STEELWORLD

Devoted to Iron & Steel Industry

Vol. 27 No. 03 | March 2021

Registered-RNI No. 62719/94

www.steelworld.com

Udayan Pathak

- Rising fuel costs will demand more and more lighter and efficient vehicles

- Scrappage policy to minimize carbon emission and enhance the domestic steel scrap availability
- India's new mining reforms to increase the competitiveness
- India needs to manufacture AHSS for the Atmanirbhar Bharat
- Steel Tales

FIRST IN INDIA

STAINLESS STEEL INDUSTRIAL COOLING TOWERS

Water Flow Rate: 1000M^3/Hr in Single cell

ITEM	MATERIAL OF CONSTRUCTION
TYPE	INDUCED DRAFT COUNTER FLOW
STRUCTURE	STAINLESS STEEL
FILL	V- SPLASH BAR
FILL SUPPORT	SS. GRIDS
DRIFT ELIMINATOR SUPPORT	STAINLESS STEEL
NOZZLE	LOW PRESSURE SPLASH TYPE
HARDWARE	STAINLESS STEEL

117, Charmwood Plaza, Surajkund, Faridabad,
Haryana-121009 ,Tel: +91-129-4266666
Email: info@casepl.com,Web site: www.casepl.com

MAKE IN INDIA

ATMANIRBHAR BHARAT

STEELWORLD
Devoted to Iron & Steel Industry

EDITOR
D. A. Chandekar
B.E. (Met.) DBM, DJMC

PRODUCTION
Anita Chandekar

DESIGN & LAYOUT
Ace Graphics

MARKETING
Mrinal Nath

CIRCULATION
Prachee More

Administrative Office
1, Alpha, M. G. Road, Vile Parle (E),
Mumbai - 400 057. India
Tel. : 91-22-2619 2376,
2617 1575 / 2617 1866

Email :
Marketing : info@steelworld.com
Editorial : editorial@steelworld.com
Website : www.steelworld.com

facebook.com/pages/Steelworld/621590691216613
steelworldblog.wordpress.com
twitter.com/ChandekarSteel
linkedin.com/company/13423799/
youtube.com/channel/UCJLJDOXYZTm12RuhR09wjuw

D. A. Chandekar
Editor

Dear Readers,

When I wrote this piece for the last month's issue, I was in the best of the mood. Everything seemed to have fallen in place for the iron & steel sector of the country. 'Rising demand and the strong prices' was the reflection of the industry sentiment prevailing at that time. In fact many steel producers recorded the highest ever production in the last quarter of the fiscal 2020-21. Indeed the industry was very well poised for a V shaped recovery and manifesting the same too.

Now after a month or so, is the situation unchanged ? Unfortunately the answer is 'No'. As we all know, the covid cases are increasing since last month. Many cities in the country are affected severely and had to follow strict restrictions and in few cases curfew or even lockdown. Yes, the second wave of corona has hit the country and medical experts say this is going to be more deadly than the first one. We are already witnessing huge number of per day cases in the cities like Mumbai, Pune etc. And many state governments have rightfully restricted the human movements.

With such dangerous situation unfolding, it is foolish to believe that the industry will remain bullish and will keep on growing in spite of the corona virus making in roads in the society on a large scale. How the industry can get affected ? Firstly, the production may get hit by two factors. One, by the spread of virus within the plant and second by migration of labour. Further, the logistics may also get affected due to non availability of manpower. As we all know, for a volume based industry like ours, logistics plays a very vital role. If the movement of raw materials and also the finished steel is compromised, then the whole industry gets chocked up. This will in turn have a detrimental impact on the production as well.

Will this really happen ? Will the industry be shut as it was in the first wave ? I wish not but as is said, let us expect the best to happen and at the same time be prepared for the worst. One has to start preparing from now itself for a possible shut down or a reduced capacity utilisation. I do agree that now as a industry, as a nation and also as human race, we are now experienced enough to handle such situation and crisis. I am sure we will be the winners in this battle against this deadly virus. All the best !

Write your comments :
https://steelworldblog.wordpress.com/

豫兴热风炉

Low nox emission, High High Hot Blast Temperature,

Yuxing top fired stoves with a catenary dome for 2x2850m3 Bfs

Yuxing top fired stove with a catenary dome achieved monthly mean HBT of 1314.7 oC

Conventional 3-section top fired transformed into Yuxing top fired with a catenary dome by cutting the top portion of the existing stove shell

Reference of Yuxing Top Fired Stove for BF with volume 40-50% of China's steel capacity since 2017 to April

Sr. No	Client	BF no	Blast volume Nm3/min
1	Hebei Zongtie Steel	1	7800
2	Hebei Zongtie Steel	2	7800
3	Hebei Zongtie Steel	3	7800
4	Hebei Zongheng Steel	3	8400
5	Hebei Zongheng Steel	4	8400
6	HBIS LaoTing	1	9700
7	HBIS LaoTing	2	9700
8	HBIS LaoTing	3	9700
9	Tangshan RuiFeng Steel	4	8000
10	Tangshan JinXi Steel		6300
11	Tangshan JinXi Steel		6300

Notes: China accounts for 50% of the world's steel capacity, and Hebei
Since 2017 to the present moment, Yuxing top fired stove adoption rate
Total reference nos of Yuxing top fired: 550.

Low nox emission - temperature difference between dome
than 83mg (international standard less than 150 mg)
from 83.5-88.9% (9-10% greater than that for other top
Long life span - Application practice has proven that the
years (the lifetime of the catenary dome combustion
High HBT - Monthly mean HBT of 1314.7 oC delivered
than that by other stove under same conditions)
combustion technology, the lower the better concept is

YUXING

Top 10 Trademark High-end Equipment of Henan Equipment Manufacturing Industry in 2018
International Leading Technology Level Stove project reference nos up to 550, highest monthly mean HBT of 1314.7 deg C achieved in China

Henan Yuxing Engineering & Technology of Hot Blast Stove Co
Henan Hot Stove Engineering Technology Research Center

Efficiency, Long Lifetimes & International Leading Technology

Conventional 3-section top fired stoves for 3x2500m3 BFs converted into Yuxing 4-section top fired by cutting the top portion of the existing stove shell

over 2000m3 at Hebei Province which accounts for 2019, adoption rate of Yuxing top fired up to 84.6%.

	Stove type	Blast time mins	HBT oC
	Yuxing 4-section	45	1250
	Yuxing 4-section	45	1250
	Yuxing 4-section	45	1250
	Yuxing Caternary	45	1250
	Yuxing Caternary	45	1250
	Yuxing 4-section	45	1250
	Yuxing 4-section	45	1250
	Yuxing 4-section	45	1250
	Yuxing Caternary	45	1250
	Yuxing 4-section	45	1250
	Yuxing 4-section	45	1250

province accounts for 40-50% of China's steel capacity.
for BFs with volume over 2000m3 in Hebei reaches to 84.6%.

and HB at 30 oC approximately, nox emission less
Higher thermal efficiency - Thermal efficiency ranging
fired stove)
lifetimes of catenary dome have been in excess of 44
chamber of Yuxing stove over 30 years)
(HBT delivered by Yuxing stove is 15-20 oC higher
Lower air excess - 1.05-1.06 (Associated with
not always right)

3x3580m3 BFs configured with Yuxing 4-section top fired stoves

Internal combustion chamber stoves for 1497m3 BF at JianLong Steel converted into Yuxing top fired with a catenary dome

Add: 23F Kailin International, Jinshui RD, Zhengzhou, Henan China
www.yuxingnc.com
E: yuxing@myyuxing,com
F: 0086 - 371 - 86122361

Content

EXCELLENCE 25 TWENTY FIVE YEARS SERVICE

World – Class Refractory Monolithics & Precast Blocks
Industry Specialization – Power, Refineries &
Petro Chemicals, Cement, Mineral Processing,
Steel & Sponge Iron, Aluminium, Glass, Incineration

**When Performance is Priority,
Count on Us**

PINC GROUP
REFRACTORIES ENGINEERING CHEMICALS

Totale Global Pvt Ltd

(Formerly Padmaja Inc)

71-C, New Avadi Road, Kilpauk, Chennai – 600010

Ph: +91-44-42183033 | Email: totale@pincgroup.com

TOTALE
REFRACTORIES CORROSION PROTECTION

Rising fuel costs will demand more and more lighter and efficient vehicles

"We are positive about the Automobile segment largely due to Government spending on Infrastructure which will boost the CV segment sales. In addition to this, customer buying pattern post Covid -19 pandemic in the PV segment preference for personal vehicles mainly on account of hygiene needs and spread of pandemic would be a another riding factor for the automobile demand" by Udayan Pathak, FIE, FASM and Ex-Head of Quality Engineering Research Centre, Tata Motors Pune

Udayan Pathak is the Fellow of Institution of Engineers (FIE) & American Society of Materials (FASM). He was Heading the World Class Quality Engineering Research Centre, Tata Motors Pune.

He has worked previously with John Deere, DGP Hnoday, Spicer India, Bharat Forge and Ruston & Hornsby India. His work is focussed on Sustainable Processes and usage of Lean alloys and environmental friendly materials including lubricants for Automotive.

He has more than 20 patents to his credit. He is mentoring Freshers & Mid Career professionals for advancement of their career.
He is The Chairman, ASM International Pune Chapter.

DA Chandekar, Editor of Steelworld Magazine had an interaction with Udayan Pathak on the present status of Indian Automobile Industry and How the concept of EV and its impact on steel demand from the Automobile industry in the years to come. Excerpts :

How much has the Auto Industry recovered after March 2020? What is the present status?

Looking at the past two years SIAM monthly data on Indian Automobile production and sales indicates that March 2020 passenger Vehicle sales was reported at 1,37,390 vehicles which was less than 52% as compared to its year ago level reported in March 2019). While in the Commercial Vehicle

segment sales declined drastically upto 12,644 vehicles, almost 88% declined as compared to March 2019 level. This decline was largely due to changeover from BS4 compliant vehicles to BS6 compliant vehicles which means cost penalty. Also Covid-19 Pandemic situation also affected the sales. As compared to the above, vehicle sales reported in March 2021 are definitely better than past two years with an impressive growth of 128% i.e. Sales volumes of 3,20,487.

Tata Motors, Mahindra & Renault have recorded growth while others recorded decline. Income Tax benefit offered by FM, spent on goods and services with more than 12% GST was considered while offering tax free LTC helped industry despite rising Covid-19 cases.

In case of Commercial Vehicle segment though figures for India are not available till date, Tata Motors alone recorded sales of 36,955 units in March, up by 593%.

The overall market sentiments are positive. And Industry is on a faster recovery path.

How do you see the future of Indian Auto industry in India ? What are the challenges ahead?

We are positive about the Automobile segment largely due to Government spending on Infrastructure which will boost the CV

segment sales.

In addition to this, customer buying pattern post Covid -19 pandemic in the PV segment preference for personal vehicles mainly on account of hygiene needs and spread of pandemic .Till last year customers were focusing on a shared mobility solution. Despite various efforts by service providers the confidence on shared mobility is at stake and people are again preferring personal vehicles. Of course, buying patterns will be favored for smaller cars. Keeping initial low cost is always a challenge for Indian Automotive Industry.

