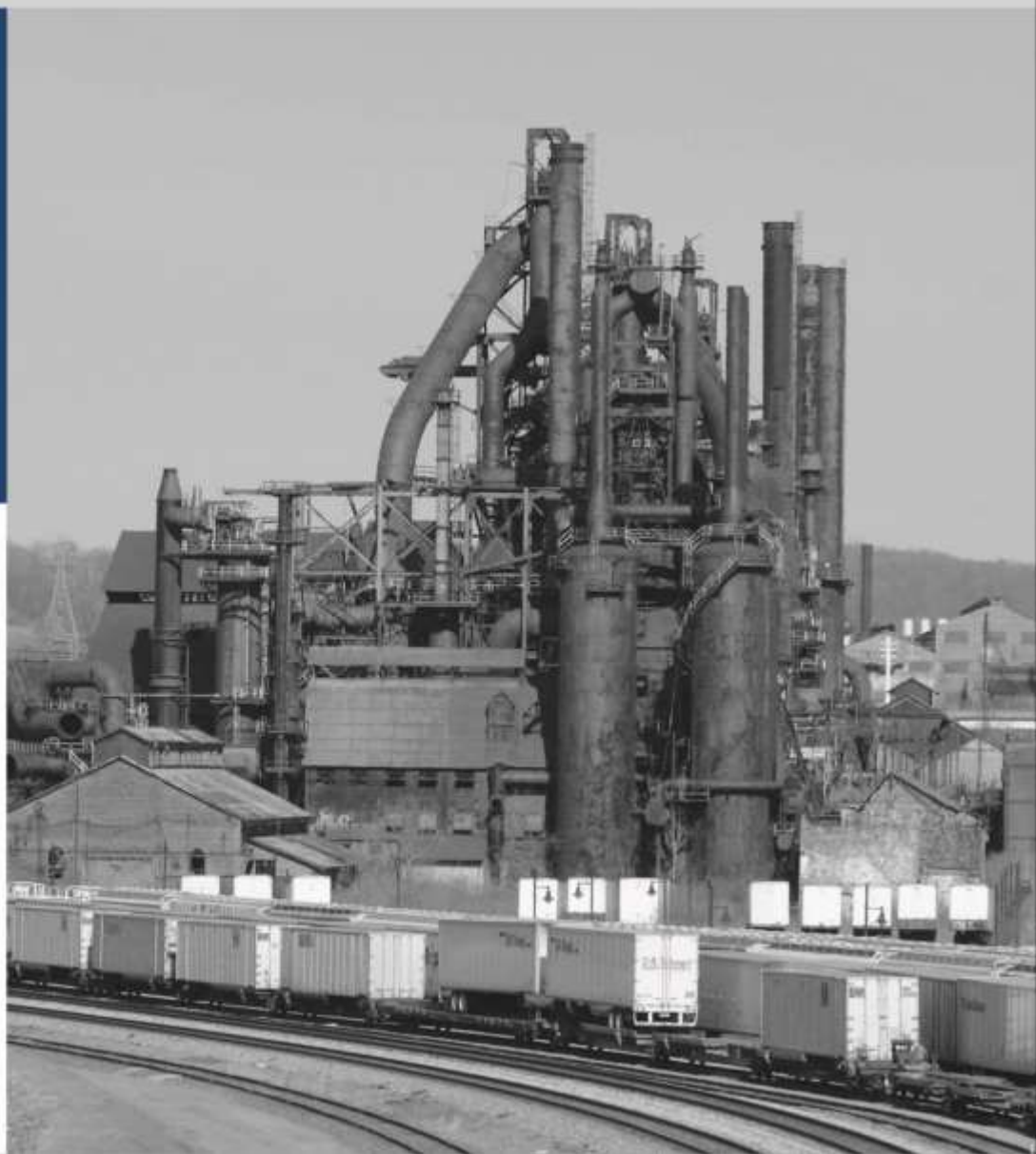
Techno Economic Viability Study

BRG Iron & Steel Co. Private Limited



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Executive Summary

Name of the Company	M/s. BRG Iron & Steel Co. Private Limited - BRGIS
Date of incorporation	Dec 12, 2002
Constitution	Private Limited Company
Industry	Steel Industry
Nature of activity	Manufacturing of Mild Steel & Stainless Steel
Group	BRG Group
Directors	Mr. Anjani Kumar Goyal (Chairman) Mr. Sandeep Goyal (Managing Director) Mr. Himanshu Goyal Mr. Jay Kumar Goyal Mr. Vijay Kumar Goyal (Additional Director)
Brief details on the project	**BRG Group (or the Group)** is in the business of steel manufacturing for the last fifteen years through one of their associate concern. The Group is having integrated manufacturing facilities for Ferro Alloys, Carbon Steel, Stainless Steel Billets and Slabs, Stainless Steel Long products, Hot Rolled Plates and Coils and Cold Rolled sheets, circles and Profiles. The group floated its flagship Company BRG Iron & Steel Co Pvt. Ltd. (BRGIS) in the year FY 2002 and since inception the group has been in a constant growth phase. Subsequently, the group diversified into varied product lines in the steel industry and incorporated a couple of more Companies with different product range and technical up-gradations. In the year FY 2010, three of the group Companies stood as its major Companies with respect to assets base and size of operations, namely, BRG Iron & Steel Co. Pvt. Ltd., Bhuvee Profiles & Stainless Pvt. Ltd. and Rabirun Vinimay Pvt. Ltd. All the said Companies created significant installed capacities of different grades and types of steel products over years. Subsequently, with a goal to reduce tax burden, operational costs and derive other synergic benefits, the Company merged all the above mentioned three Companies into a single Company. Pursuant to the order of the Hon'ble Calcutta High Court dated 17.11.2011, M/s Bhuvee Profile and Stainless Pvt.

	Ltd. (Unit II) and Odisha Unit of M/s. Rabirun Vinimay Pvt. Ltd. (Unit III) stands merged with M/s. BRG Iron & Steel Co. Pvt. Ltd. (BRGIS or Unit I). Presently Company approached for their Debt Restructuring, this report is prepared in order to ascertain the repayable capacity of existing & proposed debt of the integrated steel plant under CDR guidelines.
Activities Unit wise	1. Unit 1 – The Unit 1 of the Company is its Steel Making unit and houses the following facilities – a. Sponge Iron Plant b. Ferro Alloy Plant c. Steel Making Unit for both Mild Steel and Stainless Steel 2. Unit 2 – The Unit 2 of the Company is Hot Rolling Coil/ Plate plant and comprises of the following sub-units a. HR Coil Mill b. HR Plate Mill along with annealing and pickling line 3. Unit 3 – the Unit 3 of the Company is Cold Rolling division, which comprises of the following – a. CR Mill for Mild Steel HR Coil b. CR Mill for Stainless Steel HR Coil c. CRC processing and circle cutting unit
Estimated project cost (New TL & Priority TL)	• Total Project cost for the renovation of Slab Caster, Motors, Burners & MFA) = INR 63.00 Crores ○ Equity Contribution : INR 15.75 Crores ○ TL: INR 47.25 Crores ○ Debt Equity: 3:1 • Priority TL (Statutory Obligation) = INR 66.76 Crores

	○ Income Tax: INR 8.35 Crores ○ Demurrage Detention Charges: INR 15.00 Crores ○ Custom Duty on imported raw material released against advance license: INR 43.41 Crores • Total Proposed Debt towards New TL & Priority TL: INR 114.01 Crores.
Proposed DE ratio	3.39 As on COD (TL + WCTL + WC + FITL) / (Equity + Share Capital + Share Application Money + Unsecured Loans)
Sacrifice Amount • Total Sacrifice Amount • Promoters Contribution • FITL Generation	• Sacrifice works out to be INR 204.56 Crores (Sacrifice worked on TL's, WCTL 1, WCTL 2, FITL TL's, FITL WCTL's 1, FITL WCTL's 2, CC and FITL CC) • Promoters' Contribution Considered as 25%, which is equal to INR 51.14 Crores • FITL considered on TL's, WCTL's 1, WCTL's 2 starting from September 30th, 2013 to September 30th, 2015. Similarly FITL on CC for a period of 6 months from COD, i.e., September 30th, 2013 onwards to March 31st, 2014. Total FITL worked out as INR 252.52 Crores.
Current status	**Units are operational with minimal utilization of capacities**
Techno-Economic Viability	Yes **Subject to the assessment and the impact of various scenarios as envisaged under sensitivity analysis study, the project of the Company is viewed as techno economically viable. D&B also considers that the project offers adequate safety to the lenders with corresponding DSCR of 1.33 and adjusted DSCR 1.36, under current market conditions.**

M/s. BRG Iron & Steel Company Pvt. Ltd. ('BRGIS' or 'the Company') was promoted by Mr. Anjani Kr. Goyal along with Mr. Himanshu Goyal and Mr. Jay Kumar Goyal with the intent to set-up an integrated plant of Sponge Iron, Ferro Alloys, Mild Steel, Stainless Steel Billets

and Slabs. The Company was incorporated on 12th December 2002, registered office located at Suite No.402/403/404, Plot No.5, Block - DP, Sector V, Salt Lake City, Kolkata – 700091, West Bengal.

The said project was set up at Kurunti village in the resource rich Talcher-Angul Industrial Belt of Odisha.

In FY 2005, the Company conceived and conceptualized an integrated steel plant which was successfully implemented with the following capacities (here-in-after referred to as Phase-I):-

- Sponge Iron 73,000 MT p.a. [2X100 TPD, 2*100*365 = 73,000 TPA]
- Steel Melting Shop [SMS] for manufacturing of MS Billet 109,200 MT p.a. and SS Flat 65,000 MT p.a.,

In the year 2009, the promoters decided to set up the other modules resulting in value addition for production of MS Slabs, Stainless Steel Slabs and Ferro Alloys vide their phase-II expansion plan. This expansion project was initiated with the view to achieve better profit margins thereby allowing withstanding fluctuation in sales prices as seen in the past one year due to the cyclic nature of steel industry. Following modules were proposed to be set-up;-

- Enhancement in the Steel Melting Shop [SMS] from 1,74,200 MTPA to 4,00,000 MTPA
- Ferro Alloys – 27,981 MTPA

Both Phase-I & Phase II expansion plan of the Company, consisting of 73,000 MTPA of DRI, 27,981 MTPA of Ferro Alloys and 4,00,000 MPTA of SMS, is currently in operation.

Installed Capacities:

Name of the Company	Products	Installed Capacity (TPA @ 365 Days)	Installed Capacity (TPA @ 330 Days)	Location
BRG Iron & Steel Co. Pvt. Ltd. (BRGIS)	**Unit - I** Stainless Steel Slabs Sponge Iron Ferro Alloys	 4,00,000 73,000 27,981	 3,61,644 66,000 25,298	Dhenkanal, Orissa
	Unit – II *(Erstwhile Bhuvee Profiles & Stainless Pvt. Ltd.)* Mild Steel Plates Stainless Steel Plates Stainless Steel Coils	 3,78,000 72,000 3,50,000	 3,41,753 65,096 3,16,438	Dhenkanal, Orissa
	Unit – III *(Erstwhile Phase-I of Rabirun Vinimay Pvt. Ltd.)* Stainless Steel Cold Rolled Coil/Sheets, Circles & Profiles	1,45,000	1,31,096	Dhenkanal, Orissa

Problems

The Company's financial position has deteriorated due to some unavoidable internal and external reasons which are enumerated as below as informed by the Company:

1. **Delay in the release of enhancement in working capital**
2. **Critical maintenance in "Slab Caster" machine**
3. **Blockage of Raw Materials**

Delay in release of enhancement in working capital:

Post-merger of all 3 units, Company requested existing lenders for enhancement of working capital, at the same time the operational cycle towards raw material, WIP, finished stock, debtors are increased due to the increment in installed capacity. The Company was unable to raise the funds in time due to some technical problems with respect to the documentation work post-merger.

Blockage of Raw Material:

Company had entered into a transaction in November 2011, for import / export of raw material / sale of finished goods, at a time when the dollar rate was moving about INR 54 per USD for purchase of a specific grade of Alloy Steel shredded Blended Scrap worth of USD 67.86 Million and sale of a specific grade of plates to them made out from the above material.
For purchase of the said alloy steel scrap, the Company had opened various LS's against the supplies from consortium member's banks.

Description	Qty	Amount - USD	Share %
SBBJ	5,888.22	14,432,027.22	21.27%
SBH	7,084.78	16,938,876.42	24.96%
AB	3,095.48	7,587,011.68	11.18%
DB	4,620.84	11,325,666.59	16.69%
Uco	4,062.62	9,957,484.07	14.67%
IOB	3,110.42	7,623,639.42	11.23%
Total	**27,862.36**	**67,864,705.40**	**100.00%**

Further, Company was not able to get above material cleared from the custom authorities due to non-issuance of advance license by the Directorate General of Foreign Trade (DGFT) as the standardized Input / Output norms were not defined for the said product. Till the time the concerned authority has not issued advance license to the Company, the Company managed to defer the payments by getting buyers credit extensions from the RBI. The Company received extensions for payment of Buyers Credit from RBI thrice (twice for 90 days and then for 180 days over and above the initial 360 days permitted by RBI subject to certain conditions) for a total period of 720 days from the date of shipment.

Further, during this intermediate period, some of the banks had made payments of the letter of credits which fell due, without waiting for the receipt of extensions from RBI aggregating to USD 18.39 Million, details of which are as follows:

Description	Amount - USD	Share %
SBBJ	2,551,858.65	13.87%
SBH	2,132,728.56	11.60%
AB	4,095,547.47	22.27%
DB	8,606,098.26	46.79%
Uco	456,829.64	2.48%
IOB	549,465.18	2.99%
Total	**18,392,527.76**	**100.00%**

As on Cut Off Date, with the 360 days extension, the Company has outstanding payment of USD 49.47 Million (INR 306.71 Crores) against the above contract.

Critical maintenance in "Slab Caster" machine

Presently Company has been facing some technical issues with one of the slab caster machines which impacted the desired quality level lending to low realization. However, from August 2013, there was a severe metal leak while casting the metal which resulted into break down of critical components of slab caster which would involve replacement of these components. These components are tailor made for the slab caster machine the Company is having, hence they have to be remanufactured depending upon their specifications and drawings as they are not available across the shelf. The Company apprehends that they will take approximately 6 months' time period for completely repairing this break down (various components will be made available under different time frame). This will result into low / non production of slabs. However the Company will continue to operate Hot Rolling and Cold Rolling division of the Company but margins will be impacted due to procurement of slabs and HR products from outside. This will be a temporary situation for about 6 months till normalcy is restored.

Steel Melting Shop Section

As discussed above, The EAF located at site was not operational at the time of site visit and had been shut since the minor mishap which partly destroyed the PLC system. The new set of equipment was expected to arrive at site within 15 days after site visit was conducted by D&B India. The Company would be requiring the balance of the funds for completion of refurbishment work on EAF.

Casting Section

During the site visit, D&B India noted that the Casting Section in the unit one of the Company has the following installed –

- 1 X 9 meter radius slab caster, complete with all the accessories

- 1 X 6 meter radius billet caster, complete with all the accessories

The team D&B India was informed that the Company does not manufacture billets and the billet castor at site was primarily a stand-by arrangement.

Additionally it was noted that the older slab caster requires refurbishment in terms of replacement of motors and accessories. The Company would be requiring the funds for refurbishment of this section of the Casting Unit.

Hot Rolling Section

As discussed in the sections above, 160 TPH Reheating Furnace (New), which has not yet been commissioned due to shortage of balance of the motors and accessories. The Company would require additional funds for completion of the Reheating Furnace installed at site, otherwise the Company will not be in position to utilise the capacities of plate mill and HR coiling mill completely.

Impact on Companies Books:

- Industry has witnessed drastic rise in raw material cost because of closure of major iron ore mines and increase in coal prices.
- The rise in RM prices has been quite substantial in creating significant amount of margin and working capital squeeze for steel producers
- Companies are not able to pass on higher costs to the end consumer because of weak demand from infrastructure and automobile industry. Moreover, prices of final products are now internationally discovered and hence local manufacturers are facing intense competition.
- Infrastructure activities in the country has taken a back seat on account of global recession resulting is poor demand for steel sector

The operational bottlenecks in terms of the non-availability of adequate long term sources and operational difficulties w.r.t. external agencies (enumerated here under), mismatch in desired production w.r.t. cost of production, inconsistent supply of raw materials, higher operational cost, huge gap between demand and supply, resulted in the Company earning lower profit margin in the last year (FY 12-13), which consequently resulted in liquidity crunch and the plant not being able to operate at optimum levels. The underutilization of plant capacities further deteriorated the financial position of the Company on account of higher operational cost. The inconsistency of raw material supply resulted in the higher burden in fixed and variable costs.

Present Exposure (Cutoff Date: October 1st , 2013)

As per the information furnished by the BRGIS, the exposure related to TL's, Short Term Loans, Fund Based, Non Fund Based, Corporate Loans and Unsecured Loans are exhibited below:

Banks Name	Short Name Considered for report purpose
State Bank Of Bikaner & Jaipur	SBBJ
State Bank Of Hyderabad	SBH
Andhra Bank	AB
Dena Bank	DB
UCO Bank	UCO Bank
Syndicate Bank	SB
Indian Overseas Bank	IOB
State Bank of Mysore	SBM
The Lakshmi Vilas Bank Limited	LVBL
Central Bank of India	CBI
Indian Bank	IB
Tamilnadu Mercantile Bank Limited	TMBL
Corporation Bank	CB
The Federal Bank Limited	FBL

Sanctioned Exposures:

Exhibit:	TL Sanctioned				CC/ LC/BG Sanctioned				Interest rates					Discount Rate
Description	Unit 1	Unit 2	Unit 3	Total A	CC Limits	LC/BG	Total B	Total (A+B)	Unit 1	Unit 2	Unit 3	CC	Base Rate	
SBBJ	10.00			**10.00**	85.00	135.00	**220.00**	**230.00**	13.75%			14.25%	**10.25%**	**14.75%**
SBH	20.00			**20.00**	130.00	90.00	**220.00**	**240.00**	14.20%			13.95%	**10.20%**	**14.70%**
AB	17.50			**17.50**	128.00	62.00	**190.00**	**207.50**	14.50%			13.75%	**10.25%**	**14.50%**
DB	20.00			**20.00**	67.00	40.00	**107.00**	**127.00**	15.00%			13.80%	**10.25%**	**16.00%**
Uco	0.00	124.00		**124.00**	70.00	80.00	**150.00**	**274.00**		13.50%		13.45%	**10.20%**	**16.20%**
SB		35.00		**35.00**	20.00	30.00	**50.00**	**85.00**		14.00%		14.25%	**10.25%**	**14.25%**
IOB		25.00		**25.00**	32.00	39.00	**71.00**	**96.00**		14.75%		14.00%	**10.25%**	**14.75%**
SBM		47.00		**47.00**	21.00	25.00	**46.00**	**93.00**		14.00%		14.65%	**10.15%**	**15.25%**
LVBL		50.00		**50.00**		0.00	**0.00**	**50.00**		14.50%		14.65%	**10.25%**	**14.50%**
CBI			40.00	**40.00**	75.00	25.00	**100.00**	**140.00**			12.25%	13.75%	**10.25%**	**13.75%**
IB		45.00	75.00	**120.00**	67.50	17.40	**84.90**	**204.90**		14.00%	12.50%	13.20%	**10.20%**	**14.00%**
TMBL		29.00	30.00	**59.00**	55.00	20.00	**75.00**	**134.00**		14.25%	14.00%	13.50%	**10.75%**	**15.50%**
CB			30.00	**30.00**	22.20	3.60	**25.80**	**55.80**			12.50%	12.35%	**10.25%**	**16.20%**
FBL			25.00	**25.00**	11.30	0.00	**11.30**	**36.30**			12.50%	14.50%	**10.55%**	**16.80%**
Total	**67.50**	**355.00**	**200.00**	**622.50**	**784.00**	**567.00**	**1,351.00**	**1,973.50**						

Present Exposure:

BANKS	Term Loan							Working Capital Limit					
	Principal Outstanding			Interest & Repayment Overdue									
	Unit 1 - A	Unit 2 - B	Unit 3 - C	Installements Due - D	Interest Dues - E	Others Dues - F	Amount to be restructured Total(A+B+C-D-E-F)	CC O/s - G	Interest due - H	LC Devolvement - I	LC Outstanding - J	Amount to be Restructured CC (G-H-I)	Total WC (G-H-I)
SBBJ	4.40				0.18		**4.40**	101.33	1.18	19.88	118.16	80.27	**80.27**
SBH	9.00			1.00	0.35		**8.00**	156.97	5.01	21.96	69.43	130.00	**130.00**
AB	7.83			0.88	0.33		**6.95**	117.03	5.22	25.81	84.14	86.00	**86.00**
DB	8.70				0.12		**8.70**	67.43	0.43		26.46	67.00	**67.00**
Uco		63.99		5.39	2.45		**58.60**	76.36	0.82	5.54	80.56	70.00	**70.00**
SB		10.50			0.12		**10.50**	20.13	0.13		29.97	20.00	**20.00**
IOB		7.39		1.25	0.31		**6.14**	32.42	0.42		44.20	32.00	**32.00**
SBM		24.44		2.17	0.62		**22.27**	21.00			25.00	21.00	**21.00**
LVBL		32.38					**32.38**					0.00	**0.00**
CBI			21.26	0.57	0.91		**20.69**	74.80			24.13	74.80	**74.80**
IB		25.82	44.25	2.06	0.85		**68.01**	68.23	0.73		17.40	67.50	**67.50**
TMBL		20.05	17.35	2.63	1.43		**34.77**	57.41	2.41		19.85	55.00	**55.00**
CB			19.69	1.85			**17.84**	22.75	0.55		3.55	22.20	**22.20**
FBL			14.58	1.09	0.51		**13.49**	11.41	0.14			11.27	**11.27**
Total	**29.93**	**184.57**	**117.13**	**18.89**	**8.18**	**0.00**	**312.74**	**827.27**	**17.04**	**73.19**	**542.85**	**737.04**	**737.04**

Sources: BRGIS

Note: D & B India considered the principal amount for restructuring; all the overdue as on Cut Off Date (Installments Due & Interest Dues) will be paid by the Company.

WCTL 1:

Exhibit: WCTL 1- INR. Crores					
Description	**CC Sanction limit**	**Short Fall**	**Available DP**	**WCTL I**	**WCTL %**
SBBJ	85.00	16.54	68.46	16.54	10.84%
SBH	130.00	25.29	104.71	25.29	16.58%
AB	128.00	24.90	103.10	24.90	16.33%
DB	67.00	13.04	53.96	13.04	8.55%
Uco	70.00	13.62	56.38	13.62	8.93%
SB	20.00	3.89	16.11	3.89	2.55%
IOB	32.00	6.23	25.77	6.23	4.08%
SBM	21.00	4.09	16.91	4.09	2.68%
LVBL	0.00	0.00	0.00	0.00	0.00%
CBI	75.00	14.59	60.41	14.59	9.57%
IB	67.50	13.13	54.37	13.13	8.61%
TMBL	55.00	10.70	44.30	10.70	7.02%
CB	22.20	4.32	17.88	4.32	2.83%
FBL	11.30	2.20	9.10	2.20	1.44%
Total	**784.00**	**152.54**	**631.46**	**152.54**	**100.00%**
Transfer to WCTL II against LC devolvement	(146.94)				

Note: As per the stock audit, the drawing power shortfall considered as INR 299.47 Crores. As per the sanctioned limits (excluding the interchangeability from Non Fund Based to Fund Based) of INR 784.00 Crores. As per the stock audit the outstanding considered as INR 890.94 Crores. Therefore in view of the Company INR 146.94 Crores which is related to LC devolvement's reflected in O/s. As per the information furnished by the Company, D & B India considered INR 146.94 Crores transferred to INR WCTL 2, which are primarily LC devolvement's. D & B India considered the shortfall of INR 152.54 Crores and shared to respective lenders based on the FB sanctioned limits as on Cut Off Date.

As informed by the Company, D & B India considered the sharing of WCTL 1 on the basis of fund based sanctioned limits (CC: INR 784.00 Crores)

WCTL 2: LC Devolvement's

Exhibit: LC Devolvement Bank wise - INR. Crores			
Description	**NFB: Sanctioned**	**WCTL 2**	**%**
SBBJ	135.00	134.81	23.81%
SBH	90.00	89.87	15.87%
AB	62.00	61.91	10.93%
DB	40.00	39.94	7.05%
Uco	80.00	79.89	14.11%
SB	30.00	29.96	5.29%
IOB	39.00	38.95	6.88%
SBM	25.00	24.96	4.41%
LVBL	0.00	0.00	0.00%
CBI	25.00	24.96	4.41%

IB	17.40	17.38	3.07%
TMBL	20.00	19.97	3.53%
CB	3.60	3.59	0.63%
FBL	0.00	0.00	0.00%
Total	**567.00**	**566.20**	**100%**

Note: D & B India considered the NFB sanctioned percentage for the allocation of WCTL 2.

Risk Analysis & Mitigation

The risk analysis, allocation and mitigation measures are shown in the following table –

Key Risk	Risk Carrier	Mitigation Measure
Experience and Capability	BRGIS	The promoters have track record of successfully running various business enterprises. Further, the Group has been operational in steel industry for over a decade. Hence experience and capability risk is not associated with the project.
Time Over-run	BRGIS	Currently the plants are under operation. As per the planned schedule of the project, no time overrun is envisaged if they manage to conduct usual maintenance services at the earliest and scheduling the man power issues. Company has to take appropriate permissions from DGFT for release the material from customs area.
Statutory Approvals	BRGIS	The plants have already been established and were in operation for over two years period of time. Hence no major approvals are needed apart from the intimation to the Inspector of Factories and other statutory bodies regarding the above. It is expected that the Company would stick to deadlines as per the schedule.
Marketing Risk	BRGIS	As per the information submitted by the Company, it has already established network of consumers for its product under BRGIS. Also the Group already has footprint of over 2 decades in the steel industry; hence no marketing risk is envisaged.
Pricing level and sustainability	BRGIS	The cost of raw material and the product is highly variable in nature. Proper mechanism should be devised to monitor the price variation of the both the commodities. The Company has experience in buying

		raw materials for its group business; hence it is expected that the Company will be able absorb any shock on account of the fluctuation of raw material and product prices.
Replacement/ Substitution risk	BRGIS	The group has established itself in the steel sector for over 10 years and also done business in market through BRGIS for last two years. The established network of consumers will support them to sustain them in the market.
Operating Risks	BRGIS	Qualified personnel are available for the Company to monitor and review the project. The group Companies are well-established entity in the steel industry; this will be a major support in their day to day operation.
Force Majeure	BRGIS/Insurer	It informed that BRGIS has already taken adequate insurance cover for insurable force majeure risks.

SWOT Analysis

Strength

- The promoters of the Company are technically qualified and have experience in the Iron & Steel Industry including Ferro alloys and stainless steel over more than two decades. Over the years the promoters have also gathered experience of implementing various iron and steel projects in the group.
- Growing demand for the study products.
- Strong project management team.
- Significant financial capabilities.
- Management team is a good mix of experience and youth.
- The Company units has an advantage of being located NH – 2, village – Kuranti, PS Motanga, Dist Dhenkanal, Odisha. The site has good connectivity in terms of road and rail, which is considered essential in the steel industry as regards to the transportation of raw materials and finished goods.

Weakness

- Increase in the prices of raw material.
- Unavailability of basic raw material like iron ore, coal, due to Supreme Court ruling.

