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Metallurgy  
Materials Engineering

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# NEWS LETTER

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A young child with short brown hair, wearing a red and orange striped shirt, is looking into the open door of a Miele Professional washing machine. The machine is white with a stainless steel door and a control panel on top. The background shows a laundry room with a white laundry basket and a wooden shelf.

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## INTRODUCTION

This News Letter contains the write-ups on the following:

- 1 Nuclear Energy is Eco-Friendly and most Economic for India by Mr. R N Parbat, Past President, IIM
- 2 Memoirs about Prof. Indiresan, Ex-Director, IIT Madras by Prof. K A Padmanabhan
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### **Nuclear Energy is Eco-friendly and most economic for India**

**Mr. R N Parbat**

Past President, IIM



[The author by virtue of being a Past President of The Indian Institute of Metals and Founder President of Millennium Institute of Energy & Environment Management, had interacted with a large number of Nuclear Scientists, Nuclear Engineers and Nuclear Physicists in the country. The current published articles on this subject are primarily for the scientific community and hence less understood by non-scientific community. An attempt is, therefore, being made by the author to write a relatively popular article quoting the relevant technical information from the published documents.]

#### **Introduction**

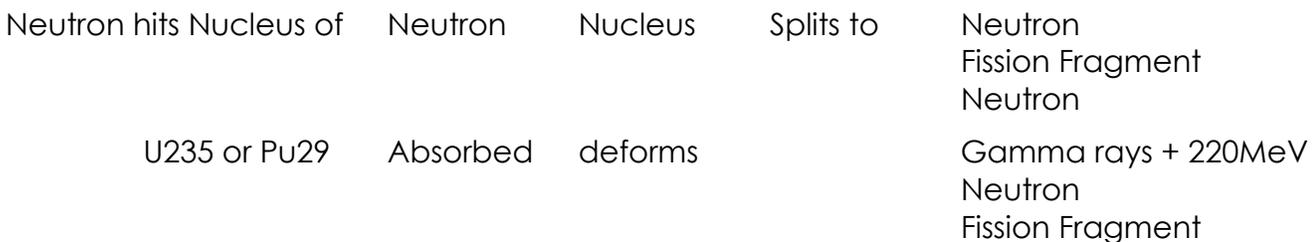
Nuclear energy has been a part of the world's energy mix for almost fifty years. Increased public concerns, over the past twenty years, has caused socio political constraints on it's use. However, recent concerns over sustainable development and climate change has lead to renewed interest in the potential role of nuclear energy in the world's future energy basket.

The yearly uranium demand to sustain the present nuclear power capacity in some 430 reactors worldwide is about 60,000 tonnes. Current known reserves around the world can support this demand of uranium for 80 years or so but undiscovered conventional resources could extend this operating period by a factor of 3, while the use of recycling and Fast Breeder Reactor may extend this period by a factor of 100. In parallel, introduction of the technology of Thorium fuel cycle has even higher potential. Ultimately, uranium extraction from sea water, with a potential of some 4000 million tonnes would constitute a virtually unlimited source of supply provided the present laboratory scale of operation is upgraded to commercially viable scale through sustained research.

➤ What goes on inside a Nuclear Reactor ?

Let me start by explaining a few technical terms, used in Nuclear parlance. Nuclear fission takes place by reaction of a Neutron with the nucleus of a fissile material like Uranium 235 (U 235) to liberate energy and particles of stable atoms of lower atomic weights with a loss of weight. This loss of weight or Mass is converted into energy according to great nuclear scientist Einstein's formula :  $E = mc^2$ , where E= energy, m = loss of mass and c = velocity of light. Nuclear transmutation is another phenomenon where a non-fissile atom of say, U238 absorbs a neutron and becomes Plutonium 239 (Pu 239), which is a fissile material. When U 235 captures a neutron, it forms unstable U236 which in turn splits into two fragments of smaller nuclei on fission with loss of weight. This loss of weight is converted to energy as per Einstein's formula and liberates energy equivalent to 220 MeV like U235, Pu 239 is also a fissile material. While U 235 is available in the Earth's crust along with U 238 which is not a fissile material, Pu 239 is a nuclear fusion product made inside a Nuclear Reactor by absorbing a neutron by U 238 atom. In nature U is available mainly as U 238 and a meager 0.7% of the content is U 235. It is important to know that when the percentage of U 235 drops below 0.25%, it is no more commercially fissionable.

When a Neutron hits the nucleus of a fissile material like U 235 or Pu 239, the fission products are represented pictorially as follows :



If the above fission chain continues in an uncontrolled manner, it leads to Atomic Explosion (atom bomb). Under controlled condition in a Nuclear Reactor, the fission chain continues in a sustained manner to provide nuclear energy that can be tapped in a safe and economic manner for social benefit.

A fissile isotope is one that can be fissioned with neutron of any energy, thereby resulting in release of more energy than what is needed to cause the fission. Such fissile materials like U233, U235 and Pu 239 are major fuels for Nuclear Reactors. A fertile material is one which leads to the production of a fissile isotope on absorption of neutron. U 238 and Thorium 232 (Th 232) are such fertile isotopes..

Most thermal reactors use U 235 as nuclear fuel in a controlled fission chain, while Pu 239 is best utilized in Fast reactors for efficient breeding of new fissile material as explained below. Thermal reactors use a moderator like Heavy water to control fission reaction while Fast reactors need no moderator. The question comes to one's mind why do we need Fast Reactor? Natural Uranium contains very small quantities of U 235 (0.7%) and large volume of U 238. Although U 238 does not participate in energy formation, it gets converted to Pu 239 which is a fissile material. Manmade Pu 239 is a nuclear fuel for Fast reactor. It is found that fission of Pu 239 produces significantly more number of neutrons per fission in a Fast reactor than in a Thermal (slow) reactor. Out of the neutrons produced from each fission process, one neutron is needed to sustain the chain reaction. The excess remaining neutrons are available for non-fission processes including nuclear transmutation. Thus in a Fast reactor, the rate of conversion of fertile nuclei to fissile nuclei by the process of nuclear transmutation is faster. The conversion of fertile to fissile material is known as Fuel breeding. Thus the concept of breeding is the concept of artificial (manmade) production

of fuel for nuclear reactor. In essence the breeding of fuel is faster when Pu 239 is fissioned in a Fast reactor than in a thermal reactor.

Thorium 232 (Th 232), a naturally occurring mineral in the coast line of India, is the second largest deposit in the World. Th 232 is fertile and can be converted to fissile material according to the following reaction:

Fertile -----		Fissile	
U238 +	Neutron	=	U239 --- Np 239 --- Pu 239
Th 232 +	Neutron	=	Th 233 --- Pa 233 --- U233

It is now clear that Th 232, abundantly available in India, will be the FINAL NUCLEAR FUEL for India. It can be depended upon as a sustainable energy source for many centuries. Thorium does not contain any fissile isotope like Uranium235. To convert Th 232 into U 233, it is necessary to mix fissile material initially. For this enough stock of fissile material like Pu 239 needs to be build-up using Fast Breeder Reactors (since India does not have a U 235 enrichment facility). Once this technology is fully developed indigenously, India will not only be self-sufficient in both nuclear fuel and reactor design it will also be a major energy provider in the world using the U – Th fuel cycle. Over the next few decades, India's dependence on imported Uranium fuel will come down sharply. In the interim, we need to work on U 235 and Pu 239 for commercial nuclear energy and develop Th 232 technology for the future. Indian scientists are working relentlessly and the success is well within sight

➤ Why do we need to import enriched Uranium now ?

With the current known domestic reserve of U 235 and U 238, India can hardly produce around 10,000 MWe of power. We need to import enriched Uranium from Uranium Supplier Countries to continue our nuclear energy programme for the next 30 to 40 years till Thorium technology is fully developed for commercial use.

As regards the cost of uranium, let it be known that the contribution of uranium in Nuclear energy cost is only 5 % as against above 30 % in case of coal.

If we look at the international use of Nuclear energy, the picture is even more clear.

**Nuclear Energy generation round the World as % of total energy mix**

	In 2002
North America	17.8 %
Latin America	2.7 %
Western Europe	28.5 %
Africa	2.6 %
Middle East & South East Asia	1.7 %
South East Asia & the Pacific	-
Far East	15.3 %
Whole World	16.0 %
France has highest use of Nuclear energy at 80 % and India's current generation is 3.5 %	

## **Is Nuclear energy commercially viable?**

In order to make our understanding complete, let us look at some of the comparative figures for Power Plants, using different kinds of fuels.

### A. Annual Fuel requirement to run 1000 MWe Power Plant

Coal requirement for a Coal based Plant	2.6 million tonnes
Oil requirement for an Oil based Plant	2.0 million tonnes
Uranium requirement for a Nuclear Plant	30 tonnes ONLY
Waste produced by a Nuclear Plant is also minimum and there is no emission of CO <sub>2</sub>	

### B. Land requirement for 1000 MWe Power Plant

Coal based Plant	3 Sq. Km
Nuclear Plant	4 Sq. Km
Solar Plant	25 Sq. Km
Wind Mills	100 Sq. Km
Biomass Plant	5000 Sq. Km

### C. Investment for 1 MWe capacity Power Plant

Gas based	Rs. 4.0 Cr
Oil based	Rs. 4.5 Cr
Coal based	Rs. 4.5 Cr
Hydro based	Rs. 6.0 Cr
Nuclear based	Rs. 7.0 Cr

### D. Energy cost from different fuel based Power Plant

Oil & Gas based	Rs. 5.0 / Kwh
Coal based	Rs. 3.5 / Kwh
Hydro based	Rs. 2.0 / Kwh
Nuclear based	Rs. 2.5 / Kwh

On the basis of Fuel requirement, area of land needed, Investment cost and Generation cost, Nuclear Power Plant is an attractive proposition. It has already been said that waste disposal is also minimum in case of Nuclear Plant.

