

rteel **SCENARIO**

A JOURNAL ON FERROUS & NON-FERROUS METALS AND ALLIED SECTORS



Interview of: Sandeep Jajodia, CMD Monnet Ispat & Energy Ltd.

- A New technique of Spheroidization & Inoculation
- State Focus: Karnataka
- Essar Hypermart
- Emerging Applications of Lithium-ion Batteries
- Usage of Metal in Furniture Industry







RINL-VIZAG STEEL: Nation's Pride & Customer's Delight





Rashtriya Ispat Nigam Limited a leading Navaratna PSE under the Ministry of Steel popularly known as "Vizag Steel" is the first shore based integrated Steel Plant in the country and is known for its "Quality Products" and













Interview of Sandeep Jajodia

Chairman & Managing Director, Monnet Ispat & Energy Limited





Monnet Group is heading to be a 2 Billion \$ enterprise by 2016-17

- SS: Monnet Group has been aggressively progressing in steel, power and the mining sector. What are its future aims of scaling up the business?
- SJ: Setting up its first sponge iron unit with a capacity of 100,000 tonnes per annum, Monnet Ispat & Energy Limited (MIEL), the flagship company of the Monnet Group, has grown by leaps and bounds to emerge as the second largest coal-based sponge iron producer in the country. MIEL is the only private company to own and operate the single largest underground coal mine in the country. The company is aggressively expanding and is constantly adding value to the areas of operations by leveraging its competitive edge of having backward and forward integration of operations.

The Group has made investment worth US\$ 2 Billion and is looking at a new phase of growth for the company with 1.5 million tonne integrated steel manufacturing facility at Raigarh, Chhattisgarh and upcoming pit head thermal power plant of 1050 MW in Angul, Odisha.

With this integrated steel manufacturing facility at Raigarh, we will be producing structural steel, longs (TMT bars) and flats (Plate Mill Plates -PMPs) to cater to the rapidly growing infrastructure & construction industry.

Also, with the introduction of TMT bars under the brand "MONNET STEEL TMT", Monnet would be foraying into the consumer space.

On the Power Generation front, the Group has a combined power generation capacity of 230 MW in Raipur and Raigarh, Chhattisgarh. The Group having availability of captive coal mines has the capabilities of generating the lowest cost power from its power projects. Leveraging this advantage, it has taken a rapid stride forward from generating power for captive consumption to surging ahead to be an Independent Power Producer by setting up a pit head thermal power plant of 1050 MW in Angul, Odisha, through its subsidiary Monnet Power Company Limited (MPCL). Endorsing the Group's strength in the power generation segment, the Blackstone Group has taken 12.5% stake in MPCL.

The Group also has its strong presence in mining, beneficiation and processing of minerals and has emerged as a highly backward integrated player. This gives us a competitive edge as it enables us to use raw material from captive and domestic resources, thereby reducing dependency on market vagaries pertaining to raw material prices and availability. Monnet also acquired Indonesian coal company - PT Sarwa Sembada Karya Bumi, in the Jambi province of Sumatra, Indonesia through its 100% subsidiary



Monnet Global Limited (MGL). The acquisition gives MGL, access to one of the largest thermal coal mine spreading over an area of 25,000 hectares. Out of this, we have been able to establish 300 million tonne of coal reserves in the mine and we expect that these reserves would increase substantially on completion of exploration of total land area. With this acquisition, MIEL has become one of the very few Indian companies to acquire the prestigious coal contract of works (CCOW) awarded by the Government of Indonesia. The Group having extensive knowledge and expertise of the mining sector, anticipated that mineral beneficiation offers a huge opportunity matrix in India, as the country is currently beneficiating only 15% of its raw coal production against 90-95% achieved by USA and 50% by China. Therefore, MIEL has been working to become one-stop solution to provide beneficiation solutions from concept to commission followed by operation and maintenance of the washeries both in coking and noncoking sectors. Monnet carries out extensive coal washing and beneficiation for its internal consumption as well as for other users, both in the public and private sectors. Monnet Group is slated to develop washing capacity of about 60 million tonnes by 2016 and about 100 million tonnes by 2022 Mt.

