiency and reduction in the cost of production.

Action Taken

RDCIS, SAIL (the Corporate unit of SAIL) has been contributing immensely to improve the efficiency of SAIL Steel Plants and Units. The innovations introduced by RDCIS, SAIL as a result of R&D projects have also resulted in cost reduction measures. During the year 2015-16, 45 projects have been completed by RDCIS, SAIL. 35 patents and 36 copyrights have been filed by SAIL (RDCIS is nodal agency for filing). R&D Expenditure of SAIL during 2015-2016 is Rs 277 crore. RDCIS, SAIL is continuously undertaking new R&D programmes to address plant issues viz., improvement in sinter plant productivity, optimisation of coal blend , waste heat recovery etc.

[Ministry of Steel O.M. No.11014 (9)/2016-Parl. Dated 28.10.2016]

RINL

Recommendation at Serial No.6

The Committee observe that actual expenditure on R&D by RINL during 2013-14 rose to Rs.50.27 crore from Rs.31.13 crore during 2012-13. However during 2014-15, the expenditure on R&D fell down to Rs. 33.09 crore. There has been a further decline in R&D expenditure during 2015-16 and only Rs. 16.24 crore were expended by RINL till December, 2015. The Committee also note that with the expansion of its plant to 6.3 MTPA and further plans of RINL to expand its production capacity to 20 MTPA, a roadmap on R&D has reportedly been prepared by RINL and a dedicated R&D Centre is being set up with state-of-the-art infrastructural facilities at an estimated cost of Rs. 100 crore. The Committee also note that the other features of the R&D strategy include expansion of manpower to 100 engineers/scientists and 80 technical staff, assimilation of new technologies for full exploitation, process development, process control, automation, development of new and high-end products, development of competence of R&D personnel, etc. While appreciating the efforts being made by RINL on R&D activities and also putting into place a robust R&D strategy for achieving the planned goals, the Committee would like to be apprised of the benefits accrued to the company on account of R&D initiatives in a quantified manner. The Committee further recommend that setting up of the proposed separate R&D Centre with requisite diagnostic and research facilities, pilot plants and simulation facilities should be carried out in a time bound manner.

Action Taken

The benefits accrued to the company on account of R&D initiatives are listed below during the last five years:

S. No.	Title of the project	Benefits accrued / expected
1	Improving the yield and metallurgical performance of Vizag Steel's four strand bloom casting tundish through water modelling.	About 50% reduction in skull loss achieved (Skull loss reduced from 8 t to 4.5 t, improving yield).
2	Improvement of MgO – C brick quality to enhance the converter life	Converter Lining Life has been extended with modified lining to 4000+ life from 2600 heats life.
3	Prediction of transition bloom volume and minimization of transition bloom production during casting of different grades of steel through Vizag steel's 12M radius four strand continuous caster	Rejected blooms on account of mix up have come down from 1000 nos. per year to 305 nos per year after implementation. Financial benefit of about Rs. 6 crores per annum achieved.
4	Development of value added ceramic products utilizing solid wastes generated at Visakhapatnam Steel Plant	1. Developed vitrified ceramic tiles / pavement blocks and porous tiles / pavement blocks with different compositions of solid wastes. 2. Commercialisation of technology is under progress.
5	Optimization of design and operating parameters like wire speed, bath super heat, steel grades on Calcium recovery and its efficacy for inclusion modification	Tripping of Auto mould level control due to clogging used to be around 100 times which has reduced to only 2 times, a reduction of 98%.
6	Development of thermo-mechanically treated bars having improved seismic and corrosion resistance.	Bars used in earthquake prone areas are treated thermo-mechanically to achieve the necessary strength for withstanding the seismic disturbances. The cooling process in the mills was optimized to achieve a UTS/YS ratio of 1.20 in 25mm and 32mm rebar and 1.18 in 16mm and 20 mm rebar.
7	Suitability of BF slag as a replacement for river sand in civil construction	Tests performed with 0-100% replacement of river sand with BF slag in concrete blocks have passed the compressive strength test. Trial implementation of the recommendations is ongoing
8	Development of boron steel grades at VSP	250t of billets were cast during Nov'15 – Jan'16. Products were sent to market and the feedback is positive with additional realisation of Rs.1500 per ton.
9	Minimization of crumbling of steel slag	Reduces environmental pollution, easy handling, transport and storage of cooled slag Suspended Particulate Matter (SPM) before implementation was 4185 Microgram/Ncum and

		SPM after implementation has come down to 523Microgram/Ncum
10	Optimization of operating parameters for Ca-Si treatment of liquid steel at SMS-2 for improving castability of steel	Adopting the practice has led to an increase of sequence (tundish life) from 4.2 in 2014 to 7.4 in 2015 yielding a benefit of Rs.21.14 Cr per annum.

The setting up of the proposed R&D centre is being monitored for timely completion.

[Ministry of Steel O.M. No.11014 (9)/2016-Parl. Dated 28.10.2016]

UTILIZATION OF IRON ORE FINES

Recommendation at Serial No. 8

The Committee note that the main source of iron ore fines are the waste dump fines from earlier workings utilizing the high grade lumps and leaving behind the low grade fines containing high silica and alumina impurities and cannot be used as such for iron making. Similarly, the ultra fines/slimes from Hematite Iron Ore washing plants with high level of impurities cannot be charged to the furnace for iron making. The Committee, however, note that such iron ore fines lying unutilized can be used if these are beneficiated and used as sinter or pellets for iron making. In this regard, the Committee also note that to address the problems of difficult-to-beneficiate/pelletise low grade iron ore fines, Ministry of Steel have sponsored several R&D projects which have resulted in development of technology at laboratory scale besides some R&D pilot plants under commissioning. According to the Ministry, Indian Steel Industry, particularly, the integrated steel plants are already using iron ore fines extensively to the tune of 60-70% in the form of sinter for production of iron and steel. Further, some steel companies have set up pelletisation facilities to utilise finer varieties of iron ore fines in the form of pellets. Similarly, large number of units in the private sector have set up beneficiation and pellitisation facilities to utilize low grade iron ore fines for production of pellet/sponge iron. As regards public sector companies are concerned, the Committee note that RDCIS, SAIL has taken a R&D project to develop suitable process in utilization of gothetic/hematite iron ore which is difficult to beneficiate and pelletise. Taking note of the fact that during 1998-2004, there was an enormous surge in export of fines and the precious resources of the country were given away at throw away prices, the Committee are concerned to note that no serious initiatives have been taken to develop a system or a technology to utilize these fines to produce steel. While observing that utilization of fines leads to conservation of minerals as well as better economics of operation and avoiding long range transportation of fines for economic and environmental reasons, the Committee feel that the development of innovative and path breaking technologies for better utilization of iron ore fines is the need of the hour. The Committee desire the Ministry of Steel to seriously pursue the various R&D projects sponsored by

them and extend all possible assistance/guidance to encourage the Indian Steel Companies in their initiatives being taken in this direction.