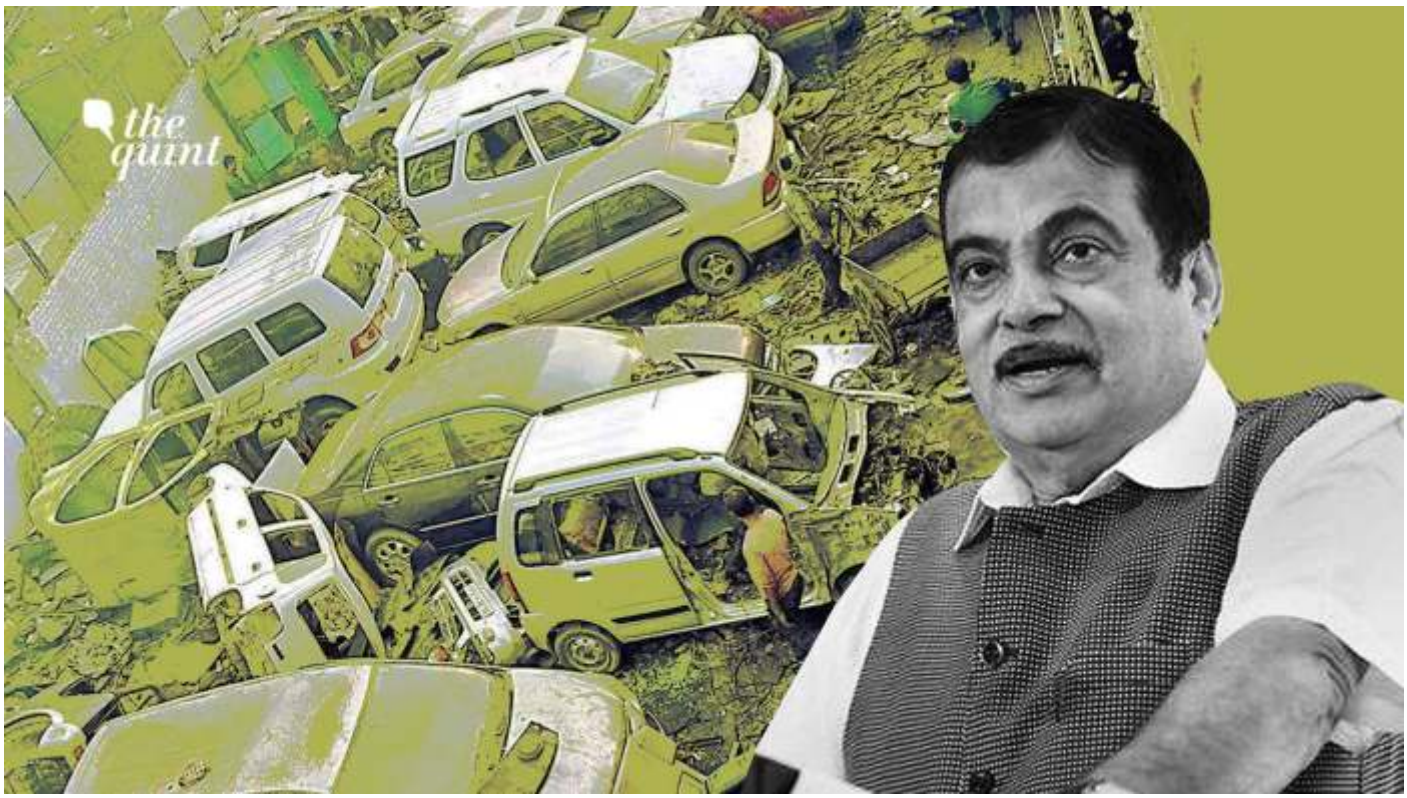
Rising fuel costs will demand more and more lighter and efficient vehicles. Also consciousness about stakeholders safety is also rising with more and more cars meeting 5 star EuroNcap safety ratings. Due to fluctuating demands, there will be a change in employment pattern with more focus on flexible aka temporary manpower.

How is the concept of EV progressing in the country? What is the situation on the ground ?

Electric Vehicles (EV) has better prospects in India. Today around 8 - 10 passenger vehicle models are available with cost varying from 4.5 lakh to 1.12 Cr INR. The availability of battery charging infrastructure is still a major issue. Also due to various reasons, variance in values reported under standard test conditions and actual performance is varying to a great extent. Many global OEMs have discontinued further development on IC engine-based Drive trains. Many Public Utility Corporations have migrated to EV Buses under FAME I & II Schemes. Even intercity electric buses are plying between Lucknow - Kanpur and Pune-Mumbai.

How will all this impact the steel demand for the auto industry ?

Although it will take a little more time to get a clear picture about adoption of Technology advances. Initial impact is clearly weight penalty due to higher battery & electric motor weight which can be compensated by special steels. However, there are limitations to reduce panel thickness because it may not meet stiffness requirements. More than electric vehicles, development of autonomous vehicles may reduce steel contet drastically. Since there will not be collisions, the need for HSS , UHSS etc is expected to come down drastically.



Scrappage policy to minimize carbon emission and enhance the domestic steel scrap availability

Steelworld Research Team

The Ministry of Road Transport and Highways (MorTH) will soon be notifying the details of the Voluntary Vehicle Fleet Modernization Program (VVMP), followed by a 30-day the period during which all stakeholders will be given another opportunity to submit their views. Its minister, Nitin Gadkari, shared the contours of the proposed VVMP last week. Much groundwork has already been undertaken with regard to the new VVMP framework and the first concept note was circulated by the ministry way back in March 2016.

Before getting to the specifics, let's recall from a macro-perspective that the VVMP is one of the mechanisms through which India is trying to lower both its air pollution levels as well as its climate change contributing emissions as part of the Paris Agreement commitments. Such a scrapping policy of end-of-life vehicles is a well-established practice in many other countries, including in the European Union, US, Canada, Australia, China, Korea and Japan, to name a few.

Domestic data indicates two relevant trends. One, medium and heavy commercial vehicles—trucks and buses—while constituting just 2.5% of India's domestic fleet, contribute about 60% of the air pollution.

Second, older vehicles (over 15 years old) and typically pre-Bharat III, represent just 15% of the total fleet but pollute 10-12 times more than new or fit vehicles. These two factors underpin the VVMP. The

3rd LARGEST RECUPERATOR MANUFACTURER WORLDWIDE

30+ YEARS EXPERIENCE

100% CUSTOM DESIGNED

4000+ INSTALLATIONS WORLDWIDE

Eastern Equipment & Engineers P. Ltd.
12, Pretoria Street, Kolkata - 700 071, INDIA
+91 33 22900187
central@recuperators.in

EASTERN
www.recuperators.in

Central Pollution Control Board (CPCB) estimates that by 2025 the number of vehicles reaching ELV status will be about 21.8 million, out of which 80% will be two-wheelers. The VVMP proposes that commercial vehicles be de-registered after 15 years if they fail to obtain a fitness certificate; for private vehicles this would be after 20 years. In both cases, the disincentive used would be to increase fitness and registration fees starting 15 years after the initial registration.
Importantly, the criteria to determine vehicle fitness will be based on emission tests, braking, and safety tests as per the Central Motor Vehicles Rules, 1989, and not merely on the age of the vehicle.

The brief VVMP outline also suggests four specific incentives to owners of old vehicles to scrap old and unfit vehicles through registered scrapping centers. Firstly, the scrap value of the old vehicle to be given by the scrapping center would be 4-6% of the ex-showroom price of a new vehicle.

Secondly, the vehicle manufacturers are asked to provide a discount of 5% on the purchase of a new vehicle upon submission of the certificate of scrapping as proof.
Thirdly, the registration fees could be waived when purchasing a new vehicle.
Fourthly, state governments are encouraged to offer a road tax rebate of up to 25% for personal vehicles and up to 15% for commercial vehicles. Sufficient phase-in time is provided given that the rules for fitness and scrapping centers are planned to be notified in October 2021; for the scrapping of government-owned vehicles, that would be in April 2022; for heavy commercial vehicles by April 2023; and only starting April 2024 would the mandatory fitness testing for other categories are introduced.

Finding the sweet spot of these incentives will be critical for the VVMP to become a success and these will need to be benchmarked against the resale value in the second-hand market regularly. Sources indicate that the resale value of some of the more popular models may range between 8-15% in the second-hand market. In such cases, the lower incentives offered under the scrapping policy of the VVMP may not be a match and fail to attract the targeted vehicle owners.
On the other hand, the market value of older diesel vehicles have fallen and in that segment taxi, bus, and truck owners may find the scrap policy rates offered under the VVMP an attractive proposition.
From a public policy perspective, the need to reduce emissions is undisputable and the government needs to adopt multi-pronged and meaningful measures to protect citizens from the harmful health effects of air pollutants.

Moreover, new vehicles are more fuel-efficient and would reduce India's oil import bill. Similarly, the steel scrap generated under a successful VVMP model would reduce India's steel import requirements.
The VVMP also foresees the creation of Registered Vehicle Scrapping Facilities across India based on the public-private partnership model.

The automotive industry supports the VVMP given its direct correlation with anticipated purchases of new vehicles; which is why the government in return also expects the industry to offer attractive discounts to new customers who can submit a scrapping certificate.

Hot & Clean Producer Gas (PG) ***First Time in World***

4th Generation

CLDF (Close Loop & Dry Filtration) Coal Gasifecation Technology

From Radhe Gasifier

Special For Steel (Iron Ore Pellet Plant & GI Steel Wire) Industries

(Waste Water & Tar Free Process)

SPECIAL FEATURES

- ★ Easily use Low grade & High ash Coal (up to E).
- ★ No Generation of waste Water & Tar from Prosses Due to Hot & Dry Filteration Technology.
- ★ No Generation of Filter Media.
- ★ 50% Saving in Power Consumption.
- ★ 20-25% Saving in Coal Consumption.
- ★ Very Low Maintenance Cost.
- ★ Less Space Required.
- ★ No Gas Scrubbing require for Cooling & Cleaning.
- ★ No need of ESP, Cooling Tower & Condensers.
- ★ Scada Control & PLC Operated.
- ★ Zero Liquid & Solid Discharge.
- ★ International Safety Standards.

Radhe
Group of Energy
www.radhegroup.com

WE
Live Green
Love Green
Leave Green

Always A Partner of Green & Clean Energy since last Three Decades

Radhe Renewable Energy Dev. Pvt. Ltd.

H.O. Plot No. 2621/22, Road D-2, Lodhika G.I.D.C., Gate No. 1, Metoda, Rajkot-360 021. (Gujarat-India) Phone : 02827-287888 287889
Email : info@radhegroup.com
Web : www.radhegroup.com
Contact: +91 92278 74005
+91 92275 74005

India's new mining reforms to increase the competitiveness

The reforms in the mining sector will play a fundamental role in enhancing the sector's contribution to the employment and GDP of the country and to increase the competitiveness, ease of doing business and creating a favourable investment environment for the sector.

Looking at such opportunities, the Union government has recently approved mining reforms which will pave the way for auction of nearly 500 mineral bearing areas (125 iron ore). Such entail the amendments to three existing laws, pricing formula for minerals, exploration of mines and several taxes and duties levied on mining.