There is continuous improvement towards higher performance, reliability and safety of fuel design and fabrication. Innovative fuel forms are in development to bring further reduction in spent fuel quantities and hence a reduction in long term liability. While the relative economic merit of reprocessing the spent fuel may vary over time, it holds the potential to reduce the specific consumption of uranium as a natural resource and a drastic reduction in the quantities of radioactive nuclides, to be disposed of safely.

A further examination of the availability of various kinds of fuels in India will make the case for Nuclear energy even stronger.

## **Relative Energy Potential for Power in India**

Coal	7,614	GWe – yr.
Hydro carbon	5,833	GWe – yr.
Hydro renewable	84	GWe – yr.
Uranium Thermal	328	GWe – yr.
Uranium Fast	42,231	GWe – yr.
Thorium Reactor	1,55,502	GWe – yr.

## **Conclusion**

From the above, It is now clear that Uranium Fast Breeder and Thorium reactors have the highest potential in India. Currently 15 Nuclear reactors are in operation in India and another 8 units are at various stages of construction. Thermal reactors will saturate at around 10,000 MWe capacity. With imported enriched nuclear fuel and reactors, the capacity for nuclear energy can be increased further. However, with fuel derived from internal resources, it is possible to build Fast Breeder reactors to contribute around 200,000 MWe by 2052. This will account for nearly 16 % of total energy produced by then. After enough fissile Plutonium is built-up with the Fast Breeder Reactors, Thorium can provide enough security for the country for a very long period as indicated in the table above.

Hope, this article has by now broken the myth that Nuclear fuel is more expensive than the conventional fuels and India will be perennially dependent on Uranium Supplier Countries. The best argument in favour of Nuclear energy is it's zero impact on Global warming as it does not emit any CO<sub>2</sub> in the atmosphere.

## **Acknowledgement**

The author is thankful to Dr. P Shankar of Material Science division of Indira Gandhi Centre for Atomic Research (IGCAR) and Dr. Baldev Raj, Director of IGCAR, Kalpakam for their liberal help with published materials from IGCAR as well as from the Department of Atomic Energy, Government of India and the Department of Nuclear Energy, International Atomic Energy Agency, Vienna, Austria. The author is also thankful to Mr. J C Chakraborty, Director of Development Consultants Limited, Kolkata for providing comparative performance data of various Power Plants run with Gas, Oil, Coal, Hydro, Nuclear, etc., etc.

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## **PROF. INDIRESAN: A MAN WHO STOOD BETWEEN OBLIVION AND ME**

It was August 1979 when I met Prof. Indiresan for the first time. I was a candidate for a professorship at IIT Madras and he, as the Director of that institute, was the Chairman of the selection committee. He was very kind and informal and made me feel relaxed from the first moment. One of the selection committee members, who was aware that I was at that time writing an expert-level book on Superplasticity – one of my areas of specialization – asked me if I had submitted the manuscript to the publisher. I said that it was ready and that at that point in time I was proof reading the manuscript. Then, I submitted the hard copy I had brought with me to the Chairman of the committee. Prof. Indiresan then on was reading the manuscript intensely only to raise his head and interject in an appropriate manner whenever an occasion demanded, as the experts were having a discussion with me on different aspects of metallurgy and materials science. Several months later, I heard from one of the three experts (late Prof. V A Altekari) that as I was only 34 years of age at that time, one of the other two experts tried to stop my selection on the grounds that I was “too young”. I was further told that in response Prof. Indiresan said, “Is it not our duty to encourage youngsters? For a start, he has written an expert level book on his subject of competence, while I have not.” According to the expert, that ended the discussion in that direction and I sailed through because “academically” my “performance was impeccable”. In 2010 I repeated this conversation to Prof. Indiresan and said, “A young man in his early career needs a certain degree of academic patronage. I received it in ample measure from you. Therefore, I would like to institute an annual lecture in your honor at IIT Delhi, the institution from where you first established your reputation as a gifted and benevolent administrator.” In response, he said, “All that I can and shall claim is that I spotted your talents.

But you owe your successes entirely to yourself.” What a contrast in a world where people claim credit for very minor gestures, which at best may be regarded as an expression of good will and at worst as a mere discharge of one’s duty. I have narrated this incident in detail because it summarizes the quintessential Prof. Indiresan – always downplaying his own contributions, while giving the other person the maximum credit.

I learned my first lessons in administration and human management from Prof. Indiresan. Soon after I joined IIT Madras in January 1980, in one of our conversations, Prof. Indiresan said, “You have become a professor at a young age. Take it as a God-given opportunity to help others. Identify a few gifted youngsters and encourage them. When they grow, you will automatically grow.” I have constantly been reminding myself of this advice so that I always try to lean on my younger colleagues and never stand on them. The first assignment I was given by Prof. Indiresan was to be the Chairman of the Timetable committee. The institute had introduced the credit system, with a heavy dose of electives, only a few months earlier, in contrast to IIT Kanpur, which had these features from 1960 (thanks to the American collaboration). Six different slots had to be created so that the students could attend all the courses for which they had registered and it should also be ensured that there was no problem in assigning rooms for every lecture. With the help of my dear colleague, Prof. K N Seetharamu mainly, I completed this job well. This exercise gave me a good understanding of the way the undergraduate program was run at IIT Madras. When I mentioned this to Prof. Indiresan, he smiled and said, “It was precisely why I gave you this responsibility. You have come from outside as a professor, without going through the system in different academic positions. The undergraduate program is at the heart of the higher education program because, as you will agree, without a solid foundation, it will not be possible for anyone to do advanced research.” Such an approach is a characteristic of the IIT system and I think that we can be legitimately proud of this aspect. I was elated when in 2001 a senior professor of electrical engineering at Cornell University, USA, told me, “Our UG program in engineering is almost as good as that of the IITs.” The contributions Prof. Indiresan made, as the Dean of UG programs at IIT Delhi, are very well known and we, youngsters, learned a lot by getting to know about them.

In those days, the total annual development grant to IIT Madras from the Ministry of Education (the earlier name of the Ministry of Human Resource Development (MHRD)) was only Rs. 4 crores. If the full amount were not spent in a particular year, the next year’s budget would be reduced to the amount actually spent during the preceding year. Prof. Indiresan’s predecessor had returned Rs. 75 lakhs in the previous year and so our development budget, when I joined IIT Madras, was pegged at Rs. 3.25 crores. There were many Departments and Research Centres. In addition, the Central Workshop, central facilities like the security, transport, glass blowing, photographic services sections etc. were there. All their demands were to be met. With a smiling face, Prof. Indiresan would tell us, “Gentlemen (it was a shame that we had no ladies in those days heading any of the different units), all I can guarantee is your salaries at the beginning of every month. You go anywhere and bring money for the institute and you can definitely take my support for granted.” I wanted to buy a fully instrumented universal testing machine useful in assessing the mechanical properties of materials. Prof. Indiresan told me, “You want Rs. 20 lakhs. I can spare you Rs. 10 lakhs. You will have to raise the remaining Rs. 10 lakhs from other sources.” Then he suggested that I write to a certain gentleman in the Central Government, whom I knew. I did and the latter advised me that I should apply to a particular central agency for financial support. I did and then started what can only be described as a “circus / merry go round”. I was sent along different alleys and I realized that I was just being made to waste my time. When persons like Faraday and Morse pursued Science, it was the preoccupation of a few who were driven by a passion about the pursuit. But, after the Second World War, when it was realized that Science, when pursued vigorously in an organized manner, could help raise the

standard and quality of living in a nation, it has become “big business”. So, as in any other profession, rivalries, jealousies, strong likes and dislikes have become common. Unfortunately for me, around that time, the pecking order in my field of metallurgy and materials science had got disturbed and some of the older lot was not happy about this development. As I was considered “close” to a couple of those “gray eminences”, as I saw it, I was getting isolated in the new scheme of things. I never even discussed this matter with Prof. Indiresan. But, he was a remarkably shrewd person and told me all of a sudden one day, “Padmanabhan, you cannot disown those who have helped you in the past because it is a convenient thing to do now. But, you should also make sure that you do only those things of which you have full conviction, not because you like someone, admire someone or think that you owe something to him / her. You are very young. Do not lose yourself in subjective considerations, as there will be no end to it. Instead, think hard, take a mature decision and do what you think the situation demands. Once you have done that, never again revisit that action or brood over it. Move on to the next problem. If you are decisive and take, say, 10 decisions and if 8 of them are right, you would have a success story to narrate. Instead, if you go on thinking and act so slowly that you take in the same time only one decision and imagine it turning out to be wrong. What would be your fate then?” This was a piece of advice that has guided my life ever since.

Prof. Indiresan was fond of saying, “When one door closes, another opens. But, unfortunately, most of us keep looking at the closed door for too long, rather than walking through the open door because of the fear that it may lead us nowhere that we want to go. I say, ‘Be adventurous’.” This is what happened to me. In 1981 the institute made an announcement that to mark the 25<sup>th</sup> anniversary of the establishment of IIT Madras, the German Government had decided to fund a few projects around selected topics, if suitable proposals were submitted. I submitted one on “New Technologies for Energy and Materials Conservation”. Luckily for me, it got funded in 1983 to the tune of DM 3.2 million. (In those days it was a lot of money, as one DM equaled Rs. 20.) Prof.-Dr. L Issler, Professor of Mechanical Engineering, Fachhochschule Technik (University of Applied Sciences), Esslingen, was appointed a monitor of this project from the German side. That grant enabled me to establish one of the best laboratories in the world in the area of Metal Forming and Materials Testing and I never had to look back. I must record here that that project proposal went through the scientific, security, political and sensitivity clearances smoothly thanks to the support I received from Prof. Indiresan and late Prof. C S Jha, the then Educational Advisor to Government of India. Soon after this success, when I was in his company, Prof. Indiresan was in a rather expansive mood and said, “See, you decided to pursue positive action in a professional manner and desisted from getting involved in petty politics. That sincerity of approach has given you success. But, never forget one thing: Whatever you may accomplish, there would be a few who will never give you credit. Accept this as a fact of life. Mediocrity finds its strength in numbers. So the only way you can survive in life with dignity is by fighting for your belief, regardless of whether you would win or lose. The “bigwigs” would want to manipulate you and as you will come to a conclusion at some stage that you should avoid being a “cat’s paw”, it is better you reach that conclusion as soon as possible. What are you afraid of? You are already a professor – the highest position an academic can aspire for. But, remember that this attitude should not become a license for impertinence.” I have recalled this piece of advice several times throughout my life to the present day. The words of wisdom had a profound impression on me because Prof. Indiresan practiced what he preached.

