An Outline of Indian Ferro Alloy Industry

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Introduction

Ferro Alloys are used as additives in steelmaking as de-oxidants and as alloying agents. These are added in steel production process not only for de-oxidation but also for grain size control as well as for improvement in the mechanical properties of steel. Depending upon the process of steelmaking and the type of steel being made, the requirement of Ferro Alloys varies widely.

The product – mix of the Ferro Alloy industry consists of Ferro Manganese, Silico – Manganese, Ferro – Silicon, Ferro – Chrome and Charge – Chrome called BULK FERRO ALLOYS. There is another group of ferro – alloys called NOBLE FERRO ALLOYS which consists of Ferro – Molybdenum, Ferro – Titanium, Ferro – Tungsten, Ferro – Vanadium etc.

Role of Ferro Alloys

Ferro Alloys are used in steelmaking and consists of less than one percent of the total raw materials required for steel production. Despite being a very low constituent, ferro alloys is a vital additive for steelmaking.

The total installed capacity of ferro alloys in India in 2007-08 was 3.64 MT for bulk and noble ferro alloys taken together as per Indian Ferro Alloys Producers Association (IFAPA). The industry entails a capital investment of over Rs. 5,000 crore and it exported ferro alloys worth Rs. 4380 crore in 2007-08. The industry employs about 2.2 lakh people both directly and indirectly. The capacity utilization of the Indian Ferro Alloys industry in 2007-08 was about 65 percent.

The demand driver of ferro alloys are:

- Mild Steel in specially categories
- Production of alloy steel
- Production of stainless steel

The growth of ferro alloy industry is directly linked to the growth of steel industry, particularly for the group of products mentioned above. The industry is a part of CORE SECTOR under the Ministry of Steel, Government of Indian and is engaged in supplying crucially required intermediaries to the steel industry.

Ferro Alloys as De-oxidant for Steel Making

Ferro Alloy are used for de-oxidation of the steel melt and as an alloying element addition depending on the type of ferro alloy. It is the relative affinity of the alloying elements / de-

oxidisers towards oxygen at different temperatures that determine the method and time of addition, for achieving the optimum recovery.

In general, the loss of ferro alloy is higher when introduced in the furnace than when added to the jet of steel or to the ladle on tapping. De-oxidants like Si-Mn, Fe-Mn, Fe-Si and aluminium are used singly or in combination, depending upon the quality of steel to be produced.

For achieving the lowest level of oxygen in steels, aluminium (Al) de-oxidation is preferred. Also, for the silicate inclusions in steel, Si-Mn and Al are used for de-oxidation which involves the use of a combination of de-oxidants and results in effective de-oxidation.

The steel melt should be free from oxidising slag for most satisfactory de-oxidation. Effective de-oxidation helps in de-sulphurisation through lime additions followed by argon / nitrogen stirring that helping better slag to metal interaction.

Capacity & Its Utilisation

The Indian Ferro Alloy industry was worst hit in 2001-02. When the global prices came down sharply. This, coupled with high cost of power and depressed domestic markets, forced many Indian producers to cut back production and the capacity utilisation of the industry came down to 30 percent- an all time low. A number of units were referred to the B.I.F.R.

By the end of 2002, production of stainless and specialty steel in India increased to some extent and the demand for Ferro Alloys got a boost and the producers started getting higher prices.

Things began to improve in 2003-04 when India's stainless steel production reached 1.25 MT and the capacity utilisation of the industry rose to about 70 percent.

The domestic production of stainless steel reached 1.71 MT in 2004-05. The improved situation led to the restart of many closed units, expansion of capacities and setting up of many greenfield projects. The installed capacity of Bulk and Noble Ferro Alloys in India in 2006-07 was 3.209 MT and 35,000 tons respectively. In 2007-08, the installed capacity of Bulk Ferro Alloys has reached 3.6 MT and that of Noble Ferro Alloys went up to 40,000 tons.