Monnet Group has a well- established state of the art technology laboratory at its Khalari (Ranchi) washery in NK Coal fields and an R&D laboratory equipped with most sophisticated equipments for testing coal at Raigarh, Chhattisgarh. The Group has acquired knowhow and technical expertise from various leading companies of the world, including EMA-Lysright Pty, Australia; Daniel Corporation, USA; J-Coal, Japan; and CLI Corporation, USA.



MIEL in collaboration with CLI USA/EMA Lysright Australia is poised to play a dominant role in participating in the various bids being invited by Coal India and its subsidiaries for setting up coal washeries. Pursuant to this, Monnet is installing a coking coal washery for CIL at Patherdih near Dhanbad, Jharkhand which was awarded to "Monnet" under International

bidding. To follow up these successes CIL also awarded Monnet a contract for design and construction and operation of 10 Mtpa washery at Ashoka near Ranchi and is being awarded another contract for design construction and operation of 10 Mt Hingula Washery, shortly to be followed by 10 Mta BASUNDRA WASHERY tendered by CIL.

In collaboration with M/s Daniels of USA, Monnet Group is operating a 4.2 million tonne capacity coal washery for Punjab State Electricity Board at KDH-Khalari in NK Coalfields Daniel Company of USA near Ranchi. The Group has also commissioned a 5 Mtpa washery at Angul, in Talcher Coal Fields, Odisha in collaboration with J-coal of Japan and is in final stage of commissioning 2.5 Mtpa non coking coal washery at Raigarh in Chhattisgarh, with indigenous technology to be expanded to 5 Mtpa. Apart from these, a 3 Mtpa non-coking coal washery at Bachra in N.K. Coalfields, Jharkhand is in the pipeline. All these washeries use indigenous technology and would be used for washing coal for captive consumption.



SS: What is the current position in terms of Steel production in your company?

SJ: We have steel manufacturing facilities in Raipur and Raigarh, Chhattisgarh. The facility in Raipur has a capacity of 0.3 million tonne and from this facility structural steel, sponge iron and billets are being produced. At Raigarh, we have set up a 1.5 million tonne integrated steel manufacturing facility. This facility is equipped with latest technology and is of world class standard. As, I mentioned earlier with this facility, Monnet Group would be entering into the consumer & retail space and through its product would cater to the rapidly growing infrastructure and construction industry. From this steel manufacturing facility we would be producing superior TMT Bars of Fe-500D grade in normal as well as CRS quality. Monnet Steel TMT Bars are made from superior and clean steel billets manufactured through the BF+DRI-EAF-LRF-CCM



route with highly controlled steel chemistry with levels of sulphur and phosphorous much below IS 1786:2008 standard and very low levels of inclusion and trap elements.

Cast square billets of (160 X 160 X 12000) mm are heated in Walking Hearth Reheating Furnace with digitally controlled combustion system to ensure uniform heating of billets. These reheated billets are then rolled in the state-of-the-art Bar mill having H-V configuration mill under technical know-how from **Nuova Carpenteria Odolese** ,Italy to produce Fe -500/Fe- 500D grades of reinforcement steel, sizes ranging from 8mm to 40mm.

The Bar mill equipped with computerized controls is capable of producing TMT bars with closer tolerance on Mass (Kg)/ Meter, yielding higher meterage of Monnet Steel TMT Bars for same weight while conforming to IS 1786:2008 due to Oval-Round Pass design from Schweitzer Rolling Technology, Canada. Furthermore, the implementation of the quenching & tempering enables the production of TMT Bars of higher UTS/YS ratio and higher elongation to ensure excellent earthquake resistance property.

The 1.5 Million Tonne per annum integrated steel making facility includes:

Iron Making: DRI Plants, Sinter Plant, Blast Furnace and Pellet Plant.

Steel Making: The State-of-art Melting & Refining facilities viz. UHP/EBT Electric Arc Furnaces, Ladle Refining Furnaces, Multi Nozzle Type VD Unit, Slab Caster & 6 strand Combi Billet Caster

Finishing Mills: State of the art Bar Mill, with technical know-how from NCO Italy and a 2500 mm wide Plate & 1550 mm wide Strip Steckel Mill.