Opportunity

- Value added products.
- Products diversification.
- Company having an Stainless Steel facility can enjoy cost competitiveness and are likely to limit their exposure to the volatility of raw materials prices
- D&B domestic steel consumption is likely to expand at a CAGR of ~ 6%-7% over the period FY 2013-2017 to touch ~90 to 93 Mn Tonne. This anticipated increase in demand will be supported by the Government`s continued focus to boost the infrastructure sector.
- With Indian Government focusing on infrastructure developments like Power, Telecommunication, Ports, Roads, irrigation, gas transportation, housing etc., the demand for steel is expected to grow at a decent pace.

- The domestic steel industry, especially for the integrated players, is attractive and profitable in the long run. The domestic market is under supplied and the market increasingly demands quality and performance, bargaining power of buyers is therefore regarded as medium. Buyers are largely sensitive to product quality and increasingly emphasize on product performance. On an overall, bargaining power of suppliers to this industry is medium.

Threat

- Generic threat of global economic slowdown.
- Increased competition.

Financials Projection as per CDR Guidelines

The financial details as per CDR guidelines are shown in the next exhibit. The details on the project financials as per D&B India's assessment with comparison to CDR guidelines is given below:

The project is meeting the required levels as per the CDR benchmarks.

Particulars	Details	Benchmark	Actual
ROCE	A minimum ROCE equivalent to 5 year G-Sec plus 2% may be considered as adequate	9.26%	13.65%
Adjusted DSCR	The adjusted Debt Service Coverage Ratio (DSCR) should be >1.25 within the 5 years period in which the unit should become viable and on year-to-year basis DSCR to be above 1.	>1.25	1.36
DSCR	The normal DSCR for 10 years repayment period should be around 1.33:1.	>=1.33	1.33
Gap between IRR, ACoF & WACC	The benchmark gap between Internal Rate of Return and Average Cost of Funds should be at least one percent		
IRR			11.33%
ACoF			7.26%
WACC			4.06%
Benchmark LLR	A benchmark LLR of 1.4, which would give a cushion of 40% to the amount of loan to be serviced, may be considered adequate.	>=1.4	1.43

Economic Viability

As per D&B India's assessment, considering the various elements the Company is expected to meet its debt servicing obligations. At the given assumptions, the overall financial, liquidity and profitability parameters of the project are considered reasonable and satisfactory.

Subject to the above assessment and the impact of various scenarios as envisaged under sensitivity analysis study, the project of the Company is viewed as techno economically viable with the required parameters of the project meeting the set CDR benchmarks.

Detailed TEV Study

Scope of Work

UCO Bank has appointed D&B India for assessing the technical, commercial, and financial viability of the integrated steel plant of BRGIS in Odisha. The study was to assess the techno economic viability of the CDR project through a detailed techno financial analysis of the venture and evaluation of the constraints and future potential.

The scope of work was finalized as under:

- D&B India will physically visit the location of the existing unit
- D&B India will validate the cost of the project, given the specifications on the building, plant and machinery
- D&B India will validate the cost and revenue assumptions related to the project
- D&B India will analyse the revenue and cost estimates for the project. Various tools, such as debt service coverage ratio, IRR, sensitivity analysis will be used to arrive at a conclusion on the viability of the project
- Report to be submitted after giving importance to the following:
    - Sales plan and viability of sales to be adopted by the Company.
    - Vetting of the project cost, including cost competitiveness of the plant and other major cost. The cost of major components to be cross checked and specific comments to be incorporated in the vetted reports there on.
    - Vetting of projected financials/assumptions, its relevance in present day scenario as per CDR norms. Comments on assumptions taken by the Company in line with market condition/technology adopted.
    - Latest status of the project.
    - Comments on identified risk and its mitigation. Any other risk and its mitigation may also be detailed out in the vetting. If there is no other risk, then specific comments there on.
    - Specific comments on viability of the project as per CDR guidelines (technical and economic viability).

Date of Inspection

The Team from D&B India had undertaken a site visit of the proposed project on February 7th, 2014, to have first-hand information about the project and to better understand the modalities of the project.

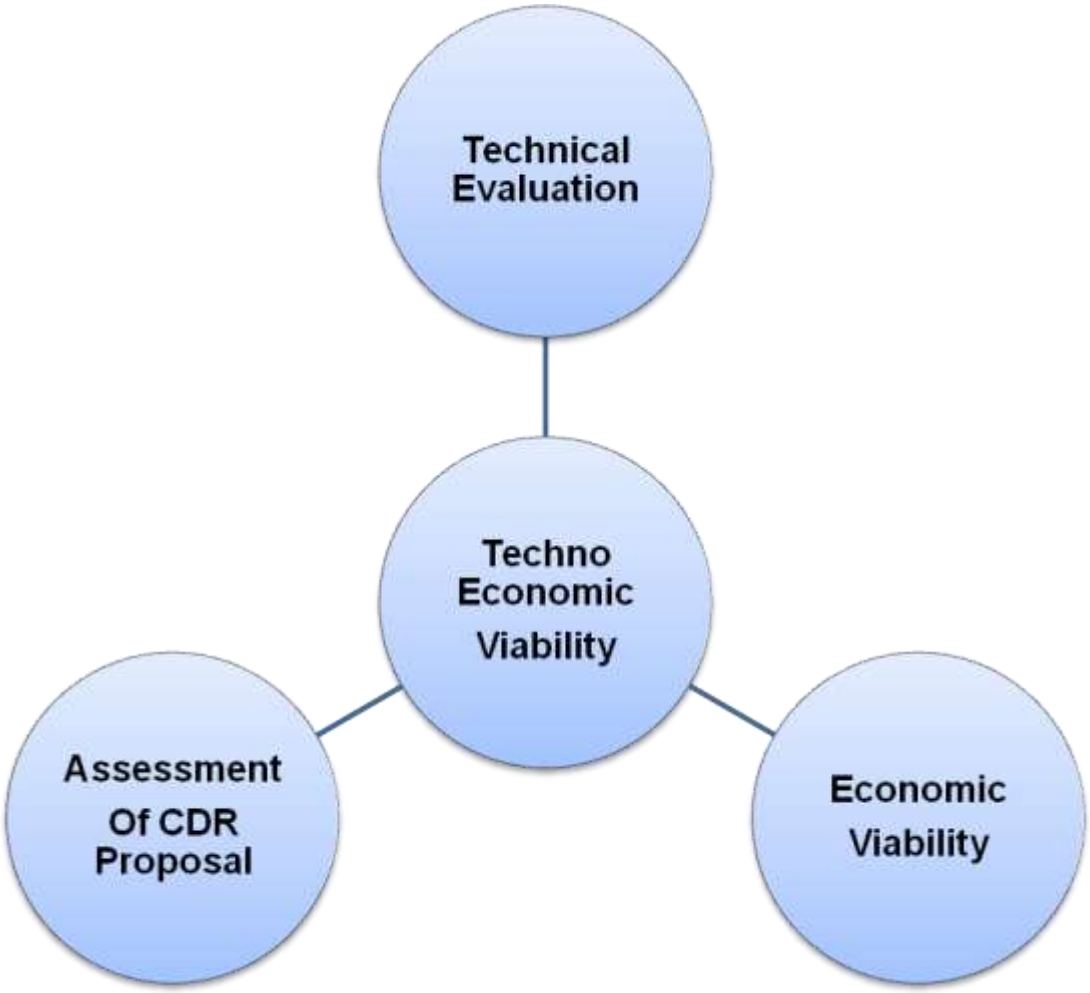
Site Visit Team

- Mr. U.U.V. Ravikant
- Mr. Vatsal

Methodology

The techno-economic viability study assigned to D&B India was carried out in the following sequence:

1. Verification of the documents provided by the client, identification of missing information, and sending the revised list of documents required from the client.
2. Visit to all the units in Odisha.
3. Assessment of the project cost reasonableness as per CDR proposal.
4. Assessment of the revenue and cost estimates for the project.
5. Vetting of financial projections as per CDR guidelines.



Project Overview

Introduction

BRG Group (or the Group) are in the business of steel manufacturing for the last fifteen years through one of their associate concern. The Group is having integrated manufacturing facilities for Ferro Alloys, Carbon Steel, Stainless Steel Billets and Slabs, Stainless Steel Long products, Hot Rolled Plates and Coils and Cold Rolled sheets, circles and Profiles.

M/s. BRG Iron & Steel Company Pvt. Ltd. ('BRGIS' or 'the Company') was promoted by Mr. Anjani Kr. Goyal along with Mr. Himanshu Goyal and Mr. Jay Kumar Goyal with the intent to set-up an integrated plant of Sponge Iron, Ferro Alloys, Mild Steel, Stainless Steel Billets and Slabs. The Company was incorporated on 12th December 2002, registered office located at Suite No.402/403/404, Plot No.5, Block - DP, Sector V, Salt Lake City, Kolkata – 700091, West Bengal. The said project was set up at Kurunti village in the resource rich Talcher-Angul Industrial Belt of Odisha.

The group floated its flagship Company BRG Iron & Steel Co Pvt. Ltd. (BRGIS) in the year FY 2002 and since inception the group has been in a constant growth phase. Subsequently, the group diversified into varied product lines in the steel industry and incorporated a couple of more Companies with different product range and technical up-gradations.

In the year FY 2010, three of the group Companies stood as its major Companies with respect to assets base and size of operations, namely, BRG Iron & Steel Co. Pvt. Ltd., Bhuvee Profiles & Stainless Pvt. Ltd. and Rabirun Vinimay Pvt. Ltd. All the said Companies created significant installed capacities of different grades and types of steel products over years.

Subsequently, with a goal to reduce tax burden, operational costs and derive other synergic benefits, the Company merged all the above mentioned three Companies into a single Company. Pursuant to the order of the Hon'ble Calcutta High Court dated 17.11.2011, M/s Bhuvee Profile and Stainless Pvt. Ltd. (Unit II) and Odisha Unit of M/s. Rabirun Vinimay Pvt. Ltd. (Unit III) stands merged with M/s. BRG Iron & Steel Co. Pvt. Ltd. (BRGIS or Unit I). Presently Company approached for their Debt Restructuring, this report is prepared in order to ascertain the repayable capacity of existing & proposed debt of the integrated steel plant under CDR guidelines.

In FY 2005, the Company conceived and conceptualized an integrated steel plant which was successfully implemented with the following capacities (here-in-after referred to as Phase-I):-

- Sponge Iron 73,000 MT p.a. [2X100 TPD, 2*100*365 = 73,000 TPA]
- Steel Melting Shop [SMS] for manufacturing of MS Billet 109,200 MT p.a. and SS Flat 65,000 MT p.a.,

In the year 2009, the promoters decided to set up the other modules resulting in value addition for production of MS Slabs, Stainless Steel Slabs and Ferro Alloys vide their phase-II expansion plan. This

expansion project was initiated with the view to achieve better profit margins thereby allowing withstanding fluctuation in sales prices as seen in the past one year due to the cyclic nature of steel industry. Following modules were proposed to be set-up;-

- Enhancement in the Steel Melting Shop [SMS] from 1,74,200 MTPA to 4,00,000 MTPA
- Ferro Alloys – 27,981 MTPA

Both Phase-I & Phase II expansion plan of the Company, consisting of 73,000 MTPA of DRI, 27,981 MTPA of Ferro Alloys and 4,00,000 MPTA of SMS, is currently in operation.

Installed Capacities:

Name of the Company	Products	Installed Capacity (TPA @ 365 Days)	Installed Capacity (TPA @ 330 Days)	Location
BRG Iron & Steel Co. Pvt. Ltd. (BRGIS)	**Unit - I** Stainless Steel Slabs Sponge Iron Ferro Alloys	4,00,000 73,000 27,981	3,61,644 66,000 25,298	Dhenkanal, Orissa
	Unit – II *(Erstwhile Bhuvee Profiles & Stainless Pvt. Ltd.)* Mild Steel Plates Stainless Steel Plates Stainless Steel Coils	3,78,000 72,000 3,50,000	3,41,753 65,096 3,16,438	Dhenkanal, Orissa
	Unit – III *(Erstwhile Phase-I of Rabirun Vinimay Pvt. Ltd.)* Stainless Steel Cold Rolled Coil/Sheets, Circles & Profiles	1,45,000	1,31,096	Dhenkanal, Orissa

Products:

1. Unit 1 – The Unit 1 of the Company is its Steel Making unit and houses the following facilities –
    a. Sponge Iron Plant
    b. Ferro Alloy Plant
    c. Steel Making Unit for both Mild Steel and Stainless Steel
2. Unit 2 – The Unit 2 of the Company is Hot Rolling Coil/ Plate plant and comprises of the following sub-units
    a. HR Coil Mill
    b. HR Plate Mill along with annealing and pickling line
3. Unit 3 – the Unit 3 of the Company is Cold Rolling division, which comprises of the following –
    a. CR Mill for Mild Steel HR Coil
    b. CR Mill for Stainless Steel HR Coil
    c. CRC processing and circle cutting unit

Problems

The Company's financial position has deteriorated due to some unavoidable internal and external reasons which are enumerated as below as informed by the Company:

1. **Delay in the release of enhancement of working capital**
2. **Critical maintenance in "Slab Caster" machine**
3. **Blockage of Raw Materials**

Delay in release of enhancement of working capital:

Post-merger of all 3 units, Company requested existing lenders for enhancement of working capital, at the same time the operational cycle towards raw material, WIP, finished stock, debtors are increased due to the increment in installed capacity. The Company unable to raise the funds in time due to some technical problems with respect to the documentation work post-merger.

Blockage of Raw Material:

Company had entered into a transaction in November 2011, for import / export of raw material / sale of finished goods, at a time when the dollar rate was moving about INR 54 per USD for purchase of a specific grade of Alloy Steel shredded Blended Scrap worth of USD 67.86 Million and sale of a specific grade of plates to them made out from the above material.
For purchase of the said alloy steel scrap, the Company had opened various LS's against the supplies from consortium member's banks.

Description	Qty	Amount - USD	Share %
SBBJ	5,888.22	14,432,027.22	21.27%
SBH	7,084.78	16,938,876.42	24.96%
AB	3,095.48	7,587,011.68	11.18%
DB	4,620.84	11,325,666.59	16.69%
Uco	4,062.62	9,957,484.07	14.67%
IOB	3,110.42	7,623,639.42	11.23%
Total	**27,862.36**	**67,864,705.40**	**100.00%**

Further, Company was not able to get above material cleared from the custom authorities due to non-issuance of advance license by the Directorate General of Foreign Trade (DGFT) as the standardized Input / Output norms were not defined for the said product. Till the time the concerned authority has not issued advance license to the Company, the Company managed to defer the payments by getting buyers credit extensions from the RBI. The Company received extensions for payment of Buyers Credit from RBI thrice (twice for 90 days and then for 180 days over and above the initial 360 days permitted by RBI subject to certain conditions) for a total period of 720 days from the date of shipment.
Further, during this intermediate period, some of the banks had made payments of the letter of credits which fell due, without waiting for the receipt of extensions from RBI aggregating to USD 18.39 Million, details of which are as follows:

Description	Amount - USD	Share %
SBBJ	2,551,858.65	13.87%
SBH	2,132,728.56	11.60%
AB	4,095,547.47	22.27%
DB	8,606,098.26	46.79%
Uco	456,829.64	2.48%
IOB	549,465.18	2.99%
Total	**18,392,527.76**	**100.00%**

As on Cut Off Date, with the 360 days extension, the Company has outstanding payment of USD 49.47 Million (INR 306.71 Crores) against the above contract.

Critical maintenance in "Slab Caster" machine

Presently Company has been facing some technical issues with one of the slab caster machines which impacted the desired quality level lending to low realization. However, from August 2013, there was a severe metal leak while casting the metal which resulted into break down of critical components of slab caster which would involve replacement of these components. These components are tailor made for the slab caster machine the Company is having, hence they have to be remanufactured depending upon their specifications and drawings as they are not available across the shelf. The Company apprehends that they will take approximately 6 months' time period for completely repairing this break down (various components will be made available under different time frame). This will result into low / non production of slabs. However the Company will continue to operate Hot Rolling and Cold Rolling division of the Company but margins will be impacted due to procurement of slabs and HR products from outside. This will be a temporary situation for about 6 months till normalcy is restored.

Steel Melting Shop Section

As discussed above, The EAF located at site was not operational at the time of site visit and had been shut since the minor mishap which partly destroyed the PLC system. The new set of equipment was expected to arrive at site within 15 days after site visit was conducted by D&B India. The Company would be requiring the balance of the funds for completion of refurbishment work on EAF.

Casting Section

During the site visit, D&B India noted that the Casting Section in the unit one of the Company has the following installed –

- 1 X 9 meter radius slab caster, complete with all the accessories
- 1 X 6 meter radius billet caster, complete with all the accessories

The team D&B India was informed that the Company does not manufacture billets and the billet castor at site was primarily a stand-by arrangement.

Additionally it was noted that the older slab caster requires refurbishment in terms of replacement of motors and accessories. The Company would be requiring the funds for refurbishment of this section of the Casting Unit.

Hot Rolling Section

As discussed in the sections above, 160 TPH Reheating Furnace (New), which has not yet been commissioned due to shortage of balance of the motors and accessories. The Company would require additional funds for completion of the Reheating Furnace installed at site, otherwise the Company will not be in position to utilise the capacities of plate mill and HR coiling mill completely.

Steel Melting Shop Section

As discussed above, The EAF located at site was not operational at the time of site visit and had been shut since the minor mishap which partly destroyed the PLC system. The new set of equipment was expected to arrive at site within 15 days after site visit was conducted by D&B India. The Company would be requiring the balance of the funds for completion of refurbishment work on EAF.

Impact on Companies Books:

- Industry has witnessed drastic rise in raw material cost because of closure of major iron ore mines and increase in coal prices.
- The rise in RM prices has been quite substantial in creating significant amount of margin and working capital squeeze for steel producers
- Companies are not able to pass on higher costs to the end consumer because of weak demand from infrastructure and automobile industry. Moreover, prices of final products are now internationally discovered and hence local manufacturers are facing intense competition.
- Infrastructure activities in the country has taken a back seat on account of global recession resulting is poor demand for steel sector

Incurrence of long term expenditure utilizing short term capital:-

In FY 2010-11, two group Companies namely **M/s Bhuvee Profile and Stainless Pvt. Ltd. (Unit-2)** and **Odisha Unit of Rabirun Vinimay Pvt. Ltd. (Unit-3)** were merged with BRGIS. Post-merger of group Companies effective from April 1st, 2010, the Company had incurred Capital expenditure for synchronizing the installed capacities. The above said capital investment / expenditure totaled approximately INR. 200 Crores (additional capex) till March 31, 2013. This has been financed through Company's cash flows including working capital facilities as shown in **below table point A, B and C.**

Particulars – INR. Crores	FY 11-12	FY 12-13
Long term funding/ (Utilization)		
Equity /Share premium	71.92	29.08
Fixed Assets investment	(169.21)	(159.21)
Excess /(Depletion) in Cash flow (A)	**(97.29)**	**(130.13)**
Operational Cash flow		
EBIDTA	271.49	224.70
Interest/Bank charges received/(paid)	(76.77)	(152.88)

Net of non-operating income/(Expenses)	(11.12)	70.29
Less: Current taxes	8.11	0.93
Cash flows from operations	**175.50**	**141.17**
Less: Repayment of term debt funds	127.12	124.37
Excess /(Depletion) in Cash flow (B)	**48.38**	**16.80**
Short Term funding/ (Utilization)		
Increase/(Decrease) in Short term Borrowing	218.34	133.61
Increase/(Decrease) in Current Assets	(422.82)	(238.66)
Increase/(Decrease) in Fixed Deposits	(76.79)	35.33
Increase/(Decrease) in Current Liabilities	333.84	176.80
Excess /(Depletion) in Cash flow (C)	**52.57**	**107.08**
TOTAL (A) + (B) + (C)	**(3.66)**	**(6.25)**

Sources: BRGIS

Company parked their above investments as mentioned below:

Asset split up details on the Capex of INR. 200 Crores spent on M/s Bhuvee Profile & M/s Rabirun Vinimay during April 2010 to March 31st, 2013 with backup (Purchase Cost) details unit wise.

Details of Capex are as under:

Machinery	INR. Crores
Capex in Unit III	
Scanacon ETP System	15.00
HR & CR CTL Machine	15.00
New Slab Caster - Fabricated	15.00
Slitter	8.00
Coil Built-up line	9.00
Skin Pass	9.00
Circle Cutting Machinery	7.00
Shed Extension	20.00
Cranes	7.50
Capex in Unit II	
R/H Furnace	25.00
Down coiler	15.00
Shed Extension	20.00
Cranes	7.50
Sub - Total	**173.00**
Add: Transpiration, Freight, Erection & Commissioning Charges (10%)	17.30
Add: Rates & Taxes (5%)	9.52
Grand Total	**199.82**
Say	**200.00**

Sources: As per the BRGIS

This has affected the working capital cycle of existing operations. Also a change in business dynamics led to increase in the holding level of raw material, WIP and debtors. Accordingly, due to this mismatch of long term and short term borrowing, operational difficulties in current environment have aggravated.

The operational bottlenecks in terms of the non-availability of adequate long term sources and operational difficulties w.r.t. external agencies (enumerated here under), mismatch in desired production w.r.t. cost of production, inconsistent supply of raw materials, higher operational cost, huge gap between demand and supply, resulted in the Company earning lower profit margin in the last year (FY

12-13), which consequently resulted in liquidity crunch and the plant not being able to operate at optimum levels. The underutilization of plant capacities further deteriorated the financial position of the Company on account of higher operational cost. The inconsistency of raw material supply resulted in the higher burden in fixed and variable costs.

Company Background

BRG Iron & Steel Co. Limited

M/s. BRG Iron & Steel Company Pvt. Ltd. ('BRGIS' or 'the Company') was promoted by Mr. Anjani Kr. Goyal along with Mr. Himanshu Goyal and Mr. Jay Kumar. Goyal with the intent to set-up an integrated plant of Sponge Iron, Ferro Alloys, Mild Steel, Stainless Steel Billets and Slabs. The Company was incorporated on 12th December 2002 with its registered office located at Suite No.402/403/404, Plot No.5, Block - DP, Sector V, Salt Lake City, Kolkata - 700091, West Bengal. The said project was set up at Kurunti village in the resource rich Talcher-Angul Industrial Belt of Odisha.

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In the year 2009, the promoters decided to set up the other modules resulting in value addition for production of MS Slabs, Stainless Steel Slabs and Ferro Alloys vide their phase-II expansion plan. This expansion project was initiated with the view to achieve better profit margins thereby allowing withstanding fluctuation in sales prices as seen in the past one year due to the cyclic nature of steel industry. Following modules were proposed to be set-up;-

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Both Phase-I & Phase II expansion plan of the Company, consisting of 73,000 MTPA of DRI, 28,000 MTPA of Ferro Alloys and 4,00,000 MPTA of SMS, is currently in operation.

Board of Directors (As on September 30th, 2013)

Sl. No.	DIN/PAN	Name	Father's Name	Address	Date of Appointment
1.	00276348/ AAOPG5564H	Mr. Anjani Kumar Goyal	Lt Baburam Goyal	"Sitakunj", DL-18, Salt lake, Kolkata – 700091	12/12/2002
2.	00324847/ AAOPG5558K	Mr. Jay Kumar Goyal	Lt Baburam Goyal	1, Ballygunge Park Road, Bally High, Ballygunge, Kolkata, 700019	12/12/2002
3.	00276140/ AAZPG7287Q	Mr. Sandeep Goyal	Mr. Anjani Kumar Goyal	"Sitakunj", DL-18, Salt Lake, Kolkata – 700091	06/02/2010

4.	00276571/ AAOPG5565G	Mr. Himanshu Goyal	Mr. Anjani Kumar Goyal	"Sitakunj", DL-18, Salt Lake, Kolkata – 700091	12/12/2002
5.	00324981/ AAOPG5561C	Mr. Vijay Kumar Goyal	Lt Baburam Goyal	Ambika Garden, Flat No. 2AB, 23, Raja Santosh Road, Alipore, Kolkata – 700 027	06/02/2010

The Promoters

Mr. Anjani Kumar Goyal: Aged 64 years, he is an engineering graduate from Thapar College of Engineering, Patiala. He has more than 30 years of experience in manufacturing industries including refractory, potteries, cattle feed, Ferro Alloys and Stainless Steel. Mr. Goyal has been a guiding force behind the success story of the Company. He possesses expertise in technical matters and has been an important contributor in all the technical development of the Company. The planning and administration of the company is also looked after by him.

Mr. Sandeep Goyal: Aged 39 years, he is a Management Graduate in marketing and has got more than a decade of varied experience in the steel industry. He has a flare for innovation in the steel industry and is the person behind all the projects conceptualized by the Group and possesses requisite leadership qualities to drive the organization to achieve the audacious goals. An aggressive visionary, he is the recipient of the prestigious "DHATUNAYAK" award for excellence in steel production by "All India Induction Furnace Manufacturers Association".

Mr. Himanshu Goyal: Aged 37 years, he is an engineering and management graduate from Pune University. He has over 12 years of experience in the Ferro Alloys and stainless Steel sector. He has on his own developed the pan India marketing network of the company. He has also contributed in the development of computer based MIS for the synergy of Production, Marketing and Finance. He is looking after technical matters, production and marketing of the company.

Mr. Jay Kumar Goyal: Aged 57 years, he is a commerce graduate and has 35 years of rich and rewarding experience in the steel sector. He is working as director of the company and looking after the day to day accounts and purchases.