Action Taken

Indian Steel Industry has already been utilizing iron ore fines in the production of sinter and utilizing it to the extent 60-70% of the Blast Furnace burden. While most of the inputs use coarse-fines, several others units even use ultra fines including low grade fines in production of pellets for subsequent use in iron making. For utilisation of low grade & finer iron ore fines, several beneficiation & pelletisation plants have already been commissioned in the recent past by the steel industry. To address the problems of difficult-to-beneficiate/ pelletise low grade iron ore fines, Ministry of Steel sponsored several R&D projects which have developed technology in laboratory scale. Some R&D pilot plants are also under commissioning with funding from Ministry of Steel. Similar initiatives have also been taken up by the steel companies themselves.

[Ministry of Steel O.M. No.11014 (9)/2016-Parl. Dated 28.10.2016]

POOR QUALITY OF RAW MATERIAL

Recommendation at Serial No.9

The Committee note that although growth of the Indian Steel Industry is attributed to domestic availability of low cost raw materials like iron ore and coal, but at the same time the country is also plagued with a major handicap regarding the poor quality of raw material available. The Committee note that though India is self sufficient in its reserves of iron ore, for growth and development of steel sector, but high alumina content, high alumina silica ratio and high alkali loading in inputs etc. have resulted in high slag volumes and high specific energy consumption which in turn adversely affect the operation and productivity of blast furnace, quality of hot metals and unnecessarily adds to the cost of production. Even the coking and non-coking coal available in our country are reported to be of very inferior quality which significantly influence the productivity and efficiency of the steel making process. Due to the presence of these impurities, techno commercial solutions for raw material quality is the need of the hour. The Committee feel that the technology for improving the quality /efficiency of coking coal needs to be developed urgently failing which there is heavy dependence on import of large quantity of coking coal. The Committee also feel that the focus of R&D should be on acquiring technology for steel making from low grade raw material including ash reduction in coking coal, utilization of low grade iron ore fines, slimes, beneficiation of iron ores and production of low phosphorous steel etc. The Committee also stress on the urgent need for implementation of beneficiation techniques developed so far for converting the available raw material suitable for blast furnace operation. The Committee would like to be apprised of the implementation of all R&D schemes financed by Ministry of Steel at various plants/mines of steel PSUs

for ash reduction in coking coal, beneficiation of iron ores, utilization of low grade iron ore fines, etc.

Action Taken

Ministry of Steel has funded a joint collaborative Comprehensive research for Production of low ash (10% ash) coal (coking non coking) from high ash Indian coals including desulphurisation of high sulphur North East coal pursued by Institute of Minerals and Materials Technology (CSIR-IMMT) Bhubaneswar, RDCIS, SAIL Ranchi, CSIR-NML, Jamshedpur, CIMFR, Dhanbad, CMPDI, Ranchi and NEIST, Jorhat. Under this research beneficiation circuits for high ash Indian coal have been developed at laboratory & pilot scale at IMMT Bhubaneswar. The findings of the research have been sent to the steel companies by Ministry of Steel for exploring commercial utilization.

The status of implementation of the R&D projects pursued at various plants/mines of steel PSUs with financial assistance from Ministry of Steel for ash reduction in coking coal, beneficiation of iron ores, utilization of low grade iron ore fines, etc. are given below:

- At Barsua mines of SAIL, a slime beneficiation system is in the process of implementation, which is being pursued with the support of plan fund of Ministry of Steel. The project has been delayed as the statutory stage-2 environmental clearance is awaited at the mine site have not been received so far.
- A project is being pursued by RDCIS/ SAIL for setting up a state-of-art pilot Pelletisation unit. The system has been already commissioned and feasibility of pelletisation of Goethitic / Hematite iron ore is being tested.
- RDCIS is developing an Automation System for Optimum Coal Blending at Coal Handling Plant of Coke Oven Batteries for implementation at Bokaro Steel Plant (BSL) of SAIL to achieve coal blend ash variation within 0.5% from the present level of 1% thereby improving the Blast Furnace productivity. Procurement process is in progress.

[Ministry of Steel O.M. No.11014 (9)/2016-Parl. Dated 28.10.2016]

NEED FOR FRESH MAPPING FOR IRON ORE DEPOSITS

Recommendation at Serial No.10

Considering the prospects of growth of steel sector in our country and the ambitious production target of 300 MT by 2025, the Committee feel that in addition to the already identified/proven iron ore reserves, there is an imperative need for exploration of new iron ore reserves. In this regard, the Committee, however note that the data of iron ore mapping available has become old and obsolete. The Committee have also been given to understand that NMDC Ltd. is equipped with state of the art/ latest technologies for drilling and exploration work but the work is pending in

some of the mining areas pending forest clearances. The Committee, therefore, recommend that the process of exploring fresh iron ore deposits should be initiated at the earliest so that latest data is made available and exploration work does not suffer on account of lack of availability of data. Taking note of the fact that exploratory works are held up pending statutory clearances and that substantial R&D works in the field of mapping and exploration of iron ore has not been done in the past, the Committee feel that this aspect should no longer remain neglected and immediate steps be taken for updation of mapping data of iron ore and pending forest clearances. The Committee also desire that the Government should not only take advance action to ensure availability of raw material for production of 300 million tonne of steel by 2025 but should also explore the prospects of acquiring iron ore assets abroad.

Action Taken

I. In coherence with the plan of Ministry of Steel of achieving 300 MTPA steel production by 2024-25, NMDC plans to become a major Iron Ore supplier in the Country. As a part of our strategic planning, NMDC is embarking upon to increase its Iron Ore production capacity to 50 Million Tonnes by 2018-19 and 67 Million Tonnes by 2021-22 from existing and new mines to meet the requirement of steel production.

II. The Iron Ore Production of 67 Million Tonnes by 2021-22 can be achieved by allocation of new Iron Ore Deposits in other States , early Statutory clearances for Bailadila Deposit-4 & Deposit-13 and expansion Projects with the support from the Government.

III. The section 17A(2A) of MM(D&R) Amendment Act, 2015 provides for Reservation for Government / PSUs. The matter is being pursued to reserve the area for NMDC with concerned State Govt. for 196 Ha & 154.50 Ha areas contiguous to KIOM & DIOM MLs and Ramandurg in Karnataka, Mankadnacha & Malangtoli in Odisha, Ghatkuri in Jharkhand, Ramgiri in Andhra Pradesh.

Abroad:

IV. NMDC has 78.56% equity in Legacy Iron Ore Ltd. Legacy Iron Ore is a Perth-based Australian exploration company, focused on the development of iron ore, gold and base metal deposits. Currently Legacy has 19 tenements- Iron ore (01 tenement), Gold (17 tenements) and Base Metals (01) tenements.

V. Mt Bevan Magnetite project is a joint venture between Legacy Iron (60%) and Hawthorn resources (40%). Total JORC magnetite resource is 1.17 billion tonnes @30.6% Fe out of which, 322Mt is in indicated category and 847Mt is in inferred category. The resource size can be further extended by drilling in eastern banded iron ore formation.

