

Address by Dr. U. Kamachi Mudali, President, IIM during NMD Awards Function at Trivandrum on 14th November 2019



Honourable Union Minister of Petroleum, Natural Gas and Steel,

Secretary and Jt. Secretary of Ministry of Steel,

Distinguished Colleagues of IIM – on and off the dais,

Former Presidents, Office bearers, Chapter Representatives, [RN Parbat, CGK Nair, B Muthuraman, Srikumar Banerjee, L Pugazhenty, Sanak Mishra, M Narayana Rao, Kamanio Chattopadhyay, RN Patra, SS Mohanty, Anand Sen]

Special Invitees from VSSC, NIIST and other Organisations from all over the nation

Industry Representatives,

Sponsors, Exhibitors, Supporters,

Delegates from all over the nation and Student Community,

International delegates,

Speakers (Keynote, Oral, Poster & Student)

NMD Awardees,

Press & Media,

Ladies and Gentleman !

Good Morning and a Warm welcome to NMD ATM 2019 at Kovalam, Trivandrum in 'God's own country, KERALA'

The celebration and Recognition of excellence of the outstanding contributions of the Indian metallurgy and materials engineering community has been a tradition since 1962, and IIM is extremely proud in joining hands with Ministry of Steel in facilitating the same.

The National Metallurgist's Day Awards Scheme was instituted by the Ministry of Steel & Mines, Govt. of India, erstwhile 1962 beginning with 6 Awards. In the year 1989, 3 Young Metallurgists awards were added.

Currently we have 13 Awards in the categories of Lifetime; National Metallurgists [Industry and R&A]; Metallurgist of the Year [Fe;NF;MS;Env]; Young Metallurgists [Fe;NF;MS] and Certificate of Excellence, are bestowed amongst the recipients, every year.

Now it is the 57th National Metallurgists Day (NMD) year, where IIM continues to facilitate & support the

pre-eminent initiative of Ministry of Steel to recognize the achievements and potential of India's prominent leaders, performers & stalwarts in the fraternity.

The NMD Awards aim to encourage continued efforts towards excellence in this challenging sector and to celebrate the recipient's outstanding & phenomenal work and contributions in respective fields.

This year recipients NMD Awards have the privilege to get felicitated by our Hon'ble Minister of Petroleum & Natural Gas and Steel, Shri Dharmendra Pradhan Ji. His illustrious presence along with significant participation of MoS representatives adds sparkle to the 57th NMD Awards Ceremony today. Over 13 awards shall be presented to this year's awardees in various categories, instituted under the aegis of Ministry of Steel, GOI.

"Excellence deserves recognition", and I personally would like to congratulate each Awardee for your exemplary contributions to the profession, industry, research & academia and setting the highest standards for many aspirants and other members of our Institute.

India has made pioneering contributions to the metallurgical field since past and the standing testimony are the Dancing Girl bronze idol at Delhi Museum, Rustless Delhi Iron Pillar, Damascus Sword from Wootz Steel, Time immemorial South Indian Bronzes, Konark Iron Beams, Kerala's Aranmula Metal Mirror, etc. Indian metallurgists were excellent technology masters; iron and steel making, zinc

distillation, lost wax investment casting of bronzes etc. are some of the wonderful examples.

We have made significant contributions in understanding the science and technology of metals and alloys making, structure-property correlations, development of novel and innovative materials with specialized properties and functions, application in extreme conditions with high performance, etc.

IIM has broadly classified its metallurgical and materials engineering activities into three domains, namely FERROUS, NON-FERROUS and METAL SCIENCE.

Sir, as we all aware presently India is a 2.8 Trillion US \$ economy and we need to grow at 10-12% per annum to achieve the 5 trillion US \$ economy by 2024, as envisaged by our Honourable Prime Minister.

India is Third largest coal producer, Fourth in Iron ore production, Third in Crude steel production, and Third in Aluminium production.

I would like to bring to your kind attention the present status of metallurgical industries in the FERROUS and NON-FERROUS sectors, and propose a few points for consideration to the Honourable Minister of Steel to support Indian metallurgical industries and improve their performance in the years to come.