Composition of Board of Directors

Name	Age (Yrs)	Qualification	Exp (Yrs)	Other Directorships	Promoter/ Independent
Mr. Anjani Kumar Goyal	64	Engineering graduate	40 years	1. Shyam Ferro Alloys Ltd 2. BRG Metal & Power Pvt Ltd 3. Jai Hanumanta Steel Pvt Ltd 4. Rabirun Vinimay Pvt Ltd 5. Integerated Pipes & Tubes Pvt Ltd 6. Bhuvee Packaging & Ancilliary Pvt Ltd	Promoter, Chairman

				7. Mahanadi Decorative Sheets Pvt Ltd 8. Integerated Equipments & Infraservices Pvt Ltd 9. BRG International Pvt Ltd 10. BRG Industries Pvt Ltd 11. Integerated Engineering Solution Pvt. Ltd.	
Mr. Sandeep Goyal	39	Management Graduate	15 years	1. G S C Castofirm Ltd 2. RCD Trading Pvt Ltd 3. Shyam Ferro Alloys Ltd 4. Kecons Tradecare Pvt Ltd 5. Pafco Laboratories Ltd 6. Ledo Vyapaar Pvt Ltd 7. Evika Vincom Pvt Ltd 8. Rabirun Vinimay Pvt Ltd 9. Integerated Equipments & Infraservices Pvt Ltd 10. Ashdil Trading Company Pvt Ltd 11. Advin Fiscal Services Pvt Ltd 12. Integerated Pipes & Tubes Pvt Ltd 13. Bhuvee Packaging & Ancilliary Pvt Ltd 14. Mahanadi Decorative Sheets Pvt Ltd 15. Cynosure Tracon Pvt Ltd 16. Anudeep Consultants Pvt Ltd 17. Carol Syntex Pvt Ltd 18. Wellman Sales Agency Pvt Ltd 19. Suncity Strips & Tubes Pvt Ltd 20. Sunrise Merchandise Pvt Ltd 21. Allworth Merchandise Pvt Ltd 22. Modsna Tie Up Pvt Ltd 23. BRG International Pvt Ltd 24. Integerated Engineering Solution Pvt Ltd 25. Prolifique Rolls Pvt Ltd 26. BRG Fabrinox Pvt Ltd	Managing Director
Mr. Jay Kumar Goyal	57	Commerce Graduate	35	1. Jay Gum Chemicals India Pvt. Ltd. 2. Allworth Merchandise Pvt Ltd 3. Sunrise Merchandise Pvt Ltd 4. BRG Steel Private Limited 5. Rabirun Vinimay Pvt. Ltd. 6. Integerated Equipments & Infraservices Pvt. Ltd.	Promoter, Director
Mr. Himanshu Goyal	37	Engineering & Management Graduate	12 Years	1. Jay Gum Chemicals India Pvt. Ltd. 2. G S C Castofirm Limited 3. BRG Steel Pvt. Ltd. 4. BRG Metal & Power Pvt. Ltd. 5. Jai Hanumanta Steel Pvt. Ltd. 6. Shyam Ferro Alloys Ltd. 7. Modsna Tie Up Pvt Ltd 8. BRG International Pvt. Ltd.	Promoter, Director

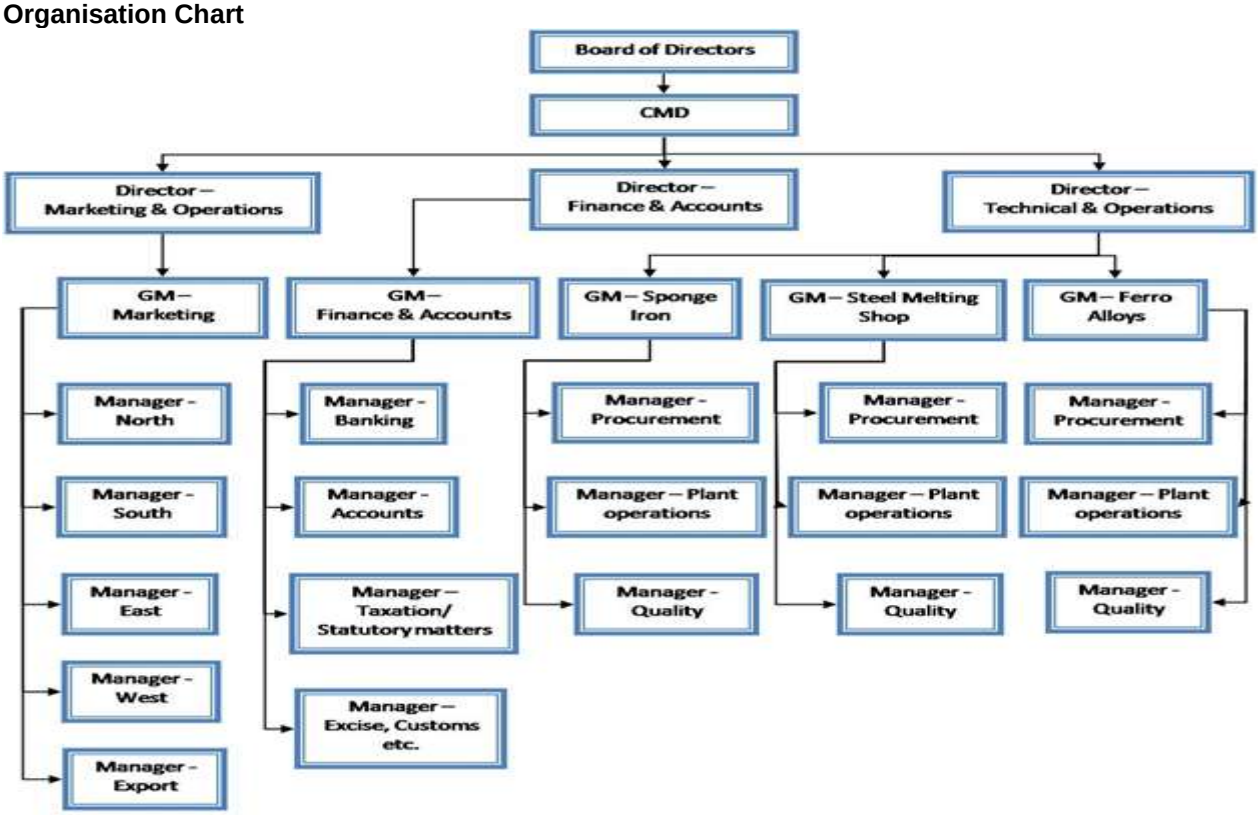
				9. BRG Industries Pvt. Ltd. 10. Rabirun Vinimay Pvt. Ltd. 11. Integerated Equipments & Infraservices Pvt. Ltd. 12. Ledo Vyapaar Pvt Ltd 13. RCD Trading Pvt Ltd 14. Evika Vincom Pvt. Ltd. 15. BRG Fabrinox Pvt. Ltd.	

Key Executives in the Group

A team of professionals under the leadership and guidance of Mr. Sandeep Goyal, having substantial projects and operational experience, particularly in the steel sector are managing the Company.

Name	Age	Destination	Experience	Qualification
Mr. S. R. Das	65	VP	45	B. Tech (Hons) Metallurgical
Mr. A.K. Agrawal	52	CEO	29	B.Com
Mr. A.K Mohata	37	CFO	13	B.Com (Hons), ACA
Mr. P.M.Parakh	55	President (F & A)	31	M.Com, ACA
Mr. Rakesh Khanna	62	President (Marketing)	37	MBA Marketing
Mr. Navneet Garg	40	V.P (Strategic Business)	17	B.Com (Hons), FCA
MR. Mohit Mittal	45	V.P (Marketing & Business Dev.)	18	B.Tech (Hons)
Mr. G D Vernekar	46	V.P (Design)	21	B.Tech (Hons)

Organisation Chart



Existing Installed Capacity

Name of the Company	Products	Installed Capacity (TPA)	Location
BRG Iron & Steel Co. Pvt. Ltd. (BRGIS)	**Unit - I** Stainless Steel Slabs Sponge Iron Ferro Alloys	4,00,000 73,000 27,981	Dhenkanal, Orissa
	Unit – II *(Erstwhile Bhuvee Profiles & Stainless Pvt. Ltd.)* Mild Steel Plates Stainless Steel Plates Stainless Steel Coils	3,78,000 72,000 3,50,000	Dhenkanal, Orissa
	Unit – III *(Erstwhile Phase-I of Rabirun Vinimay Pvt. Ltd.)* Stainless Steel Cold Rolled Coil/Sheets, Circles & Profiles	1,45,000	Dhenkanal, Orissa
Rabirun Vinimay Pvt. Ltd. (RVPL)	**Phase-II** Stainless Steel Circles & Profiles, Decorative Sheets, Pipes & Tubes etc.	3,00,000	Kharagpur, West Bengal
Integerated Equipment & Infraservices Pvt. Ltd. (IEIPL)	Stainless Steel downstream applications	1,34,400	Kharagpur, West Bengal

Shareholding Pattern

Exhibit: Shareholding Pattern As on Sep 30th, 2013				
Sl. No.	**Particulars**	**No. of Holders**	**Holding/ Shares held**	**% of holding**
1	Promoter Group	4	84,64,210	3.45%
2	Indian Financial Institutions / Banks	-	-	0.00%
3	State Govt.	-	-	0.00%
4	Insurance Co.	-	-	0.00%
5	FII	-	-	0.00%
6	Body Corporate	12	22,35,84,441	91.05%
7	NRI	-	-	0.00%
8	Foreign Body Corporate	-	-	0.00%
9	Individual & Others	6	1,35,21,824	5.51%
	Total	**22**	**24,55,70,475**	**100.00%**

Sources: BRGIS

Product Mix

The Company having the product mix and a planned usage of the respective products have been indicated in below Table:-

Product	Planned Use
Unit – 1	
Sponge Iron	Produce of sponge iron will be utilized in existing Stainless Steel Slabs & Mild Steel Slabs plant.
Stainless Steel Slabs	To be used in Unit -2 for production of SS Plates of various grades and Stainless steel Coil. Balance remaining finished goods will be sold in the market.
Mild Steel Slabs	To be used in Unit – 2 for production of MS Plates. Balance remaining finished goods will be sold in the market.
Ferro Manganese	Produce of Ferro Manganese will be utilized in existing Stainless Steel Slabs. Balance remaining finished goods will be sold in the market.
Medium Carbon Silico Manganese	Produce of Medium Carbon Silico Manganese will be utilized in existing Stainless Steel Slabs and Mild Steel Slabs. Balance remaining finished goods will be sold in the market.
Unit – 2	
MS Plate	To be sold in the market.
SS Plate Grade	To be used in Unit -3 for production of Stainless Steel Circles and Coils. Balance remaining finished goods will be sold in the market.
Stainless Steel Coil	To be used in Unit -3 for production of Stainless Steel Circles and Coils. Balance remaining finished goods will be sold in the market.
Unit – 3	
Stainless Steel Circles	To be sold in the market.
Stainless Steel Coils	To be sold in the market.

Product Pricing: - The final pricing of the products would depend on the product costing. Product costing has been derived from cost of raw material procurement and internal transfer pricing for materials produced for captive consumption.

Product Promotion:-

The Indian domestic steel industry is divided into two broad categories; ISPs and smaller players (non-integrated and semi integrated plants). The Company has already established its brand image in the domestic market especially in Eastern India. The Company can promote their end products either through direct marketing or through sponsoring various events. Moreover, the Company can market their products through various advertisement modes and also by using any well-known and socially accepted personality as its brand ambassador for increasing the brand image of its products and for strengthening its hold not only in the eastern region but also all over the country.

Distribution Strategy:-

The Company presently sells Stainless steel Slabs, Mild Steel Slabs, Ferro Manganese, Medium carbon Sillico Manganese, MS Plate, Stainless Steel Circles and Stainless Steel Coils mainly through agents and a network of dealers and distributors. The Company may utilize the existing network to sell all the above products. Further, the group has requisite experience of marketing the products through their own marketing setup. With the close networking, appropriate marketing strategy backed by quality products, the Company shall be able to penetrate the market further and will be in position to sell their entire production. The Company shall continue to strengthen its distribution network in the region and rest of India. The Company shall strive for brand creation and product promotion as a part of marketing and sales promotion. The Company shall target direct sales to bulk consumers like, real estate and housing projects, infrastructure projects through participation in tenders and pricing offers.

Project Details

Land Details

The operation of the BRG Iron and Steel Limited is segregated in 3 Units, which have been described below –

1. Unit 1 – The Unit 1 of the Company is its Steel Making unit and houses the following facilities –
    a. Sponge Iron Plant
    b. Ferro Alloy Plant
    c. Steel Making Unit for both Mild Steel and Stainless Steel
2. Unit 2 – The Unit 2 of the Company is Hot Rolling Coil/ Plate plant and comprises of the following sub-units
    a. HR Coil Mill
    b. HR Plate Mill along with annealing and pickling line
3. Unit 3 – the Unit 3 of the Company is Cold Rolling division, which comprises of the following –
    a. CR Mill for Mild Steel HR Coil
    b. CR Mill for Stainless Steel HR Coil
    c. CRC processing and circle cutting unit

The entire Unit – 1 is located on 50 acres of land adjacent to the National Highway 42. Meanwhile the Unit – 2 of the Company is located at a distance of less than 250 meters from Unit – 1 on 17.39 acres of land. The Unit – 3 is located on 18.20 acres of land further 1.50 Km from Unit – 1 and Unit – 2 towards Angul on National Highway 42. As per memorandum of entry the details of the land was provided and the same has been illustrated in the exhibit below –

List of Title Deeds (Unit-I)									
Sl. No.	Regtn. No.	Khata No.		Sl. No.	Regtn. No.	Khata No.		Sl. No.	Regtn. No.	Khata No.
1	4028	330		26	4317	546/226		51	4433	506
2	4029	546/226		27	4353	330		52	4434	506
3	4244	506		28	4354	546/219		53	4435	506
4	4245	423		29	4355	330		54	4475	244
5	4246	329		30	4356	407		55	4477	341
6	4247	368		31	4357	330		56	4489	244
7	4248	183		32	4360	156		57	4490	341
8	4249	8		33	4361	128		58	4491	342
9	4250	430		34	4384	244		59	493	334
10	4251	413		35	4385	244		60	503	349
11	4252	321		36	4388	546/72		61	520	268
12	4253	377		37	4389	213		62	521	334
13	4254	149		38	4390	342		63	524	19
14	4255	409		39	4391	244		64	525	77
15	4290	259		40	4392	341		65	526	242
16	4292	515		41	4393	546/176		66	532	133
17	4293	8		42	4394	494		67	533	245
18	4294	63		43	4395	467		68	534	87
19	4305	-		44	4398	244		69	536	198
20	4306	91		45	4400	91		70	537	197
21	4308	506		46	4405	427		71	538	50
22	4310	546/40		47	4414	330		72	542	180
23	4313	213		48	4415	154		73	543	229

24	4314	242		49	4416	244		74	544	222
25	4316	241		50	4426	342		75	576	356
								76	577	390

Source: BRGISL

List of Title Deeds (Unit-II, Phase I)						
Sl. No.	Deed No.	Made on Year	Kisam	Plot / Dag No.	Khata No.	Area
1	4423	19.10.2006	Taila - 2	3740/4526	450	1.96
			Taila - 2	3739	384	0.37
			Sarada - 2	3719	384	0.14
			Taila - 2	3724	247	1.25
			Taila - 2	3740	169	0.57
2	3642	07.08.2006	Taila - 1	2460	565	0.22
			Taila - 1	2461	565	0.11
3	3639	07.08.2006	Nala	2457	301	0.18
			Taila - I	2458	301	0.17
			Taila - 1	2459	301	0.4
4	3102	03.07.2006	Sarad - I	3570	409	0.23
			Sarad do			
			Fasali -1	3627	409	0.25
			Taila - I	3628/5222	409	0.05
			Taila - I	3628/5224	409	0.07
5	3101	03.07.2006	Sarad do			
			Fasali — 1	3617 (P)	242	0.045
			Sarad - 1	3630 (P)	242	0.2175
			Taila — 1	3628/5219(P)	242	0.0375
			Taila —1	3628/5222	242	0.0525
6	3052	30.06.2006	S - 2	3720	393	0.15
			T - 2	3737	393	0.47
7	3015	29.06.2006	S-3.	3742	360	0.34
			S-2	3743	427	0.2
8	3016	29.06.2006	Tail a — 1	3744	473	0.04
			Sarad - 1	3757	473	2.82
			Taila — 1	3742/4367	473	0.21
			Taila — 1	3756/4638	473	0.16

Source: BRGISL

List of Title Deeds (Unit-II, Phase II)						
Mouza	Plot No.	KISAM	Area in acres			Total Area in Acres
			Deed No. 1996/07	Deed No. 83/08	Deed No. 88/08	
Kurunti	3755	T-2	0.19			0.19
Kurunti	3761	S-2	0.37			0.37
Kurunti	3774	S-1	0.32			0.32
Kurunti	3776	S-1	0.21			0.21
Kurunti	3754/4085	T-2	0.08			0.08
Kurunti	3755/4086	T-2	0.12			0.12
Kurunti	3775/4304	S-1	0.16			0.16
Kurunti	3775	S-1	0.15			0.15
Kurunti	3756	S-2	0.17			0.17
Kurunti	3764/4183	T-2	0.16			0.16
Kurunti	3764/4184	T-1	0.15			0.15
Kurunti	3763	S-2	0.41			0.41
Kurunti	3760	T-1	1.25			1.25
Kurunti	3765	T-1	0.2			0.2
Kurunti	3752	S-2	0.43			0.43
Kurunti	3745	T-1	0.08			0.08
Kurunti	3746	S-1	0.24			0.24
Kurunti	3747	T-1	0.42			0.42
Kurunti	3672	T-1		0.23		0.23
Kurunti	3762	S-2		0.42		0.42

Kurunti	3669/4618	S-3		0.14		0.14
Kurunti	3575	S-1		0.22		0.22
Kurunti	3675/P)	T-1			0.56	0.56

Source: BRGISL

List of Title Deeds (Unit-III)						
Sl. no.	**Khata no.**	**Plot no.**	**Area**	**Kisam**	**Sale deed no.**	**Village**
1	754/886	6357	0.45	S - 3	2039	Kurunti
2	754/886	6377	0.27	S - 2	2039	Kurunti
3	754/886	6387	0.24	S - 2	2039	Kurunti
4	546/422	3201	0.11	S - 2	869	Kurunti
5	546/422	3202/5356	0.32	T - 1	869	Kurunti
6	546/422	3225	0.42	S - 2	874	Kurunti
7	546/422	3682	0.17	S - 2	830	Kurunti
8	546/422	3683	0.27	S - 2	830	Kurunti
9	546/422	3713	0.92	S - 2	830	Kurunti
10	546/422	3210/4658	0.16	S - 1	876	Kurunti
11	546/422	3278	0.39	S - 3	1535	Kurunti
12	546/422	3341	0.43	S - 2	1535	Kurunti
13	546/422	3343	0.30	S - 2	1535	Kurunti
14	546/422	3353	0.16	S - 2	1535	Kurunti
15	546/422	3355	0.30	S - 2	1535	Kurunti
16	546/422	3356	0.05	S - 3	1535	Kurunti
17	546/422	3358	0.11	S - 2	1535	Kurunti
18	546/422	3360	0.04	S - 2	1535	Kurunti
19	546/422	3361	0.30	S - 2	1535	Kurunti
20	546/422	3374	1.00	S - 3	1535	Kurunti
21	546/422	3375	0.18	Aadi	1535	Kurunti
22	546/422	3376	1.50	Jalasaya 2	1535	Kurunti
23	546/422	3377	0.96	S - 2	1535	Kurunti
24	546/422	3378	0.45	S - 3	1535	Kurunti
25	546/422	3382	1.88	T - 2	1535	Kurunti
26	546/422	3355/4811	0.11	S - 2	1535	Kurunti
27	546/422	3362/4960	0.14	S - 2	1535	Kurunti
28	754/724	6856	1.23	T - 1	3360	Kurunti
29	203	3768/5245	0.09	S - 3	1204	Kurunti
30	195	6382(P)	0.49	S - 2	3939	Kurunti
31	546/374	3767/5714	0.12	T - 1	875	Kurunti
32	195	6386	0.18	T - 1	4050	Kurunti
33	567	6854	0.35	Patita	4490	Kurunti
34	567	6857	0.32	T - 1	4490	Kurunti
35	195	6382(P)	0.25	S - 2	4596	Kurunti
36	504/682	6850	0.75	S - 1	4653	Kurunti
37	504/682	6853/8124	0.23	S - 3	4653	Kurunti
38	504/682	6366	0.66	S - 2	4653	Kurunti
39	504/682	6367	0.40	S - 2	4653	Kurunti
40	545	6362	0.24	S - 3	4772	Kurunti
41	545	6369	1.26	S - 2	4772	Kurunti

Source: BRGISL

Location Analysis

The distance of the key demand driver from the plot (Unit -1 and Unit - 2) have been provided in the exhibit below –

Description	Distance (in Kms)
Nearest Highway	National Highway – 42 (0.50 Km)
Nearest Road	National Highway – 42 (0.50 Km)
Nearest Town	Aungul (18.50 Km)
Nearest major city	Bhubaneshwar (115 Km)
Nearest railway station	Meramandali Station (3.80 Km)

	Burhapanka Station (5 Km)
Nearest airport	Bhubaneshwar (115 Km)

Source: D&B India Site Visit

The location of the site has been provided as an exhibit below –

Source: Google Earth

The location of site with respect to nearby areas has been provided in the exhibit below –

Source- Google Earth

Project Area Statement

The area statement of Unit – 1 of the Company has been provided in the exhibit below –

Unit I - Iron & Steel Making and Steel Melt shop		
Sl. No.	**Description**	**Area**
a.	***Buildings***	
1	LRF Control room & transformer room - Sq. mtr.	186.44
2	Slab Caster office room - Sq. mtr.	68.20
3	Slab caster Hydraulic Control room - Sq. mtr.	66.40
4	slab caster Electrical control room - Sq. mtr.	75.60
5	slab caster operating room - Sq. mtr.	10.63
6	AOD-1 Control Room - Sq. mtr.	121.44
7	AOD-2 Control Room - Sq. mtr.	121.44
8	132 KV Sub Station Control Room - Sq. mtr.	291.20
9	132 KV Sub Station office Room - Sq. mtr.	60.80
10	Electrical Maintenance Room - Sq. mtr.	23.94
11	Induction Furnace - Sq. mtr.	106.50
12	I/FLato & office - Sq. mtr.	220.40
13	Arc Furnace Control Room - Sq. mtr.	2,971.50
14	Civil office - Sq. mtr.	61.60
15	overhead tank - Sq. mtr.	
16	Softener Tank - Sq. mtr.	20.25
17	Weighing bridge Control Room - Sq. mtr.	33.12
18	Canteen Room - Sq. mtr.	1,262.20
19	Adm. Building - Sq. mtr.	3,136.00
20	Time office & project office - Sq. mtr.	396.00
21	DRI Weighing bridge room & Rest Room - Sq. mtr.	120.00
22	Dri Mech. Ment & Motor Room - Sq. mtr.	60.00
23	DRI control Room /office - Sq. mtr.	503.90
24	DRI ROOM - Sq. mtr.	240.00
25	DRI Lab/DG room - Sq. mtr.	240.00
26	Ferro office room - Sq. mtr.	183.60
27	Water Complex - Sq. mtr.	1,669.50
b.	***Sheds & Structures***	
	Major Sheds - Sq. mtr.	
	AB, BC, CD, DE, EF Bays - Sq. mtr.	20,764.80
	Minor Sheds / Storage yards etc	
1	SMS Material store-1 - Sq. mtr.	602.00
2	SMS Material store-2 - Sq. mtr.	55.44
3	Mech store room - Sq. mtr.	34.20
4	Lime Dolomite storage building - Sq. mtr.	667.50
5	Softener material storage building - Sq. mtr.	33.60
6	DRI main store - Sq. mtr.	80.00
c.	***Civil Foundations***	
	SMS	
i)	ARC Furnace foundation	2250M^3
ii)	VD/AOD	750 M^3
iii)	AOD	3375M^3
iv)	Misc Capacity Platforms	1250M^3
v)	Slab Caster Foundation	6075M^3
vi)	Misc working Platforms	3125M^3
vii)	Misc foundation	700M^3
	Ferro	
i)	Finished Metal Yard	1500M^3
ii)	Raw Material Yard	2500 M^3
iii)	Gigging Yard	500M^3
iv)	Casting Platform	500M^3
v)	Main Furnace Foundry	2250 M^3
	DRI	
i)	Pedestal for Kiln for Cooker	500 M^3
ii)	Cooker Tray of Drainage	40 M^3

iii)	Misc foundation Etc.	100 M^3
d.	***Chimney***	5 nos.

Source: BRGISL

The project area statement of Unit – 2 of the Company has been provided in the exhibit below –

Unit II – HR Plate & Coil Mill		
Sl. No.	**Description**	**Area**
a.	***Buildings***	
1	Admin Building - Sq.Mt	18,900.00
2	Control Room for panels etc - Sq.Mt	14,160.00
3	Transformer room - Sq.Mt	4,320.00
4	Control Room for water complex - Sq.Mt	694.00
5	ETP area, ECR, Security Pit - Sq.Mt	7,500.00
6	Office Building - Sq.Mt	5,500.00
7	Store Building - Sq.Mt	2,580.00
8	Water Complex - Sq.Mt	5,250.00
9	New Canteen Building - Sq.Mt	1,100.00
10	Time office - Sq.Mt	688.00
11	Weigh Bridge and Control room - Sq.Mt	344.00
b.	**Sheds & Structures**	
	Major Sheds	
	I - Sq.Mt	11,042.74
	II - Sq.Mt	26,850.00
	Minor Sheds	
	Propane Storage, Storage, Store House, Blower Shed, Flooring etc - Sq.Mt	2,250.00
c.	***Civil Foundations***	41,899.50M^3
d.	***Chimney***	1 nos.

Source: BRGISL

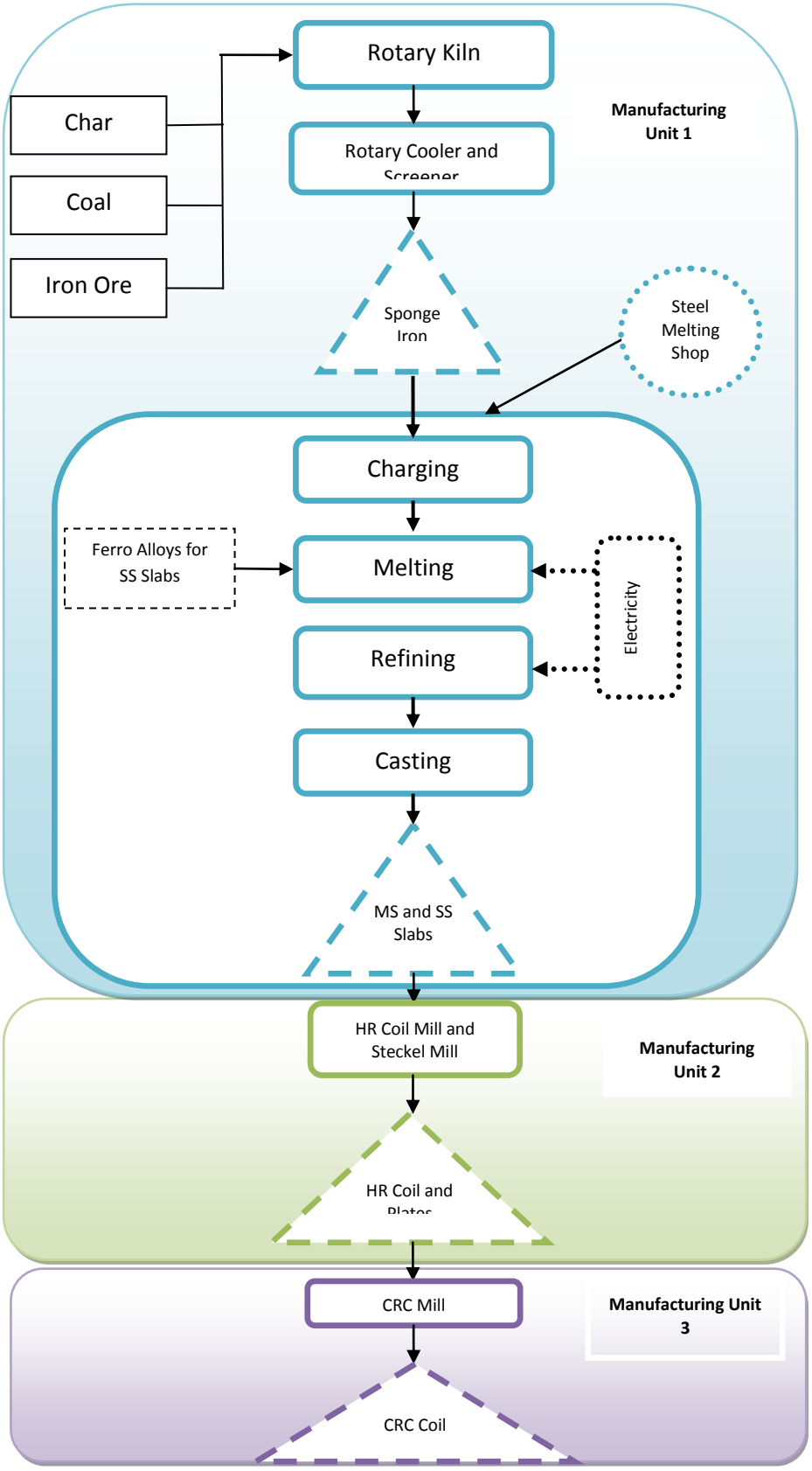
The project area statement of Unit – 3 of the Company has been provided in the exhibit below –

Unit III – CR Coil Mill		
Sl. No.	**Description**	**Area**
a.	***Buildings***	
1	ETP area, Lime Storage, Security Pit - Sq.Mt	2,223.00
2	Boiler House - Sq.Mt	2,533.00
3	Store Building - Sq.Mt	2,240.00
4	Site Office (3 Storied) - Sq.Mt	13,230.00
5	New Canteen Building - Sq.Mt	860.00
b.	***Sheds & Structures***	
	Major Sheds	
	AB-CD, GH-IJ, IJ-KL, GH-MN Bays - Sq.Mt	55,514.50
	Minor Sheds / Storage yards etc	
	Propane Storage, Lime Storage, Boiler House, Blower Shed. - Sq.Mt	2,661.00
c.	***Civil Foundations***	19,152.50M^3
d.	***Chimney***	5 nos.

