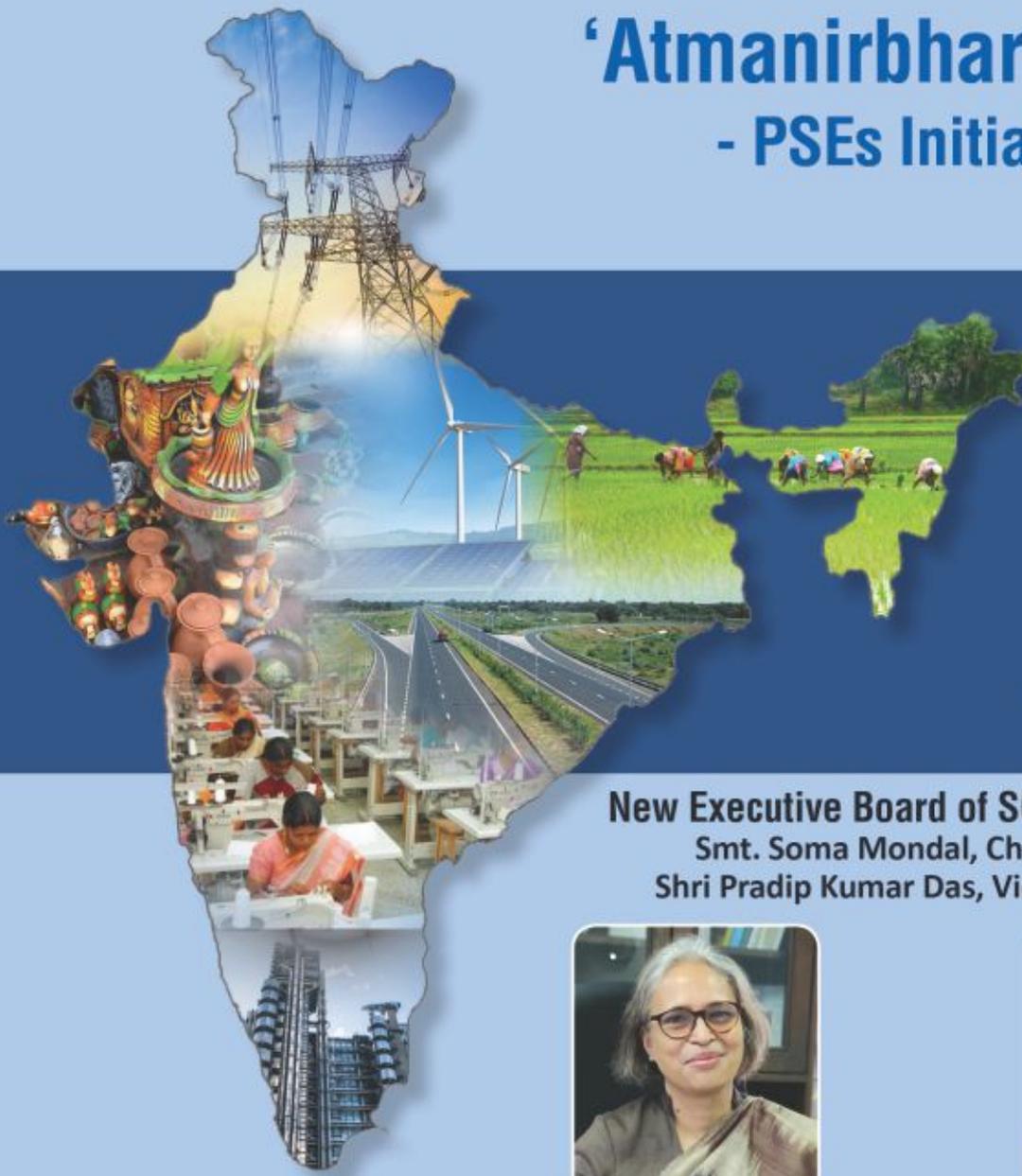




KALEIDO SCOPE

STANDING CONFERENCE OF PUBLIC ENTERPRISES

'Atmanirbhar Bharat' - PSEs Initiatives



Secretary, DPE compliments Public Sector and SCOPE on the occasion of Public Sector Day

New Executive Board of SCOPE Elected:

Smt. Soma Mondal, Chairperson
Shri Pradip Kumar Das, Vice Chairman



Smt. Soma Mondal
Chairperson, SCOPE & Chairman, SAIL



Shri Pradip Kumar Das
Vice Chairman, SCOPE & CMD, IREDA

SCOPE and PSEs Celebrate Public Sector Day

- Weeklong Celebrations (10th - 16th April, 2021)



हमारे निधि सृजन से होता है भारत रोशन

हमारी वृद्धि हमें लोगों के जीवन का कई गुना विकास करने के लिए प्रेरित करती है।

भारत के विद्युत क्षेत्र का आधार बनने की प्रक्रिया में, पावर फाइनेंस कॉर्पोरेशन उस घरघाटांकी वृद्धि को प्राप्त करने में समर्थ रहा है जिसके लिए इसकी स्थापना की गई थी। इस विकास यात्रा में समाज हमारे लिए उत्कृष्टता की मार्गदर्शक शक्ति बन गया है।

- अधिकांशतः भारत सरकार के स्वामित्वाधीन
- अब तक ₹ 6.55 ट्रिलियन से अधिक का ऋण संवितरण, निधियों की लागत 7.79%
- अब तक ₹ 10 बिलियन सीएसआर व्यय
- ऋण संरक्षकृति वर्ष वर वर्ष 16.65%/14.32% सीएजीआर
- फॉर्च्यून 500 इंडिया में 33वीं रैंक
- सर्वोच्च दीर्घाधि घरेलू रेटिंग 'एएए'

पावर फाइनेंस कॉर्पोरेशन लिमिटेड

(भारत सरकार का उपक्रम)

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KALEIDO SCOPE

STANDING CONFERENCE OF PUBLIC ENTERPRISES

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Total Pages : 121

Annual Subscription: Rs. 500/-

Price per copy : Rs. 50/-

(Payment may be sent by DD/Cheque drawn in favour of "Standing Conference of Public Enterprises")

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Published and printed at New Delhi by
A. S. Khan on behalf of Standing Conference of Public Enterprises, Core 8, 1st Floor, SCOPE Complex, 7 Lodhi Road, New Delhi-110003 • Tel.: 24361495, Fax: 24361371
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Designed by Akar Advertising & Marketing (P) Ltd.
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भारत सरकार
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भारी उद्योग एवं लोक उद्यम मंत्रालय
Government of India
Department of Public Enterprises
Ministry of Heavy Industries & Public Enterprises

Message

On the occasion of Public Sector Day, I extend my warm greetings and best wishes to the Public Sector fraternity and compliment them for exemplary performance and resurgent spirit in supporting the economy. I am also happy to note that on the occasion, Standing Conference of Public Enterprises (SCOPE) is bringing a special issue of its monthly journal – KALEIDOSCOPE on 'Atma Nirbhar Bharat' which is not just a mission but the spirit of the country. I am sure special issue will showcase the relentless efforts of PSEs towards self-reliant India.

Our CPSEs are the backbone of the economy. During the pandemic they have once again earmarked their role as nation builder and vanguards of the nation. For COVID-19 vaccination, CPSEs are enthusiastically participating in the procurement of Cold Chain Equipment for meeting the additional requirements of the Ministry of Health & Family Welfare. Despite COVID impact, CPSEs has improved their CAPEX achievement from 12% in Q1 of the FY 2020-21 to 72% by February, 2021, i.e., from Rs.24,738 crore by June, 2020 to Rs.1,55,329 crore by February, 2021.

For India to achieve global competitiveness, the 'Atma Nirbhar Bharat' mission was introduced based on five pillars of Economy, Infrastructure, System, Demography and Demand. In line with efforts to realise the vision of 'Atma Nirbhar Bharat', CPSEs have acted promptly to clear MSEs' dues in time to provide cash flows for business activities of MSEs. CPSEs also adopted the Government instructions for not inviting global tender enquiries upto tenders of Rs.200 crore to support Make in India and instructions regarding Performance Security and 'Force Majeure Clause (FMC)' to relief and promote MSME sector.

I wish SCOPE success and good luck in highlighting the initiatives towards 'Atma Nirbhar Bharat' and hope that this mission continues to reveal the true potential of the country.

6th April, 2021
New Delhi.


(Sailesh)

Message by CHAIRPERSON



It is an honour and privilege for me to take over as Chairperson of Standing Conference of Public Enterprises (SCOPE), an apex body of Public Sector Enterprises (PSEs) and take forward the cause of SCOPE in empowering PSEs to excel and become globally competitive. I thank the fraternity for giving me this opportunity to serve the Public Sector and Nation at large. I assure you of my complete commitment for impactful and sustainable growth of SCOPE and the brand image of Public Sector Enterprises as a whole.

I believe that accomplishing any feat is possible only with team work and therefore look forward to the unflinching support of our Member PSEs to help SCOPE excel and for us jointly to revitalize the industrial and social fervour of the nation.

PSEs continue to make significant contribution to the National Economy and rebuilding efforts of the Government. As per the last DPE survey there are 249 operating PSEs with a Gross Turnover in excess of Rs. 25 Lakh Crores and 178 PSEs contributing an Annual Profit of approximately Rs. 1.75 Lakh Crores. PSEs contribute over Rs. 3.68 Lakh Crores in the form of Dividend, Interest, Taxes and GST to Central Exchequer. In addition the PSEs also incurred an annual expenditure of approximately Rs. 3900 Crores towards Corporate Social Responsibility.

During the pandemic too PSEs came forward whole heartedly to contribute to the PM CARES Fund and were at the forefront in bringing solace to the community through supply of Medical Oxygen to Hospitals as well as Food, Equipment, Masks and Sanitization products. Hospitals run by PSEs were also converted to Covid Care Centres where the doctors, nurses and paramedical staff have contributed to the well being of fellow citizens.

The challenges of the year gone by awakened PSEs' inherent spirit of social commitment to the Nation. As the world was sequestered with limited international trade and restricted movements in global supply chains, we as a country opened up to each other and combated one of the worst crises of all times to emerge fitter and stronger. 2020-21 has seen a resurgent Public Sector in India bounce back from the setbacks of the Pandemic to post handsome revenues and profits.

PSEs also have a major role to play in the 'Atma Nirbhar Bharat' mission by creating employment opportunities and bringing self-sufficiency. I am happy to share that this issue of 'KALEIDOSCOPE' charts out the various endeavours of PSEs towards this mission with a glimpse into the country's aim to be a manufacturing hub.

Commemorating the spirit of PSEs in propelling change and enabling social and economic development of the country, SCOPE celebrates Public Sector Day each year on 10th April. This day earmarks the significance and reach of these enterprises in all corners of the country. I urge all PSEs to observe weeklong celebrations (10th -16th April, 2021) with great zeal and fervour while adhering to social distancing norms. The Message from Secretary, DPE on the occasion of Public Sector Day has further motivated us in our efforts towards nation building.

Also, SCOPE has always emphasised on capacity building, research and development for PSEs. Studies that were initiated by SCOPE in association with renowned international institutions will be an area of focus for us and we will certainly take them forward.

As the new team of SCOPE forges ahead with new aims and aspirations, I hope collectively we will continue to escalate ourselves to reach newer heights. I hope this issue of the magazine reaches its readers as a valuable repository for both academic and professional purposes for all.

A handwritten signature in black ink, appearing to read 'Soma Mondal'.

Soma Mondal
Chairperson, SCOPE



Director General's Desk

At the outset, on the occasion of Public Sector Day (10th April), I extend my warm wishes to the entire Public Sector fraternity and compliment them for their immense contribution towards national economy. I am happy to note that week-long celebrations (10th -16th April) are planned to be held across the country to commemorate the successful journey of PSEs of nearly seven decades.

On the occasion, I am happy to share that the newly elected SCOPE Executive Board for the term 2021-23 has taken over from 1st April, 2021. We are honoured to have Ms. Soma Mondal, Chairman, SAIL as Chairperson, SCOPE and Mr. Pradip Kumar Das, CMD, IREDA as Vice Chairman, SCOPE. I take this opportunity to thank our member PSEs for their enthusiastic participation in SCOPE Elections as SCOPE witnessed record voting during this Election in comparison to the previous Election which is testimony to the confidence of the Public Sector Enterprises (PSEs) in SCOPE.

As PSE have been collectively converting crisis in opportunity, they have taken various initiatives towards realizing the dream of being a self-reliant and self-sufficient nation. This year too as part of this, we are bringing this special issue on 'AtmaNirbhar Bharat.' It is a comprehensive collection of the various initiatives of PSEs towards the mission.

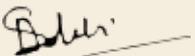
As organisations and business around the globe transformed rapidly, SCOPE itself undertook series of novel initiatives. Digitalization has been an integral part of SCOPE's transformation in the past two years that has further aided us to adapt and pivot seamlessly to the 'New Normal.' SCOPE recently launched its new website that has been created embodying new brand articulation and interface with stakeholders as SCOPE embarks into its next phase of innovation led growth.

Recognising the cascading impact on health of employees and their families SCOPE organised a virtual rendezvous titled 'Happiness & Harmony- Road

to Engagement & Creativity' with Sister BK Shivani, one of the most sought-after spiritual speakers in the world. This webinar has become one of our most viewed webinars across all platforms, reckoning the fact that emotional immunity and wellness is still one of the most pertinent topics.

As part of representing PSEs at various forums, SCOPE represented PSEs in tripartite meeting held by ILO Decent Work Team for South Asia and Country Office for India chaired by Secretary, Ministry of Labour and Employment.

Enhancing our capabilities as an organisation and SCOPE in the upcoming months will forge ahead into conducting more programmes and studies to become an innovation led organisation. I request all our members to continue their support and invite feedback to enable SCOPE's veritable growth.


Atul Sobti

Director General, SCOPE



SCOPE FORUM OF CONCILIATION AND ARBITRATION (SFCA)

With a view to expedite settlement of disputes and reduce avoidable expenditure by PSEs, a need was felt by Standing Conference of Public Enterprises (SCOPE), an Apex Body of Public Sector Enterprises, to institutionalize the prevailing system of arbitration which led to formation of SFCA in 2003. The forum was formally inaugurated by Shri Santosh Gangwar, the then Hon'ble Minister of State for Heavy Industries & Public Enterprises and Parliamentary Affairs at SCOPE Complex on 9th January 2004.

WHY SFCA?

Empanelment of more than 400 Arbitrators/Conciliators

- Retired Judges of Supreme Court, High Courts,
- Retd. Secretaries, Joint Secretaries of Government of India
- Chief Executives, Directors and senior officials of PSEs
- Professionals including Advocates, Chartered Accountants.

Complete services for conducting Arbitration

- A dedicated Forum administering, overseeing and conducting arbitration and conciliation proceedings.

Cost effective and timely dispute settlement

- Settling disputes between PSEs and their associates within shortest possible time at more economical and cheaper cost in comparison to other institutions.

Dedicated Infrastructure

- Exclusive Arbitration Hall having sitting capacity of 15 persons.
- Facility of provision of halls with higher capacity in SCOPE Convention Centre at SCOPE Complex, Lodhi Road and SCOPE Minar, Laxmi Nagar, New Delhi.

Facilities and provisions

- Provision of modern equipments and facilities such as projector for live streaming of proceedings on a large screen, stationery etc.
- Complementary service of mineral water, tea/coffee with arrangements for high tea on request of parties.

Capacity Building

- Executive development programmes and workshops on various aspects of Alternate Dispute Resolution process (ADR).
- Annual National Seminar on various aspects of Arbitration and Conciliation.



For any queries relating to SFCA, you may contact

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Standing Conference of Public Enterprises



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SCOPE, an apex professional organisation is reimagining and reorienting for catering to the fast changing industry dynamics and unexplored business opportunities.

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Corporate Communication <ul style="list-style-type: none"> • Sr. Manager/Manager • Dy. Manager/Asstt. Manager 	Legal <ul style="list-style-type: none"> • Sr. Manager/Manager
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All posts are initially on fixed employment for 3 years, can be considered for extension or regular employment

For further details and to apply, please visit SCOPE Website : www.scopeonline.in

Results of SCOPE Biennial Elections 2021-23 Declared

SAIL Chief Smt. Soma Mondal Elected as Chairperson, SCOPE



Mr. Atul Sobti, DG, SCOPE and Returning Officer, SCOPE Elections declaring the election results.

Pursuant to SCOPE Biennial Elections for the term 2021-23, for the offices of Chairman, Vice Chairman and Members of the Executive Board, results were declared by Mr. Atul Sobti, Director General, Standing Conference of Public Enterprises (SCOPE) and Returning Officer, SCOPE Elections in the presence of representatives from Public Sector Enterprises and Contestants. The new Executive Board of SCOPE assumed office from 1st April, 2021.

While announcing the results, DG, SCOPE said that this year for the first time the apex body witnessed record voting in comparison to the recent past which re-affirms confidence of the Member Organizations in SCOPE. He thanked the entire member PSEs for the overwhelming response which would further encourage SCOPE to take newer initiatives.

As per the results declared, Smt. Soma Mondal, Chairman, SAIL has been elected as Chairperson, SCOPE. Mr. Pradip Kumar Das, CMD, IREDA has been elected as Vice Chairman, SCOPE.

Other Members elected to the Executive Board of

SCOPE are: Mr. R. K. Sinha, Director (Personnel), CWC; Mr. Ranjan Kumar Mohapatra, Director (HR), IOCL; Mr. Amitabh Banerjee, CMD, IRFC; Mr. Alok Verma, Director (HR), HAL; Mr. Subodh Gupta, Director (Finance), BHEL; Mr. Anuj Aggarwal, Member (HR), AAI; Mr. M. V. Iyer, Director (Business Development), GAIL; Mr. V. K. Singh, Director (Personnel), POWERGRID; Smt. Baldev Kaur Sokhey, Director (Finance), NBCC; Dr. Siba Prasad Mohanty, CMD, HIL; Mr. Dillip Kumar Patel, Director (HR), NTPC; Mr. Rajendra Prasad Goyal, Director (Finance), NHPC; Mr. Piyush Tiwari, Director (Commcl & Mktg), ITDC; Mr. Pradeep Kumar Agarwal, CMD, Cotton Corpn. of India; Dr. Sanjay Kumar, Director (Personnel), WCL; Mr. Om Prakash Singh, Director (Technology & Field Services), ONGC; Mr. Amitava Mukherjee, Director (Finance), NMDC and Mr. D.S. Sudhakar Ramaiah, Director (Finance), PDIL.

SCOPE in the recent past has taken a series of initiatives to become more impactful and innovative organization. With the newly elected Board, the apex body will transcend to newer heights. ■



Smt. Soma Mondal
Chairperson, SCOPE

Smt. Soma Mondal has assumed the position of Chairman, SAIL w.e.f. 1st January, 2021. Smt. Soma Mondal has the distinction of not only being the first woman Functional Director of SAIL, but she is also the first woman Chairman of the Company.

A graduate in Electrical Engineering from National Institute of Technology, Rourkela, in 1984, she has over 35 years of experience in the metal industry. She commenced her career as a Graduate Engineer Trainee at NALCO and rose through the ranks to take over the mantle of Director (Commercial) at NALCO in the year 2014.

She joined SAIL in March, 2017 as Director (Commercial). At SAIL, she spearheaded the implementation of the marketing strategies emerging from the Comprehensive Turnaround Roadmap for the company since 2017 which witnessed SAIL increasing its sales and expanding the market reach progressively year on year. Promoting the branding efforts, she was instrumental in the launch of new brands viz. "NEX" and "SAIL SeQR" Under her leadership, SAIL has achieved best ever sales volume in the Financial Year 2020-21 despite the challenges posed by COVID-19. The performance during Q4 FY 21 is in fact the best ever quarterly production for the Company.

She, as Director (Commercial), has served as a member of the CII-National Committee on Steel and Chairperson of the CII Sub-Committee on 'Safeguard for Tariff and Non-Tariff Barrier'

Currently, she is Chair, FICCI Steel Committee.



Mr. Pradip Kumar Das
Vice Chairman SCOPE

Mr. Pradip Kumar Das, is the Chairman & Managing Director of Indian Renewable Energy Development Agency Ltd. (IREDA) since March 2020. Mr. Das is a Fellow Member of the Institute of Cost Accountants of India and Associate Member of the Institute of Company Secretaries of India. He also holds Post-Graduate Diploma in Management from Xavier Institute of Management, Bhubaneswar. Under the leadership of Mr. Das IREDA has been playing pivotal role in financing and development of renewable energy in India. Prior to joining IREDA, he was Director (Finance) in India Tourism Development Corporation Ltd. (ITDC). Mr. Das has also rich experience of working at key positions with REC Ltd. (Rural Electrification Corporation), Bharat Heavy Electricals Limited (BHEL), Nuclear Power Corporation Ltd. (NPCL), Bharat Heavy Plates and Vessels Ltd. (BHPV), Kusum Products Ltd. and other organizations. With his rich career span of over 32 years in various

positions in Finance, Banking, Accounts, Audit, Corporate Governance, etc. both in public as well as private sectors, Mr. Das is also Member to various high level committees constituted by Govt. of India for various strategic decisions. Mr. Das has always leveraged technology and introduced various innovative financing schemes that reflects the unique relationship with each of the customers even at the time of adversities.

Newly Elected SCOPE Executive Board Members 2021-2023*



Mr. Pradeep Kumar Agarwal
CMD, The Cotton Corporation of
India Limited



Mr. Anuj Aggarwal
Member (HR) AAI



Mr. Amitabh Banerjee
CMD, Indian Railway Finance
Corporation Limited



Mr. Rajendra Prasad Goyal
Director (Finance)
NHPC Limited



Mr. Subodh Gupta
Director (Finance), Bharat
Heavy Electricals Limited



Mr. M. V. Iyer
Director
(Business Development)
GAIL (India) Limited



Dr. Sanjay Kumar
Director (Personnel)
Western Coalfields Limited



Dr. Siba Prasad Mohanty
CMD
HIL (India) Limited



**Mr. Ranjan Kumar
Mohapatra**
Director (HR), Indian Oil
Corporation Limited



Mr. Amitava Mukherjee
Director (Finance)
NMDC Limited



Mr. Dillip Kumar Patel
Director (HR)
NTPC Limited



Mr. D.S. Sudhakar Ramaiah
Director (Finance)
Projects & Development
India Limited



Mr. Om Prakash Singh
Director (Technology & Field
Services), Oil & Natural Gas
Corporation Limited



Mr. V. K. Singh
Director (Personnel)
Power Grid Corporation
of India Limited



Mr. R. K. Sinha
Director (Personnel)
Central Warehousing
Corporation



Smt. Baldev Kaur Sokhey
Director (Finance)
NBCC (India) Limited



Mr. Piyush Tiwari
Director (Commercial & Marketing)
India Tourism Development
Corporation Limited



Mr. Alok Verma
Director (HR)
Hindustan Aeronautics Limited

* In alphabetical order.

Sister BK Shivani emphasizes need for Emotional immunity in SCOPE webinar



(L to R) Mr. Rakesh Kumar, the then Chairman, SCOPE, Sister BK Shivani and Mr. Atul Sobti, DG, SCOPE during the virtual rendezvous titled "Happiness & Harmony - Road to Engagement & Creativity" organized by SCOPE.

Achieving emotional wellness and immunity has become a key challenge amidst these perplexing times.

Recognizing this, Standing Conference of Public Enterprises

(SCOPE) organized a virtual rendezvous titled 'Happiness & Harmony- Road to Engagement & Creativity' with Sister BK Shivani, one of the most sought-after spiritual speakers in the world. Mr. Rakesh Kumar, CMD, NLCIL & the then Chairman, SCOPE and Mr. Atul Sobti, DG, SCOPE also addressed the webinar. Nearly 800 participants joined the riveting experience through SCOPE's various platforms.

Sister Shivani in her address signified the importance of internal contentment for achieving happiness. Drawing attention to the imperfect situation created due to COVID 19, she said that there was a need to pause and reflect on one's priorities in life. She added that in this age of technology and social

media, there was an urgent need to restrict content consumption to build emotional immunity, be positive and achieve 'Atma Nirbharta - self-reliance' in our thoughts.

Mr. Rakesh Kumar in his address said that there was a need to recognize the path to happiness that does not only focus professional satisfaction but also helps achieve happiness and contentment in one's personal life.

Mr. Atul Sobti highlighted the importance of finding happiness and recognizing actions that can harmonize as well as re-enthusiasm individual towards better engagement in life. While expressing gratitude to Sister BK Shivani, he reiterated SCOPE's commitment in conducting symposiums and programs for the mental and emotional wellness. ■

New Board of SCOPE envisions Newer Horizons

SAIL Chief Smt. Soma Mondal takes over as new Chairperson, SCOPE



Mr. Rakesh Kumar, Immediate Past Chairman, SCOPE & CMD, NLCIL handing over the SCOPE flag to newly elected Chairperson, SCOPE & Chairman, SAIL, Smt. Soma Mondal in the presence of Mr. Atul Sobti, DG, SCOPE and Mr. Pradip Kumar Das, CMD, IREDA & Vice Chairman, SCOPE.



Mr. Atul Sobti, DG, SCOPE handing over the Public Sector Flag to Smt. Soma Mondal, the newly elected Chairperson of SCOPE in the presence of Mr. Rakesh Kumar (on right) and Mr. Pradip Kumar Das (on left).

Smt. Soma Mondal, Chairman, SAIL took over as the first woman Chairperson of Standing Conference of Public Enterprises (SCOPE) and Mr. Pradip Kumar Das, CMD, IREDA took over as Vice-Chairman, SCOPE at the first meeting of the newly constituted SCOPE Executive Board 2021-23 recently. Mr. Rakesh Kumar, CMD, NLCIL & immediate Past Chairman, SCOPE passed on the coveted mantle to the new Chairperson in the presence of Mr. Atul Sobti DG, SCOPE and other Board Members. The Board was constituted after the apex body witnessed record voting in comparison to the past election.

Speaking at the meeting Smt. Soma Mondal said, "I thank the Public Sector fraternity for reposing confidence and entrusting me with this responsibility. Taking cognizance of the tremendous work done by our predecessors, the new Board will stride ahead as a team to add value and achieve newer horizons."

Mr. Rakesh Kumar immediate past Chairman, SCOPE and CMD, NLCIL said that, "The increased participation of PSEs in Elections validates the increased confidence of member PSEs in SCOPE and with the new leadership, SCOPE will undertake more effective steps for the betterment of the Public Sector."

Mr. Atul Sobti, DG, SCOPE said, "With such a pool of experience in Board comprising of old and new members from Maharatna, Navratna, Miniratna and other PSEs from diverse fields, SCOPE will work more dedicatedly towards transcending newer heights and thanked PSEs for enhanced participation in SCOPE Elections."

During the meeting, Mr. Rakesh Kumar handed over the SCOPE Flag and Mr. Atul Sobti, DG, SCOPE handed over the Public Sector Flag to Smt. Soma Mondal.

SCOPE unveils New Website



Mr. Atul Sobti, DG, SCOPE unveiling the new website of SCOPE.

Construing that change is the only constant, Standing Conference of Public Enterprises (SCOPE) launched its official website with a new look. Mr. Atul Sobti, Director General, SCOPE while launching the refurbished website said that “In line with our aim of being an Inspiring, Innovative and Impactful organisation, SCOPE decided to revamp its official website in line with the dynamic environment.” The new website www.scopeonline.in will provide enhanced interaction, information and swiftness in user interface. ■

Interface with Stakeholders



SCOPE represented PSEs at Tripartite Progress Review of India Decent Work Country Programme (DWCP), chaired by Mr. Apurva Chandra, Secretary, Ministry of Labour & Employment.

Interaction with Forum of Women in Public Sector (WIPS)



An Introductory meeting of Smt. Soma Mondal, Chairperson, SCOPE; Mr. Rakesh Kumar, Immediate Past Chairman, SCOPE, Mr. Atul Sobti, DG, SCOPE and Mr. Pradip Kumar Das, Vice Chairman, SCOPE with newly elected WIPS President, Dr. C. Dharini Mouli and immediate Past President, Smt. Kirti Tiwari.

Comments/Feedback Received for SCOPE Webinar on 'Happiness & Harmony- Road to Engagement and Creativity' with Sister BK Shivani

Recording of SCOPE Webinars are available on SCOPE Website : www.scopeonline.in

Why not Sister Shivani's program be made essential induction program for all new entrants in all organisations ?

Superb, mesmerising, enlightening session !!

Thanks to all involved in making this happen .

- Mr Ashutosh Vasant

Director, RailTel & Former Member, SCOPE Executive Board.

The session was much need of the hour. 1 hour listening to Sister Shivani was like hearing to the divine words of god. Words fall short to compliment her session. Looking forward for more such sessions. Thank U once again.

It was wonderful session. The life changing tips offered by Sister Shivani were rather simple and practical. Such conversations force you rethink over your day-to-day activities to bring in desired elements in the direction of peace and harmony and happiness.

Thanks SCOPE for the opportunity

Respected Sir,

Many thanks for arranging such a wonderful and enlightening programme. It was really the need of hour and will be extremely useful if we ourselves put into practice. Thanks once again. Sharing a photograph taken during Question Answer session.

With Regards

Tarsem Lal

GM and Head PSSR, BHEL Chennai

XInt presentation by Sis Shivani, thnx SCOPE for arranging same

Programme was excellent. Gained immense knowledge from the session. Thank you SCOPE. I hope many such programmes in future. Sister Shivani has given practice approach in dealing with the mental and emotional issues. I hoped the Q&A SESSION would be there for some more time.

Dear SCOPE Team,

A superb initiative indeed.

An interaction with Sister Shivani will surely be a very enriching experience for one and all. Thanks for the efforts.

It was excellent

A wonderful presentation & seminar.

Thank you so much and all the best.

It was very very effective. Thank you sister and all organisers.

Thank U SCOPE for organising this program and giving us this opportunity to connect with you all.

This was really very good program.

Thanks!

Thank you for such a mind blowing session.

It was in deed an excellent event!
Thanks for organising and giving an opportunity to participate.

Thank you very much for arranging the mind blowing programme by a wonderful personality.

We have to frequently hear her words for our well being. Hence I would request you sir, to send the audio recording of the programme.

Good luck for the initiatives taken by SCOPE.

I really enjoyed the program. Happiness is inside, if that is happy you can make the world happy. Liked this.

We have our whatsapp Alumni group and if we want to approach Sister B K Shivani to arrange presentation to our group, how do we approach.

It was excellent, to disseminate and reap the benefit fully, kindly send the complete recorded pl.

It is a great honor to be a part of such a high spirited webinar. It is an eye opener for balancing work & life and keeping calm at all times. Thank you once again for the great opportunity.

I attended the Webinar.

It has been really a very good and valuable experience.

THANKS very much.

Request to please send the recording of the Program. Thank you for arranging a Wonderful Program.

With reference to trailing email, it is requested to share recording of the very enlightening webinar in order to draw maximum benefit please.

Hope SCOPE organises many more programs like this to motivate us & reorganise ourselves. Thanks to SCOPE. Excellent webinar!

Thanks to SCOPE for organizing this webinar. Looking forward for more such sessions.

Excellent program, enjoyed thoroughly...
Great initiative looking fwd for further more illustrative talks...
thanks to SCOPE team.

Thank you to team SCOPE for creating thus platform.

It was a very enlightening programme, though Sister Shivani is too good in explaining in very simple apprehensive language such topic wise programmes are even more absorbing. Thanks for sharing

Excellent program. Looking forward to more such programs. You can also get people like Acharya Prashant (IIT, IIM and now spiritual /social service), Sudha Murthy for webinar



You may also arrange a series through which organisations doing good social services can be introduced for benefit of those who want to contribute/ help/ work for such organisations.

Thank you organizing team members for organizing a very good program. It was really very enlightening one.

Absolutely valuable. I am regular follower of sister's sessions.

Very nicely done. If possible kindly share the link of the program here for future reference.

Keep arranging such session in future as well.

Today's webinar was very well organized and a great learning experience. Thanks for giving an opportunity to listen to such an enlightened soul, Sister Shivani.

Many Thanks for arranging such a wonderful and enlightening programme. It was really the need of hour and will be extremely useful if we ourselves put into practice. Thanks once again.

Very well organized

Fantastic programme SIR

Very enlightening fruitful.

Superb, mesmerising, enlightening session !! Thanks to all involved in making this happen.

Very nice webinar

Excellent webinar going on !

Very very useful
Thanks for giving opportunity very nice program

Excellent. Beyond words. Inspirational Devotional and Motivational

Thank you very much for arranging such a beautiful webinar. It was really enlightening

So nice of you SCOPE

Beautiful webinar

Very nice Webinar conducted by Sister Shivani and use to hear from Aastha channel. Her discourse will always enlighten our life peaceful and stress free. Thanks for having given an opportunity to join.

Thanks SCOPE for organising this! This has been one of the best webinars



NBT नवभारत टाइम्स

2.03.2021 Pg no : 9

SCOPE REITERATES NEED FOR EMPOWERING WOMEN EMPLOYEES IN THE 'NEW NORMAL'

New Delhi: Forum of Women in Public Sector (WIPS) under the aegis of SCOPE (Standing Conference of Public Enterprises) organised its 31st National Meet 2021 virtually on the theme 'New Normal: Opportunities and Risks' for Public Sector women employees.