VI. SPV, the initiative of Ministry of Steel to boost steel production in India, NMDC is leading the formation of steel SPV in the state of Karnataka and Jharkhand.

VII. To provide iron ore to the steel plants, NMDC is in continuous engagement with Mysore Minerals Limited (MML) to sign a Memorandum of Understanding and form a Joint Venture company to develop the iron ore resources in the state of Karnataka.

VIII. For allocation of iron ore resources and ore linkage to Steel SPV , NMDC had submitted the draft Joint Venture agreement to form a Joint venture company between NMDC and JSMDC in July 2015.

[Ministry of Steel O.M. No.11014 (9)/2016-Parl. Dated 28.10.2016]

Comments of the Committee

(Please see para 13 of Chapter I of the Report)

TECHNICAL MANPOWER IN STEEL SECTOR

Recommendation at Serial No.11

The Committee note that the Ministry of Steel had assigned the work to IIT, Kanpur for a study on requirement and availability of technical manpower for steel industry in India for production of 300 MT by 2025. The study has revealed that if future steel plants employ modern technology & automation then no shortfall is envisaged for graduate engineers in any discipline including metallurgical engineering. However, if steel plants continue to remain at the same level as these are today, there is likely to be some shortfall in the supply of graduate metallurgical engineers and to some extent ceramic engineers. However, no shortage is anticipated in the case of diploma engineers and ITI trained personnel. Taking note of delayed modernization and expansion of existing steel plants by SAIL, the Committee are apprehensive that if steel plants continue to remain at the same level as they are today, there will be shortage of graduate metallurgical engineers. The Committee, therefore, recommend that the Ministry should chalk out a time bound plan for modernization and automation of all the existing steel plants in the country to check shortfall of graduate engineers including metallurgical engineers.

Action Taken

The Indian Steel industry is taking a two pronged strategy for improving the technological face of the steel sector through modernisation & expansion of the existing plants and setting up of green-field plants with the state-of-the-art technologies to improve its performance indices at par with international standards. The Government is also facilitating the Iron and steel industry which has been de-licensed and deregulated. Import of foreign technologies & equipment is freely permissible with 100% FDI and reduced

import tariff for project imports also facilitate procurement of state-of-the-art technologies globally.

Under Modernization & Expansion plan of SAIL, besides capacity enhancement, new state of the art technologies with higher level of automation, energy efficient and pollution control facilities have been under taken. This will also enrich the product mix and customer centric processes to support higher production volumes.

Further SAIL, being a Maharatna Company of Govt. of India has been able to attract and select the graduate engineers in all the required disciplines including metallurgy and ceramics through its regular induction process at all India level without experiencing any shortfall. The recruitments in SAIL across all required disciplines have been consciously integrated to the manpower requirements arising out of our modernization and expansion plans.

As regards operation of the modernized and expanded facilities, manpower has already been provided and deployed in most of the facilities apart from re-deployment of skilled / trained manpower from existing facilities.

RINL completed its capacity expansion from 3.0 Mtpa to 6.3 Mtpa of liquid steel in April, 2015 at a cost of Rs.12291 crore. RINL is further investing about Rs.4,000 Cr for modernizing & upgrading the health of its older units viz., Blast Furnace, Converter shop, Sinter plant etc.

RINL, VSP has been adopting the state of art technologies including automation in all capacity expansion & modernization plans. Automation is being used extensively in managing all plant functions including control & optimization of all process equipment, material storage, personal resources, manufacturing operations & management functions plant wide.

[Ministry of Steel O.M. No.11014 (9)/2016-Parl. Dated 28.10.2016]

PERSONNEL ENGAGED IN R&D

Recommendation at Serial No.12

The Committee observe that for any industry to succeed, it requires a dedicated technical manpower having depth of knowledge and expertise required to perform the assigned job for various activities such as engineering (design), project, operation, maintenance, development of new technology through R&D etc. The technology and R&D positions need to be manned by technical professionals who have the ability to do self-study, understand state-of-the-art or benchmark processes, analyze complex problems and explore new solutions. Such positions demand personnel with high learning ability, mental agility and application orientation. The Committee, therefore, feel that there is a need to encourage students from IITs/IIScs to take up metallurgy for which adequate jobs have to be created. The Committee, however, observe that engineering graduates, in general,

prefer white collared jobs with the highest available pay package. As a result, there is dearth of quality manpower for the manufacturing sector where salaries are low and working conditions are strenuous. It's a known fact that a person will give his best productivity and output if he is assured that his financial needs will be satisfactorily met. For this, the Committee recommend that remuneration provided to the scientists and research scholars should be upgraded from time to time to ensure retention of such talent. The Committee also note that Academic institutions from which these personnel pass out also play a major role in shaping up their vision. Though, there is no dearth of quality institutes or well versed faculty in our country, yet the infrastructure provided is not at par with foreign institutes which might be another reason why very few people opt for metallurgy for their research. The Committee, therefore, desire that existing faculty may be trained with the help of industry and Research Institutions. The Committee also recommend that creation of 'Steel Technology Centres' at the location of the Steel Plant sites will quickly help in the development of faculty. Furthermore, the Committee desire that the Government/steel companies should persuade the institutes imparting education and training in metallurgical field to invite faculty for lectures from foreign institutes having expertise in this field which can contribute to the growth of mindset and vision of our researchers.

Action Taken

The above observations and suggestion of the Committee with regard to engagement of R&D personnel has been noted and will be intimated to the steel companies/ research organizations/ Academic Institutions for consideration/ compliance. The recommendation of the Committee for creation of 'Steel Technology Centres' at the location of the Steel Plant sites, have been noted.

[Ministry of Steel O.M. No.11014 (9)/2016-Parl. Dated 28.10.2016]

JOINT VENTURES FOR R&D

Recommendation at Serial No.14

The Committee note that some of the steel companies in India have also been partnering with world leaders through joint ventures for acquiring technology and process know-how to enable them to improve their performance and produce value added products. For example, Steel Authority of India Limited (SAIL) has signed an MOU with Arcelor Mittal for development/production of automotive grade steel sheets. JSW steel has entered into partnership with JFE, Japan for technological support for development and production of value added steel products particularly automotive grade steel and electrical steel. Further, Tata Steel Limited has entered into partnership with Nippon Steel and Sumitomo Metals Corporation for development and production of automotive grade steel sheets. In addition, 2 renowned foreign companies namely POSCO, South Korea and China Steel Corporation, Taiwan have set up their 100% subsidiaries in India to produce value added flat steel products. Though, the Committee

appreciate these efforts and feel that with these initiatives India's dependence on import of value added products will substantially decrease, yet at the same time, the Committee desire that concerted efforts are also required not only for technological collaboration with such companies but for acquiring/transfer of high-end technologies pursued by them. The Committee would like to be apprised of the targeted investments and stipulated dates by which the aforementioned Joint Ventures by the Indian Steel Companies could be set up.