Source: BRGISL

Manufacturing Process

The unit wise manufacturing process flow is provided in the exhibit below –



Source: BRGISL and D&B India

The process flow wise details of the manufacturing process is provided in the exhibit below –

Sponge Iron Manufacturing

The process for the production of sponge iron consists of the reduction of iron ore with solid carbonaceous material (coal/coke/lignite) in a rotary kiln at high temperature, cooling to room temperature in the rotary cooler with indirect water cooling system, screening and magnetic separation of the product. Sponge iron being magnetic gets attracted and separated from the non-magnetic char.

In the process for the production of sponge iron, the raw materials (iron ore, feed coal and lime stone /dolomite) are fed to the rotary kiln through feed tube in a pre-determined ratio by electronic weighing equipment. Rotary kiln is internally lined with refractory of 200 mm thick. It is rotated by an AC variable speed motor at a steeples variable speed. Due to inclination and rotary motion of the kiln, the material moves from the feed 'end of the kiln to the discharge end in approximately 5.5 hours (tendency time). The fine coal is blown counter currently from the discharge end of the kiln to maintain the required temperature and the carbon concentration in the bed. The kiln has air fans mounted on the top which blow air in the respective zones to maintain the required temperature profile. The material and the hot gases move in the counter current direction and as a result iron ore gets pre-heated and gradually reduced by the time it reaches the discharge end. The kiln is divided into two zones namely pre-heating zone and reduction zone. The preheating zone is normally 30% of the total length of the kiln and the rest is taken as the reduction zone. The material gets heated to the reduction temperature in the pre-heating zone, the iron ore, coal and limestone gets dried and all the moisture is vaporized. Up to 800° C, the iron ore gets roasted and any carbonates in it get calcinated. In the coal, the volatile matter starts getting released. The limestone also gets calcinated and becomes active. The iron ore, which is in the form of hematite, gets reduced to magnetite. After this, the materials enter the reduction zone where the magnetite is reduced to wustite and then to metallic iron.

Coal contains sulphur. During decomposition of the coal, sulphur is released in the form of Iron sulphide. The iron sulphide (FeS) has deleterious effect in the steel making and is to be removed. So, limestone is used to prevent the sulphur pick up by the sponge iron.

All the above reactions are possible only in the presence of CO. The generation of the CO is most important reaction, which is called the Boudouard reaction.

This reaction is highly endothermic which is also reversible. The conditions favorable for the forward reaction i.e. the generation of CO is –

- The higher temperature favors the production of CO.
- The concentration of the reactants has to high so that the forward reaction occurs.
- Low pressure favors the CO generation.

The oxygen required for the burning of these combustibles is supplied from the air tubes placed along the length of the kiln. By controlled combustion, the temperature in the various zones is maintained so that the reduction is proper and to sufficient degree. The reduction of iron ore is topo-chemical i.e. the reduction proceeds from the surface to the core. The iron ore on partial reduction has all the different stages of the reduction.

The hot material after the reduction is complete is then transferred to the rotary cooler via the transfer chute. The rotary cooler is made up of Mild Steel shell inclined at 1.432° approximately and rotates at variable speed from 0.2-1.2 rpm .It is driven by an AC variable speed motor. The water is sprayed on the top of the shell, which cools the material inside the cooler indirectly. The heat from the material is extracted by the shell. In order to increase the surface area for the heat extraction fins are welded inside. Complete shell is covered by thin layer of water. The heat is transferred from the shell to the water by convection. By this the material gets cooled to 80°C and is discharged on the belt conveyor by the double pendulum valve. The double pendulum valve acts as the seal for the prevention of the atmospheric air into the kiln cooler system. The total kiln cooler system is kept under positive pressure. This prevents the atmospheric air from getting into the system. The kiln has to be always operated on positive pressure, as any leakage into the system will cause the re-oxidation of the sponge iron thereby causing the drop in the quality of the product.

The material after the discharge from the cooler is dropped on to the cooler discharge conveyor. A diversion chute is provided at the head end of this conveyor for diversion of the material in case of break down in the production separation. The material is then sent to the product separation system. In product separation system consisting of double deck screen, the material is screened to 0-3mm and 3-20mm size fractions. The oversize i.e. +20 mm obtained is small quantity so it is taken on the floor or diverted to the sponge iron bin. The 0-3mm size fraction is called the fines are fed to a drum type magnetic separator where the magnetic sponge iron fines and the non-magnetic dolochar separated and fed to the respective bins through the chutes and conveyor. The coarser fraction is similarly separated by another magnetic separator and fed so respective bins. This magnetic fraction is called the sponge iron lumps and the non- magnetic as char which is the unburned coal. This char can be recycled depending on the quality obtained after processing.

The gasses, which flow in the counter current direction of the material, go to the dust-settling chamber where the heavier particles settle down. These particles are continuously removed by the wet scrapper system. The gasses then pass to the after burner chamber where the residual carbon or CO is burned by the excess air available. The gasses are at high temperature and have lot of heat energy, which can be utilised for the power generation through the waste heat recovery boiler. The hot gas after the heat recovery boiler gets cooled to 200°C. The gasses are then scrubbed and let of to the atmosphere at 80°C through the chimney. Alternatively, the hot gasses are quenched and scrubbed to clean all the dust in it. Then they are let off to the atmosphere through the stack. The chemical reactions taking place in the reduction zone is represented by the following equation:

$Fe_xO_y + CO$ ---------- > $Fe_xO_{y-i} + CO_2$

The carbon dioxide formed is converted to carbon monoxide by means of the carbon in the reductant in accordance with the Boudouard reaction:

$C + CO_2$ ---------- > $2CO$

Burning of small amount of carbon and excess carbon monoxide by means of outside air supplied through tubes to provide heat for the process reactions can be shown by the following equations:

$CO + 1/2\ O_2$ _____ CO_2

It is to be noted that a reducing and oxidizing atmosphere prevail side by side in the rotary kiln. Within the material charge, it is reducing atmosphere accompanied with endothermic reaction while in the free board above are the oxidizing conditions with the exothermic reactions.

The separation of the two atmospheres is ensured by the pressure generated by CO emerging from the charge into the kiln free board. This avoids re-oxidation of the reduced particles at the charge surface.

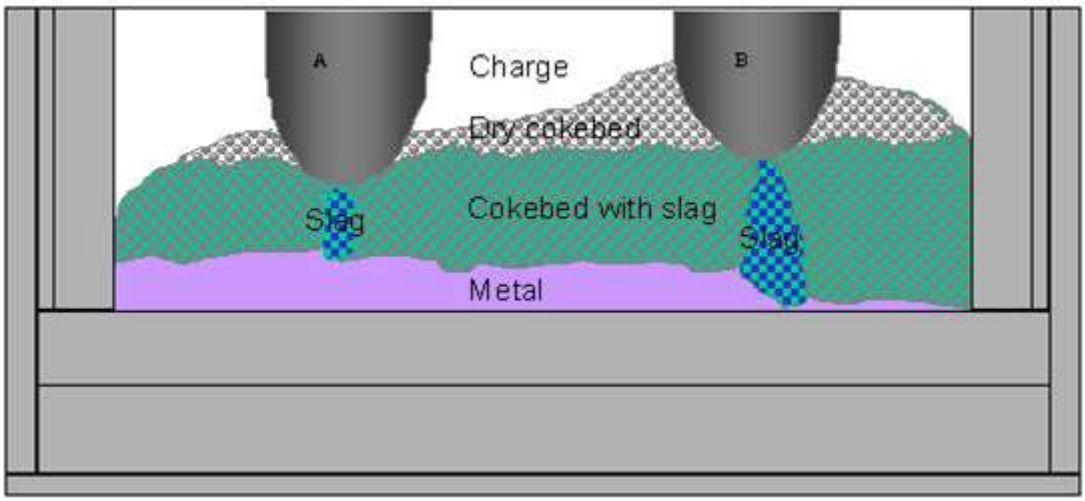
Ferro Alloys Manufacturing Process

Manganese and silicon are crucial constituents in steelmaking, as de-oxidants, de-sulphurizers and alloying elements. Silicon is the primary deoxidizer. Manganese is a milder deoxidizer than silicon but enhances the effectiveness due to the formation of stable manganese silicates and aluminates. It also serves as de-sulphurizer. Manganese is used as an alloying element in almost all types of steel. Of particular interest is its modifying effect on the iron-carbon system by increasing the hardenability of the steel. About 93 % of all manganese produced is in the form of manganese ferroalloys. The FeMn grades are high carbon (HC), medium carbon (MC), low-carbon (LC) and very low carbon (VLC), whereas the SiMn grades are medium carbon (MC) and low carbon (LC). The steel industry is the only consumer of these alloys.

Silico-manganese is produced by carbothermic reduction of oxidic raw materials in electric submerged arc furnaces. The same type of furnaces is used for FeMn and SiMn alloys. Operation of the SiMn process is often more difficult than the FeMn process because higher process temperature is needed. The size of the SiMn furnaces is usually in the range 15-40 MVA, giving 80-220 tonne of alloy per day.

A process temperature of 1600 to 1650°C is necessary to obtain metal with sufficiently high content of Si and discard slag with low MnO. FeMn slag has a relatively low melting temperature (about 1250°C) compared with Mn-ores. Accordingly, a high share of FeMn slag will tend to give lower process temperatures. When the Mn-ore starts melting at around 1350°C, it will contain a mixture of a solid and a liquid phase, where the solid phase is MnO. Further heating and reduction to 1550°C or more is necessary before the melting ore will mix with the slag and flow freely. With a high share of Mn-ore in the mix, the surface temperature and process temperature in the coke bed zone will be higher.

The interior of the furnace may conveniently be divided into two main areas; first preheating and pre-reduction zones where the charge components still are solid, and secondly the cokebed zone where ore, slag and fluxes are molten. The main raw materials were lump manganese ore, FeMn slag, quartz, some dolomitic limestone and coke.



The tip of electrode A, B and C was respectively 60, 110 and 50 cm above the metal bath. The electrode tip will be at the top of a correctly sized coke bed. If the coke bed gets too big, coke will build up along the electrode leg as seen around electrode B. Too much coke has been accumulated around electrode B resulting in its unwanted high position. Under each electrode was a zone with relatively pure slag with very little coke. Even below the coke rich electrode B there was an area with mainly slag and very little coke.

Loose materials were on average heaped about 20 cm above top of the furnace steel casing and lining. MnO_2 in the ore had decomposed early to Mn_2O_3. A modest reduction to Mn_3O_4 by CO gas or by thermal decomposition had taken place just before the first signs of melt phase in the ore particles

The main source of Mn in the charge mix for this SiMn furnace was MnO-rich FeMn slag. Initial melting and reduction of the FeMn slag had taken place 50 to 70 cm below top of the furnace lining. The FeMn slag was reduced almost to its final SiMn slag composition at level 90 cm before further reduction of the Mn-ore started. The Mn-ore is reduced separately and not via dissolution into the first melting FeMn slag. Nearly all reduction to low-Si metal and SiMn slag had been finished at the start of the coke bed zone and about 20 cm above the tip of the neighbouring C-electrode. Probably the 'pick up' of Si in the metal is quite fast and takes place as the metal trickles down through the coke bed towards the metal bath. The average content of SiO_2 in tapped slag was 40.4 %.

The main oxide components in raw materials for silico-manganese production are MnO, SiO_2, CaO, MgO and Al_2O_3. MnO and SiO_2 are partially reduced whereas the more stable oxides CaO, MgO and Al_2O_3 are regarded as un-reducible and will go entirely to the slag phase. Even though these oxides do not take part in the reduction process, they are of great importance for the thermodynamic and physical properties of the slag phase.

The distribution of silicon and manganese between carbon-saturated Mn-(Fe)-Si-C alloys and MnO-SiO_2-CaO-Al_2O_3-MgO slags in equilibrium with CO gas is a result of simultaneous reactions taking place. In the silico-manganese process the temperature may reach 1600°C or higher, and the composition of metal and slag is assumed to approach equilibrium.

Steel Melting Shop:

The iron in form of nuggets are introduced into the steel melting process routing as Induction Furnace (IF)/ Electric Arc Furnace (EAF)→Laddle Furnace→Continuous Casting Machine (CCM).

Induction Furnace:

The principle of induction melting is that a high voltage electrical source from a primary coil induces a low voltage, high current in the metal or secondary coil. Induction heating is simply a method of transferring heat energy. Induction furnaces produce their heat cleanly, without combustion. Alternating electric current from an induction power unit flows into a furnace and through a coil made of hollow copper tubing. This creates an electromagnetic field that passes through the refractory material and couples with conductive metal charge inside the furnace. This induces electric current to flow inside the metal charge itself, producing heat that rapidly causes the metal to melt. Although some furnace surfaces may become hot enough to present a burn hazard, with induction, you heat the charge directly, not the furnace.

Induction heating is a form of non-contact heating for conductive materials.The principle of induction heating is mainly based on two well-known physical phenomena:

1. Electromagnetic induction – The energy transfer to the object to be heated occurs by means of electromagnetic induction. Any electrically conductive material placed in a variable magnetic field is the site of induced electric currents, called eddy currents, which will eventually lead to joule heating
2. The Joule effect – Joule heating, also known as Ohmic heating and resistive heating, is the process by which the passage of an electric current through a conductor releases heat. The heat produced is proportional to the square of the current multiplied by the electrical resistance of the wire.

Induction heating relies on the unique characteristics of radio frequency (RF) energy - that portion of the electromagnetic spectrum below infrared and microwave energy. Since heat is transferred to the product via electromagnetic waves, the part never comes into direct contact with any flame, the inductor itself does not get hot and there is no product contamination. Induction heating is a rapid, clean, non-polluting heating. The induction coil is cool to the touch; the heat that builds up in the coil is constantly cooled with circulating water.

An electric induction furnace requires an electric coil to produce the charge. This heating-coil is eventually replaced. The crucible in which the metal is placed is made of stronger materials that can resist the required heat, and the electric coil itself cooled by a water system so that it does not overheat or melt. The induction furnace can range in size, from a small furnace used for very precise alloys only about a kilogram in weight to a much larger furnaces made to mass produce clean metal for many different applications. The advantage of the induction furnace is a clean, energy-efficient and well controllable melting process compared to most other means of metal melting. foundries use this type of furnace and now also more iron foundries are replacing cupolas with induction furnaces to melt cast iron, as the former emit lots of dust and other pollutants.

There are two types of induction furnaces. The first is coreless and the second is called channel. Both are in use in the early 21st century.

- The coreless induction furnace has copper coils that are protected by a steel and magnetic shield and kept cool by water circulating from a special cooling tower. A layer of refractory, or difficult to melt material, is placed above the coils and heated to the desired temperature. A crucible, which is a melting pot made of heat resistant material, is above the refractory. The metal to be melted is placed inside the crucible and the heat produced by the electromagnetic charge melts the scrap.
- The channel induction furnace can also be called a core induction furnace. It functions very similarly to the coreless furnace, except for the addition of a heated core. Channel furnaces were originally used as molten metal holders, but have been found useful in the melting of lower melt temperature metals.

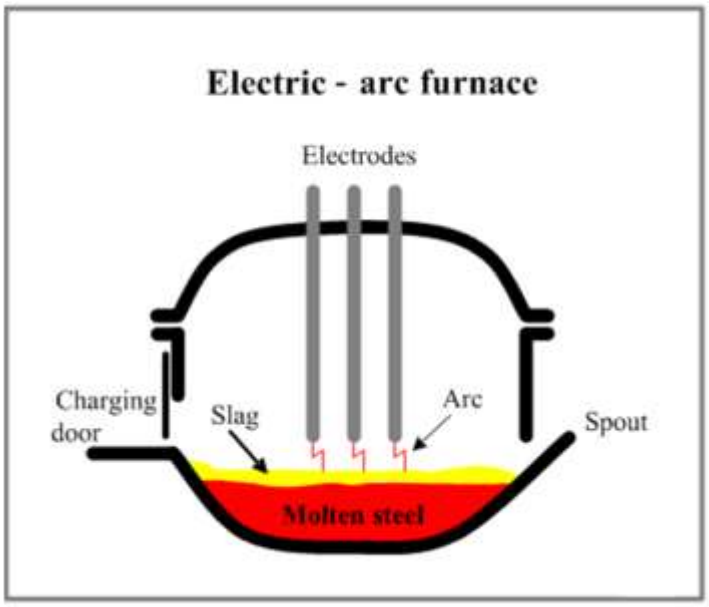
Both types of induction furnaces produce a natural stirring motion when the metal is molten. The pull of the magnetic fields and electrical currents cause the materials to sway in different directions. This stirring is essential to maintaining the integrity of the metal. The coreless furnace creates a more violent stirring, while the channel is known to have less turbulence at the surface.

After melting, the molten metal is poured into a mould. Some pouring methods are fully operated by human hands. Others are mechanical with human intervention, while others are fully automated. Mechanical systems are more efficient for large scale projects, while manual pouring methods are more suited to low volume production lines.

Electric Arc Furnace:

The process in the EAF is as following-

- *Charging:* Scrap metal is delivered to a scrap bay, located next to the melt shop. The scrap is loaded into large buckets called baskets, with "clamshell" doors for a base. After loading, the basket may pass to a scrap pre-heater, which uses hot furnace off-gases to heat the scrap and recover energy, increasing plant efficiency. The scrap basket is then taken to the melt shop, the roof is swung off the furnace, and the furnace is charged with scrap from the basket. There is a lot of energy generated by multiple tons of falling metal. Other operations are continuous charging—pre-heating scrap on a conveyor belt, which



then discharges the scrap into the furnace proper, or charging the scrap from a shaft set above the furnace, with off-gases directed through the shaft. Other furnaces can be charged with hot (molten) metal from other operations.

- *Melting Down:* After charging, the roof is swung back over the furnace and meltdown commences. The electrodes are lowered onto the scrap, an arc is struck and the electrodes are then set to bore into the layer of shred at the top of the furnace. Lower voltages are selected for this first part of the operation to protect the roof and walls from excessive heat and damage from the arcs. Once the electrodes have reached the heavy melt at the base of the furnace and the arcs are shielded by the scrap, the voltage can be increased and the electrodes raised slightly, lengthening the arcs and increasing power to the melt. This enables a molten pool to form more rapidly, reducing tap-to-tap times. Oxygen is also supersonically blown into the scrap, combusting or cutting the steel and extra chemical heat is provided by wall-mounted oxygen-fuel burners. Both processes accelerate scrap meltdown.
- *Refining and Finishing:* Once flat bath conditions are reached, i.e. the scrap has been completely melted down; another bucket of scrap can be charged into the furnace and melted down, although EAF development is moving towards single-charge designs. After the second charge is completely melted, refining operations take place to check and correct the steel chemistry and superheat the melt above its freezing temperature in preparation for tapping. The electric arc furnace operates as a batch melting process producing batches of molten steel known "heats". The electric arc furnace operating cycle is called the tap-to-tap cycle. The tap-to-tap cycle of the proposed project is about 76min with annual production capacity of 334,400 tons per year. More slag formers are introduced and more oxygen is blown into the bath burning out impurities such as silicon, sulfur, phosphorus, aluminum, manganese, and calcium, and removing their oxides to the slag. Removal of carbon takes place after these elements have burnt out first, as they have a greater affinity for oxygen. The steel is tapped out into a preheated ladle through tilting the furnace. For plain-carbon steel furnaces, as soon as slag is detected during tapping the furnace is rapidly tilted back towards the de-slagging side, minimizing slag carryover into the ladle. For some special steel grades, including stainless steel, the slag is poured into the ladle as well, to be treated at the ladle furnace to recover valuable alloying elements. During and after tapping, the furnace is "turned around": the slag door is cleaned of solidified slag, repairs may take place, and electrodes are inspected for damage or lengthened through the addition of new segments; the tap hole is filled with sand at the completion of tapping.

Chemical Process in EAF:

- Oxidizing Stage

At this stage excessive carbon, phosphorous, silicon and manganese oxidize. Basic oxidizing slag composed of lime (CaO) and iron ore (FeO) is used during the oxidizing period. Gaseous oxygen may

be blown into the melt for additional oxidizing. Iron oxide causes increase of oxygen content in the molten steel according to the reaction:

(FeO) = [Fe] + [O]

Oxygen dissolved in the melt oxidizes carbon, phosphorous, silicon and manganese:

[C] + [O] = {CO}

[Si] + {O_2} = (SiO_2)

[Mn] + 1/2{O_2} = (MnO)

2[P] + 5/2{O_2} = (P_2O_5)

Carbon monoxide partially burns in the atmosphere:

{CO} + {O_2} = {CO_2}

The formed oxides are absorbed by the slag. CO bubbles floating up through the melt result in refining of the steel from non-metallic inclusions and hydrogen removal. Gaseous products CO and CO_2 are removed by the exhausting system. The oxidizing slag enriched with phosphorous and other oxides formed during this period is removed from the furnace to a slag pot (de-slagging).

- Reducing stage

New slag composed mainly of lime (CaO), CaF_2 (as slag fluidizer) is added at this stage for formation of basic reducing conditions. The function of this slag is refining of the steel from sulfur and absorption of oxides, formed as a result of de-oxidation (”killing”).

The excessive oxygen dissolved in the melt during oxidizing period is removed by metallic deoxidizers Mn Si, Al:

[Mn] + [O] = (MnO)

[Si] + 2[O] = (SiO_2)

2[Al] + 3[O] = (Al_2O_3)

Basic reducing slag is favorable for desulfurization in accordance to the reaction:

[S] + (CaO) = (CaS) + [O]

Oxide and sulfide non-metallic inclusions are absorbed by the slag. Alloying elements (Cr, Ni, Mo, V, etc.) are added after de-oxidation.

Continuous Casting Machine:

In this process, molten steel flows from a ladle, through a tundish into the mould. The tundish holds enough metal to provide a continuous flow to the mould, even during an exchange of ladles, which are supplied periodically from the steelmaking process. The tundish can also serve as a refining vessel to float out detrimental inclusions into the slag layer. If solid inclusion particles are allowed to remain in the product, then surface defects such as “slivers” may form during subsequent rolling operations, or they may cause local internal stress concentration, which lowers the fatigue life. To produce higher quality product, the liquid steel must be protected from exposure to air by a slag cover over the liquid surface in each vessel and by using ceramic nozzles between vessels. If not, then oxygen in the air will react to form detrimental oxide inclusions in the steel.

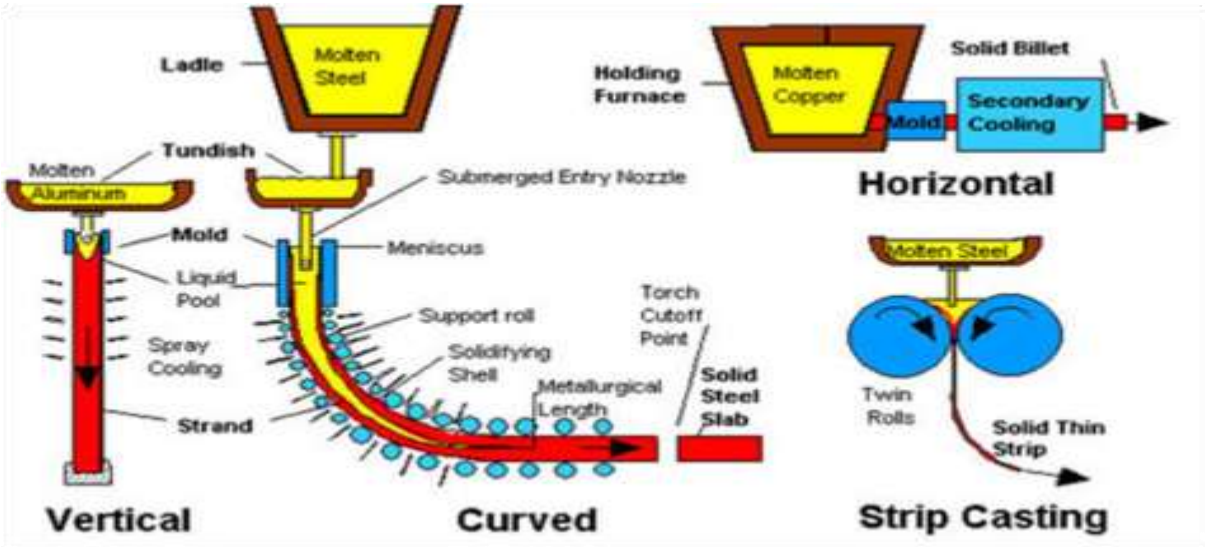
Once in the mould, the molten steel freezes against the water-cooled walls of a bottomless copper mould to form a solid shell. The mould is oscillated vertically in order to discourage sticking of the shell to the mould walls. Drive rolls lower in the machine continuously withdraw the shell from the mould at a rate or “casting speed” that matches the flow of incoming metal, so the process ideally runs in steady state. The liquid flow rate is controlled by restricting the opening in the nozzle according to the signal fed-back from a level sensor in the mould.

The most critical part of the process is the initial solidification at the meniscus, found at the junction where the top of the shell meets the mould, and the liquid surface. This is where the surface of the final product is created, and defects such as surface cracks can form, if problems such as level fluctuations occur. To avoid this, oil or mould slag is added to the steel meniscus, which flows into the gap between the mould and shell. In addition to lubricating the contact, a mould slag layer protects the steel from air provides thermal insulation and absorbs inclusions

Below mould exit, the thin solidified shell (6-20 mm thick) acts as a container to support the remaining liquid, which makes up the interior of the strand. Water or air mist sprays cool the surface of the strand between the support rolls. The spray flow rates are adjusted to control the strand surface temperature with minimal reheating until the molten core is solid. After the center is completely solid (at the “metallurgical length” of the caster, which is 10 – 40 meter) the strand is cut with oxyacetylene torches into slabs or billets of any desired length

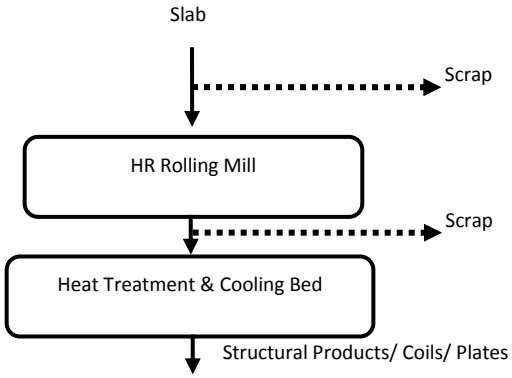
When casting large cross sections, such as slabs, a series of rolls must support the soft steel shell between mould exit and the metallurgical length, in order to minimize bulging due to the internal liquid pressure. Extra rolls are needed to force the strand to “unbend” through the transition from the curved to the straight portion of the path. If the roll support and alignment are not sufficient, internal cracks and segregation may result.