FINANCIAL EXPRESS

'Need to empower women staff'

AS THE country is treated towards 'Make for the World', women employees have an indispensable role in achieving self-sufficiency in all

mid-day

SCOPE reit for empow employees

The Forum of Women in Public Sector (WIPS) under the aegis of SCOPE (Standing Conference of Public Enterprises) recently organised its 31st National Meet 2021 virtually on the theme 'New Normal: Opportunities and Risks' for Public Sector women employees.

महिला कर्मचारियों को सशक्त बनाने के लिए स्कोप की पुनरावृत्ति की है आवश्यकता

नई दिल्ली: स्कोप के अध्यक्ष डॉ. संचिता बानर्जी ने 31वें राष्ट्रीय सम्मेलन के दौरान कहा कि महिला कर्मचारियों को सशक्त बनाने की आवश्यकता है।

Hindustan Times

19.02.2021 Pg no : 16

SCOPE reiterates need for empowering women employees

Forum of Women in Public Sector under the aegis of SCOPE organised its 31st National Meet 2021 virtually on the theme 'New Normal: Opportunities and Risks' for Public Sector women employees. Rakesh Kumar, CMD, NLCIL & Chairman, SCOPE; Atul Sobti, DG, SCOPE and Atishi Marlena addressed the participants during the inaugural session. Soma M...

अमर उजाला

स्कोप ने लांच की नई वेबसाइट

नई दिल्ली: स्टैंडिंग कॉन्फ्रेंस ऑफ पब्लिक इंटरप्राइजेज (स्कोप) ने अपनी नई वेबसाइट 'www.scopeonline.in' को लांच किया है। स्कोप के महादेशिक अखिल सचिव डॉ. संचिता बानर्जी ने लांचिंग के अवसर पर कहा कि स्कोप ने एक प्रेरक, नवचार और सशक्त बनाने के लिए नई वेबसाइट को लांच किया है।

वीर अर्जुन

वीरों से राष्ट्र की सेवा में सशक्त

THE PRESS

SCOPE reiterates need for empowering employees in the 'New Normal'

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the Sunday Statesman

SCOPE reiterates need for empowering women employees in the 'New Normal'

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NBT नवभारत टाइम्स

17.02.2021 Pg no : 18

बजट के असर पर वेबिनार

नई दिल्ली: स्टैंडिंग कॉन्फ्रेंस ऑफ पब्लिक इंटरप्राइजेज (स्कोप) ने बजट-2021 के असर पर एक वेबिनार का आयोजन किया। इस वेबिनार को वेंकटेश्वर रिश्त डॉ बीआर आंबेडकर स्कुल ऑफ इकोनॉमिक्स यूनिवर्सिटी के वीसी प्रो. एनआर. एनएलसीआईएल के सीएमडी राकेश कुमार, स्कोप के चेयरमैन अतुल सोबती ने संबोधित किया। करीब 500 लोगों ने इस वेबिनार में हिस्सा लिया।

millenniumpost

18.02.2021 Pg no : 10

SCOPE REITERATES NEED TO EMPOWER WOMEN EMPLOYEES IN 'NEW NORMAL'

NEW DELHI: Forum of Women in Public Sector (WIPS) under the aegis of SCOPE (Standing Conference of Public Enterprises) organised its 31st National Meet 2021 virtually on the theme 'New Normal: Opportunities and Risks' for Public Sector women employees. Rakesh Kumar, CMD, NLCIL & Chairman, SCOPE; Atul Sobti, DG, SCOPE and Atishi Marlena addressed participants during the inaugural session. Soma M..., Chairperson, SAIL and H.K. Joshi, CMD, SCI presided the subsequent sessions in the presence of Tiwari and Sanchita Banerjee, president Apex, S and other WIPS members.

अमर उजाला

नॉर्मल में महिला कर्मी सशक्तिकरण पर बल

नई दिल्ली: स्टैंडिंग कॉन्फ्रेंस ऑफ पब्लिक इंटरप्राइजेज (स्कोप) की 31वें राष्ट्रीय सम्मेलन में डॉ. संचिता बानर्जी ने कहा कि नॉर्मल में महिला कर्मियों का सशक्तिकरण पर बल देना आवश्यक है।

पंजाब केसरी

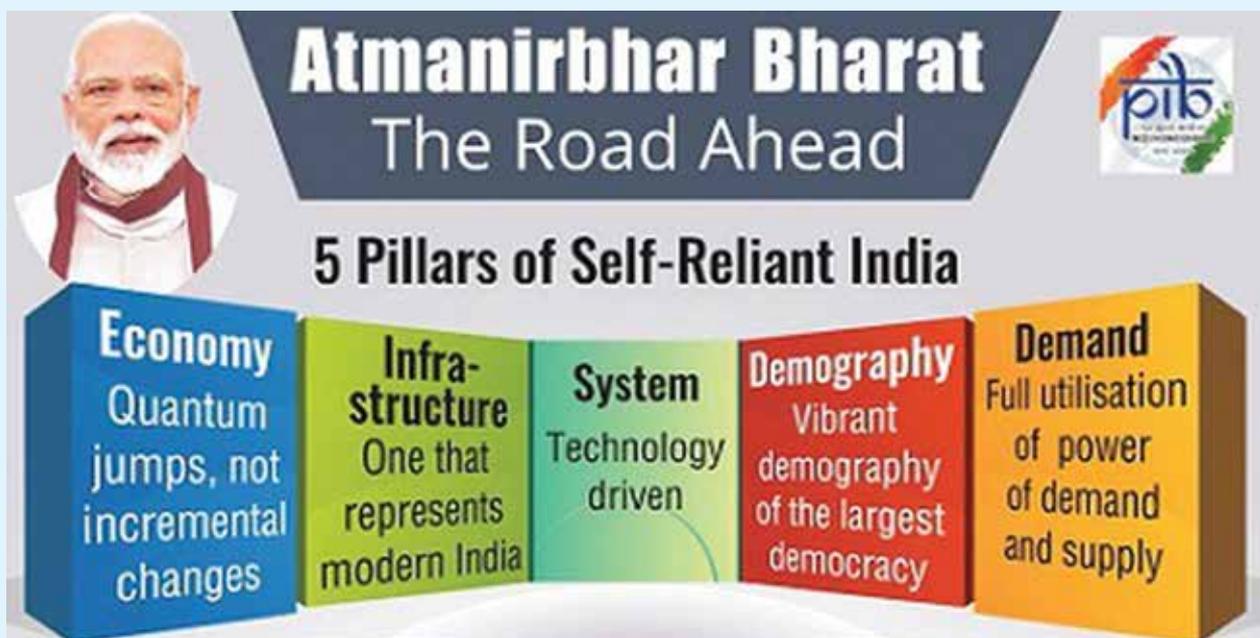
19.02.2021 Pg no : 9

वैज्ञानिक क्षेत्र की महिला कर्मियों के लिए न्यू नॉर्मल

नई दिल्ली, (पंजाब केसरी): स्टैंडिंग कॉन्फ्रेंस ऑफ पब्लिक इंटरप्राइजेज (स्कोप) के महादेशिक अखिल सचिव डॉ. संचिता बानर्जी ने 31वें राष्ट्रीय सम्मेलन के दौरान कहा कि वैज्ञानिक क्षेत्र की महिला कर्मियों के लिए न्यू नॉर्मल में सशक्तिकरण पर बल देना आवश्यक है।

Atmanirbhar Bharat Abhiyan

Prime Minister Narendra Modi announced a special economic package worth 20 lakh crore rupees for an 'Atmanirbhar Bharat' or self-reliant India, saying that self-reliance is the only way to ensure that 21st Century belongs to India



About:

- The Prime Minister noted that this package, together with earlier announcements by the government during COVID crisis and decisions taken by RBI, is to the tune of 20 lakh crore rupees. This is equivalent to almost 10 percent of India's GDP.
- The package focuses on land, labour, liquidity and laws. It will cater to various sections including cottage industry, MSMEs, labourers, middle class, industries, among others.
- He said India's self-reliance will be based on five pillars - economy, infrastructure, technology driven system, vibrant demography and demand.

Prime Minister remarked that self-reliance will prepare the country for tough competition in the global supply chain, and it is important that the country wins this competition.

Source: PIB

ONGC

Deepens presence in Gas Business



Subhash Kumar
CMD (Addl. Charge) &
Director (Finance), ONGC

Maharatna ONGC has recently taken some concrete steps to deepen its presence in Gas business. The largest crude oil and natural gas Company of India is opening a dedicated vertical for gas business. Recently Oil and Natural Gas Corporation Limited (ONGC) has signed a Share Purchase and Shareholders Agreement (SPSHA) with the Indian Gas Exchange (IGX) and the Indian Energy Exchange (IEX) on 10th March, 2021 to acquire 5 percent equity in IGX. On this occasion, CMD said that ONGC is aligned to the government's vision of increasing the share of gas in the energy mix to 15% by 2030. "We believe that the gas markets are key to facilitating the efficient and competitive gas trade in India. ONGC is pleased to be part of the Indian Gas Exchange and we look forward to develop the gas markets in the country through joint and synchronised efforts in the coming years."

Indian Gas Exchange Ltd. (IGX) is India's first automated national level Gas Exchange to promote and sustain an efficient and robust Gas market and to foster gas trading in the country. Indian Gas Exchange (IGX) would play an

important role to facilitate achieving the Government of India's target of increasing share of natural gas in India's energy basket from current 6.5% to 15% by 2030.

ONGC also took a major step by commencing oil production from the well Asokenagar-1, Bengal Basin in 24 Paragana district. The well Asokenagar-1 was completed as an oil producer under Early-Monetization Plan issued by Government of India. This makes ONGC having discovered and put to production seven out of the eight producing basins of India covering 83 percent of established oil & gas reserves. ONGC is India's largest oil and gas producer contributing 71 percent of the country's hydrocarbon production. This raw material is used by downstream companies like IOC, BPCL, HPCL and MRPL (Last two are subsidiaries of ONGC) to produce petroleum products like Petrol, Diesel, Kerosene, Naphtha, and Cooking Gas LPG.

Re-energized by this discovery and eager to script more success stories in the newly awarded OALP acreages in the Bengal Basin, ONGC has already set aside a sling of fresh geoscientific activities. These

comprise appraisal programme of Asokenagar discovery for an area of about 739 sq. km. including 3D seismic, Low Frequency Passive Seismic (LFPS) Survey and drilling of two wells, besides acquiring roughly 1300 LKM of 2D, 2900 SKM of 3D and drilling of 13 wells in the next three years in the newly awarded acreages. Bengal Basin is spread across nearly 1.22 lakh square kilometres, with nearly two-third of it falling under the waters of the Bay of Bengal. Till now, ONGC has invested Rs. 3361 Crore to explore hydrocarbon in the Bengal Basin. Rs. 425 Crore will be spent on exploration activities in the basin in the coming two years.

Shri Pradhan also congratulated ONGC and said that with this discovery, around seven decades of relentless endeavours by scientists and engineers of India have borne fruits, giving a new hope for robust development of West Bengal. Bengal Basin finally looks set to find a place on the oil & gas map of the world.

ONGC has a unique distinction of being a company with in-house service capabilities in all areas of Exploration and Production of oil & gas and related oil-field services. Winner

of the Best Employer award, this Public Sector Enterprise has a dedicated team of around 28,500 professionals who toil round the clock in challenging locations.

ONGC will implement India's maiden Geothermal Field Development Project in Ladakh. A Memorandum of Understanding (MoU) to formalize this has been inked by ONGC Energy Centre (OEC) with the Union Territory of Ladakh and Ladakh Autonomous Hill Development Council, Leh on 6th February 2021. It is the first step towards creating a Carbon Neutral Ladakh, a clarion call given by Prime Minister of India on Independence Day 2020.

This project of ONGC will put India on Geothermal Power map of the World. Geothermal resource development can revolutionize farming in Ladakh, which is now totally dependent for supply of fresh vegetables, fruits from outside the UT round the year. Further, direct heat energy applications make it most relevant to Ladakh.

ONGC has planned this field development in Ladakh in three phases. Phase-I involves exploratory-cum-production drilling of wells up to 500 metres depth and setting up of a Pilot Plant of up to 1 MW power capacity. Phase-II would involve deeper and lateral exploration of geothermal reservoir by drilling of optimal number of wells and setting up of a higher capacity Demo Plant and preparing a Detailed Project Report. Phase-III would involve commercial development of the geothermal plant.

Puga and Chumathang in Eastern Ladakh happen to be the most promising geothermal fields in India. These areas were



discovered in 1970s and initial exploratory efforts were made in 1980s by Geological Survey of India (GSI). But development efforts to exploit geothermal energy by government as well as private agencies did not materialize for some reasons. After creation of UT Ladakh, efforts were taken up earnestly by ONGC Energy Centre, culminating in this MoU.

ONGC has been dedicated since day one to make India self reliant in the energy space. With progressive reforms such as OALP and NDR intensifying the exploration efforts, ONGC had taken a strategic decision to enhance its focus on unexplored areas. To reach the target of meeting 50% of demand indigenously by 2050, CMD has called for bold steps to venture into unknown territories to intensify exploration, to improve overall recovery factor attempting to match benchmarked analogous fields across the world and eventually realise the untapped potential of unconventional resources.

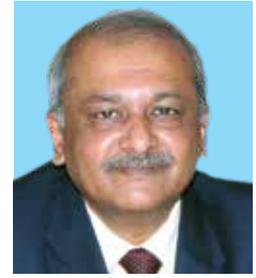
ONGC is committed to cleaner and greener sources of energy and one such form of energy is Gas Hydrates, ONGC has been an active participant in the National Gas Hydrate Programmes (NG-HPs). To promote this a Gas

Hydrate Research & Technology Centre (GHRTC) was established on 14th September, 2016 at Panvel. This centre gives impetus to the Gas Hydrate research & technology development and contributes to GoI's plan to commercialize Gas Hydrates as energy resource at the earliest.

ONGC has struck gas hydrate reserves in the deep sea off the Andhra Pradesh coast. The reserves are located in the Krishna-Godavari basin, which came into the limelight about a decade ago and the fresh reserves are estimated to be around 134 trillion cubic feet (tcf), about one-third of the gas reserves of the United States, which is the largest producer of natural gas in the world.

We at ONGC have a Energy Strategy 2040 in place which has charted out our vision for the next 20 years, the crux of it is that we have to 2x our Oil & Gas Production, 3x our revenue distributed across E&P, refining & Marketing and other business, 4x our PAT with 10% contribution from non-Oil & Gas business and 5-6x our Market Capitalization current levels. With the goal clearly defined, we have to pull up our socks and get going to make India Self Reliant. ■

HAL: Leading Self Reliance in Aerospace



R. Madhavan
CMD, HAL

Hindustan Aeronautics Limited, Asia's aerospace major has been at the forefront of indigenisation in India and has established proficiency in every field of aerospace in terms of design, development, manufacturing, overhaul and upgrade of aircraft, helicopters, aero-engines, avionics and accessories. HAL produced aircraft have been the mainstay of the Indian Armed Forces with around 76% of the current flying fleet of Indian Defence Services bearing HAL footprint in aircraft repair and overhaul segment.

Originally conceived as a centre for the overhaul of fighters and bombers, HAL embarked on indigenous design and development of aircraft as early as the 1940s, thus fostering self-reliance over the years. So far, HAL has indigenously designed, developed and manufactured 17 types of aircraft and helicopters.

HAL has earmarked indigenisation as a key thrust area and is continuously increasing the indigenisation content in major platforms. To realise the Government's vision of "Aatmanirbhar Bharat", HAL formulated a strategy for

indigenous development not only for aircraft, helicopters, aero engines, Unmanned Aerial Vehicles (UAV), aircraft systems but also for advanced aerospace materials and technologies that will benefit the nation.

Over the years, HAL has developed capabilities from servicing, manufacturing of aircraft under ToT to design, develop, manufacturing, servicing and midlife upgrades of indigenous platforms. HAL's major current products include Su-30 MKI, LCA Tejas, ALH Dhruv, ALH MKIV Rudra, Light Combat Helicopter (LCH), Chetak Helicopters, Do-228. HAL has also upgraded aircraft/ helicopters with advance mission systems and weapon integration from indigenous R&D and in collaboration with OEMs. HAL has successfully proven its capabilities in: Design & Development (D&D), manufacturing, overhaul of aircraft, helicopters, aero-engines, related accessories and avionics; Mid-life upgrade solutions for indigenous and licensed platforms; Missiles and Defence Systems Integration on existing platforms; Manufacturing of aerospace structures; and Precision castings & forgings for

aerospace applications.

HAL is currently pursuing indigenous technological advancements in development of Basic Trainer Aircraft HTT-40, Light Utility Helicopter (LUH) and LCA Mk 1A as second variant of LCA-Tejas with enhanced combat capabilities and Indian Multi Role Helicopter (IMRH). HAL is also developing 1200kW turbo shaft engine and 25kN turbo fan engine to ensure development of critical aero-engine D&D capability in country.

HAL has successfully developed a range of helicopters from three to six ton class suitable for utility, combat and civil roles to make India Aatmanirbhar in the helicopter segment. The Advanced Light Helicopter (ALH) Dhruv, indigenously designed and developed by HAL is a benchmark for the Indian rotorcraft industry. The ALH was designed at a time when there was very little rotorcraft knowledge in India and the project was a first of its kind integrating multiple technologies on a single platform to produce a world-class helicopter. HAL achieved the milestone of producing 300th ALH. Over 2,

80,000 flying hours of ALH is a testimony of HAL's capabilities in indigenisation. In addition, HAL's Cheetah and Chetak helicopters are being widely used by the Armed Forces for more than five decades.

HAL's Light Utility Helicopter attained the Initial Operational Clearance (IOC) for both IAF (2020) and Army (2021). HAL's dedicated attack helicopter LCH is the only helicopter in the five to six ton weight class that has demonstrated its capacity to land and take-off at an altitude of 4700 mtrs at Siachen with a payload of 500 kg. The LCH is also the first helicopter to fire Air-To-Air Missile against an aerial target and has received its Initial Operational Clearance (IOC) for both the IAF and the Army variants. Futuristic programs such as design and development of Indian Multi-Role Helicopter (IMRH), higher thrust engines etc. are also on the anvil.

The civil variant of the military transport aircraft Do-228 has also been developed by HAL which is most suitable for Regional Connectivity Scheme (UdeDeshKeAamNagrik) under 'Make in India'.

HAL has also successfully executed upgrades of Jaguar NAVWASS aircraft to DARIN-II Standard, MiG-21 BIS, MiG-27M, Sea Harrier, HS-748 (Avro), Do-228, Cheetah, Chetak Helicopter re-engining etc. thus prolonging the life and increasing the lethal capabilities of these already proven platforms. Current upgrade programs under progress are Jaguar DARIN-III, Mirage 2000 aircraft upgrade, indigenously upgraded Hawk Mk132 aircraft with enhanced operational and training capabilities etc.

With a presence in every segment of the aerospace industry, HAL is facilitating indigenisation at a greater scale as the Government revitalizes the defence ecosystem towards "Aatma-nirbhar Bharat". HAL is poised to be the lead platform integrator supported by a capable, responsive and vibrant vendor base in the Indian private sector through synergistic partnerships and is looking to play a greater role through IMRH, AMCA, LCA Navy, Mk II and other powerful indigenous war machines flying out from the assembly lines of the company.

Apart from platform development, HAL undertakes design, development and production of airborne systems covering equipment like communication, radar, data recorders, and mission computers in the field of avionics. Further design, development and production of mechanical systems such as hydraulic systems, environmental control systems, fuel systems, wheels and brakes, flight instruments etc.

are also carried out. HAL has taken proactive steps to ensure successful implementation of the indigenisation program that includes collaboration with DRDO labs, premier educational institutes for development of latest technologies.

HAL has established an exclusive Indigenization department at the corporate level to oversee all indigenisation activities. Dedicated indigenisation cells are set up at the divisional levels for indigenisation of items/LRUs, which are imported, from foreign OEMs. A Permanent Monitoring Committee at HAL has also been formed to take stock and allied company wide indigenisation activities.

HAL is making concerted efforts for greater indigenisation and every year the strategy for identifying the items for indigenisation was adopted for components, standard parts, spares and limited LRUs from the point of self-reliance, economy and obsolescence management. More than 1000 imported items are indigenised through in-house and with the help of Indian private Industries with significant foreign exchange savings. Some major items indigenised successfully are Automatic Flight Control System (AFCS), Integrated Avionics and Display System (IADS), Real Time Operating System (RTOS), Mission Computer, Air Data Unit (ADU), Solid State Flight Data Recorder (SSFDR), Tactical Air Navigation (TACAN), VHF Omni direction Radio Range/ Instrument Landing System (VOR/ILS), Yaw Damper Computer Unit etc.

In-line with Government's announcement of developing two



defence industrial production corridors in Uttar Pradesh & Tamil Nadu, HAL is supporting by way of investing in HAL units under the UP Defence Production Corridor. This will create business opportunities for the local industries for the next 25-30 years besides generating employment potential, both directly and indirectly.

HAL's Make-II programme is also a very important step towards supporting the 'Aatmanirbhar Bharat' mission. HAL's Make-II (Industry Funded) procedure is in compliance with the Make-II framework promulgated by the Ministry of Defence and envisages the assured order quantity after successful development of items through private vendors. In this regard, HAL has identified number of items for indigenisation under Make-II and has hosted these items on its website with relevant details. HAL has floated EOIs for more than 600 types of items for indigenisation through Make-II policy and has already received more than 450 responses. Indigenisation through Make-II procedure will be a game changer in the long run as far as indigenisation is concerned. It will involve more number of

Further design, development and production of mechanical systems such as hydraulic systems, environmental control systems, fuel systems, wheels and brakes, flight instruments etc. are also carried out.

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interested and capable local vendors and thereby help expanding the aerospace and defence ecosystem in the country.

HAL has also hosted details of test facilities available with the Company for utilisation of the private vendors during the course of indigenisation. As per the recent initiative by the Department for Promotion of Industry and Internal Trade (DPIT), MoD, data of imported items are also being uploaded in the Srijan Defence Portal regularly to facilitate import substitution through Indian vendors. HAL has uploaded more than 7200 items in Srijan Portal with high import value. In addition, implementation of Public Procurement Order 2017 at HAL will go a long way in further import reduction and would be an encouraging factor in creating a local aerospace ecosystem in the country.

HAL participates and organizes various vendor development program of MoD, Industrial bodies/Clusters to promote indigenisation through webinars, exhibitions, seminars etc.

With a presence in every segment of the aerospace industry, HAL is facilitating indigenisation at a greater scale as the Government revitalizes the defence ecosystem towards "Aatmanirbhar Bharat". HAL is poised to be the lead platform integrator supported by a capable, responsive and vibrant vendor base in the Indian private sector through synergistic partnerships and is looking to play a greater role through IMRH, AMCA, LCA Navy, Mk II and other powerful indigenous war machines flying out from the assembly lines of the company. ■

SCI's Initiatives towards making India – “Atmanirbhar Bharat”



H. K. Joshi
CMD, SCI

Maritime transport is the backbone of global trade and the global economy. It is rightly said that “Without shipping half the planet would starve and the other half would freeze”. The importance of shipping in supporting and sustaining today's global society makes it indispensable to the world and to meet the challenge of the 2030 Agenda for Sustainable Development, a consensus of all global leaders for people, peace, planet prosperity and partnership. Hence the importance of shipping for a self-reliant India - an AtmaNirbhar Bharat cannot be emphasized enough.

Inter-relationship between shipping and economy

Around 90% of the global trade is carried through the sea. Shipping provides the low-cost, environment friendly, efficient and sustainable means of transportation. The jobs and livelihoods of billions of people in the developing world, and standards of living in the industrialized and developed world, depend on ships and shipping. The shipping industry has

played an important part in the dramatic improvements in global living standards that have taken millions of people out of acute poverty in recent years. India is blessed with an extensive coastline of over 7500 Km and its maritime prowess is well known since ancient times. In the modern times, the maritime trade covers 95% of India's total trade by volume and 70% by value.

Shipping Corporation of India- its growth trajectory

The Shipping Corporation of India (SCI) was formed in 1961 by amalgamation of Eastern Shipping Corporation and Western Shipping Corporation which envisaged better co-ordination of policies, greater economy and efficiencies of operations between the two companies and providing shipping service for overseas transportation of goods and promoting EXIM trade. “Transporting Goods, Transforming Lives” has transcended beyond a mere corporate slogan, to become an integral part of the SCI's vision, mission and objective. Efficient, cost-effective

and sustainable transportation of goods is paramount to SCI – a flag bearer of the Indian Maritime Sector since the past six decades.

SCI today on the eve of its Diamond Jubilee Year

SCI continues to be the country's premier Shipping Line, owning a fleet of 59 vessels aggregating to 5.3 Million DWT tonnes presently with a share of about 28% (27.36) (in DWT terms) of the total Indian tonnage and thus being the largest Indian Shipping company in India. SCI's owned fleet includes Bulk carriers, Crude oil tankers, Product tankers, Container vessels, LPG/ Ammonia carriers and Offshore Supply Vessels. In addition, SCI presently mans/ manages 51 vessels of 0.387 Million DWT tonnes and 0.537 million GT on behalf of India LNG Transport Companies (JVCs), Andaman & Nicobar Administration, Geological Survey of India (Ministry of Mines), Ministry of Earth Sciences (Department of Ocean Development), Oil and Natural Gas Corporation (PSU). SCI's managed fleet includes LNG Tankers, Research Vessels, Ocean Research Vessel, Fishing &

Oceanographic Research Vessel, Offshore Supply Vessels, Well Stimulation Vessel, Geotechnical Vessel, Multi Support Vessel, Mobile Offshore Drilling Units (MODU). Unlike conventional cargo carrying vessels, these managed vessels perform specialized functions and require expert skills for their operations. SCI is the only Indian company having expertise in LNG operations and manning.

SCI's contribution to the Atmanirbhar Bharat

"AtmaNirbhar Bharat", a term coined by Hon'ble Prime Minister of India, to ensure self-sufficiency through self-reliance became the shining beacon for all to follow, an umbrella concept about making India a crucial, inseparable part of the global economy. COVID-19 pandemic with various geo-political factors has made it imperative for India to become self-reliant and the AtmaNirbhar Bharat campaign aims to make the country and its citizens independent and self-reliant in all aspects.

The COVID-19 pandemic brought the global economy to a standstill and growing uncertainties fogged the vision of businesses worldwide. In spite of the manifold restrictions, imposed time and again through the year in various forms by the Governments and Government bodies across the world in an effort for containment of the spread. The maritime industry continued to ply and brave the choppy waters of uncertainty and disruption. SCI being the representative of the Indian Maritime sector did not cease operations for even a single day

throughout the lockdown period and had implemented a Business Continuity Plan which had been drafted well in advance to meet the eventuality of a restricted work environment which would be necessitated due to a lockdown. This imparted confidence amongst the stakeholders, in turn imparting confidence in the nation's economy which was moving then at a snail's pace.

SCI has always been well-aligned to the concept and has through its uninterrupted shipping services, especially during the pandemic times, despite constraints, ensured the continuity of transportation of goods and services and the vital trade links so essential for the sustenance of the Indian and global economy. It is also committed to the implementation of various initiatives being announced by the Government of India to make India self-reliant.

MSME support

The vision of AtmaNirbhar Bharat encompasses promotion of local industries and economy, and presupposes support to MSME (Micro, Small and Medium Enterprises) vendors. SCI has taken various steps to increase procurement from MSME vendors especially in the last one year; the number of MSME vendors registered with SCI has increased from 523 (end of March 2020) to 769 (as on 29th Feb, 2021). SCI does not limit itself to only registration of MSME Vendors, but ensures their gainful employment, again reflected by the steady increase of procurement from MSME vendors with every passing year. Currently for FY 2020-21 (till date), procurements from MSME

vendors accounts to about 45% of SCI's total eligible procurements, an increase from 33% in the FY 2019-20. Informatively, the annual target set by Government for PSEs for procurements is 25%. All efforts are made for MSME Procurement as per guidelines issued from time to time. SCI's proactive policy of supporting the local MSME vendors is well aligned with the Government's vision of AtmaNirbhar Bharat.

Apart from the procurements, SCI has been performing voyage repairs on board vessels trading in Indian waters through the Indian workshops. MSMEs are being promoted for carrying out repairs on Vessel in Indian Ports or at Anchorage. Contracts/Agreements are in place with these MSMEs for carrying out repairs as per the tariff.

Procurement through GeM

SCI makes conscientious efforts to support the Government's initiatives in encouraging procurements from the Government online platform for public procurement viz. Government e-Marketplace (GeM). SCI encourages and urges its vendors to get themselves registered on the online platform and does a regular review and follow up with them. Although methods are being explored for ship-based procurements, SCI has made all out efforts to increase its shore-based procurements from this platform, which has resulted in SCI almost doubling its procurement from GeM as compared to the previous year. Settlement of their bills is accorded due priority and done expeditiously to ensure highest efficiency of services from them.

Aligning to the public procurement policy despite the nature of procurements peculiar to the shipping industry

A shipping company's assets constitute ships viz. floating assets, plying across the globe and therefore the nature of its procurements is peculiar and different from that of other land-based industries having a geographical area of operation. More often than not, the procurements are required to be done while the vessel is in foreign waters so crucial to meet with the statutory/regulatory and commercial requirements. SCI, in line with the revised DPE guidelines for Public Procurement, to float domestic tenders for contracts upto Rs.200 Crore, continually explores all possibilities of procuring ship-specific services from the local service providers, despite facing procedural and other constraints in effecting supply of the procurements on its ships. Accordingly, domestic tenders have been issued for identification and award of contracts to local vendors for providing goods and services at various ports. Suitable modifications and clauses that have been necessitated for compliance with the guidelines have been designed and introduced in SCI tenders to maximize the participation of Indian vendors and promoting them. In case of construction of new-build vessels too, SCI has been encouraging Indian shipyards to explore the market for availability of Indian Makers for various equipment and materials, so that the same can thereafter be incorporated in the Makers List for new vessels being constructed for SCI or for clients to whom SCI provides

technical consultancy services.

The entire offshore fleet of SCI is chartered to Indian clients/Government agencies. In case of dry-dock (maintenance) of offshore vessels, the contracts have been awarded only to the Indian shipyards. Not only are dry-docks of SCI owned vessels awarded to Indian yards, but for vessels managed by SCI also, the dry-dock contracts are being awarded to local yards. Further, in case of global tender, for acquisition/Dry-dock/repairs, SCI tenders already have provision giving preference to Indian players by way of Right of First Refusal (RoFR). Routine maintenance/machinery repairs of offshore vessels are carried out by Indian empanelled workshops and also the services of OEM authorized workshops in India are availed for maintenance of foreign origin equipment/ machinery on board vessels.

Support to the Indian PSU refineries and Power generation and Steel manufacturing industries (Bulk Carrier & Tanker operations)

Energy and industries form a vital aspect of nation's economic growth. As a part of the Industry Working Group (IWG), SCI has been providing logistical support to Indian PSU's refineries. SCI has been actively deploying its vessels in transportation of vital commodities like crude oil, petroleum products, coal, fertilizers etc. to and around the coast of India, thus giving the required support to various indigenous businesses. SCI's Tankers have helped carry about 7.5 MMT of crude around the

coast and import about 14-17 MMT of crude during the three quarters of FY 2020-21, thereby playing a key role in the nation's crude oil transportation requirement. Likewise, SCI's Bulk Carriers have catered to the transportation requirements of the power generation and steel manufacturing industries of India. SCI's Bulk carriers have helped transport about 3.4 MMT of Coal, Iron etc. around the Indian coast and also helped import about 4.5 MMT of Coal, Fertilizer, Limestone etc. during the three quarters of FY 2020-21.

Liner Services

SCI is the only diversified Indian Shipping company which continues to provide liner and coastal services. It has under the umbrella of Ministry of Shipping, Govt. of India commenced direct shipping service between India and Maldives on 21st September, 2020 with an aim to provide an alternate, direct and less expensive means of transport for passengers and goods and to enhance economic, social and cultural ties between the two countries.

Foray into the Inland Waterways – an outreach expected to benefit the Indian hinterlands

India's vast coastline is the buzz center for all the EXIM trade. This misconception has long led to the potential of the vast hinterlands being ignored. India's hinterlands have the capacity and the capability to churn the nation's economy to yield tremendous economic growth. With Hon'ble Prime Minister's clarion call of "AtmaNirbhar

Bharat”, the manufacturing sector of these long-ignored hinterlands are picking up pace and are making significant contribution in accelerating the economic growth of the country. Bearing in mind the importance of India’s vast hinterlands to the growth of the economy, SCI’s wholly-owned subsidiary, viz. Inland & Coastal Shipping Ltd. (ICSL) signed a Memorandum of Understanding with the Inland waterways Authority of India (IWAI) for operating and managing 3 of their cargo vessels viz. MV Rabindranath Tagore, MV Lal Bahadur Shastri and MV HomiBhabha. With this historic Memorandum of Understanding, SCI has ventured into the inland waterways sector in the Indian maritime industry. ICSL has taken delivery of two of the three vessels so far viz. MV Rabindranath Tagore on 22nd January, at Kolkata and MV Lal Bahadur Shastri on 26th February, at Patna. Through the operation and management of these vessels, ICSL intends to establish a scheduled liner service on NW-1, an effort expected to provide much needed substance and boost to the Government’s AtmaNirbhar Bharat Vision.