Ferrous Industry

Per capita consumption of steel is 74 kg against the world consumption of 224 kg. The National Steel Policy 2017 with nine objectives projects an achievement of

per capita consumption of steel of 160 kg by 2030-31, with crude steel capacity of 300 million tonnes, generating additional employment for 36 lakh people directly or indirectly.

To achieve 300 MMT capacity and 255 MMT production of steel India needs 480 MT of iron ore while the current iron ore production is 210 MT, which will be a difficult task. This is mainly because of renewal of iron ore mines leases expiring in March 2020, less spending on exploration, inadequate infrastructural facilities, single window clearance system and lack of dedicated freight corridor for evacuation of iron ores.

90% of iron ore is concentrated in Odisha, Chhattisgarh, Jharkhand, Karnataka and Goa.

40% of steel production is from the secondary steel sector. Govt of India should encourage secondary steel sector around our integrated steel plants or demand centers in the country with a "Steel Cluster Policy".

With enhancing domestic demand, huge spending on infrastructure and development will increase the demand of steel in the years to come. Government should encourage adequate capacity additions in the steel plants.

Also, Introduction of new environment benign technologies for CO₂ reduction and globally competitive steel manufacturing capabilities for special steel production for oil & gas, marine, chemical & petrochemical and transportation sectors. Availability of affordable iron ore, coking coal & natural gas.

Non-Ferrous Metals Industry

- Non-Ferrous metals industry constitute four major sub-sectors.
 1. Base metals (Al, Cu, Zn, Pb, Ni, Sn)
 2. Precious metals (Ag, Au, Pd, PGM)
 3. Minor metals including refractory metals (W, Mo, Ta, Nb, Cr)
 4. Specialty metals (Co, Ge, In, Te, Sb, Ga).
- Non-Ferrous Metals like Al, Cu, Zn and Pb are key metals in critical industries including infrastructure, power, automobile, defense, transport, telecom and manufacturing in general, owing to excellent thermal and electrical conductivity and high recycling, high strength to weight ratio.
- Aluminium is the fastest growing Non-Ferrous metals in India ranks third in terms of aluminum production behind China, and Russia, and during 2018-19 primary aluminum production was 3.42 million tones. India, taking the advantage of high quality Bauxite reserve, fifth in the world, should be a major Alumina and Aluminium supplier to the world.
- Copper is the second largest Non-Ferrous metals market and primary copper production in 2018 was about 2.4 million tones. It is expected that by 2020 India will become 4th largest copper market growing at 6.1% per annum.

- Lead is mainly used in storage Batteries and it is currently US\$7 billion, mostly driven by automotive sector which consumes 60% of lead acid batteries.
- Production of Zinc in India in 2018 was around 0.5 million tonnes and the consumption is about 0.7 million tonnes, about 75% of zinc is used for galvanizing in order to protect steel from corrosion. Thus with a target of 300 million tonnes of steel by 2030-31 the production of zinc should be doubled as zinc is mostly used for cathodic protection of steel and steel structures.

Expectations from Government of India:

- There are many critical challenges which are affecting the robust growth of Non-Ferrous metal industries in India, especially **China factor, under developed scrap recycling and inverted duty structure.**
- Non-Ferrous metal industry looks for government assistance in the form of infrastructure support, cheap and abundant electricity supply, relaxation in import duties of raw materials, and recycling equipment, and other taxation incentives.
- Government should include non-ferrous metals in key government reforms like Make in India, Smart cities etc.; which emphasis on Manufacturing, and Manufacturing will be directly proportional to the growth of Non-Ferrous Metal industry.

- One of the key challenges faced by Non-Ferrous metal industry is its heavy dependence on scrap metal imports and another cause of concern is reliance on imports of metals ores and concentrates especially for copper.
- Government must come with well-defined end-of-life cycle norms and strictly enforce regulations to reduce metal scrap import and close the gap between the demand and supply of metal scrap.
- Also government need to ensure that existing regulations related to import and use of metals scrap should be strictly implemented and monitored by State and Central Pollution Control Boards (S&CPCB).
- “Inverted duty structure” – select downstream products such as Copper wires, Zinc ingots and Aluminium, etc. are imported from certain countries under trade agreements at lower tariffs than imports of raw materials for producing primary metal in India.
- While dealing with international agreements such as “Regional Comprehensive Economic Partnership (RCEP)” which facilitates duty reduction or duty free import, will widen the trade imbalances and hence Aluminium should be out of RCEP purview, in future. As on date China’s Aluminium exports is higher than its imports from India.