In May 1982 Prof. Indiresan called me to his office and said, “Your colleagues have suggested that you should be the next Head of the Department. Do you think that you can handle that responsibility?” I said, “I am willing to give it a try so long as I have your blessings.” I did a decent job of it, I think. In October 1982, he took Prof. P S Rao – a very respected structural engineer and the then Dean of Academic Courses at IIT Madras – and me to a meeting at the Ministry of

Education during which it was decided that IIT Madras would take up the responsibility of introducing the GATE (graduate aptitude test in engineering) examination, with effect from July 1983, as the channel of admission with scholarship into the IITs. In this effort, IIT Madras was to join forces with the other IITs at Mumbai, Delhi, Kanpur and Kharagpur as well as the IISc, Bangalore. On our return, Prof. Indiresan and Prof. Rao called me and said that according to the Ministry, I would be the Organizing Chairman (the operational chief) for the first two GATE examinations of 1983 and 1984 and that Prof. Indiresan would be the Chairman of the Implementation Committee, who would give me the necessary policy guidance. Fortunately, I completed this task efficiently and in the process became reasonably well known in IIT circles. By the time Prof. Indiresan demitted office in September 1984 I was so well entrenched in the system that I was confident that I would go through the rest of my career with dignity and self-respect.

When I think of my association with Prof. Indiresan, I recall a line from Shakespeare, "How far that little candle throws its light. So shines a good deed in a naughty world." He taught me that we lose our honor if we are in no position to take the same stand in private as well as public. Ambitions are lawful if they do not thrive on the miseries and credulities of others and above all, to borrow a nice phrase I learned at Cambridge, "To speak out is an intellectual duty." I can go on. But limitation on space prevents me from doing so. Therefore, I end by saying (a) that he continued to be a source of inspiration to me in later years also, and (b) that he will always occupy a very important corner in the depths of my heart.

**Note: The above memoirs have been narrated by Prof. K A Padmanabhan, Chair Professor, School of Engineering Sciences and Technology, University of Hyderabad and Ex-Director, IIT Kanpur**

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### **Steel demand slowdown is a short-term phenomenon -Mr Narendran**

TATA Steel is in expansion mode. Once its new units at Jamshedpur and Odisha are commissioned, it will have added more capacity this decade than the previous century. However, there are plenty of challenges for the company, from managing cash flows to creating market for the products rolling out of its expanded capacity. The induction of Mr TV Narendran, 48, as MD last September has helped TATA Steel hit the market with a fresh vigour. An alumnus of REC Tiruchi and IIM-Calcutta, Mr Narendran is unperturbed by the downtrend in steel demand. He is conscious of the long term nature of the steel industry and the need to keep multiple stakeholders satisfied while capacities get built. In his maiden interview to media that in our business, the lead times are high, there is a huge amount of capital involved and you cannot just switch on and off the factory just because the growth is not supportive.

Q What are your priorities?

A We are expanding capacity steadily. Building a steel plant involves huge investment. Typically, it's a billion dollar investment for a million tonne steel plant. We want to stay invested to retain our market share and grow it. So, the challenges to me are to manage growth in terms of financial perspective, market creation and attracting right human resources, besides strengthening the engineering capabilities because the capacity to build a steel plant is different from running it. We have to manage this in a dynamic environment with the macroeconomic conditions not supportive to great pace of growth.

Q What is next after the expansion in Odisha?

A The Odisha project itself will keep us busy for 2 to 3 years because it's a 6 million tonne plant. The phase one of 3 million tonne is close to commissioning and the phase 2 will be taken up at an appropriate time. But the configuration and facilities are being built for a 6 million tonne capacity. We are in the process of digesting what we have created in Jamshedpur. We are always looking at new opportunities in Karnataka and Chhattisgarh. Obviously today for setting up a steel plant you

look for some raw material security because huge capital is spent. Just now, we are focusing on executing the ongoing projects.

Q Have you tied up raw material for the Odisha plant?

A Well, we are in talks with the Odisha Government. We are in the process of renewing our existing leases. Obviously, when we invest more in capacity, we should get more raw materials. That is the spirit with which we had gone there, but everyone has their own set of challenges to deal with.

Q How do you react to Posco walking into India with iron ore mine allotment?

A It's for each company to convince the Government that they are a worthy allottee. Every State has its own policy and each company has its own aspirations. But India is one of the most open countries as far as foreign investment in the steel industry is concerned. There are very few countries in the world where you can go and set up a steel plant, own it 100% and get raw materials. This is to the credit of the progressiveness of Indian policy, in that sense. It's good in the overall national perspective, but in the industry, we have to fight our own battle.

Q Given the current demand, do you see oversupply in the market?

A I believe India will struggle to create capacity as much as demand is. Do not judge the industry by what has happened in 2 or 3 years. If you look at China, it added huge capacity. Land acquisition is never a problem in China. Credit from banks is not an issue. Regulations, till recently, were not an issue. India is a very vibrant democracy. There will be a lot of issues. We have seen it ourselves. It has taken 10 years to get the first tonne out in Odisha and it's still not off the ground. Globally, in most places you build a greenfield plant in 3 to 5 years. In India, in the last few years only brownfield projects have come up. After reaching the limit of what you can build in your existing plant, going for new projects is not going to be easy. Unless you make it easy for companies to invest in new projects who is going to invest? If the steel industry is not helped to build capacity, 10 years from now, steel will become the second largest imported item after oil. We are among the few countries that are blessed with raw materials and a consuming public. Why cannot we have the whole value chain end-to-end in the country and create so many jobs? The challenge will be more to do with supply than the demand itself.

Q Has managing Government policy become a challenge?

A It is. For any company anticipating changes in government policy is vital just like the way we anticipate changes in our customer needs. Obviously, governments and policy makers have their own pressure and compulsions. We are supportive to anything that will make the process more transparent and happy to participate in fair process. Any developing country going through the pace of industrialization like India has to be sensitive to the voice of communities. We have to factor it in our pace and cost in building capacities. Financial viability is important purely from an investment point of view. If you make the cost of building capacity so high then nobody wants to put in money. Or are you going to say only public sector companies will build capacity? World over, governments have got out of the steel industry because it's not seen as a strategic investment for the government. If you create right conditions, there are enough investors to build a steel plant.

Q How competitive is Tata Steel without the raw material linkage in Odisha and Europe?

A It's not entirely correct to say that we do not have raw material linkage in Odisha. We have raw material leases. The Odisha Government has given us the comfort that the steel plant will not be short of raw material. Raw material linkages are a key component to remain cost-competitive. Raw material security also means investment in mining and capabilities. The choice is between buying the raw material and digging it from the ground. In Europe, they have not had the linkages traditionally. Some raw material comes out of our property in Canada. If you look at Posco, they had 15 to 25% EBITDA margin even without raw materials. Of course, their plants are designed that way. They are on the coast, they minimise the freight cost and bring in huge ships to optimise the whole chain.

Source: Steel Guru

## **Global steel output rallies, dominated by China: trade data**

Global production of steel rose by 3.5 percent in 2013 and China's share of the total grew further to 48.5 percent, trade data showed a few days back, giving an insight into a basic input for economies and growth. China produced 8.95 times more steel than the United States. The global industry is showing signs of benefiting from a pick-up in demand, which had fallen heavily, highlighting in some regions concern about excessive capacity. The World Steel Association, which covers 65 countries, said that the rate at which steel-making capacity was in operation fell in December to 74.2 percent from 75.8 percent in December 2012. However, the average rate of use of capacity was 2.2-percent higher than in December 2012, and total output in the month rose by 6.3 percent on a 12-month comparison to 129.2 million tonnes. In the whole of last year, average utilisation was 78.1 percent compared with 76.2 percent in 2012. "The growth came mainly from Asia and Middle East while crude steel production in all other regions decreased in 2013 compared to 2012," the association said. Global output of steel totalled 1.61 billion tonnes last year, and China raised production by 7.5 percent to 779 million tonnes. Japan, the second-biggest producer in the world, raised output of raw steel by 3.1 percent to 110.6 million tonnes. India, the fourth-biggest producer, raised output by 5.1 percent to 81.2 million tonnes. However, production by South Korea, the sixth-biggest, fell by 4.4 percent to 66 million tonnes. Across Asia, production rose by 6.0 percent to 1.08 billion tonnes.

In other regions, production fell in many countries. The United States, ranking third, produced 2.0 percent less than in 2012, turning out a total of 87.0 million tonnes. Output by Russia, fifth in the rankings, fell by 1.5 percent to 69.4 million tonnes. Total production in the European Union fell by 1.8 percent. Output in Germany, ranking seventh, was steady at 42.6 million tonnes. Other notable changes were: Turkey, ranking eighth, down 3.4 percent to 34.7 million tonnes; Brazil, ninth, down 1.0 percent to 34.2 mt, Ukraine, 10th, down 0.5 percent to 32.8 mt; and Italy, 11th, down 11.7 percent to 24.1 mt.