The Company is using a rectangular slab caster for production of MS and SS Slabs. Various type of continuous casting is shown in the exhibit below-



Rolling Mill / Steckel Mill Process for HR Coil and Plates

The exhibit below indicates the process flow diagram for rolling mill.



Source: D&B India Database

The primary function of the Hot Strip Mill is to reheat semi-finished steel slabs of steel nearly to their melting point, then roll them thinner and longer through successive rolling mill stands driven by motors, and finally coiling up the lengthened steel sheet for transport to the next process.

Reheating

As slabs are assigned to orders, schedules are written and material is staged with rail-cars and overhead cranes in the slab yard at the end of the Hot Strip Mill. Slabs are placed, one at a time, on a roll line. The slab's dimensions and weight are confirmed as it is positioned in front of the charge door on the side of the furnace. Once inside, the slabs are supported about eight feet off of the furnace floor by water-cooled, refractory-coated pipes called 'skids'. To minimize the cold spots ('skid marks') left in the slab, the skid spacing changes approximately two-thirds of the way through the furnace. Two independent sets of skids, one fixed, one walking, take turns supporting the slab as it is walked through the furnace by a massive sub-frame energized by a pair of large hydraulic cylinders. It is divided into eight zones for temperature control –

- Preheat, top-and-bottom
- Heating, top-and-bottom
- Soak, top-and-bottom.

The preheat and heating zones combust a mixture of natural gas and preheated combustion air with massive burners on the side walls of the furnace, both above and below the skids, to heat the slab nearly to its discharge temperature. Much of the preheating of the steel is achieved by the hot exhaust gases rushing past the slabs on the way to the 'recuperators' above the charge door. Whatever heat is

left in the exhaust gases preheats the incoming combustion air to over 1000° F in these massive heat-exchangers. Conversely, in the heating zone the steel is primarily heated by the glowing-hot furnace walls. In the soak zone, numerous smaller burners seek to maintain a uniform temperature within the zones to equilibrate any cold spots in the slabs.

Refractory dividers help to physically distinguish the zones, and thermocouple temperature sensors throughout the furnace interact with the automatic burner control systems to maintain the target temperatures in each zone. Complex computer models calculate the targeted roughing mill exit temperature to obtain a furnace discharge ('drop-out') aim temperature. Estimating the temperature profile through the thickness of each slab in the furnace on an ongoing basis, the computer aids the operator in selecting the production rate and zone set-points that will maximize production of steel slabs uniformly heated to as close to the target temperature as possible. After the rolling process begins, as the steel exits the roughing mill, its temperature is fed back to the furnace, updating the computer models and informing the heater as to the temperature uniformity. When the slab reaches the 'discharge door' at the exit end of the furnace, and the computer has determined that the slab has been sufficiently heated, the door opens and massive 'extractor arms' reach beneath the slab, lift it off of the skid supports, and draw it out of the furnace. The extractors can act independently of one another to remove double-charged slabs one-at-a-time, or in conjunction to extract longer slabs. The intensely hot slab is placed on a roller table which carries it into the roughing mill.

De-scaling

After exiting the reheat furnace, the slab passes through a de-scaling unit, an enclosure employing two pairs of spray headers that blast the intensely hot slab with pressurized water to remove the thick layer of oxidized iron that forms at the surface of the slab in the oxygen-rich atmosphere of the reheat furnace. Shortly after de-scaling, a (relatively) small rolling mill called a scale breaker reduces the slab's thickness by about one inch to break up any scale that remains. Just before the next reduction pass is taken, 'sweep sprays' clean away any loosened scale that remains on the slab surfaces. The transfer bar will be de-scaled twice more during roughing, immediately prior to the third and to the last rolling operation, to remove the scale that has grown back over the three minutes or so that it spends in the roughing mill.

Roughing

The roughing mill is made up of independent rolling mill stands, the last of which incorporate small vertical rolling mills called edgers. Slabs heated in the furnace until they glow bright orange-yellow are rolled through one stand at a time to produce so-called transfer bars suitable for finish rolling. High-pressure water-jet nozzles clean the oxidized iron, or scale, from the surface along the way.

As the transfer bar exits the last roughing mill stand, the thickness of the leading edge of the bar is estimated. Similarly, a pyrometer measures the temperature profile of the bar from head to tail. Depending on the gauge, width, and grade of the product to be rolled, the average temperature of the bar as it exits the last roughing mill normally ranges from 1900° to 2100° Fahrenheit.

The last roughing mills each incorporate edger's for width control and roll the bar from five to six inches thick incrementally down to around an inch and a quarter, depending on the customer's ordered width, gauge, and steel grade. As mentioned previously, the roughing mills each have high-pressure de-scaling headers operating at. The individual roughing mills are spaced increasingly further apart to accommodate the lengthening of the transfer bars as they are rolled thinner and thinner.

De-scaling

Between the Crop Shear and the first Finishing Mill stand sits the Scale Breaker, which is tasked with the final scale removal operation. Sprays above and below the transfer bar blast it with jets of water to break up the scale that has re-formed since the de-scaling operation at the entry of the last roughing mill, as well as any scale that has persisted through earlier de-scaling operations. After de-scaling by the low-pressure headers, the bar is pinched by a pair

of pneumatically-actuated rolls to mechanically loosen any remaining scale, which, as the processing temperatures cool off, becomes increasingly sticky even as it returns ever more slowly to the surfaces of the still red-hot steel.

Finally, a pair of high pressure headers operating at nearly makes a final pass at both surfaces of the transfer bar shortly before it enters for finish rolling. As with the roughing mill's de-scaling system, for some thinner-gauge, wider, and/or stiffer products, the low-pressure header is disabled to conserve heat for rolling. The last opportunity to remove oxidation before the finished hot-rolled strip is coiled. Typically, the de-scaling system in the Hot Strip Mill is very effective at removing primary (from the furnace) and secondary (re-grown during roughing rolling) scale.

Finishing

Hot Strip Mill includes finishing mills, which reduce the thickness of the transfer bar down to the gauge required by the customer or the next process. The rolling speed is set to allow the last stand to perform the final reduction at the finishing temperature, between 1500° to 1650°F, specified to reach certain mechanical properties.

By now, the steel has been rolled into a flat bar as long as 200 feet. In contrast to the roughing mills, meaning each bar will be rolled through all stands at once. The hot steel is quite fragile as it is rolled and tension between the finishing mill stands must be closely controlled at very low levels in order to avoid stretching or tearing the strip. Prior to the finish rolling operation, the head and tail ends of the transfer bar will be sheared to square them up, helping to ensure proper threading and tail-out. A final two-stage de-scaling operation is performed to clean off the scale that has grown on the bar during roughing. Once the bar is threaded between each successive pair of mills, a free-turning roll on an electro-mechanical pivot called a looper roll engages the bottom of the strip to monitor the tension between the stands. Adjustments are made as necessary to ensure the strip threads properly through each of the mills without looping up and folding over or stretching and tearing apart. The position of each roll is fed back to the finishing mill's sophisticated automation system which, along with information from the load cells that monitor rolling force and from the X-ray gauge measuring final strip thickness, work to smoothly adjust the roll gaps

and speeds to maintain stable rolling of strip to the necessary thickness in spite of the temperature variations present in every bar.

Coiling

Hot Strip Mill's present configuration relies on two Coilers. Minor differences exist between the two, but both operable coilers begin with a pair of pinch rolls that catch the strip head-end and establish tension across the run-out table and back to the finishing mills. The head-end is deflected by a gate down to the mandrel associated with the coiler and is guided around the mandrel by pneumatically-actuated wrapper rolls linked by aprons. Once the head-end is all the way around the mandrel, laps begin to build around the mandrel, forcing away the wrapper rolls. Once the head-end is 'cinched' and friction and tension prevent the wraps of steel from slipping relative to the mandrel, the wrapper rolls disengage from the growing coil of steel.

After the strip tails out of the finishing mill, the pinch rolls continue to hold back-tension to prevent the coil from unravelling and before the strip tail is pulled through the pinch rolls, the wrapper rolls are reengaged. A hydraulic coil car moves into place beneath the coil, and, after rising up to support the coil's bulk, strips the coil from the mandrel and places it in position for transport to the tagging and automatic bender procedures.

Coil Handling

Coils are removed from each coiler by hydraulic 'coil cars' that set the product down on the platform in the 'hole' where one of the two 'walking beams' cycle back and forth to move coils into position to receive identification and banding.

Cold Rolling Mill Process

Pickling Lines

Push-Pull Pickling Lines can process strips between 1.0mm to 12.0mm thick and 200mm to 2000mm wide. Push-Pull lines process one coil at a time, thus removing the need for joining strips. This allows tremendous flexibility of operation and ensures ease of operation and maintenance. As there is no need for accumulators in such lines, these lines have very low cost of investment and are very much cost-effective for medium volume of production between 200,000 to 1,000,000 Tons per annum.

Annealing Furnaces

Annealing Furnace is continuous types for production of Wires, Tubular Radiators and Pipes made up of high grade steels with bright annealing. Here the cold hardening from the previous rolling or drawing is eliminated. The annealing material is pulled and/or pushed through the furnace without any transport

devices. The annealing and cooling channel consists of numerous pipes, which are arranged close to each other. The openings of the cooling pipes are sealed to the annealing material by means of elastic rings. The cooling and annealing pipes are always kept under an inert gas atmosphere. Heating is carried out by electric resistance elements, which are embedded in insulating blocks made up of ceramic fibres. The low consumption of inert gas and heating energy is a special feature of Bell Annealing Furnaces. The heating up time of the Annealing Furnace from 20°C to 1100°C is less than one hour.

One of these is a stand-by annealing and pickling line, which was 95% complete at the time of site visit. The main annealing and pickling line was complete and ready for operations.

CR Slitter

CR(Cold-Rolled) Slitter Line is the equipment to produce pipe and skelp by installing tension roll which does not damage to the surface of high-grade steel sheet, including EGI/GI coil, colour coil and stainless coil. This reduces pad wear and tear due to the tension bridle roll as well as does not damage to the surface of coil. It uses a rolling type tension roll which is easy to adjust the tension.

CR Cut to Length Machine

Cold Rolled cut to length Machine is used for cutting finished CR and HR coils produced in the Mill with high precision accuracy customized as per customer's requirements.

Plant and Machinery at Site

D&B India notes that the Unit -1, Unit – 2 and Unit – 3 combined together form an integrated steel finished steel manufacturing unit. The unit wise list of plant and machinery installed at site have been provided in the exhibits below –

Unit I - Iron & Steel Making and Steel Melt shop	
Sl. No.	**Machinery Details**
Iron making	
1.	2 X 100 TPD DRI kilns complete with Kiln, Cooler and all raw material feeding circuits & finished Sponge Iron delivery systems
2.	Iron Ore Crusher - Cone Crusher complete with Ore screening, sizing and delivery
3.	Material handling equipment's like Pay Loaders, Tipper Trucks etc.
4.	Miscellaneous ancillary assets like gen-sets, power transformers, chimney, bag filters and ESP etc.
Ferro Alloy Making	
5.	2 X 9 MVA Ferro Alloy Smelting Furnaces (Submerged Arc Electric Furnaces) complete with furnace, electrode regulation device, raw material feeding circuits, finished goods tapping, crushing and sizing
6.	Miscellaneous Assets like transformers, genets, maintenance equipment etc.
Steel Melt Shop	
7.	4 X 20 Ton Induction Furnaces Complete with crucible, hydraulic tilting table, electrical rectifier and capacitor panels and electrical control panels.
8.	1 X 40 Ton Electric Arc Furnace complete with furnace shell, furnace lid, electrode regulation device, furnace tilting mechanism

	and oxygen and lime/carbon injecting ports and lances
9.	2 X 40 Ton AOD Converters complete with converter vessel, tilting mechanism, oxygen top lance and bottom ports for inert gas stirring and oxygen blowing along with Gas mixing station & controls
10.	1 X 40 Ton Ladle Refining Furnace complete with Furnace lid, Ladle cars, Electrode holding and regulation device, Flux and Alloy addition systems
11.	1 X 9 meter radius slab caster complete with ladle positioning system, tundish and tundish cars, caster segments and cooling arrangements slab withdrawal system, slab cutting torches
12.	1 X 6 meter twin strand billet caster complete with ladle positioning system, tundish and tundish cars, caster segments and cooling arrangements billets withdrawal system, billets cutting torches
13.	Ladles, Ladle Cars, 70 tons EOT cranes
14.	Industrial Gases storage and piping / manifolds
15.	Misc assets like gensets, transformers, material handling devices etc
16.	3 x Slab Grinders complete with travelling grinding heads, slab manipulators

Source: BRGISL

Unit II – HR Plate & Coil Mill	
Sl. No.	**Machinery Details**
1.	Roughing stand - Plate Mill 4,000 ton Roll separating force upto 2 meter wide Plate feed - 160mm thick slabs max 200 mm min 120 mm plate output - minimum 8 mm thick - maximum 100 mm. Rolling speed - 40 meters per minute maximum Direct Driven Work Rolls Each Roll drive 4000 HP Hydraulic AGC for accurate thickness Barrel length of Rolls 2520 mm Back up Rolls bearings Morgoil Work Roll Bearings Two Double Row Trapezoid Timken Hydraulic Roll Balancing Level 2 automation Laser thickness Gauge
2.	Steckel Mill stand - HR Coil Mill 3000 ton Roll separating force upto 1500 mm wide HR Coil feed - 28 mm thick transfer bar from Plate Mill output - 3 mm minimum HR Coil upto 20 ton weight max. Rolling speed - 140 meters per minute maximum Independent geared drives on each Work Roll Each Roll Drive 6000 HP Full Hydraulic AGC Barrel length of Rolls 1650 mm Back up Rolls Morgoil Work Roll Bearings Two Double Row Trapezoid Timken Hydraulic Roll Balancing Coiler Furnaces and Drums Level 2 automation X ray thickness Gauge

	Quick Roll Changing sled
3.	60 ton per hour Reheating Furnace for Plate Rolling Twin Row charging walking hearth Regenerative Gas Fired Burners Full PLC and Level 2 controls
4.	160 tom per hour Reheating Furnace for Coil Rolling 12.2 meter wide twin row charging walking beam Gas fired full PLC controlled combustion Heat Recuperatoration Full PLC and Level 2 controls
5.	Online SS Plate Annealing Roller Hearth Furnace 2 meter wide Plate Length of furnace 32 meters Regenerative Burners Gas fired Inconel HU Rolls
6.	Online Plate Quenching Full PLC control rapid quench Both mist and water
7.	Plate Transfer Table - Roller type Cooling Bed 12 meters length 2 meter wide plates
8.	Online edge shears full automatic operation with laser marking and tracking Plates upto 32mm thick
9.	Hot Leveller Cassette type 9 roll Hot Leveller with hydraulic screw down arrangement upto 32mm thick plates
10.	Online Plate Pickling with automatic acid dosing and management
11.	Cold Leveller 15 roll cassette type upto 20 mm thick plates hydraulic screw down
12.	Roller Tables 285 meter long convey upto 2 meter wide plate individual roll drive with geared motors Level 2 automation and control
13.	Upcut dividing and cropping shear cut upto 40 mm thick plate PLC control
14.	Slab Descaling system 230 bar pressure descaling top and Bottom spray Banks Centrifugal multi stage pumps two numbers Hi pressure accumulator with auto level control
15.	Rotary Transfer slab cropping Flying shear Cut on the Fly upto 32mm thick transfer bar full automatic operation laser tracking
16.	Laminar Cooling system 60 meter length 2 banks of 30 meters Rapid cooling for stainless steel Mist cooling and water full automatic operating with PLC
17.	Downcoiler upto 1500 wide Hot Strip Coil SS Hot Band upto 20 mm thick Coil weight 25 tons maximum Automatic Coil banding, ejection, banding and convey & weighment

18.	Upcoiler upto 1320 wide Hot Strip Coil SS Hot Band upto 16 mm thick Coil weight 15 tons maximum Automatic Coil Banding
19.	Roller Tables 105 meter long convey upto 1.5 meter wide HR band individual roll drive with geared motors Level 2 automation and control
20.	Level 2 automation of entire Mill
21.	Miscellaneous assets like gensets, transformers etc.
22.	EOT Cranes and Material handling devices
23.	Roll & Bearing Shop 4 X Roll Grinders 2 X Roll Turning Lathes Bearing repair shop Roll handling cars and devices
24.	Plant Maintenance and spares with spare rolls stock

Source: BRGISL

Unit III – CR Coil Mill	
Sl. No.	**Machinery Details**
1.	Two Nos. ZR 22 20 Hi Cold Rolling Mills 20 Hi Cluster Mill 64 mm work roll dia. Rolling speed 230 mpm tp 500 mpm Dynamic Roll Bending Intermediate Roll Mill Drive through geared pinion stand ETR & DTR with reverse pyramid collapsing mandrels 2500 ton Roll Force Zero Crown Housing Flex Back Up Roll Bearing Assemblies As U Roll automatic Crown and gauge control Positionable sprayboards Level 2 Automation X ray Thickness Gauge Quick Roll change on the fly Heavy Reduction capabilities on very hard material input gauge 7 mm maximum output gauge 0.3 mm minimum
2.	Continuous Hot Rolled Coil Annealing & Pickling Line line process speed 60 meters per minute Automatic Coil Charging with levelling Automatic Coil Trimmer and Welding (Coil joining station) Three station Coil Blasting - Dry Scale removal Regenerative Gas fired annealing furnaces PU coated Rolls automatic steering systems Rubber coated & PU pickling tanks Rinsing and coil drying Scanacon Acid Management & Regeneration system Delivery section with automatic shear Coil inspection Recoiling Level 2 automation
3.	Continuous Cold Rolled Coil Annealing and Pickling Line line process speed 130 meters per minute

	Automatic Coil Charging Automatic Coil Trimmer and Welding (Coil joining station) Precision Leveller Three station Coil Blasting - Dry Scale removal Regenerative Gas fired annealing furnaces PU coated Rolls automatic steering systems Rubber coated & PU pickling tanks Rinsing and coil drying Scanacon Acid Management & Regeneration system Delivery section with automatic shear Coil inspection Recoiling Level 2 automation
4.	Coil Built up line Coil to coil - automatic MIG welding with joint annealing Rerollable joints
5.	Coil Grinding Line Acme 8 station full plc control both sides Belt type with photo sensors and automatic pressure regulation
6.	Miscellaneous assets like EOT cranes, gen sets, boilers etc
7.	Roll and bearing shop 2 X Roll Grinders Hi Precision Full CNC with auto calipers and crown 2 X Roll Polishers Bearing assembly shop Saddle machining shop

Source: BRGISL

Raw Material

The key raw material utilized by the proposed project include –

- Iron Ore Lumps
- Coal of various grades
- Heavy Melting Scrap
- Sponge Iron
- Stainless Steel Scrap
- Ferro-Alloys like –
    - Ferro-Silicon (manufactured internally by Company)
    - Ferro-Manganese (manufactured internally by Company)
    - Ferro-Chrome (manufactured internally by Company)
    - Ferro-Nickel
- Lime/ Dolomite/ Flourspar
- Coke

D&B India notes that projects of the BRGISL are located in at Aungul in the state of Orissa and is close to the steel making belt of Orissa. These raw materials are utilized by most of the steel making units located in the vicinity of the project and manufacturers/ producers of these raw materials are also located in the same area. Hence the project will not find any difficulty in procurement of raw material for the project.

Other Technical Aspects

Stores and Consumables

The manufacturing process of finished steel making involves a series of stores and consumables that include –

- Argon Gas
- Oxygen Gas
- Nitrogen Gas
- Electrodes
- Refractories
- Copper
- Fuel oil/ furnace oil etc.

D&B India notes that since the units are located in the steel making belt of Orissa, hence all the above mentioned stores and consumables can be easily procured by the Company from the local markets.

Power

The Company has already procured the power connection of all three units from State Electricity Board and has also installed the requisite size of power sub-stations within each of the unit. The details of the electrical setup at each of these units have been provided as Annexure named as Power.

Water

In addition to the housekeeping requirement, the process of manufacturing steel and finished steel also requires significant amount of water for cooling, quenching, descaling processes etc. The Company has installed water complexes and storing tanks at site for handling of the entire water requirement for the project.

The required water for the projects are provided by the Bore-wells at site.

Manpower

Finished steel manufacturing process is manpower intensive process and D&B India estimates that the project would require around 1,100 personnel for operations of the units at peak capacity.

However at the time of site visit, D&B India noted that currently the manpower at all the 3 units is at lowest level due to financial issues faced by the Company. However considering the fact that the units are located in the steel making belt of Orissa, hence the project will not face problems in recruiting the right personnel for its project, as and when the utilization levels increase.

Site Status Report

The team D&B India visited the manufacturing facilities of BRGISL on 7th February 2014. The key observations of the site visit have been provided below –

Unit – 1 – Steel Making Unit

Sponge Iron Unit

- The Sponge Iron Unit has Rotary Type Kilns of installed capacity of 2 X 100 TPD, which was non-operational at the time of site visit due to lower capacity utilization experience by steel making unit

- The raw material storage areas within the Sponge Iron sub-unit were clearly ear-marked and well connected with separate section for storing of iron ore, coal and coal fines.

Ferro Alloys Unit

- The Ferro Alloys units has 2 X 9 MVA Arc Furnaces installed at site for manufacturing of silico-manganese, ferro-manganese and ferro-chrome, required for manufacturing of mild steel and stainless steel in the SMS section
- The unit was not operational at the time of site visit undertaken by D&B India.

Steel Melting Shop

- The SMS section has the following sub-units installed –
    - 4 X 20 Tons Induction Furnaces
    - Electric Arc Furnance with installed capacity of 1 X 40 Tons. The EAF located at site was not operational at the time of site visit and had been shut since the minor mishap which partly destroyed the PLC system. The new set of equipment was expected to arrive at site within 15 days after site visit was conducted by D&B India
    - 2 X 40 Ton AOD Converters
    - 1 X 40 Ton Ladle Refining Furnace
    - All the utilities like argon, nitrogen, oxygen capsules, ETP unit etc.

  At the time of visit by D&B India, the team observed preparation and making of one heat at the Induction Furnace of the unit.

Casting Section

- The casting section of the Unit – 1 has got the following installed –
    - 1 X 9 meter radius slab caster, complete with all the accessories
    - 1 X 6 meter radius billet caster, complete with all the accessories

  The team D&B India was informed that the Company does not manufacture billets and the billet castor at site was primarily a stand-by arrangement

Unit – 2 – Hot Rolling Mill

The Unit – 2 of the Company is located adjacent to the Unit – 1 and is involved in Hot Rolling works. The installed capacities of major machinery installed at site has been provided below –

- Roughing stand - Plate Mill – 4000 Tons Roll separating force (manufacturing minimum 8 mm thick - maximum 100 mm.)
- Steckel Mill stand - HR Coil Mill - 3000 ton Roll separating force (manufacturing 3 mm minimum HR Coil upto 20 ton weight max.)
- 60 TPH Reheating Furnace (second hand), for feeding heated Slab for coil/ plate manufacturing purpose. The same mill is currently feeding both the Plate/ Coil Mill
- 160 TPH Reheating Furnace (New), which has not yet been commissioned due to shortage of accessories.
- Online SS Plate Annealing Roller Hearth Furnace
- Online Plate Quenching
- Online edge shears, along with other units for manufacturing of plates

The team D&B India notes that the Company is utilizing Propane gas procured from local sources for the purpose of firing of the reheating furnace.

Unit – 3 – Cold Rolling

- Two Nos. ZR 22 20 Hi Cold Rolling Mills, 20 Hi Cluster Mill, 64 mm work roll dia. Rolling speed 230 mpm tp 500 mpm

- Continuous Hot Rolled Coil Annealing & Pickling Line, line-process speed 60 meters per minute
- Continuous Cold Rolled Coil Annealing and Pickling Line, line-process speed 130 meters per minute
- Coil Grinding Line
- Roll and bearing shop
    - 2 X Roll Grinders Hi Precision Full CNC with auto calipers and crown
    - 2 X Roll Polishers
    - Bearing assembly shop
    - Saddle machining shop

General Comments – Common to All Units

- The plant and machinery at site were maintained in good operational condition, whether the units were operational or not.
- The housing facility for manpower was located next to the Unit – 1 and Unit – 2
- The approach road for to the three units was kuchcha road, which was quite dusty at the time of site visit
- Ample amount of space has been provided between various plant and machinery installed at site to provide passage for material and manpower across the shop floors
- The workshops located at the 3 units were fully equipped with equipment like lathes, grinding machine etc.
- All the utilities at site were well maintained and regular maintenance undertaken.

Approvals and Clearances

D&B India had sought the copies of all the statutory approvals and clearances from the Company, for review purpose. The Company had provided D&B India with copies of all the critical statutory approvals/ clearances.

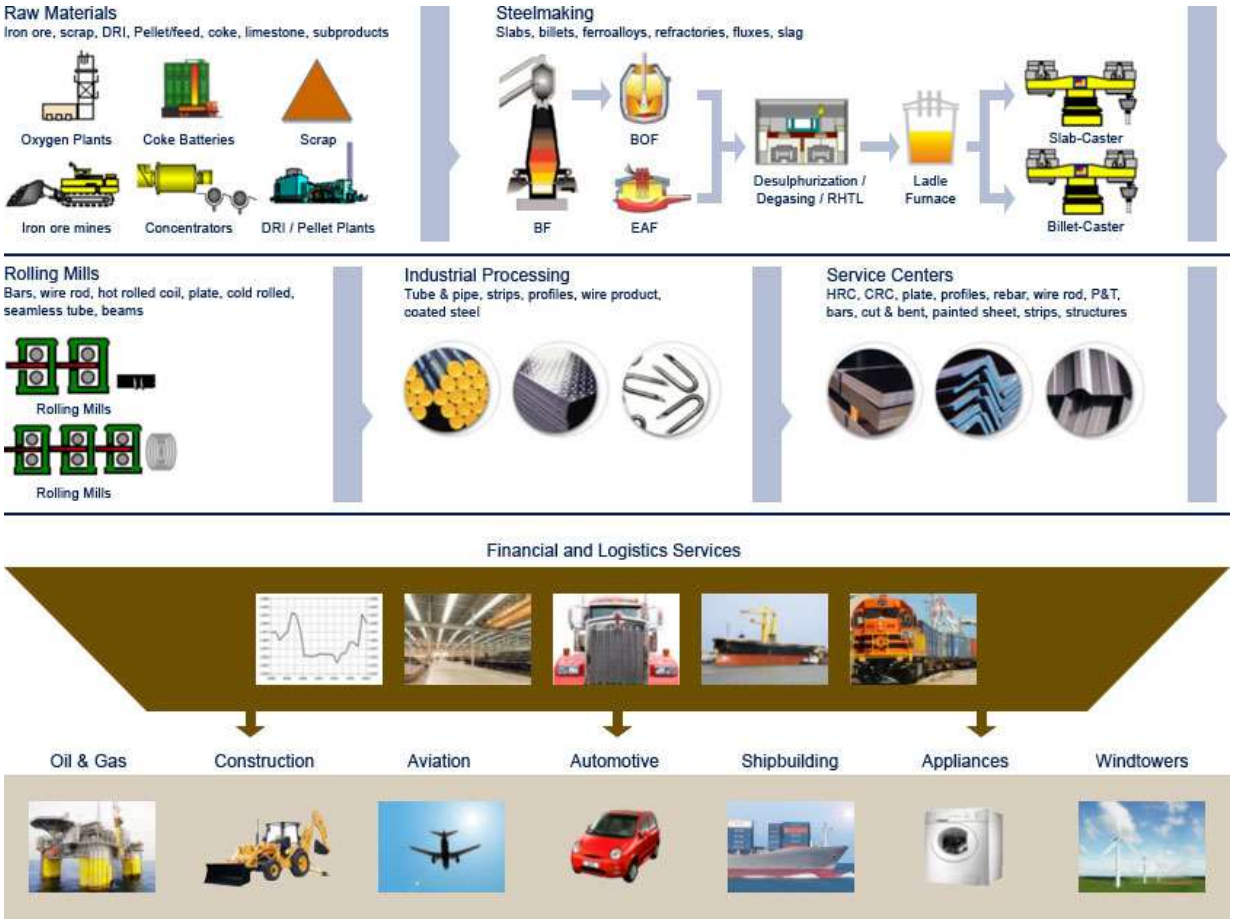
Implementation Schedule

Implementation of Slab Caster: D & B India has considered 6 Months for erection of proposed machinery. Due to the implementation of Slab caster, D & B India considered the lower capacity utilization levels in for the financial year FY 14-15.