Offshore services

SCI has been providing vital offshore logistic support services to the Indian oil industry in its indigenous oil exploration activities for the last 3 decades and apart from operating its owned vessels, gained expertise in manning, managing and operating specialized vessels for oil industry and various Government Departments/Organizations.

Education & Training for Seafarers and building the foundation for a seafaring nation

The Maritime Training Institute (MTI) of the Shipping Corporation of India Ltd., poses a perfect example for SCI’s boundless commitment towards being a self-sufficient organization as also augurs well for an AtmaNirbhar Bharat. MTI was set up by SCI for meeting the regulations of International Convention on Standards of Training, Certification and Watch keeping for Seafarers (STCW), 1978 as amended in 1995 and later in 2010, which sets minimum qualification standards for masters, officers and watch personnel on seagoing merchant ships.

Due to acute shortage of training facilities in India, MTI was set up in approx. 45 acres of land in Mumbai with latest technologies and equipment required for quality training in Indian maritime industry. MTI not just helped SCI in training its sailing officers and staff for STCW but also started doling out officers for SCI ships, enabling SCI to meet growing demand for sailing officers at an unmatched pace. The aspiring candidates handpicked by MTI every year through stern entrance procedures are trained meticulously by the best-in-class faculty at MTI. SCI has been nominating its officers for various courses nationally (at IIM Ahmadabad, AIIMA etc.) and internationally (World Maritime University) who later takes responsibility of imparting training at MTI as Faculty/Principal.

MTI is a remarkable example of a responsible institution that exhibits and encourages green initiatives of Government of India

in becoming sustainable and environment cautious. Its campus became FIRST Wi-Fi enabled GREEN CAMPUS in Maritime Education Industry of the country, with inauguration of its solar plant (with current capacity of 0.5 MW) in January, 2017. In addition, MTI collects and compost the dry leaves waste for making manure that is used for gardenizing in the campus, which is a house to millions of trees, shrubs and vines. The future plans of the Institute are ambitiously in line with SCI vision of becoming self-sufficient and will soon be commencing the highest competency level of Master (Foreign Going) at MTI. SCI not only promotes, encourages men and women from diverse backgrounds to join the maritime profession, but also provides various concessions to them in their training at MTI. Today, SCI is proud to be an equal opportunity employer of women seafarers. In a recent historic and landmark achievement, an “All Women Officers’ Sailing” was executed on board its tanker m.t. Swarna Krishna demonstrative of a shift in perception of the shipping industry being seen as male oriented to an inclusive profession giving equal employment access to the women candidates aspiring to join the coveted profession. In this inclusivity, Indian women should also feel empowered to take on the challenges and contribute to a self-reliant economy.

SCI serves as a facilitator for the AtmaNirbhar Bharat Vision of the Government, imparting confidence amongst the local manufacturers and producers to engage in manufacturing goods, as the responsibility of their safe, efficient and cost-effective transportation lies with SCI. ■

Aviation Industry's contribution to "AtmaNirbhar Bharat"



Anuj Aggarwal
Member (HR), AAI

In order to make India self-reliant and to ensure sustainable development in Indian civil aviation sector, 'आत्मनिर्भरभारत' is a pivotal initiative for it is about being self-sustaining, self-generating and pursuing national 'policies that promote efficiency, equity and resilience.' The continuously growing Indian Civil Aviation Sector is one of the basic pillars for development of infrastructure, connectivity and tourism for growth of our country's economy.

The Airports Authority of India, a Public Sector Enterprise (PSE) is actively undertaking various initiatives and programs to enhance self-reliance and self-sufficiency in Civil Aviation in India, pursuant to the Ministry of Civil Aviation's National Civil Aviation Policy- 2016 (NCAP-2016) and vision of 'आत्मनिर्भरभारत', initiated by the Hon'ble Prime Minister of India.

AAI has taken various steps for unfolding the non-aeronautical revenue streams by utilizing new untapped aviation-related activities. This shall also help in reducing the outflow of Foreign Exchange which is being incurred in aviation related activities. In this reference AAI has taken following actions:



Development of MRO facilities

The global aircraft MRO market is a multi-billion-dollar industry growing aggressively year-on-year. India's share of the market is abysmally low. While North America is the largest MRO market in the world accounting for nearly 40% of the global business, India accounts for a paltry 1%. MRO service providers in the Asia Pacific are mainly concentrated in China, Singapore, Malaysia and Dubai. Given India's technology and skill base, the Government of India is keen to develop India as an MRO hub in Asia that can attract business from foreign airlines and other relevant stakeholders. While announcing post

-COVID-19 financial stimulus last May, India's Finance Minister had said India will become a hub for MROs by offering tax concessions and other policy initiatives. Also, convergence between civil aviation and defence sectors will be established to create economies of scale. The Airports Authority of India is committed to extend all assistance for developing the MRO infrastructure in the country by rationalizing land / space rentals w.e.f. 01.04.2021 for existing contracts, renewal of contracts and new contracts. It is planned to introduce MROs at eight more locations (Delhi, Kolkata, Chennai, Hyderabad, Chandigarh, Bhopal, Juhu & Tirupathi).

Initiative undertaken towards Flying Training Organizations in India



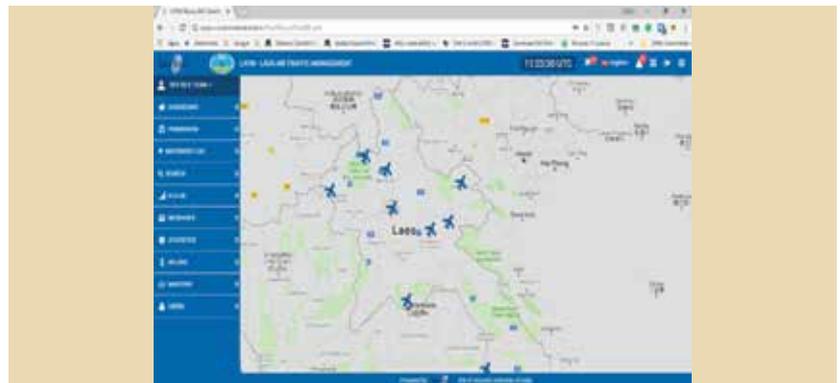
In order to promote Indian Civil Aviation Sector and the orders placed by various scheduled airlines for acquisition of new aircraft, there is a growing demand of trained aircraft pilots. The estimated requirement of such pilots is 7000+ in next five years. In order to meet growing demand for pilots, AAI has decided to set up 10 more flying training institutes at six AAI Airports; Belagavi, Jalgaon, Khajuraho, Kalaburagi, Lilabari and Salem. AAI will offer a host of concessions such as reduced concessionaire fee & other charges that flying schools pay. These steps will go a long way in empowering the country's youth for a brighter future.

SKYREV360- Automated Revenue Management System

The SKYREV360 system is a unique end to end solution for revenue management for Airport Operators and Air Navigation Service Providers. The SKYREV360 is a specialized

and customized package, which has been developed by AAI in consultation with IATA, primarily as a Comprehensive e-invoicing solution for air navigation billing for overflying and arrival/departure charges and to provide information through report generation, at various levels, for the processes, within and across airports, for an efficient and effective Air Traffic Operations management.

AAI has recently implemented SkyRev360, revenue management system, at 12 Airports at Lao PDR. AAI has also received business interest from various other countries from South-East Asia and Africa, regarding implementation of the SkyRev360 revenue management system.



GAGAN – GPS Aided GEO Augmented Navigation

AAI in collaboration with Indian Space Research Organisation (ISRO), has developed GAGAN (GPS Aided Geo-Augmented Navigation), which is an implementation of regional Satellite Based Augmentation System (SBAS). GAGAN provides a civil aeronautical navigation signal, consistent with International Civil Aviation Organization (ICAO) Standards and Recommended Practices (SARPs) as established

by the Global Navigation Satellite System (GNSS) Panel. GAGAN system provides NPA (Non Precision Approach) services of RNP-0.1 over Indian FIR and PA (Precision Approach) services of APV-1.0/APV-1.5 (Approach with Vertical guidance) over Indian landmass. GAGAN is the fourth Space Based Augmentation System in the world, in addition to WAAS from US, EGNOS from Europe and MTSAT from Japan. Although, primarily meant for civil aviation, the GAGAN signal



can be used by a vast majority of civilian and non-aviation users. GAGAN provides benefits to transportation, search & rescue, seaways, highways, railways, surveying, geodesy, security agencies, real-time weather forecasting, land management through terrestrial mapping, precision farming, telecom industry, personal users of position location applications etc.

AAI, with support from USTDA (under US-India Cooperation Programme) has taken up business promotion and expansion of GAGAN in the Asia-Pacific region. The main focus of the programme is to study the advantage of GAGAN technology in aviation and non-aviation sectors and develop opportunities for assistance programmes in neighbouring countries, such as Bhutan, Afghanistan, Nepal, Sri Lanka, Myanmar, Bangladesh, Maldives, etc.

India stands proud as fourth country in the world after Canada, Europe and Japan to have its own Satellite based Augmentation System, which is a major leap in the future of air navigation.

Support to Start up in Airport sector

In-line with Government of India's initiatives, Startup India,

Airports Authority of India (AAI) launched its Startup policy and initiated "Innovate for Airports" program. AAI's Startup Policy lays down the guidelines to support and nurturing startups for driving innovation by providing Idea 2 Poc grants up to Rs. 2 Cr per selected startups. This will ultimately help the airports across India to become future-ready through airport specific indigenous solution development, better airport operation turnaround time and enhanced passenger experience.

As per policy, Entities which are recognized as Startups as per the definition of Department of Industrial Promotion & Policy (DIPP) as on the launch of program. For evaluation a 3 Tier structure was adopted in AAI Innovate for Airports program. Based upon examination and Startup conclave, four startups have been awarded Idea2PoC grant. On successful Idea2PoC of solution provided by selected startups, it will be used at all AAI controlled airports. Currently AAI uses foreign solutions for its requirement in the area like VDGS (Visual Docking Guidance System) and Airport Digital Mapping. The indigenous solution developed by start-ups will be one step forward towards achieving 'Atmanirbhar' Bharat Abhiyan and will lead to less reliance on foreign suppliers and promote indigenous vendors.



MoU with BEL for Co-operation in the field of Civil Aviation

The Airports Authority of India (AAI) has entered into an MoU with Bharat Electronics Limited (BEL) that will provide a platform for collaborative development and support for both the organizations to address the emerging airport business globally, including that of Asia Pacific region.



In furtherance of such cooperation, AAI, in the role of development partner, will render assistance to BEL in its domain of expertise to enable execution of the prestigious MEA projects outside India by BEL. Both the organizations will work in close cooperation with each other in the field of civil aviation in present and in future projects being handled by BEL. The manufacturing of Communication, Navigation & Surveillance (CNS) equipment in India will reduce the cost substantially and will save foreign exchange outflow, making India Self-Reliant. The skills and expertise of AAI and BEL would serve the domestic civil aviation market as well as in South-East Asian, African and Latin American civil aviation market. The partnership between both organizations will be a game-changer in the Indian aviation sector. ■

BEML: Epitomizing 'Atmanirbharta'



M. V. Rajasekhar
CMD (In-Charge),
BEML Limited

Set up to manufacture Earth Moving Equipment in the 1960s, BEML has 'AtmaNirbharta' in its veins and is fully aligned and committed to the visionary initiative. The Company has been at the forefront to support the Armed Forces to be abreast with state-of-the-art military equipment and serve the key sectors of the national economy such as coal, steel, power, infrastructure and urban transportation. With its dedicated and well accomplished R&D establishment, BEML has been continuously churning out new products and also taking indigenisation of its products to higher levels.

BEML is a highly diversified company operating in three business segments, viz., Mining & Construction, Defence & Aerospace and Rail & Metro and has an International Business Division for undertaking export activities. BEML, as a trail-blazing PSU, is in an intense competitive business environment across all its business verticals and it is pitted against Multinational Corporations to win sale orders by fielding its products in a one-to-one technological and commercial competition with competitor products.

Presently, BEML wins and executes nearly 90% of its orders in competition mode especially with MNCs. BEML products thus not only exhibit its technical prowess but are also cost competitive. Also, nearly 70% of the business is from in-house R&D developed products. In-house R&D and proactive indigenisation therefore are the cornerstones of the Company's business strategy which are being leveraged in full measure.

In-house R&D commenced in earnest in mid-1970's, with a mandate to design and develop new products and support indigenisation efforts. A full-fledged R&D Centre was established at KGF during 1980's, with NABL accredited Laboratories



and Design Centre with modern CAD/CAE tools. Today, BEML's world-class composite R&D establishment for Design & Development of products at KGF is the biggest Design & Development Centre for Earth Moving Machinery in India.

R&D facilities enable aggregate level and equipment level testing and evaluation through the extensive infrastructure available in the laboratories and test tracks. R&D infrastructure is also being offered, as a national facility for the Industry. R&D division is manned by over 225 experienced engineers from premiere institutions like Indian Institutes of Technology, and specializes in technological areas such as mechanical design, engine technology, structural engineering, material science, fluid power, electronics etc. R&D expenditure of around 2.5% to 3% of gross sales, is in-line with the industry standard for the engineering industry.

Over the years, many defining steps were taken to strengthen the knowledge and skill base of R&D engineers. This has been made possible by initially working with global technology partners and systematically absorbing comprehensive knowledge to further indigenise the products/aggregates. side by side many products have been developed through in-house R&D efforts to meet specific

market driven requirements. Centres of Excellence and Innovation Centre have been established to update and upgrade the technical skills of the manpower. The innovative elements in R&D products are being patented and yearly about 70 patents are being filed.



Being in a highly niche and competitive business environment with innovative products, an Industrial Design Centre (IDC) first of its kind in India, as an inhouse facility in any manufacturing industry has been set up by BEML in its Bangalore Plant. Created as a space where employees can exchange their creative ideas & concepts, it is integrated with the Company's R&D and manufacturing processes. The designers at IDC who have been engaged from the leading Institutes such as National Institute of Design are equipped to carry out design interventions of international standards.



The designers at the IDC would be focusing on implementing factors of Industrial Design & Human Factors as a part of developmental strategies for setting the global benchmarking in Industrial Design and Ergonomics in BEML Products. It would harness latest technologies like AI, Gesture recognition, Ergonomic issues of Vehicle-Driver interaction, Process standardization and

simplification, Exploration of alternative material for cost reduction. It is proposed to develop this facility as a National Model Centre, with services offered to allied Industries – national as well as international. BEML has been working closely with academia like Indian Institutes of Technology, National Institute of Design and Indian Institute of Science to improve the products in complex domains like torsion, vibrations, noise reduction, crash analysis etc. Where domain expertise is not available in the country, international consultants have also been engaged in developing certain high value and challenging products. BEML has been continuously focusing on indigenization of its products. Currently over 90% indigenization has been achieved in mainline Mining & Construction products, Rail Coaches & Electrical Multiple Units. In Defence Segment indigenization of well over 80% has been achieved in High Mobility Vehicles 8x8.



BEML was the first Company in India to manufacture all steel Integral Passenger Rail Coaches to meet the requirements of Indian Railways and has an installed dedicated production facility to manufacture 720 Rail coaches per annum. BEML's R&D Developed, Stainless Steel Electrical Multiple Unit won the Raksha Mantri's Awards in recognition of the excellent effort, 'Design Effort' for



country's first Stainless Steel Electric Multiple Unit (SSEMU) for Indian Railways for sub-urban commuting. BEML is currently executing a MEMU order for the Indian Railways.

Based on the experience in Rail products for over 50 years, BEML ventured into manufacturing state-of-the-art Stainless Steel Metro cars since 2002 onwards. BEML's foray into metro manufacturing has been defining for the urban transportation scenario in India. With a major market share in the country, in direct competition with well-established international players, BEML has made its mark as the only Indian Company in the field. BEML's presence in almost all major metro networks in the country is evident as also its technical prowess in adopting latest technologies such as driverless trains; Unattended train Operations.

Over the years, BEML through its continuous thrust and focus has indigenised Car body, Bogie and other aggregates which were typically sourced from MNCs such as Bogie Frame for Metro Car, Bulk Head panel for Metro Car, Saloon Seat for Metro Car and Car Body Integration. BEML designed & developed Intermediate car for DMRC has won Raksha Mantri's Awards under 'Design Effort' category. Design, Development, Testing and consequently successful indigenization of Kolkata metro car has considerable foreign exchange. At present, the indigenisation level in Metro car manufacturing is over 60%. Till date more than 1600 metro cars have been manufactured and supplied to Delhi, Mumbai, Bangalore, Jaipur and Kolkata Metros.

By winning the Mumbai metro order, the largest ever, BEML truly arrived and unmistakably transformed the metro commercial terms in the Nation's favour. BEML delivered Mumbai Metro mock-up car to MMRDA ahead of schedule and it was



inaugurated by the Hon'ble Prime Minister on 6th September, 2019. The design and production activities for the contract moved forward despite disruptions of the pandemic, and on 15th January, 2021 the delivery of the first train took place in the presence of the Hon'ble Defence Minister.

The Mining segment is migrating towards deployment of higher capacity equipment to meet the higher production requirements, BEML took initiative to design and manufacture of higher capacity



mining equipment such as 190-205 ton range and 150 ton electric dump trucks, 180 ton class electric and diesel versions of excavators and 850 hp bulldozers with in-house R&D capability. BEML supplied its newly developed, higher capacity 150 Ton and 205 Ton Electric Dump Trucks on trial cum sale basis and after successful trial evaluation, BEML has won orders, underpinning its technical and R&D prowess. These products designed, developed and manufactured for the first time in India, helps in import substitution and foreign exchange savings in addition to promoting the cause of green mining.

BEML Ltd. being a DPSU, has been keeping Indian Army and other Services abreast with state-of-the-art



Military equipment, coming in its product range. BEML has been continuously increasing indigenisation level of its products to much higher levels especially in High Mobility All-terrain Vehicles and Engineer Plant Equipment. In addition, with its dedicated R&D establishment, BEML has been in the forefront of developing new products such as the Arjun Armoured Repair and Recovery Vehicle, Medium Bullet Proof Vehicle 'GAUR', Mounted Gun System, AI enabled Mobile Medical Health Diagnostic System (COVID-19 screening kit) etc. There is a continuous surge in the demand for spare parts and providing Annual Maintenance Service support to BEML high mobility vehicles supplied for various prestigious projects.

BEML is also shaping its vision to be a significant player in Aerospace Industry. BEML Aerospace Division has the capability of precision machining of aerospace components and structures made of Maraging steel, Titanium alloy, Carbon steel, Stainless steel & Aluminium alloys, precision Fabrication of Missile Motor Casings made of Exotic alloys, Manufacture of Airborne Sheet Metal components, NDT Services such as DP, MP, UT & Radiography, Proof Pressure testing with provision for Micro strain Data acquisition and manufacturing of Ground Handling & Ground support Equipment. The division has certification of AS 9100D Quality management systems for Machining, Fabrication & Assembly of Aircraft and Missile subsystems and NADCAP certification for heat treatment and Fluorescent penetrant testing. BEML Aerospace Division has also entered into areas of UAVs and space launch vehicle structures.

BEML is encouraging its major aggregate manufacturers to establish facilities in India. BEML has planned to set up 'Make in India Park' by attracting potential collaborators with niche technology and consequently minimize import dependency while creating export opportunities. BEML has signed MoU with OFB and other DPSUs and has also entered into formal partnerships with major private players to reap benefits of exploring collaborative business opportunities.

To enhance indigenisation, BEML invited 'Expression of Interest' for manufacturing and technology partnerships with reputed global OEMs looking to establish and / or expand their supply chains / manufacturing base in India for the manufacture

of various goods and/or service business in the areas of Defence & Aerospace, Rail & Metro, Mining & Construction, Engines and aggregates with the overarching objective of "Aatmanirbhar Bharat". Further, BEML has entered into MoUs with global OEMs for joint production and local manufacture of products and aggregates.

BEML has exported its products to over 68 countries. The company has exported more than 1000 units of mining and construction equipment worth about US\$ 275 million across the globe and is continually seeking new markets by expanding its dealership base. BEML has built a chain of dealers in countries with business prospects and it in the process of setting up an office in Africa.

BEML is well on its journey to become a system integrator by outsourcing a substantial part of manufacturing activities to Indian vendors, enabling the Company to enhance its capacity, attain cost effectiveness and improve competitiveness in the global market. In addition to using GeM portal as an enabling tool to increase the vendor base and get better value, the list of components that could be sourced from MSEs are placed on the Company's website with the objective increasing its procurement from MSEs.

The 'Atmanirbharta' efforts are also being executed responsibly, by contributing to sustainability. Towards the goal of 'Clean & Green Energy' BEML has set up wind and solar power generation Projects. Presently, nearly 75% of BEML's requirement of energy is met through non-conventional route achieving substantial Carbon mitigation.

Absorption of new technologies, ability to successfully face tough business competition and sail through tough market situations are the hallmarks of BEML. BEML's vision is to become a market leader as a diversified Company, supplying quality products & services to core sectors such as Defence & Aerospace, Mining & Construction and Rail & Metro and emerge as a prominent international player. Towards that goal, BEML aspires to continue to diversify and grow by manufacturing new products and reaching out to markets while striving to attract and retain people in a rewarding and inspiring environment by fostering creativity and innovation. ■

New Copper - intensive Age vis-à-vis role of HCL in Atmanirbhar Bharat Abhiyan



Arun Kumar Shukla
CMD, HCL

While the mining industry emerges as the core to India's ambitious growth plan, Copper has been identified as one of the twelve sectors in which the nation proposes to be self-reliant and to emerge as a global supplier. Hindustan Copper Limited (HCL), a Miniratna Central Public Sector Undertaking under the administrative control of the Ministry of Mines, is the only Copper miner in India for last 54 years, owning seven operating Copper mines in the State of Rajasthan, Madhya Pradesh and Jharkhand.

The Copper ore reserve in India is limited to only about 0.31% of the total world reserve. While the smelting and refining capacity of the country is 10.28 lakh tonne per annum, its consumption of refined Copper is around 7 lakh tonne per annum. Due to this huge gap between the mine output and the smelting & refining capacity of India, the lion's share of the raw material, Copper Concentrate, has to be imported by the custom smelters. The total import and net import (deducting export) bill of the country in 2019-20 for Copper ore concentrate and refined Copper & articles were around USD 6324 million & USD 5470 million respectively. The import bill is expected to rise exponentially as the price of Copper is

predicted to move upward and to remain high due to the deficit market. It is also foretold that there may be a huge shortage of Copper in the global market in view of its increased demand, limited growth potential of mine output and threat of downward trend of average Copper grade in ore to be mined. Thus there is a genuine need of extensive capital expenditure for enhancing copper ore inventory, developing and exploring new Copper mines in India in order to reduce the import of the red metal.

In consonance with the Government of India's Aatmanirbhar Bharat Abhiyan, the Company is aligned with the overall strategy of mine expansion and promoting domestic industry by supplying Copper concentrate and reducing import dependency.



Anode Furnace.

Mining sector is one of the key areas that is destined to play a crucial role in our economic recovery as India gets propelled into a phase of rapid industrialization.

In terms of GDP contribution, mining has a multiplier effect – every 1% increase in the growth rate of mining leads to an increase of 1.2-1.4% in the growth rate of industrial production. Mining being a labour-intensive industry has a huge potential for employment generation. It can play a pivotal role in creating job opportunities, mainly in the backward areas which have limited potential for other economic activities.



Refinery Work



Cathode pulling

Presently, there is a rush for Copper all across the globe. Countries around the world have charted out economic strategies to bounce back from the recession induced by the COVID-19 pandemic. The key themes that have

been featured prominently are investments in green technology and digitalisation. Copper plays a pivotal role in the green economy of the future. Clean energy is the fastest growing segment to support electrification, with solar panels and wind turbines requiring around 12 times more Copper than previous generation methods. Electric vehicles use four times the amount of Copper used in internal combustion engines. The 5G network which is regarded as the optimal choice for industry digitization, especially because of mobile network characteristics such as easy deployment and universal access, will also require many more tonnes of Copper.

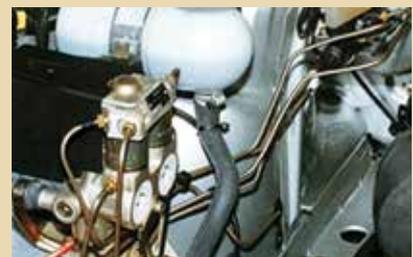
Furthermore, COVID-19 has also brought Copper to the forefront of the healthcare industry due to its antimicrobial properties, adding entirely new sources of demand. Reportedly, even before the pandemic, it was estimated that the sector would drive one million metric tonnes of demand

over the next 20 years. Today, as the world grapples with a pandemic, it turns out that Copper has an important part to play in healthcare, thanks to an unusual property that makes the metal a protector for coronavirus disease. Copper can eliminate pathogenic organisms after a short period of exposure. A recent study reveals that the COVID-19 virus survives for less than four hours on Copper surfaces, compared to up to three days on plastic and stainless steel. This confirms Copper's infection control benefits and more usability in a hospital setting.

The above demand drivers are expected to usher in a new age of Copper as the trillion-dollar, multi-year recovery plans require significant quantities of the red metal that conducts both heat and electricity, and is a key input for global manufacturing, electrical equipment, industrial machinery, and construction.

In India, there is a significant growth potential in Copper

consumption in electrical, transport, consumer durables, building & construction, defence, engineering and other sectors. The per capita refined Copper consumption in India is around 0.5 Kg with respect to the global average of 3.2 kg per capita. Hence there is a large scope for enhancement of Copper consumption in the country with increase in urbanisation, industrialisation and population. The Government of India's initiatives that are expected to accelerate the Copper demand in India are Make in India, 100 Smart City Projects, Metro and Railway projects, 100 GW target for Renewable Energy by 2022, PLI schemes for consumer electronics industry, etc. Copper demand will also be driven by accelerated growth of electric vehicles, affordable housing schemes, rural electrification, and increase in urbanization. Consequently, in sync with the Aatmanirbhar Bharat initiative, it is essential for the country to be self-reliant in Copper to nourish its own industry.



Usage of Copper

Hindustan Copper Limited was incorporated in November 1967 as a Govt. of India Enterprise to take over all projects, schemes and studies pertaining to the exploration and exploitation of Copper deposits, including smelting and refining, from National Mineral Development Corporation Ltd. The main activities of the Company include mining of Copper ore

and production of refined Copper as well as downstream products such as Continuous Cast Copper Wire Rods. HCL has five operating units, i.e., at Khetri (Rajasthan), Malanjkhand (Madhya Pradesh), Ghatsila (Jharkhand), Taloja (Maharashtra) and Jhagadia (Gujarat). While the Unit in Ghatsila is fully integrated (from mining to ore beneficia-

tion to smelting and refining), Malanjkhand & Khetri Units have mining and ore beneficiation facilities, Taloja has only wire rod manufacturing facility and Jhagadia has secondary Copper smelter & Refinery. The Government of India holds 76.05% of the paid-up capital of HCL. The Company is listed in BSE & NSE stock exchanges.



Melting Furnace.



Copper Cathodes



Plant view



Continuous Cast Copper Rod

As a measure to reduce Copper imports and to offer a more reliable supply of Copper to feed the diverse Copper downstream sectors in India including power, construction, automobiles, railways, etc., HCL plans to expand its mining capacity from 3.4 million tonne per annum ore production to 12.2 million tonne per annum in phase-I (under implementation) and from 12.2 million tonne to 20.2 million tonne per annum ore production thereafter in phase-II through expansion of existing mines,

reopening of closed mines and opening of new mines. To keep the production running, the team HCL toiled relentlessly braving the COVID-19 outbreak. Despite the raging pandemic, Malanjkhand Copper Project, HCL's Unit in Madhya Pradesh achieved the milestone of connecting 240 level from both the North and South declines - an important milestone for constructing infrastructure for the 5 MTPA underground mine. Further, HCL proposes to explore new Copper deposits in Rajasthan

(District Alwar, Sikar, Jhunjhunu, Chhitorgarh), Madhya Pradesh (District Balaghat) & Jharkhand (District Singhbhum) and is open to associate with private entities.

As a major step towards import substitution and reducing the nation's dependence on imported Copper concentrate, HCL has signed a long term agreement with one of the Indian Conglomerates for sale of Copper concentrate of more than 60% of its total production. This unique public-private partnership (PPP) aligns with the Government's clarion call for Aatmanirbhar Bharat Abhiyan and will go a long way in building the domestic Copper industry by ensuring efficient utilization of the country's mineral resources in a sustainable manner.

In a bid to nurture the self-generating economy of our nation in synchronicity with the objective of Aatmanirbhar Bharat Abhiyan, the thrust areas of HCL is on a) Expansion of existing mines (Malajkhand in MP, Khetri and Kolihan in Rajasthan and Surda in Jharkhand), b) Re-opening of closed mines (Rakha and Kendadih in Jharkhand), c) Developing new mines (Banwas in Rajasthan and Chapri Sidheswar in Jharkhand), d) Exploration to establish depth and strike continuity of ore body, and f) Measures for sustainable development (utilization of waste rocks, etc.)

Fostering the true essence of self-reliance, our Hon'ble Prime Minister recently emphasized that "Atmanirbhar Bharat" is not just a Government policy but also a national spirit. With the mission of exhorting Atmanirbharta beyond the

mining borders, HCL has taken up several projects like promoting preventive health care, making available safe drinking water facility, promoting education and employment, enhancing vocational skills, livelihood opportunities, promoting environmental sustainability and sports to

empower the locals and garner self-sufficiency in lives of those staying in and around its mining Units. The Company has always strived to integrate its business processes with the social welfare long before Corporate Social Responsibility became a mandate for the organizations.



Self Help Group training in progress.



Inauguration of a Muri making unit for the local community.

Thus, as the world will need the healing touch of Copper to recover from one of the most trying times of mankind, Hindustan Copper Limited, the Copper Miner of India, will continue to play its colossal role in making the nation self-reliant in Copper to help the economy get back on its growth trajectory. ■

AtmaNirbhar Bharat Abhiyaan - HLL Lifecare Limited



K. Beji George, IRTS
CMD, HLL

HLL Lifecare Limited (formerly Hindustan Latex Ltd. (HLL)) is a 55-year-old Govt. of India Enterprise, under the Ministry of Health & Family Welfare (MoHFW). Over the last 2 decades, HLL has transformed – from a Condom Manufacturing Company to Healthcare Delivery Company. While focusing and expanding the core areas – contraception and hospital products – HLL diversified into other areas in healthcare including hospital infrastructure management, procurement consultancy, diagnostic services, Pharma retailing etc. HLL's business motto is to provide high quality healthcare products and services at affordable price.

During the COVID pandemic period, HLL as a Public Sector Enterprise(PSE) has made the following major service contributions and interventions in the healthcare sector, apart from being a major manufacturer of Contraceptives and Hospital products.

Emergency Procurement for COVID-19 management

HLL appointed as nodal agency for procurement and distribution by MoHFW

The first COVID-19 case in India was reported on 30th January 2020, the same day that WHO declared it as a public health emergency of international concern. On 21st February 2020, the Union Health Ministry nominated HLL as the nodal agency for the procurement and supply of emergency medical items. The sudden outbreak of the Covid-19 virus and its repercussions were unprecedented for the country and the procurement and supply task was Herculean to HLL as well. HLL had no previous history of dealing with a pandemic situation of such a scale and magnitude. HLL took up the procurement

and distribution operations as per the directions of the Health Ministry and started working on a project mode at a time when the country was under nationwide lockdown.

On 1st March 2020, two days before the World Health Organization (WHO) spoke of a global shortage of PPE, India too had a shortage of production of Personal Protective Equipment (PPE) coveralls suitable for COVID-19. India was completely import dependent as far as PPE kits were concerned. In January 2020, there were only 2,75,000 PPE kits available with the EMR (Emergency Medical Relief) division of Health Ministry mainly for laboratory use and emergency settings. The Empowered Group-3, (EG-3) therefore, devised a strategy to order imports for addressing immediate needs, parallelly, manufacturers of allied products were incentivised to manufacture essentials and stress was laid on 'Make in India'. The Group proposed the indigenous development of PPEs, N95 masks, ventilators and its electronic parts, extraction kits, swabs, RT-PCR, etc. An outreach programme was launched jointly by Ministry of Textiles (MoT) and MoHFW in this regard, inviting fabric and garment manufacturers to develop suitable product and manufacturing capacities on a war footing. What followed was a remarkable journey of collaboration between governments at the central and state levels, industries and workers to revamp the existing production of quality certified PPEs in India and improve the status in the prevention, care and treatment against COVID-19.

Based on the directions of EG-3, HLL undertook the procurement of PPE coveralls from manufacturers/ suppliers after getting their coveralls tested for Synthetic blood penetration test as per ASTM F1670 and approved by the labs nominated by the

Ministry of Textiles. Today, India manufactures almost 4.5 lakh PPE coveralls and 2.3 lakh N-95 masks per day. India is now second only to China in manufacturing PPE kits. HLL procured a quantity of 151.11 lakh (15.11 million) Coveralls, 249.49 lakh (24.94 million) N95 masks, 102 lakh Gloves (10.20 Million) and 123 lakh (12.30 Million) Goggles during the pandemic time.