The Centre has removed the distinction between captive (self-use) and merchant (commercial sale) mines. The Centre would amend the Mines and Minerals (Development and Regulation) Act, 1957 (MMDRA) to enforce the reforms.

The Centre has proposed to amend the section 10A(2)(b) & 10A(2)(c) of the MMDRA in order to unlock more mines for auctioning. This would entail Centre auctioning the pending mining leases as well. Section 10A(2)(b) pertains to the leases where reconnaissance permit (RP) or prospecting licence (PL) were granted and 10A(2)(c) relates to grant of mining leases (ML).

Federation of Indian Mineral Industries (FIMI) had asked the government to review the auction strategy for mineral mining. "Auction has neither served public good nor led to fair allocation of resources. The sole focus to maximize revenues for the States has adversely affected long-term mineral development in the country and socio-economic benefits in mining areas

Some of the reforms may not be beneficial to the miners and consumers. These (along with observations) are detailed

N.M.Rao
Consultant (I&S)

WE MINE. SO THAT

SHINES.

One of the best performing Public Sector Enterprises of India

The single largest producer of iron ore in India

Venturing into steel by commissioning 3.0 MTPA Steel Plant at Nagarnar, Chhattisgarh

Sole producer of Diamonds in India

Bringing socio-economic transformation through innovative and impactful CSR initiatives in the less developed regions of the Country

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

/nmdclimited

Website: www.nmdc.co.in

eco Friendly Miner

NMDC Limited

(A Government of India Enterprise)

Regd. Office: Khanij Bhavan, 10-3-311/A, Castle Hills, Masab Tank, Hyderabad - 500 028, Telangana, INDIA.

CIN: L13100TG1958GOI001674

enumerated below:

- **Mining rights will be allocated through auction route.**

  The auction route results in higher prices, particularly for iron ore which has huge demand, due to high premiums quoted by bidders. This was the experience of last auctions in Odisha in January-March 2020. Chart below shows NMDC's iron ore prices between January 2020 and January 2021.

The increase in prices between January 2020 and January 2021 was 78.1% for lumps and 65.3% for fines. Prices in Odisha are even higher. Hence, it is felt that a policy based on sealed bids and reserve price, fixed by the independent credible third-party evaluations may be adopted for allocating mining rights.

- Mining companies will be compensated for exploration expenses from NMET funds. Exploration regime will be simplified to facilitate seamless transition from exploration to production.

  India's expenditure on mineral exploration is $17/sq.km against $56/sq.km by China and $35/sq.km by Brazil (www.orfanline.com). In the global mineral exploration budget 2017, Australia's share was 13%, Canada 14%, USA 7%, Mexico 6%, Peru 6%, Chile 5%, Latin America (including Brazil) 10%, Africa 13%, China 6%, Russia 5%, and all other countries including India 3% (www.teriin.org).

  Therefore, India has to increase exploration expenditure for iron ore and other minerals substantially, particularly in view of the fact that there are over 17 billion tonnes of remaining resources for iron ore (www.ibm.gov.in) and steel production will go up considerably as the per capita consumption of steel in India is only about one-third of the world average. PSUs like Mineral Exploration Corporation Limited and Geological Survey of India should be entrusted with the task of detailed exploration. Private companies are unlikely invest much for mineral exploration.

- Government owned companies will have to pay premium to get their leases extended.

  Idea is not clear since the money will go from one wing of the government to another. This reduces the capacity of the mining company to invest for mine development. NMDC's Donimalai mine in Karnataka remained idle for more than two years due to dispute on this subject.

- Captive mines would be allowed to sell up to 50% of the minerals excavated during the year.

  Captive mines would be allowed to sell 50 per cent of the minerals excavated in a year. The Centre has also proposed to give 50 per cent rebate in the quoted revenue share, for the quantity of mineral produced and dispatched earlier than scheduled date of production. However, Captive mines are meant for captive consumption and sell up to 50% criteria is not clear.

  Companies should extract mineral as per their requirement so that mine will last for a longer period and companies do not have to procure from market. FIMI has complained in a letter to PMO that primary steel producers have exported 7.52 MT of iron ore in October and November 2020 from their captive mines. If true, this is unfortunate.

- Effective tax rate in India at 64% which is highest in the world. Uniformity will be brought to stamp duties of various states.

  Just uniformity in stamp duties of various states will not suffice the purpose of effective tax burden. Government will have to have to review the tax elements. Present tax elements includes royalty 15% and 30% of royalty for district mineral fund for old mines, 2% royalty for National mineral exploration trust, 10% of sale proceeds goes to special purpose vehicle for forest development in Karnataka and 10% of sale proceeds for mineral ore permanent fund in Goa. In addition to all the above, there are GST, deposits for mining lease & performance and security etc.

(Acknowledgement: Steel Mint's post in LinkedIn's site on 14-01-2021).

National Metallurgist's Day

"Extractive metallurgy research is the need of the hour" – Dr. V K Saraswat

Despite the covid-19 fallout, National Metallurgist's Day (NMD) and Annual Technical Meeting (ATM) which are the annual flagship events of The Indian Institute of Metals (IIM) had been successfully organized the International Conference and IIM Platinum Jubilee celebrations with 58th NMD and 74th ATM from 23rd to 26th February 2021 via online mode. The events were originally planned for November 2020. The event was organized by the IIM Mumbai with Pune, Nagpur, Dolvi, Goa and Baroda Chapters, and IIT Bombay.

Prof. Amber Shrivastava
Jt. Hon. Secretary, IIM

Among the office bearer attended the event includes IIM President, Prof Amol A Gokhale, Vice President (Ferrous) Mr. T V Narendran, Vice President (Metal Sciences) Dr. S V Kamat and Vice President (Non-ferrous) Mr. Satish Pai were among others former Presidents were also presented d led the various parts of the Conference.

The events started with the opening session of the 74th ATM and International conference on 23rd February 2021. The opening sessions were graced by the presence of Dr. V K Saraswat, NITI Aayog Science Member as Chief Guest.

In the opening remarks, Dr. Saraswat has emphasized more on the need to reviving extractive metallurgy research in academic institutes and working on critical raw materials required for the country. The ATM was an impressive ensemble of an inaugural keynote lecture by Prof Subra Suresh, President, NTU Singapore. Besides, it had successfully conducted plenary sessions, panel discussions, various invited and contributed talks spread over 7 parallel tracks with 41 sessions, posters, Microstructures contest, and exhibits from various industries.

The talks encompassed topics ranging from state-of-the-art materials modeling, cutting edge new materials to industrial metals and materials. Topics covered the science, technology, engineering, applications, and prospects of different materials. The talks were delivered by the speakers from academia (IITs, IISc, NITs, etc.), industries (Tata Steel, JSW, SAIL, AMNS(I), L&T, SS HF, HZL, Nalco, etc.) and research labs (DMRL, BARC, NML, IGCAR, VSSC, IMMT, etc.).

Two important trends were captured: Digitalisation, and Electric Vehicle making inroads in the mobility sector and its impact on battery materials.

Two-panel discussions covered two very different ends of the spectrum. The first panel discussion, moderated by Mr. Kunal Bose, was focused on enhancing the global competitiveness of Indian metals industries, which was very interesting for the big businesses. For this discussion, the panelists were industry leaders from Steel, Aluminium, and strategic materials industries.

The second-panel discussion, which was moderated by Prof Parag Bhargava was more focused on the young entrepreneur inmaterials. The online

DANIELI

REVOLUTIONARY DANIELI MIDA HYBRID MINIMILL

Unique performances using patented

DIGIMELTER®, OCTOCASTER® DYSENCASTER® AND DUE® TECHNOLOGIES

IRNA GANIRNTNGA MDNG TNNTNRR

Unique performances using patented
GNLNTIRI
EEAI
G IEAI
GI

Scrap shredding and cleaning; smart handling (automated scrap yard).

SCRAP MANAGEMENT

20 kWh/ton saving

Lateral and top continuous charging system (ECS).

ENDLESS SCRAP CHARGE

30 kWh/ton saving

11% lower electrode consumption; Zero power grid disturbances.

DDM - DANIELI DIGIMELTER: THE EVOLUTION OF THE EAF

30 kWh/ton saving

DR+DDM PRODUCTION ROUTE

DRI HOT CHARGE

100 kWh/ton saving

HYBRID VIA Q-JENIUS

50 kWh/ton saving

CO_2 reduction: 800 $kgCO_2$/tls DR+DDM route vs. 1,800 $kgCO_2$/tls BF+BOF.

DRI PRODUCTION USING HYDROGEN

Use of alternative power sources at site to Q-One via patented Q-Jenius DC link and Q3-Jenius energy management.

324 $kgCO_2$/tls using up to 70% hydrogen instead of 100% natural gas (without compromising DRI quality).

Note: energy savings expressed in kWh/ton (1 kWh/ton = 3.6 MJ/ton)

mode of the conference allowed easy implementation of voting-based popular poster and metallography contests. The overwhelming voting response indicated the excitement among the participants.

The international conference consisted of 13 talks delivered by distinguished speakers from Japan, Singapore, India, Portugal, Switzerland, Germany, UK, and the USA.

In order to accommodate different time zones, these talks were organized after ATM, in the evening as per Indian Standard Time. Despite being later in the day, the turnout of the conference delegates was very impressive. All the informative talks were followed by very interesting questions and answer sessions.

Overall, this year event allowed researchers from various global locations to come together and interact over some of the very relevant topics and issues related to materials of our time. The second day of the conference was marked by the 58th NMD. Keeping up with the tradition of the NMD, this year's N P Gandhi Memorial lecture, Daya Swaroop Memorial lecture, and GD Birla Gold Medal lecture was delivered by Prof B K Mishra, Director IIT Goa, Prof Manna, VC, BIT Mesra, and Prof Satyam Suwas, Head, Materials Engg, IISc, respectively.

The gracious presence of Shri Dharmendra Pradhan, Honourable Minister of Steel, Shri Faggan Singh Kulaste, Honourable Minister of State for Steel and Dr Rasika Chaube, Addl.Secretary, Ministry of Steel enlightened the NMD Award ceremony.

Shri Vikram Kirloskar, Chairman Kirloskar Systems Ltd. received the JRD Tata Award. IIM National Sustainability Awards went to Tata Steel Ltd., JSW Steel Vidyanagar, and L&T Special Steels and Heavy Forgings Ltd. NALCO Angul, Hindustan Zinc Ltd Udaipur, Hindalco Hirakud and Foundry and Forge HAL was awarded under various IIM Non–Ferrous Best Performance categories.

This ceremony was followed by IIM Awards Function. These awards included IIM Honorary Member Awards, IIM Platinum Medal, IIM Fellowship Awards and IIM Springer award for the best reviewers.

Since the year 2020-21 is the platinum jubilee year of IIM, the year-long platinum jubilee events were launched with the release of Platinum Jubilee logo, IIM Vision Statement, and streaming of a short movie on Dr. Dara P. Antia, IIM President (1962-65).