According to industry sources, in 2008-09, due to the slackening of demand in the country between October, 2008 and February 2009, the Indian Ferro Alloy industry had to face a severe fall in capacity utilisation to nearly 35 percent which brought down production to 1.90 MT during the period and about 30 percent of the Indian ferro alloy producers halved their capacity from the normal level of production of 70 percent.

The period also saw about 20 percent of the existing furnaces shutting down due to the lack of market demand.

However, the position has changed for the better since February, 2009 which has been discussed later.

Major Ferro Alloy Production India

The names and product-mix of some major producers in India are shown in Table- 1.

Table – 1 : Major Producers of Ferro Alloys and their Product Mix

Name of the Producer	Product – Mix
Ferro Alloy Corporation Ltd. Vijianagram, A.P.	Ferro Manganese, Ferro Chrome
Maharashtra Elektrosmelt Ltd (MEL),	Ferro Manganese, Silico Manganese
Chandrapur, Maharashtra (A SAIL subsidiary)	
Universal Ferro & Allied Chemicals Ltd.,	Ferro Manganese, Silico Manganese,
Bhandara, Maharashtra (Units 1 & 2)	Ferro Silicon
Sandur Manganese & Iron Ore Ltd., Hospet, Karnataka	Ferro Manganese, Ferro Chrome
Ispat Alloys Ltd., Balasore, Orissa	Ferro Manganese, Ferro Silicon
KEA Corporation Ltd., Khandelwalnagar, Maharashtra	Ferro Chrome, Ferro Manganese
* Indian Charge Chrome Ltd., Chaudwar, Orissa	Charge Chrome, Ferro Chrome
Ferro Alloy Corporation Ltd., Balasore, Orissa	Charge Chrome, H.C. Ferro Chrome
* Indian Metals & Ferro Alloys Ltd.,	Ferro Chrome, Charge Chrome,
Rayagora, Koraput, Orissa	Ferro Silicon
* Tata Steel Ferro Alloys Plant,	H.C. Ferro Chrome, Charge Chrome
Bamlipal, Kendujhar, Orissa	
Tata Steel Ferro Alloy Plant, Rawmet, Orissa	H.C. Ferro Chrome
Jindal Ferro Alloys Ltd., Kothavasala, A.P.	Ferro Chrome
Jindal Stainless Ltd., Raigarh, Chhattisgarh	Ferro Chrome
Tata Steel Ferro Alloy Plant, Goda, Kendujhar, Orissa	Silico Manganese, Ferro Manganese
Nav Chrome Ltd., Raipur, Chhattisgarh	Ferro Manganese, Silico Manganese
Ferro Chrome Ltd., Orissa	Ferro Chrome
Jeypur Supar Ltd., Orissa	Ferro Chrome
VISL, Bhadravati, Karnataka (A SAIL Unit)	Ferro Silicon
Nava Bharat Ferro Alloys Ltd., Polacha, A.P.	Ferro Chrome, Silico Manganese
Rohit Ferro Tech, Bankura, West Bengal	Ferro Chrome

*100 Percent Export Oriented Unit (EOUS)

Typical Grades & Chemical Compositions of Indian Ferro Alloys

Typical grades and chemical compositions of Indian Ferro Alloy are shown in Table – 2.

According to expert metallurgists, steel composition is very important for attuning the desired properties.

The elements which are completely last in air during re-melting are Al, B, Ti and Zn. Those which are lost in vacuum are H, Pb, N and Zn. The elements that are partially lost during re-melting in air are C, Nb, Cr, Fe, Pb, Mn, Si, V and W. Those which are partially lost in vacuum are As, Bi, Cr,

Cu, Mn, O, Sn and N. Elements that are lost in inert atmosphere are Pb, Bi, H, N and Mn.

Except for the residual constitution of un-oxidisable / partly oxidisable alloying elements from scrap. Most of the elements are added at suitable stages of steelmaking.

Manganese Ore Alloys

The recoverable reserve of manganese ore as per Ministry of Mines in 2008; was 132 MT. During 2007-08, 1.30 MT of manganese alloy was produced.