Source: Energy Daily.com

## **Worst is over for steel sector in country – SAIL**

Mr CS Verma chairman of SAIL said that reeling under subdued demand for over 2 years, the steel sector's worst phase is over and green shoots are visible in areas like prices and inventories. He said that "The worst phase of steel sector is already over. Things are looking up. Demand has gone up. There is liquidation of inventories. Steel prices have also slightly gone up in last 2 to 3 months. Things are going to be better from here." Mr Verma said that "Why steel prices have gone up? It is because demand has gone up and demand has gone up for more consumption from the end use sectors. Companies are also spending. This is good time for steel makers. There is good demand for steel and prices have also gone up."

Source: Steel Guru

## **Government ask Indian steelmakers to invest 1pct of turnover in R&D**

Business Standard reported that Indian government will soon ask major steelmakers to invest at least 1% of their total turnover in R&D activities in the next 2 years so as to help India treble steel output to 300 million tonne. It also wants steel companies to double the spend after that till 2020. Mr. Beni Prasad Verma steel minister of India said that "We will issue directions to major steel players to invest more in Research & Development. They will be asked to increase the investment in R&D to at least 1% of the total turnover by 2015-16 and 2% by 2020. The government also plans to provide incentives to steelmakers for increasing investment in R&D which is abysmally low at present ranging from 0.15% to 0.25%." He said that "The roadmap also aims at tackling limiting factors like technological obsolescence and lack of timely modernisation, lack of inferior quality raw material and lack of automation. The move is based on Steel Ministry's roadmap to boost sector's growth." The ministry has constituted a task force to prepare a blueprint for promoting R&D in the sector in a bid to help India treble its production capacity to 300 million tonne from

the present about 96 million tonne. The policy would also focus on development of alternative iron making technologies and adoption of technologies like Finex, Fastmet and ITmK3.

Source: Steel Guru

### **Steel Secretary rules out closure of iron ore mines in Odisha**

The New Indian Express reported that Mr G Mohan Kumar, Union Steel Secretary ruled out the possibility of closure of the operating mines in the State. The Shah Commission in its report had recommended closure of 55 mines recently. The Union Secretary also denied that the steel industries in the State were facing raw material crisis due to closure of several mines following detection of irregularities in the mining sector. Mr Kumar said reporters after a high level meeting with the senior officers of the State Government that "Odisha is the major State contributing towards enhancing steel production in the country and in the last 5 years many progressive things are happening in the steel sector." He said that "Since the State has largest reserve of iron ore, it can contribute substantially to the national target for production of 300 million tonne of steel." Mr Kumar said that the Central Government has taken proactive measures for speedy clearance of statutory requirements. The States to ensure that projects do not suffer due to procedural delays. The progress of major Central PSUs like SAIL, NMDC, RINL, OMDC and MSTC were reviewed. Issues relating to mining, forest clearances, renewal of mining leases, expansion of the SAIL units, long term raw material linkages, e auction of iron ore, environmental and other statutory clearances were discussed in the meeting and decisions were taken for quick resolution of the issues.

Similarly, the concerns of private steel producing units like Bhusan Steel, Jindal Steel & Power, Essar Steel, TATA Steel, POSCO India Limited, Monnet Ispat & Energy, Visa Steel and Jindal Stainless were discussed. The National Mineral Development Corporation offered to undertake iron ore exploration in unexplored areas. The proposal was accepted in principle for examination of the State Government.

Source: Steel Guru

### **Indian steel consumption languishes despite tall talks**

Steel consumption in India picked up by meager 1.8% (April-December) at 53.7 million tonne YoY as major steel consuming sectors from automobiles and capital goods through to infrastructure are facing tough times, reflecting a slowdown in the economy. Total production of finished steel over April-December grew to 60.4 million tonnes, up 5.2% YoY. India's total steel exports for the first three quarters grew by 9.5% to 4.1 million tonnes while total steel imports registered a sharp decline of 29.2% to 4 million tonnes. The coming months will be even more challenging for the Indian steel mills with China returning after Spring festival would certainly get aggressive with better offers as inventory piles up with 8.3% growth in steel production. Moreover Japanese and Korean mills with preferred import duty of 2% would be launching new offers. Relative muted impact of US tapering on Indian currency portends to take the parity cushion touted by Indian. Indian mills have hiked flat prices by INR 2500-3000 per tonne since January despite sluggish demand in a bid to capitalize on anticipated INR devaluation. However slow demand and high price levels is likely to boomerang on the Indian mills with domestic buyers vying for import. Roll back in March is anticipated since apart from economic factors the code of conduct for Parliamentary election is enforced no further projects are likely to be announced till the formation of new government.

Source: Steel Guru

### **SAIL Bokaro targets 14 million tonne production by 2025**

Times of India reported that the fiscal looks bright for SAIL subsidiary Bokaro Steel Limited that saw a slump last year. The public sector undertaking, which is at 4.5 million tonne of hot metal capacity looks forward to wrap up at 14 million tonne by 2025, which is a 10 million tonne leap

on the existing hot metal capacity and allied capacity of steel making and rolling. Mr Anutosh Maitra, CEO of Bokaro Steel said that "The bulk of SAIL's present phase of modernization is at Salem, Burnpur, Rourkela and Bhilai. BSL's share is around INR 6,300 crore. The modernization and expansion here is mainly under 2 categories, which is debottlenecking of certain processes and logistics, and a new Cold Rolling Mill 3 of 1.2 million tonne capacity. The new CRM3 will primarily enable BSL to make a comeback in the market and also improve BSL's profitability significantly by middle of the current year." Mr Maitra said that "After a lull of around nine months in 2013, BSL's profitability has been positive over the last 3 months. This indicates that the direction in which BSL has been moving over the last one and a half years has yielded results and we are on a growth track, though certain shortcomings in the coke oven, sinter plant and existing CRM remain. If BSL becomes profitable, the prosperity will trickle down to stakeholders and people in the periphery." Mr Maitra added that "In the first half of this fiscal, the BSL had been at a minus INR 152 crore but this quarter 3 will be better than Q3 of 2013. However, BSL will still be missing its bus achieving 94% of the production target. Given the land mass, equipment and existing skills, the potential of BSL is huge and even if we have missed the target this time we are working towards a 100% target achievement."

Source: Steel Guru

### **SAIL, RINL and MOIL may join hands to set up ferroalloy plants**

Press Trust of India reported that a three way joint venture between SAIL, RINL and MOIL to produce ferroalloys is on the cards with the earlier two separately proposed between SAIL-MOIL and MOIL-RINL having virtually been scrapped. A source said that "A couple of round discussions has already taken place between the three parties for jointly setting up the ferroalloy plant along with a captive power plant. Final decision will be taken in a couple of months' time." State-run MOIL Ltd, formerly known as Manganese Ore India Ltd, had inked two separate JV pacts with Steel Authority of India and Rashtriya Ispat Nigam Ltd to set up two ferroalloy plants with a total outlay of INR 600 crore. The INR 400 crore JV between SAIL and MOIL was proposed to be set up in Chhattisgarh with an annual capacity of 100,000 tonnes a year. The INR 200 crore JV between RINL-MOIL in Andhra Pradesh was supposed to manufacture 50,000 tonnes of ferroalloys a year. While power shortage was the primary reason for scrapping the RINL-MOIL JV; till recently SAIL was maintaining that the proposed venture with MOIL was not yet scrapped.

Source: Steel Guru

### **India iron and steel industry worst affected by slowdown NPA mount – ASSOCHAM**

According to the Associated Chamber of Commerce and Industry, iron and steel industry was the worst affected by slowdown in the Indian economy and their repayments to banks have seen huge defaults causing non-performing assets of banking sector to swell. ASSOCHAM said that the number of properties and assets mortgaged to the lenders going for auction has increased substantially but due to slowdown there aren't many takers for these assets. The number of possession notices published in the media has also gone up significantly, reflecting a tremendous stress in the economy. According to ASSOCHAM, the worst seems to be over and the situation may improve in the fiscal 2014 to 2015, though the improvement may not be dramatic as long as the consumer confidence is restored and the investment cycle gets back on track. Iron and steel and infrastructure sectors are the largest contributor to NPAs of the public sector banks. Besides, aviation, textiles and mining are also adding to the stressed assets. These 5 sectors together contribute around 24% of total advances of all banks and account for around 51% of their total stressed advances at the end of September 2013. The possession and the sale notices are issued by banks and other lenders like financial institutions under the Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002. These notices are for the immovable properties mortgaged with the banks.

Mr DS Rawat Secretary General of ASSOCHAM said that "We will urge the banks to avoid publishing pictures of the borrowers since it does no good either to the banks or to the failed borrowers, a large number of whom would have failed to repay the loans for reasons beyond their control."

Source: Steel Guru

### **Last ditch effort by government might kindle steel demand in India**

There was a heart-warming news of possibility of sharp reduction in excise duty on consumer durables in the interim budget. Even though a half measure in tenor owing to parliamentary elections due shortly it was music to the ears of automobile and white goods sector. Notably these two sectors are key drivers of demand in flat steel which consumes 2 million ton per annum. Indian steel industry has been languishing for the past 3 years amidst plummeting demand from key consuming sectors viz., auto, white goods, construction etc. The malaise has been furthered with the blind quest of capacity expansion based on unrealistic demand projections. These sectors have witnessed abysmal demand owing high lending rates curtailing the purchasing power of the consumers. On one hand Government has done fire-fighting with the runaway inflation by enhancing the lending rate to curtail money supply it has borne heavily on the propensity to buy thereby keeping the demand and price of steel low. Steel consumption in India grew by meagre 1.8% in April 2013 - January 2014 period against a projection of nearly 10%. India has globally 4th largest capacity at 96 million tonnes which is projected to go up to 300 million tonnes by 2025. All this looks preposterous in the backdrop of poor demand and surplus capacity. In a bid to provide succor to beleaguered sector government took some measures as follows. Reduction in excise duty on two wheelers and small cars to 8 per cent from 12 per cent reduction in excise duty on SUVs to 24 per cent from 30 per cent, large cars that used to attract excise of 27 per cent will now be levied only 24 per cent. Excise duty on mid-sized cars will be 20 per cent from 24 per cent earlier. Reduction in excise duty on, refrigerators, computers, printers, keyboards, mice, hard disks, scanners, vacuum cleaners, dish washers, water coolers, torch lights, digital cameras, hair dryers, electric irons, microwave oven, MP3 players and DVD players. Retail market remained indolent but certainly coming days will be full of excitement and activity with buying activity picking up. Steel mills in India have already hiked price by upto INR 3000 per tonne over the past 2 months owing to parity advantage and escalation in input cost. Demand nonetheless has been pale all through which is likely to get life line by the short term measure.