On the occasion of the commencement of IIM's Platinum Jubilee celebrations, a special issue of the Transactions of IIM dated June 2021 focusing on 'Design and Manufacturing' was announced. Further, three books are announced to be published over the Platinum Jubilee year with titles "Metallurgy, Materials and Manufacturing", "Indian Metallurgy: The Platinum Years" and the Proceedings of the 74th ATM of IIM"

This conference turned out to be a special experience for the organizers and participants. On one hand, the online tools for bringing people together like websites and online platforms played a key role. These tools also posed new challenges. Although people could not connect in-person, however, desire to learn new things, seek better solutions to industry problems, and know more, made everyone overcome these challenges and make most of the conference.

Photo courtesy : Delhi Metro Rail Corporation (DMRC)

JINDAL STEEL & POWER

MADE IN INDIA **LONG RAILS** MADE BY JSPL

JSPL Rails are equipped to faciliate rapid deployment of durable metal tracks for high speed and bullet trains

MADE IN INDIA **260 METER LONG RAILS** MADE BY JSPL

1 MTPA Rail Mill at Raigarh

MAKING IN INDIA

LONGEST OF DISTANCES ARE BRIDGED WITH JSPL RAILS

PRECISION | STRENGTH | DURABILITY | RELIABILITY

Corporate Office: Jindal Centre, 12, Bhikaiji Cama Place, New Delhi - 110 066, India
Call: +91 11 2618 8340 **Fax:** +91 11 2616 1271 (CIN L27105HR1979PLC009913)
www.jindalsteelpower.com | www.jindalpanther.com

Steel Tales

An expanding steel conglomerate based out of West Bengal which hires expensive film stars and cricketers to appear as the brand ambassadors of its TMT bars recently was recruiting a new brand manager. A headhunter told me this story that they keyed on a brand manager presently working with an FMCG company. The brand manager from the FMCG was lured with higher job security and fewer hours of work with more holidays. When all seemed hunky-dory, the aspiring candidate found out that much to his dismay the salary offered by the steel company was only a third of his salary as an FMCG personnel!

The per capita consumption of FMCG, as well as steel in India, are among the lowest in the world. India's per capita steel consumption is 70 kgs, which at the rate of Rs 50,000 a tonne translates into Rs 3500 per capita. The size of the FMCG in India is USD 13.1 billion, which means USD 10 per capita. This would mean a per capita consumption of Rs 730. The value of steel consumed per capita is five times that of the FMCG and yet salaries for a comparable position is a third. This is indeed a very disappointing fact. Both sectors use celebrities and hence advertisement costs of both are comparable. Then why does the steel sector pay so less?

Before answering the above question, we may also like to recall that entry-level salaries for qualified engineers are among the lowest in the industry. The amount of money spent on training is among the lowest in the steel industry. Defaults in payments to vendors and NPAs to banks are the highest for the steel industry. Together, what does this story tell us?

The story says that steel is not serious where business is concerned. Steel is among the most technologically intense industries; its use of electricity and minerals are among the highest and yet the knowledge quotient it uses is among the lowest in the world. What makes the Indian steel industry cut such a sorry figure?

A survey of the engineering courses in the country will reveal that there are almost no takers for metallurgy courses, college after college will inform you that they have no steel companies visiting their campuses for candidates and that the students have no interest to be a part of the steel industry. Yet, India is the world's largest steel industry after China. Why is this paradox?

Dr Susmita Dasgupta

Former Jt. Chief Economist, ERU, Ministry of Steel

Ventura Alloy and Steels Private Limited

We are Importer, Exporter, Stockist, Distributor & Suppliers for
Tool & Alloy - Special and Die Steels, Forging Components Spring Steel - Wire Rod, Square & Round Bars
Coiled & Disc Springs, Tools Collets, Impact Sockets Etc.

HOT WORK STEEL (IND/USA/EUR)

DB6 / AISI L6 / DIN2714
H13 / AISI H13 / DIN 2344
H11 / AISI H11 / DIN 2343
H21 / AISI H21 / DIN 2581
H10 / AISI H10 / DIN 2365
H12 / AISI H12 / DIN 2606

COLD WORK STEEL (IND/USA/EUR)

HCHCR-D2/AISI D2/DIN 2379 | A2/AISI A2/DIN 2363
HCHCR-D3/AISI D3/DIN 2080 | O1/AISI O1/DIN 2510
D5/Cr12MoV/DIN 2601

PLASTIC MOULD STEEL (IND/USA/EUR)

P20+Ni/AISI P20+Ni/DIN 2738
P20/AISI P20/DIN 2311

ALLOY STEEL (IND/USA/EUR)

EN24/AISI 4340/40NiCrMo84 / 34CrNiMo6
EN19/AISI 4140/ 42CrMo4
EN31/AISI 52100/100Cr6

SPRING STEEL

EN47 / 50CrV4 / 51CrV4 / AISI 6150 / SUP10 / DIN 8159
SUP9 / AISI 5155 / DIN 1.7176
SAE 9254 / AISI 9254

Head Office

Unit No. 1201 & 1202, Ghanshyam Enclave P. Co-Op. Soc. Ltd,
New Link Road, Near Laljipada Police Station,
Kandivali West, Mumbai - 400067.
Tel.: +91 22 2869 3824 / 9324959833 Mob.: 7977097657

Stocking/ Machining Centre

Gala No. 6, Building No. 183, Indian Corporation, Mouje Gundavli
(Mankoli - Phata) Dapoda, Taluka - Bhiwandi : 421302
Tel : +91 7977097655 |
Email: sales@venturasteels.com | Web: www.venturasteels.com

SOVEREIGN SOLUTIONS FOR ALLOY, SPRING AND DIE STEELS

India needs to manufacture AHSS for the Atmanirbhar Bharat

The first-generation Electric cars (EC) were made of Al alloys and Carbon fibre to keep the weight down. With the initial excitement surrounding the Electric Car it appeared that Alloy Steel would no longer be required in the production of cars as anyhow there would be total replacement of the IC Engine type of cars by Electric Cars. Governments were mandating that Electric Cars would be required instead of the traditional IC Engine type cars to meet the Greenhouse Emission norms.

The target in India for only Electric cars to ply on the roads by, possibly, 2030 which is not far away. So, is Alloy Steel on its way out? Have the Alloy Steel producers surrendered and given up on the giant automotive market worldwide?

Not at all. Interestingly, Alloy Steel producers such as Thyssenkrupp , Germany, Arcelor Mittal and some others took on the challenge. Today they have developed a NEW class of Alloy Steels called Advanced High Strength Steels (AHSS). The new generation of EC produced by Tesla (Model 3), Nissan (Leaf) etc use largely AHSS and Steel instead of Al alloys.

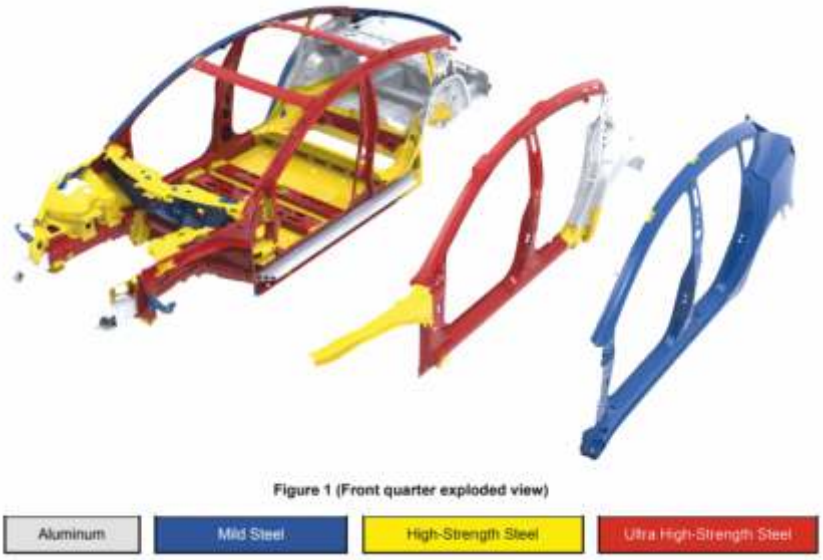


Figure 1 (Front quarter exploded view)

Above is the view of the Body of Tesla Model 3. Pl note for the impact bearing sections Steel has replaced Al alloys and wherever it is used is in the less critical zones. (Ultra High Strength Steel is in the AHSS family).

This is only for the Body of the car and similarly the Battery Housing, Motor etc are made from AHSS and other grades of Alloy Steels. Before we get into a deeper discussion on AHSS and its benefits, for readers not familiar with the Electric Car (EC) a quick review of some EC basics as follows:

- What is an Electric Car?
- What are its components?
- Important Design considerations of an Electric Car which in turn dictate the choice of suitable materials.

Definition : An Electric Car is a car that does not use fossil fuels but relies only on Electric Power for its motion. As fossil fuels are eliminated there is no requirement to use petrol / diesel / CNG etc. and the IC Engine and Exhaust system becomes redundant.

The Electric Power drawn from a Battery which is charged from a suitable power source. The lighter the car, less charge is required and faster the charging time. Further, the distance covered by the car in a single charge is increased lower the weight of the car. Hence, these considerations influenced the initial design of the Electric car towards Al alloys and Carbon fibre.

R. Mohan, CEO, MTEX Solutions

Components of EC:

The Electric Car consists of the following major components:

- Body
- AC converter and Motor
- Reducer
- Battery
- On Board Charger
- Electric Power Control Unit

Items 2-6 comprise the Powertrain. A photo of the Electric car is Powertrain is shown below for immediate understanding :

Providing
Customised Gearing Solutions
To The Steel Industry For Over 50 Years

Esenpro
The Most Trusted Brand

Helical Planetary Gearbox for Hoisting

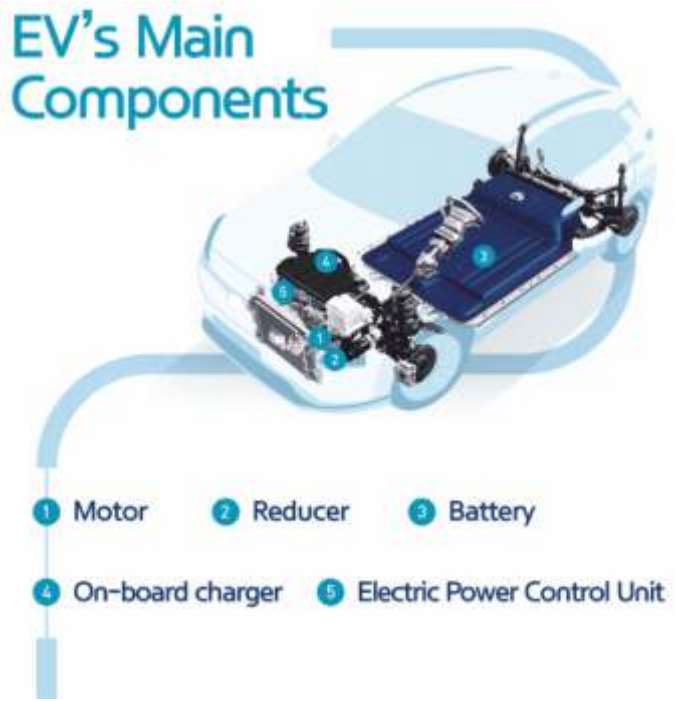
Entry Tension Reel Gearbox

Bevel Helical Gearbox for Ore Handling Equipment

Leveller Gearbox with Inch Drive

Essential Power Transmission Pvt. Ltd.
Reg. Office: Esenpro House, 24, Marol Co-op Industrial Estate Ltd.,
Off. M.V. Road, Andheri (E), Mumbai - 400 059, (India)
Email: marketing@esenpro.com, sales@esenpro.com, jshah@esenpro.com
Telephone: +91 (22) 2850 5132 / 3685 / 6471 | Fax: +91 (22) 2850 4501 / 2848

ESSENTIAL POWER TRANSMISSION PVT. LTD.