Major reserves are of blast furnace grade. India is the 7th highest producer of manganese ore in the world. The states of Orissa, Maharashtra, Andhra Pradesh, Goa, Karnataka, Madhya Pradesh and Jharkhand are the major producers of Manganese Ore in India.

Statewise production figures of Manganese Ore during 2007-08 are shown below :

Production of Manganese Ore in 2007-08

State	Production (tonnes)
Andhra Pradesh	50,000
Goa	50,000
Karnataka	2,70,000
Madhya Pradesh	4,90,000
Maharashtra	8,70,000
Orissa	6,80,000
Jharkhand	60,000
Total	**2,470,000**

Source : Indian Ferro Alloy Producers Association (IFAPA)

Table – 2 : Typical Grades and Chemical Compositions of Indian Ferro Alloys

Type of Ferro Alloys	Grade	Mn (%)	Si (%)	C (%)	P (%)	S (%)
(A) Ferro Manganese						
HC Ferro Manganese	HC Fe Mn 65	65(min)	1.5 (max)	6-8	0.85	1.03
	HC Fe Mn 70	70 (min)	1.5 (max)	6-8	0.35 (max)	0.03 (max)
	HC Fe Mn 75	75 (min)	1.5 (max)	6-8	0.35 (max)	0.03 (max)
HC Ferro Manganese (Low Phosphorus)	HC Fe Mn 70 (LP)	70 (min)	1.5 (max)	6.8	0-15 - 0.20	0.03 (max)
	HC Fe Mn 75(LR)	75 (min)	1.5 (max)	6-8	0.35 (max)	0.03 (max)
MC Ferro Manganese	MC Fe Mn 65	65 (min)	1.5 (max)	1.5 (max)	0.35 (max)	0.03 (max)
(B) HC Silico Manganese						
	HC Si 15 Mn 60	60 (min)	15 (min)	2.0 (max)	0.30 (max)	0.03 (max)
	HC Si 17 Mn 65	65 (min)	17 (min)	2.0 (max)	0.30 (max)	0.03 (max)
HC Silico Manganese (Low Phosphorus)	HC Si 15 Mn 60 (LP)	60 (min)	15 (min)	2.0 (max)	0.15 – 0.20	0.03 (max)
	HC Si 17 Mn 65 (LP)	65 (min)	17 (min)	2.0 (max)	0.15 – 0.20	0.03 (max)
MC Silico Manganese	MC Si 20 Mn 58	55 – 60	20 (min)	0.50 (max)	0.15 (max)	0.03 (max)
LC Silico Managanese	LC Si 24 Mn 53	50 -55	24 (min)	0.10 (max)	0.10 (max)	0.03 (max)
C) Ferro Silicon	Grade	Si (%)	C (%)	S (%)	P (%)	Al (%)
Ferro Silicon (Normal Al)	Fe Si 70	70 (min)	0.15 (max)	0.05 (max)	0.05 (max)	2.0 (max)
Ferro Silicon (Low Al)	Fe Si 70 (L-AL)	70 (min)	0.15 (max)	0.05 (max)	0.05 (max)	1.0 (max)
Ferro Silicon (Extra Low Al)	Fe Si 70 (Extra Low Al)	70 (min)	0.15 (max)	0.05 (max)	0.05 (max)	0.5 (max)
(D) Ferrp Chrome	Grade	Cr (%)	C (%)	Si (max)		
	7 Fe Cr 65	60-70	6-8	1.5		
	5 Fe Cr 58	55-60	4-6	1.5		
	7 Fe Cr 58	55-60	6-8	4.0		
	Fe Cr 58	55-60	4-6	6.0		

*100 Percent Export Oriented Unit (EOUS)

These are produced by the reduction of manganese ore with carbon / silicon at high temperatures in blast furnaces and electric ore furnaces (EAFS).