Source: Steel Guru

### **India braces for last round fight with US on steel levy**

Business Line reported that India is preparing for the last round of its fight with the US at the World Trade Organisation over the imposition of high import duties on its steel. Major Indian steel producers such as TATA Steel, Jindal Steel and Essar Steel have lost their competitive edge in the US market because of steep punitive duties called countervailing duties imposed on hot rolled carbon steel flat products. India had dragged the US to the WTO's Dispute Settlement Body in February 2012 after consultations with the country on removal of the unfair duties failed. Legal experts are working on a response to the recent interim report of the Dispute Settlement Panel following which the panel will give its final report. The US has been imposing CVD, a levy to neutralise Government subsidies on steel for the last decade. Duties on Indian companies range from about abnormal for companies such as TATA Steel and Jindal Steel. Exports of carbon steel to the US have stopped completely because of the duties. A representative from one of the affected steel companies said that "The CVD is so high that there is no point in our continuing to export to the US. We stopped a number of years back. We certainly hope the WTO rules in India's favour." In its representation to the WTO panel, India had challenged the US Department of Commerce's allegation that the iron ore sourced by Indian steel makers from public sector

NMDC is supplied at subsidised rate because it is Government owned. It argued that this is a wrong assumption as NMDC always sells at the prevailing market prices which are determined by their exports to Japan and South Korea. Which was submitted by the Dispute Settlement Panel recently has recognised the arguments given by India but has sought some more details.

Source: Steel Guru

### **Indian steel consumption might expand by 2-3pct in FY14 – INSDAG**

Business Standard reported that steel consumption in the country might clock a growth of 2% to 3% in 2013 -14. Mr Sushim Banerjee DG of Institute for Steel Development & Growth said that "The steel industry is facing sluggish consumption growth. We expect some improvement in Q4 period and the sector may see a growth of 2% to 3% in 2013 to 2014. The steel demand in the 10 month period increased by only 0.5% to 0.6%." Mr Banerjee said that "Traditionally in the Q4 period demand and price remained buoyant but this year long products were witnessing price pressure after slump in steel scrap price in the international market. Crude steel production in April 2013 to January 2014 period was 4.6% and for the full fiscal FY'14 it was projected to remain at around 5%." He said that he was not sure and it might come sooner as elections were knocking on the doors. Despite sluggish demand and production outlook in FY'14, the scenario was likely to improve in 2014 to 2015. The industry expects some 10 million tonne capacity to be added from greenfield capacity and greater capacity utilisation from the industry.

Source: Steel Guru

### **Update on modernisation for Indian steel giants SAIL**

Indian steel giant SAIL is in the process of implementing massive modernisation and expansion plans across all its steel plants to enhance its annual hot metal capacity from 13.8 million tonne per annum to 23.5 million tonne per annum which works out to a quantum jump of 70%. The objective of SAIL's on going modernisation is fourfold

1. Volume expansion
2. Infusion of new technologies, along with phasing out of obsolete ones
3. Enrichment of product mix
4. Capacity expansion of captive mines to ensure higher raw material production to feed the manufacturing capacity

After the modernisation process is completed, the share of value added products in the overall product basket of the company is slated to go up to 55% from the current level of 37%. Value added products comprise high quality steel sheets used for manufacturing automobiles and consumer durables like refrigerators and washing machines. Mr CS Verma CMD of SAIL said that "The modernisation is being carried out simultaneously in all SAIL steel plants with a huge investment exceeding INR 72,000 crore." Mr Verma said that "This will eventually result in generating higher profit margins for the public steel company. SAIL also plans to develop special plates for Naval applications and high toughness corrosion resistant rails for the Indian Railways."

Source: Steel Guru

### **Dearth of technical expertise may jeopardize national steel target - Mr Malay Mukherjee**

Times of India reported that the retired talent pool of SAIL can bridge the gap between knowledge and expertise. Mr Malay Mukherjee eminent technocrat and group CEO of Zamin Ferrous Limited said that "The talent pool of retired SAIL officials who are respected globally can play a significant role in bridging the gap between knowledge and expertise, required to achieve 300 million tonne to 350 million tonnes steel production by 2035." Mr Mukherjee expressed fear that the huge gap between technological and managerial expertise required by the country in meeting its ambitious target needs to be bridged immediately. Delivering the keynote address at a seminar organized by SAIL Retired Officer's Association in Kolkata Mr

Mukherjee, himself an ex SAIL official before he joined hands with Mr Laxmi Nivas Mittal and played a pivotal role in Mittals ascendancy, emphasized the importance and relevance of SROA against the background of the national steel target and dearth of expertise. He noted that in the present global steel scenario the world is looking towards India, Africa and Latin America for providing direction and support. He remarked that the expertise of SAIL officials has been fruitfully utilized in Mexico and several places across the world since they command respect across the globe. He called upon SROA to make a master plan and create a road map for development of Steel Industry in India taking into consideration the shortage of rich raw materials, environmental restrictions and present the same for the government's consideration. He also urged SROA to develop a data bank of expertise that can be accessed by the steel industry and other stake holders. Mr Sushim Banerjee, Director General of Institute for Steel Development & Growth, Mr Arabinda Das, Principal Director of Commercial Audit, Government of India, Mr Saral Dutta, ex ED of IISCO Steel Plant and several eminent retired SAIL officials attended the Seminar.

Source: Steel Guru

### **Where will Indian steel prices stand in the coming months**

Business Standard reported that the Indian steel market cannot but remain flat, as growth continues to elude the commodity's principal consumption points such as construction, automobiles and machinery building. Braving resistance from buyers, steel makers raised prices by INR 1,000 per tonne to INR 1,200 per tonne in the past 3 months across long and flat products to defray cost rises. In the current environment, resistance to price revision is understandable. In the first 3 quarters of this financial year, demand for steel increased a piffling 0.5% to 53.789 million tonne. Where will steel prices stand in the coming months? Mr Chandra Shekhar Verma chairman of Steel Authority of India Limited said that "Prices appear to have stabilised at current levels. Customarily, as the country goes into an election mode, it sees a slowdown in government sector spending. Delays in the launch of infrastructure projects and the general lull in investment should be over once a new government is in place in a few months. At this stage, I would venture to say the worst appears to be over for the steel sector." Mr Verma said that "The decelerating car sales are a blip. Lowering of excise duty on cars of all sizes and SUVs in the interim Budget is what the automobile industry needed for demand improvement. Similarly, duty relief will give a push to sales of white goods. All this should result in automobile and white goods manufacturers requisitioning larger volumes of steel. Hopefully, the new government will stay the course laid down in the interim Budget."

Source: Steel Guru

### **Global Crude Steel Production - Jan'14 - Region wise**

Region	Jan'13	Jan'14	YoY
Total 65 countries	130253	129783	-0.40%
Asia	87144	85809	-1.50%
European Union (28)	13430	14409	7.30%
North America	10122	10058	-0.60%
CIS (6)	9065	9005	-0.70%
South America	3634	3665	0.90%
Other Europe	2975	3013	1.30%
Middle East	1987	2141	7.80%
Africa	1405	1267	-9.80%
Oceania	491	416	-15.30%

In'000 tonnes

Source: Steel Guru

## **Minister promises 10 new steel units in Uttar Pradesh**

Mr Beni Prasad Verma union steel minister of India announced that 10 steel processing units would be set up in Uttar Pradesh to boost industrialisation. The plants would be established in Gonda, Barabanki, Lakhimpur, Hardoi, Jhansi, Kaisergunj, Mirzapur, Ambedkar Nagar and Bahraich. Each plant would be set up at a cost of nearly INR 100 crore, thus total investment would be to the tune of INR 1,000 crore. The plants are likely to be set up by public sector enterprises viz. Rashtriya Ispat Nigam Limited and Steel Authority of India Limited. Another steel factory is being set up at Jagdishpur with 13,000 tonne per annum capacity corrugation unit and a TMT Bar mill of capacity 1,50,000 tonne per annum. Stockyards are also being set up at Gorakhpur and Gonda. A forged wheel plant would also be set up at Rae Bareilly.

Source: Steel Guru

## **Spreads between steel & metallica might not contract further - Mr Koushik**

TATA Steel has internal initiatives to improve performance in mind, in the face of adverse market conditions. In his first interview as executive director (finance and corporate), Mr Koushik Chatterjee shares his outlook for the company and the sector with Ms Ishita Ayan Dutt.

Q The first phase of Kalinganagar will now be commissioned in the Q1 of 2015. Why the further delay?

A All our guidance on commissioning was towards the later end of financial year 2014-15 and we stuck to it. A large integrated steel plant doesn't get commissioned by the turn of a switch - it is a phased plan. Also, a new plant at a new site requires synchronisation of not only construction and availability of raw materials but critical railway, water, power and other infrastructure linkage, along with all approvals to commence operations. These issues have own timelines and challenges. Currently, the project construction work, along with development of people, processes and social infrastructure, is on at the site in full swing and we are focused on successful completion in line with the plan.

Q TATA Steel registered significant profits in the last quarter. Is the worst over?

A The recent financial performance needs to be also seen in the context of the external market environment, both in India and globally, including Europe. There is no market momentum and the gross spreads between steel and metallica continue to be depressed, especially in Europe. Under these conditions, we focus a lot more on internal initiatives across the company. The focus on performance improvement culture in Tata Steel Group helps us to be better prepared to face adversity, especially when the market structurally contracts, as in Europe.