Action Taken

The information desired by the committee is given hereunder:

SAIL:

- SAIL and Arcelor Mittal have signed an MOU on May 22, 2015 to explore the possibility of setting up an automotive steel manufacturing facility under a Joint Venture (JV), in India. The MoU has a validity of two years.
- The proposed JV will construct a state-of-the-art cold rolling mill and other downstream finishing facilities in India that will offer technologically advanced steel products to India's rapidly growing automotive sector.
- The input material for the CRM shall be supplied from SAIL's upcoming Hot Strip Mill located at Rourkela Steel Plant. Thus, it would be a completely integrated indigenous supply chain for the Indian Automotive Sector.
- A task force team comprising representatives from both SAIL and Arcelor Mittal has been working on detailed due diligence and feasibility study, based on the outcome of which definitive agreements for setting up a JV Company shall be entered into.
- The investment and the timeline for setting up of production facilities shall be firmed up as a part of the due diligence and feasibility study.

Tata Steel:

- In early 2000, Tata Steel signed technological contracts with Nippon Steel and Arcelor for the development of cold rolled and galvanized products for automotive customers. Nippon Steel was appointed as a Technology Consultant for the selection of process and machinery in the cold rolling complex, which was established in the year 2000. Nippon Steel help was availed for the finalization of technology/process/ machinery in the green field project at Kalinganagar.
- Tata Steel and Nippon Steel put up a Continuous Annealing Line at Jamshedpur (0.54 MTPA) in 2014 for the production of high quality Cold Rolled material for automotive customers. This unit produces steel for internal as well as external applications up to a strength level of 590 MPa.
- Tata Steel and Bluescope, Australia established a Continuous Galvanizing unit and Colour Coating Line at Jamshedpur. The unit produces high quality Galvalume and Colour Coated Steel for

construction application. TSL availed the help of CSM, Italy in 2015 for the development of high strength API grades.

- All the Technology collaborations and JVs have been completed successfully. These efforts have resulted in the development of new grades and substantial technology transfer has occurred on account of them.
- At present there is no ongoing Technology contract with any overseas Technology Partner. Discussions are in progress for JV with Nippon Steel & Sumitomo Metal for a 2.5 MTPA modern Cold Rolling Complex at Kalinganagar. It will be done only if the economics of doing it as JV are favorable.

JSW Steel:

- JSW entered into a JV with JFE Steel Corporation for a) transfer of Know-how to help JSW steel in production of high end products for automobile steels and Electrical steels b) Process improvement consultation and guidance for steel processes, and c) Testing & certification of advanced steels.
- Accordingly, to adopt the new technologies, JSW has invested in two major production facilities:

a. About Rs 4,350 Crores in CRM-2 project for building the Country's largest and widest state-of-the art 2.3 MTPA capacity Cold Rolling Mill with continuous annealing and continuous galvanizing lines to produce high end automotive steels.
b. About Rs 505 Crores in new facilities for production of Cold Rolled Non-grain Oriented (CRNO) electrical steel

[Ministry of Steel O.M. No.11014 (9)/2016-Parl. Dated 28.10.2016]

Comments of the Committee

(Please see para 16 of Chapter I of the Report)

STEEL PRICING

Recommendation at Serial No.15

The committee were informed that cost of production of steel by individual companies is not available with Ministry of Steel as the matter is commercially sensitive and companies are reluctant to share such data. However, from a study undertaken by World Steel Dynamics, the Committee note that average cost of production of steel in different countries varies from $658/tonne(highest in U.S.) to $405/tonne [lowest in Commonwealth of Independent States (CIS)]. Further, the average cost of steel production in India is reported at $468/tonne as compared to $546/tonne in China. The Committee were also apprised of the major factors leading to higher cost of production such as higher capital and interest costs; relatively less operational efficiencies; dependence on other countries for technology and capital equipment; dependence on imports for coking coal; higher transport and logistics costs; and higher cost of electricity, etc. The Committee are, however, concerned to note that the process of modernization and expansion of some of the integrated steel plants by phasing out older plants and

facilities with latest energy efficient, clean and green technologies, which directly affects the cost of production, has not yet been completed. While stressing the need for completion of modernization and expansion of integrated steel plants at the earliest, the Committee also recommend that R&D interventions required to address problems relating to manufacturing of technological and capital equipment, beneficiation of low grade iron ore and slimes in the country, optimum coal blending with imported coking coal should be stepped up for improvement in operational efficiency and reduction of cost. The Committee would like to be apprised of the action plan of the Government/Steel companies to address these R&D interventions/equipment manufacturing in the country to bring down the cost of steel production.

Action Taken

Ministry of Steel is facilitating the setting up of an Industry led Institutional Mechanism to pursue joint collaborative research in the Iron & steel sector of national importance. These observations of the Committee for bringing down the cost of steel production, in the country, have been noted and will be given due importance in SRTMI to bring down the cost of steel production.

SAIL has undertaken Modernisation and Expansion plan of Integrated Steel Plants at Rourkela, Burnpur (IISCO), Durgapur, Bokaro and Bhilai along with Special Steel Plant at Salem. The major facilities at all the plants excluding Bhilai Steel Plant have been completed. After completion of these facilities, latest energy efficient, clean and green technologies have been operationalized which will reduce the cost of production. For Bhilai Steel Plant, some of the facilities have been completed and balance is likely to be completed during 2016-17.

Some of the R&D projects having been undertaken to reduce cost of production, energy optimization and improvement in operational parameters of steel plants over the years, are:

- Improvement in productivity and quality of sinter through preheating of sinter mix and oxygen enrichment in ignition hood at SP#2, DSP
- Introduction of modified ladle heating system in SMS-II, BSP
- Development of an integrated process automation system for Machine #2, Sinter Plant, BSL
- Automation of Stacker cum Reclaimer (SCR) in RMHP, DSP
- Introduction of digital VVVF drive technology to control cooling bed roller table motors at Merchant Mill, DSP
- Improvement in performance of SP #3 through optimisation of process parameters, RSP

Beneficiation of low grade iron ore and slimes

In order to ensure desired quality of iron ore feed along with maximum utilisation of all grades of ore naturally available in an efficient manner and at

the same time maintain the various Techno-Economic Factors and profitability at desirable levels, SAIL iron ore mines at Kiriburu & Meghahatuburu in Jharkhand, Bolani & Barsua in Odisha and Dalli mines in Chhattisgarh have the provisions of iron ore washing facilities with slime beneficiation facilities. Further, SAIL has also undertaken certain quality improvement projects as detailed below:

– Gua Beneficiation & Pellet Plant (Lump-1.8 Mtpa, Fines- 4.2 Mtpa, Pellets–4 Mtpa)
– Dalli Rajhara Beneficiation and Pellet Plant (Pellet – 1.0 Mtpa)
– RSP Beneficiation and Pellet Plant (Pellet – 2.0 Mtpa)

SAIL has presently 35 million tonnes of iron ore fines dump at Gua iron ore mines, which got accumulated over the years as there was no sintering facility at ISP, Burnpur, which was the principal linkage plant of Gua mine.