For production of one ton of ferro-manganese, inputs required are: 2.6 tons of manganese, ore, 0.5 ton of reluctant and 3 MwH of electricity. Silico- Manganese production is carried out by the reduction of manganese ore, quartzite and manganese slag with coke.

Stainless steel accounts for about 5 to 6 percent of the total production of ferro-manganese and silicon-manganese in India at present. The average consumption of manganese alloys by the Indian stainless steel industry is about 105 kg per ton. As the stainless steel production is expected to increase after the present slow down, the consumption of manganese alloys is expected to increase in future.

According to industry experts, the Indian manganese alloy industry has the potential to meet the global challenges despite various constraints. With the necessary supportive measures from the government, the industry can make fast towards the path of sustainable

growth and meet the higher requirement of the Indian steel industry.

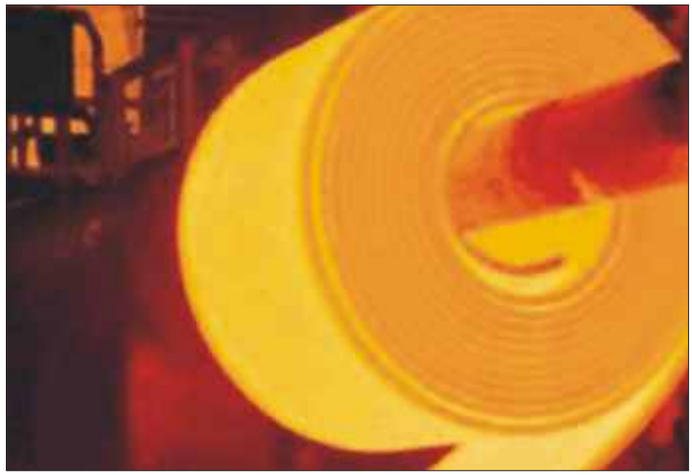
Availability of high grade manganese ore is very critical for the industry. Manganese Ore (India) Ltd. (MOIL) is unable to meet the increased demand of the domestic producers and they are compelled to import manganese ore. About 0.7 MT of manganese ore has been imported during 2007-08, to produce manganese alloys.

Chrome Ore & Alloys

The estimated reserve of chrome ore in India as on 01.04.200 was 178 MT. As per IFAPA India's chrome ore production in 2007-08 was estimated at 4.82 MT as against 4.10 MT during the previous year recording growth of 17.56 percent. Against the above, production in Orissa is estimated at 4.81 MT and Karnataka 0.01 MT. The industry imported about 0.1 MT of chrome ore lumps and other chrome ore in 2007-08. India is the 3rd highest producer of chrome ore in the world.

The sole and major supplier of chrome ore to the industry is Orissa Mining Corporation (OMC). The supply of Chrome Ore from OMC is not sufficient for the industry. Tata Steel and other major chrome ore lease holders, has stopped supplies to other producers, using their ore for their own Ferro – Chrome plants.

To avoid congestion by allotting mining leases to a number of ferro – chrome producers for captive use, and in the interest of ferro – chrome industry, Government has allotted entire chrome ore deposits in Orissa to the public sector undertaking OMC, so that they can judiciously mine and supply the required material to the ferro – chrome producers who do not have their mining leases.



OMC now accounts for about 80 percent of the total chrome leases in Orissa and therefore, the ferro chrome industry has to totally depend for its main raw material on OMC. The industry sources maintain that proper allocation in not taking place and the chrome alloy industry is finding it difficult to get their chrome ore requirement from OMC. The industry has, therefore, to depend on imports from countries like Turnkey, Oman etc.

It has been alleged that OMC has taken a partial stand to give preference for supply of chrome ore to the ferro – chrome plants in Orissa. This is disturbing the dynamic of the industry as most of the units locate outside Orissa have made huge investments particularly to put up their captive power generation capacities. The IFAPA is very much concerned with the decision to bar the use of natural resources all over the country, while exporting the same to other countries without any restriction. This, the industry opines, is not definitely in the national interest.