Each part of the Electric car needed to be assessed for the service and safety conditions it needed to fulfill The total weight of the Powertrain Components is around 40 % which is SIGNIFICANT. As with the IC Engine cars, the Powertrain components need to fulfill Crash worthy norms and Safety requirements.

Out of the above 5 components, the Body, the Motor and the Battery are highly critical. Optimal design of the Body /Structure demands it needs to be light weight AND satisfy crash worthiness norms.

The focus was on using lightweight materials for the BODY of the car and Al alloys seemed the natural choice. Greenhouse Gas Emissions from the tailpipe of the car were eliminated as compared to the IC Engine type of car.

However, in the first generation of Tesla cars (Model S) fire incident was reported earlier. It appeared that Battery housings were not fireproof. This was the first door opener for the Alloy Steel producers. They started to carefully ANALYZE whether Al alloys and Carbon fibre were sufficient to meet the requirements of Crash Worthiness and Safety hazards such as Fire caused by Battery Leakage etc; other parameters evaluated were also the Lifecycle cost of the car which requires considering cost of Greenhouse emissions caused by production of materials such as Al alloys vs Steel and recyclability. Then, Alloy Steel seemed to be offering more options.

The mission for the Alloy Steel producers was to come up with a class of Alloy Steels that would be comparably lightweight (total weight of Al used in Tesla S is 190 Kg) without any compromise on SAFETY.

Motor : Similarly, for the Motor, the components used to make the Rotor, Stator and the laminations must be suitable to achieve the highest magnetic permeability, minimal core losses and need to be thin as possible to save on weight.

ThyssenKrupp claims its power core non-oriented electrical steel is only 0.2 - 0,35 mm thick significantly thinner than the material (0.5-0.65mm thick) used in traditional electric motors.

Battery Housing : Batteries and Battery Housing can be approximately 10% of the total Electric car weight. Typically for a 60-100 KWH battery capacity, the battery weight is around 385-544 Kg for the gross car weight of around 3000 Kgs. Here again, the Battery housing needs to have the requisite strength to withstand front/side/rear impact in case of a crash and also be debris proof and fireproof in case of any leakage.

Thyssen Krupp, Germany claims their electrify platform of AHSS Battery Housings significantly improves Fire Safety in electric cars, up to 50% cheaper to produce over the Lifetime cycle of the car and generates only around 50% of CO_2 emissions as compared to battery housings made of Aluminium.

The AHSS battery housing can be very thin-

Thermex Fe600 grade rebar

THERMEX®

H&K INDIA

Fe600 effortlessly commissioned in:

Year 2020

- Alaknanda Sponge Iron Ltd., West Bengal
- B. S. Sponge Pvt. Ltd., Chhattisgarh
- M. S. Agarwal Foundries Pvt. Ltd., Telangana
- RAIC Integrated Sponge & Power Pvt. Ltd., West Bengal
- SBIW Steel Pvt. Ltd., West Bengal
- Shambhavi Ispat, Chhattisgarh
- Shree Parmeshwar Steels Pvt. Ltd., Gujarat
- Shree Sidhbali Ispat Ltd., Maharashtra

Pre 2020

- Amit Metaliks Ltd., West Bengal
- Captain Steel India Ltd., West Bengal
- Electrotherm India Ltd., Gujarat
- Gagan Ferrotech Ltd., West Bengal
- Grace Castings Ltd., Gujarat
- Haq Steels & Metaliks Ltd., Gujarat
- JBA Metal Company, Puducherry
- JMD Alloys Ltd., Bihar
- Radha Smelters Pvt. Ltd., Telangana
- Shyam Steel Manufacturing Ltd., West Bengal
- Shritirupati Steelcast Ltd., Andhra Pradesh
- Sri Navdurga Billets Pvt. Ltd., Telangana
- Vinayak Steels Ltd., Telangana

To produce higher grade rebars

Contact handk.india@gmail.com

walled enabling use of a larger battery thus increasing the range of the battery power.

It was clear to the Steel producers that a NEW class of Steel needs to be invented to meet the above challenges head-on. Enter AHSS.

So, what is AHSS? The WorldAutoSteel definition of AHSS :

AHSS are complex, Sophisticated materials with carefully selected chemical compositions and multiphase microstructures resulting from precisely controlled heating and cooling processes. Various strengthening mechanisms are employed to achieve a range of strength, ductileness, toughness and fatigue properties. They are uniquely lightweight and engineered to meet the challenges of today's vehicles for stringent safety regulations, emission reductions and solid performance at affordable costs.

(The price of Tesla Model 3 is much lower than Model S and use of Steel is a major contributing factor).

The strength and ductility requirements vary over different sections of the Electric car Body as shown in the a.m photo. Hence a RANGE of AHSS has been developed to meet such requirements. 60% of today's EC s body structure are made from AHSS. The AHSS have UNIQUE and Complex microstructures caused by SPECIAL Heat Treatment processes.

The AHSS family consists of the following types of Steels. Applications and Benefits are

Type of AHSS (1st Generation)	Application	Benefit
Dual Phase (DP) TS: 590-1400 Mpa	Crash Zone of the car	High Energy Absorption
Complex Phase (CP); microstructure with Bainite +Martensite and Ferrite TS: 800- 1180 Mpa	Car Frames	Higher FORMABILITY than DP Steels
Transformation Induced Plasticity (TRIP) microstructure with ferrite, Martensite and some retained Austenite converts to strong Martensite after transformation and so can absorb a lot of energy. TS: 590-1180 Mpa	Energy Absorption in Frontal and Rear Zone structure	Enables Car light weighting but taking care of safety of passengers in crash situations.
Martensitic (MS) hardest steel in AHSS but low on formability. TS: 900-1700 Mpa	Used in Vehicle Bodies	Limited Deformation
Type of AHSS (2nd Generation)	Energy Absorption in	Higher formability
New Generation of TRIP	Frontal and Rear Zone structure	
Hot Forming (HF)		Higher formability
Twinning Induced Plasticity (TWIP)		Higher formability

Typically, Steels with tensile strengths greater than 550 MPa are referred to as AHSS. AHSS with YS > 780 MPa are called Ultra High Strength Steels and AHSS with YS > 1000 MPa are called Gigapascal Steels.

The above were 1st and 2nd generation AHSS. The 2nd Gen AHSS have higher formability but also higher alloying additions which increase the cost. Massive funding is on to develop the 3rd Generation AHSS with improved capabilities at the same or LOWER costs.

The Targeted YS is 1200 MPa and Ductility is 30%. The 3rd Gen AHSS are expected to haver LOWER alloy content to minimize costs.

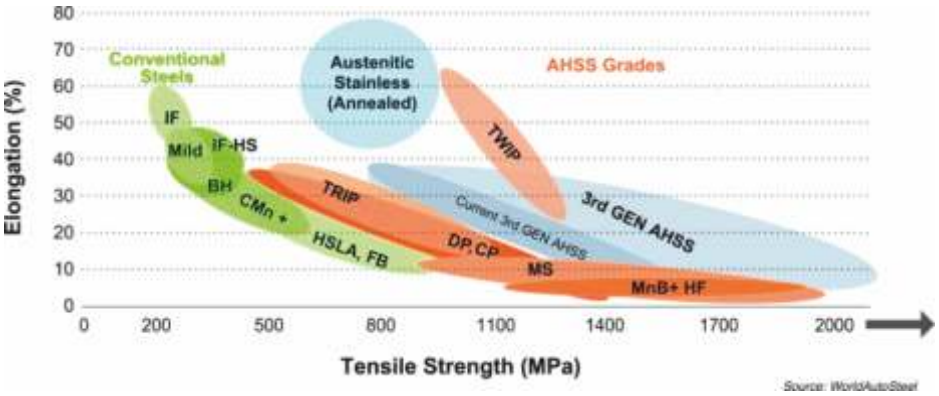
Already the current grades of AHSS has enabled car makers to reduce vehicle components weight from 25%- 39% and overall car weight by 8-10% compared to conventional steels based car.

In a typical 5 passenger car, there is overall weight reduction of 100-150 Kg which results in corresponding saving of 2-3 tonnes of Greenhouse Gas emissions spread over the

Lifetime of the vehicle.

The Future Steel Vehicle (FSV) Project promoted by World Auto Steel since 2013 has resulted in a project wherein the Body In White (BIW) mass has a weight of only 188 Kg and consequent reduction in Greenhouse Gas Emissions by 70 % over the vehicle Lifetime. The material portfolio developed through the FSV project is being implemented in many of the NEW Electric cars.

A pictorial representation of the AHSS family with Grades under production is shown below :



Note: the 3rd Generation AHSS are under development for achieving improved strength/ ductility ratios and also over 35% reduction in Structural Weight

Market for AHSS: as of 2018, in USA alone the AHSS market was 12.80 Bio USD.

Projected Demand for AHSS: 33.85 Bio USD by 2026 (CAGR: 13.1 % from 2019-2026)

(Figs from Allied Market Research, USA)

The above demand figures are only for the US but high demand for AHSS is anticipated from several other countries such as the EU, China, Japan etc.

AHSS in India: so far, it appears manufacturing of AHSS in India is still to start. AHSS grades are all imported.

Looking at the anticipated global demand one would expect much investment in R&D to enable local manufacturing of AHSS. So, we can save on imports and eventually become a global supplier of AHSS.

India need to start its own domestic manufacturing of AHSS which would be a worthwhile objective of the Government and Private steel producers to attain the Atmanirbharta.

References:

- World Auto Steel, USA
- Thyssen Krupp, Germany
- Arcelor Mittal
- Matmatch, USA

Author's Note: R. Mohan is the CEO of MTEX Solutions and focused on manufacturing practices in Special Alloy Steels. He is a Graduate Engineer in Metallurgy from Indian Institute of Science, Bangalore. Mr.Mohan has prior experience of providing Vacuum metallurgy solutions to leading alloy steel producers in the private sector enabling import substitution of costly and crucial materials required in our Atomic Energy, Defense and Space /Aircraft industries. Other areas of interest are Renewable Energy especially Solar Power and its increasing use in various fields.

Steel sector outlook remains strong; valuations, deleveraging drive prospects

India's domestic stronger demand for steel and, in turn, rising prices since the easing of lockdown restrictions have continued to drive the profitability of Indian steel manufacturers. Analysts expect the cycle to sustain longer and the improved cash flows may lead to deleveraging, providing fresh triggers for stocks. Further, the fresh CAPEX cycle may start with continued strength in demand and prices of the commodity.