Product Range from our Steel Division includes:

MONNET STEEL TMT Bars from 8mm to 40mm sizes



- o 500D PLUS grade for retail & general sale
- o Other higher grades viz. Fe 500S, Fe 550D etc as per IS 1786:2008
- o Customised grades like High Corrosion Resistant (HCR) against specific project requirements

Medium and high strength Structurals (I-beams, Channels, Angles) up to 500 mm size

Plates of Structural, Boiler Quality and API grades in width up to 2500 mm, thickness range from 8mm to 120 mm, in length as per customers' requirement

Cast rounds up to 350 mm diameter for seamless pipes and blooms upto 280 x 320 mm

- SS: Have you any plans for manufacturing high value or niche products? Are you planning any Collaborative R & D for this purpose?
- SJ: The 1.5 Million Tonne integrated steel making facility is a state of the art steel manufacturing facility having ability to manufacture any value added alloy steel as per customer demand. Monnet group currently offers 55Si7, EN31, SAE1541, SAE4140, 16MnCr5 etc. grades of alloy steel. The integrated steel plant is also capable of producing alloy steel for automobiles, Spring Manufacturers and Seamless Pipe manufacturers.

In the TMT Bar segment the Group is currently offering high value Earthquake Resistant MONNET STEEL TMT Bars having higher flexibility with High Strength. Catering to the higher corrosion resistance (HCR) requirements for marine and coastal applications, the steel division of the Monnet Group would be introducing Corrosion Resistance MONNET STEEL TMT Bars. These Corrosion Resistance MONNET STEEL TMT Bars would be supplied against specific customer requirements. The integrated steel manufacturing facility gives Monnet Group added advantage vis-à-vis its competitors as, the steel division is capable of modifying the chemical composition by adding appropriate alloying elements for enhancing Corrosion Resistance.

- SS: What steps are being taken by your company for the human resource development in your sector?
- SJ: I would like to share that, the journey of our company started in 1994 with 2 people wherein we had first set up ferro alloys unit followed by first sponge iron unit of a capacity of 100,000 tonnes per annum. Over these years, we have grown as a company to become a 1.5 million tonne steel company and in our journey our Monnet Family has grown to around 6,500 employees. Since inception of the company, we have considered our employees as our biggest assets and hence various Human Resource Development programes are being undertaken to identify and nurture the talent of the employees.



Some of the initiatives taken for Human Resource Development are as follows:

Building Intellectual Capital

Monnet Group has ventured into campus recruitment drive through a competitive and rigorous selection procedure- All India Engineer Test. The Test is conducted for the following:

- o Requirement of Manpower for expansion
- o Attract young Talent
- o PAN India Presence
- o Brand Building
- o To create a pool of home-grown professionals imbibed with a sense of commitment

Monnet recruited total 173 Engineer trainees in the 2010-2011 and 210 Engineer trainees in the year 2011-2012 from the premium campuses.

Training and Development

At Monnet, we invest in our people in a very tangible way. We constantly up-skill and upgrade their competency levels along with developing new ones with robust training programs. We are futuristic and promote on potential

The training and Development modules are designed to turn the talented human resource pool of the organization into learning and innovation focused stronghold, by realizing individual strengths & competencies and up grading them to match closely with contemporary corporate & individual growth needs.

The organization has abundance of human resources as the **BRAIN TRUST** of the company. Company's objective is to convert these human resources in to its assets. To make it happen the company is continuously recycling the human resources through formal and informal training and development activities to update professional / technical knowledge and raise the skill level versatility and adaptability of its employees.

To meet this objective following trainings have been implemented:

- o **On Job Training**: Through Practical
- o Off Job Training: Class room training & Workshop
- o **Out Side Training**: Sending the Employees for participating in training & Seminars.
- Awareness Training Program: Through Different Events Organized within plant & Sharing of Incidents & Different Case Studies.

o Chhu Lo Aasman 2011 o Sitaron Se Aage 2012 o Ek Udaan Lakshva ki Aur 2013

o EVOLVE Programs for Management Technical Trainees (MTT's)

A special training program "EVOLVE" has been designed for the MTT's considering:

Future challenges, making the greatest assets (People) of company up to its competitive edge, grooming the young talents with different types of development programs. Catering the young engineers from different academic backgrounds, and develop long term career prospective, for company as well as individuals.