HLL also provided end-to-end solution for the Logistics & Distribution of the Emergency Medical items procured. To facilitate the receipt of supplies, their accounting, repacking and timely dispatch of Emergency Medical Items to the State and Central Govt. Institutions, Integrated Warehouses with IT enabled Logistics facilities was set up at 8 strategic locations in India i.e. Chennai, Mumbai, Kolkata, Bangalore, Chandigarh, Delhi, Ahmedabad and Gurgaon. A dedicated team of Nodal Officers in every State and a taskforce comprising of 1510 people were deployed for the purpose of sourcing, logistics, dispatch and data maintenance for the entire procurement of PPEs and other Emergency Items. Emergency supplies were distributed to more than 160 Government Medical Institutions covering 29 states and 7 Union Territories.

Manufacturing Innovations by HLL for COVID-19 pandemic

Govt. of India encountered the spread of COVID-19, by adopting not only Social distancing mechanisms but also by promoting safety protocols and practices which includes effective usage of Hand Sanitizers, Disinfectants, Face Masks and Test Kits for early detection of the disease. In order to boost the agenda of 'Make in India', HLL took measures to manufacture the following essential items to ensure safety during the COVID-19 pandemic.

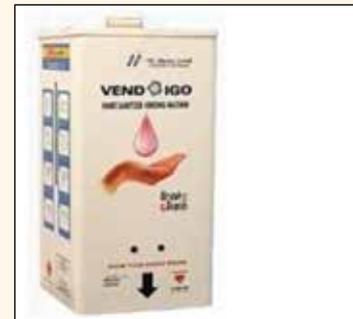
- **Rapid antibody screening kits:** HLL is the first



Makesure Antibody Test kits.

government entity that received the approval from Indian Council of Medical Research (ICMR) for manufacturing and supplying of the rapid antibody kit for COVID-19 detection. The kits manufactured at its manufacturing facility at Manesar, Haryana were validated by National Institute of Virology (NIV), Pune and has also obtained license from Central Drugs Standard Control Organisation (CDSCO). The kits were supplied to various Government Institutions as well as to approved private organizations across the country, under the HLL brand name 'Makesure', for screening and surveillance purpose for COVID-19.

- **Hand Sanitizer Vending Machine** with the brand name 'VENDIGO' was manufactured and it ensured contactless dispensing of sanitizer and has 1500 cycles of operation in a single refill. The same was installed in various Government, Non-government institutions, educational institutions, police departments, etc.



Hand Sanitizer Vending Machine.

- **Portable UV Sanitizer:** Developed in-house portable UV sanitizer, which incorporates UVC (Short wavelength Ultraviolet) light to disinfect and sanitize the items kept inside its cabin for 20 minutes. It is ideal for disinfection of personal belongings such as wallet, handbag, mobile phones and office stationery including files, calculator, office seal etc.



Portable UV Sanitizer.

- **Chitra Swab Collection Booths & Examination Booth:** In technical collaboration with Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST), HLL fabricated Chitra Swab Collection Booths & Examination Booths to provide a line-of-defense for the health workers who work in close proximity with COVID patients.



Chitra Swab Collection Booth.

- **Fabrication of Chitra 'Disinfection Gateway'**, a disinfection tunnel which could be used in public places to reduce viral load on clothing, bags and hands of individuals before entry / exit in technical collaboration with SCTIMST.



Disinfection Gateway.

- **In-house manufacturing of Hand Sanitizers** under the brand name 'Medigard' as per WHO specifications in collaboration with M/s Ordinance Factory Board.



Medigard Hand Sanitiser.

Services rendered during the Pandemic

- As a measure to control the spread of COVID-19 Antibody testing of International passengers was provided at all International Airports in Kerala.
- On 23rd Feb 2021, an exclusive COVID testing facility had been set up at Chennai International Airport catering to both arriving and departing passengers. This facility is NABL accredited and ICMR approved. Both RT-PCR and True NAT PCR testing options are being provided to the passengers.
- In Maharashtra state, HLL started COVID specific parameter testing at 34 district head-quarters through HINDLABS. These tests include detection of IL6, D-dimer, Ferritin, CRP etc. HLL's HIND LABS in Thiruvananthapuram, Mumbai and Nagpur in Maharashtra are also offering RT-PCR testing services to general public.

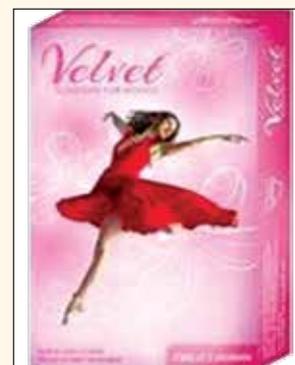
- In partnership with Government of Kerala, HLL introduced a mobile kiosk facility in the city of Kochi to make COVID testing convenient for those worried about going to clinics or hospitals for undergoing the COVID tests, especially senior citizens and those with comorbidities. This kiosk mainly provided Antigen testing and RT-PCR on demand.

HLL's core manufacturing operations

- **Male Condoms:** Initially in the 60's, India was import dependent on prophylactics like condoms. Condoms were imported by a few companies and sold locally. With the establishment of HLL in 1966, Government of India took steps to indigenously manufacture male condoms. Through the decades, HLL has grown as a company manufacturing more than 1.9 billion condoms annually making 10% of the Global Production. MOODS is the flagship brand of male condoms from HLL.



- **Female Condoms:** The R&D division of HLL indigenously developed a low-protein natural latex based Female condom and manufactures it in-house with an installed capacity of 25 Mpcs annually. HLL markets the Female condoms in India and abroad, under the brand name "Velvet" and HLL's FC is one of the four WHO pre-qualified female condoms globally.



Velvet Female Condoms.

- **Intra-Uterine Contraceptive Devices (IUCD):** IUCD provides safe and effective contraception, giving women the time they need to space their pregnancies. T-CARE, COPPER-T 380 is an IUCD manufactured HLL's facility (AFT) setup in technical collaboration with M/s. Finishing Enterprises,



T care and M care.

USA. Also being introduced is MULTI-LOAD M-CARE CU250 - an effective Intra Uterine Contraceptive Device made of polyethylene. The horse-shoe shaped CU 375 IUCD offers smooth, painless entry and the flexible arms improve the comfort and effectiveness of the device.

- **Blood Bags** -Under hospital products division, HLL manufactures Blood Bags with an installed capacity of 12.5 M. Pieces, supplies to both domestic and international markets. HLL has been



Haemopack Blood Bag.

retaining its leadership position for Blood bags in the country with 46% market share in terms of quantity.

- **Intra Uterine Delivery System (IUS)** branded, as EMILY is a Levonorgestrel releasing IUS



Emily IUD.

developed indigenously by HLL Corporate R&D in collaboration with Sree Chitra Thirunal Institute for Medical Sciences and Technology (SCTIMST).

- **Centchroman** (Ormeloxifene 30 mg), the world's first Non-steroidal Oral Contraceptive Pill was launched as SAHELI by HLL in 1991



Saheli OCP.

- **Emergency Contraceptive Pill:** UNIPILL is an emergency contraceptive pill, with 1.5 mg Levonorgestrel in each dose, which prevents pregnancy when taken within 72 hours of unprotected sex.



Unipill ECP.

- **Surgical Sutures:** Sutures are an integral part of any surgical procedure. HLL offers a range of absorbable and non-absorbable surgical sutures for General Surgeries and various other specialties.

- **Sanitary Napkins:** In 2012, HLL committed itself to the nation's Menstrual Hygiene program by setting up its own Sanitary Napkin facility at Kanagala Belgaum District in Karnataka. The current annual production capacity of Sanitary Napkins is 400 MPCs.



Sanitary Napkins of HLL.

- **Sanitary Napkin vending Machine:** Sanitary Napkin Vending Machine under the brand name “Vendigo” has been indigenously designed and manufactured in its own unit in Trivandrum, which provides any time availability and accessibility of sanitary napkins.



Sanitary Napkin Vending Machine.

- **Sanitary Napkin Incinerators,** also designed, developed and manufactured indigenously by HLL, provides the most scientific and easiest method of disposing Sanitary Napkins with the least possible harm to the environment. Till date HLL, has installed more than 35,000 Sanitary Napkin Vending machines and Incinerators across the country. HLL clientele includes CSR clientele, Self Help Groups, NGOs, voluntary donor organisations like Inner Wheel etc.



Sanitary Napkin Incinerator.

- **Menstrual Hygiene Management (MHM) programmes through CSR route:** HLL has conducted Menstrual Hygiene awareness campaigns in 775 schools in Kerala, in association with Kerala State Women’s Development Corporation and around 250 schools in Raichur and Yadgir in Karnataka as part of a CSR project of M/s Mangalore Refineries Petrochemical Limited. The awareness campaign is conducted



Menstrual Cup.

by qualified medical doctors on topics related to safe menstrual hygiene practices. Booklets on Menstrual Hygiene practices were distributed free to the girls while conducting the program. HLL has also ventured into promoting Menstrual Cups, a sustainable alternative to Sanitary Napkin, through various CSR activities. The venture kick started in Alappuzha Municipality in Kerala, where 5000 menstrual cups were distributed among schoolgirls and awareness created around its usage. In future, HLL plans to manufacture Menstrual Cup in-house.



Menstrual Hygiene Management (MHM) Programme in Schools.

HLL's in services

In the year 2015, HLL established AMRIT retail pharmacy stores with the commitment to reduce out-of-pocket expenditure and providing access to Indians in all sections of the society, thereby making a Self-reliant India. As on 15th Mar, 2021, there are 214 AMRIT Pharmacies spread across 26 states/ union territories, selling more than 5200 drugs (including cardiovascular, cancer, diabetes, stents, etc), implants, surgical disposables and other consumables at significant discount of up to 50% on market rates. HLL in the recent past has also ventured into Diagnostic services sector and associated with various state governments as well as setup standalone centers to provide Affordable and state-of-the-art diagnostic services to the public. Along with reducing people's health expenditure, HLL aims to help promote the diagnostics and reagents sector. At present, we have 269 diagnostic centers across 10 states in India, which includes both clinical labs and imaging centers.

Emergency Procurement for Ministry of External Affairs (MEA)

As part of Humanitarian Assistance and Disaster relief, Ministry of External Affairs (MEA), Govt. of India is supplying essential medicines/ consumables to many overseas. The procurement and dispatch of supplies are carried out through MoHFW. HLL acts as the procuring and delivering agency of MoHFW for the medicines/medical equipments/ consumables to be supplied. With the onset of the pandemic, other items like PPE Kits, N-95 masks, surgical items, etc. were also supplied to various

partnering countries to combat COVID-19. HLL has received orders for supply of COVID related items to 104 countries from MEA and has already delivered medical supplies to nearly 100 countries.

Exports as a part of Globalization

HLL's International Business Division had made excellent strides in opening up markets in Latin America, Africa and Middle East. HLL's flagship condom brand 'MOODS' is available in 18 countries and has been supplying condoms to various Government Health Ministries and also in OEM brands. HLL's other products like Blood collection bags; surgical sutures and medical disposables are also available in nearly 20 countries. Recently the division had signed long-term agreement with UNFPA for four products – Male & Female Condoms, Lubricants and ECP in a row for next 3 years, ending 2024.

Conclusion

HLL Lifecare Limited during the last 55 years aims at providing high quality products at affordable prices that touches millions of people across the globe. HLL has always been inspired by the challenges of public health issues around the world and develops products to address the healthcare need. Since inception, HLL has been constantly innovating to create novel products with the help of modern technology so that the benefits of modern healthcare can transform the lives of the common man. HLL lives up to its vision of 'Innovation for healthy generations' and every product of HLL is created through constant research and development that aims at making world-class healthcare affordable and available to the society at large. ■



HLL Corporate Head Office.

IREL:

Self Reliance in Atomic Minerals & Rare Earths



D. Singh
CMD, IREL (India) Limited

IREL (India) Limited, a Mini Ratna, Category-1 CPSE under the administrative control of Department of Atomic Energy (DAE) is a Multi-Unit-Multi Product Company with the mandate to produce and market Atomic Minerals, Rare Earths and other Compounds of Strategic interest. Atomic Minerals are a suite of 7 (seven) minerals which interalia include Ilmenite, Rutile, Leucosene which are titanium bearing minerals, Zircon – a zirconium bearing mineral, Sillimanite – a silicate of aluminium, Garnet - iron-aluminium silicate, and Monazite which is a phosphatic mineral of Rare Earths (RE). The Company has 41 products in its product profile and more than 2200 industries in Private sector, mostly MSEs have been using these mineral products liberated from radioactivity in downstream industry.

Atomic Minerals are used for a horde of applications spanning production of pigments, titanium metal, plastics, aircraft body parts, ceramics, welding electrodes, refractory bricks, sand blasting, water jet cutting, abrasives, etc. RE are performance enhancing material having number of niche applications such as consumer gadgets, electronics,

renewable energy, defence, space, pollution control, petroleum refining, etc. The Strategic Compounds produced by IREL find direct use in the Atomic Power Programme, Space and Defence Sectors of the Country, besides commercial applications such as doping agents. These products are used in low volumes as performance enhancing materials, hence it is very important to carry out operations in this sector sustainably so as to eliminate foreign dependence and this sector is not operated with profit incentivization as the motto.

The operating units are located along the coastal tracts of Chatrapur, Odisha; Manavalakurichi, Tamil Nadu and Chavara, Kerala where these Atomic Minerals and Rare Earths are available. The Rare Earths Extraction Plant (REEP) is located in Odisha while the separated High Pure Rare Earth Plant (HPRE) is located in Aluva, Kerala. The Corporate Research Centre is at Kollam in Kerala which the Corporate Office is located in Mumbai, Maharashtra. IREL has constituted a subsidiary company, IREL IDCOL Limited to harness the Atomic Mineral deposits in Odisha.

Extraction of RE involves five stages, viz. mining, concentration, mineral production, extraction of RE concentrate and obtaining high purity individual RE elements. The concentration of REs in India are not very high. In the atomic mineral deposits, the RE concentration is only around 0.06%, which if compared with China is around 3.7%, thereby making the process of RE extraction all the more difficult. Further the RE resources in the country is mixed with radioactivity, making the process of producing RE concentrate/ separated high pure rare earths resulting in complex process for extraction to achieve the purity level acceptable to industry.

Indian resources of RE are rich in light RE elements and heavy RE elements are available in negligible quantities (traces). However, these heavy RE elements finds a number of applications in the strategic and Defence sectors and are hence considered to be critical elements. Some of the heavy RE elements used for the above application areas include dysprosium, gadolinium, ytterbium, europium, etc. The availability of RE elements in the Indian resources of RE is tabulated ahead.

S. No	Individual REEs	Total RE Oxide (TREO) in Ore (%)	Applications
1.	Gadolinium	0.0007	Strategic application-Nuclear Reactors, Medical, Radiography
2.	Samarium	0.0014	Strategic application-Magnet for Defense and Atomic energy,
3.	Praseodymium	0.003	High Power Magnets & Phosphors,
4.	Neodymium	0.011	High power permanent magnet
5.	Lanthanum	0.012	Cracking Catalysts, Misch Metal Alloys, NiMh Batteries,
6.	Cerium	0.025	Catalysts-Automotive, Glass Polishing
7.	Dysprosium	0.00009	High quality Magnets, Nuclear Reactors, Radiography,
8.	Yttrium	Not available in extractable	Lasers, Ceramics, Stainless Steel, Phosphors, Tinted Glass Application, Jewellery, superconductors,
9.	Europium	quantities/ trace value	OLEDs, Phosphors, Nuclear Reactors, Ceramics and Specialty glass
10.	Terbium		High quality Magnets, Medical, Magnetostrictive Alloys, Fuel Cells, Energy & Electronics
11.	Erbium		Fiber Optic Amplifiers, Glass Application, Ceramics, Nuclear Reactors
12.	Holmium		Glass, Tinted Glass Application, Phosphors, Lasers
13.	Thulium		Tinted Glass Application, Medical, Opto-Electronics & Electronics
14.	Ytterbium		Optical Fiber Application, Geology/Geo-Chemistry, NDT, Solar Cells, Glass and Ceramics
15.	Lutetium		Medical, Electronics, Catalysts in Petroleum industry, X-Rays Phosphors
16.	Scandium		Aerospace, Lighting, Tracing agent in Refineries
17.	Promethium		Atomic Batteries for Pacemakers, Guided Missiles & Radio

Towards making the Country self-reliant in the field of rare earths required for strategic sector, many activities have been taken up, few details of which are narrated in the subsequent paragraphs.

IREL (India) Limited has undertaken the prestigious assignment on behalf of the Government of India to set up a Rare Earth Permanent Magnet Plant in BARC Campus Vizag. The plant will be producing samarium-cobalt magnet based on samarium oxide produced by IREL (India) Limited and will cater to the strategic requirements of DAE, Defence and Space Sectors.

The plant is being set up based on technology developed by BARC,



Perspective layout of Rare Earth Permanent Magnet Plant.

Mumbai and DMRL, Hyderabad. IREL (India) Limited on its part is integrating the two technologies and implementing on plant scale. Necessary statutory clearances

required for establishing the project have been received and implementation of the project on EPC lumpsum basis has started. During the Pandemic period,



Virtual inauguration of Gadolinium facility by CMD, IREL (India) Limited.

IREL (India) Limited has implemented two facilities for producing heavy RE elements viz. Gadolinium and Dysprosium, which are available in the resources in traces. In the atomic mineral deposit, while availability of Gadolinium is around 0.0007%, that of Dysprosium is

only 0.00009%.

These coveted elements find use in nuclear reactors as neutron absorbers and are thus vital for operation of the reactors. In addition, dysprosium is used in neodymium-iron-boron permanent magnet to increase its resistance to demagnetization

and improved performance in high temperature applications. These facilities were established in IREL (India) Limited's unit in Rare Earths Division (RED), Udyogmandal, Kerala.

The dysprosium facility was dedicated to the nation by Shri K. N. Vyas, Chairman, Atomic Energy Commission and Secretary, DAE. The inauguration was done by virtual mode in commemoration of IREL's Platinum Jubilee celebrations in the presence of Shri. D. Singh, Chairman and Managing Director, IREL (India) Limited.

During the pandemic period, IREL also inaugurated the Dysprosium producing facility. The facility was inaugurated by CMD, IREL (India) Limited as a part of the opening ceremony of the Platinum Jubilee.

Not only in the strategic front, the Company has also taken a unique



Inauguration of Dysprosium facility by Chairman, AEC & Secretary, DAE by virtual mode in the presence of CMD, IREL (India) Limited.

global initiative of setting up a Rare Earth & Titanium Theme Park in Bhopal, Madhya Pradesh with the objective of increasing the consumption of rare earths within the country. The theme park will be demonstrating technologies in the value chain of rare earths and titanium in pilot scale to develop the confidence of aspiring industries/ startups for setting up commercial operations and is also aimed at developing the skill sets of the future workmen.

The first stage of the pilot plant will be conversion of rare earth oxides to metals followed by conversion to alloys and finally the end components. This facility will be amongst the first of its kind globally and will set the tune for establishing rare earth value chain domestically.

Mandated to increase the rare earth producing capacity three fold in the next decade, IREL (India) Limited has already put in place expansion activities of its existing operations and is also taking up operations in new areas thereby widening its footprint with a view to ensure raw material security in the years to come. In-line with the above endeavour, IREL (India) Limited has set up its first subsidiary i.e. IREL IDCOL Limited along with a state PSU in Odisha. Nomination as per the stipulations of Atomic Mineral Concession Rules 2016 has been initiated in the states of Odisha and Tamil Nadu. These projects will increase the production of atomic minerals as well as the rare earth bearing ore, which will be the feed stock for increasing the rare earth producing capacity.

From amongst the atomic



Perspective plan of Rare Earth & Titanium Theme Park.

minerals produced by IREL, zircon finds strategic use and is supplied to Nuclear Fuel Complex (NFC), Hyderabad to manufacture zirconium tubes which house the uranium fuel used in nuclear reactors. With the capacity of nuclear power generation targeted to increase over the next

decade, the zirconium supplied by IREL (India) Limited will help in self sufficiency in production of zirconium tubes.

Furthermore, as mentioned above, the other atomic minerals find domestic consumption and the products of IREL (India) Limited are supplied to about 2200 private industries operating in the downstream sector, which are primarily MSEs. So, these sectors will be further supported for their expansion programmes or other similar industries can be set up by startups, thereby increasing the domestic production in the downstream sector.

Thus, IREL (India) Limited will be in a position to supply coveted Rare Earths elements, atomic minerals to meet the strategic requirements of DAE and the Nation, at large, showcasing its commitment towards achieving self-reliance as part of "Make in India", "AtmaNirbhar Bharat". The Company is also poised to expand its capacities to meet the requirement of increase in capacity of the downstream sector dealing with products of IREL (India) Limited. ■

IREL (India) Limited has undertaken the prestigious assignment on behalf of the Government of India to set up a Rare Earth Permanent Magnet Plant in BARC Campus Vizag. The plant will be producing samarium-cobalt magnet based on samarium oxide produced by IREL (India) Limited and will cater to the strategic requirements of DAE, Defence and Space Sectors.

ITI takes Atmanirbhar road to become a leader in Telecommunications segment



R. M. Agarwal
CMD, ITI Limited

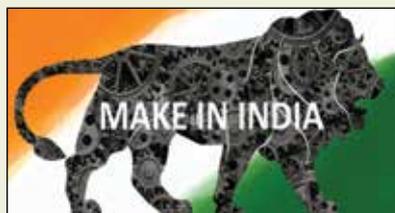
Central Public Sector Enterprises in India, which have a combined net worth of around Rs 12 lakh crore are capable to boost India's GDP to get the economy wheels on the track by rising to the occasion and playing their part in building an 'Aatamanirbhar Bharat'.

Year 2020 has been a challenging year for the Industry in general and also CPSEs including ITI. Though the pandemic situation has badly affected almost the first three quarters of the calendar year, ITI could still muster to make 27% raise in the turnover to clock Rs. 2403 Cr in FY20, the highest ever in the last 10 years. We also registered an impressive PAT of Rs.150 Cr. In a row we have made profit for 3 years after a long drought of 16 years. Not only this, the net worth of the company has become positive and this is a phenomenal achievement. This would not have been possible without the efforts of the employees and the support from the Government. We are on the recovery and revival path. We need to keep up the momentum and steadily move towards much higher targets. Though the first 2 quarters of FY21 are affected by pandemic, the company has a target of Rs.2748 Cr to be achieved in

this financial year. The company has an order book of more than 11,000 Cr. but it is very essential to build this further.

Manufacturing of COVID Products during COVID-19

However, the COVID-19 virus has presented the world with unprecedented health and economic challenges. Our PM's "Vocal for Local" initiative in these turbulent times has helped homegrown businesses heave a sigh of relief. Local products, in-house manufacturing units and supply chains have gained special importance. Being present in the system since a long time and having a deep penetration, we are supporting the development and evolution of this local supply chain.



The Company started manufacturing of Face Shields at its Bengaluru unit. We have already supplied more than two million

face shields and expect to enhance production in the coming months. The face shield provides protection to the facial area including eyes, nose and mouth from sprays and droplets. They proved to be more comfortable and convenient to be worn by people.



The company also manufactured face masks, face mask vending machine, face mask disposal machine, automatic hand sanitizer and manual sanitizer dispenser- a foot operated hand sanitizer fully adjustable for various bottle types in its Mankapur unit. ITI has signed TOT agreement with M/s. Laser Science and Technology Centre (LASTEC), DRDO for "UV Disinfection system" named UV Blaster for manufacturing at Mankapur Plant. UV disinfection system is a mobile UV tower for



rapid and chemical free disinfection of frequently touched and exposed surfaces.

Signing of MoUs

Like every other industry and sector, our Company also faced headwinds from the nationwide lockdown during most of this quarter due to the COVID-19 pandemic. Though ITI through its innovative strategies started exploring new avenues of sustainability and growth. The company has signed various MoUs with market pioneers.

ITI has signed a transfer of technology (ToT) agreement with Defence Research & Development Organization (DRDO) to manufacture portable ventilators at ITI's manufacturing plants. These aims to be supplied to Defence forces, hospitals, and similar institutions in the country.

ITI has signed a Memorandum of Understanding (MoU) with Tech Mahindra, a leading provider of digital transformation, consulting, business reengineering services & solutions, to work together in the areas of 4G & Wireless Technology, Equipment Manufacturing, Smart Cities, Health Care services. The initiative is to build local competence

by synergizing the offerings of ITI & Tech Mahindra to create a next generation wireless network.

ITI with state-of-the-art facilities and capabilities for manufacturing Telecom equipment plans to manufacture eNodeB in its various plants. ITI is gearing up to participate in the 4G tender expected to be floated by BSNL. Similarly, ITI has signed MoU with Tata Consultancy Services (TCS), a leading IT and ITeS services organization to work in different IT Projects and solutions.

ITI has signed a Memorandum

of Understanding (MoU) with Ilantus Technologies to deliver Make-in-India, world-class Identity and Access Management (IAM) solution to government agencies, defence and public sector undertakings to address concerns of cyber threats in the country. Under the MoU, ITI and Ilantus will address the challenges of today's fragmented identity landscape through Identity and Access Management Solution, which is the only solution in the world with all features inside one single product.



Strengthening Army's Communication Network

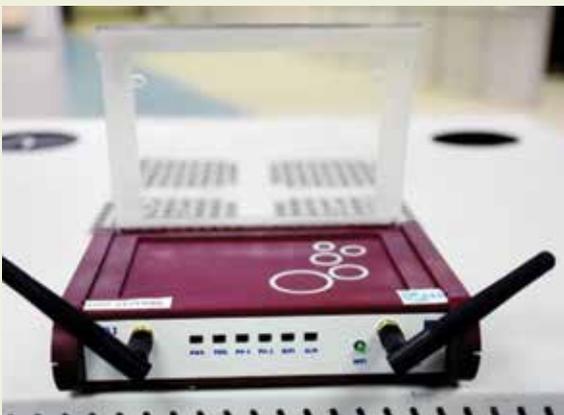
As the first step towards Aatmanirbhar Bharat and strengthen country's communication network for Indian Army, ITI Limited signed Rs 7,796 crore Phase IV Project of Army Static Switched Communication



Network (ASCON) for deploying strategic network for secured communication across the country and subsequent maintenance for next 10 years. Having successfully implemented and maintaining the first three phases of ASCON project for last 3 decades, we have an edge in implementing this prestigious project. ASCON IV project at this juncture certainly gives a big boost to Indian army and ITI is very much excited to roll out this network. The project is army's telecom network spread across different terrains in the northern, north-eastern and western regions. The project is an IP MPLS based communication network with Microwave Radio, Satellite and Optical Fiber Network as media. The project includes installation, commissioning and maintenance of telecom equipment like IP/MPLS Routers, NMS, Mobile Nodes, Test Equipment and civil works for providing the complete infrastructure at various sites and roll out optical fiber network of about 11,000 kms.

A Big Leap in Make-in-India & Digital India

This year, company's most coveted projects GujNet and NFS are on the verge of completion



& MahaNet is also being pulled up for timely completion. The OFC laying project of Airtel in six states, which is the first ever project for private operators, is also being executed with a great focus. With the changed strategy of manufacturing, we have planned to utilize the infrastructure set up for HDPE, OFC, Solar Panels to the maximum extent, from which we have already started supplying to MahaNet & ASCON Phase IV projects and any business opportunity that is coming towards ITI. ITI has established OFC manufacturing plant at its Raebareli unit. ITI has installed capacity of 15,000 Kms per annum of 24F ADSS OFC and 5,000 km 48F Ribbon type OFC. As only 25% of the mobile towers are connected with optical fibre, fiberization of the remaining towers will be taken up in a big way. With the introduction of technologies like 5G, fiberization gains more importance. It is expected to see huge domestic demand of OFC to establish Pan India communication network. In pursuance to Atma Nirbhar Bharat Abhiyan, ITI plans to enhance the capacity of OFC manufacturing facility to create sufficient optical infrastructure in India and to mass productionize OFC during the current year.

This would also help us engage the infrastructure we have established effectively, thus intensifying the indigenous manufacturing giving a boost to the Aatmanirbhar Bharat Abhiyan. To enhance revenue, apart from the projects, the company also emphasizes on selling the products manufactured in ITI to its various customers in addition to supplies for the projects being executed by ITI.



The company has a rich product portfolio where it manufactures and sells Micro PC, Smart Cards, 3D Printing Machine & Services, Anti-Covid products, Solar Street lights, Solar Panels, Smart Energy Meters etc. In-line with the policy of "Make in India", ITI is manufacturing above mentioned electronic, communication & IT, encryption, Smart energy meters etc and supply to various customers such as Defence, BSNL, MTNL, BBNL, EESL and other Government Organizations. We have entered into agreements with various Companies, for manufacturing various products in India.



ITI Limited is running a Tier 3 Data Centre with 350 Rack capacity for the past 12 years. There are about 26 customers that includes Banks, Co-Operative societies, and PSUs who are currently



availing these services.

ITI is expanding its Data Centre facility in order to handle a capacity of 1000 Racks. As of now 343 rack space is ready for offering. Three customers have been on-boarded for Cloud and Co-location. The Datacentre facility is Tier 3 certified ensuring redundant DG set, UPS and Transformers and chillers. CMMi level 3 certified and ISO certified under various categories viz. ISO 27001, ISO 20000, ISO 27017 and ISO 27018. The Data Centre has been successfully audited for Meity Empanelment.

ITI offers Various services like Co-location, Managed Co-location and Cloud services. Cloud services include IaaS, PaaS and SaaS. Email, Internet and back up services are also part of the offering. The Data Centre is well connected with multiple ISPs ensuring high availability of Connectivity. The customers are also offered seating facility for their maintenance staff and a NOC room for monitoring the performance.

ITI data Centre is located in a secured factory environment and is also provided with additional security which is specific to

Data Centre. The BMS- Building Management System enables the duty staff to continuously watch the movement of personnel through CCTVs. The BMS also keeps tab of the real time parameters of facilities like A/C, UPS, DG Sets.

PM Wani: As part of PM WANI initiative, the company has already manufactured 1000 Nos of Wi-Fi Access Points in collaboration with C-DoT and expects to roll out more in the coming days.



Upcoming Technologies

Along with the existing orders & projects, for longer sustenance, the company has already planned to enter in the upcoming technologies like 4G & 5G, Cyber Security, AI, E/V Band Radios, Secure Routers and other prospective areas. The company has garnered partnership with

leading companies to address some of these areas. Along with the technology, the competent human resource is also an essence. We are focusing on building capacity by recruiting new blood coupled with expertise in the domain. The initiative is to build local competence by synergizing the offerings of ITI & Technology partners to create a next generation wireless network. The Company with state-of-the-art facilities and capabilities for manufacturing Telecom equipment plans to manufacture eNodeB/RAN in its various plants. ITI is gearing up to participate in the 4G PoC & tender expected to be floated by BSNL.

The company, in near future looks to consolidate the significant milestones achieved, looks for improved revenue streams, strengthening our capabilities, enhancing value addition in each project and diversify into new technology areas. The company, with its sincere approach in telecommunications business that powers the current as well as emerging trends & solutions that support the AatmaNirbhar Bharat initiatives, aims to create niche position in the ever changing Telecom & Defence market. ■



MECON Limited: Realizing the vision of 'Atmanirbhar Bharat'



Atul Bhatt
CMD, MECON

MECON Ltd. is India's frontline Design, Engineering & Consultancy, Project Management Consultancy and Contracting CPSE under Ministry of Steel, Govt. of India.

Being an Engineering consultant, MECON has always played a significant role in the development and expansion of Indian's manufacturing excellence. Presently, MECON is shouldering the responsibility of making a 'Master List of all items being imported by Steel industry' and 'Roadmap for domestic manufacturing/indigenization of those items', under the guidance of Ministry of Steel.

MECON's strength in promoting India's manufacturing excellence lies in the fact that MECON can develop manufacturing drawing of any equipment from available basic engineering and by reverse engineering. MECON can convert drawings of other foreign standards into Indian standard with same fits and tolerances for the ease of manufacturing in India. MECON has an experienced pool of design engineers who can indigenize the equipment and spares which are currently being imported. MECON already has a

vendor base for manufacturing of equipment in the area of mechanical, hydraulics and electrics.

MECON is all geared up to provide its services in line with the Government drive for 'Digital India'. Using modern digital techniques like Industry 4.0, MECON has ready to offer Smart yard solutions to steel manufacturers for automated raw material management in the yard using state-of-the art technology.

Large Blast Furnace technologies in the country have been coming from international sources causing dependency on foreign suppliers and resulting in loss of foreign exchange. There was an impetus from the Ministry as well as the iron & steel industry in general towards development of indigenous technology for large Blast Furnaces that can take care of the problems faced by Indian operators and produce hot metal in a more environment friendly, efficient & economic way. Accordingly, with a view to have self-reliance in the field & taking a cue from the Governments flagship "Make in India" program, design development work of 4,250 m³ Blast Furnace has been undertaken by MECON suiting to Indian raw materials. The size of the Blast Furnace selected is apposite with the future need of adding large Blast Furnace production modules in the country during the course of prospective expansion plan of the Steel Industry. This Blast Furnace has been branded as 'Loha 4250'.

ANGARA 7.1 - Design & Engineering of 1 MTPA top charged recovery type Coke Oven Battery 7^m tall, useful

volume- 49.8 m³. Advantage of this Battery: a) Increase in productivity, b) Utilization of less space & energy for producing 1 t of coke, c) Less pollution. This can match the requirement of coke for 4000 to 4500 m³ Blast Furnace.