Now, SAIL has taken the initiative to beneficiate & reclaim the fines from the fines dump to the tune of 2.50 MTPA and liquidate the entire fine dump under the expansion program of Gua Ore Mines. In this regard, environmental clearance has been obtained and setting up of state-of the-art beneficiation plant of 12.5 MTPA capacity for processing of 10 MTPA ROM from the mines and 2.50 MTPA fines from the fines dump is under progress.

Steps taken by SAIL to increase supply-base of imported coking coals

Detailed characterization including pilot oven carbonization tests were carried out with hard and soft coking coals. Coal samples from twelve different sources were tested. These coals have been found usable in SAIL coal blends.

Coal from new sources/ existing sources with changed specifications evaluated since September 2014 include Australian hard, Australian Soft, Indonesian hard, Mozambique hard, New Zealand soft and Colombian hard.

Cost reduction is one of the most important benefits targeted by the R&D Projects taken up. This is carried out on a regular basis at the shop level through various cost reduction measures, with specified targets assigned to each major shop. Apart from this R&D Centre, RINL has targeted reduction in the cost of steel production though various measures such as utilization of optimum coal blend, PCI, etc. as one of its key objectives.

An Action Plan has been devised to reduce the cost of steel production due to R&D interventions. The running programs and the programs to be taken up shortly under this plan are given under:

- Reduction of Ladle balance and improvement of yield from the steel ladle at VSP
- Effect of coke dust (-1mm) on sintering process and on the Sinter produced.

- Effect of coke dust (-1mm) on sintering process and on the Sinter produced
- Re-design of emergency containers for slag/steel dumping to eliminate refractory lining.
- Optimization of Aluminum consumption in steel refining process in Steel Melting Shop (SMS)-2
- Fe Alloy reduction.
- Mill scale briquetting.
- Replacement of conventional coagulant (Alum) in chemical treatment of MBC plant of Coke Ovens using different commercially available coagulants.
- Improving life of hammers in flux crusher of sinter plant
- Feasibility study on Utilization of fly ash pellets as ladle &tundish covering compound
- GCP sludge briquetting
- Metallurgical waste briquetting, etc.

[Ministry of Steel O.M. No.11014 (9)/2016-Parl. Dated 28.10.2016]

Recommendation at Serial No.16

According to Ministry of Steel, domestically produced steel is at a disadvantage as compared to imported steel due to certain costs which are external to steel producers such as cost of power, cost of finance, cost of logistics, Government levies etc. The Committee have been given to understand that at the present rate of per KWH power in the country, domestic steel producers are at a disadvantage of Rs. 800-Rs. 900 per tonne as compared to steel producers in China, Japan and Korea. The Committee have also been apprised of certain levies and duties in the form of District Mineral Fund (DMF), National Mineral Expansion Trust (NMET), duty on import of raw material such as coking coal (@2.5%) levy on clean energy cess etc. which are imposed on steel producers in India. The Ministry of Steel has desired that duty on clean energy cess and on coking coal be removed as 90% of coking coal is procured through imported sources due to lack of domestic availability and it being cleaner source having lower ash content and essential input material for production of steel. While concurring with the suggestions of Ministry of Steel, the Committee recommend that the Ministry should take up the matter at the highest level with the authorities and the states concerned and impress upon them for waiving off the import duty and clean energy cess on coking coal as it being the major and cleaner raw material for production of steel.

Action Taken

The issue of high incidence of increased cost of power, finance, logistics, Government levies, duty on Import of Coking coal etc. has been taken up with NITI Aayog in the Ministry of Steel "Approach Paper". The same has also been raised in a high level meeting of MoS with the PMO and other concerned ministries.

[Ministry of Steel O.M. No.11014 (9)/2016-Parl. Dated 28.10.2016]

CONSUMPTION OF STEEL

Recommendation at Serial No.18

The Committee note that focus of R&D has been mainly on increase in production of steel by phasing out of obsolete technology and introduction of new state of the art technology. No attention has been paid to the fact that per capita steel consumption in the country is as low as 60 kg against the world average of around 225 kg. There is no doubt about the fact that India is a young emerging economy which has a huge potential for consumption of steel in areas beyond infrastructure and automobile industry. The need of the hour is to focus on exploring new avenues for utilization of steel which in turn would have a proportionate effect not only on increase in production but consumption too. The Committee are of the firm view that R&D should not be restricted to technologies/innovation to increase production, rather R&D is required to focus and identify the areas where consumption can be increased. The Committee feel that a lot of work needs to be done in this area as no attention has been paid till now. The Committee, therefore, recommend that besides real estate and home/industrial appliances, innovative techniques like usage of steel in hitherto unutilized sectors like construction of bridges by replacing concrete/cement with steel, road railings in hilly areas, etc. should also be encouraged. The Committee would like to be apprised of the steps taken by the Ministry of Steel/Steel Companies to identify the areas where consumption of steel can be increased.

Action Taken

Institute for Steel Development & Growth (INSDAG), an Institute promoted by the Ministry of Steel has taken up a good number of activities / initiatives to enhance steel consumption and to create the awareness for increasing the steel usage. INSDAG has organized steel campaign in rural areas by training the masons on the benefits of steel usage and promote best practices. Till date, 52 number of Masons Training Programme covering 2611 nos. of masons were conducted by INSDAG in association with SAIL, Tata Steel, RINL and JSW. INSDAG is developing designs of model Rural Houses, Culverts, Anganwari Panchayat Hall, Community Toilet, etc. with steel. INSDAG has brought out brief publications on the designs of such structures in rural areas and translated in vernacular languages in Hindi, Telegu and Bengali. INSDAG has been transforming rural youths as Entrepreneur to start steel based fabrication shop through 3-weeks' training, preparing DPR for them to enable receive subsidized loans under PMEGP to set up steel fabrication facilities in their areas. INSDAG has developed prototype community grain storage bin and also will be working for Green House for safe farming of seeds, flowers, fruits, develop rural household items like Trunks, Diwans, Furniture, Trolleys

INSDAG has organized Annual all India Student Competition for Students of Engineering Colleges, one for Civil & Structural students and another for Architecture students on different themes of making steel based structures. INSDAG also conducts all India Competition for Professionals

every year for any iconic steel structures designed and constructed during last one year.