Q What is the outlook on Europe? What are the biggest challenges facing TATA Steel Europe?

A The headline macro data from Europe, especially the UK, has improved significantly in recent months. However, a large part of that is on account of higher consumer spending and home buys, on the back of cheaper consumer credit. The structural shift to a more sustainable economic performance is yet to emerge and will take time. When the market doesn't help and the spread between raw material and steel realisation remains depressed, the best one can do is to look at internal self-help mechanisms in all areas. That's the focus with which our colleagues in Europe have been working. In the Indian operations, over the past 15 years, the performance improvement process has been a never-ending journey, where new targets are set after each milestone is achieved.

Q What's your view on global commodities, especially iron ore and coal?

A A lot of the iron ore and coal dynamics in recent times have been based on how the Chinese demand pull has played out. A 2% growth in Chinese steel production and a continuing trend of rebound in steel output in the rest of the world will keep iron ore prices range-bound in the next year. On the other hand, if one takes the supply side for ore, it is expected the seaborne market will be modestly surplus by the end of the year and continue its over-supply state thereafter for some time. Following the decision by the Chinese State Council to restrict capacity growth and manage pollution standards, however, the import requirements of higher grade iron ore will increase further. On coking coal, China continues to grow its coal imports to feed its newer fleet of large blast furnaces and, last year, China surpassed Japan as the largest coal importer. Coal prices softened significantly last year and my sense is, it is likely to stay that way. However, some supply readjustment is also happening, as Australian exports are pushing US coal volume out of the seaborne market and US coal producers might have to cut capacity.

Q How do you see the global steel industry in 2014 and how do you see the M&A play in this sector?

A The recent capacity cut announcement by the Chinese State Council will make more meaningful differences than the measures taken so far. Stricter pollution norms and lending restrictions to small and medium mills could restrict capacity additions in a significant manner and also close down significant capacity. There are some provinces like Hebei, which had already started closing capacities in 2013 and more will follow. I expect China to, first, reduce the pace of adding new capacities and increase utilisation of existing capacity. These steps, with consolidation of existing Chinese players, bodes well for the industry. With a general rebound in production levels across the world, especially in the US and Japan, there's an expectation that steel prices will remain stable and the spreads between steel and metallics is not expected to contract beyond the current levels. On the M&A play, it has certainly slowed since the global financial crisis. So have the valuations, compared to the pre-crisis levels. I would expect a lot more bias on intra-region or in-country M&A in the sector, rather than too much of cross-border M&A. The reason is not very difficult to guess. In places where there is structural over-capacity, consolidation through M&A will help enhance sustainability of the industry. The nature of consolidation will also change from straight buyouts to share-based merger, JV of carved out assets or non-equity based alliances. As the cyclical trough hits other commodities like coal, we might see similar themes, especially in new mining projects, where infrastructure play is becoming more significant and sharing the infrastructure through alliances and collaboration is critical.

Source: Steel Guru

### **Rug likely to be pulled below the feet of Indian steel mills**

Two consecutive months of price hike by Indian flat producers have left the buyers aghast about the greed of Indian mills amidst sulking price levels in international markets. Domestic price levels have escalated by nearly INR 2500-3000 per tonne since December. Indian mills have been shrilling about the hike input cost compelling price hike as the plausible reasons but the hidden agenda being to capitalize on market insulated by parity advantage. Much is being made about iron ore shortage and concomitant hike in price levels to the extent that no holds bar war has broken out between the iron ore miners and steel mills in Karnataka each charging the other of collusion and unfair market practice. However iron ore price levels have not gathered much flab during Dec-Jan justifying price hike by mills. Q3 & Q4 is characterized by surge in demand from projects as the financial year draw to close in India. However this year trend has been defied owing to credit crunch and residual projects in the pipeline as the entire year has barely

seen any action on new project sanctions. Indian mills encouraged by prospects of dip in INR owing to tapering impact from US bond buying put the odds on encasing market. However the stark reality of abysmal 1.8% growth in steel consumption (April-January) never receded. International price levels have kept low dispelling all expectations of rally after the winter. Even though US and European market is believed to have bottomed out but the impact is yet to translate into transactions. Moreover the currencies of emerging market taking hit import prospects became hazy. Domestic HRC in India is available at nearly INR 45000 (incl ed) + vat at Mumbai whereas import offers at USD 580 – 590 per tonne, CNF Mumbai are keeping the heat up on Indian mills with wafer thin parity advantage of INR 500-1000 per tonne depending on the size and grade. Chinese market has barely opened after spring festival and mills are expected to get aggressive on export bookings since domestic demand prospect looks shaky amidst plummeting PMI and economic indicators. Inventory levels in China are at nearly 15.5 million tonnes for flat products at major cities. The export offers are inevitably going to decline. In the unlikelihood of domestic mills rolling back next month import is likely to inundate Indian steel market from China in HRC and Plates.

Source: Steel Guru

### **Industrial gloom dispels optimism of steel mills in India**

Dispelling optimism about an economic recovery in twilight of present regime industrial production growth rate remained negative for the third month in a row, contracting 0.6 per cent in December 2013, mainly due to sluggishness in manufacturing sector. Industrial output for the April-December period of the fiscal has contracted by 0.1 per cent, compared to growth of 0.7 per cent in the same period of 2012-13. Manufacturing sector constitutes over 75 per cent of the index, declined by 1.6 per cent in December, as against a contraction of 0.8 per cent in the year-ago period. During April-December, the sector's output contracted 0.6 per cent compared to a growth of 0.6 per cent in same period in 2012. Consumer durables segment contracted by 16.2 per cent in December against decline of 8.1 per cent in the same month in 2012. For the April-December period, the segment declined by 12.9 per cent compared to a growth of 3.7 per cent in same period in 2012. Coming close on heels of industrial data the inflation rates showed encouraging signs as it fell for the second consecutive month and eased to 24-month low of 8.79 per cent in January mainly due to a drop in food prices. Inflation as measured by the Consumer Price Index (CPI) for December was 9.87 per cent down from 11.16 per cent in the previous month. Ebbing inflation augurs well for the economy and enhancing chances of easing lending rates by RBI thereby creating liquidity. Construction, automobile and consumer durable sectors are heavily dependent on supply and demand side credit. Steel mills have been recurrently hiking prices over the past 2 months amidst flimsy demand would seek solace from expectancy of credit easing though it might come too little too late with parliamentary elections round the corner. In India prior to election code of conduct is enforced by the Election Commission thereby stalling announcement of new projects. It is evident steel mills have been employing a short term price pilferage approach insulated by weak currency to maximize returns. However this moment of glory is in passing and reality will catch up sooner than expected. Mills might be coerced to roll back price levels next month lest face the daunting challenge from cheaper imports.

Source: Steel Guru

### **SAIL BSP saleable steel production up by 2pct in April 2013**

Economic Times reported that Steel Authority of India Limited's Bhilai Steel Plant has registered a growth of 2.6%, 1.6% and 2.1% in cumulative Hot Metal, Crude Steel and Saleable Steel production respectively during the April 2013 to January 2014 period against corresponding period last year. Production of cast steel at steel melting shop during the 10 month period was the best ever since inception. At 2.29 million tonne it surpassed the previous best of 2.26 million

tonne in April 2009 to January 2010. This included best ever production of 1.52 million tonne of cast slabs as against previous best of 1.47 million tonne in 2010 to 2011. Production of 1.85 lakh tonne of High Tensile plates for home sales and export during the ten-month period has been the best ever since inception, surpassing the previous best of 1.36 lakh tonne in 2012 to 2013. Loading of 2.23 Lakh tonne of 26 metre rails for Indian Railways was also the best, surpassing the previous best of 1.97 Lakh tonne in 2009 to 2010. The Plant loaded 1.41 million tonne of steel for direct despatches during the April to January period of current fiscal year, surpassing its previous best of 1.38 million tonne in 1999 to 2000. In the area of techno economics, the plant recorded its best ever energy rate of 6.473 GCal per tonne of crude steel for the ten-month April to January period of current FY, surpassing the previous best of 6.653 in 2009 to 2010. Labour productivity of 349.7 tonne per man year has also been the highest for the period, surpassing the previous best of 330.2 in 2012 to 2013.

Source: Steel Guru

### **SAIL-led group doing due diligence on coal mines abroad**

Steel Authority of India Ltd, India's second-biggest steelmaker, said its coal joint venture with four other Indian firms was in advance stages of due diligence on purchases of mines abroad, with no limit set on its investment. Most steel producers in India, the world's third-largest coal importer, depend on coal shipments from overseas and are trying to buy mines in Africa and Europe. SAIL-led International Coal Ventures Private Ltd (ICVL), whose five participating firms all are state-owned or state-controlled, has been scouting for mines since 2009. "Our due diligence on some coal assets abroad are at advance stages," C.S. Verma, chairman of SAIL and ICVL, told reporters recently. "There's no cap on investment. All the five partners in ICVL are cash-rich companies." Indian Steel Minister Beni Prasad Verma visited Australia and New Zealand in January to explore possibilities of developing assets there and securing long-term supply deals. India has also been looking at Poland for assets. "I can't tell you where (we are doing due diligence), because there are only two or three areas," said SAIL's Verma, who accompanied the steel minister in his latest foreign trip. JSW Steel Ltd, India's third-largest steel maker, has already bought U.S. mines that produce steelmaking coal. India's coal imports rose 21 percent to 152 million tonnes last year, with most of that thermal coal used to generate power, according to Delhi-based research firm OreTeam. SAIL imports about 12 million tonnes of coking coal per year, but it has its own mines for iron ore, the other main raw material. The company plans to raise its annual iron ore production capacity to about 42 million tonnes by next year from 30 million tonnes currently, Verma said, adding that it had enough iron ore to feed its expanding steel capacity. SAIL will invest about \$26 billion to more than double its steel-making capacity to 50 million tonnes per year by 2025, while India's total capacity is expected to triple to 300 million tonnes. The company, which reported a 10 percent jump in profits after tax for the October-December quarter, is also looking to link up with foreign companies to raise capacity and has received a "tremendous response", Verma said.