With the experience gained over the years in the field of Blast Furnace, Coke Oven Battery and Pelletization, MECON has carried out indigenous design development of the following:

- **Blast Furnaces (BFs)** - MECON has already supplied more than 20 nos. of small blast furnaces and demonstrated achievement of very high productivity. MECON designed furnaces have achieved benchmarks in all important performance parameters. Likewise MECON is capable of designing and engineering of larger size blast furnaces and has already indigenously developed large size blast furnace "LOHA 4250" and is ready to offer to domestic entrepreneurs. MECON expertise is manifested in their large capacity upgradation project, wherein projects have been realised in stringent time schedule like BF#1 of JSW Dolvi (2700 m³ to 4350 m³ upgrade in 140 days) and BF#1 JSW Tornagallu (1250 m³ to 2350 m³) and 2 MBFs of Tata Metaliks, 1 MBF of Usha Martin etc.
- **Sinter and Pellet Plants** - MECON is capable of offering design engineering and consultancy services for mid-sized sinter plant and pellet plant including manufacturing drawing for non-standard equipment/components as well as

MECON's strength in promoting India's manufacturing excellence lies in the fact that MECON can develop manufacturing drawing of any equipment from available basic engineering and by reverse engineering. MECON can convert drawings of other foreign standards into Indian standard with same fits and tolerances for the ease of manufacturing in India. MECON has an experienced pool of design engineers who can indigenize the equipment and spares which are currently being imported. MECON already has a vendor base for manufacturing of equipment in the area of mechanical, hydraulics and electrics.

other equipments on EPC basis. While detail engineering and consultancy services can be offered for any size of sinter and pellet plants, MECON is on its way to develop and build indigenous design capability in larger size sinter plant and pellet plants also.

- **Coke Oven Battery** – MECON's indigenously developed top charged coke oven battery up to 7m tall is a time tested proven design and matches best in the world in terms of various process and technology parameters. In recent times MECON has further made improvement in design with upscaling in capacity to offer Steel fraternity in India new top charged 7.0 m tall battery called "7.1A Angara" with Computerized Oven Heating System Control (COHC) and increased width and capacity reaching 1.0 Mtpa. In view of the need to reduce coking coal imports by shifting to stamp charged coke oven batteries in India, MECON has parallelly started development of stamp charged coke oven battery of its own in response to "Atmanirbhar Bharat" policy formulated by Govt. of India.

In addition to the above, MECON is all geared up to provide its services in line with the Government drive for 'Digital India'. Using modern digital techniques like Industry 4.0, MECON has ready to offer Smart yard solutions to steel manufacturers for automated raw material management in the yard using state-of-the art technology. ■

Initiatives by MIDHANI on AtmaNirbhar



S. K. Jha
CMD, MIDHANI

MIDHANI is one of those few organizations in the country that have remained dedicated towards its goals for which it was established. MIDHANI is doing exceptional work in the field of defence, space and energy. MIDHANI's role towards fulfilling the requirements of India's strategic needs is admirable. Established in 1973, 48+ years of experience in the manufacture of critical materials for strategic applications of India. Our portfolio comprises of Super Alloys (Ni, Co, Fe), Special Steel & Ti&Ti-based alloys and continuously growing in the metal sector.

MIDHANI has travelled a long road through many ups and downs and slowly emerged as a 'National Centre for Excellence' in advanced metals and alloys. MIDHANI aspires to achieve greater heights by contributing more towards indigenization so that our nation becomes "AtmaNirbhar" in the truest sense of the term.

MIDHANI has been part of several programs of national importance. Recently have contributed in development of material for AUSC Project, Adour disc for Jaqar Aircraft, low pressure turbine for adour engine, satellite launch vehicles (PSLV, GSLV-MkIII, Chandrayaan 1 & 2 etc.) and recently started working on Gaganyaan program.

Midhani's Contribution under Atma Nirbhar Bharat

Contribution in space

Over the years MIDHANI has developed various High-performance stainless steel, special steel, ultra-high strength steel, super alloys & titanium alloys for space sector and contributed in various prestigious launch programme for ISRO like PSLV, GSLV, GSLV Mk-III, Chandryan¹, Chandryan², Mangalyaan and Gaganyaan. MIDHANI is key supplier of material for all the 50+ launches of ISRO.

Development of Ultra High Strength steel for Gaganyaan

First consignment of Ultra High Strength Steel for Ignitor box and Cobalt alloy for Throat Sitting Ring delivered by MIDHANI for Prestigious Human Space Program of ISRO "Gaganyaan" after meeting all stringent quality requirements.



Dr. S. K. Jha, CMD, MIDHANI seen flagging off first consignment of materials for "Gaganyaan" program.

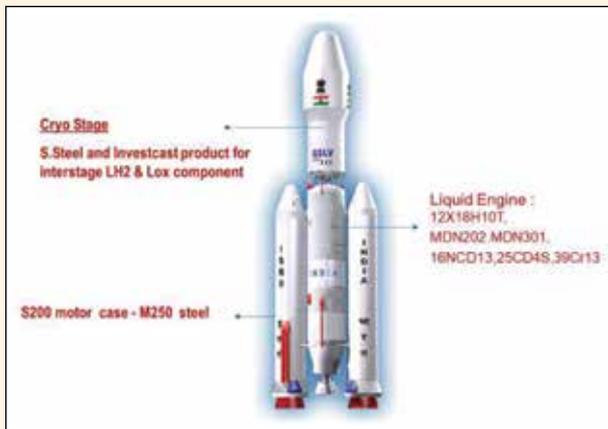
Manufacturing of Titan31 ELI large size forged slab for Gaganyaan: First time MIDHANI has manufactured the slab of - 170 thick X 1540 width X 2050 Length mm (~ 2.5 T) through slab forging in 3 directions which is largest ever in manufactured in INDIA.



Special Steel & Stainless steel for PSLV



Special Steel and Stainless Steel for GSLV MKIII



Various Investment Cast Products Developed for ISRO



Contribution in Defence Sector

Development of High-pressure compressor discs for Jaguar Military Aircraft

In first of its kind, under “Make in India” program MIDHANI has successfully delivered 20 sets of isothermally forged titanium alloy high pressure compressor discs for compressor of Adour MK 811 Engines for jaguar military aircraft with completely indigenous technology. The discs were Isothermally forged to Near Net Shape (NNS), forged and heat treated to achieve desired properties.



MDN 9201 alloy development for Helicopter programs of HAL

MDN 9201 is a low carbon, low alloy (0.17C-1.5Cr-1.5Ni) steel. It is typically used for parts requiring a through-hardening capability up to 40 mm in nominal thickness and subject to rigid magnetic particle inspection standards.

The alloy is used extensively in helicopter transmission assemblies’ (power transmission gears and pinions) in helicopter for different projects like ALH, LCH & LUH.



Indigenized Designed and Manufacturing of Armoring Panels For M-17 Helicopter

MIDHANI has developed Composite Armouring Solution for Helicopters engaged in Military operations & other missions. Indigenously developed panels by MIDHANI are cheaper by 35%.



Development of High strength Precipitation Hardening Stainless Steels (MDN 465) for aerospace applications



Fasteners for aerospace.

Development of Rolled Homogenous Armor steel (MDN 30CND8 Mod) for Penetration Test of Missiles

RHA steel indigenously developed under 'Atmanirbhar Bharat Programme' as it is being imported by BDL. RHA steel is a heat treatable steel which has at least 1.8% Cr, 1.8% Ni, and 0.3% Mo as strengthening alloy elements. It is usually supplied with quenched and tempered condition with a typical tensile strength of 1100-1300 N/mm². RHA steel used for general components which require high strength & toughness and good hardenability. It is especially suitable for heavy duty parts in the defence sector for testing the penetration depth of missiles.



Representation of penetration testing.

T-90/T-72 Gun Barrel – Improvement of mechanical properties by modifying the chemistry

MIDHANI has successfully indigenized gun barrels for Indian Field Gun, T72, Main Battle Tank Arjun, 155 mm Field Howitzer (Bofors), and T90. Nearly 2000-gun barrel forgings for T72 tank have been supplied to ordnance factories.

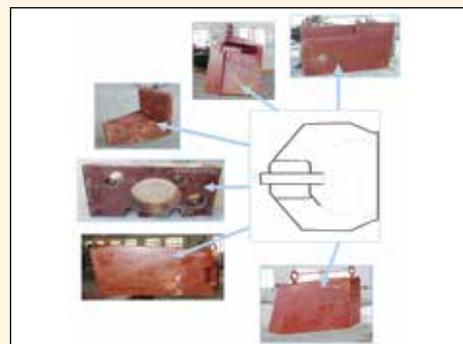


Battle Tank.

Development and production of Ultra high strength and high toughness low alloy steel MDN 173 plates and sheets for tank armouring:



MBT – Arjun.



Armour Modules

Development of Large size Titanium Casting for Naval applications

For the first time in the country, under “Make in india” program, MIDHANI has developed 74 kg titanium casting for naval application.



Titanium Castings.

Innovative Products Developed

Indigenization of large size tubes for NALCO

Large size tubes of alloy steels are required for various applications in the country. MIDHANI has identified alloy steels tubes (known as roll shells) being imported by NALCO. These have size of OD 1013 ID889 and L 1867 mm.

Development of Bomb shell assembly for Indian Air Force

Three types of Bomb Shell assemblies used by Indian Air force namely 1000 lbs, 450 kg. & 250 kg for Ordnance Factory were successfully developed, assembled and painted.

MIDHANI joins the fight against COVID-19

During COVID-19 crisis, MIDHANI has developed and supplied Nickel Wire (0.16 mm) with purity ~100% which was critically required for the manufacture of Oxygen sensor pertaining to the “Critical Core Ventilator”.

An oxygen sensor monitors the oxygen concentration of the gas to be delivered to the patient – an important, essential function. The correct operation of the connected oxygen sensor is automatically checked at regular intervals by the ventilator’s internal electronics.

Atma Nirbhar Abhiyaan Celebration at MIDHANI

MIDHANI mission statement reads: “To achieve Self Reliance in the research, development, manufacture and supply of critical alloys and products of National Security and Strategic Importance”. Since inception, MIDHANI has focused efforts on indigenisation of materials for programs of national importance. To encourage AtmaNirbhar Bharat, Ministry of Defence had organised week long celebration ‘AtmaNirbhar Abhiyaan’ between 7th-14th August 2020 to promote indigenous development of materials & equipment to achieve Self-Reliance in Defence manufacturing. During AtmaNirbhar Abhiyaan, MIDHANI had conducted several events such as webinars on Export Promotion and Opportunities for MSE & Startup. Subsequently, MIDHANI booklet “Contribution towards AtmaNirbhar Bharat” was unveiled during the week.

On 10th Aug 2020 with the inauguration of “Centre of Excellence (CoE) – Special Materials” at MIDHANI by Shri. Rajnath Singh, Hon’ble Defence Minister of India in the august presence of Shri Shripad Yesso Naik; Hon’ble Minister of State for Defence, Dr. Ajay Kumar; Secretary Defence, Shri Rajkumar; Secretary Defence Production, Dr Sanjay Kumar Jha; Chairman & Managing Director (MIDHANI) and a host of dignitaries through Video Conference.



The motto of the facility is “Skilling India for AtmaNirbhar Bharat in Special Materials”. CoE will closely work with R&D Laboratory, Academia, Private industry & Ministry of Skill Development & Entrepreneurship towards indigenization of materials for Defence, Space, Aerospace, Nuclear & Other Strategic sectors in India. The facility shall impart training to women, young engineers, diploma & ITI

students & underprivileged sections of the society (SCs, STs, OBCs, EBCs etc.) to enhance their employability. State-of-the-art infrastructure including training centre, computer lab and technical information centre for about 200 people is available at the facility.

On 11th Aug'20, CMD (MIDHANI) inaugurated e-Office System to facilitate a simplified, responsive and transparent working of all departments in MIDHANI.

On 12th Aug'20, CMD (MIDHANI) inaugurated

industry webinar on exports to promote GoI mission of achieving Rs 35,000 Cr. of exports by FY 20-25.

CMD elucidated about MIDHANI's contribution towards self-reliant India in strategic sectors namely Defence, Space & Energy. He invited all participants to collaborate with MIDHANI on special materials, new technologies and value added products. AtmaNirbhar Bharat celebration at MIDHANI was concluded on the eve of Independence Day i. e 14th Aug'20 with the unveiling of AtmaNirbhar Bharat Booklet



Dr. S. K. Jha, CMD and Dr. Upennder Vennam, CVO unveiling "Contribution by MIDHANI towards Atmanirbhar Bharat" a booklet on Atmanirbhar Bharat.

Way Forwards

In the present global scenario, diversification, expansion, modernization initiatives play a vital role in the growth and sustenance of any organization. MIDHANI is no exception. MIDHANI has commenced phase wise modernization and expansion programme for capacity and technology addition at its existing Hyderabad facility. And Exclusive facilities of Armour plant has been set up at Rohtak, Haryana, will focus on the local and global demand for body and vehicle armouring.

These initiatives will not only enhance the production capacity but also enable MIDHANI to achieve increased product and process capabilities in its pursuit to making India self-reliant in strategic materials. In days to come, MIDHANI has to play a crucial role in Government of India initiatives towards Atmanirbhar Bharat and indigenization of technology in defence sector by giving greater impetus to manufacturing variety of special alloys indigenously.

MFL:

Atmanirbhar Bharat



U. Saravanan
CMD, MFL

Madras Fertilizers Limited (MFL) is the only PSU in the South India producing Urea with RLNG. It also produce NPK Complex fertilizers & Bio Fertilizers and markets to the Farmers of Southern India with a brand name of "VIJAY" covering Tamil Nadu, Puducherry, Telangana, Andhra Pradesh, Karnataka, Kerala and Andaman & Nicobar Islands.

Initiatives taken by MFL

Minimizing the Import Bill

To minimize the import bill, MFL has taken up replacement of Urea Reactor vessel liner and completed with Indigenous expertise at a lesser cost of Rs. 3.26 Crs and in turn made a considerable saving of Rs. 3.74 Cr. This event made us more confident on self-reliant, self-sustaining and

self-generating economy and explored further.

For the year 2019-20 itself, MFL has reduced the import bill to a tune of Rupees 14.695 Crs, by utilizing the indigenous components such as spares for Prill tower fan blades, Urea Reactor liner renewal job, K1901 LP/HP Compressor Rotor spares etc., The details are as under:

Rs. in crores

DESCRIPTION	IMPORT VALUE	INDIGENOUS VALUE	PROJECTED SAVINGS	ACTUAL VALUE	ACTUAL SAVINGS
Repair & Return of K 1901 LP/HP Compr Rotor	3.5	1.5	2	1.1	2.4
H 151A Urea Reactor liner replacement	7	3.26	3.74	3.26	3.74
Coupling for PC Boiler ID fan	0.1	0.03	0.07	0.025	0.075
Prill tower Fan blades	0.09	0.01	0.08	0.01	0.08
Top lid Gasket for Urea Reactor	0.4	0.15	0.25	0.15	0.25
Stuffing box assembly for Carbomate pump	0.42	0.08	0.34	0.08	0.34
Repair & return of K1901 Turbine rotor	6.5	4	2.5	3	3.5
Carbomatepump stuffing box barrel	0.35	0.04	0.31	0.04	0.31
Repair & return of K1603 Turbine rotor	7.5	4.9	2.6	3.5	4
Total	25.86	13.97	11.89	11.165	14.695

As per the directive of Department of Fertilizers on the subject of Atmanirbhar Bharat Abhiyan, manufacturing of two products have been identified viz. Liquid Nitrogen & Ammonium Sulphate which are under study phase to take up in Joint venture mode.

Following are the steps taken to reduce usage of Chemical Fertilizers & to promote Organic Farming:

- MFL is manufacturing Organic products like Biofertilizers with different strains like Azospirillum, Phospho bacteria and Rhizobium and marketing Neem seed extract Azadiractin based bio Pesticides for the past 20 years.

- Under “Basket approach”, from 2011-12 onwards, MFL started trading of Organic fertilizers – a product from animal/ plant bio mass/ excreta.
- Under “Swachh Bharath Mission”, MFL is aggressively promoting & marketing City Compost, a product from City/ Municipality Waste has been undertaken since 2016-17.
- MFL is continuously imparting knowledge to minimise usage of Chemical Fertilizers and to promote Organic Farming by conducting Field Demonstration for Bio & Organic Fertilizers, Direct farmers contact, Dealers training program, Exhibitions, Krishi Melas, etc.,

- MFL organised the following programs during Apr '20 to Feb '21:

Soil Sample Analysis	3465 Nos.
Direct Farmers Contact	20451 Nos.
Bio Fertilizer Demo	44 Nos.
City Compost Demo	49 Nos.
Organic Manure Demo	36 Nos.
Training Programs	7 Nos.

MFL is committed to enhance Agricultural productivity through imparting proper awareness to the farmers for effective farming and using right choice of fertilizers. ■

NEEPCO:

Atmanirbhar Bharat



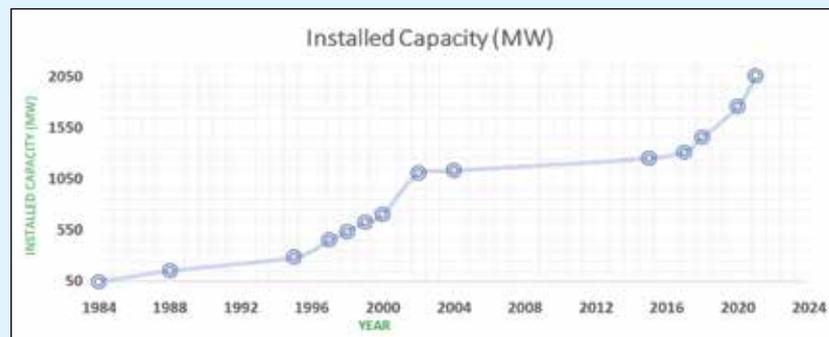
V. K. Singh
CMD, NEEPCO

Electricity consumption and access are strongly correlated with economic development. Previously around 95% of electricity supply was publicly owned. The bulk of this came from State Electricity Boards (SEBs), special development agencies such as DVC, Public Sector Enterprises such as NTPC, NHPC and the Nuclear Power Plants under the direct control of Department of Atomic Energy. Small percentage of electricity supply was from private utilities.

NEEPCO came into being in 1976. Its first power project, Kopili H.E. Project at the border of Assam-Meghalaya was commissioned in 1984. NEEPCO's present total installed capacity is 2057 MW which includes 1525 MW in Hydro, 527 MW in Thermal and 5 MW Solar with an average weighted tariff of Rs 3.3/Unit.

NEEPCO's growth over the years

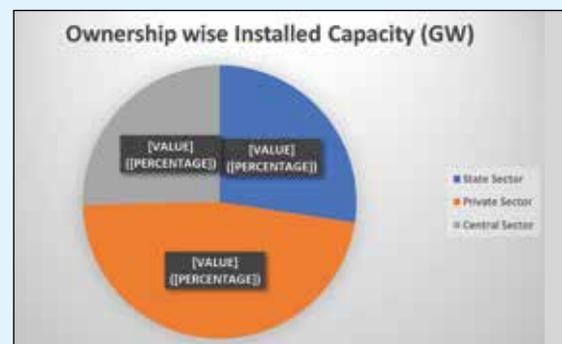
The electricity sector in India witnessed reformation since 1991 with introduction of sectoral reform. To expedite reforms in the power sector, the "Electricity Act, 2003" was enacted to consolidate the laws relating to generation, transmission, distribution, trading and use of



electricity and generally for taking measures conducive to development of electricity industry. The Act has enabled an environment that fosters huge investment in the power sector for capacity addition.

India is the third largest producer and the third largest consumer of electricity in the world after the US and China with an installed capacity of around 379GW and yearly generation of approximately 1220 BU per year, the per capita consumption since 2006 has increased from 631 unit to 1208 unit in 2019, showing an increase in electricity demand and growth of the power sector. Although generation has grown more than a hundred-fold since independence, growth in demand has been even higher due to accelerating economic activities.

Atmanirbhar Bharat Abhiyan or self-reliant India campaign is the



vision of new India envisaged by the Hon'ble Prime Minister Shri. Narendra Modi. The aim is to make the country and its citizen independent and self-reliant, the five pillars being economy, infrastructure, technology driven systems, vibrant demography and demand.

Growth in economy leads to growth in electricity demand/generation which in turn leads to further industrialization creating a virtuous cycle. The growth of the Indian power sector will entail

exponential demand of electrical equipment. To make India, a country of choice for production of electrical equipment by balancing exports and imports, the public procurement (Preference make in India) Order, 2017 (Revised) will promote "Make in India"/ domestic manufacturing, making the country self-reliant. Domestic manufacturing will offer multiple opportunities to the MSMEs by becoming part of the ecosystem and act as ancillary units for large enterprise to support the system in growth. Procurement by NEEPCO is being done to meet the broader objectives of the Government and to meet targets.

NEEPCO's efforts toward Self Reliant

NEEPCO with its installed capacity of 2057 MW caters approximately 45% of the total demand in the North Eastern Region (NER) of India. Project development has provided visible socio-economic benefits.

Notable efforts

- In FY 2020-2021 energy generation (7.2 BU) is around 39% of the total energy supplied (18.3 BU) in NER.
- Commissioning of the largest Hydro Power station in the NE region, the 600 MW Kameng Hydro Electric Project in the remote area of Arunachal Pradesh despite serious disruption in supplies and expert services caused by Corona Lockdown in FY 2020-21. The plant will completely change the power landscape of the entire North East and will make Arunachal Pradesh a power surplus state. Power from Kameng is presently being supplied to the North

Eastern States, UP, Haryana, Chhattisgarh and Nepal.

- Given the country's commitment to the Paris agreement on climate change, and the enabling measures to promote the hydro power sector, it makes sense to focus on labour intensive hydro segment for capacity addition. The hydropower industry can add jobs along the supply chain, from manufacturers to construction workers to plant operations' and maintenance. Hydro projects of varying capacities totaling 2477 MW are identified and being pursued for allotment. Around 4215 MW of Hydro-projects have been allotted to NEEPCO and are under construction pipeline. NEEPCO's energy pathway will define its growth, securing livelihoods

and combatting climate change. Reconstruction, Renovation and Modernization of 200 MW Kopili HEP is presently in progress and construction of an 85 MW hydro project is expected to commence immediately on receipt of Techno Economic Clearance.

- Synergy between NEEPCO and its new promoter i.e. NTPC is being utilized to bid for many power development projects.
- Under the Saubhagya Schemes of the Government of India, 6242 and 5366 households have been provided with electricity connections in the South Tripura and Sepahijala districts of Tripura.
- Adherence to the public procurement (Preference Make in India) policy, except for some propriety items of thermal plants. Timely payment to MSMEs vendors and service providers.
- Extension of contractual obligations up to 6 months without costs to contractor in compliance with the Atmanirbhar Bharat Economic package.
- Relief to the existing contractors facing liquidity problem due to lockdown based on application, who have otherwise fulfilled contractual obligations by reducing the performance security. Relaxing norms for submission of Bid Security providing relief to the prospective bidders for new tenders.
- Creating awareness on self-sustainable development methods like Rain water harvesting, waste management, afforestation in vicinity of plant areas.
- Power plants of NEEPCO are spread across the North East

NEEPCO came into being in 1976. Its first power project, Kopili H.E. Project at the border of Assam-Meghalaya was commissioned in 1984. NEEPCO's present total installed capacity is 2057 MW which includes 1525 MW in Hydro, 527 MW in Thermal and 5 MW Solar with an average weighted tariff of Rs 3.3/Unit.

Region with predominant tribal population. CSR activities focuses on health, education, rural infrastructure development, clean drinking water, sanitation and sustainability programs which ushers in Atmanirbhar. (Self-reliant).

- Imparted training to 1000 youths of North Eastern Region in various trades towards bridging the skill gap in India under the flagship programme “National Skill Development Mission”. NEEPCO has also partnered in the establishment of an IIIT in PPP mode, at Agartala, Tripura.

Emerging Technologies, Research & Development and the way forward

Increase in variable renewable energy(VRE) production from wind and solar sources is expected to cause much higher volatility in the electricity system. Grid operators must constantly balance demand with supply to keep the system stable. Decentralized solutions, such as batteries, and demand response are expected to provide short-term flexibility. The new model for using the pump storage power plants (PSPs) in combination with renewable energy has led to a revival of the technology. More focus on state-of-the-art renewable technologies of Green Hydrogen, Stored Energy at Sea (StEnSea), airborne tethered devices for harnessing wind power etc. needs to be prioritized.

NEEPCO’s existing dams are equipped with state-of-the-art dam safety monitoring system which includes installation of Global Navigation Satellite System (GNSS) Equipment, Geodetic

NEEPCO’s existing dams are equipped with state-of-the-art dam safety monitoring system which includes installation of Global Navigation Satellite System (GNSS) Equipment, Geodetic Equipment, Seismic Sensors, dam safety monitoring software. The system is providing 24x7 real-time information / data for monitoring the safe performance during normal operation by providing more comprehensive information and to manage or predict unsatisfactory performance.

Equipment, Seismic Sensors, dam safety monitoring software. The system is providing 24x7 real-time information /data for monitoring the safe performance during normal operation by providing more comprehensive information and to manage or predict unsatisfactory performance. Real time hydro meteorological monitoring system have been established in almost all the catchment areas of hydro plants to improve on hydrological forecasting, particularly in the upper reaches of rivers; provide flood alerts; and integrate stream flow

predictions with weather forecasts to advance the lead time for flood management.

NEEPCO in association with SECI is involved in the study of development of PSPs in the abandoned coal mines and Ladakh Region. Successful implementation of PSPs will induce the much-needed flexibility, reliability and stability to the power system.

Process is ongoing for teaming up with premiere organizations for implementation of predictive analysis platform using pattern recognition-based failure analysis driven by state-of-the-art Machine learning and Artificial intelligence (ML&AI) with focus on Big Data Analytics, Deep Learning, IoT for timely alerts.

Research and development must be a priority focus and should be part of co-ordinated and collaborative effort by Industries, Utilities, Research Institutions, and Universities in areas such as emerging and future technologies, which are crucial to meet the Country’s climate goals and to remove dependence on Imports. Research & Development projects of NEEPCO are based on need and area of activities within the permissible resources.

Self-sufficient villages are key to India’s self-reliance. Electrification of rural areas with renewable technologies such as small hydro, rooftop solar, and biomass have the potential to accelerate creation of employment and provide additional income to farmers. Finally, with rising role of technology, renewable energy deployment, it only makes economic sense to invest in developing and updating skill for a self-reliant India. ■

NRL

Bio Refinery and future of Bamboo



S. K. Barua
MD, NRL

Assam Bio Refinery Private Limited (ABRPL), a joint venture of Numaligarh Refinery Limited with Finnish Collaborators is likely to commission its 2G Bio Refinery Ethanol plant by 3rd quarter of next year and will become the largest consumer of raw bamboo in the state of Assam. The plant will require approximately 2 Crore bamboo poles annually. The ideal bamboo species would be 'Jati', 'Makal' and 'Bhaluka' bamboos.

With such assured demand, bamboo farming will be a gainful proposition for the farmers of the state particularly those farming in the belt of Central Assam as well as the parts of Nagaland, Arunachal Pradesh and Meghalaya. As per a rough estimate on considering 40% as harvestable yield, a farmer is likely to have a net income of around Rs. 20,000 to Rs.25, 000 per season per bigha from bamboo farming once it reaches maturity level after 3-4 years. Besides commercial consideration, bamboo also contributes to the soil and environment, giving back as much as it takes. It plays an important role in balancing oxygen and carbon dioxide in the atmosphere. Its unique root and rhizome

structures act as binders, controlling erosion and rejuvenating soil. Additionally, bamboo plantations act as windbreaks and noise & climate buffers, something that we all look out for nowadays

Suitable Agroforestry practices with inter-cropping of cash-crops like Ginger, Turmeric etc. in the bamboo plantation area for the initial 3-4 years further increases profitability by maximizing land utilization. Once planted, bamboo clumps will go on producing culms and shoot for about 50 years. In other words, bamboo plantation will act like banks where people deposit money on fixed term and enjoy the returns in the form of interest.

The main bamboo growing areas of Assam are in the District of Cachar, Karbi Anglong, North Cachar Hills, Nagoan and Lakhimpur. While forest bamboo is abundantly available, home grown bamboo cultivations are common across the state.

ABRPL is coming out with a well-planned strategy to streamline its supply chain management process which will ensure that the entire logistics remains flawless. The Local Level Entrepreneurs (LLE) will collect bamboos directly from farmers. Besides bamboos will be sourced from community farmers, Joint Forest Management Committees, Farmers Producers Organisation etc. The LLE will be equipped with a Bamboo Chipping Machine as these bamboos will have to be chipped before being transported to the plant. This two/ three tier mechanism will delegate various functions from village level to the aggregator & then to the transporter. Each of these stakeholders will have a robust economic model which will be built in while finalising the revenue model.

The entire process of sourcing, chipping and transportation will

be interlinked and the online payments will be made directly to each of the stakeholder in the chain by using Block Chain Technology which will facilitate faster and secured payment to all the stakeholders.

ABPRL will produce 6.0 Crore litre of ethanol annually which will be supplied to NRL which in turn will be blended with Motor Spirit (petrol) before being marketed by Oil Marketing Companies. As ethanol contains oxygen, it will help the engine in complete combustion of the fuel, thereby ensuring lesser emission and reducing pollution. The ethanol produced from non-food plant is considered as Second Generation

i.e 2G and is a renewable fuel. Blending of ethanol with Petrol will reduce our dependency on fossil fuels to that extent. ABPRL plant will also produce Acetic Acid, Furfural and Bio-coal. The plant will utilise the 20 megawatt power to be generated from Bio-coal, which can be considered as Green Power.

Growing Bamboo as energy plantation is a lucrative business in terms of low input and high return. Bamboo farming needs protection and maintenance only during the initial two years of establishment. Bamboo plantation needs approximately 3-4 years to establish & give economic yield. One hectare of Bamboo plantation

in a scientific manner with high yield saplings/rhizomes at the expense of Rs. 1.0 lakh is likely to provide 30-40 Metric Tonnes of Biomass/Year from the 4th year onwards until its 50th year. Suitable Agroforestry practices with inter-cropping of cash-crops like Ginger, Turmeric etc. in the bamboo plantation area for the initial 3-4 years further increases profitability by maximizing land utilization. Once planted, bamboo clumps will go on producing culms and shoot for about 50 years. In other words, bamboo plantation will act like banks where people deposit money on fixed term and enjoy the returns in the form of interest. ■

National Scheduled Castes Finance and Development Corporation (NSFDC) and its Activities



Rajnish Kumar Jenaw
CMD, NSFDC

Background

National Scheduled Castes Finance and Development Corporation (NSFDC) was incorporated on 08.02.1989 as a Company 'not-for-profit' under Section 25 of Companies Act, 1956. Consequent upon the introduction of the Companies Act, 2013, NSFDC is now a Section 8 Company (not-for-profit) under the new Act.

NSFDC is a Schedule 'C' Central Public Sector Enterprise (CPSE) under the Ministry of Social Justice & Empowerment (MoSJ&E) and wholly owned by the Government of India.

Role

The main role of NSFDC is to provide concessional financial assistance in the form of loan for socio-economic development of persons belonging to Scheduled Castes having annual family income up to Rs.3.00 lakh, for both rural and urban areas.

Since inception, NSFDC has been financing income generating activities of its target group through State/UT Channelizing Agencies nominated by the respective State Governments and Union Territory Administration.

Besides, NSFDC has also been

sponsoring Skill Development Training Programmes in potential trades for unemployed persons of the target group through Government/ Semi-Government/Autonomous Institutions/ Universities/ Deemed Universities/ Sector Skill Councils/ Sector Skill Council Affiliated training providers.

Mode of Operation

NSFDC is functioning in the channel finance system. As on 28.02.2021, NSFDC has 37 State Channelizing Agencies (SCAs).

In order to expand outreach, since 2013-14, NSFDC has also been signing Agreements with Public Sector Banks, Regional Rural Banks, Cooperative Societies/ Banks and other Organizations. In this endeavour, NSFDC has signed agreements with 50 Channelizing Agencies (CAs) in the alternate channel.

Authorized and Paid-up Share Capital

NSFDC is 100% owned by Government of India. As on 28.02.2021, the Authorized Share Capital and Paid-up Capital of NSFDC are Rs.1500.00 crore and Rs.1500.00 crore respectively.

Objectives

- To finance income generating schemes of eligible Scheduled Caste persons through State Channelizing Agencies (SCAs) nominated by the State Governments/ UT Administration and other Channelizing Agencies (CAs).
- To provide Educational Loans to target group through SCAs and or CAs for pursuing full-time professional/ technical education through recognized institutions.
- To provide loans to target group through SCAs and/or CAs for pursuing employment linked Vocational Education & Training Courses.
- To provide grants for Skill Development Training Programmes of the target group.
- To provide advisory services to SCAs/CAs & target groups.
- To upgrade professional skill levels of the Officers of SCAs/ CAs.
- To develop competencies of its employees by providing professional training in emerging fields.
- To organize/ participate in the Exhibitions cum Fairs for marketing of the products of beneficiaries.

Schemes of NSFDC

NSFDC has two schemes, namely Credit Based Schemes and Non-Credit Based Scheme (Skill Development Training Programme). In addition to this an interest subvention scheme is also being implemented from the year 2020-21.

Credit Based Schemes

Under credit based schemes, NSFDC has a bouquet of 12 Schemes with Unit Cost ranging from Rs.1.40 lakhs to 50.00 lakhs and interest rates per annum for beneficiaries ranging from 3% to 9%, based on NSFDC's share per unit.