Regarding the consumption of steel, as per World Steel Association (WSA), per capita consumption of steel in the world during calendar year 2015 is reported to be down by 3% compared to 2014 whereas in India, the per capita consumption is 60.6 Kg, up by 4.5% compared to 2014. So far as SAIL is concerned, it has formed a senior level committee which has been interacting with key functionaries of various Ministries, Project Executing Authorities, consultants, designers, experts etc. for promoting increased usage of steel. The key areas where consumption of steel can be increased have been identified as:

a) Road Transport & Highway – The Committee met the Secretary MoRTH, DG (Roads) and Spl. Secretary MoRTH, Chief Engineer of Indian Academy of Highway Engineers, key functionaries of NHAI, Indian Road Congress Consultants and concerned Chief Engineer of MoRTH. It was ascertained that the target of this year construction was 15,000 KMs. of National Highway. Further in the next 15-20 years 15-20,000 Kms. of expressway are also planned. Apart from this some huge bridge projects like Ganga bridge at Patna (6 Kms. long) are coming up which would be requiring over 1 lakh tons of steel. There are 1500 road bridges which are being rehabilitated and 208 ROB's will be reconstructed which will be requiring huge amount of steel.

b) Rural Development – The Committee has met the concerned key officials in the ministry to push for maximum steel usage in rural houses as well as panchayat schools etc. Presentations have been made to the key official of 26 States on maximum usage of steel for rural housing. A prototype has also been presented to be adopted under PMAY.

c) Urban Development - The Committee has met the Minister of Urban Development and Housing as well as Chairman NBCC, DG (CPWD) and other officials to maximize steel usage under "PMs Housing for All-2022" Scheme where mass housing would be required. Studies by INSDAG for high rise buildings have been done which show steel intensive buildings have been more cost effective compared to conventional RCC Buildings. Presentations are being planned to highlight these aspects.

d) Ports and Shipyards – With the rolling out of the Sagarmala Project released by PM in April 2016, 173 projects have been identified for port modernization/connectivity/industrialization with the investment of 4 lakh crores. Besides this, ship building and ship repair also would be going up in the next 5 years with an estimated demand of 1.5 lakh tons of steel.

e) Railways – The requirement of rails in the next year is approx. one million tonnes. Further Wheel & Axle as well as wagon building is likely to go up substantially.

f) Automobile – This segment consumes 11% of total steel consumption in the country and is likely to go up to 20% under Automobile Mission Plan 2016-2025 of the Govt. There will be huge requirement for High Strength Steel for the manufacture of Passenger Cars.

g) Border fencing - The Committee met Secy. NHAI, Border Management and other key officials of BSF. This is primarily carried in Eastern frontier states like Assam Tripura, Mizoram and West Bengal in wake of recent terror attack in Dhaka. Expeditious action is being taken by Border Fencing Deptt. of NHAI in consultation with BSF and state government to fence immediately 550 kms. in South Bengal on priority.

h) Storage of Food Grain - The Committee met the Chairman of FCI as well as some leading silo manufacturers to push for steel grain silos for storage of food grains to prevent losses. FCI has plans to build storage capacity of 100 lakh tons of steel silos by 2020. FCI has awarded contracts for 2.5 lakh tons already at 6 locations and another 13.5 lakh tons at 26 locations is under process. There is consumption possibility of storage of other grains in the future.

Steel Demand has been proportionate with the GDP growth of the country. Housing & real estate, construction & infrastructure and manufacturing segment are the prime drivers of steel demand in India.

RINL over the years has taken a number of initiatives to develop products for different applications by capturing the needs and expectations of the customers. Apart from customer feedbacks, RINL is working with Institute for Steel Development and growth (INSDAG) in steel intensive projects, participates in various workshops and seminars and conducts ABC (Architecture, Builders, Construction Engineers) meets in different cities to identify areas where steel consumption can be increased. Further advertisements in various print and electronic media are being intensified to ensure enhanced awareness about its products.

[Ministry of Steel O.M. No.11014 (9)/2016-Parl. Dated 28.10.2016]

CHAPTER – III

RECOMMENDATIONS/OBSERVATIONS WHICH THE COMMITTEE DO NOT DESIRE TO PURSUE IN VIEW OF THE GOVERNMENT'S REPLIES

Recommendation at Serial No.1

The Committee note that during the year 2014-15, the country produced 88.25 MT of crude steel and was ranked the 4th largest steel producer in the world after China, Japan and the United States of America. Although, the Indian Steel Industry is amongst the fastest growing world wide with a growth rate of 8%, the per capita steel consumption in the country has remained abysmally low at 60kg against the world average of around 225 kg. The Committee are, therefore, of the firm view that there is ample scope for sustained growth and development of steel sector in the country. In the opinion of the Committee, to sustain and improve the competiveness of the Indian Steel Industry, adoption of modern and state-of-the-art technologies both in the existing and new plants is of utmost importance by pursuing appropriate R&D Programmes. While examining the R&D in Iron and Steel Sector in detail, the Committee have made their observations and recommendations in the succeeding paragraphs.

Action Taken

Iron and steel industry is de-licensed and deregulated, and import of foreign technologies & equipment is freely permissible with 100% FDI. The Indian Steel industry is taking a two pronged strategy for improving the technological face of the steel sector through modernisation & expansion of the existing plants and setting up of green-field plants with the state-of-the-art technologies to improve its performance indices at par with international standards. Steel companies in India are also partnering with world leaders through joint ventures for acquiring high-end technologies, viz. SAIL with Arcelor Mittal, Tata Steel with Nippon Steel & Sumitomo Metal Corporation, JSW Steel with JFE etc.

The Indian steel industry is also taking various measures through Research & Development for optimisation of the existing processes for reduction in resource consumption. SAIL, Tata, JSW & Essar did significant R&D work in process improvements and raw material beneficiation & agglomeration. Ministry of Steel is also facilitating R&D in the sector by providing financial assistance from Steel Development Fund and also Plan Fund.

[Ministry of Steel O.M. No.11014 (9)/2016-Parl. Dated 28.10.2016]

Recommendation at Serial No.13

As regards the strategy employed by steel industry to retain the technical manpower, the Committee were informed that Competitive compensation package at entry level, established brand equity combined

with other benefits & facilities for work-life balance, makes the Steel Public Sector Undertaking (PSU) a choice for employment by the candidate from premier institutes. The Committee further observe that the Steel PSU employ a Performance Management System which is unique and comprehensive. Growth opportunities for every young entrant are immense and one can aspire for career growth upto the Board level positions. However, in view of the increased capacity of private sector steel plants, during the last decade, the Committee would like to be apprised of the details of officers of public sector steel companies who have left them to join private sector steel companies. The Committee would also like to be apprised of the strategy of the public sector steel companies to retain their officers in future expansion programme of steel sector.

Action Taken

To attract and retain the technical manpower in SAIL, various strategies have been employed including competitive compensation package at entry level, work-life balance, medical facilities, schools for their ward, welfare amenities, developed townships and infrastructure like club, sports, swimming pool, etc. apart from established brand-value of SAIL.

At present, in SAIL, attrition rate is around 0.5 % to 0.6 % of total manpower, which is minimal in comparison to private sectors companies in the industry. Though most of the time while submitting resignation, employees may not indicate the actual reason of leaving the job, the negligible percentage of attrition and the past experience shows that SAIL employees leaving for private steel companies is not a major concern.

Retention of executives has never been a constraint in RINL-VSP as the rate of attrition amongst executives is less than 1% per annum, since last 5 years. Data on details of employment of executives post separation/ resignation is not maintained as it is not obligatory for such executives to furnish the same.