Strong rebound in demand in 2021, plus supply-side reforms in China should lead to higher international steel prices say analysts at Morgan Stanley India.

China remains the largest consumer of commodities and it is accelerating its environmental push to control carbon emissions. This is likely to keep a tab on production in many industries. Morgan Stanley in China feels that the country's efforts to achieve carbon neutrality may lead to an upward trend in the cost curve and supply disruption for heavy power-consuming and high-emission industries such as steel and aluminium, driving more upside potential to these commodity prices.

The continued rise in demand for steel and supply constraints from China may lift international steel prices and also bode well for Indian manufacturers. Firm demand, higher realizations, and lower risk of cheap imports from China are likely to accrue benefits for Indian manufacturers.

"With the cycle remaining higher for longer, we believe investor focus will shift to earnings growth over balance sheets," said analysts at Morgan Stanley. They continue to prefer stocks with low valuation and substantial de-leveraging like Tata Steel Ltd and Jindal Steel and Power Limited (JSPL).

Having increased their F2021-22 realizations by 1-12%, driving 4-35% increase in Ebitda estimates across coverage, Morgan Stanley analysts believe their estimates may have further upside risks. They have also upgraded JSW Steel Ltd, given the strongest volume growth, weakening iron ore prices and solid earnings CAGR (compounded annual growth rate), and expect premium valuations to sustain given a better return on equity profile.

Stock prices of Tata Steel saw intraday gains of more than a percent on Thursday, a day when broader indices were down more than 1%.

Strong steel realizations support SAIL's profitability, debt reduction prospects

Steel Authority of India [1] (SAIL [1]) has largely overcome the Covid-19 crisis, posting a healthy profit in the third quarter.

An uptick in activity in the construction, infrastructure and manufacturing sectors augur well for the industry in general and SAIL says, Soma Mondal, Chairman, SAIL.

As a result, Steel Authority of India Ltd's (SAIL) stock prices have more than doubled since the start of November amid several positives.

Firm steel prices have continued to drive prospects and the company has seen a significant turnaround in profitability post coming out of the lockdown.

The start of the current financial year saw us battling issues on two fronts. Firstly there was the pandemic which posed a serious challenge to the life and well-being of our employees and then we faced liquidity and profitability issues while running operations at our plants at minimum levels. The SAIL family, however, stood up to these challenges and came out with flying colours.

The fruits of these efforts were visible as early as June when the lockdown was lifted and the economy revived.

The steel sector echoed the sentiments of the overall economy both in terms of demand and supply. In fact, SAIL posted its best-ever sale performance month after month and was back in the black in the second-quarter results. With the markets regaining momentum in Q3, SAIL posted a net profit of Rs.1,283 crore.

The outlook for the industry is quite good. There is a lot of positive sentiment. The uptick in activity in the construction, infrastructure and manufacturing sectors augurs well for the industry in general and SAIL in particular.

The government finds multiple takers for steel company Neelachal Ispat

The government has received multiple expressions of interest (EoIs) for its proposed divestment in Neelachal Ispat Nigam department of investment and public asset management (Dipam). It, however, didn't reveal the identity of the parties nor the number of expressions it received for the steel [2] asset.

ArcelorMittal [3] Nippon Steel and JSW Steel have submitted their interests for the public sector unit located in Odisha [4]'s Kalinga Nagar, which is pretty close to Tata Steel [2]'s plant, said people in

Sanghi Organization

Always a step ahead.

60 TPD
(1800 cu.m./hr.)
Oxygen Plant commissioned at
MSPL – SAIL Bhadravati Project.

Most Power efficient and
Versatile Plants
with Highest safety standards.

SANGHI ORGANIZATION

Manufacturers & Exporters of Oxygen, Nitrogen, Acetyiene, Nitrous Oxide and Carbon Dioxide Plants

1-2, Turf View, Opp. Nehru Centre, Seth Motilal G. Sanghi Marg, Worli, Mumbai - 400 018, India.
Tel: 2494 5464 (12 Lines), Fax: {91-22} 2494 7052.
E-mail : mail@sanghioverseas.com | Website : www.sanghioverseas.com

SANGHI

M. K. Sanghi Group

the know.

The last date to submit the expression of interest was March 29. "The transaction moves ahead to the second stage," said Dipam's tweet.

Tata Steel too has thrown its hat in the ring for the proposed acquisition of Neelachal. All three potential bidders have snapped up bankrupt assets to ramp up their play in one of the world's largest economies.

Ex-IPS officer files petition in HC against steel plant privatization

Former IPS officer VV Lakshminarayana has filed a Public Interest Litigation (PIL) in the High Court seeking intervention from privatising the Visakhapatnam Steel Plant (VSP). In the petition, Lakshminarayana said that the VSP was established with the sacrifices of 32 people and selling away a 100 percent stake in the RINL citing financial losses is not correct. He pointed out that the VSP can run into profits if captive mines are allotted. The Modi government wants to sell a 100 percent stake to private corporate entities. Employees of the steel plant, political parties except for BJP, trade unions and employees' groups are opposing VSP privatisation.

Smt. Soma Mondal elected as new Chairman, SCOPE

Smt. Soma Mondal, Chairman, Steel Authority of India Limited (SAIL) has been elected as the new Chairman of the Standing Conference of Public Enterprises (SCOPE) today. She has been elected for a term of two years, w.e.f 1st April, 2021. Smt. Mondal assumed the charge of Chairman, SAIL on 01st January, 2021.

After the announcement of the results, Smt Soma Modal said, "I am a firm believer that the collective performance by the PSEs can make a marked difference to the fortunes of the Country. We would work to make SCOPE an even more effective organization by repositioning itself into an impactful apex body for effective policy advocacy, capacity building research and brand building. SCOPE can play a constructive role in putting forward the views to the decision-makers and champion the cause of 'Atmanirbhar Bharat' ".

SCOPE is an apex professional organization representing the Central Public Sector Enterprises (CPSEs). It is promoting excellence in organizations where public investment is involved, in order to enable them to be globally competitive.

Danieli installed Tashkent Metallurgical Plant in Uzbekistan

The Tashkent Metallurgical Plant was started recently at the grand opening ceremony attended by government officials and industry leaders.

Designed and spplied by Danieli, this complex is the largest investment project in the metallurgical industry of Uzbekistan, to produce cold-rolled galvanized and color-coated flat products.

"This is one of the most modern industrial facilities not only in our republic but also in the countries of Central Asia", stated Shavkat Mirziyoyev, President of Uzbekistan.

The president visited the enterprise where the latest Danieli cold-rolling and strip-processing technologies and automation processes are installed and in operation, and he focused on the economic effects expected from the start-up of the new complex.

"The low level of development of ferrous metallurgy in our country complicates the activities of the domestic industrial enterprises. The Tashkent Metallurgical Plant will annually produce 500,000 tons of galvanized and colour-coated flat products. And this will make it possible to meet the needs of hundreds of enterprises engaged in the production of building materials and steel structures, household appliances, electrical and packaging for food products. Previously, this need was met mainly through imports."

In the future, the plant products also will meet the new needs of the domestic automobile and agricultural machinery industries. At the first stage of the enterprise activity, about 400 million dollars will be saved due to the production of import-substituting products.

It was also noted that in the prime cost of sandwich panels and roofing materials, the share of primary products manufactured in Uzbekistan will grow from 50 to 90%. In the context of ventilation and air conditioning systems, this figure will increase from 30 to 50%, and in consumer electronics from 35 to 50%. Consequently, the final products will become cheaper.

Tashkent Metallurgical Plant is a "green production complex" complying with the strictest emission laws and energy efficiency levels.

AM/NS Calvert selects Primetals Technologies to supply RH degasser and continuous caster

Primetals Technologies will supply an RH degasser, continuous slab casting machine, and material handling equipment to AM/NS Calvert for their new steel melt shop. A 50/50 joint venture between ArcelorMittal and Nippon Steel Corp. (NSC), the facility is located in Calvert, Alabama, USA.

Once completed, the plant will be capable of annually producing 1.5 million tons of slabs to feed its existing hot strip mill. This expansion will give AM/NS Calvert full control of product quality and the flexibility to produce a broad spectrum of high-quality steel grades for the automotive industry. Construction is expected to take two years.

The Primetals Technologies scope of supply includes a 180-ton twin RH degasser plant. The system includes the patented Combined Vessel & Ladle Lifting System (CVL), the Combined Oxygen-Burner System (COB Lance), mechanical vacuum pump, ladle treatment stands, wire feeder station, argon stirring emergency lance, and Level 1 and Level 2 automation systems. This RH degasser plant is designed to produce enhanced product quality like interstitial free steel grades or ultra-low carbon steel grades and to provide AM/NS Calvert with higher flexibility and throughput in a very compact layout.

Another key component is a single-strand, bow-type, continuous casting machine. The caster can produce slabs ranging in thickness from 235 millimeters to 255 millimeters, widths from 950 millimeters to 2,050 millimeters, and lengths of 4.2 meters to 11.75 meters. With a radius of 9 meters, the caster features a straight mold with segmented strand containment as well as a patented continuous bending and straightening process.

A full suite of advanced process models, including DynaFlex oscillation, DynaGap Soft Reduction, and Dynacs 3D Secondary Cooling will be supplied to ensure class-leading production quality. Advanced Level 2 technologies will ensure slab quality control while mechatronics packages integrate technological control systems with core machine mechanical designs. These packages were designed to improve maintenance and quality tracking, optimize casting speed and slab cut length, as well as monitor systems in order to detect problems like potential breakouts and clogged cooling spray nozzles. AM/NS Calvert is recognized as one of the most advanced steel finishing facilities in the world. Purchased by ArcelorMittal and NSC in 2014, the plant has served the North American market since 2010 with the capacity to produce 5.3 million tons of flat-rolled carbon steel products annually. End-user markets include automotive, construction, pipe and tube, service center, appliance, and HVAC. Their portfolio of steel grades for high-value applications includes hot-rolled bands, hot-rolled pickled and oiled, cold-rolled and advanced coated products. AM/NS Calvert also produces advanced high strength steels that are needed for lighter-weight, more fuel-efficient vehicles. The facility currently includes a river terminal, hot strip mill, cold rolling mill, three hot-dip galvanizing lines, continuous annealing line, rail yard and supporting infrastructure.

Slitting line modernization at Becker Stahl-Service, Germany

Danieli Fröhling completed a successful revamp of the shear and the exit guide at Becker Stahl Service GmbH in Germany, a project that included the supply of a new gearbox and a fully automatic mandrel changing device. All the new equipment was designed in-house and pre-assembled at Danieli Fröhling workshops in Meinerzhagen, Germany.

With the help of the 3D scan of the existing equipment and the technical audit performed prior to the design stage, Danieli Fröhling ensured an engineering solution that best suited the needed tolerances of the slitting line and conforms with the interface requirements.

The efficient preparation, great coordination and organization of the project team and flawless execution of work on-site during the shutdown, allowed the on-time project completion. It also ensured that the customer gained safer and better-performing equipment, along with dramatically improved slitting line productivity.

The revamped slitting shear was empowered to cut 50% thicker strips, thus providing 50% increase in production with respect to strip thickness and equipped with a fully automatic changing head. This enables the customer to produce a wider range of products while complying with the market's more

demanding requirements.