An Interest spread up to 3% is provided to the SCA/Channel Partner to meet the administrative overheads in implementing NSFDC schemes.

NSFDC provides loans up to 90% of unit cost [except in the case of Term Loan and Vocational Education Training Loan Scheme (VETLS) where it is 95% and 100% respectively] and remaining share is provided by Channelizing Agencies and in some cases partly by promoters as per the Lending Policy.

Non-Credit Based Scheme (Skill Development Training Programme)

NSFDC facilitates Short term Skill Development Training Programme in job oriented areas for unemployed youths of the target group through Government Institutions and Sector Skill Councils.

Under the Scheme, 100% Course fee paid in terms of Common Cost Norms stipulated by Ministry of Skill Development and Entrepreneurship (MSDE)

and Stipend @ Rs.1,500/- per month per trainee provided as Grants for non-residential training programmes.

The trainees are also provided placement assistance and/or entrepreneurial guidance to start their own ventures. They are also encouraged to avail financial assistance from NSFDC through State Channelizing Agencies and other Channelizing Agencies. From the year 2020-21, NSFDC is implementing skill training under PM-DAKSH, a Scheme formulated by the Ministry of Social Justice and Empowerment. The salient features of the Scheme are as given below :

Pradhan Mantri - Dakshta Avem Kushalta Sampann Hitgrahi (PM-DAKSH) Yojana :

PM-DAKSH is a Scheme formulated by the Ministry of Social Justice and Empowerment, for Skilling Marginalized persons covering SCs, OBC, EBC, DNT, Sanitation workers including Waste Pickers, Manual Scavengers, Transgenders, Victims of Substance Abuse and other similar categories with the following objectives:

- Improve all-round competency & adeptness of 10 lakh persons over the next four years, beginning with nearly 1.5 lakh youth in the first year i.e. 2020-21
- A multi-pronged strategy to improve the all-round competency and adeptness of the following sections of the target group :
- Artisans may improve their revenue generation capacities within their practicing vocations,

- Women may enter into self-employment thereby financially empowering themselves without neglecting their domestic activities and
- Educated youth may acquire long-term training and specialization in employable vocations giving them better standing in the job market.

Under PM DAKSH, skill training shall be provided in the following categories :

- Up-skilling/ Recognition of Prior Learning (RPL)
- Short Term Courses (focus on self-employment)
- Entrepreneurial Development Programmes (EDP)
- Long Term Courses (for global class skills)

New Interest subvention Scheme - Vanchit Ikai Samuh aur Vargo ke Arthik Sahayata (VISVAS)

- NSFDC is implementing the VISVAS launched by the Ministry of Social Justice and Empowerment, during 2020-21, to provide 5% interest subvention to the regular accounts of SC borrowers financed by various Banks & NBFC-MFIs. The subvention would be available on individual loans up to Rs. 2 lakh and SHG loans up to 4 lakh. This model will give a quick interest benefit to the standard accounts of borrowing SHGs/beneficiaries.
- The objective of the proposed Scheme is to provide direct benefit of lower rate of interest to the eligible Self-Help Groups (SHGs)/ individual beneficiaries who have availed loans through Public Sector Banks

(PSBs), Regional Rural Banks (RRBs) and similar financial institutions herein after referred to as Lending Institutions.

- NSFDC is making efforts to obtain SECC data in respect of the poor SC Households to lift them above poverty through capacity building in need-based livelihood activities and credit linkages through the State Channelizing Agencies (SCAs) / Channelizing Agencies (CAs). NSFDC shall obtain similar data for districts having more than 25% SC population pan India (As per Census 2011) in addition to Aspirational Districts.

Cumulative Achievement: Disbursement & Beneficiaries

Credit Based Schemes

As on 28.02.2021, NSFDC has disbursed Rs. 6143.87 crore for 14.15 lakhs beneficiaries belonging to scheduled castes under its Credit Based Schemes since inception i.e. February, 1989.

Skill Development Training Programmes

As on 28.02.2021, NSFDC has sanctioned Rs.257.33 crore to train 1,79,789 target group through various Training Institutions under its Non-Credit Scheme i.e. Skill Development Training Programmes since inception i.e. February, 1989.

Major need based initiatives taken during 2020-21 for self-reliance activities and wider coverage of beneficiaries:

- Revised unit cost of Micro-Credit Finance, Mahila Samridhhi Yojana and Ajeevika

Microfinance Yojana from Rs.0.75 lakh to Rs.1.40 lakh.

- Introduced a new scheme namely Mahila Adhikarita Yojana (MAY) on September, 2020 with a unit cost of Rs.5.00 lakh for providing concessional financial assistance to the women target group.
- Revised the quantum of loan assistance in case of Term Loan from 90% to 95%, thereby reducing the promoter's contribution.
- Introduced a new scheme namely Swacchta Udyami Yojana on June, 2020 with a unit cost of Rs.15.00 lakh for promoting mechanized cleaning and earning livelihood through entrepreneurial activities.
- In order to utilize the funds allocated to Ministry of Textiles under Scheduled Castes Sub-Plan (SCSP), NSFDC signed Memorandum of Understanding (MoU) with the Development Commissioner (Handicrafts) and Development Commissioner (Handlooms), Ministry of Textiles to converge Government of India Schemes for providing more benefits to the Scheduled Caste Artisans/Weavers. The basic objective of the MoUs is to help Scheduled Caste Artisans/Weavers and their families by promoting production and marketing of high value quality Handicrafts/Handlooms Products at Cluster level.
- Revision in Lending Policy w.r.t. additional annual family income eligibility criterion i.e. in addition to certification mode (by the Competent Authority of State Government/ District Administration/Self-certified

duly endorsed by any Gazetted Officer notified by the State/ Central Government or the Branch Manager in case of PSBs/RRBs), Scheduled Caste persons facing 3 or more deprivation points as per the SECC-2011 report may be considered as persons with annual family income less than Rs.1.50 lakh & hence as eligible beneficiaries for the current year i.e. upto 31.3.2021.

Steps for propagation of NSFDC Self Employment Schemes

NSFDC has been popularizing its Schemes amongst the target group by participating in various exhibitions/fairs and awareness programmes organized at National, State and District level. NSFDC has been participating every year in National/International Event such as Shilpotsav, Dilli Haat, New Delhi, India International Trade Fair, (IITF), Pragati Maidan, New Delhi and International Surajkund Crafts Mela, Faridabad, Haryana in which NSFDC assisted beneficiaries are provided free stalls to exhibit and sell their products.

In addition to above, publicity of NSFDC schemes are also made amongst the target group in the State, District level events as well as awareness programmes organized.

Further, as part of India @75 celebration, NSFDC has prepared an Action Plan for publicity of MOSJ&E's and NSFDC's schemes through mass publicity and awareness camps at State and District level, including SC concentrated and Aspirational Districts, across India.

RITES Ltd.

Towards Atmanirbhar Bharat...



Rajeev Mehrotra
CMD, RITES LTD.

Infrastructure is the key for building a self-reliant India that would support local ingenuity creating global impact

In its fight against Covid-19, India has demonstrated that it can cope up with any problematic situation and help others also in dealing with tough times. Against this backdrop came the clarion call for an “Atmanirbhar Bharat” or a self-reliant India, effecting a fundamental shift from entitlements to empowerment.

Based on the five pillars of Economy, Infrastructure, System, Vibrant Demography and Demand, the idea of Atmanirbhar Bharat encourages people to be ‘vocal for local’ (‘Make in India’) and striving for ‘global outreach’ (‘Make for the World’). Also, the five phases of the Atmanirbhar Bharat --- 1. Businesses, including MSMEs, 2. Poor, including migrants and farmers, 3. Agriculture, 4. New Horizons of Growth and 5. Government Reforms and Enablers ---- aim at transiting pandemic aftermath from survival to strength.

NIP - A solid foundation

Infrastructure development will serve as a strong foundation for ‘Atmanirbhar Bharat’ or ‘self-reliant India’. In pursuit of the

‘Atmanirbhar Bharat’ and ‘Make in India’ strategy to happen, the National Infrastructure Pipeline (NIP), a major government initiative announced in 2019 towards building world-class stellar infrastructural facilities, has been expanded from 6835 projects to 7400 projects. The NIP targets are to be achieved by creating the institutional structures, monetizing public assets, including land, and raising the share of capital expenditure in Central and State budgets.

Empowerment through exports

Through ‘Atmanirbhar Bharat Abhiyan’, India pitches to become a manufacturing hub with ‘Make for the world’ as the mantra so that domestic value additions can help it switch from the ‘exporter of raw materials and importer of finished products’ and become an integral part of the global supply chain. Driven by the spirit of global development and well-being, the initiative, apart from cost advantages, brings in knowledge and awareness, modern technology, and capital flows, which are

imperative for rapid growth.

In today’s world, a diversified export basket has become an integral part of a prudent business policy to foster economic empowerment. The dominant exports of India have been capital and technology-intensive, but India should focus on incentivising the manufacturing of those products that are competitive in the world market and have the potential to meet large-scale global demand. Considering this, the Production-Linked Incentive (PLI) scheme announced by the government is an important initiative to attract investment in the areas of core competency, bring cutting-edge technology, create economies of scale, and boost exports, besides generating employment opportunities.

RITES’ role

In-line with the Department of Industrial Policy and Promotion (Preference to Make in India) policy, RITES has taken the following initiatives:

Fostering exports

RITES, the export arm of the

Indian Railways and a multi-disciplinary consultancy organization in the fields of transport, infrastructure and related technologies, continues to focus on enhancing exports, backed by quality products, solutions, and services from railway production units.

- RITES has ventured into the Cape Gauge market through an export order worth Rs 700 crore from Mozambique (June 2020) for 6 cape gauge locomotives and 90 stainless steel passenger coaches. In the spirit of Atmanirbhar Bharat, these 3000 HP Cape Gauge AC-AC locomotives and coaches have been designed in India, Made in India and financed by India. The project demonstrates India's 'design, manufacture and export' capabilities and furthers its resolve to facilitate investment, foster innovation, enhance skill development and build best-in-class infrastructure. Also, it will open up the overseas markets having Cape Gauge (1067mm)/Metre Gauge (1000mm) railway systems such as in Africa, South-East Asia etc. for these indigenous locomotives and coaches.
- RITES is developing locomotives and rolling stock (prototype) at Banaras Locomotive Works (earlier Diesel Locomotive Works) in Varanasi for the Standard Gauge market. It aims at drawing global interest towards India's capability to develop indigenous products customised to clients' needs,
- In its endeavour to facilitate rail infrastructure development in the South Asian countries, RITES has supplied 'made-in India' DEMUs, Broad Gauge



RITES is exporting 'Make in India' 3000 HP Cape Gauge AC-AC locomotives to Mozambique.

locomotives & coaches (manufactured at Banaras Locomotive Works and Integral Coach Factory, Chennai) to Sri Lanka. Based on the quality of products supplied, RITES also bagged

repeat order for DEMUs from Sri Lanka, demonstrating its capabilities and readiness to manufacture/supply high-quality and customised products.



RITES has successfully delivered 10 custom-made in India railway passenger coaches to Sri Lanka.

- RITES has also actively pursued exports of locomotives and passenger coaches, spares and other equipment to Bangladesh Railway. It has supplied Bangladesh locomotives manufactured at Banaras Locomotive Works and coaches from Rail Coach Factory, Kapurthala.

These joint endeavours of Indian Railways and RITES are not only fostering regional cooperation with these countries, but

adding credence to India's resolve to become an export hub for rolling stock and other related services. Besides, RITES, in partnership with Steel Authority of India Limited (SAIL), is manufacturing and rehabilitating wagons for the Indian Railways at Kulti in West Bengal.

Global reach

RITES is uniquely placed in terms of diversification of services and geographical reach in various sectors such as railways, highways, urban transport, airports, ports, ropeways, inland waterways and renewable energy. Besides executing projects of national importance, RITES, as a technical partner, has actively provided transport-related solutions to clients in more than 55 countries across Asia, Africa, Latin America, South America and Middle East region. At present, it is providing project management consultancy services and technical assistance for various infrastructure projects such as Metro Express in Mauritius, highway works in Bangladesh, Botswana and Guyana (South America), airport rehabilitation work and development of Integrated Check Post in Nepal etc., helping in transforming transportation landscape and bringing real-time impact on the lives of the people.

Tendering & preference to local vendors

As part of the Atmanirbhar Bharat strategy, RITES has emphasised on promoting 'Make in India' products and increasing the participation of local vendors in the procurement process, with a view to enhancing income and employment. It was also decided that the local content clause in the procurement should be such that we may get more bids from local vendors/suppliers. RITES has mandated in its General Conditions of Contract (GCC) that for tenders of value up to Rs. 200 crore, the bidding shall be restricted to national bidders only. Besides, price preference is accorded to local suppliers/bidders as per policy (Tender and Contract Document for Works, July 2019).

Also, during the Financial Year 2020-21, RITES has procured goods worth Rs. 43.85 crore (up to January 2021) from MSME vendors.

Promoting innovation & supporting startups

Innovation and entrepreneurship will be the key to ensuring the development of physical as well as digital infrastructure across the country. The call for Atmanirbhar Bharat presents a glorious opportunity for young creative entrepreneurs to tap into and create

startups or companies with global impact.

- RITES is supporting a startup based in Chennai incubated by IIT-Madras for developing Hydrogen Fuel Cell stack (import substitution for use in UAVs and other such defence equipment).
- Promoting the use of renewable energy, REMC Ltd., a subsidiary of RITES, secured the mandate to manage the entire process for installation of 3 GW solar plants, with preference to Make-in-India products, on vacant railway land. Of this, 400 MW is planned to be added by REMC Ltd. on its ownership basis and the power will be procured by the Indian Railways.

The Atmanirbhar Bharat Abhiyan, an initiative aiming to strengthening local manufacturing, building local supply chains, and converting local products into global brands, will help in accelerating economic growth, generating jobs, betterment of life and bringing in prosperity and well-being that can serve the interests of the rest of the world as well. RITES, a leading infrastructure consultancy company associated with projects of national importance, is committed to remain a significant contributor in building an 'Atmanirbhar Bharat'. ■

SJVN: Striding ahead towards AtmaNirbhar Bharat



Nand Lal Sharma
CMD, SJVN

India, the largest democracy of the world has demonstrated to the world, how to rise to the challenges due to COVID-19 that has brought the whole world into standstill. The subsequent lockdowns in the wake of the global pandemic impacted the economies around the world and the Indian economy also was not spared. To boost and stabilize the turbulent effects on Indian economy, Hon'ble Prime Minister Shri Narendra Modi called for the need of being self-reliant. This call to be self-reliant gave us the AtmaNirbhar Bharat Abhiyan (ANBA) which has helped in resurrecting the Indian economy from the ill-effects of the pandemic. It is a vision of New India envisaged by Hon'ble Prime Minister and the five pillars of AtmaNirbhar Bharat Abhiyan (ANBA) Economy, Infrastructure, System, Demography and Demand are serving as the Foundation for self-reliance and strengthening every citizen of the Nation. The focus is to promote local producers and manufacturers, thus propelling forward the ideas of Make in India, Vocal for Local, Vocal for Global, Make for World and Brain Drain to Brain Gain.

India is fast moving towards

new paradigm of ANBA and the Central Public Sector Enterprises (CPSEs) have played a pivotal role in realizing this dream. PSU's have always been catalyst in the balanced economic development with social welfare perspective. They have laid strong foundation for industrial & infrastructural development with minimum regional disparities and have played key role in nation building initiatives.

SJVN Limited, a Mini Ratna, Category-I and Schedule -'A' CPSE under administrative control of Ministry of Power, Govt. of India, has since long been supporting the concept of self-reliance. We are imbibing the best practices and interventions to contribute in ANBA and help in mitigating the consequential outcome of economic growth hindrance due to the pandemic.

From 1st April 2012 onwards, SJVN under Public Procurement Policy has implemented the mandatory procurement from MSMEs. We have been organizing Vendor Development Programs to enhance the participation of MSMEs in procurement process and strengthen interaction between the company and local businesses. SJVN is

providing them a platform and opportunity to develop themselves and sustain in today's competitive market. Purchases are being made through GeM Portal. Online Vendor Bill Tracking Management System is in place to facilitate the vendors to track payments. The procurement from MSMEs and the status of their payments are being regularly monitored and timely payment is being ensured. Such promptness helps in strengthening the financial portfolio of vendors especially during the uncertain times of COVID-19. This circulation helps in continuous flow of cash in market thus boosting the economy.

The Tenders for the Civil and Electrical contracts are being floated for Domestic Bidding. The local content under Make in India is being ensured thus boosting the indigenous market and supporting the local producers and manufacturers. Purchase preference is being given to the MSMEs. We have encouraged Vocal for Local in our Projects under Construction stage. In 900 MW Arun-3 Hydro Electric Project in Nepal, we ensured that the contractors participating in the tendering process were of Nepali or Indian origin or it could

be an Indo-Nepali Joint Venture with the Indian contractor as a lead partner. In our Projects in Operation & Maintenance (O&M) Stage, we are ensuring that the spare parts being utilized for the machines are India made and promote the idea of Make in India.

We are focusing on tapping the availability of young demography by strengthening and enhancing their skill through Trainings under Skill Development programs. We believe in empowering the youth by providing them industry-relevant skill training that will help in securing a better livelihood. Few such Training programs are as following:

- Skill Development trainings to 840 youths of projects areas of SJVN through National Skill Development Corporation (NSDC).
- In line with national scheme Deen Dayal Upadhyay Kaushal Vikash Yojana for doubling the income of farmers by 2022, 1128 farmers have been imparted training on latest farming & seeding techniques in association with CSK Himachal Pradesh Krishi Vishwavidyalaya, Palampur (HP).
- 906 students from Project affected areas have been sponsored for vocational training in Govt ITIs till date. The scheme is designed for matriculate youth to obtain ITI qualification through the Govt institution.
- As a part of Support to Start-ups, 60 youth of the tribal area of Kinnaur, Himachal Pradesh imparted with the Handloom Weaving training.
- SJVN has entered into an MoU

AtmaNirbhar Bharat Abhiyan is an outstanding showcase of how Hon'ble Prime Minister turned a calamity into an opportunity to promote self-reliance to promote National Interest. We at SJVN are supporting indigenous goods, local manufactures & contractors so they can withstand in global competitive marketplace leading to globalization of local industries. We have adopted the campaign not merely as an obligation but in true spirit with an aspiration to reach out to all the stakeholders.

for providing financial assistance of Rs. 6 Crores for upgradation of 6 Govt. ITIs in and around project areas of SJVN. The Institutional Development Plan for each ITI shall cover strengthening and augmentation infrastructural facilities such as modern class rooms, library, workshops, machinery & equipment and introduction of new trades. This will help these ITIs to be at par with progressive technological demands of the industries.

- 181 youths residing in slum areas of Malviya Nagar, Delhi

have been imparted Computer Training under the Company's initiative to educate youth with computer knowledge and creating a pool of skilled manpower.

Infrastructure development of the community has been intrinsic to the activities undertaken by SJVN as we believe that our growth is meaningful when we share it with society. Our infrastructure development activities range from construction of buildings for Panchayats, Mahila mandals, Toilets, Schools, Hospitals, Bus stand, Cremation grounds in the region. SJVN has adopted District Chamba of Himachal Pradesh as Aspirational District and works on three verticals Health, Education & Nutrition are under implementation. Construction of 17 schools and 15 libraries across the district are underway. We have formulated DeenDayal Upadhyay SJVN Jal Sarankshan Yojana for conservation of water and soil, regeneration of green cover, judicious use of natural resources in a particular water shed area and increasing the productivity potential of degraded lands through various water shed interventions.

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Covid-19 and Health System Resilience in India



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Atmanirbhar Bharat, which translates to 'self-reliant India' is a Hindi phrase used and popularized by the Prime Minister of India and the Government of India in relation to economic development in the country during and after the COVID-19 pandemic. The term is used as an umbrella concept in relation to making India "a bigger and more important part of the global economy", pursuing policies that are efficient, competitive and resilient, and being self-sustaining and self-generating. It does not mean "self-containment", "isolating away from the world" or being "protectionist". The first popular mention of this came in the form of the 'Atmanirbhar Bharat Abhiyan' or 'Self-Reliant India Mission' during the announcement of India's COVID-19 pandemic related economic package on 12 May 2020, 12 October and 12 November 2020. Since May 2020, the phrase has been used across ministries such as the Ministry of Consumer Affairs, Food and Public Distribution, Ministry of Education and the Ministry of Defence in relation

to press releases, statements and policies. The phrase has also been used by the government in relation to the 2021 Union Budget of India.

Commentators have noted that India has been enacting policies and building institutions that promote self-reliance since the day it was created. Private companies and their products have also been considered as fine examples of self-reliance in India such as— the Maruti 800 car, Thums Up beverage, Amul, HDFC, the leading IT companies of India, and Bharat Biotech and Serum Institute of India. Bharat Biotech developed India's first indigenous COVID-19 vaccine in a bench-to-beside journey that took eight months.

"self-reliance to us did not mean shutting out the windows to the world; even a certain quantum of external assistance was incorporated in our definition of the term, but we did certainly rule out the probability of chronic foreign aid. India, we argued, was not lacking inherently either in manpower or natural resources, including mineral resources. We had also the

advantage of starting out with a certain basic infra-structure of industrial and technological skills and facilities, which was superior to that possessed by most developing countries at the time. In addition, there was the advantage, we thought, of having a political leadership keen to pursue the goal of self-reliance. We opted for self-reliance because, in our view, it was the most rational economic course.

The Indian healthcare scenario presents a spectrum of contrasting landscapes. At one end of the spectrum are the glitzy steel and glass structures delivering high tech medicare to the well-heeled, mostly urban Indian. At the other end are the ramshackle outposts in the remote reaches of the rural India" trying desperately to live up to their identity as health subcenters, waiting to be transformed to shrines of health and wellness, which we will wait to see unfold. With the rapid pace of change currently being witnessed, this spectrum is likely to widen further, presenting even more complexity in the future.

Our country began with a glorious tradition of public health, as seen in the references to the descriptions of the Indus valley civilization (5500–1300 BCE) which mention “Arogya” as reflecting “holistic well-being.” The Chinese traveler Fa-Hien (tr. AD 399–414) takes this further, commenting on the excellent facilities for curative care at the time. Today, we are a country of 1,296,667,068 people (estimated as of this writing) who present an enormous diversity, and therefore, an enormous challenge to the healthcare delivery system. This brings into sharp focus the WHO theme of 2018, which calls for “Universal Health Coverage-Everyone, Everywhere.”

Challenges in delivering healthcare to the “everyone” which must include the socially disadvantaged, the economically challenged, and the systemically marginalized? What keeps us from reaching the “everywhere,” which must include the remote areas in our Himalayan region for instance, where until recently, essentials were airlifted by air force helicopters without road connectivity. there are many challenges, How aware is the Indian population about important issues regarding their own health? Studies on awareness are many and diverse, but lacunae in awareness appear to cut across the lifespan in our country. Adequate knowledge regarding breastfeeding practice was found in only one-third of the antenatal mothers in two studies. Moving ahead in the lifecycle, a study in urban Haryana found that only 11.3% of the adolescent girls studied knew correctly about key reproductive health issues A

Pandemics such as Covid-19 starkly remind us that public health systems are core social institutions in any society. The government has made several efforts to address the shortfall in the public health system through the schemes like the National Medical Commission (NMC) Act, 2019, Pradhan Mantri Bhartiya Janaushadhi Pariyojana, Pradhan Mantri - Jan Arogya Yojana etc. However, the need of the hour is an adequate investment, for creating a health system that can withstand any kind of public health emergencies, deliver universal health coverage and meet the targets of the Sustainable Development Goals.

review article on geriatric morbidity found that only 20.3% of participants were aware of common causes of prevalent illness and their prevention The reasons for low level of health awareness low in the Indian population lie in low educational status, poor

functional literacy, low accent on education within the health-care system, and low priority for health in the population, among others.

What is encouraging is that efforts to enhance awareness levels have generally shown promising results. For instance, a study in Bihar and Jharkhand demonstrated improved levels of awareness and perceptions about abortion following a behavioral change intervention A review on the effectiveness of interventions on adolescent reproductive health showed a considerable increase in the awareness levels of girls with regard to knowledge of health problems, environmental health, nutritional awareness, and reproductive and child health following intervention. Which indicates That we must strive to raise awareness in those whom we work with and must encourage the younger generation to believe in the power of education for behavior change.

Access to healthcare or opportunity to use or benefit from healthcare Again, when we look beyond the somewhat well-connected urban populations to the urban underprivileged, and to their rural counterparts, the question “What is the level of access of our population to healthcare of good quality?” is an extremely relevant one. access being a complex concept and speaks of aspects of availability, supply, and utilization of healthcare services as being factors in determining access. Barriers to access in the financial, organizational, social, and cultural domains can limit the utilization of services, even in places where they are “available

Physical reach is one of the basic determinants of access, defined as “ the ability to enter a health-care facility within 5 km from the place of residence or work Using this definition, a study in India in 2012 found that in rural areas, only 37% of people were able to access IP facilities within a 5 km distance, and 68% were able to access out-patient facilities Krishna and Even if a healthcare facility is physically accessible, what is the quality of care that it offers? Is that care continuously available? While the National (Rural) Health Mission has done much to improve the infrastructure in the Indian Government healthcare system, a 2012 study of six states in India revealed that many of the primary health centers (PHCs) lacked basic infrastructural facilities such as beds, wards, toilets, drinking water facility, clean labor rooms for delivery, and regular electricity.

As public health, experts we must encourage discussion on the determinants of access to healthcare. We should identify and analyze possible barriers to access in the financial, geographic, social, and system-related domains, and do our best to get our experts and peers thinking about the problem of access to good quality healthcare.

Absence or the human power crisis in healthcare: Any discussion on healthcare delivery should include arguably the most central of the characters involved – the human workforce. Do we have adequate numbers of personnel, are they appropriately trained, are they equitably deployed and is their morale in delivering the service reasonably

high? A 2011 study estimated that India has roughly 20 health workers per 10,000 population, with allopathic doctors comprising 31% of the workforce, nurses and midwives 30%, pharmacists 11%, AYUSH practitioners 9%, and others 9%. This workforce is not distributed optimally, with most preferring to work in areas where infrastructure and facilities for family life and growth are higher. In general, the poorer areas of Northern and Central India have lower densities of health workers compared to the Southern states.

While the private sector accounts for most of the health expenditures in the country, the state-run health sector still is the only option for much of the rural and peri-urban areas of the country. The lack of a qualified person at the point of delivery when a person has traveled a fair distance to reach is a big discouragement to the health-seeking behavior of the population. According to the rural health statistics of the Government of India about 10.4% of the sanctioned posts of auxiliary nurse midwives are vacant, which rises to 40.7% of the posts of male health workers. Twenty-seven percentage of doctor posts at PHCs were vacant, which is more than a quarter of the sanctioned posts.

Considering that the private sector is the major player in healthcare service delivery, there have been many programs aiming to harness private expertise to provide public healthcare services. The latest is the new nationwide scheme proposed which accredits private providers to deliver services reimbursable by the

Government. In an ideal world, this should result in the improvement of coverage levels, but does it represent a transfer of responsibility and an acknowledgment of the deficiencies of the public health system?

As public health practitioners how are we equipping our trainees to deliver a health service in the manner required, at the place where it is needed and at the time when it is essential? It is time for a policy on health human power to be articulated, which must outline measures to ensure that the last Indian is taken care of by a sensitive, trained, and competent healthcare worker.

Affordability or the cost of healthcare: Quite simply, how costly is healthcare in India, and more importantly, how many can afford the cost of healthcare; It is common knowledge that the private sector is the dominant player in the healthcare arena in India. Almost 75% of healthcare expenditure comes from the pockets of households, and catastrophic healthcare cost is an important cause of impoverishment. Added to the problem is the lack of regulation in the private sector and the consequent variation in quality and costs of services.

The public sector offers healthcare at low or no cost but is perceived as being unreliable, of indifferent quality and generally is not the first choice, unless one cannot afford private care.

The solutions to the problem of affordability of healthcare lie in local and national initiatives. Nationally, the Government expenditure on health must urgently be scaled up, from <2% currently to at least 5%–6% of

the gross domestic product in the short term. This will translate into the much-needed infrastructure boost in the rural and marginalized areas and hopefully to better availability of healthcare services, infrastructure, and personnel. The much-awaited national health insurance program should be carefully rolled out, ensuring that the smallest member of the target population is enrolled and understands what exactly the scheme means to her.

Locally, a consciousness of cost needs to be built into the healthcare sector, from the smallest to the highest level. Wasteful expenditure, options which demand high spending, unnecessary use of tests, and procedures should be avoided. The average medical student is not exposed to issues of cost of care during the course. Exposing young minds to issues of economics of healthcare will hopefully bring in a realization of the enormity of the situation, and the need to address it in whatever way possible.

Accountability or the lack of it: Being accountable has been defined as the procedures and processes by which one party justifies and takes responsibility for its activities.

In the healthcare profession, it may be argued that we are responsible for a variety of people and constituencies. We are responsible to our clients primarily in delivering the service that is their due. Our employers presume that the standard of service that is expected will be delivered. Our peers and colleagues expect a code of conduct from us that will enable the profession to grow in harmony. Our family and friends

have their own expectations of us, while our government and country have an expectation of us that we will contribute to the general good. A spiritual or religious dimension may also be considered, where we are accountable to the principles of our faith.

In the turbulent times that we live in, the relationships with all the constituents listed above have come under stress, with the client-provider axis being the most prominently affected. While unreasonable expectations may be at the bottom of much of the stress, it is time for the profession to recognize that the first step on the way forward is the recognition of the problem and its possible underlying causes. Ethics in healthcare should be a hotly discussed issue, within the profession, rather than outside it, although code of medical ethics issued by earlier medical council of India is in vogue.

Communication is a key skill to be inculcated among the young professionals who will be the leaders of the profession tomorrow. A good communicator is better placed to deal with the pressures of the relationships with client, employer, peer, colleague, family, friend, and government.

The above present challenges to the health of the public in our glorious country. As we get ready to face a future which is full of possibility and uncertainty in equal measure, let us recognize these and other challenges and prepare to meet them, remembering that the fight against ill health is the fight against all that is harmful to humanity.

India faced the COVID-19 situation with fortitude and a spirit of

self-reliance, that is evident in the fact that from zero production of Personal Protection Equipment (PPE) before March 2020, India today has created a capacity of producing 4,50,000 kits a day by the beginning of July which is also growing steadily.

Additionally, India has demonstrated how it rises up to challenges and uncovers opportunities therein, as manifested in the repurposing of various automobile sector industries to collaborate in the making of life-saving ventilators, this can be taken as a fine example of a self-reliant India. The PPE industry in India has become a 10,000 crore (US\$1.4 billion) in three months, the second largest after China. The research, development and manufacture of COVID-19 vaccinations in India was connected to *atmanirbharta* by the President, Vice President, Prime Minister and other Union Ministers in separate statements. PM Modi has stated that "Made in India vaccines are a symbol of *Atmanirbhar Bharat*". The Prime Minister got his COVID-19 vaccine, Covaxin, indigenously produced in eight months, by Bharat Biotech.

The exemplary role played by India in the global fight against COVID-19 has been recognized and appreciated widely.

Initiatives on National Animal Disease Control Programme for Foot and Mouth Disease (FMD) and Brucellosis launched with total outlay of Rs. 13,343 crore to ensure 100% vaccination of cattle, buffalo, sheep, goat and pig population (total 53 crore animals) for Foot and Mouth Disease (FMD) and for brucellosis. Till date, 1.5 crore cows &

buffaloes tagged and vaccinated. also An Animal Husbandry Infrastructure Development Fund of Rs. 15,000 crore is expected to be set up, with an aim to support private investment in Dairy Processing, value addition and cattle feed infrastructure. The National Medicinal Plants Board (NMPB) has supported 2.25 lakh hectare area under cultivation of medicinal plants. 10,00,000 hectare will be covered under Herbal cultivation in next two years with outlay of Rs. 4,000 crore. This will lead to Rs. 5,000 crore income generation for farmers. There will be network of regional Mandis for Medicinal Plants. NMPB will bring 800-hectare area by developing a corridor of medicinal plants along the banks of Ganga.

Health Reforms & Initiatives

Public Expenditure on Health will be increased by investing in grass root health institutions and ramping up Health and Wellness Centres in rural and urban areas. Setting up of Infectious Diseases Hospital Blocks in all districts and strengthening of lab network and surveillance by Integrated Public Health Labs in all districts & block level Labs & Public Health Unit to manage pandemics. Further, National Institutional Platform for One health by ICMR will encourage research. And implementation of National Digital Health Blueprint under the National Digital Health Mission is also underway

In this time of global pandemic, it is vital that we provide psychosocial support to students, teachers and families for mental health and emotional wellbeing. The Manodarpan initiative is being launched to provide such

support through a website, a toll-free helpline, national directory of counselors, interactive chat platform, etc. This initiative will benefit all school going children in the country, along with their parents, teachers and the community of stakeholders in school education.

The heart of our challenge since the onset of the global pandemic has been to continue our critical sexual and reproductive health work in an era where COVID-19 has complicated nearly every decision. Lockdowns, supply shortages, and at times, a fear of going to health facilities due to COVID-19 have challenged the continued provision of sexual and reproductive health care. But our health care workers and the communities they work alongside, are more than up to the challenge. targeted response is helping women, girls, and their communities not only survive this crisis but come through it stronger and more resilient.