Monnet Family Day

Monnet Family Day organized annually, gives us an opportunity to bond with our fellow Monnetians and with their families creating an emotional connect. On this day, a gala event is organized wherein the Monnetians and their families display their talents and celebrate togetherness. This creates a great sense of oneness amongst everyone and makes our organization stronger.



- SS: According to National Steel Policy 2012 (Draft) there is a target of achieving 300 MT capacity by 2025-26, do you think India is ready for this growth? What do you feel are the basic hindrances (if any) for the development of steel industry in the country?
- SJ: India has occupied the 4th rank in the world in terms of crude steel production lagging behind only China, USA and Japan. The country has remained world's largest producer of sponge iron for many years and is expected to emerge as the 2nd largest producer of steel in the world in near future, next only to China. Keeping in view the positive outlook, the draft note on National Steel Policy 2012 has set up an ambitious target of achieving crude steel capacity of 300 million tonne by the middle of next decade.

But are we prepared to meet this demand? One cannot confidently give an answer to this question as Indian Steel sector is passing through a critical juncture in the present time. While at one hand it is ready to take up large scale capacity addition, on the other hand it is facing constraints on several issues that need to be addressed.



On account of a lower GDP growth, very few construction & infrastructure activities are taking place and as a result there is tepid demand for steel products which is leading to piling up of inventories with the steel manufacturers.

Steel sector, is one of the core sectors of the Indian economy and is a major growth driver, therefore the sector needs some independence from the clutches of stringent policies. It is imperative to note that today countries are focusing on consumption of steel produced domestically rather than focusing on exports. We cannot be satisfied with the fact that the devalued rupee has proved to be a huge fillip and today we are 22% more competitive because of the depreciating rupee. There is nothing to cheer about it, as, though the export of finished steel touched 5.25 Mt (an increase of 14.5%) over the previous year but the imports have remained higher at 7.87 Mt. Therefore despite the depreciating rupee, our country remained net importer of steel.

Furthermore bleak demand, availability & higher costs of raw materials and squeezed profit margins have made it difficult for the non-integrated steel manufacturers to operate in the current economic scenario. There are severe constraints on the raw material front, as shortage of iron ore has led to lower capacity utilization of Indian steel industry. The capacity utilization during the period 2003-04 till year 2010-11 had been more than 88% whereas in the year 2012-13 it has touched all-time low of 78.3%. Government of India has taken a decision in the budget 2007-08 that Iron ore exports will be discouraged through various fiscal measures when there used to be a 100 million tonne surplus availability. If the exports restrictions are relaxed in the present scenario, the iron ore supply situation for the domestic steel industry will further aggravate and will impact the production of steel in the country. In such a scenario, country will have to increase its steel imports, which will further worsen the current account deficit. Even in the present scenario steel import in the country is approximately \$6 billion, which will further increase if iron ore shortage increases due to exports.



There has been negativity in the business environment from a very long time now and the government's policy paralysis is further worsening the overall business environment. There are critical issues being faced by the steel companies at present, one of them being the lengthy clearance process. Most of the steel MOUs signed in prior years remain as plans, with projects not started due to delays on environmental and forest clearance, land acquisition, mining leases and other regulatory issues. The introduction of the Land Acquisition Bill would further make the process of land acquisition more tedious and would lead to unrealistic increase in the land prices. This would not only add to the delays in execution of new projects due to complicated land acquisitions processes but would also lead to raising costs at all levels and thereby severely impacting the manufacturing and heavy industries sector. At a time when major projects are stalled and India's global competitiveness is eroding, a more facilitative land acquisition process would have helped long-term growth and restore investor sentiments.

It is imperative to note that today, countries are focusing on consumption of steel produced domestically rather than focusing on exports. Infact China, is currently consuming ten times more steel than India, which is a testimony of the revival of their economy and the demand for steel.