The production diameter of the mandrel can be changed in less than 3 minutes, improved from the originally contracted 5 minutes, meaning that Becker Stahl can change the mandrel diameter, coil by coil, without affecting production. Thus, the highest flexibility is achieved while shortening the delivery time of products to customers.

SMS group complete vacuum pump modernisation at China Steel

SMS group has successfully completed the modernization of the vacuum pump of China Steel Corporation's RH facility at the steelworks in Kaohsiung, Taiwan. In February 2021, the SMS group received the Final Acceptance Certificate (FAC) for modernization.

With the 800,000 ton-per-year RH facility (Ruhrstahl-Heraeus process), originally supplied by SMS group in the 1980's, China Steel Corporation produces a wide range of steels, including higher-strength structural steels, higher-strength steels for shipbuilding, Cr-Mo-alloyed steels, tool steels and concrete reinforcing bars.

As part of the modernization, which was aimed at increasing plant availability and enhancing steel quality, SMS supplied a powerful four-stage vacuum pump and revamped the vacuum lock system.

Thanks to the modernization of the vacuum system, China Steel Corporation is now able to use the plant without interruption at significantly higher condensate cooling-water temperatures of up to 38 degrees centigrade. Also, the suction capacity of the vacuum pump has been significantly increased. Now final pressures of less than 1 mbar can be reached in shorter evacuation times.

SMS group is a group of companies internationally active in plant construction and mechanical engineering for the steel and nonferrous metals industry. It has some 14,000 employees who generate worldwide sales of more than EUR 2.9 billion. The sole owner of the holding company SMS GmbH is the Familie Weiss Foundation.

Chun Chang, Chung, Superintendent of BOF PLANT I, China Steel Corporation: "We are very satisfied with the performance of the new vacuum pump from SMS group. Commissioning went smoothly and we were able to start production before the scheduled date."

Commissioning of the RH facility was performed in February 2021 under Corona conditions. China Steel Corporation operates a steelworks in the south of Kaohsiung, Taiwan's second-largest city.

Osaka Steel invests in PROgauge light-section system from TBK Automatisierung und Messtechnik

With this latest investment in a laser-based light-section system from TBK Automatisierung und Messtechnik GmbH, a company of SMS group (www.sms-group.com) based in Graz, Austria, Japanese steel section producer Osaka Steel Co. Ltd. will be able to achieve higher productivity and enhanced quality control thanks to next-generation dimension measurement. Using PROgauge, the company can now perform surface analyses based on 3D representation, optimizing its production in an area that could not be measured up to now.

Osaka Steel, based in Osaka, is also known outside of Japan for its high-quality steel products which are supplied to numerous industrial sectors, including construction, civil engineering, shipbuilding, steel towers, and industrial machinery manufacturing. The PROgauge system from TBK will be Osaka Steel's first surface inspection system measuring directly after the finishing stand.

The PROgauge laser measuring system is designed to measure a wide range of small and medium sections between 45 and 200 millimeters in size – including angles, channels, rails, and SMS group is a group of companies internationally active in plant construction and mechanical engineering for the steel and nonferrous metals industry.

It has some 14,000 employees who generate worldwide sales of more than EUR 2.9 billion. The sole owner of the holding company SMS GmbH is the Familie Weiss Foundation.

elevator guide rails. The system also includes the SurfTec surface analysis function developed by TBK for the inline detection of surface defects. This allows the sections to be measured in a hot state directly after the last mill stand. Surftech is currently being fine-tuned and, based on the defects identified, it will be possible to draw conclusions as to their cause. This means that the frequency of manual inspections will be drastically reduced. Thanks to PROgauge, Osaka Steel will be able to enhance its process analysis, which in turn will provide time and cost savings.

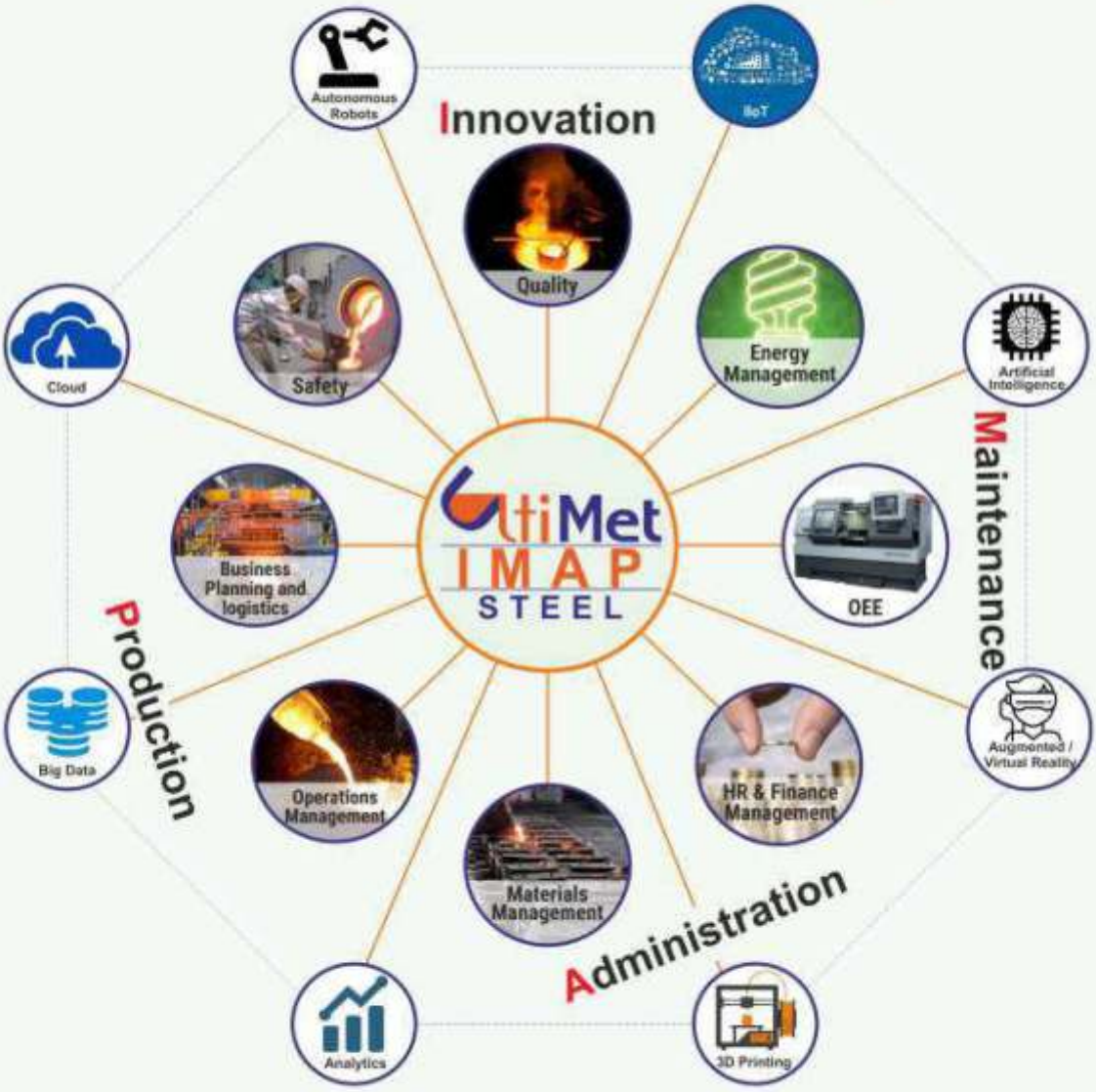
The PROgauge laser measuring device combines two functions within one device: shape and size measurement, and surface analysis. Thanks to the high scanning rate and a large number of measuring points, the surface can be shown in 3D. The comprehensive remote support provided by TBK enabled the successful and timely commissioning of the system.

Make your Steel Plant future-ready

End-to-End Industry 4.0 Smart Solutions from

UltiMet

Facilitating Metals Industry to go Digital



Contact us

Ulti-Met Technologies Pvt. Ltd.

Facilitating Metals Industry to go Digital

Tel : +91-22-2619 2376 / 2617 1575 / 1617 1866

Email : info@ulti-met.com / rajesh@ulti-met.com

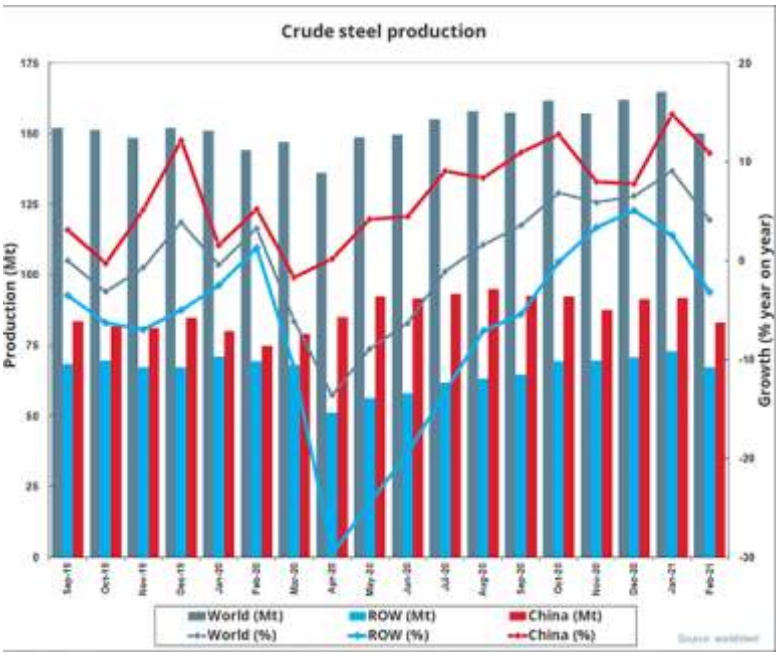
Web : www.ulti-met.com

Global Steel Output Up By 4.1 pc in Feb 2021

As per the World Crude Steel production data for the 64 countries reported by World Steel Association (world steel) was recorded at 150.2 million tonnes (Mt) in February 2021, a 4.1% increase compared to February 2020.

China is estimated to have produced 83.0 Mt in February 2021, up 10.9% in February 2020. India produced 9.1 Mt, down 3.1%. Japan produced 7.5 Mt, down 5.6% while India's steel production for Jan-Feb 2021 has been increased by 3.4 percent. The United States produced 6.3 Mt, down 10.9%, Russia is estimated to have produced 5.7 Mt, down 1.3%. South Korea produced 5.5 Mt, up 1.2%.

Turkey produced 3.0 Mt, up 5.9%. Germany produced 3.1 Mt, down 10.4%. Brazil produced 2.8 Mt, up 3.8%. Iran is estimated to have produced 2.3 Mt, up 11.5%.