Source: Coaljunction

### **Coal India rejig only after analysing Deloitte report: Sriprakash Jaiswal**

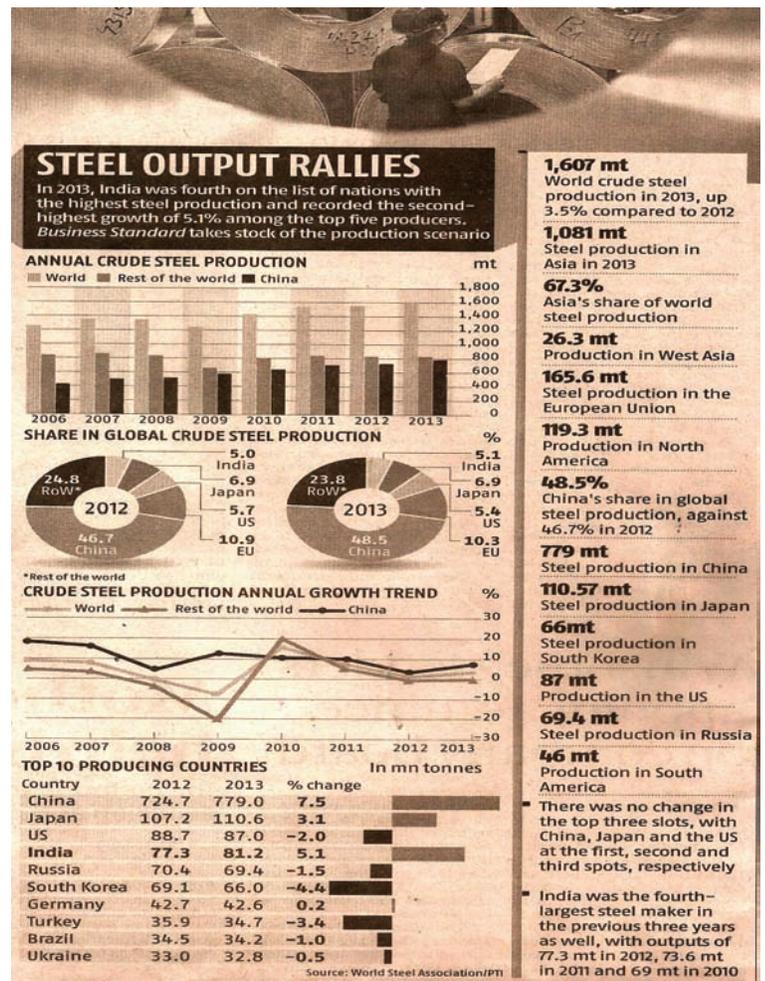
A decision on restructuring of Coal India will be taken only after analysing the consultant's report on the matter, Union Minister Sriprakash Jaiswal said today. What is the need for restructuring? Coal India has given 290 per cent dividend this year (2013-14) and the government is happy, Jaiswal told reporters on the sidelines of a mining conclave here. In January, Coal India had declared a special interim dividend of Rs 29 per share and the government had earned over Rs 16,485 crore as dividend and dividend tax. Jaiswal later told PTI that the government would take a "final call" only after analysing the consultant's report which has already been submitted. Asked if the restructuring plan has been pushed to background since the polls are round the corner, the Minister just smiled, but did not offer any comment. The government had last year

appointed consultancy firm Deloitte to study the scope of restructuring of the company following recommendation by the T L Shankar Committee. The T L Shankar Committee had recommended restructuring Coal India subsidiaries into separate companies to bring in more efficiency in the functioning and productivity in a bid to make the state-run mining company globally competitive. Coal India has seven wholly-owned coal producing subsidiaries and one mine planning and consultancy company and accounts for over 80 per cent of India's coal production. Meanwhile, the government might offer 'some' coal blocks for auctions in the next one month for steel and cement companies, Jaiswal said. "I cannot give the exact number of blocks that will come up for auction. But some blocks will come up for auction in the next one month," the minister said.

Source: Coaljunction

### **Coal India fuel pact with sponge iron makers one sided - CCI report**

Economic Times reported that Coal India's fuel pact with sponge iron makers is skewed in the staterun miner's favour, the fair trade regulator has observed in its probe into allegations that the miner misused its market monopoly to dictate the terms. The probe was ordered in July last year on a complaint filed by the Sponge Iron Manufacturers Association that Coal India's fuel supply agreement is one sided and that the miner has insisted on consumers signing a separate memorandum of understanding that allows it to supply less than the contracted volume. The report being filed by the director general of investigation at the Competition Commission of India said that "The investigation has shown that CIL, by virtue of its dominance and on account of lack of competitive process in the relevant market, has not tried to evolve or finalise the terms and conditions of the FSA by way of mutual or bilateral process." According to sponge iron makers, Coal India's MoU said the quantum of supply of indigenous coal under the respective FSA shall be at the sole discretion of the coal company from time to time but shall not exceed 50% of ACQ in any case. SIMA, which has over 80 members had also alleged that the annual contracted quantity in the FSA and supply through the MoU were a result of Coal India and its subsidiaries abusing dominant market position.



The CCI report said that the terms and condition of MoU which are meant for the new consumers are found to be tilted in favour of the coal companies and indicate exploitative conduct of OPs. The conduct of OPs regarding MoU is found to be unfair in violation of the provisions of section 4 (2) (a) (i) of the Act. The lobby group of sponge iron makers had also claimed that the miner diverted coal towards e-auction despite the fact that it had less coal to supply as per the FSA. The CCI probe, however, has not found any evidence of this. SIMA's complaint includes Coal India subsidiaries Central Coalfields, Eastern Coalfield, Western

Coalfields, South Eastern Coalfields, Northern Coalfields and Mahanadi Coalfields. The CCI report also includes complaints filed by Madhya Pradesh Power Generation Corporation and West Bengal Power Development Corporation. In December 2013, the CCI had imposed a penalty of INR 1,773.05 crore on Coal India in another case of unfair trade practice filed by the Maharashtra State Power Generation Company Limited and Gujarat State Electricity Corporation Limited. Coal India, the largest coal company in the world, has struggled to meet its production targets since its initial public offer in 2010. The company's volumes growth in the period FY 2010 to 2013 has been low single digit numbers.

Source: Steel Guru

### **Ferro Alloy industry in AP in dire straits**

Business Line reported that Ferro Alloys Corporation of India is one of the oldest company in the industry and the oldest in Andhra Pradesh. It recently informed the BSE that it has declared a lock-out at its plant this comes after a 10 day shutdown of its operations. In the last 6 months, the State has seen ten out of the 31 makers of this vital raw material for the steel industry winding up operations, unable to stem the increasing costs. These include: VBC Ferro Alloys, VBC Industries, RV Alloys and ASV Ferro Alloys. Another 5 companies, which started operations in the last three years, are in the process of closing down, even as they knock at the doors of banks for a rescheduling of their loans. The rest are operating at less than 50% of their capacities, estimated at 2.75 lakh tonne. This is symptomatic of the woes facing the Indian ferro alloys industry in the wake of demand slowdown, rising input costs and higher power bills. The units in Andhra Pradesh, which account for 30% of the country's production, are particularly in an unenviable position; this is due to the sharp increase in power tariff and prolonged cuts in the last 3 years, apart from the common market conditions. In the last 3 years, the tariff for the industry had been hiked from INR 2.65 per unit to INR 3.65 and INR 4.85 for the current fiscal. Now, the State power distribution companies have come out with fresh proposals for 2014 to 2015, which will increase the tariff to about INR 6.40 a 40% rise. Mr MR Prasad, Secretary General of AP Ferro Alloys Producers Association, said that "And if this were to happen, the entire industry in the State will have no option but shut down or declare lock-outs. We are trying to talk to the State Government."

Source: Steel Guru

### **Mining industry disappointed as FM retains duty on exports of pellets**

Business Standard reported that Mr P Chidambaram finance minister of India's move to retain 5% duty on export of pellets has deeply disappointed the iron ore mining industry. The industry which was expecting duty withdrawal in the interim budget 2014 to 2015 said that the industry might consider closing down existing units and put on hold investment to the tune of over INR 35,000 crore. Mr RK Sharma, secretary general of Federation of Indian Mineral Industries said that "We had submitted our memorandum to the finance minister requesting for withdrawal of 5% export duty on pellets. But he chose not to remove duty and it will be a big disaster for the mining sector. Pellet plants are already operating at 50% of their capacities and the duty structure will further make their operation uneconomical." He said that the industry is currently in the process of making an investment worth over INR 35000 crore and many new units under construction may have to stop as it will not be viable to produce and export pellets. He said that "There is not much demand for pellets in India and it will not be feasible to export paying duties. Our margins will go towards paying for the duty."