Industry Assessment

Steel Industry – Value Chain

Steel Industry value chain is depicted in the exhibit –



Source: D&B India Database

The team D&B India notes that the project as established by BRGIS is an integrated steel plant; hence most of the products proposed to be manufactured by the project will be consumed internally.

The Company will in long run focus on selling the following products in open markets –

- Low Ash Metallurgical Coke
- Power
- TMT Bars and Rods

Balance of the products will be intermediate products (Sponge Iron, PIG Iron, Billets, Ingots); hence the markets for the same have not been covered.

Executive Summary

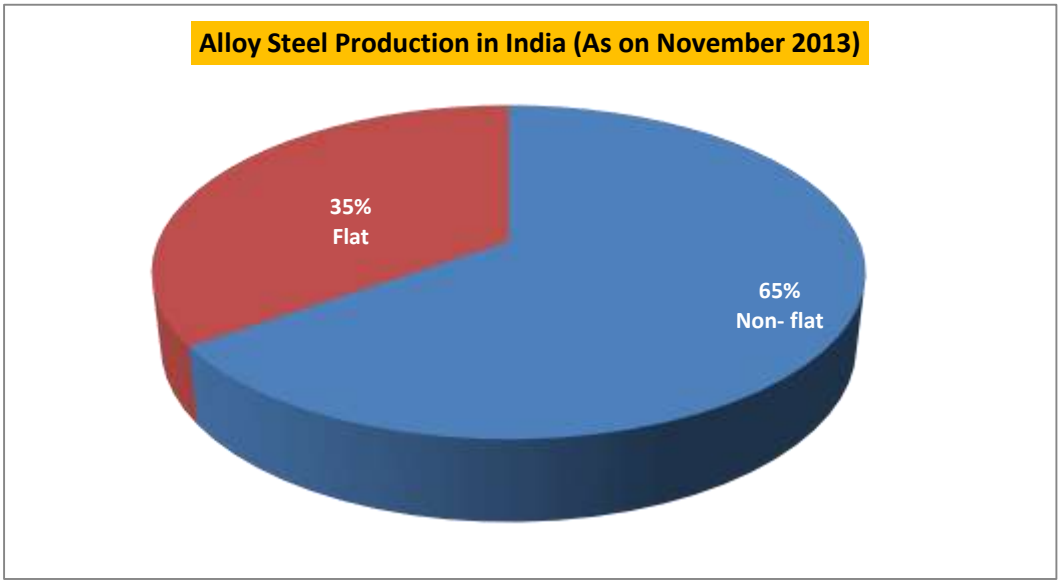
- Steel is one of the most multi-functional and adaptable of materials. It is an alloy of iron, containing small amounts of carbon, manganese, silicon, phosphorus, sulphur and oxygen.
- With ~86.95 Mn Tonnes of production in CY 2013, India is remained the fourth largest producers of crude steel and contributes about 5.1% of the global production.
- The primary production of crude steel as well as finished steel is fairly consolidated where the share of private players has been rising and currently contributes nearly 80% of the total finished steel production. One of the key success factors in this sector is the ability to be integrated across the value chain right from upstream raw material production to downstream manufacture of finished steel products. Consequently, the players are in a better position to pass on raw material price hikes to the end-users.
- India has one of the lowest per capita consumption of steel of around 57 kg as against the world average of 215 kg. Demand for steel is largely driven by growth in the end user industries such as construction and infrastructure, automobiles, packaging and consumer durables.
- Steel consumption grew by a CAGR of 8.8% over the period FY 2009-13 to reach 73.3 Mn Tonnes in FY 2013 while the production grew at a CAGR of 7.9% in the same period and stood at 77.6 Mn Tonnes.
- Domestic steel producers are however threatened by cheap imports from China and also face uncertainties over raw material prices.
- New investment in the steel sector has declined significantly over the period FY 2011-13 on the back procedural delays in obtaining environmental impact assessment clearance, delays in land acquisition mainly due to public protests while setting up steel plants, prolonged interest rate regime and high inflation which has restricted RBI to adopt monetary expansionary policies.
- In the midst of weak operating environment in near to mid-term, D&B estimates the Indian steel demand to grow at muted rate ranging 2.5-3% during FY 2014 and by about 6-7 % during period FY 2013-17 and cross the consumption mark of 90 MTPA by FY 2017.

Product Profile

- Steel is an alloy of iron and carbon, containing less than 2% carbon,1% manganese and small amounts of silicon, phosphorus, sulphur and oxygen.
- Steel is the most important engineering and construction material in the world on account of its functionality and adaptability. Quantity of steel produced annually is 20 times more than the annual production of all non-ferrous metals put together.
- Compared to other materials of its type, steel has low production costs. The energy required for extracting iron from ore is about 25 % of what is needed for extracting aluminum.
- Steel is mainly of two types – alloy and non-alloy (carbon steel). Alloy steel is divided into low alloy steel and high alloy steel where stainless steel is a type of high alloy steel. Alloy steel includes stainless steel and other steel types such as tool steel and heat resistant steel. In November 2013, Non Alloy Steel which includes major finished steel products like bar & rod,

steel structural, railway material, HR Coil & CR Coil, Steel pipes etc. accounted for majority production of about 94% and alloy steel accounted for remaining 6% share.

- Alloy steel is primarily divided into two main categories - flat and long.



Source: Steel world (Monthly Data)

- Stainless Steel is a value added product with high corrosion resistant properties. For steel to have properties generally referred to as "stainless", it must have over 10.5% Chromium content.
- Higher levels of Chromium and additions of other alloy elements (Nickel, Molybdenum, etc.) enhance the corrosion resistance.

The different types of stainless steel are as follows:

Three Distinct Series of Stainless Steel & their composition			
	200 series	**300 series**	**400 series**
Manganese	5.5 - 12%	2% maximum	1% maximum
Nickel	1 - 6%	6 - 22%	0.75% maximum
Chromium	10.5 - 20%	15 - 25%	10.5% minimum
Copper	1.5 - 2.5%	None	None
Iron	Balance	Balance	Balance

Source:D&B India Research

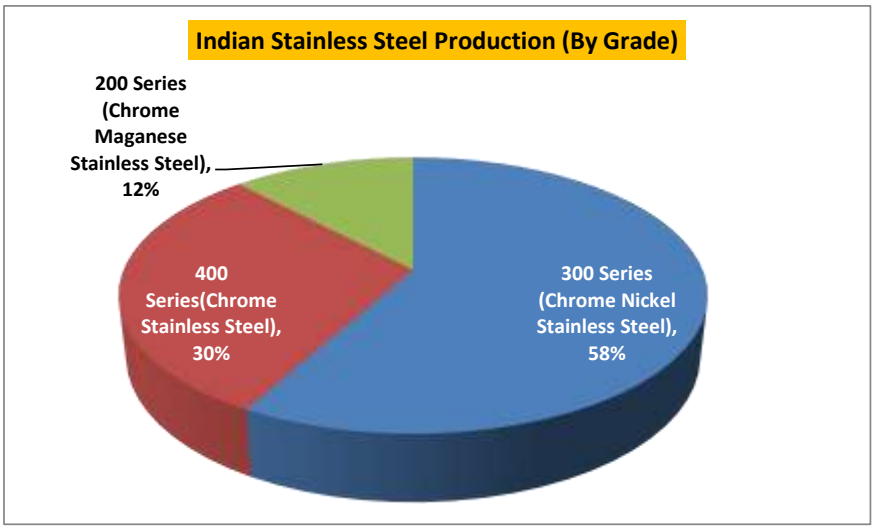
Some of the main applications in which the various types of stainless steel are used are as follows:

Applications of the various series of Stainless Steel			
	200 series	**300 series**	**400 series**
Utensils, Household goods & Kitchen Appliances	☑	☑	
Tubes & Pipes	☑	☑	
Architecture / Decorative	☑	☑	
Automobiles / Railways / Transportation	☑	☑	☑
Oil & Gas Sector		☑	☑
Nuclear Applications		☑	
Pharmaceuticals & Dairy		☑	

Coinage			☑
Power Plants		☑	
Consumer Durables			☑
Blades			☑

Source: Company Annual Report, D&B India Research

- Due to high prices of Nickel there is a move towards low nickel content stainless steel.



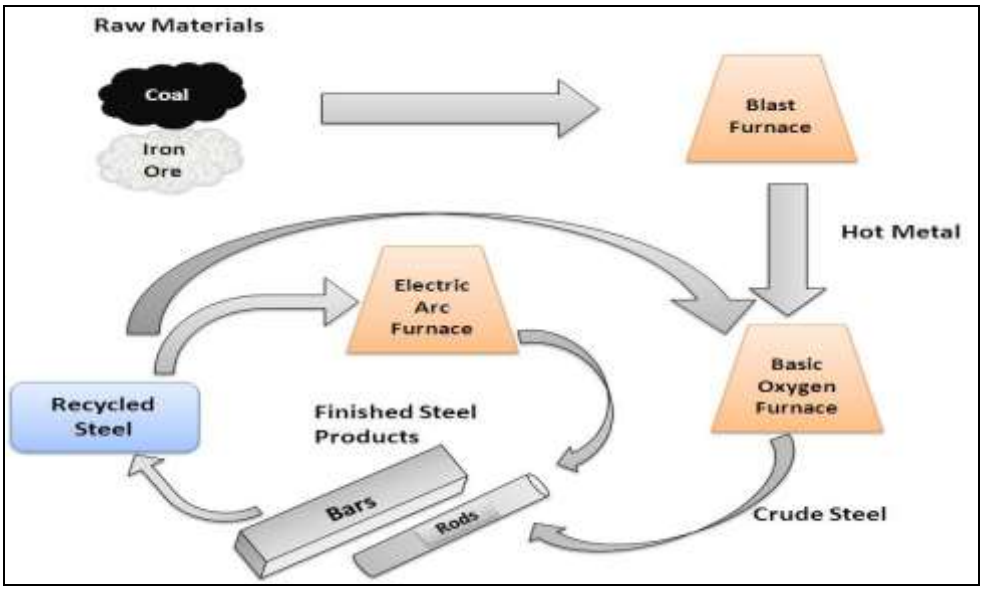
Source: Indian Stainless Steel Development Association (ISSDA)
**indicative of Indian mill production by grades*

- Non-alloy steel is primarily divided into two main categories - flatsteel and long steel. A flat carbon steel product is a plate product or a (hot or cold) rolled strip product. Plate products vary in dimensions from 10 mm to 200 mm and thin flat rolled products from 1 mm to 10 mm.
- Plate products are used in ship building, construction and boiler applications. Thin flat products are used in automotive body panels, domestic white goods products, tin cans and the whole host of other products from office furniture to heart pacemakers. Plates, HR coils and HR Sheet, CR Sheet and CR coils, GP / GC (galvanized plates and coils) pipes, etc. are included in this category.
- A long steel product is a rod or a bar. Typical rod products are the reinforcing rods made from sponge iron for concrete, ingots, billets, engineering products, gears, tools, etc. Wiredrawn products and seamless pipes are also part of the long products group. Bars, rods, structures, railway materials, etc. are included in this category.
- Ferro alloy is the collective term used to define various alloys of iron with compounds including manganese, silicon, chromium, nickel, aluminum etc. Ferro manganese, ferro nickel, ferro chromium and silico manganese are few of the major ferro alloys. Ferro alloy is a vital input in steel manufacturing, where it is used to increase resistance to corrosion, improve hardness & tensile strength and improve wear & abrasion resistance of steel.
- Ferro alloy is classified into two: Bulk ferro alloys and Noble ferro alloys
- Bulk ferro alloys: Ferro-manganese, Silico manganese, Ferro Silicon

- Noble ferro alloys: Ferro-tungsten, Ferro-molybenum, Ferro-boron, Ferro-aluminum, and Ferro-titanium.
- Ferro alloy manufacturing units are spread across the country, but there is a high concentration of units in the states of Andhra Pradesh, Maharashtra, West Bengal, Chhattisgarh and Orissa primarily because of the proximity to the raw materials. These five states together accounts for ~70% of total units present in the country.

Value Chain Analysis for Steel

- An integrated steel plant refers to a large unified facility in which iron ore and other raw materials are converted into crude steel and (using continuous casting) into various finished steel products such as flat rolled steel or plate. Integrated mills differ from mini-mills mainly in terms of scale of operations and end products.



Source: D&B Research

- Steel is manufactured through to the following two processes:
- Conventional method: Blast furnace (BF) and basic oxygen furnace (BOF)
- (Iron ore+ coke + limestone) ==> Blast furnace ==> Basic oxygen furnace ==> (Crude steel)===> continuous caster
- New Method : Electric Arc Furnace (EAF)
- Iron ore pellets ===> DRI +Scrap ===> EAF===> (Crude steel) ===> continuous caster
- BF and BOF method on an average involves the use of 1,400 kg iron ore (use to produce “pig iron” which is one of the major raw materials to produce steel), 770 kg of coal, 150 kg of limestone, and 120 kg of recycled steel to produce a tonne of crude steel while EAF route uses 880 kg of recycled steel or DRI, 150 kg of coal and 43 kg of limestone to produce a tonne of crude steel.

- Sponge Iron/ Direct reduced iron (DRI) is a high quality metallic product produced through removal of oxygen from iron ore and direct reduction of iron and iron ore pellets in the solid state. This causes micro pores in the ore body turning it porous. When examined under a micro scope, the structure resembles a honeycomb (appearing spongy in texture). Hence, the product derived its name - sponge iron.
- Steel manufactured by the DRI process is expensive compared to the normal blast furnace process but it is a lot less polluting and a lot more energy efficient. As sponge iron is created by reducing iron ore without melting it, it is an energy-efficient feedstock

Sponge Iron is produced in mainly two types: Sponge Iron is produced in mainly two types:

Type	Application
Direct Reduced Iron (DRI)	Used as a feedstock in Electric Arc Furnaces (EAFs), blast furnaces, basic oxygen furnaces and foundry furnaces
Hot Briquetted Iron (HBI)	Compacted form of DRI designed for ease of shipping, handling, and storage

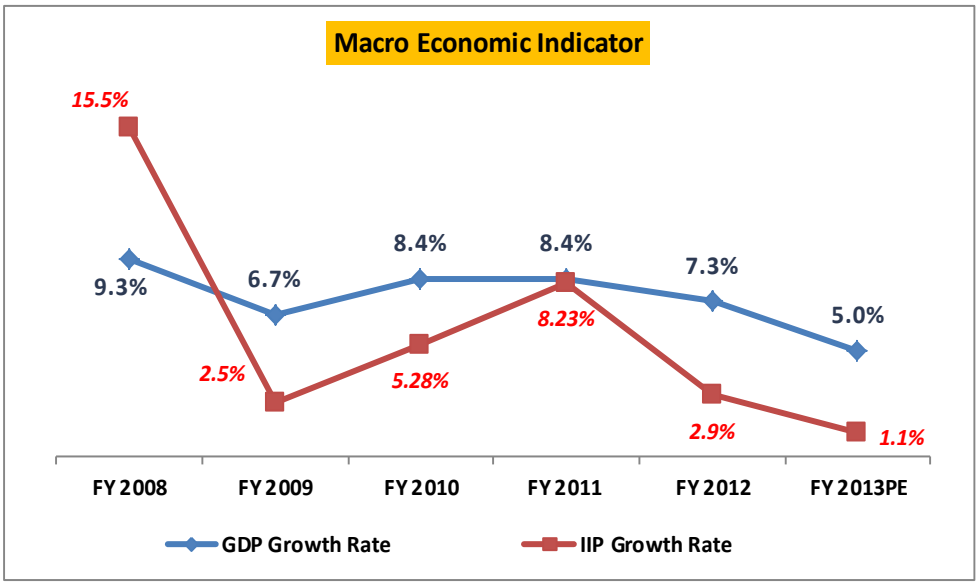
Source : D&B Research

- Direct-reduced iron is richer in iron than pig iron, typically 90-94% total iron as opposed to about 93% for molten pig iron; it allows the steel manufacturer to use lower grades of scrap for the rest of the charge.
- Steel Billets are semi-finished long product of up to 150 mm square cross-section with round corners. Billets can be continuously cast or hot rolled from either ingots or larger concast billets and blooms. They are re-rolled or forged into other forms.
- Iron Ore Pellets are agglomeration of finely ground and concentrated ore (particle size 9.55mm to 16mm). Of the total iron ore production, 56% of iron ore comes out as fines. Since, iron ore in a finely ground state is not easily transported or readily processed therefore fine ground ore are agglomerated into pellet using binders.
- Thus, Pellets with their high, uniform mechanical strength and high abrasive strength increase productivity in blast furnace and reduces coke consumption. It contributes to faster reduction and high metallization rates.

Macro Economic Analysis

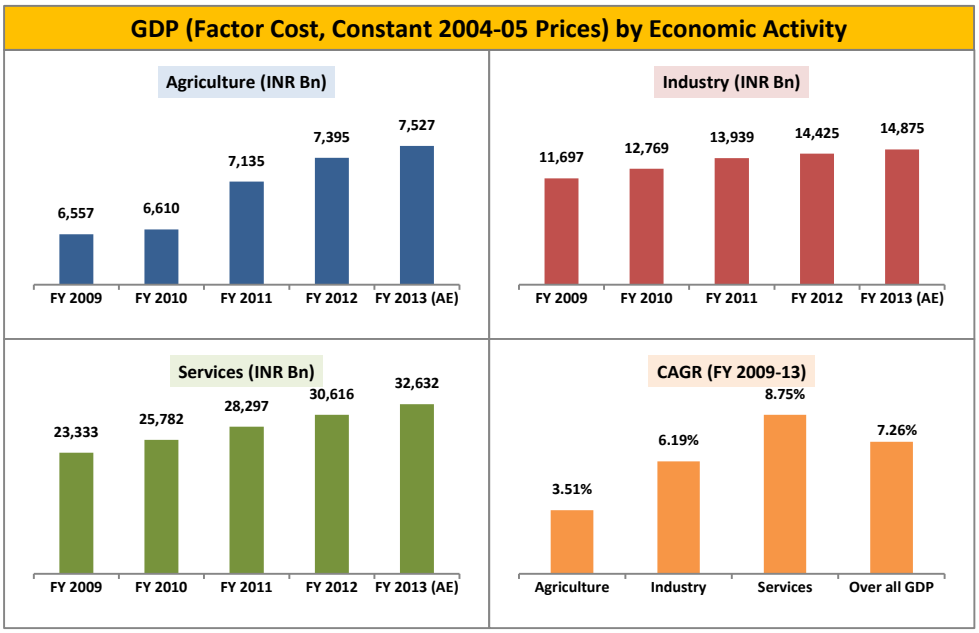
Glance at Key Economic Indicator

- The slowdown in growth which set in during FY 2012 continued in FY 2013. Multiple factors like political uncertainties, persistent inflationary pressures, adverse fiscal situation, and administrative policy paralysis coupled with the influence of subdued external demand decelerated the GDP as well as in IIP growth during last fiscal.



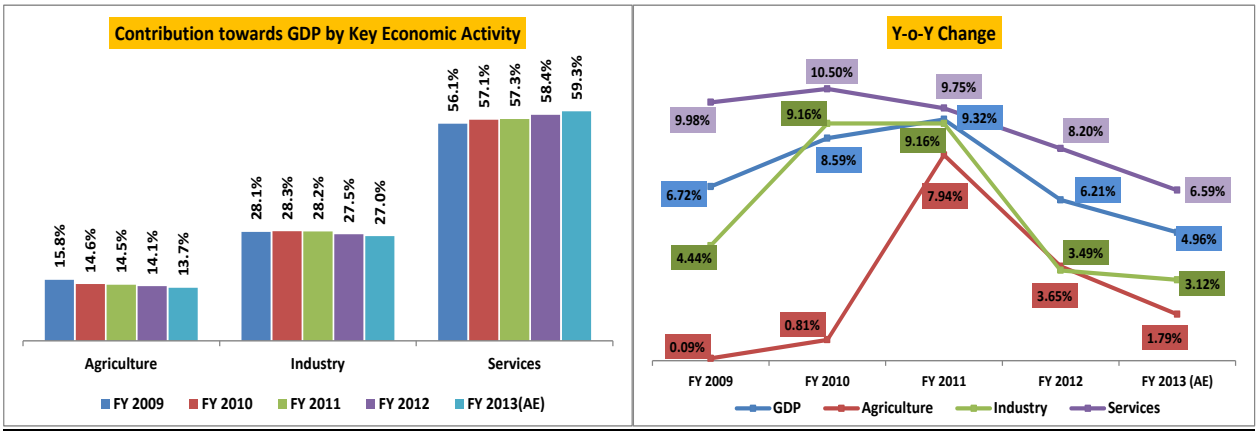
Source: CSO; RBI D&B Estimates, (PE is Provisional Estimates)

- In FY 2013, India's GDP increased by just 4.96% which is a decade low. The GDP growth rate fell sharply on the back of substantial moderation witnessed in the services sector. Economic activity continued to slow during the first quarter of current fiscal (Q1 FY 2014), resulting in a further slowdown in GDP growth. In Q1 FY 2014, country's GDP growth decelerated to four years low as it increased by just 4.4% against a growth of 5.4% recorded during Q1 FY 2013.
- Also for FY 2013, the IIP growth declined to 1.1 % against the 2.9% growth registered in previous fiscal year. India's GDP is estimated to have grown by a CAGR of ~7.3% over the period FY 2009-13 while Index of Industrial Production (IIP) grew at a CAGR of ~4.3% during the same period.
- As per Quick estimates on Index of Industrial Production (IIP), IIP stood at 166.3 in Sep 2013, registering a y-o-y increase of 2%. The IIP growth was driven by growth in consumer non-durable segment, basic & intermediate good segment. During H1:2014, average IIP exhibited an increase of just 0.4% over the corresponding previous fiscal indicating over-all slowdown in domestic economic activity.
- As seen in below chart, the services sector has registered the maximum growth over the period FY 2009-13, followed by the industrial sector and the agriculture sector.



Source: Business Beacon

- In FY 2013, services sectors contribution towards GDP stood at 59.3%, followed by industry (27%) and agriculture (13.7%). Also, the share of services in the GDP of our country is observed to be increasing, while that of agriculture is seen declining over the period FY 2009-13.

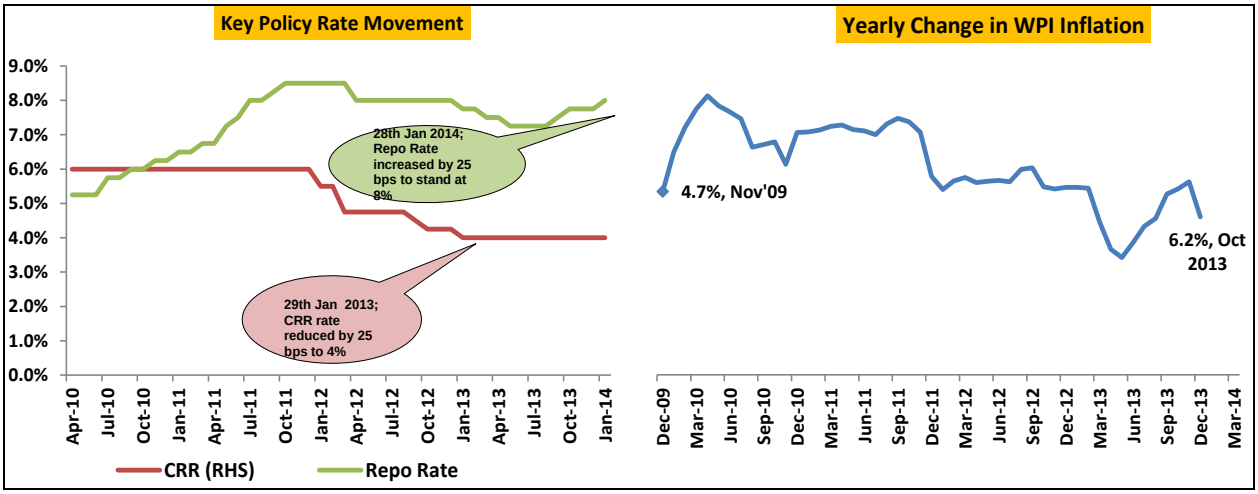


Source: Business Beacon; D&B Research

- The annual growth rate of services sector, industry and agriculture sector declined to 6.59%, 3.12% and 1.79% in FY 2013 as compared to 8.20%, 3.49% and 3.65% respectively, registered in previous fiscal.
- The prevailing uncertainty in the global economic environment like crises in the euro zone, sustained weakness of the US economy, have adversely impacted consumer confidence across the globe and have hurted the consumption, resulting in a slowdown.
- To curb burgeoning inflation, RBI adopted the monetary policy tightening since February 2010. RBI kept on increasing the repo rate (rate at which RBI lend money to commercial banks) which saw last hike of 25 basis points on 25th October 2011 to reach 8.5%. High interest scenario has severely impacted the new investment and business confidence amongst the investor in

domestic economy. As a result, the industry players have been demanding the interest rate cut to revive the investment in order to bring the economy back to a high growth trajectory.

- Cash Reserve Ratio (CRR) which was maintained at level of 6% during April 2010 to Dec 2011, was slashed by 50 basis points to 5.5% on Jan 24, 2012. Since March 2012, CRR has been reduced four times (each time by 25 basis points) in order to infuse the primary liquidity in banking system and supports the GDP growth. With last 25 basis points cut on 29th Jan 2013, the CRR currently stands at 4.0% and it remained unchanged in latest policy review.