Crude steel production by region

	million tonnes February 2021	% change Feb-21/20	million tonnes Jan - Feb 2021	% change Jan - Feb 21/20
Africa	1.2	-6.4	2.4	-6.9
Asia and Oceania	109.7	7.5	230.8	10.1
CIS	8.0	-1.5	16.8	-0.4
EU (27)	11.9	-7.1	24.1	-3.7
Europe, Other	3.9	5.2	8.2	6.9
Middle East	3.2	-0.9	6.8	0.4
North America	8.8	-8.9	18.5	-7.1
South America	3.5	2.2	7.3	6.6
Total 64 countries	**150.2**	**4.1**	**315.0**	**6.6**

The 64 countries included in this table accounted for approximately 98% of total world crude steel production in 2020. Regions and countries covered by the table:

- Africa: Egypt, Libya, South Africa
- Asia and Oceania: Australia, China, India, Japan, New Zealand, Pakistan, South Korea, Taiwan (China), Vietnam
- CIS: Belarus, Kazakhstan, Moldova, Russia, Ukraine, Uzbekistan
- European Union (27)
- Europe, Other: Bosnia-Herzegovina, Macedonia, Norway, Serbia, Turkey, United Kingdom
- Middle East: Iran, Qatar, Saudi Arabia, United Arab Emirates
- North America: Canada, Cuba, El Salvador, Guatemala, Mexico, United States
- South America: Argentina, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, Venezuela

	million tonnes February 2021	% change Feb-21/20	million tonnes Jan - Feb 2021	% change Jan - Feb 21/20
China	83.0 e	10.9	175.0	12.9
India	9.1	-3.1	19.4	3.4
Japan	7.5	-5.6	15.4	-4.7
United States	6.3	-10.9	13.3	-9.9
Russia	5.7 e	-1.3	12.1	-0.2
South Korea	5.5	1.2	11.5	3.3
Turkey	3.0	5.9	6.4	9.4
Germany	3.1	-10.4	6.4	-2.6
Brazil	2.8	3.8	5.8	7.3
Iran	2.3 e	11.5	5.0	10.8

e - estimated. Ranking of top 10 producing countries is based on year-to-date aggregate

Utility vehicles drive auto sales in February 2021

As per the latest data released by the Society of Indian Automobile Manufacturers (SIAM), the utility vehicles (UVs) segment, with a year-on-year (y-o-y) growth of more than 45 per cent, has driven the total passenger vehicles wholesales in the domestic market in February 2021.

While two-wheeler dispatches to dealers also rose 10.2 per cent to 14,26,865 units, compared to 12,94,787 units in February 2020. Motorcycle sales during the last month increased 11.47 per cent to 9,10,323 units as against 8,16,679 in February 2020. Scooter sales were also up 10.9 per cent at 4,64,744 units from 4,22,168 units a year ago.

Three-wheeler sales, however, declined by 33.82 per cent to 27,331 units as compared with 41,300 units in February last year. Vehicle sales across categories rose by 10.21 per cent to 17,35,584 units last month as against 15,74,764 units in the year-ago period.

Commenting on the sales data, SIAM Director General Rajesh Menon said total sales of passenger vehicles from April-February period was still below 2015-16 levels and for two-wheelers it is below 2014-15 levels.

Society of Indian Automobile Manufacturers

Category	Domestic Sales (In Numbers)		
Segment/Subsegment	February		
	2020	2021	% Change
Passenger Vehicles (PVs)*			
Passenger Cars	148,541	155,128	4.43
Utility Vehicles (UVs)	78,674	114,350	45.35
Vans	11,407	11,902	4.34
Total Passenger Vehicles (PVs)*	**238,622**	**281,380**	**17.92**
Three Wheelers			
Passenger Carrier	32,423	18,514	-42.90
Goods Carrier	8,877	8,817	-0.68
Total Three Wheelers	**41,300**	**27,331**	**-33.82**
Two Wheelers			
Scooter/ Scooterettee	422,168	464,744	10.09
Motorcycle/Step-Throughs	816,679	910,323	11.47
Mopeds	55,802	51,445	-7.81
Electric Two Wheelers	138	353	155.80
Total Two Wheelers	**1,294,787**	**1,426,865**	**10.20**
Quadricycle			
Quadricycle	55	8	-85.45
Total	**55**	**8**	**-85.45**
Grand Total	**1,574,764**	**1,735,584**	**10.21**

** BMW, Mercedes, Tata Motors & Volvo Auto data is not available.*

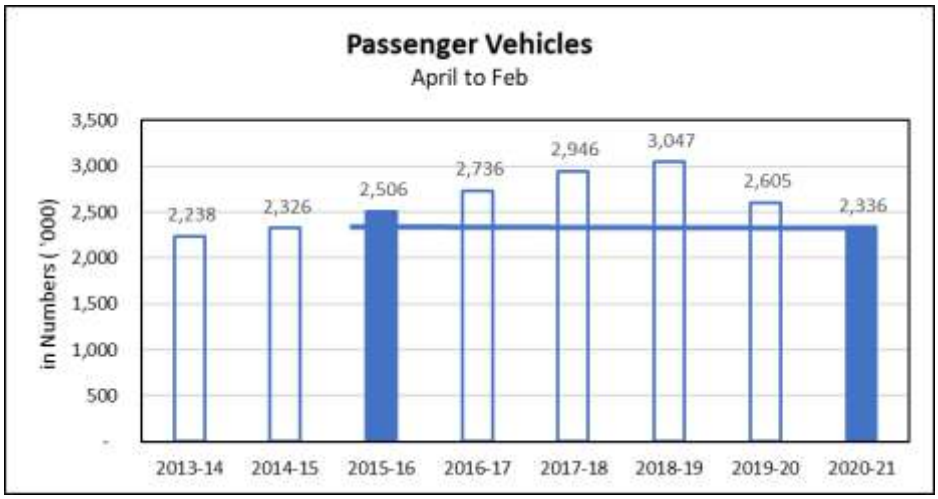
Statistics

Society of Indian Automobile Manufacturers

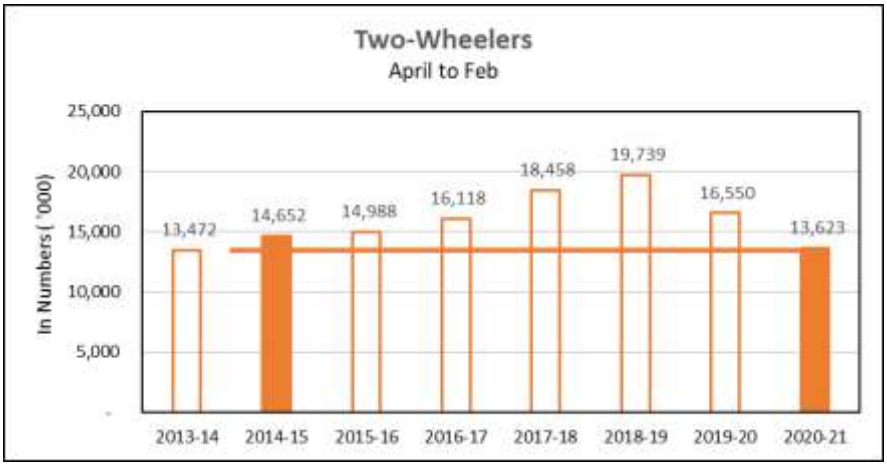
Category	Domestic Sales (In Numbers)		
Segment/Subsegment	April-February		
	2019-2020	2020-2021	% Change
Passenger Vehicles (PVs)*			
Passenger Cars	1,594,821	1,336,473	-16.20
Utility Vehicles (UVs)	885,556	902,951	1.96
Vans	125,006	96,384	-22.90
Total Passenger Vehicles (PVs)**	**2,605,383**	**2,335,808**	**-10.35**
Three Wheelers			
Passenger Carrier	503,317	112,473	-77.65
Goods Carrier	106,140	71,794	-32.36
Total Three Wheelers	**609,457**	**184,267**	**-69.77**
Two Wheelers			
Scooter/ Scooterettee	5,302,614	4,022,171	-24.15
Motorcycle/Step-Throughs	10,642,804	9,025,840	-15.19
Mopeds	604,004	572,559	-5.21
Electric Two Wheelers	165	2,011	1118.79
Total Two Wheelers	**16,549,587**	**13,622,581**	**-17.69**
Quadricycle			
Quadricycle	1,073	-19	-101.77
Total	**1,073**	**-19**	**-101.77**
Grand Total of All Categories	**19,765,500**	**16,142,637**	**-18.33**

*** BMW, Mercedes and Volvo Auto data is not available and Tata Motors data is available for Apr-Dec only*

For Reference:



Apr to Feb Sales Numbers are below 2015-16 Levels



Apr to Feb Sales Numbers are below 2014-15 Levels

Source : SIAM

राष्ट्रीय इस्पात निगम लिमिटेड
(भारत सरकार का उद्यम)
विशाखपट्टणम इस्पात संयंत्र

RASHTRIYA ISPAT NIGAM LIMITED
(A Government of India Enterprise)
Visakhapatnam Steel Plant

RINL-Vizag Steel... aiding Atma Nirbhar Bharat

Now get easy access to

RINL-Vizag Steel's Quality Products

at your doorsteps

RINL eSuvidha

order online through web based portal

logon to https://esuvidha.vizagsteel.com/rinlesuvidha/index.jsp

RINL recently launched a new customer friendly initiative i.e. "RINL eSuvidha" – a Online Retail Portal to procure steel by customers all over India.

"RINL eSuvidha"

- Desktop/Mobile enabled website for customers across the country, to logon and access RINL-VizagSteel's Quality products in a convenient, transparent & efficient manner.
- Portal enables RINL to offer quotation against the customer's enquiry and the customer can confirm the order on the portal itself.
- Facilitates the customer to book order-on-line for quantities, make payment on-line for getting the material at their door steps.
- Provides a hassle free access to purchase quality steel products from RINL –Vizag Steel from any part of India.

The principal products of RINL-Vizag Steel includes TMT Rebars, Wire Rod Coils, Rounds, Structurals, Squares & Flats. Manufactured from 100 % virgin steel with stringent tolerances in both physical and chemical properties, RINL-Vizag Steel is the preferred steel for a wide array of customers.

RINL-Vizag Steel's quality products are marketed through a vast network of distributors and dealers in 24 Nos. of locations pan India including Tuticorin (Tamilnadu) &Rayagada (Odisha) distributors under 2-Tier Sales & Distribution system.

RINL-Vizag Steel is the first integrated steel plant to be certified for ISO 9001:2015, ISO 14001, ISO 27001 & OHSAS 18001 standards. It is also one of the first Indian Steel Companies to certified for ISO 50001 - Energy Management Systems.

उत्पाद श्रेणियाँ व उपयोग
PRODUCT MIX & APPLICATIONS

WIRE RODS

5.5mm - 45mm Dia

Wire drawing, Bright bars, Fasteners etc.

ROUNDS

16 - 90mm Dia in straight length

Fasteners, Forging, Re-rolling, Railways, Construction etc.

'VIZAG TMT' REBARS

8mm - 36mm Dia

Construction - Reinforcement etc.

BILLETS / BLOOMS

Billets : 65mm, 77mm, 90 mm, 125mm RCS
Blooms : 150 x 150, 200 x 200, 250 x 250
320 x 250mm

Forging, Re-rolling, General Engineering purposes etc.

'VIZAG UKKU' STRUCTURALS

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

Construction, Fabrication, Auto Leaf Springs etc.

@RINL VIZAG STEEL @RINL_VSP r.i.n.l