About 80 percent of HC ferro-chrome produced in India goes for the production of stainless steel. With the projected higher production of stainless steel in future years, the domestic consumption of HC ferro – chrome will reach a much higher level. India holds a leading position in the world in the production of HC ferro-chrome as well as in its exports.

Chrome ore is used in the production of chromium metal and various alloys of chromium with iron, nickel, cobalt, tungsten, molybdenum etc. Chromium imparts strength, hardness, toughness, magnetism and offers resistance to abrasion corrosion as well as to oxidation.

The use of chromium in steelmaking depends on the end-use purpose. Low chromium steel with less than 5 percent chromium and small quantities of nickel is used in the production of rails, automobiles, armored plates etc. Intermediate chromium steels containing up to 12 percent chromium along with small quantities of tungsten, molybdenum or silicon are used in high speed valves for engines and equipment which require resistance to abrasion, corrosion and oxidation.

High chromium steels are stainless

steels and super stainless steels used for the manufacture of cutlery, cooking utensils, aircrafts and high speed trains.

Profile of Indian Ferro Alloy Industry : 2007–08

(a) Capacity

The manufacturing capacity of the Indian ferro alloy industry is shown in Table – 3 along with production during 2007–08.

It is observed that capacity utilisation of chromium alloys and noble ferro alloys in 2007–08 has been satisfactory while that fro manganese alloys was moderate and the same for Ferro Silicon was low.

(b) Production

(i) Bulk Ferro Alloys

The production of Bulk Ferro Alloys in 2007–08 is shown itemwise in Table – 4 in tons.

Highest growth in production in 2007–08 over the previous year is seen in case of HC ferro manganese 34.50 percent. Negative growths in production occurred in 2007–08 incase of MC ferro manganese, LC ferro manganese and ferro silicon. HC ferro, chrome / charge chrome had the highest share of 40.62 percent in the total production of Bulk Ferro Alloys in India in 2007–08.

(ii) Noble Ferro Alloys

Production of Noble Ferro Alloys in 2007–08 is presented in Table – 5.

The highest production among the Noble Ferro Alloy during 2007–08 has been in case of ferro silico magnesium with a share of 45.56 percent in total output. Negative growths in production in 2007–08 is observed incase of ferro molybdenum, ferro tungsten, ferro aluminium and ferro silico zirconium.

The overall growth in production of Noble Ferro Alloys in 2007–08 over the previous year has been 6.92 percent.

Exports

The Indian ferro alloy industry has recorded the highest exports of ferro alloys at 902,542 tons in 2007–08 with a growth of 55.30 percent over the previous year. The Indian exports of ferro alloys (Bulk and Noble) during the years 2007–08 and 2006–07 are furnished in Table – 6.

It is observed that export of HC ferro chrome / charge chromes had the highest share of 57.70 percent in 2007–08 in the total exports of ferro alloys. The share of silico manganese was second in total exports at 29.12 percent, followed by HC ferro manganese which accounted for 12.22 percent of total ferro alloys export in 2007–08.

The highest growth in exports in 2007–08 vis–à–vis 2006–07 among the major Bulk Ferro Alloys has occurred in case of HC ferro manganese at 123.74 percent followed by silico manganese – 56.54 percent and HC ferro chrome / charge chrome – 46.23 percent.

In terms of value, export realization during 2007–08 at Rs. 43,797 million has increased by a hefty 130.97 percent over Rs. 18,962 million over the previous year.

Table – 3 : Capacity & Production of Ferro Alloys in India During 2007-08

Item Capacity	Production of Ferro Alloys : 2007 – 08		
	Capacity (Mt)	Production (Mt)	% Capacity Utilisation
Manganese Alloys	2.10	1.30	62
Chromium Alloys	1.30	0.95	73
Ferro Silicon	0.20	0.084	42
Noble Ferro Alloys	0.04	0.003	75
Total	**3.64**	**2.364**	**65**