Contrary to the popular notion about India's Public health systems being inefficient and ineffective, it is performing reasonably well in tackling the Covid-19 pandemic and providing treatment of patients without refusing anyone on financial grounds. India's healthcare infrastructure is incapable of dealing with this crisis today. in order to overcome the Shortages in medical supplies and for providing adequate testing, the allocation of 15,000 crore rupees (USD 2 billion) for building infrastructure has strengthen the fight against coronavirus. Also, state governments are trying to expand facilities to deal

with this situation.

Moreover, there are only 118 government approved laboratories in India which are capable of performing covid-19 tests. Apart from it, obviously, there are private labs, which are now authorized to conduct tests, and companies making self testing kits.

However, the private health sector which accounts for 70% of healthcare services in India, is playing only a supporting role to public hospitals for treatment of any cases relating to Covid-19.

The current pandemic reiterates the importance of Public Health systems. Thus, there is a need to address the constraints and revamp of the public health system in India. There is a need to make nutrition, water, sanitation and hygiene (WASH) part of the core functions of Panchayati raj institutions and municipalities.

Conclusion

Pandemics such as Covid-19 starkly remind us that public health systems are core social institutions in any society. The government has made several efforts to address the shortfall in the public health system through the schemes like the National Medical Commission (NMC) Act, 2019, Pradhan Mantri Bhartiya Janaushadhi Pariyojana, Pradhan Mantri - Jan Arogya Yojana etc.

However, the need of the hour is an adequate investment, for creating a health system that can withstand any kind of public health emergencies, deliver universal health coverage and meet the targets of the Sustainable Development Goals.

References

1. Roy S. Primary health care in India. *Health Popul Perspect Issues*. 1985;8:135–67.
2. James L. A Record of Buddhist Kingdoms: Being an Account by the Chinese Monk Fa-Hien of His Travels in India and Ceylon (A.D. 399-414) *Dover publications*. 1991:79.
3. *SRS Statistical Report, 2016*. Office of the Registrar General & Census Commissioner. India: Ministry of Home Affairs, Government of India; 2016. Ministry of Home Affairs, Government of India. [Google Scholar]
4. *National Geographic News*. [Last accessed on 2018 Jun 14]. from: https://www.news.national-geographic.com/news/2002/11/1112_021112_IndiaCyberCafe.html .
5. De M, Taraphdar P, Paul S, Halder A. Awareness of breast feeding among mothers attending antenatal OPD of NRS medical college. *IOSR J Dent Med Sci*. 2016;15:3–8.
6. Pandey D, Sardana P, Saxena A, Dogra L, Coondoo A, Kamath A, et al. Awareness and attitude towards breastfeeding among two generations of Indian women: A comparative study. *PLoS One*. 2015;10:e0126575. [PMC free article]
7. Mittal K, Goel MK. Knowledge regarding reproductive health among urban adolescent girls of Haryana. *Indian J Community Med*. 2010;35:529–30.
8. Banerjee SK, Andersen KL, Warvadekar J, Pearson E. Effectiveness of a behavior change communication intervention to improve knowledge and perceptions about abortion in Bihar and Jharkhand, India. *Int Perspect Sex Reprod Health*. 2013;39:142–51. [PubMed] [Google Scholar]
9. Kotwal N, Khan N, Kaul S. A review of the effectiveness of the interventions on adolescent reproductive health in developing countries. *Int J Sci Res Publ*. 2014;4:1–4.
10. *Oxford Dictionary Online*. [Last accessed on 2018 Jun 15]. Available from: <https://www.oxforddictionaries.com/definition/access> .
11. Gulliford M, Figueroa-Munoz J, Morgan M, Hughes D, Gibson B, Beech R, et al. What does 'access to health care' mean? *J Health Serv Res Policy*. 2002;7:186–8. [PubMed] [Google Scholar]
12. Munjanja SP, Magure T, Kandawasvika G. Geographical access, transport and referral systems. In: Hussein J, McCaw-Binns A, Webber R, editors. *I Maternal and Perinatal Health in Developing Countries*. CAB International e books; 2012. pp. 139–54. [Google Scholar]
13. Understanding Healthcare Access in India. *Report by the IMS Institute for Healthcare Informatics*. 2012. [Last accessed on 2018 Apr 17]. Available from: <http://www.imshealth.com>
14. Krishna A, Ananthpur K. *Globalization, Distance and Disease: Spatial Health Disparities in Rural India*. [Last accessed on 2018 Jun 17]. Available from: <http://www.sites.duke.edu/krishna/files/2013/10/>
15. Rao M, Rao KD, Shiva Kumar AK, Chatterjee M, Sundararaman T. Human resources for health in India. *The Lancet*. 2011;377:587–98. [PubMed] [Google Scholar]
16. Rao KD. Situation Analysis of the Health Workforce in India. *Human Resources Technical Paper I. Public Health Foundation of India*. 2011. [Last accessed on 2018 Jun 17]. .
17. *Health Management Information system of the Ministry of Health and Family Welfare, Government of India*. [Last accessed on 2018 Jun 18 Available from: <https://www.nrhm-mis.nic.in/Pages/RHS> 2015.
18. Balarajan Y, Selvaraj S, Subramanian SV. Health care and equity in India. *Lancet*. 2011;377:505–15.
19. Reddy KS, Patel V, Jha P, Paul VK, Kumar AK, Dandona L, et al. Towards achievement of universal health care in India by 2020: A call to action. *Lancet*. 2011;377:760–8.
20. Emanuel EJ, Emanuel LL. What is accountability in health care? *Ann Intern Med*. 1996;124:229–39.

Indian Economy: Pursuit of Self Reliance and Challenges Ahead



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Indian Economy, sixth largest in the world is moving fast towards self reliance. Although in an inter - dependent world no country can live in isolation, produce every thing required without help of any other country, self reliance in such a situation means ability to stand firm in normal times and in any contingency like natural calamity, wars, recession etc, produce enough in its farms and factories and services sector to meet internal demand and pay for imports. When India got independence, it had to borrow food grains from USA under PL 480 to feed 36 crore people, today it is producing more than required by 136 crore people. It had no industrial base. Today it ranks second in agricultural production, eleventh in services and twelfth in manufacturing in the world. It is software king, accounts for a large activity of Silicon Valley, second largest steel producer and mobile manufacturer and fourth largest motor vehicle producer. It is one of the most preferred destinations of foreign investors. It is 'creating wealth and value not only for itself but for the larger humanity' in words of PM Modi whose Made in India and Atmanirbhar Bharat campaigns aim to take up Indian Economy to the new heights. The world has

recognized this in the present crisis created by Covid19. India has provided large doses of vaccines to neighboring countries free and is exporting on low cost to more than 40 countries. India's dream of \$ 5 trillion Economy by 2025 may be delayed a little but is not beyond reach.

Agricultural Power House

India today is a multi-product agricultural powerhouse of the world. It is among the first five agricultural producers with second rank next only to China. The two countries together account for around one third total agricultural production of the world. No country produces as many crops as India. Growth in India has been spectacular specially in the last two decades. The drivers of the growth have been apart from food crops, dairy, horticulture and inland fisheries which provide farmers year round income. Foodgrain production is around 303 MT against 227 MT in 2000. The country is fully self sufficient in internal foodgrain requirement. On export front also agricultural products are doing better than industrial goods. As per WTO report India ranks 19 in merchandise export but sixth in agricultural

product export. Measures taken by the Government through various schemes like Pradhan Mantri Krishi Sinchai Yojana, Kisan Credit Card, Soil Health Card, National Mission for Sustainable agriculture, Pradhan Mantri Kisan Samman Nidhi and others have promoted agricultural growth and increase in farmers income in recent years which Government wants to double in next few years. A Pan India portal e- nam has been setup to facilitate marketing of agricultural products. Three new laws have also been enacted to provide opportunity to farmers to market their products any where in India and attract investment in agriculture. Central PSUs - FCI, SCI, IARI and others have been helping farm sector through procurement of rice, wheat and pulses, storing in its godowns large stocks, transporting throughout the country for distribution under Public Distribution System, supplying quality seeds developed internally and R&D for crop improvement, plant protection, horticulture and fisheries development. PSU banks have been the main source of credit to farmers throughout the country. In 2019-20 the ground level credit to agricultural sector reached to

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Rs. 13.68 lakh crore, 8.5% above the previous level. It may be mentioned that the farm sector accounts for the bulk of bad loans for most banks. Gross bad loans in agriculture loan constituted 15.85% of the total credit disbursement of SBI alone at the end of March 2020.

Strong Industrial Base

Industrialisation of India began in the Second Five Year Plan (1956-61) with a lead role for Public Sector. There were few big industries in private sector like TISCO, Birla Jute, Century Textiles, ITC, Raymond, Bata, Bajaj Electricals etc. when India got independence. Most of the private banks were there which were nationalised in 1969. Public Enterprises included Indian Railways, Post and Telegraph, Ordinance factories etc. India today is among top industrialised countries of the world. Tata Steel is the world's second most geographically diversified steel producer. SAIL, one of the seven Maharatnas, is the biggest steel producer in the Public Sector. India's current steel producing capacity is 140 MT and is expected to rise to 300 MT by 2030. Among aluminium producers India ranks second after China. The other two big producers are Russia and Canada. Hindalco, BACL, Vedanta are among top producers. India ranks fourth in passenger car manufacturing. Most top world auto companies: Volkswagen, Nissan, Renault, Ford, Toyota, Honda and others have their manufacturing plants in India. Two wheeler segment has a huge market. Focus in auto sector is shifting to electric vehicles. Maruti Suzuki is the best selling car with monthly turnover of more than

India today is a multi-product agricultural powerhouse of the world. It is among the first five agricultural producers with second rank next only to China. The two countries together account for around one third total agricultural production of the world. No country produces as many crops as India. Growth in India has been spectacular specially in the last two decades. The drivers of the growth have been apart from food crops, dairy, horticulture and inland fisheries which provide farmers year round income.

1.5 lakh cars. Total domestic automobile production in 2020 was 26.36 million. Electronic manufacturing in India registered 23% cumulative growth over past five years. Major producers are Bharat Electronics, Crompton Greaves, Bajaj Electricals, Wipro, Videocon, Sterlite technologies etc. Bharat Electronics, a PSU with nine factories manufactures advanced electronic products. Mobile manufacturing during this period increased from 6 crore to 33 crore handset. Over 90% domestic demand is met from domestic production. Consumer

electronics and appliances industry in India is expected to become fifth largest in the world by 2025. With 100 pc FDI in Electronic and IT hardware and electronic systems design and manufacturing, electronic market in India is expected to grow to \$ 400 billion mark in few years. In IT sector India has six large companies: TCS, Infosys, HCL, Wipro, Tech Mahindra and LTI, out of top 25 in the world. TCS and Infosys are among the first five with third and fourth positions respectively. In cement production India continues at the top with 8 pc of global installed capacity: 545MT in 2020. India with 1383 TWh generation is the third largest producer of electricity in the world. Renewable energy accounts for around 38pc of installed capacity. Power generation has doubled in last seven years making the country power surplus. Solar and wind power segments are growing fast. During eight months of FY 2020-21 solar segment added 2283 MW and wind power brought in 690 MW of new capacity to the grid. In defence production India is taking steps under Make in India program to be self reliant in weapons such as artillery guns, assault rifles, corvettes, sonar systems, transport aircraft's, light combat helicopters and radars etc. India's dependence in defence sector is rather heavy with almost 45Pc of world export. In traditional industries India continues to lead. It is the largest tea and jute producer and second largest sugar producer in the world.

Challenges Ahead

India is the second largest populated country in the world, next only to China. It's per capita

income is much lower than USA, China and other advanced economies. It needs to increase productivity in all sectors of economy and spend more on education, health and social welfare. Indian agriculture is more a means of living for large number of farmers than a profitable venture. The problems faced include fragmented land holding, lack of warehousing facilities, supply chain bottlenecks, low fertiliser consumption, inadequate irrigation facility in many parts of the country, too much dependence on monsoon, rising cost of inputs, soil erosion, post harvest losses and dependence on local money lenders for loan and middle men for marketing

specially for small and marginal farmers. The problems industries in general are facing include dumping of manufactured products by China at low cost in Indian markets, high manufacturing cost and lower quality in respect of certain products, forecasting demand, inventory and other management issue, wide price fluctuations in price of some crucial raw materials in world markets and protectionist tendencies of big powers. Digital advancements are challenging but at the same time full of opportunities for Indian industries. Digital trend is making headway in manufacturing in robotics, predictive analysis to make forecasts, machine learning

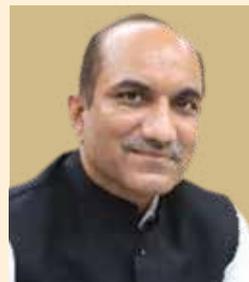
techniques and supply chain operations. Covid 19 Coronavirus pandemic which started in early 2020 had a severe negative impact on global economy. India was losing Rs. 32000 crore per day in first 21 days of Lockdown. GDP went down to - 24% in Q1 of FY 2020-21. Situation started improving with relaxation and lifting of lockdown gradually, GDP loss for the whole year is estimated around - 7.5 pc. Central Government pumped more than Rs. 29 lakh crore relief package to rejuvenate the economy which is bouncing back and is expected to grow by 12.6% in FY 2021-22 as forecasted by OECD. Rating agency Crisil has projected growth at 11% and the NITI Ayog at 10.5-11%. ■

PERSONALIA



Mr. Subhash Kumar

Director (Finance) assumes additional charge as CMD of Oil and Natural Gas Corporation Limited.



Mr. Sanjeev Kumar

assumes charge as Chairman of Airports Authority of India.



Mr. A. S. Kesavan Nampoori

is appointed as Director (Technical) FACT Limited.



Mr. J. P. Gupta

assumes charge as Director Technical (Project and Planning) of Bharat Coking Coal Limited.



Mr. Upkar Kumar Kedia, ITS

is appointed as CVO of MOIL Limited.

AtmaNirbhar Bharat and Steel industry



Sushim Banerjee
Ex-Director General
Institute for Steel
Development
& Growth, Kolkata

Prologue

The concept of AtmaNirbharata has a wide implication for the development and growth of Indian economy. When India gained independence in 1947 after a long and exemplary sacrifices by our leaders and countrymen fighting for an independent India from the colonial rule of the British, the country faced an uphill task of bridging the massive shortfall in all the development indicators like Education, Health, Food supply, industrial growth, job opportunities and income generation. The country initially chose a socialistic pattern of society with central planning, regional balanced growth, growth in heavy industry, irrigation, fertilizer, oil and Gas, ports with a heavy dependence on Public Sector to carry out these sets of nation building activities as private corporate sector was at a nascent stage. In early 1990s India ventured into major economic reforms of de-control of steel pricing and distribution, abolition of freight equalization, bringing down high tariff on imports and paving the way for entry of private sector in industry and service sector.

The concept of Globalisation was a major influencing factor in

deciding the Government policies across all the countries after the break up of Soviet Russia. An international Body in the form of World Trade Organisation (WTO) was formed to frame rules, guidelines and procedures in propagating Free and Fair trade in a Globalised world. China which became an independent nation in 1949 with a centralised government mechanism worked exceptionally hard to build capacities in almost every field of industry and service sector so that by early 21st century the country was fast emerging as a major exporting country and trading partner of goods and services and became a member of WTO with a status of non-market economy. The global trade that was gaining support from a large group of countries under the GATT (General Agreement in Trade and Tariff, subsequently subsumed under WTO) rules brought to light various weaknesses in the system that harmed the emerging and developing countries, India being one of them. While protection against dumping of goods, providing subsidies for export thereby making them competitive in the global market was provided under multilateral trade system, the

long-drawn procedures hardly offered adequate compensation against damages inflicted on the suffering countries, under Free Trade Agreement between developed and developing countries, the latter faced challenges to reap any benefits of trade.

The case in point is FTAs between India and South Korea and Japan, under which steel products are getting imported to India free of duties with little exports from India to these countries. The plethora of non-tariff barriers imposed by various trading partners put severe restraints to free flow of goods across countries. The origin of Atmanirbhar Bharat lays in realizing these intricate challenges in world trade that became a roadblock against developing indigenous capabilities and led to a perennial dependence on supply sources from abroad. In the following chapters we would discuss on AtmaNirbhar Bharat and how it is shaping the Indian steel sector.

Steel and AtmaNirbhar Bharat

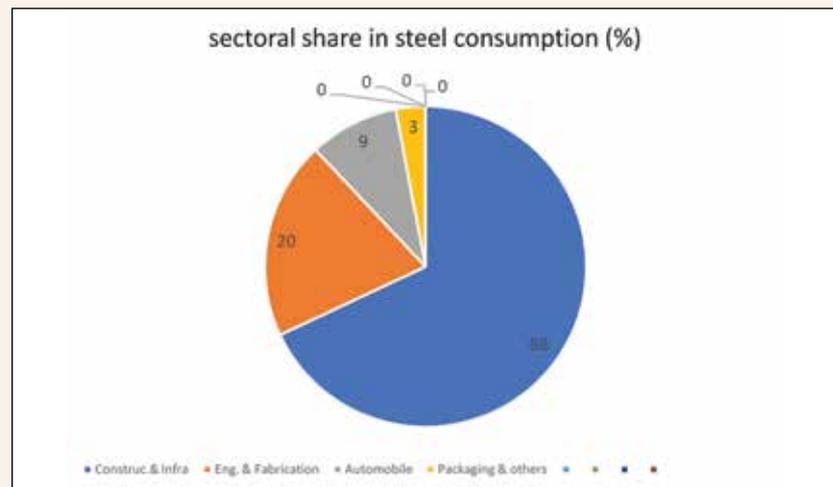
It is to be appreciated that each of the five elements of AtmaNirbhar Bharat, namely, Economy, Infrastructure, Systems, Demography

and Demand is unique concept by themselves and provides abundant opportunities for building up capacities, restructure and re-orient existing methods with new benchmarking for higher level of performance.

The growth and behaviour of Indian steel industry is inextricably linked with the growth of Indian economy. In the last two decades GDP-steel elasticity has been of the order of 0.8. The ratio has marginally come down from what it was in the 1980-90s due to increasing share of service sector (largely non steel intensive) in GDP and nearly stagnant share of the secondary sector (Manufacturing, Electricity, Gas and Water supply and Construction) which is most steel intensive. GDP Growth (at constant prices) in FY 16 at 8.0 per cent, at 6.8 percent in FY18 and at 4.0 percent in FY20 was associated with steel consumption growth of 6.0 percent in FY16, 7.9 percent in FY18 followed by 1.5 percent growth in FY20. In the pandemic year of FY21, while Indian GDP is estimated to degrow by 7.5 percent, steel consumption growth over last year is pegged at (-) 6.0 percent. The growth in steel consumption in India suffered due to inadequate investment in Infrastructure as Gross fixed capital formation (GFCF) in the country which was 31.3 percent of GDP (at current prices) in FY14 has come down to 26.7 percent of GDP in FY21 (second Advance estimates).

The infrastructure demand remains the prime driver in steel consumption as around 68 percent of steel goes to Building (Residential, commercial and industrial) construction and

infrastructure (Roads, Railways, power, urban infrastructure, ports, airports, oil and gas, water transportation, irrigation). The following chart shows the sectoral consumption of steel.



One major element in the concept of Atmanirbhar Bharat is replacement of non-essential imports. It is an acknowledged fact that India cannot and should not aim at developing all grades and dimensions of steel. Out of the annual average volume of imports of 5-6 MT of steel, around 40 percent steel gets imported on price considerations and not to bridge the gap in domestic availability. On the other hand, the basic criterion of developing capacities in any segment is sustained and regular demand for the product. If the current capacity is way below the requirement, there is an urgent case for capacity augmentation which requires fresh investment, either by the existing or new producers or by inviting FDI into the sector. And if indigenous demand is lagging, the new unit or the expanded old unit and the group of them must be engaged in exports. This would provide the much-needed economy of scale and the option to switch.

Each sector also has a long list of indirect imports which are

embedded in the finished good that is ultimately gets imported. The annual average indirect import of steel in the form of Engineering imports is around 5-6 MT. For textile sector it is the special kind of Textile machinery or for the mining sector, the excavators or cranes of massive capacities. For auto components these are tools and equipments containing special alloy steel. As these items are built or constructed in other countries, the special steel that is needed to manufacture these, is procured by these countries from the sources that have become, over the years, the part of the Global Value Chain (GVC). Being a part of the GVC would provide exposure to quality upgradation and developing service delivery excellence. Digitalisation and e-marketing are the latest tools that have become imperative for global operations of these units. Many a times we come across the domestic industry claiming to have created the capability of manufacturing those special steel grades and dimensions which go into the

production of the whole gamut of engineering items that are getting imported. It needs to be a part of this type of manufacturing by supplying those small requirements at competitive prices at the place of manufacturing which is a bit far-fetched but not impossible if it can combine the order for multiple items where these grades are needed. Marketing agents in particular locations can facilitate the operations, may be through a warehouse where the special steel can be stored in bulk. There are a few ports like Antwerp which is offering excellent storage space near the port to take care of all necessary export formalities from India.

The second option is to incentivize MNCs including large machine building manufacturers (south Korea, USA, Japan) to set up facilities in India to manufacture the variety of engineering goods currently being imported. The procurement of steel from indigenous sources to produce those items would then become highly cost competitive and it would be the ultimate stage of Atmanirbhar Bharat. In this case also, the ability of the firm to become a part of Global Value Chain would be imperative to achieve economy of scale in operation which would go a long way to reduce the total cost of production.

The alternative to the above remains in the capability of various segments of Capital Goods sector (Fabricated Metal products, Forged metal products, Transformers, Material Handling Equipment, Excavators, Heavy Cranes, Firefighting equipment, Printing Machinery, Dairy Machineries) to create capacities to indigenously manufacture

these finished products and replace imports. Depending on which item/s are getting regularly imported by India, the indigenous capacities can be created. Indigenous manufacturing of equipments needs to be immediately encouraged by developing equipment design technology within the country. The Government must provide suitable incentives to these units setting up facilities for import replacement. It would be necessary to combine the export orders for these machineries particularly from the neighboring countries, SAARAC, ASEAN and Vietnam. In addition, it would add to higher steel consumption in the country. PSU Units like BHEL, NTPC, BEML have the capabilities of developing these items.

Defence and steel

Defence sector imports around 70 percent of weapons and equipments. A set of 101 defence items has been banned from imports, out of which around 69 imported items have already been banned from Dec'20. The new Defence Acquisition Procedure (DAP) includes revised offset clauses by state run defence units like DRDO (57 establishments), regional Ordnance factories (41), Defence PSUs (11 nos) by raising the indigenous content by 10 percent with phased programmes for Buy and Make India. While FDI limit has been raised from 49 percent to 74 percent, the Joint Ventures by Foreign OEMs has been permitted to have strategic partnership with Indian Firms to take part in RFP under Buy and Make Indian categories. The Innovation for Defence Excellence (idex) framework has been launched to achieve

self reliance. Two Defence Corridors at Tamilnadu and UP have been set up to encourage domestic production of defence items and also for exports. This would help MSMEs and start ups to create job opportunities. Indian Navy is similarly trying to create indigenous capability of making submarines through enhancing space in Nuclear Power Ballistic Missile Submarines. It is trying to develop new generation diesel-electric attack submarines with foreign collaboration by Indian firms (Mazagaon Dock and L&T).

SAIL has developed and supplied DMR-49 grade steel for making naval ships and has developed other NACE grades plates. RSP Plate mill has been supplying various special grades steel for merchant ships, aircraft carriers. Bharat Dynamics Ltd. has delivered heavy weight torpedo to Indian Navy as a part of Quick Reaction Surface to Air Missile. For indigenous manufacturing of Submarines, the various grades and dimensions of steel items are being developed by Indian steel industry.

Other sectors

Railways, a major steel consumer is making sincere attempts to capitalize the concept of AtmaNirbhar Bharat. For high speed rails, SAIL and JSPL have developed Head Hardened Rails (R-1018, R-1175) for the Metro Coaches which is expanding in 27 locations by FY22-23. This has enabled Railways to get indigenously manufactured Rails which have all along been imported. Domestic capacities are being created to develop Forged Wheels which was imported by

Railways. Stainless steel produced indigenously has helped Railways in station development, manufacturing and internal facilities of coaches.

CRGO steel for making Transformers get imported to the annual average extent of 2.5-3.0 lakhs tonnes of steel. Indigenous capacities (Thyssen-Wellspun venture, JSW steel) have been created to substitute imports in the coming months. For Galvannealed steel, ElectroGalvanised steel, API grade HRC, Plate, Pipes API > X-80 and Tin plates (OTSC grade) which get imported every year, domestic capacities are being created to cater to the rising demand as well as to undertake exports in these categories.

Productivity Linked Incentive

13 sectors have been offered incentives worth Rs.1.47 lakh crores for the next 5 years to incentivize companies to create manufacturing capacities in India. The sectors are Auto manufacturing, auto components, Solar Panel makers, Speciality steel, Consumer Appliance companies, Textile units, Food Processing Plants, Special Pharmaceutical products, Mobile Phones (Smart Phones, Components), Electronics, Battery manufacturing etc. This is a phased manufacturing incentive scheme to allow the companies to enhance local value addition in components and accessories. Electronic goods are the largest non-oil imports by India. India has imported goods worth of \$65 bn from China in FY20 and exported goods worth \$17 bn to the neighboring countries.

The following 3 incentive slabs on

Production Linked Incentive scheme for Speciality Steel

3 percent incentive	6 percent incentive	9 percent incentive
Colour Coated, Al-Zccoated, Heat Treated HR Steel used in Power, Construction & Agro sector	Tin Mill Coated Metal products, Electro Galvanised steel having export potential	Steel imported for Oil and Gas and Industrial purposes, Head Hardened and Asymmetrical Rails, Plates and Flats of API, AHSS (Cold Rolled Cold Annealed), all Plates for Boiler and Pressure Vessels, Abrasion Resistant, Wear resistant, Die steel, Valve steel and Bearing steel

incremental sales have been announced for enhancing capacities in Speciality steel valued at Rs. 6322 crores for 5 years subject to ceiling of Rs. 200 crores for each company. Detailed procedures follow in April'21.

Conclusion

The Ministry of steel in India has implemented Domestic manufacturing of Iron and steel policy to give priority for indigenously manufactured steel with 20-50 percent value addition, based on specific product category, by all Government procurement agencies for projects valued more than Rs. 5 lakhs with the stipulations that no Global tender would be necessary upto the project value of Rs. 200 crores. USA has long been implementing Make In USA policy which has recently been replaced by Make and Melt in USA specifically to support US Steel industry to develop capacities so as to cater to the increasing requirements of federal funded US Infra sector, Railways and other steel intensive segments. The local content rule has also been implemented by UK for steel procurement by all funded agencies.

The AtmaNirbhar Bharat is

therefore a sincere attempt by the Government to help and nurture Indian manufacturing sector with thrusts to build capacity augmentation for various special items to form a strong foundation for Indian manufacturing sector which would be able to internationalize their product categories and establish a brand image for Indian manufactured items, while bringing down the non-essential imports at a substantial cost to the economy. India imported 6.6 MT of melting scrap valued at Rs. 22918 crores last year. During April-February'21 the country has imported 5.2 MT of scrap valued at Rs. 18544 Crores (\$2494.8 mn). With the final Vehicle Scrapage policy (personal vehicles more than 20 years and Commercial vehicles exceeding 15 years) to be announced shortly by the Government with a number of players creating shredding and processing centers all over the country along with enhancement of capacities at Alang, Gujarat for ship breaking scrap, India's internal generation of scrap should drastically bring down this import in the coming years and make India self reliant in providing good quality scrap for steel making purposes. ■

MSTC: Mission Atmanirbhar Bharat



Surinder Kumar Gupta
CMD, MSTC

The Financial Year 2020-21 was a difficult year, not only for India but for the global economy as well due to the ensuing COVID-19 pandemic. As of 7th April 2021, more than 132 million cases have been confirmed, with more than 2.87 million deaths attributed to COVID-19, making it one of the deadliest pandemics in history.

Accordingly to contain the spread through 'Break the Chain' initiatives, the authorities worldwide have responded by implementing travel restrictions, lockdowns /quarantines, workplace hazard controls and business closures.

As such FY 2019-20 experienced a weak environment of global economic growth, throughout all sectors including manufacturing and trade. Demand also remained depressed though the economic scenario was expected, optimistically, to improve in 2020. Lockdown across continents has delivered a global economic shock of enormous magnitude, leading to steep recessions in many countries.

To rise up to the challenges of the prevailing crisis our Hon'ble PM has given a clarion call to the nation for 'Atmanirbhar Bharat' or Self-reliant India on 12th May, 2020. The aim is to make the

country and its citizens independent and self-reliant in all senses and enable resurgence of the Indian economy. It has been appreciated globally that how India has demonstrated her capability of turning a crisis into opportunities, as manifested in the re-purposing of various automobile sector industries to collaborate in the making of life-saving ventilators.

Towards achieving self-reliance, India has adopted five-pillars, viz. Economy (to bring in quantum jump and not incremental change), Infrastructure (to become the identity of India), System (21st century technology driven arrangements), Vibrant Demography (our source of energy for a self-reliant India) and Demand (to utilize in full capacity, the strength of our demand and supply chain) thereby strengthening all stakeholders in the supply chain to increase, as well as fulfill the demand.

In this mission the Prime Minister announced a special economic package, equivalent to almost 10% of India's GDP, which will provide a much needed boost towards achieving 'Atmanirbhar Bharat'. It will focus on land, labour, liquidity and laws and will also cater to various sections including cottage industry,

MSMEs, labourers, middle class, and industries, among others. He also said that several bold reforms are needed to make the country self-reliant, so that the impact of crisis such as COVID can be negated in future. These reforms include supply chain reforms for agriculture, rational tax system, simple and clear laws, capable human resource and a strong financial system. These reforms will promote business, attract investment, and further strengthen "Make in India". He remarked that self-reliance will prepare the country for tough competition in the global supply chain, and it is important that the country wins this competition by increasing efficiency in various sectors while ensuring quality.

Subsequently, the Govt. of India has charted the following five phases of Atmanirbhar Bharat Abhiyan:

- **Phase-I:** Businesses including MSMEs
- **Phase-II:** Poor, including migrants and farmers
- **Phase-III:** Agriculture
- **Phase-IV:** New Horizons of Growth
- **Phase-V:** Government Reforms and Enablers

MSTC Limited, a premier public sector company in e-commerce sector (Mini Ratna Category-I PSU under Ministry of Steel, Govt. of India) has been servicing its major clients & customers in the domestic B2B segment for last two decades.

MSTC is stand-alone service provider and does not outsource e-commerce activities to any outside agency. The development of application software is carried out by in-house team of engineers/experts. MSTC is compliant of CVC Guidelines, IT Act 2000 & its subsequent amendments and GFR norms. MSTC's e-Commerce platform is certified as ISO 27001:2013 & ISO 9001:2015 and Software Development Division is appraised as CMMI Level 3. The e-commerce system is periodically audited by STQC, a Department in Information technology under Ministry of Communication and IT. All the above features ensure utmost transparency and fairness which are the essence of e-commerce.

Presently MSTC have more than 500 principals (clients) and more than 1.50 lakh buyers (ever increasing) registered on its e-commerce platform. With an outlook of 'Vocal for Local' over the years MSTC has emerged as a leader in providing e-Commerce services with list of domestic clients as diverse as Ministry of Defence, Govt. of Andhra Pradesh, Govt. of NCR, Prime Minister's Office, Supreme Court, major PSUs like ONGC, BHEL, IOCL, CIL, NTPC, DVC, PGCIL, State Road Transport Corporations, State Electricity Boards and CUSTOMS etc. Also PMO, President House, NCR Delhi, majority of Central/ State PSUs, Central Govt.

MSTC is engaged in both forward e-auction and e-procurement as well (both e-tender & e-reverse auction) for scraps, condemned items, old plant & machineries, surplus store, minerals like coal, lignite, iron ore, chrome ore, barytes, manganese ore, rock phosphate etc., and agri & forest produces along with e-procurement of goods, works & service contracts for its large client base in the country.

Departments have been the esteemed recipients of services of MSTC.

MSTC is engaged in both forward e-auction and e-procurement as well (both e-tender & e-reverse auction) for scraps, condemned items, old plant & machineries, surplus store, minerals like coal, lignite, iron ore, chrome ore, barytes, manganese ore, rock phosphate etc., and agri & forest produces along with e-procurement of goods, works & service contracts for its large client base in the country.

MSTC has already adopted and promoted the "Digital India" drive which became the change agent and rapidly transformed everyone's life and augurs well for ease of doing business in India. Now towards 'Atmanirbhar Bharat' MSTC has taken initiative

towards complete contactless process between market optimum price discovery to domestic vendor/buyer selection vis-a-vis seamless online payment transaction till delivery. This has been aptly demonstrated in the recent events of Govt. of India's e-auctions for several Commercial Coal Mining blocks, 5G Spectrum auction, that of Mining Leases and Composite Licenses of both major and minor minerals for various State Governments, auction of NPAs of Banks, auction of Sand & Moraine Blocks in UP as well as e-bidding system for strategic sale of Public Sectors, bidding portal for allotment of License for Liquor Shops in Rajasthan etc. through individually customised portals of MSTC to act as a tool/enabler for the newly launched schemes of governments both Centre & State. Further, in the last decade MSTC has developed portals of other Govt. of India schemes, viz. DEEP (Discovery of efficient electricity price), UDAN (Ude Desh ka Aam Nagrik), SHAKTI (Scheme to Harness and Allocate Koyla (Coal) transparently in India) etc.