Also, if RCEP is consented, all excess zinc capacity will be exported by China to India, and this will affect the domestic zinc market.

- Government should insist that for all government procurements in defence, rural electrification, housing, make in India, smart cities etc. procurement is mandatory from domestic manufacturers. For example, galvanized rebars should be made mandatory for all high-rise buildings, bridges, structures and highways.

With the support of GoI for all the above considerations, domestic demand can be expected for non-ferrous metals to grow at a maximum of 8% per year over the next five years, contributing to the ambitious 5 trillion US\$ economy by 2024.

Concluding Remarks

- ✓ Government should find ways for increasing the use of Metals like Fe/Steel, AL, Cu, Zn in India and also exploration of Export of the same. Capacity utilization of Steel, Al and Cu industry is low due to less demand in India. This is the right time to increase Government Expenditure on Infrastructure encouraging NEW INVESTMENT in Metal Industry.
- ✓ We need to accelerate on the infrastructural front to push demand for steel & metals, create employment opportunities, and also to sustain the economic growth momentum.

- ✓ Power Generation via Solar & Nuclear Routes should be enhanced to meet increased power requirement with the industrial growth foreseen in all sectors.
- ✓ Need for Li and Co (not available in India) for Solid State Battery for Solar Cells and Electric Vehicle should be addressed urgently.
- ✓ Enhance Research in Metals, Materials and Machineries (Follow South Korean Model of Research & Development). Global Warming and CO₂ reduction should be focus of Industrial Research. Being the second largest producer and consumer we need to rethink in establishing a "Steel University" in our country in a similar line with POSTECH and University of Aachen, in addition to SRTMI (Steel Research & Technology Mission of India)
- ✓ Digitalisation of steel industry, evolving an appropriate ecosystem, and emphasizing a circular economy are need of the hour. We cannot sustain without it, and certainly Metallurgists can play a pivotal role in their applications.
- ✓ In view of the involvement of steel ministry in supporting the application of other metals beyond steel, like copper, zinc, aluminium etc and their related mining issues, why the steel Ministry cannot be rechristened as MINISTRY OF METAL or some better suitable name and bringing both Ferrous & Non-Ferrous metals together under one Ministry.
- ✓ Establish a MATERIALS RESEARCH FOUNDATION with support of Ministry of Steel at one of the

existing R&D Institute of CSIR for doing material related activities relevant to industry and the government policies.

- ✓ Establish an APEX FORUM with all CSIR Labs engaged in metallurgy and materials related activities with the support of Ministry of Steel to enhance academia – research – industry interaction and networking. For this Forum, Ministry of Steel will provide necessary funding for doing industrial R&D and application oriented projects.
- ✓ A new INDIAN INSTITUTE OF MATERIALS TECHNOLOGY with the departments focussing on aluminium, copper, iron & steel, Titanium & zirconium, noble metals etc. During 3rd & 4th year of B.Tech., the students will specialise in the respective metal/alloys and will do extensive studies focussing industry relevance. These students will be trained for entire eco-system from mineral exploration to environment / waste management and will be *ready to take up the job* from the day one, they join the metallurgical industries.
- ✓ IIM can make the base line study and submit a white paper for all the above proposals. The involvement of IIM as unofficial advisor to Ministry could also be considered, for issues involving metallurgical considerations.
- ✓ To closely monitor the National Steel Policy for implementation - a Consultative Committee consisting eminent experts from outside the Govt., drawn from the Academic & S&T institutions, Design

& Engineering, Manufacturing, Economics, Trade, Information Technology, Finance, and Environmental Sustainability.

Finally, we are extremely delighted that the Honourable Minister of Steel is present for the NMD-2019 function to honour the metallurgists by presenting the awards, interacting with the metallurgical community, and also addressing all of us on this National Metallurgists' Day. We are looking forward to have continuing interactions with the Ministry of Steel to provide valuable input to the government policies and contribution to the growth of metallurgical industries of the nation.

Thanking you Sir,

U. Kamachi Mudali
President, IIM

14th November 2019
Trivandrum