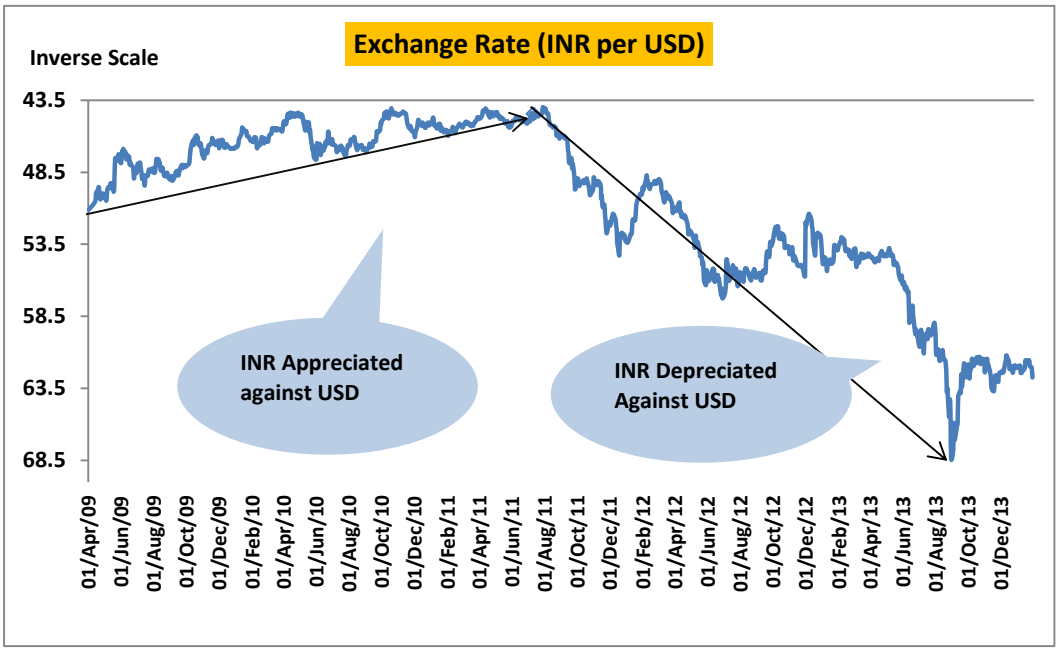


Source: Office of the Economic Advisor; RBI

- On April 17th 2012, RBI slashed the repo by 50 basis points for the first time in three years even though the inflation rate remains elevated in order to boost sluggish economic growth. Easing of WPI Inflation which come down below 5% for the first time after a gap of about 40 months in April 2013 largely on the back of weak domestic demand and lower global commodity prices provided room for repo rate cut. Therefore, since January 2013, RBI has cut the repo rate thrice each time by 25 basis points, latest cut made on 3rd May, 2013. However, with revival of the inflationary pressure as a result of unfavourable monsoon, RBI has again hiked the repo rate by 25 bps thrice since September 2013 with latest cut being made at 28th Jan 2014. CRR rate however was left untouched. This increase in interest rate is likely to result in raising up the interest cost for corporate and impact the investment flow in the sector.

Foreign Exchange Fluctuations

- Since, India continued to remain a net importer of finished steel during period FY 2009-13, the forex market remained unfavourable (with the USD gaining strength against the INR) for the industry in FY 2013 & YTD FY 2014



Source: Ministry of Finance, Government of India

- Average rupee against USD depreciated by more than 12% in FY 2013 and has been exhibiting a steady decline during YTD FY 2014. Rupee closed at a historically low of 68.39 on 30 August 2013. This decline in Rupee vis-à-vis U.S Dollar has made imports expensive. A high proportion of raw materials used are imported exposing the sector to currency risks. Thus the sector incurs a high raw material cost. With the demand for steel declining, the pace of growth in revenue has slowed down. The slow growth in revenue along with high raw material cost have proved detrimental to the steel sector.

Government Regulations

Iron and steel industry plays a strategic position in the overall infrastructure industry. Therefore, Government has been taking sustained initiative on yearly basis towards the development of the industry. This includes several initiatives such as

- 100% FDI under automatic route is allowed in Mining and Exploration of both metal and non-metal and in coal and lignite mining for captive consumption by steel Companies.
- In Union Budget 2013-14, the plan outlay to Ministry of Steel was increased by 20% to ~INR 197.31 Bn. Increased allocation would benefit the domestic steel production capacity.
- The existing basic customs duty on most of finished steel products in India is fixed at ~5%-7.5%. In previous union budget, excise duty on stainless steel was increased from 10% to 12% in FY 2012 which remain unchanged in FY 2013. In Union Budget 2012-13, the basic custom duty on stainless steel ingots and other primary form (HS CODE 7218,) as well as stainless steel product (HS Code 7219) was increased from 2.5% to 5% which while countervailing duty (CVD) was hiked to 12% from 10% earlier. This remained unchanged during the following budget in FY 2013-14.

- The basic custom duty on iron ores and nickel oxide which are used in making stainless steel and alloy steel remained unchanged at 2.5% for FY 2014.
- In May 2012, the Government also advised Coal India Limited to sign fuel supply agreements (FSA) with thermal power plants, which have long-term power purchase agreements (PPAs) with DISCOM and have commissioned between 1.4.2009 and 31.12.2011. Ministry of Coal has also directed CIL to consider supply of coal as per Annual Contracted Quantity (ACQ). Under ACQ, assured coal supply of 80% is required to be made for new power plant which have been commissioned and/or would get commissioned between 1.4.2009 and 31.3.2015. The move aims to ensure supply of raw material, coal to these power plants which are essential for smooth working of steel plant too.
- In order to preserve iron ore resources (which a key input for the steel making) for domestic use on cheaper rates, export duty on iron ore has been increased w.e.f. 30.12.2011 to 30% ad valorem on all varieties of iron ore (except pellets). This is likely to augur the iron ore resources availability for domestic steel manufacturing industry at cheaper rate.
- Recently, the Government lifted the ban on 84 iron ore mines classified under as A and B and which is likely to ease the iron ore supply situation which is a key input for the steel production.
- In June 2012, the industry players have sought Government to impose anti-dumping duty on cheap import of stainless steel from China to safeguard the interest of domestic players.
- Also, Chrome is used in steel manufacturing and therefore export duty on chrome ore and concentrates has been enhanced to 30% ad valorem w.e.f. 17th March 2012.
- Basic Customs Duty on the plants and equipment's required for initial setting up or substantial expansion of iron ore pellets plants and iron ore beneficiation plants has been reduced from 7.5/5% to 2.5% i.e. 17th March 2012. This is likely to encourage more corporates foraying in setting up of beneficiation and pelletisation of iron ore fines in the country,
- In the first year annual plan of 12th Five Year Plan (2012- 17) i.e during 2012-13, two new schemes i.e. scheme for promotion of beneficiation & agglomeration of low grade iron ore & ore fines and Scheme for improving energy efficiency of secondary steel sector have been included with budgetary provision of ~INR 10Mn each for pursuing research activities in Iron & Steel sector.
- The R&D investment in Indian steel sector is very low when compared with other advanced countries. It varies in the range 0.15-0.25% of the sales turnover of Companies as against 1-2% in the steel plants in advanced countries
- Therefore, the Government approved a new steel development fund program called "Scheme for promotion of Research and Development in Iron & Steel Sector" during the 11th five year plan with a budgetary provision of ~INR 1.18 Bn with an objective to develop an environment friendly technology for the sector.
- Under the **Plan Fund R & D Scheme**, eight R&D projects has been approved in different areas in iron and steel sector with particular emphasis on utilization of low grade resources by

developing suitable upgradation techniques whereas under the **Steel Development Fund scheme**, so far 73 R&D projects have been approved in different areas of basic and applied research in iron and steel sector.

- In the Annual Plan (2013-14), which is the second year of 12th, Five Year Plan (2012-17) INR 12.00 Crores has been earmarked for existing projects. One new component under the existing R&D scheme i.e. Development of Technology for Cold Rolled Grain Oriented (CRGO) Steel Sheets and other value added innovative steel products has been included with budgetary provision of INR 32.00 crores and new projects under the existing scheme on Development of innovative iron/steel making Process Technology has been included with budgetary provision of INR 2.00 crores.

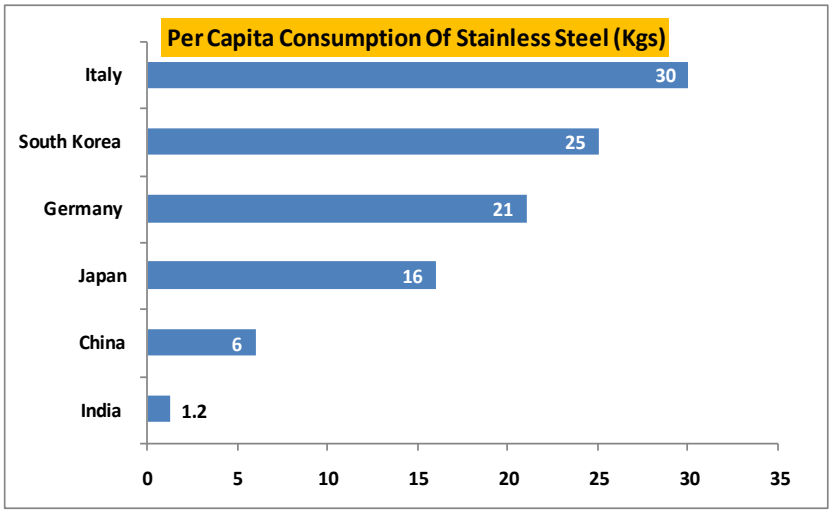
Initiative to Promote Integrated Steel Plant (ISP):

- Government of India has taken several initiatives to promote the setting-up of the integrated steel plant. Since FY 1992, Government has introduced Prime Minister's Trophy for excellence in performance of ISP with a cash reward of INR 1 Cr which spur major producers to achieve international standards of efficiency, quality and economy in their operations. The cash reward was further doubled to INR 2 Crs in FY 2006-07 along with the introduction of runner up award of INR 1 Cr in FY 2006-07. Vizag Steel Plant, RINL; Bhilai Steel Plant, SAIL; Tata Steel Limited; and JSW Steel Limited are key award winning plant operating in India.
- As per Ministry of Steel, steel plants to be eligible for participation in Prime Minister's Trophy should be an integrated steel plants which involves operation starting from iron ore, virgin or processed, in one location, having minimum production capacity of 1 Mn MT of crude/cast steel per year. Producing steel irrespective of any route, to national or international specifications and having completed commercial operation for at least two years.

Demand Supply Dynamics

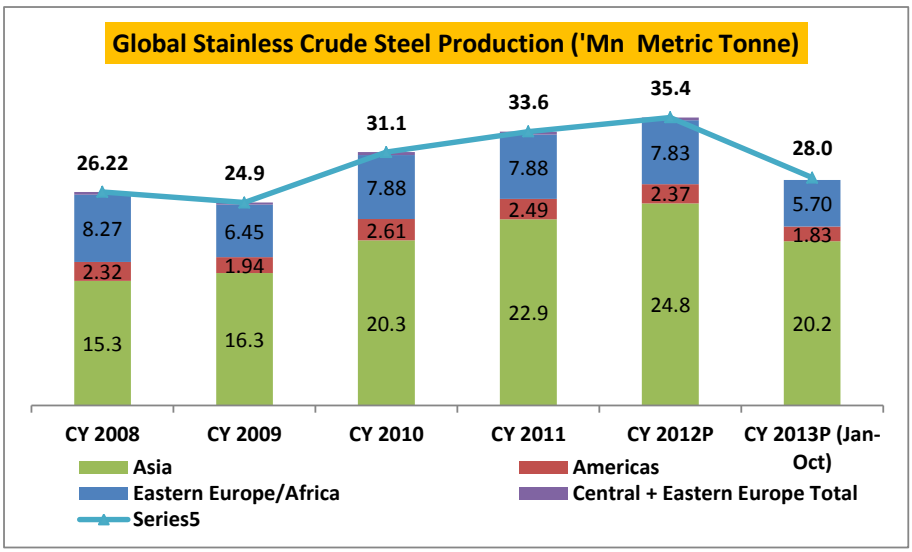
Global Production Trend

As per International Stainless Steel Forum (ISSF), India is one of the lowest per capita consumer of stainless steel in the world with a per capita consumption at 1.2-1.5 kgs far below the global average of 9.4kgs.



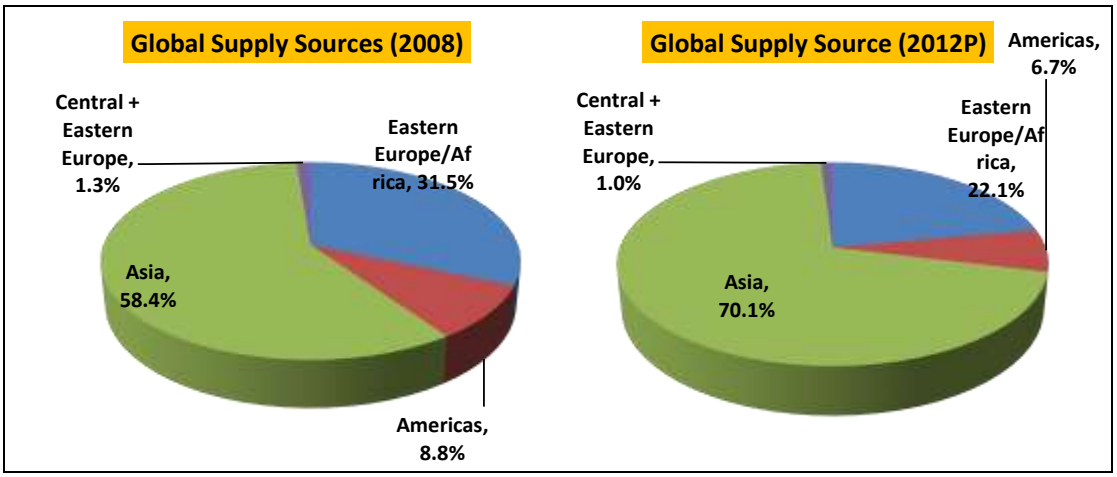
Source: *Indicative per capita consumption, D & B research

- As per ISSF, the global stainlesss steel consumption index for all steel products have improved from about 186 in October 2012 to about 192 in October 2013.



Source: International Stainless Steel Forum (ISSF), D&B Research,
Note: 2013 figure are prelimary and 2012 are provisional.

- There world stainless steel production is estimated to have grown at a CAGR of 7.8% during period FY 2008-12. With timid demand outlook, annual growth rate of world stainless steel production is exhibited a slowing trend y-o-y with 24.9% in FY 2010, slowing to 8.1% in FY 2011 and further to 5.2% in FY 2012.

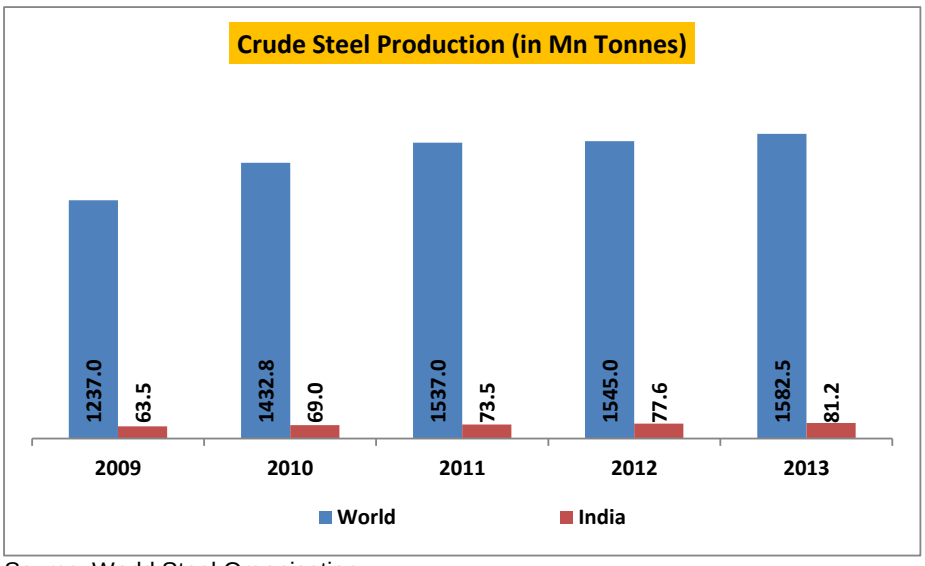


Source: International Stainless Steel Forum (ISSF), D&B Research

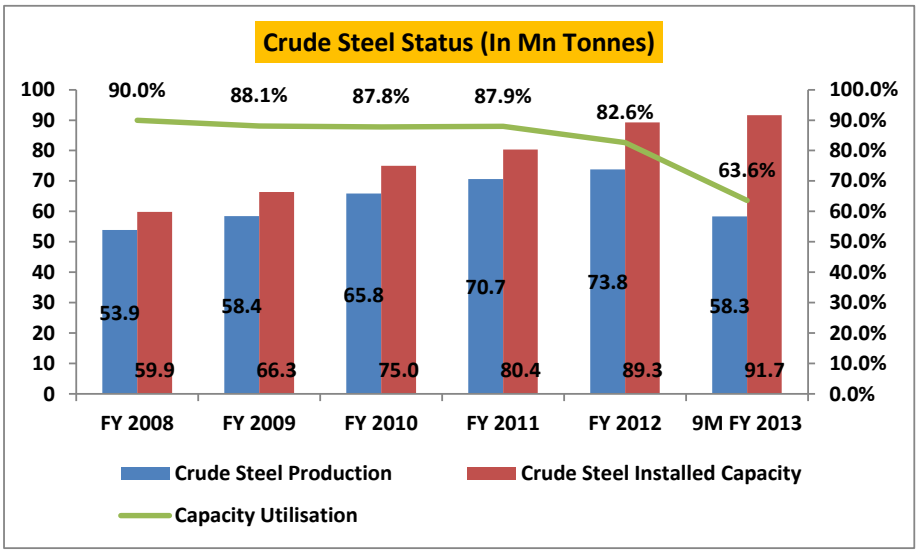
- Share of Asian countries in the total world production of stainless steel has grown impressively from 58.7% in FY 2008 to 70.1% in FY 2012. China's share in asian steel production has increased from 45.4% in 2008 to 67.8% in during Jan-Oct 2013 while its share in global steel procduction grew from 26.5% to 48.9% over the same period.

Domestic Market

- India with share of 5.1% in global crude steel production, continued to remain the 4th largest producer of the crude steel during FY 2013. The global crude steel production stood at 1,582.5 Mn Tones and has grown at CAGR of 6.4% during period FY 2009-13. India crude steel production grew by a CAGR of 6.3% during period FY 2009-13.

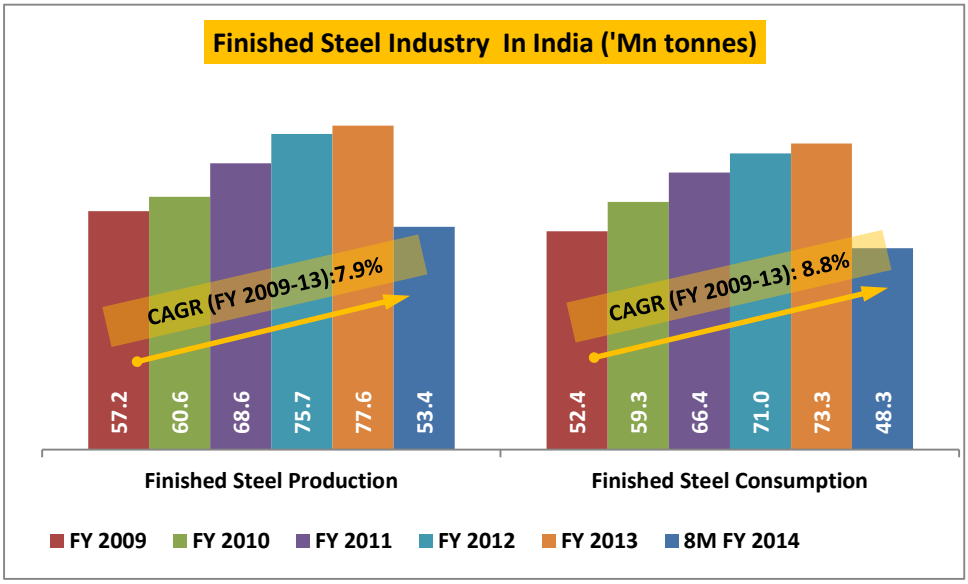


Source: World Steel Organisation



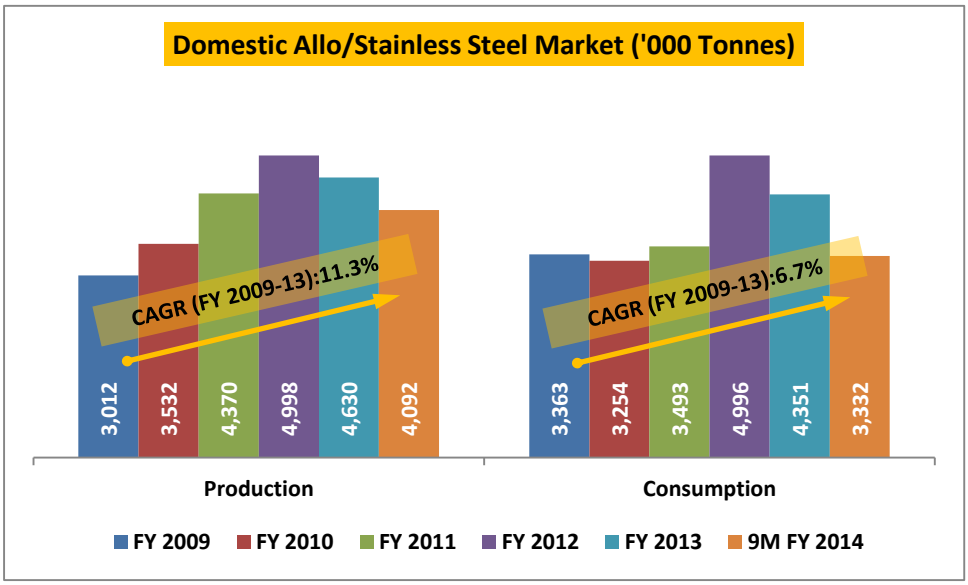
Source: Ministry of Steel, Annual Report 2013

- As per Ministry Of Steel, India's crude steel production grew by a CAGR of 8.2% during period FY 2008-12 whereas the aggregate installed capacity grew by a CAGR of 10.5% over the same period. As a result of timid economic growth, country's steel consumption has slowed down in the country translating into declining capacity utilization during FY 2012 and 9M FY 2013 over the previous years. As per recent industry estimates, India's current steel production capacity is estimated at 96 MN Tonnes per annum.



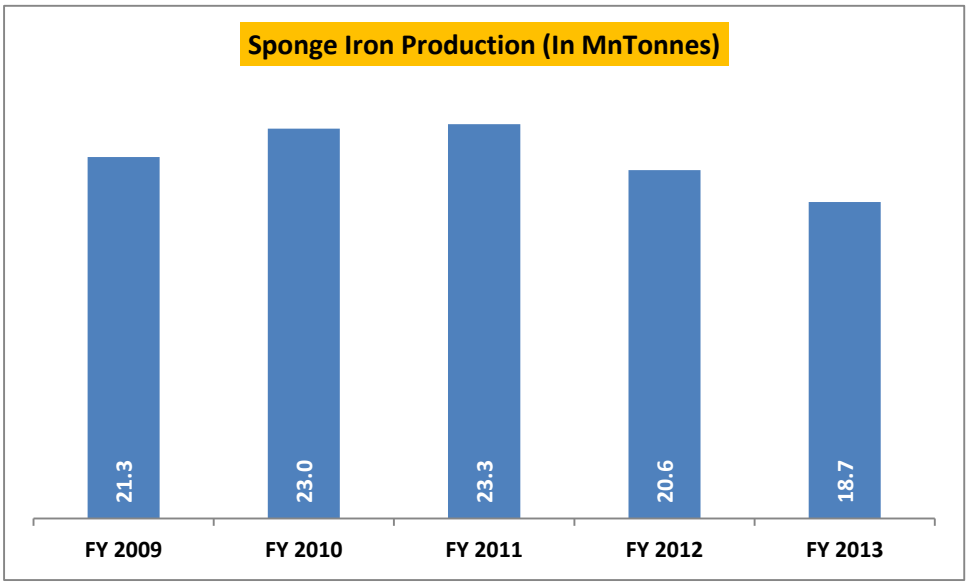
Source: CMIE IAS

- During period FY 2009-13, production and consumption of finished steel has clocked a CAGR of 7.9% and 8.8% respectively.



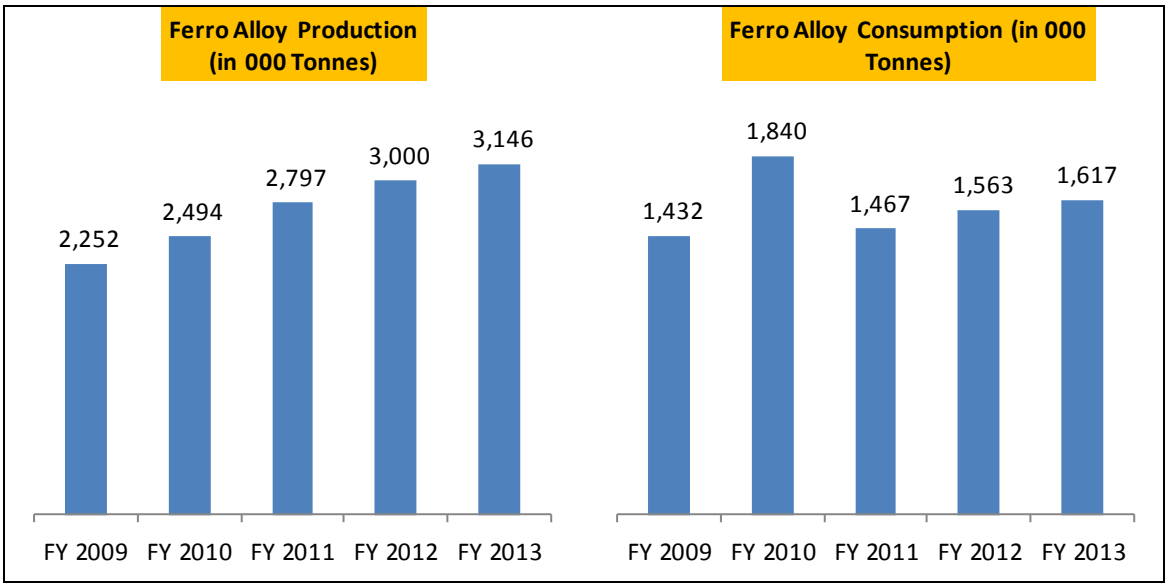
Source: CMIE IAS

- The production of the alloy steel grew at a CAGR of ~11.3% over the period FY 2009-13, while the consumption increased at a CAGR of ~6.7% over the same period.



Source: CMIE, IAS

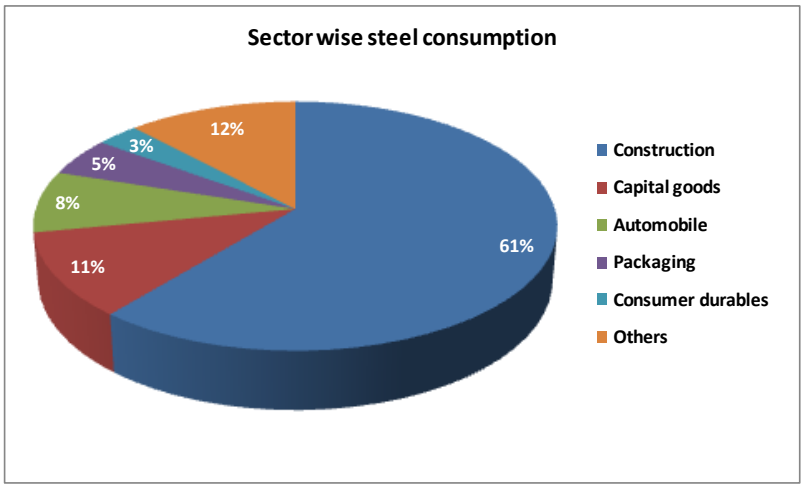
- Sponge iron production has experienced a negative compounded annual growth of 3% during the period FY 2009-13
- Production of ferro alloys in the country increased by a CAGR of ~9% during period FY 2009-13 to reach ~3,146 thousand tonnes. Bulk ferro alloys for the major portion of total ferro alloy production while noble ferro alloys accounted for less than 1%. Annual consumption of ferro alloy increased by a CAGR of ~3% during period FY 2009-13 to reach ~1,617 thousand tonnes.