Based on the feedback of all the stakeholders of the different activities dealt by MSTC it is evident that our endeavour has resulted in a positive impact and win-win situation for all due to speed, transparent and cost-effective initiatives and processes taken by the TEAM.

I foresee a New India, through the government of India's initiative of 'Atmanirbhar Bharat Abhiyan' making her citizens more empowered and the country self-reliant with resurgent economy in a globalised world thereby forging a partnership in global cooperation and peace. ■

New and Improved Convention Centre at SCOPE Complex and SCOPE Minar

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Booking of halls are now open in line with Government guidelines.

Conference Facilities at SCOPE Convention Centre Lodhi Road, New Delhi

The centrally air-conditioned SCOPE Convention Centre at SCOPE Complex, Lodhi Road, New Delhi provides excellent conference facilities to PSEs, Govt. Departments, Autonomous Bodies, Institutions/NGOs etc. The Auditorium and other Conference Halls are equipped with projector and screen facilities, sound & light control room with recording & P.A. facility, etc. Details of the capacity of the Auditorium and other Halls, which are available on nominal tariff are given below:

Auditorium



The Auditorium having capacity of 310 persons (300 Chairs + 10 Nos. Chairs at stage) capacity equipped with projector, screen and mikes on dais and podium on stage.

Tagore Chamber



The chamber having capacity of 92 persons (86 Nos. Chairs + 6 Nos. Chairs on Dais) equipped with 2Nos. projector & screen and mikes on dais, tables & podium.

Bhabha Chamber (Board Room)



The chamber having capacity of 44 persons (24 Nos. Chairs on round table and 20 Nos. Chairs on sides) equipped with projector, screen and mikes on dais, tables & podium.

Mirza Ghalib Chamber



The chamber having capacity of 108 persons (102 Nos. Chairs + 6 Nos. Chairs on Dais) equipped with 2 Nos. projector & screen and mikes on table, dais and podium.

Fazal Chamber



The chamber having capacity of 25 persons (15 Nos. Chairs on round table and 10 Nos. Chairs on sides) capacity with board room type sitting arrangement equipped with projector, screen and mikes.

Business Centre



The Business Centre having capacity of 7 persons equipped with multi point Video Conferencing System (1+3), at three locations at a time for National & International both.

Annexe II



The Annexe-II has capacity of 15 Persons and is equipped with projector and screen.

Banquet Hall



The banquet hall having capacity of 500 Persons for the purpose of lunch & dinner. Sitting arrangement could be done for 40 persons.

Tansen Chamber at UB



The Tansen Chamber has capacity of 30 persons and also has stage & podium equipped with projector and screen.

Annexe I



The Annexe-I has capacity of 20 Persons and is equipped with projector and screen.

Amir Khusro Chamber at UB



The Amir Khusro Chamber has capacity of 35 persons with facility of stage & podium equipped with projector and screen.

For Booking & Tariff details please contact

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Mr. Nitin Kulshrestha

Dy. Manager (Tech. & HR)

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Conference Facilities at SCOPE Minar Convention Centre, Laxmi Nagar, New Delhi

SCOPE Minar, an architecturally conceived in the form of two high rise curvilinear tower blocks sitting on a four storey circular Podium Block, is strategically located in Laxmi Nagar District Centre, Delhi -110092 and housing around 40 PSEs of repute. It is one of the iconic buildings of East Delhi. It has a huge foyer which gives an ambience look inside the building. There is a green environment all around the SCOPE Minar building with large size planters. The building also has state-of-the-art Convention Centre comprising of five conference halls i.e.

Auditorium



The auditorium has capacity of 350 delegates. Various seminars, training programmes, presentations, get together etc. can be conducted in auditorium which is equipped with projector and screen. It provides ambient and peaceful environment for the programmes.

VIP Lounge



VIP Lounge has sitting capacity of 30 delegates. The executives and higher level officers, Directors, CMDs can use it as waiting lounge also.

Board Room



Board room having "U" shaped table, has a sitting capacity of 50 delegates with modern facilities - projector, screen, sound system, table mic etc.

SCOPE Academy of Public Sector Enterprises



SCOPE Academy of Public Sector Enterprises (APSE) conducts induction level programmes for PSEs' executives. It has three training halls equipped with projector, screen, sound system etc. one with capacity of 40 persons and two halls with capacity of 30 persons each for training purpose.

Meeting Hall



Meeting hall having "U" shaped table, has a sitting capacity of 62 delegates. Most widely used for small size meetings and training programmes, group discussion, power point presentations etc. and is equipped with projector and screen.

For Booking & Tariff details for Convention Center, SCOPE Minar, Laxmi Nagar please contact

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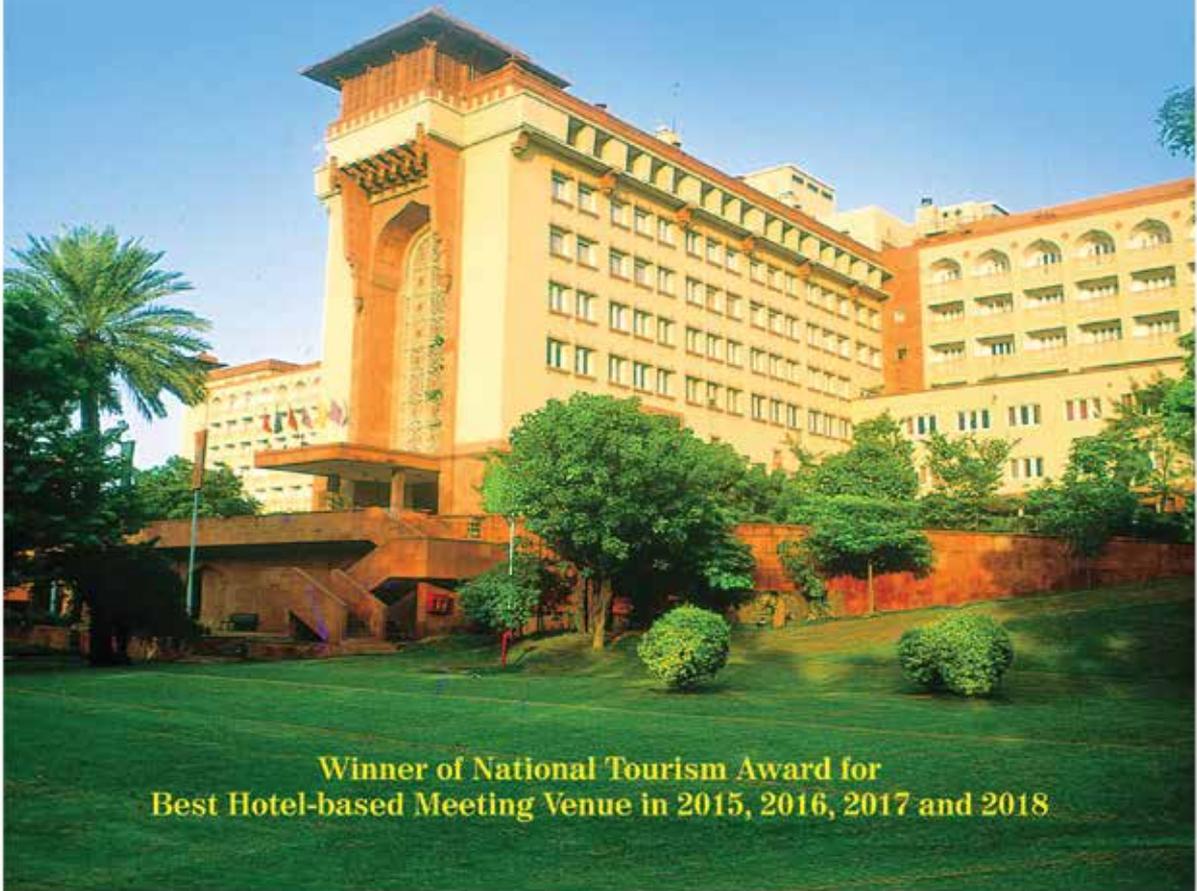
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There is a wide space for vehicle parking that cater for a capacity of 550 cars, including the newly built good quality Banquet Hall wherein 300 delegates can comfortably dine at a time, makes it special to deliver an all-round conducive meeting environment.



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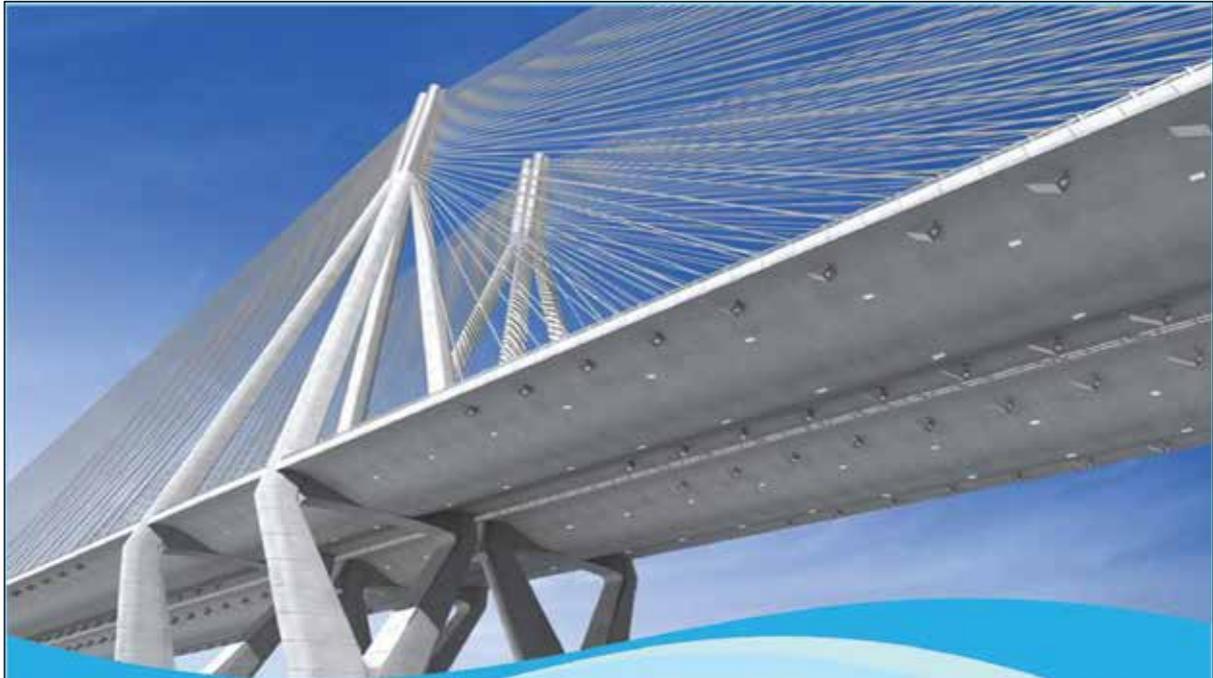
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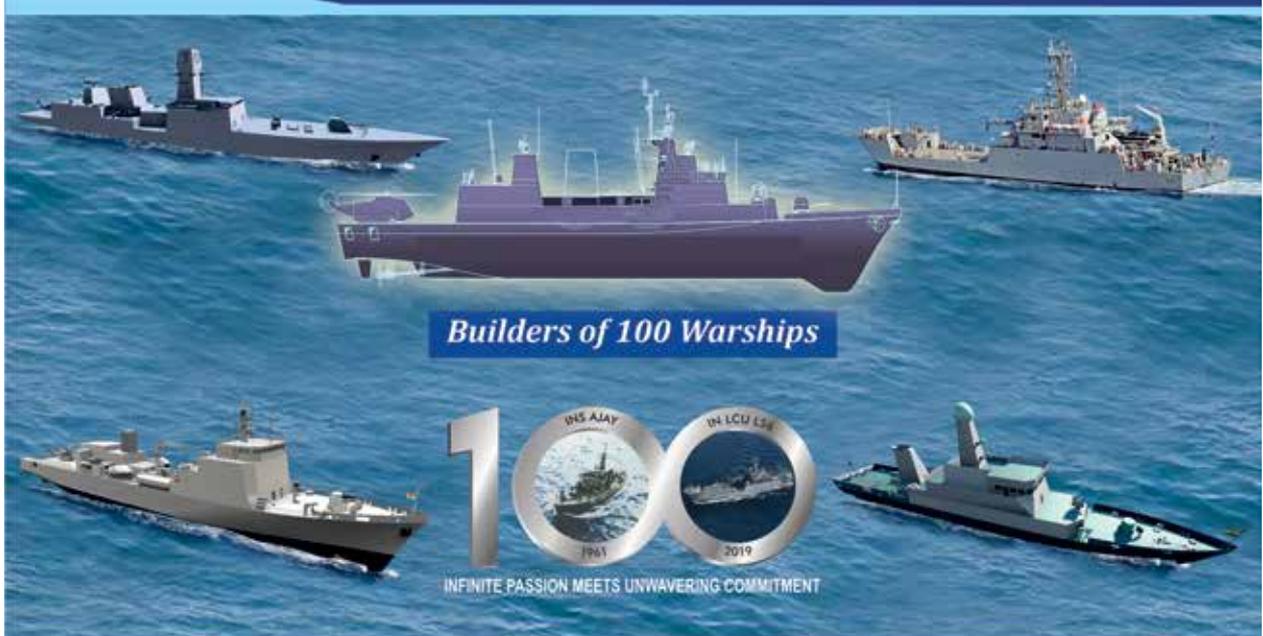
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(भारत सरकार का उद्यम)

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(A Government of India Enterprise)

A Navratna Company

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OIL has been Conquering Newer Horizons with:

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Corporate Office: Oil House, Plot Number 19, Sector 16A, Noida, District Gautam Budh Nagar, Uttar Pradesh 201301, India

Tel: 0120-2419000, 2419200. Website: www.oil-india.com • CIN: L11101AS1959GOI001148  [PROilIndiaLimited](https://www.facebook.com/PROilIndiaLimited)  [OilIndiaLimited](https://twitter.com/OilIndiaLimited)



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Ujwal Bharat Ka Hai Sapna, Swachh Koylanchal Ho Apna

Mahanadi Coalfields Limited

(A subsidiary of Coal India Limited)

Corporate Office: At/PO.- Jagruti Vihar, Burla, Sambalpur, Odisha-768 020

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CIN NO: U74899DL1965GOI004343

KIOCL Making the Environment Clean **Green** & Healthy



KIOCL is in the journey of Iron Ore Mining, Beneficiation, Pelletization and Foundry Grade Pig Iron making for more than 4 decades, compliant with all International Standards like ISO 9001:2015, ISO 14001:2015 & OHSAS 18001:2007. KIOCL is continuously contributing to the State & Central Exchequer, earning precious Foreign Exchange for the Country.

KIOCL is an active partner in meeting the target of 300 million tons of steel capacity by FY 2030 as per National Steel Policy 2017. As a part of afforestation programme, the Company has already planted more than 7.5 million saplings to prevent mine run-off, soil wash-off at Kudremukh region. Under CSR, the Company has been spending substantial amount in the fields of Health, Community Development, Education, Drinking Water, Sanitation and Swachh Bharath- Swachh Vidyalaya Abhiyan.

KIOCL is also a zero discharge Company continuously contributing towards Environmental Sustainability.



View of Pellet Plant



DISP



Pellet Ship Loading

KIOCL Limited

(A Government Of India Enterprise)

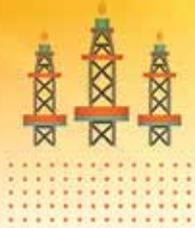
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KIOCL is an active partner in making self reliant India

ECOLOGY-OUR MISSION OUR OBSESSION



वाँ

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ओएनजीसी ने भारत की स्वतंत्रता के उपरांत सभी 7 उत्पादक बेसिनों की खोज की है

ओएनजीसी समूह की कंपनियाँ



सहायक कंपनी

संयुक्त उद्यम

सहयोगी कंपनी

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रजिस्ट्रेशन
करवाएं

कार्यालय जाने
की
आवश्यकता नहीं

योजना के लाभ

एकल बिन्दु पंजीकरण योजना के तहत सूक्ष्म व लघु उद्यम को मिलने वाले फायदे:

- नि: शुल्क निविदा सेट जारी करना।
- अग्रिम जमा (अर्बेस्ट मनी) राशि के भुगतान में छूट।
- टेंडर में सहभागी सूक्ष्म और लघु उद्यम जिसने एल1 (L1)+15 प्रतिशत के मूल्य बैंड के भीतर निविदा मूल्य उद्धृत (Tender Quoting Price) किया हो, वहाँ उनके मूल्य को एल1 (L1) मूल्य (Price) के स्तर पर लाकर आवश्यकता के एक भाग की आपूर्ति की अनुमति भी दी जाती है। ऐसे सूक्ष्म और लघु उद्यम को कुल टेंडर मूल्य के 25 प्रतिशत तक की आपूर्ति की अनुमति होती है। इस स्थिति में L1 सूक्ष्म या लघु उद्यम नहीं होता है।
- सूक्ष्म और लघु उद्यम के संघ (Consortia) की सुविधा, टेंडर मार्केटिंग के लिए।

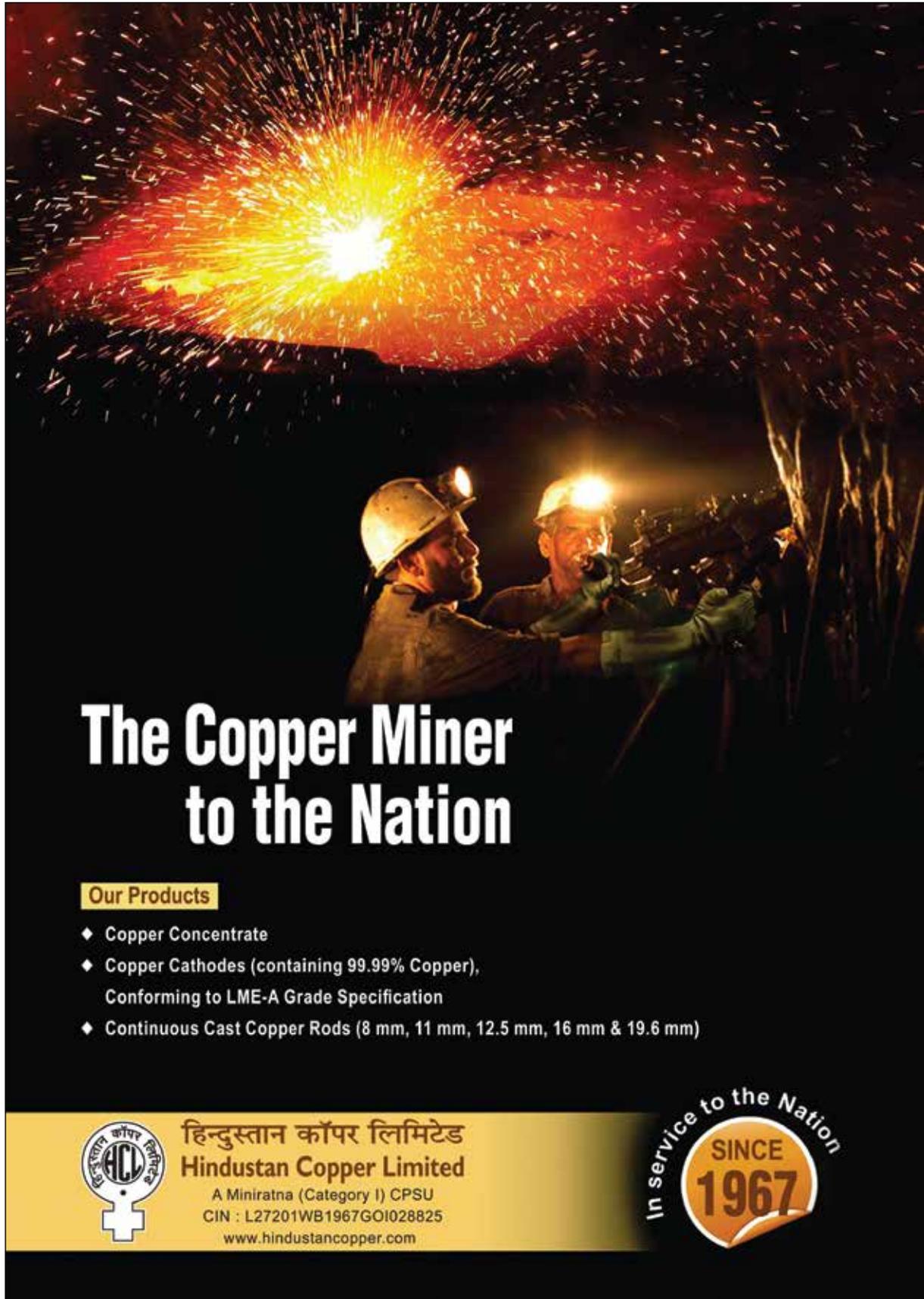


- उपयोगकर्ता एजेंसी द्वारा प्रमाण पत्र के ऑनलाइन सत्यापन के लिए प्रावधान
- प्रतिष्ठित अन्य पक्ष (हर्ड पार्टी) से सत्यापन एवं विश्वसनीयता की मोहर के साथ
- सूक्ष्म एवं लघु इकाइयों के द्वारा विभिन्न सरकारी विभागों के साथ किए जाने वाले पंजीकरण की बहुलता को रोकता है।

अधिक जानकारी हेतु संपर्क करें:

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The Lignite Giant now Ignites the Nation with Clean & Green Energy...

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To reap the benefits of the renewable energy revolution, as a part of the National Solar Mission, Government of India has set a target to achieve 1,75,000 MW of Solar Power by 2022. NLCIL has an ambitious plan to establish 4251 MW of renewable energy projects in Tamilnadu and various states. Presently, the Company has a total renewable energy capacity of 1421.06 MW which includes 1370.06 MW of Solar Power Plants and 51 MW Wind Power Plant.

Renewable Energy Projects under operation and consideration

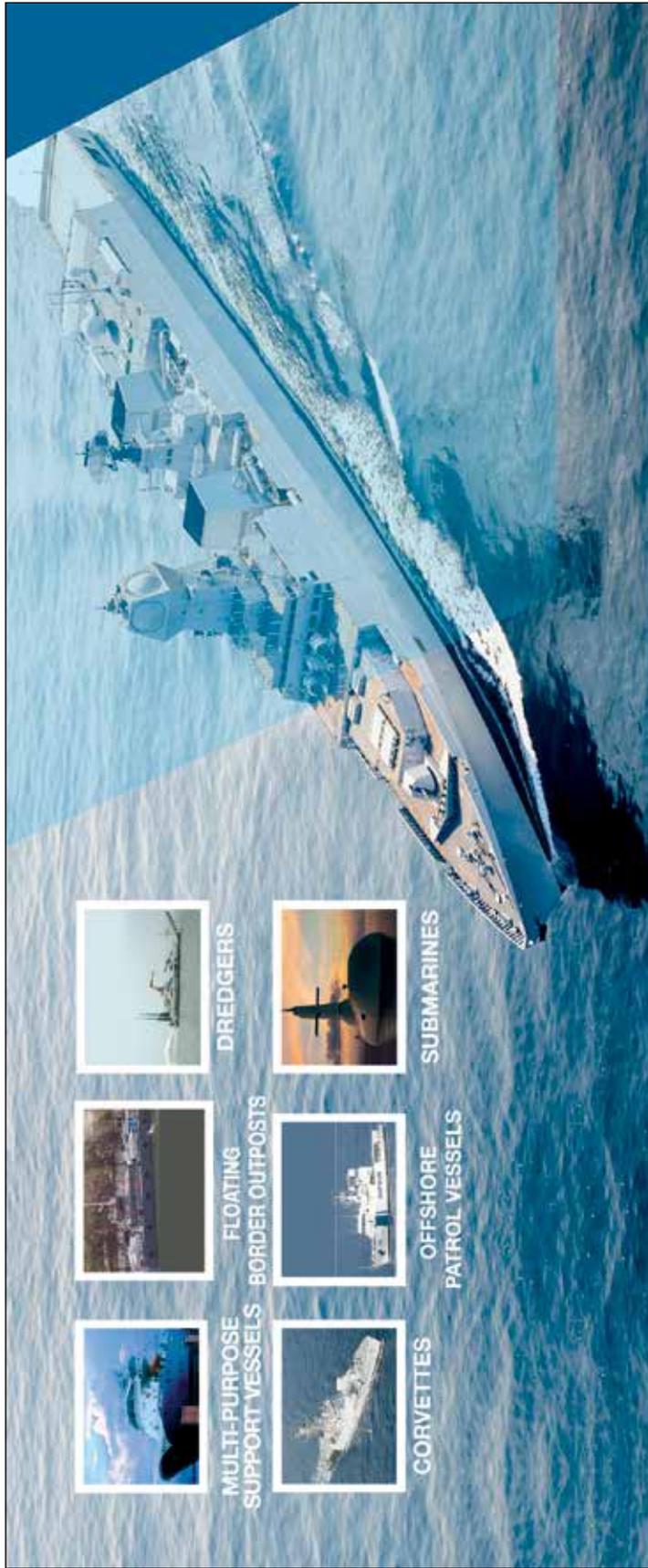
- NLCIL is the first CPSE to cross 1 GW capacity in solar power generation.
- 141.06 MW Solar Power Projects (SPP) including Roof top solar project at Neyveli at a cost of Rs.782.24 crore .
- 1209 MW Solar Power Projects at a cost of Rs. 5343 crore at Tirunelveli, Virudhunagar, Ramanathapuram and Thoothukudi Districts of Tamilnadu.
- 200 KW, R&D Pilot Scale Floating SPP in Neyveli New Thermal Power Project's Raw Water Reservoir at Rs.1.16 crore.
- 20 MW SPP, integrated with 8 MWhr Battery Energy Storage System at South Andaman Island. This is the largest battery bank in India for catering the variation in solar insolation.
- A JV Company, "Coal Lignite Urja Vikas Pvt Limited" is incorporated on 10.11.2020 with Coal India Limited for establishing 3000 MW Solar Power Projects at various parts of the country.
- A 10 MW Solar Power Project in Neyveli, under Mini Smart City Scheme is on the anvil.
- 51 MW (34 x 1.5 MW) Wind Power Project at Tirunelveli District in Tamilnadu at a cost of Rs.347.14 crore.
- The company has also planned to install wind power project of 200 MW in other parts of Tamilnadu.



NLC India Limited

"Navratna" - Government of India Enterprise
 Regd. Office : No.135, E.V.R. Periyar High Road, Kilpauk, Chennai - 600 010.
 CORPORATE OFFICE : BLOCK-1, NEYVELI-607 801, TAMIL NADU.
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- One of the best performing Public Sector Enterprises of India.
- The single largest producer of iron ore in India.
- Bringing socio-economic transformation through innovative and impactful CSR initiatives in the less developed regions of the Country.
- Sole producer of Diamonds in India.
- Venturing into steel by commissioning 3.0 MTPA Steel Plant at Nagarnar, Chhattisgarh.

NMDC re-dedicate itself with a fresh zeal and renewed enthusiasm, energy and strategy to achieve greater heights in delivering value for all its stakeholders



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PRODUCT PROFILE



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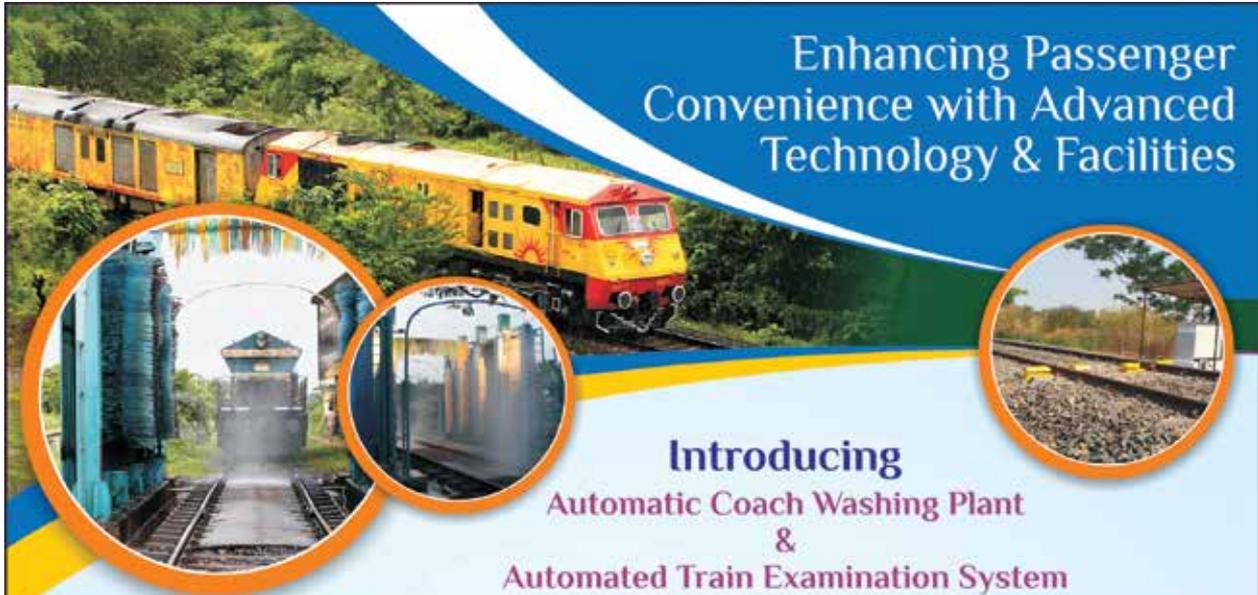


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- Construction of 12 km rail line for Vizhinjam International Seaport Limited
- Railway Siding Projects for Super Thermal Power Project of NTPC at Kudgi and Gadarwara
- Rolling Stock Components Factory at Lote MIDC (Near Chiplun)
- Contract for conducting final location survey for Railway line between Raxaul (India) & Kathmandu (Nepal)
- Construction of Road Tunnel at Wayanad in Kerala State



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Telefax: +91 40 27120671

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MADRAS FERTILIZERS LIMITED

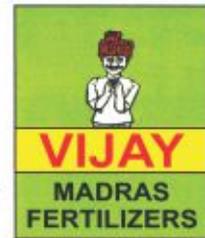
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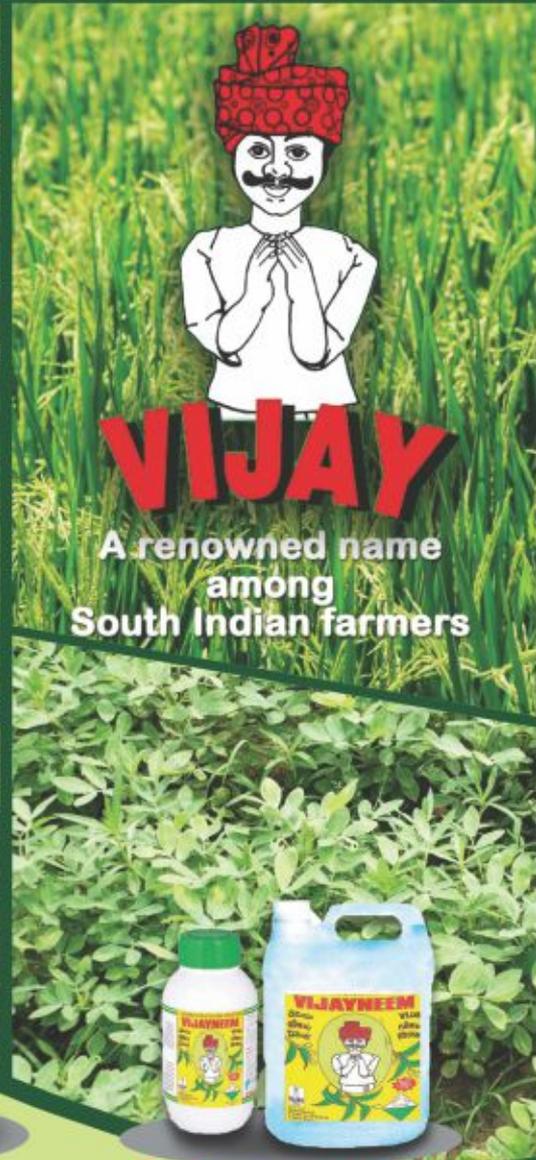
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- ◆ Visakhapatnam Port Trust

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WIRE RODS

5.5mm - 20mm

Wire drawing, Bright bars, Fasteners etc.



ROUNDS

16 - 95mm

Fasteners, Forging, Re-rolling, Railways, Construction

20-45mm both Straight & Coil form
45-95mm straight length



'VIZAG TMT' REBARS

8mm - 36mm

Construction - Reinforcement



BILLETS / BLOOMS

65mm, 77mm, 90 mm / 150mm, 200mm

Bright bars, Forging, Re-rolling, General Engineering purposes



'VIZAG UNKIL' STRUCTURALS

Angles 75 x 75 x 6 - 110 x 110 x 10mm
Channels 100 x 50 - 200 x 75mm
Beams 125 x 70 - 150 x 75mm
Flats 80 x 12 - 100 x 20mm

Construction, Fabrication, Auto Leaf Springs

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