[Ministry of Steel O.M. No.11014 (9)/2016-Parl. Dated 28.10.2016]

CHAPTER – IV

RECOMMENDATIONS/OBSERVATIONS IN RESPECT OF WHICH REPLIES OF THE GOVERNMENT HAVE NOT BEEN ACCEPTED BY THE COMMITTEE

NEED FOR HIGHER INVESTMENTS IN R&D

Recommendation at Serial No.7

The Committee note that steel PSUs like NMDC Ltd., MECON Ltd., MOIL Ltd. and KIOCL Ltd. also carry out independent R&D works in the field of ore beneficiation, mineral processing and safety and productivity in mines etc. The Steel Companies like SAIL, TATA Steel, JSW Steel and ESSAR Steel have accomplished some significant R&D works in the area of raw material beneficiation, agglomeration and product development. However, the actual investment on R&D by the Steel Companies in India has remained very low in the range of 0.05-0.5% of the sales turnover compared to R&D investments in Steel Companies abroad. For instance, in the countries like China, Japan and South Korea etc., annual R&D investments are very high and varies in the range of 1-2% of their sales turnover whereas during the year 2014-15, the SAIL's share of expenditure was only 0.56% of the turnover of the company. Similarly, the expenditure on R&D by RINL, NMDC Ltd., MOIL Ltd. and MECON Ltd. during 2014-15 was 0.28 %, o.15%, 0.73% and 0.53% respectively of their total turnover. The Committee note that as per Department of Public Enterprises guidelines, Maharatna and Navratna category of CPSEs are required to invest 1% of their PAT and Miniratna Companies have to invest 0.5% of their PAT in R&D. Besides that, the Working Group on Steel Industry for the 12th Five Year Plan has also recommended a minimum 1% investment in R&D by the steel companies of their sales turnover. While the main focus of R&D by Indian Steel Companies have remained on improving internal processes like saving costs and improving plant efficiency, want of adequate R&D investments for development of high end technologies and products remains a major concern for the Committee. The Committee feel that enhanced R&D investments and adoption of new technologies are imperative for competitiveness of Indian Steel Industry. The Committee, therefore, recommend that taking into account the requirement of laying focus on indigenous development of technology, continuous and augmented efforts should be made for R&D initiatives by all concerned including the Ministry of Steel, Public and Private Sector Companies, Institutes of Technological Research and Advancements, etc. The Committee also recommend that the Indian Steel Companies, both public and private enterprises should make an attempt to benchmark their R&D spending with internationally prevalent best practices in the Sector. The Committee would like to be apprised of the steps taken by all Steel PSUs and private sector companies in this regard.

Action Taken

In addition to the present R&D schemes pursued by Ministry to Steel, to augment the R&D initiatives of the Indian Steel Sector, Ministry of Steel is facilitating the setting up of an Industry led Institutional Mechanism to pursue joint collaborative research in the Iron & steel sector and spearhead R&D of national importance.

With regard to benchmarking R&D investments by the Indian steel companies to the global best practices, it is submitted that setting up of SRTMI which is an industry led mechanism for joint collaborative research, and will run from the contributions of the steel companies, will facilitate increasing the R&D investment. Besides, the PSU steel companies individually are also giving more thrust on R&D and have set up strategies to enhance the R&D investment. The steel companies in the private sector also are engaging in enhancing their R&D capabilities which are expected to enhance the R&D investment.

There has been a significant increase in R&D expenditure of SAIL from Rs.110.43 crore in 2013-14 to Rs.264.20 crore in 2014-15, further to Rs 277 crore in 2015-2016. In terms of turnover net of excise, R&D expenditure has increased from 0.24% (2013-14) to 0.58% (2014-15), further to 0.72% in 2015-16, which is the highest among all steel plants in the country.

SAIL has undertaken R&D Master Plan programme with an aim to increase the R&D Expenditure to 1% of turnover. Under R&D Master Plan, new innovation projects have been undertaken in SAIL Steel Plants and Units.

RINL strives for indigenous development of technology through R&D spending to match with the international practices in the Iron & Steel Sector. Major R&D initiatives to achieve an R&D expenditure of 1% of Sales Turnover at RINL – VSP are given under:

1. A collaborative R&D program on "Development of the technology and produce CRGO steel and other value added steels" with CSIR – National Metallurgical Laboratory, Jamshedpur, Tata Steel, Jamshedpur and Ministry of Steel at an estimated cost of Rs.495 crore over a period of five years. RINL's contribution for this project is Rs.129.4 crore.
2. Setting up additional facilities for existing R&D Centre at an expenditure of Rs.3.4 crore towards infrastructure and with additional research equipment of Rs.15 crore.
3. Setting up a separate R&D Centre over a period of six years with a proposed expenditure of about Rs.150 Crore (Rs.25 crore per year).
4. Participation in "Steel Research and Technology Mission of India" (SRTMI) involving an expenditure of approx. Rs.8 crore per year.

[Ministry of Steel O.M. No.11014 (9)/2016-Parl. Dated 28.10.2016]

Comments of the Committee

(Please see para 10 of Chapter I of the Report)

ANTI-DUMPING DUTY ON STEEL

Recommendation at Serial No.17

While reiterating their earlier recommendation in 20th Report on Demands for Grants (2016-17) of Ministry of Steel whereby the Committee appreciated the measures like hiking of import duty, imposition of provisional safeguard duty on certain items, imposition of anti-dumping duty, invoking the Steel and Steel products (Quality Control Order) etc. taken by the Government to protect the interest of beleaguered domestic steel industry, the Committee note that India follows the lesser duty rule in anti-dumping investigations and subsidy investigations. As per this method, anti-dumping duty/countervailing duty is levied on the lesser of 'margin of dumping/amount of subsidy' or margin of injury. According to the Ministry of Steel, major jurisdictions such as the United States of America, Canada and China, however, do not adopt the lesser duty rule. These jurisdictions are of the view that their domestic industry has to be protected from unfair dumping/subsidy at all costs and the most effective way to accomplish that would be if anti-dumping duty/countervailing duty is levied to the full extent of the margin of dumping/amount of subsidy. As a consequence, these countries do not give the benefit of lesser duty rule to erring exporters as they realize this method is not effective because it always leaves room for the exporters to continue dumping practices. Similarly, it gives less relaxation to exporters from countries that offer trade distortive subsidies. The Committee were further apprised that General Agreement of Tariffs and Trade, Agreement on Implementation of Article VI of the General Agreement on Tariffs and Trade 1994 (Anti-Dumping Agreement) and Agreement on Subsidies and Countervailing Measures permit WTO members to levy anti-dumping duty/countervailing duty to the full extent of the margin of dumping/amount of subsidy. In fact, WTO commitments do not mandate that countries should follow lesser duty rule in anti-dumping investigations. In view of the foregoing and the fact that the lesser duty rule was introduced in the WTO at the instance of import dependent countries, to give them an elbow for levying duties that are lower than the dumping margin, the Committee feel that the country which has a vibrant domestic industry capable enough of producing a wide spectrum of products with increase of steel production to give a boost to the 'Make in India' Vision should consider imposition of anti-dumping duty/countervailing duty to the full extent of the dumping margin/amount of subsidy and stop the practice of giving only partial protection against dumped imports/subsidized imports. According to the Ministry of Steel, scrapping of 'lesser duty' rule in relation to anti-dumping investigations and subsidy investigations do not require changes in the parent act and these charges can be effected by change in Rules alone. The Committee therefore, recommend the Ministry of Steel to take up the matter at the appropriate level in the Government so that elaborate policy initiatives be taken and a level playing field and adequate and effective safeguards are provided to the domestic steel Industry.