Therefore efforts need to be made to enhance the demand of steel products in the country through enhancing consumption in the retail sector, focusing on higher urbanization by enhancing the purchasing power of middle class population that will in turn increase demand for automobiles, white goods and other consumer non-durables, tapping latent demand potential in rural market through investment in housing & social infrastructure. Such steps would be instrumental in increasing domestic demand for steel products which will lead to an increase in the steel prices thereby paving path for revival of the steel sector.

I would like to emphasize that our country holds huge growth potential and now the time has come to frame policies and create conducive environment to facilitate investments in the sector in order to meet the target of achieving crude steel capacity 300 million tonne by the middle of next decade and to achieve overall growth of our nation.

- SS: Could you give your remarks on the present mining crisis in the country? Do you consider the mining laws to be too harsh on the mining sector? Or should there be even more stringent regulations?
- **SJ:** I would not say that the mining laws are harsh but they do require to be revisited and suitably amended to



accommodate the needs of today. The laws should be enabling in nature besides playing a regulatory role. Policies derived from the laws should be encouraging to attract investment in the sector and facilitates large scale exploitation of available minerals in an environmentally friendly and scientific manner to add to the revenues of the nation.

- SS: What are your views about the recent land Acquisition Bill in India? How far do you think it will affect the industries?
- **SJ:** I have always appreciated the policies that are framed to increase the prosperity of the people as it improves their purchasing power and increases their standard of living, which is a sign of an economic revival. However, this recent land acquisition bill would be a deterrent to economic growth as it has several clauses that are unfavourable for industries at large.

The land acquisition bill should have been designed with an aim to balance the interests of affected families with industry affordability. Whereas, the Land Acquisition Bill that has been introduced on the backdrop of the economic crisis wherein the industry is battling a severe slowdown would further make industrial projects unviable and would severely impact the manufacturing and heavy industries sector as all such projects require acquisitions of large land parcels. At a time when major projects are stalled and India's global competitiveness is eroding, a more facilitative land acquisition process would have helped long-term growth and restore investor sentiments.

Paying good compensation to the land owners is a welcome move and we have been doing that already, but seeking 80% of land owners consent in case of private developer and 70% consent of land owners in Public-Private Partnership (PPP) model would lead to unnecessary delays in transfer of land. This will in turn lead to an unrealistic increase in the land prices thereby raising costs at all levels in the Indian economy. Also, with the introduction of the bill, the process of land acquisition would become more tedious and acquisition of large tracts of land for setting up business would become a difficult task. The retrospective applicability of the Bill would severely affect the on-going industry projects as re-starting the entire land acquisition process would lead to delays and consequent cost over-runs.

- SS: Do you find bureaucratic negligence or interference in the development of industry in our country?
- SJ: Red tapism and delays in getting statutory clearances have been a major reason for delays in setting up of projects. These have been caused by various factors including outdated laws and bureaucratic delays. The current environment which has emerged due to string of scams and investigations has created a tensed

environment resulting in anti-investment atmosphere. The bureaucracy at both, Centre and State levels has become fearful in taking decisions further adding to the voes of the industry.



- SS: Could you let us know your views on sustainable growth?
- SJ: Creation of sustainable growth of the business should be the ultimate goal for every organization. As, a business that grows too quickly may find it difficult to fund the growth and a business that grows too slowly or not at all may stagnate. However, achieving this sustainable growth is a tough task, given the dynamic economic, political and other competitive trends.

The organizations need to develop business models that minimize the impacts arising from the fluctuations in economic, political and competitive trends. To achieve that, the organizations have to reduce their dependencies on external factors and have to be cost effective.

It is with pride, I can state that, at Monnet Group we have developed a diversified business model with forward and backward integration of operations. This business model has not only safeguarded us from external market forces but has also helped us in adding value to our business operations.

We have successfully implemented integrated business model in our 1.5 million tonne steel plant. Wherein right from raw material to final product everything/every process happens in house and there is minimal dependency on external forces. This insulates us from volatility of external forces like availability & fluctuations in prices of raw materials and also enables us to put stringent quality control techniques to ensure production of best quality products from this integrated steel facility.

Every organization, should aim at maximizing stakeholders' value and to do so it gets imperative to focus on sustained growth rather than just focusing on growth.