Source : IFAPA

Table – 4 : Production of Bulk Ferro Alloys in India : 2007-08

Type of Bulk Ferro Alloys	2007-08	2006-07	% Variance
HC Ferro Manganese	377,958	281,013	34.50
MC Ferro Manganese	7,517	9,190	(-) 18.18
LC Ferro Manganese	5,735	6,523	(-) 12.08
Silico Manganese	858,601	738,314	16.29
MC Silico Manganese	35,041	29,581	18.45
LC Silico Manganese	17,760	15,067	17.87
Ferro Silicon	83,716	92,632	(-) 9.63
HC Ferro Chrome / Charge Chrome	948,366	801,138	18.38
LC Ferro Chrome	235	230	2.17
Total	**2,334,929**	**1,973,688**	**18.30**

Source : IFAPA

Table - 5 : Production of Noble Ferro Alloy in India : 2007-08 (tons)

Type of Noble Ferro Alloy	Production (tonnes)		
	2007-08	2006-07	% Variance
Ferro Molybdenum	2899	3120	(-) 7.08
Ferro Vanadium	1585	1139	39.16
Ferro Tungsten	51	54	(-) 5.56
Ferro Silico Magnesium	13,525	11,387	18.78
Ferro Aluminium	9377	9947	(-) 5.73
Ferro Silico Zirconium	109	178	(-) 38.76
Ferro Titanium	1937	1761	9.99
Ferro Nickel Magnesium	122	97	25.77
Ferro Boron	80	80	=
Total	**29,685**	**27,763**	**6.92**

Source: IFAPA, N.B. The production in 2007-08 is estimated.

Table – 6 : Exports of Ferro Alloys by India : 2007-08 & 2006-07 (tons)

Item	Exports (Tons)	
	2007-08	2006-07
HC Ferro Manganese	110,272	49,286
LC Ferro Manganese	85	0
Silico Manganese	262,799	167,882
MC Silico Manganese	0	909
LC Silico Manganese	0	4,800
Ferro Silicon	5,102	458
HC Ferro Chrome / Charge Chrome	520,739	356,112
LC Ferro Chrome	76	0
Ferro Molybdenum	10	0
Ferro Vanadium	32	15
Ferro Silico Magnesium	2,407	584
Ferro Titanium	25	374
Ferro Aluminium	993	738
Ferro Silico Zirconium	2	0
Total	**902,542**	**581,158**
Export Earnings in Rs. Mtn	**43,797**	**18,962**

Data Source : IFAPA

Imports

Imports of ferro alloys by India during the year 2007-008 and 2006-07 are shown in Table – 7.

The Indian Ferro Alloy Producers Association maintains that imports of ferro alloys have increased as and when the basic Customs Duty is reduced. This has resulted in opening the flood – gates of imports of ferro alloys which have increased manifold. Ferro alloy imports were worth about Rs. 780 crore in 2006-07 when the import duty was 7.5 percent and the same has increased to Rs. 1,089 crore in 2007-08 when the Customs Duty was reduced to 5 percent. The imports are expected to increase further now as the Customs Duty has been made O (zero) percent. With the result that the outgo of foreign exchange has increased to Rs. 2,920 crore in the last four years.

On the one hand, the installed domestic capacity is not being fully utilized and on the other hand, the outgo of foreign exchange has increased year after year. This could have been avoided as it was possible to meet almost the total requirement from the domestic production of ferro alloys, by utilizing the idle capacity which would have also increased the government revenue from taxes like excise duty, sales tax etc. IFAPA opines that such a measure would have resulted in a better created more employment and increase in GDP of the country.