Action Taken

It may be noted that industries have been constantly trying for removal of 'Lesser Duty Mechanism' for notification of Anti-Dumping Duty on Steel Products. Ministry of Steel vide DO No. 3/2(7)/2015-TTD dated 18th March 2016 has also requested for the same to Ministry of Commerce. To lend support to the stressed domestic industry, Government of India has notified a number of measures, viz. MIP, Anti-dumping duty, Safeguard duty, Quality Control to cover a wide range steel products affected by predatory pricing strategy of countries with excess steel making capacities.

[Ministry of Steel O.M. No.11014 (9)/2016-Parl. Dated 28.10.2016]

Comments of the Committee

(Please see para 19 of Chapter I of the Report)

CHAPTER – V

OBSERVATIONS/RECOMMENDATION IN RESPECT OF WHICH FINAL REPLIES OF THE GOVERNMENT ARE STILL AWAITED

STEEL RESEARCH AND TECHNOLOGY MISSION OF INDIA (SRTMI)

Recommendation at Serial No.4

The Committee note that to spearhead R&D activities of national importance through joint collaborative research programmes in steel sector, an Industry led initiative called SRTMI has been setup in close cooperation amongst the steel companies, Ministry of Steel, academia and relevant R&D institutions in the country. The mission will facilitate joint collaborative R&D proposals of national importance inter-alia to ensure raw material security, development of relevant technologies suitable for domestic raw materials to ensure reduction in energy consumption & Green House Gas (GHG) emissions to address climate change issues. The Committee have been given to understand that after introduction of SRTMI, a major bottleneck will be overcome as earlier all the Institutes, PSUs, Private Sector companies were busy doing their own R&D without consulting, coordinating and sharing any information amongst themselves. According to Ministry of Steel, this will be a single umbrella under which all diverse R&D works will be clubbed under one roof. As regards funding of the project, the Committee note that initial corpus for setting up of SRTMI is Rs. 200 crore of which 50% is to be provided by the Ministry of Steel and the balance by the participating Steel Companies. According to Ministry of Steel, major steel companies like SAIL, RINL, NMDC, Tata Steel, JSW, JSPL and MECON have committed to contribute @ Rs. 25 per tonne of crude steel produced in the year 2013-14 as their contribution in the initial corpus for SRTMI amounting of Rs. 212.49 crore. While appreciating the efforts of Ministry of Steel in setting up of SRTMI to facilitate joint collaborative R&D works, the Committee also note that CEOs of major India Steel Companies have signed a Memorandum of Agreement with Ministry of Steel on 6th April, 2015 for participation and financial contribution in the initiative. The Committee hope that the benefits from R&D projects undertaken would be shared by all and not remain confined to members of SRTMI only. Taking note of the fact that there are a large number of smaller and secondary units in the steel sector which are not part of the SRTMI, the Committee apprehend that these units will not be benefited from the research carried by SRTMI. The Committee, therefore, recommend the Ministry of Steel to evolve appropriate mechanism in SRTMI to address the issues faced by the Smaller and Secondary Steel Sector. The Committee also desire that adequate attention should also be paid to the on-going R&D projects as well as implementation of the projects already completed to ensure that their findings can be put into commercial use by various steel PSUs and private players.

Action Taken

The recommendation of the Committee for evolving appropriate mechanism to address the issues faced by secondary steel sector has been

noted. As desired by the Committee, adequate attention will also be given for the on-going R&D projects as well as implementation of the projects already completed, to ensure that their findings can be put to use by the steel industry for commercial purpose.

[Ministry of Steel O.M. No.11014 (9)/2016-Parl. Dated 28.10.2016]

NEW DELHI; **RAKESH SINGH**
2 March, 2017 **Chairperson**
11 Phalguna, 1939 (Saka) **Standing Committee on Coal and Steel**

ANNEXURE-I

MINUTES OF THE SITTING OF THE STANDING COMMITTEE ON COAL AND STEEL HELD ON 2 MARCH, 2017 IN HON'BLE CHAIRPERSON'S CHAMBER, ROOM NO. '210', B-BLOCK, PHA EXTENSION BUILDING, NEW DELHI.

The Committee sat from 1130 hrs. to 1200 hrs.

PRESENT

Shri Rakesh Singh - Chairperson

Lok Sabha

2. Shri A Arunmozhithevan
3. Shrimati Jyoti Dhurve
4. Shri Shailesh Kumar
5. Shri Ajay Nishad
6. Shrimati Riti Pathak
7. Shri Chandu Lal Sahu
8. Shri Sunil Kumar Singh
9. Shri Sushil Kumar Singh
10. Shri Krupal Balaji Tumane

Rajya Sabha

11. Shri Ali Anwar Ansari
12. Dr. Pradeep Kumar Balmuchu
13. Shri Ranjib Biswal
14. Shri B.K Hariprasad
15. Shri Ranvijay Singh Judev

SECRETARIAT

1.	Shri U.B.S. Negi	-	Joint Secretary
2.	Shri Ajay Kumar Garg	-	Director
3.	Shri Arvind Sharma	-	Additional Director
4.	Ms. Miranda Ingudam	-	Deputy Secretary

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

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

(i) Report on Action Taken by the Government on the observations / recommendations contained in the 21st Report (16th Lok Sabha) of the Committee on "Research and Development in Iron and Steel Sector" relating to the Ministry of Steel; and

(ii) ** ** ** **

4. The Committee adopted the Reports without any changes/modifications. The Committee then authorized the Chairperson to finalise the Reports and present the same to both the Houses of Parliament.

The Committee then adjourned.

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**Do not pertain to this Report.

ANNEXURE- II

(Vide Para IV of Introduction)

ANALYSIS OF ACTION TAKEN BY THE GOVERNMENT ON THE RECOMMENDATIONS CONTAINED IN THE TWENTY-FIRST REPORT OF THE STANDING COMMITTEE ON COAL AND STEEL

I.	Total No. of Recommendations made	18
II.	Recommendations that have been accepted by the Government *(vide* recommendation at Sl. Nos. 2, 3, 5, 6, 8, 9, 10, 11, 12, 14, 15, 16, and 18)	13
	Percentage of total	72.22%
III.	Recommendations which the Committee do not desire to pursue in view of the Government's replies (vide Recommendation at Sl. Nos. 1, 13)	02
	Percentage of total	11.11 %
IV.	Recommendations in respect of which replies of the Government have not been accepted by the Committee *(vide* recommendation at Sl. Nos. 7 and 17)	02
	Percentage of total	11.11%
V.	Recommendations in respect of which final replies of the Government are still awaited (*vide* recommendation at Sl. No.4)	03
	Percentage of total	5.56%