Source: Steel Guru

### **Iron ore E auction causing chaos and needs review – ASSOCHAM**

Apex industry body ASSOCHAM has urged the government to review e auctioning of iron ore and provide long term iron ore linkages to protect the interest of domestic iron and steel industry. Mr R H Khwaja secretary of Ministry of Mines said that "The e auction of iron ore, instead of

providing any relief to India's iron and steel industry will adversely affect it, more so as lack of raw material has been a major cause for tardy progress of both green field and brown field steel capacity expansion projects." Mr D S Rawat secretary general of ASSOCHAM said that "There is a need to adopt holistic development approach for ensuring smooth supply of iron ore thereby harnessing the growth of iron and steel industry." Iron ore production in FY 2013 was 136 million tonne out of which 42 million tonne was captive production while 18.4 million tonne of iron ore had been exported and about 76 million tonne of total iron ore was available for the relevant market for non-captive steel producers. ASSOCHAM while highlighting certain grave consequences of selling iron ore through e auction on iron and steel industry said that if e Auction is allowed for an important raw material like iron ore, it will create complete chaos for the iron and steel industry and such a huge quantity of Iron ore for non-captive users cannot be fulfilled through e Auction process. In case of e auctioning the quality of raw material cannot be assured and it will always remain fluctuating as each time it would come from multiple sources and create problems in the operations of blast furnace and steel melting furnaces thereby leading to high coal and energy consumption. The existing plant will eventually close down due to uncertainty and high raw material prices as had happened in case of Karnataka where 28 out of 53 sponge iron manufacturers had shut their operations. Besides, ASSOCHAM also shared its concerns about inflow of new investments in the domestic steel sector as setting up of integrated steel plants involves huge finances. It is almost impossible to commit large financial resources without having security of iron ore supply which is a critical raw material for operating steel plants. Besides, in India even banks do not provide financial closure to projects without secure source of raw materials. Merchant mining companies will be the sole beneficiary of e-auction of iron ore. Merchant miners will charge higher prices to derive maximum benefits thereby taking significant advantage of demand supply gap more so as there are no captive mines to operate iron and steel industry.

Source: Steel Guru

### **Iron ore scarcity now haunts Odisha steel makers**

Will the Shah Commission report on illegal mining in Odisha lead to massive closure of mines in the state, which have a combined annual turnover of over Rs 40,000 crore per annum? This is the question that hangs perilously over miners, their associates and the state government whose major chunk of non-tax revenue is contributed by royalty and other levies on minerals ever since contents of the commission's report were made public in the last couple of weeks. According to these reports, the commission, among other things, has recommended that mining operations of those who have been accused of violating forest and environment laws and other mining rules should be halted, restrictions on production and export of iron ore should be imposed, and Rs 60,000 crore (the amount of money allegedly made by the miners illegally) should be recovered from them. Seen against the recent developments in Karnataka and Goa (where mining operations were shut down following the Supreme Court order and the Shah Commission enquiry earlier), the mood of panic and gloom among the state's miners is quite palpable. The Shah Commission has rapped both the state government and the Centre for rampant illegal mining in Odisha which, according to the commission's assessment, has been happening since the 1990s and facilitated by a nexus of influential politicians, bureaucrats and the mining mafia. Doubting the efficacy of the state police to expose this nexus, the Commission has suggested an inquiry by the Central Bureau of Investigation, or CBI, into all cases where first information reports, or FIRs, have been filed by the police. According to the report, out of the 192 iron ore and manganese leases in Odisha, 176 were located in dense forest areas and 94 of them were operating without the mandatory clearance under the Environment Protection Act, 1972. Of these 94 leases, 53

were iron ore mines, while 25 were extracting manganese. Out of the 192 mining leases, it was found that 75 lessees had mined more iron ore than what they were permitted to do.

### Relooking green clearances

The commission has also recommended revisiting the environment approvals granted to 55 mines belonging to 40 firms around the Baitarani river and its tributaries, and has suggested shutting down these mines till a study can assess the pollution load on the river and the modification of the environmental approvals of the mines by an expert panel.

The corporations which have been faulted by the commission with regard to violation of environment and forest laws and excess production (beyond permissible limit) include state-owned Steel Authority of India, Tata Steel, Essel Mining, Orissa Mining Corporation and Serajuddin and Co. While the miners have disputed the state government's penalty notice and have approached the revision tribunal of Union mines ministry which has stayed the operation of the notice, it is now up to the state government to move the High Court against the tribunal order.



Meanwhile, the Union ministry of environment and forest has reportedly asked the Odisha government to act tough against the miners who have been accused of violating the laws and send show cause notices to them. This brings up the crucial question: can the state or the Centre can stop mining operation of the defaulting miners as suggested by the Shah Commission? "It is difficult to implement the panel's recommendation in toto. For example, the state had agreed to capping iron ore production as suggested by the Shah Commission, but in a recent meeting of the committee of secretaries it was opposed on the ground that such a measure would lead to acute raw material crisis for domestic steel units, besides creating unemployment in the mining belt," says a senior officer of the Odisha government. It may be noted that Odisha is the largest producer and supplier of iron ore in the country: in 2012-13, it accounted for nearly 45 per cent of India's total iron ore production of 143 million tonnes.

Similarly, the proposal to restrict export of iron ore has been opposed by the Union commerce ministry on the plea that it would affect foreign exchange earnings adversely. The Shah Commission, while arguing for preservation of minerals like iron ore, had mentioned that China despite having 200 billion tonnes of iron ore reserves was importing ore from India and other places to shore up its stock. The Commission feared that if allowed to be exploited at the present rate, the iron ore reserves in Odisha would be exhausted in 30 years. Hence, it favoured capping the iron ore production to below 55 million tonne and also putting restrictions on exports.

### In search of a wriggle room

In this backdrop, industry circles feel, the Action Taken Report, or ATR, being prepared by the committee of secretaries - to be presented along with the Commission's report in Parliament - might take the middle path to avoid accentuating the raw material supply problems for the domestic steel producers. Instead of shutting down those mines which have violated the forest and environment laws, sources say it may be suggested in the ATR that action may be taken

against those who have violated the Environment Protection Act and cases filed against them as provided under Section 15 and 19 of the Act may be pursued vigorously, while allowing the mining companies to operate the lease. For violation of the Forest Conservation Act, the defaulters may be asked to deposit additional NPV (net present value), a user charge levied for use of forest land for non-forest purpose, and pay penal compensatory afforestation charge instead of asking the miner to completely stop the operation. Similarly, the ATR may invoke the Mineral Concession Rule, 1960, which permits deemed renewal of mining leases where leases are not renewed within the stipulated one-year period, to allow these mines to operate, as against the suggestion of the Shah panel to stop operation of those mines whose renewals have been pending for years together. The defensive mood of the state and the Centre vis-à-vis the strictures of the Shah Commission can be gauged from the fact that the Centre is resisting to submit a copy of the panel's report in the Supreme Court, while the state is fiercely denying any need for a CBI enquiry into the illegal mining activity. "With general elections round the corner, neither the state nor the Centre would want to make things murkier by stopping the mining operations completely or instituting a CBI enquiry on the matter", points out an analyst.



Source: Business Standard

### **Economy may grow 5pct in H2 of FY 2014 – CII**

Financial Express reported that India's economy is likely to grow in the range of 4.5 to 5% during the H2 of the current fiscal. The industry body does not see any possibility of a significant improvement in the GDP growth for the October to March period as against the H1 of the current fiscal and asked the government to take necessary steps to improve investment climate in the country and boost domestic demand. In its survey report, the CII has predicted the economy in the H2 would grow in the range of 4.5 to 5%. The country's economy grew by 4.6% in the first 6 months of the current financial year. The economy may have already bottomed out in the previous quarter and recovery process may already be in place, albeit fragile, political uncertainty was the biggest concern. It said that to hasten the clearances of the held up projects, the government should halve the threshold limit of fast-track projects from the current level of INR 1,000 crore. Mr Chandrajit Banerjee Director General of CII said that "High food inflation, growth uncertainty and rising borrowing costs have all impeded consumer demand. With inflation showing some signs of moderation, it is time that the monetary policy is now directed at stimulating growth." It said that exports are likely to increase at a moderate pace during the current quarter. For the April to December period, exports aggregated USD 230.3 billion and imports USD 340.3 billion while the trade deficit stood at USD 110 billion. India's GDP growth in 2012 to 13 was the lowest in a decade, with the previous low of 4% recorded in 2002 to 2003.

Source: Steel Guru

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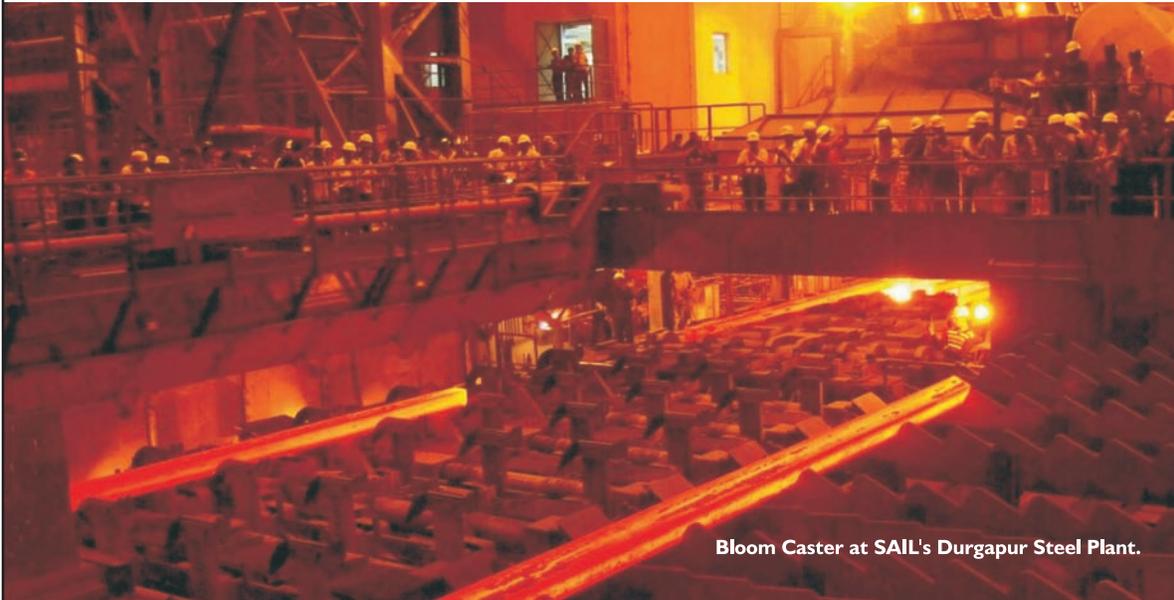
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# SAIL - A Maharatna Company



Bloom Caster at SAIL's Durgapur Steel Plant.

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