Table – 7 : Imports of Ferro Alloys by India : 2007-08 & 2006-07 (tons)

Items	Imports (tonnes)	
	2007-08	2006-07
Ferro Manganese	21,751	12,037
Silico Manganese	513	207
Ferro Silicon	96,310	86,835
HC / LC Ferro Chrome / Charge Chrome		
19,302	19,054	
Silico Chrome	59	114
Ferro Silico Magnesium	4,062	1,758
Ferro Molybdenum	481	262
Ferro Vanadium	195	523
Other Ferro Alloys	13,298	6,368
Total	**155,971**	**127,158**
Percentage of Increases	**22.66**	**30.64**
Total Value in Rs. Million	**10,894**	**7,798**
Percentage of Increase (Value)	**39.70**	**31.88**
Import Duty	**5%**	**7.50%**

Data Source : IFAPA

Constraints

●The Indian ferro alloy industry has invested over Rs. 5,000 crore and it provides employment to about 2.2 lakh people both directly and indirectly. The industry has created capacity to meet the domestic demand as well as make exports. About 35 percent of the installed capacity remained idle in 2007-08 for want of demand, high costs and scarcity of chromium and manganese ores.

●Customs Duty on Ferro Alloys has been reduced to zero which has opened the flood-gates of imports at lower cost from China, Russia, Kazakhstan and South Africa.

●Ferro alloy is a power intensive industry. The cost of power per KwH in India varies from 245 to 490 paise whereas the same in China is 150 paise, Kazakhstan – 78 paise, Russia – 86 paise and South Africa – 105 paise.

●The customs duty on imparts of ferro alloy is zero at present whereas the duty on inputs for manufacturing ferro alloys varies from 2 to 7.5 percent.

●Steep increases in the cost of raw materials and other inputs.

●Increase in road and railway freight and non-availability of railway wagons as per requirement.

●Major Suggestions of IFAPA

●In order to help the industry, it is necessary for the Government to re-impose the customs duty at 10 percent on all ferro alloys excluding ferro nssickel under Heading 7202.

●Government has reduced the customs duty on many inputs for steel manufacturing, including ferro alloys which have been brought to zero percent effective from May, 2008. It is imperative that inputs like manganese ore, chrome ore, vanadium pentoxide and all other ores under chapter 26 of Customs Tariff and Anthracide coal, should brought down to zero percent for manufacturing all ferro alloys.

●Exports of manganese ore, chrome ore and concentrate should be stopped immediately, to conserve the ores for domestic ferro alloy and steel industries in future. The GSI and Indian Bureau of Mines should undertake further exploration of chrome ore deposits beyond 100

meter depth and evaluate its expected life for the country.

●Government should also handover further mineral exploration to private parties with requisite experience. It is necessary for the Government to initiate fast track exploration programme like Aerial Survey to look into the potential deposits.

Improved Situation?

After facing a prolonged grim situation with slackening of demand, the Indian ferro alloy producers have gone for higher capacity utilization in the last quarter of 2008-09. Order positions have improved particularly from February, 2009 which is a positive indication of revival of demand.

According to industry sources, the industry had to face a serve fall incapacity utilization to nearly 35 percent between October, 2008 to February 2009 as about 30 percent of the ferro alloy producers in India halved their capacity from the normal production level of 70 percent. The period also saw about 20 percent of the existing furnaces shutting down.

However, with the revival of the steel sector in the last quarter of 2008-09, the ferro alloy industry is likely to achieve its normal capacity utilization of 70 percent in the first two quarters of the year 2009-10.

Some new capacity would emerge particularly in Orissa, Jharkhand, Haldia in West Bengal, Visakhapatnam in Andhra Pradesh and in North Eastern States, Where power tariff is lower. IFAPA expects that another 1,000 MVA capacity which is in pipeline will start commercial production by 2010-11.

Conclusions

The Indian Ferro Alloy industry is maintaining a steady growth despite various constraints faced by it. The Indian Ferro Alloy Producers Association has made some valid suggestions for the development of the industry. The Government should consider these seriously and take proactive steps to solve the problems of the industry.

The reduction of customs duty to zero is jeopardizing the interests of the industry. The distribution of Chrome Ore by the Orissa Mining Corporation (OMC) should be directed to serve the ferro chrome plants located all over the country.

Stainless steel production in the country is likely to increase substantially by 2011-12 even after the present slows down and the domestic demand of ferro alloys will increase accordingly.

The government should support the growth of this vital industry in all possible manner.