Source: D&B Research

Demand Drivers

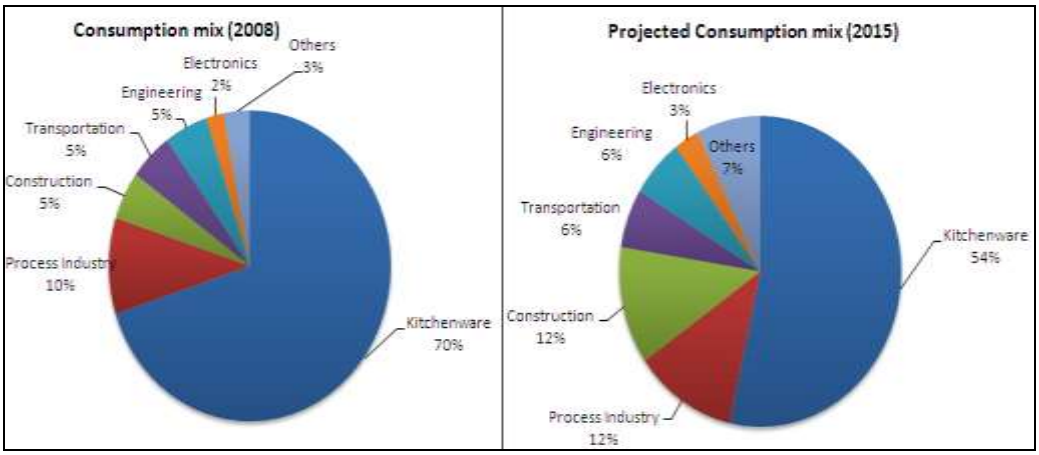
- Demand for crude and finished steel is driven by the growth in the end user sectors mainly construction, infrastructure, manufacturing and automobile. Despite the strong growth, per capita consumption of steel in the country is only around 57 kg as against the world average of 215 kg. The per capita consumption in semi-urban and rural sector is low as compared to the urban area which shows the growth opportunities for the industry within the country.



Source: Industry Sources, D&B Research

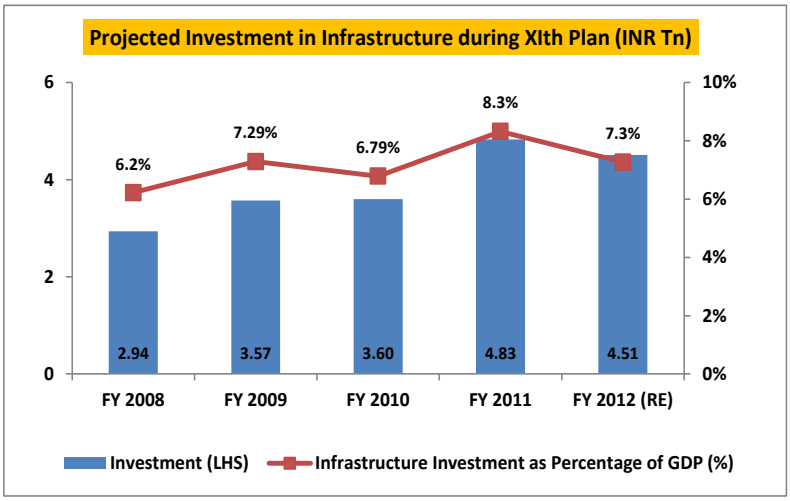
- The growth of stainless steel in India has been mainly driven by the booming kitchenware consumption, construction, infrastructure, manufacturing and automobile. Stainless steel has a wide application in used consumer goods item and home appliances. The usage of stainless steel has been expanding in construction and transportation sector.
- Government of India has permitted the usage of stainless steel in manufacturing of gas cylinders. The growth in end user industries would boost the demand of stainless steel.

- Major end-users of stainless steel in India are as follows:

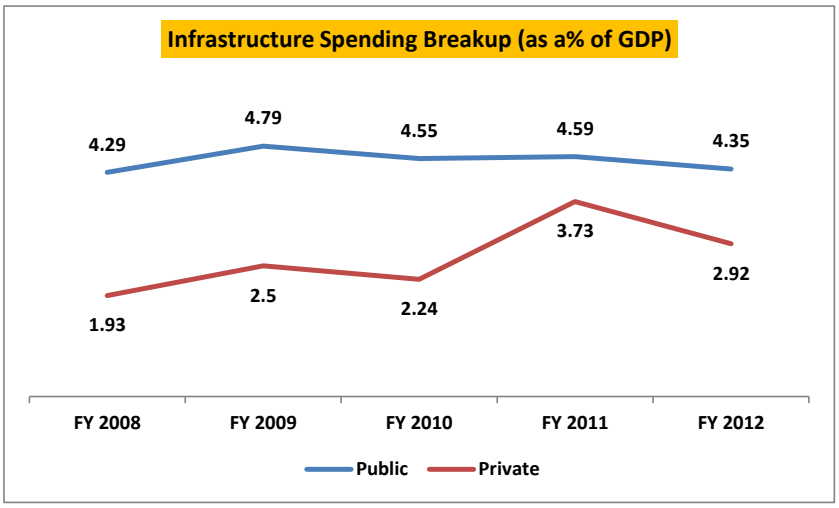


Source: Indian Stainless Steel Development Association (ISSDA)

- Steel sector share a strong linkages with the infrastructure spending which has increased by a CAGR of about 11% over the 11th plan period.

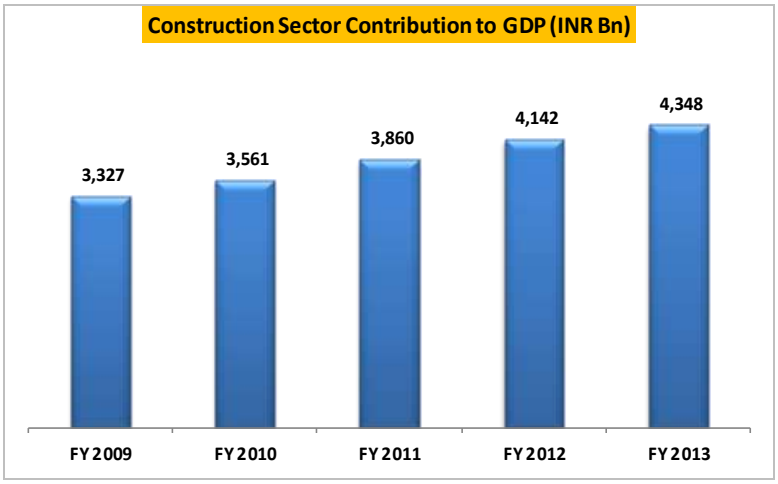


Sources: Interim Report of Infrastructure Finance



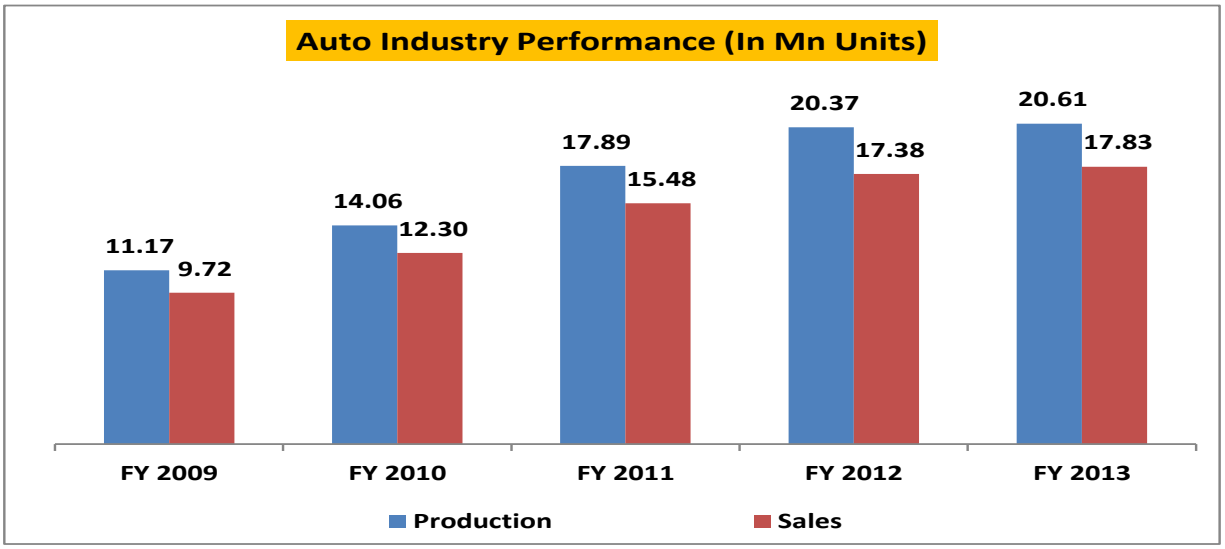
Sources: Interim Report of Infrastructure Finance

- Public and private investment ratio during 10th plan was 80:20. The ratio increased to 70:30 in 11th plan. The 12th plan envisages this ratio to be 50:50. Growing preference signifies the rising investment potential of the private sector in the infrastructural development.
- During the Twelfth Plan period (period FY 2012-17), the Government envisages infrastructure investment about ~INR 50 trillion up from ~INR 20.5 Trillion envisaged during the 11th plan period. About half of this is expected to come from the private sector.



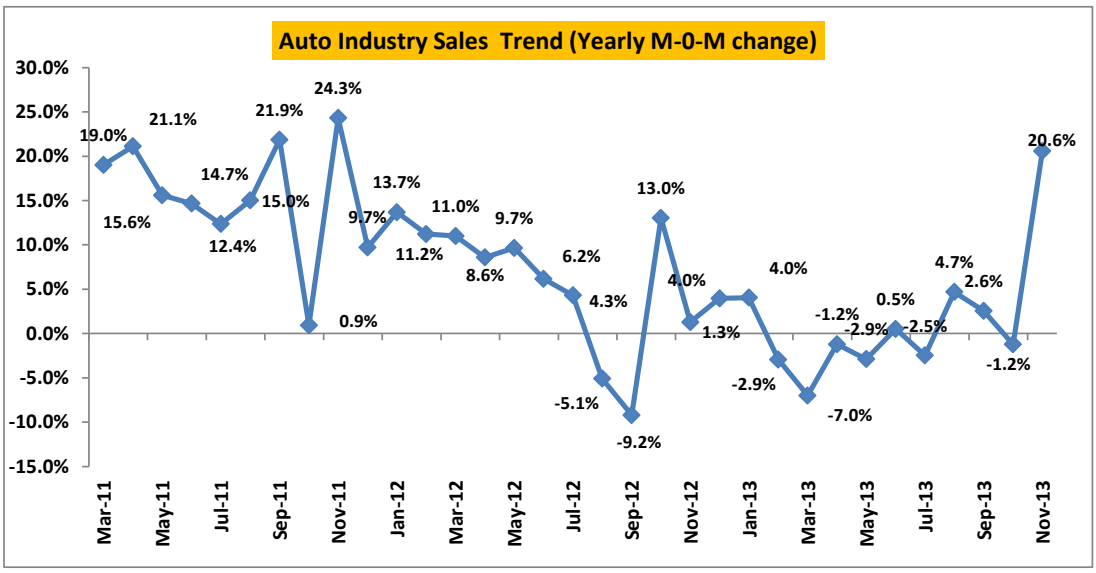
- Contribution of construction sector to GDP[1] increased by a CAGR of ~7% during period FY 2009-13 to reach ~INR 4,348 Bn. Although the share of construction sector contribution to GDP has remained at 8% the y-o-y growth slowed down to 5% in FY 2013 from average y-o-y growth of 7% during the period FY 2009-12. The growth was muted due to external factors such as policy uncertainty, high interest rate, slowdown in liquidity delays in project execution and drop in consumer demand (for residential and commercial building units). Slowdown in infrastructure as well as residential and commercial real estate project is expected to impact steel consumption growth in next two to three year.

[1] *Source:* Planning Commission, D&B Research



Sources: SIAM

- During period FY 2009-13, auto production and sales grew at CAGR of about 16%. Growth in domestic auto industry and demand from export market led to the growth of auto electrical component industry.
- However, the industry has observed a sharp fluctuation amidst ongoing economic slowdown. The monthly sales volume remained weak in during FY 2013 and YTD FY 2014 on the back of rising interest rate, expensive loan and high fuel prices. On annual basis, the sales declined by 2.6% and taking a cue of weak demand vehicles production too declined by 1.2% during FY 2013.

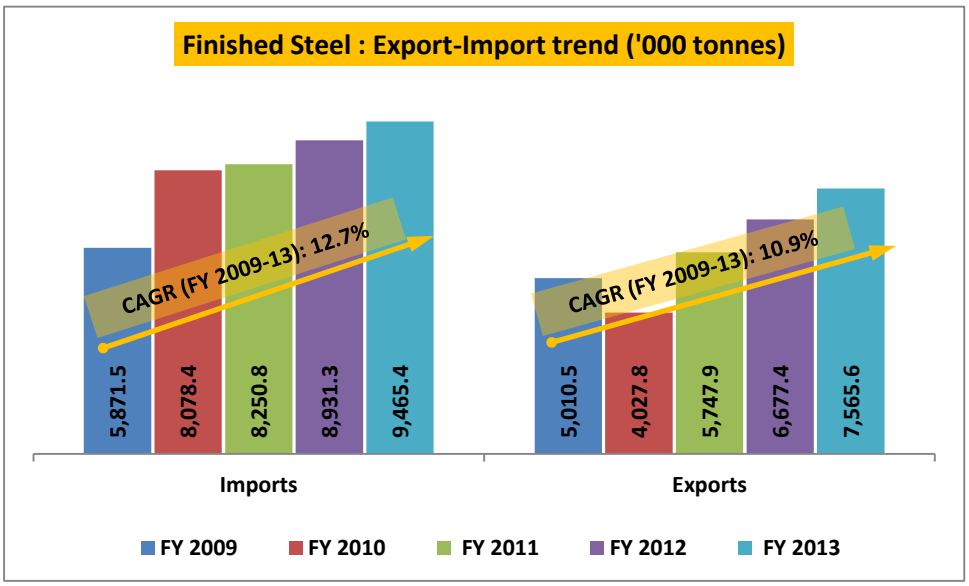


Sources: CMIE IAS

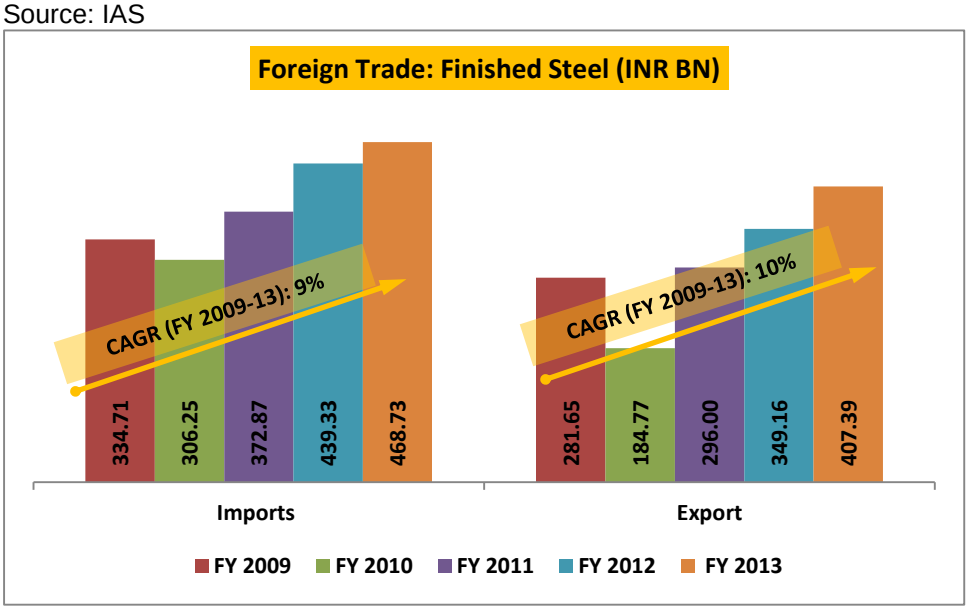
- Thus, industry is expected to experience declining sales during FY 2014 which is likely to have a direct impact on the demand for steel consumption.

- Impacted by various externalities such as weak business outlook, exchange rate movement, input prices volatilities, regulatory issues, interest rate etc. industry faces significant challenges in near to medium terms and expected to see a muted consumption growth.

Export–Import Trend



Source: IAS

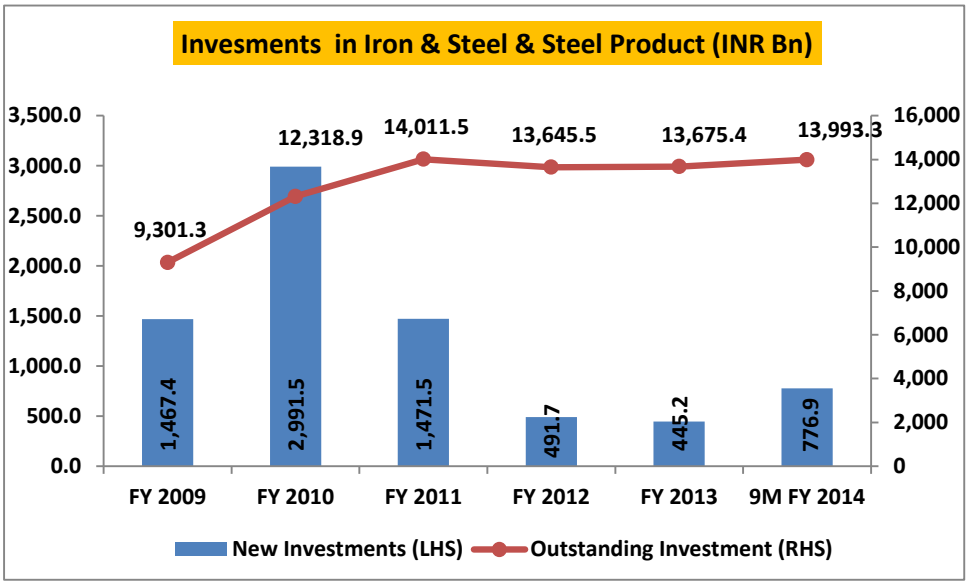


Source: IAS

- India continued to remain a net importer of various finished steel products both by volume and value terms.
- In FY 2013, South Korea with over 19% share in total import of finished steel stood as the major import source for India. Other countries from where India mainly imports the finished steel products include like Japan, China, Russia and Germany.

- UAE is the major export destination for India's finished steel products followed by Italy, USA, Belgium, South Korea, China, and Japan with the combine share of 35% in country's total finished steel exports in FY 2013.
- In FY2013, more than 40% of India's finished steel was imported in the form of HOT Rolled coils while the pipe and tubes accounted for highest share of about 29.3% in India total finished steel imports and were closely followed by Galvanized Sheets (27.5%) and HR Coils (27.2%).

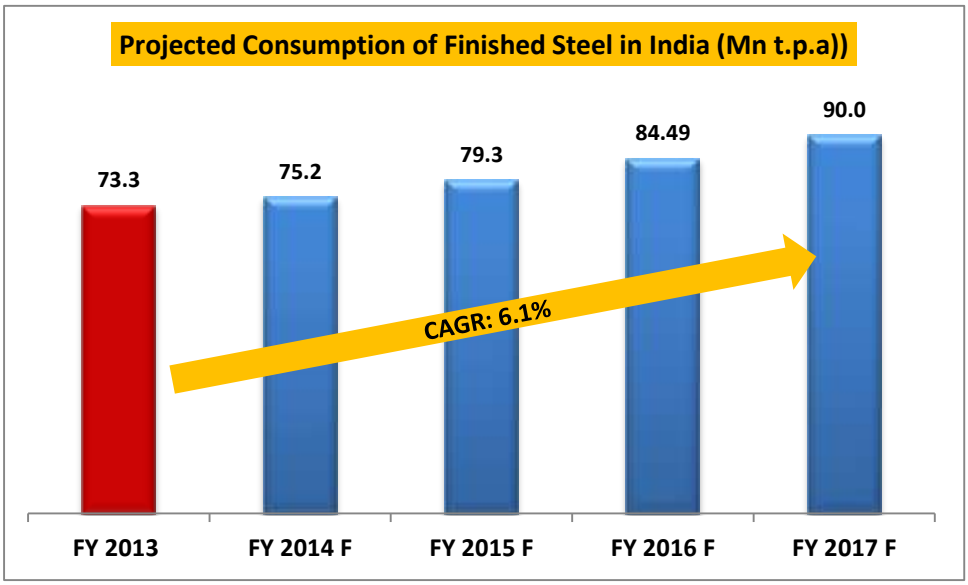
Capital Expenditure



Source: CMIE Capex

- Capacity expansion activity in the steel sector is facing a hurdle as there are procedural delays in obtaining environmental impact assessment clearance and delays in land acquisition mainly due to public protests while setting up steel plants.
- Total outstanding investments at the end of FY 2013 were around INR 13,675.4 Bn spread across 369 projects. Forty new projects worth ~INR 445.2 Bn were announced during FY 2013.
- Some of the latest development in the industry:
- South Korean Steel Major Posco and Uttam Galva are in conversation to set up a facility having a production capacity of 3MTP in Maharashtra with proposed investment of ~INR 160 Bn.
- Jindal Steel and Power Ltd. (JSPL) are considering investment of ~INR 230 Bn in next three years i.e. by FY 2015 toward expansion of its production capacity to 14 Mn Tonnes. Of this, about ~INR 140 Bn will be invested on JSPL's upcoming 6 million tonne (MT) steel plant. The Company has plans to commission the first phase of the plant, having 1.8 MT capacities, in the next quarter, while rest of the units will get operational by FY 2015.

Projected Steel Consumption



Source: D&B India Research

- India is fourth largest producer of steel in the world and is likely to achieve the second position by the year 2015-16 as projected by the Ministry of Steel. In additIon, India is the largest DRI (Direct Reduced Iron) producer globally.
- D&B estimate the subdued annual demand growth of 2.5-3% for steel in FY 2014 as some of the key end users such as construction and automobiles are witnessing a sluggish growth on account of unfavorable operating environment.
- With current sluggish growth in steel consumption, country is likely to miss the target envisaged by Ministry of Steel of achieving expected steel demand touching 113 Mn tonnes by end of FY 2017.
- D&B domestic steel consumption is likely to expand at a CAGR of ~ 6%-7% over the period FY 2013-2017 to touch ~90 to 93 Mn Tonne. This aniticipated increase in demand will be supported by the Government`s continued focus to boost the infrastructure sector.

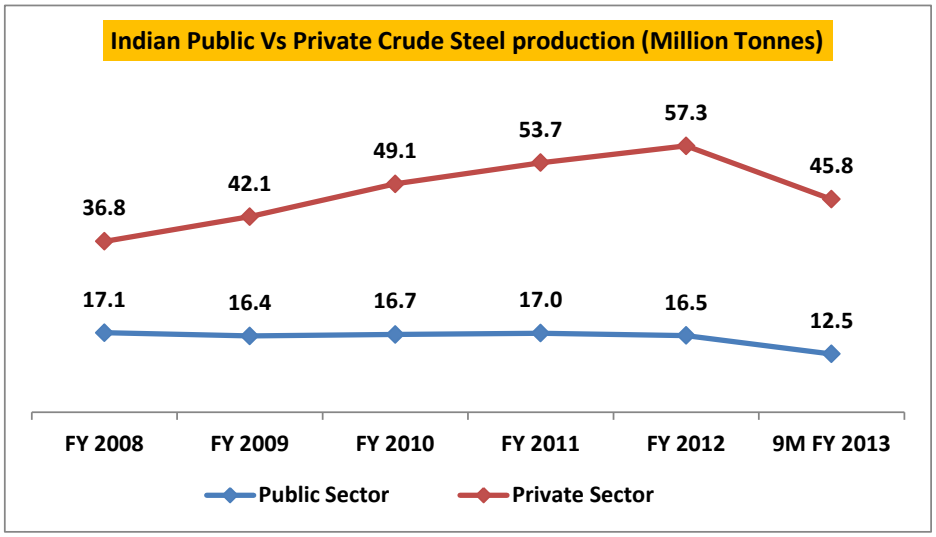
Competitive Scenario

Nature of Industry

- The steel industry is highly consolidated globally as well as in India. India has maintained its numero uno position of being largest producer of sponge iron since FY 2002. Several favorable factors like easy availability of key raw materials, low labor wage rates, abundance of quality manpower, etc have given India a competitive advantage vis-à-vis other nations.
- Bestowed with the abundant availability of iron ore in the country with states such as Orissa, Jharkhand and Chhattisgarh being rich in iron ore reserves, India possess well established facilities for the production of steel.
- The Indian steel industry is fairly consolidated. One of the key success factors in this sector is the ability to be integrated across the value chain right from upstream raw material production

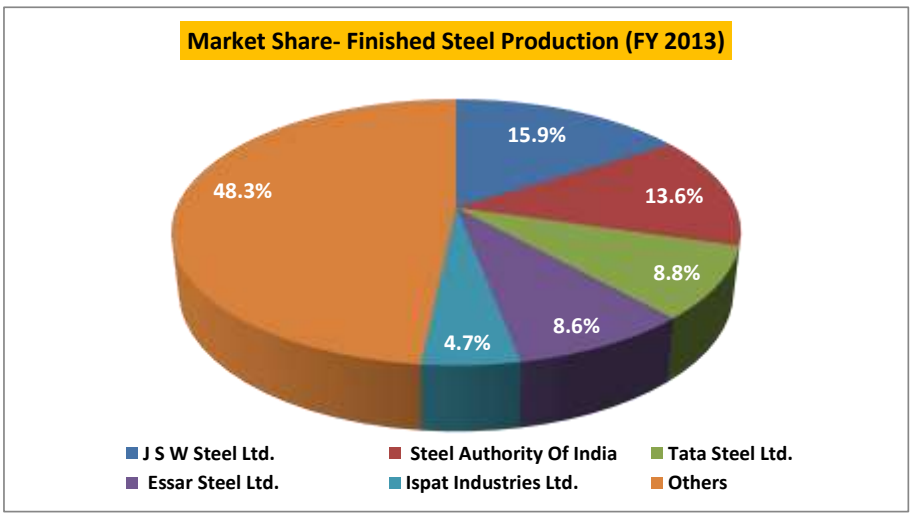
(nickel, ferro chrome) to downstream manufacture of finished steel products. Consequently, the players are in a better position to pass on raw material price hikes to the end-users.

- Indian steel industry is integrated with the global steel industry and involves active participation by the private sector. According to Joint Plant Committee (JPC) data for 9M FY2013, private sector accounted for ~78.6% share in the total finished steel production. The share of private sector in crude steel production has grown from 68.3% in FY 2008 to ~77.7% in FY 2012, registering a compounded annual growth of ~11.7% for the period FY 2008-12 while the public sector production has declined at CAGR of 0.9%.



Sources: JPC, Ministry of Steel

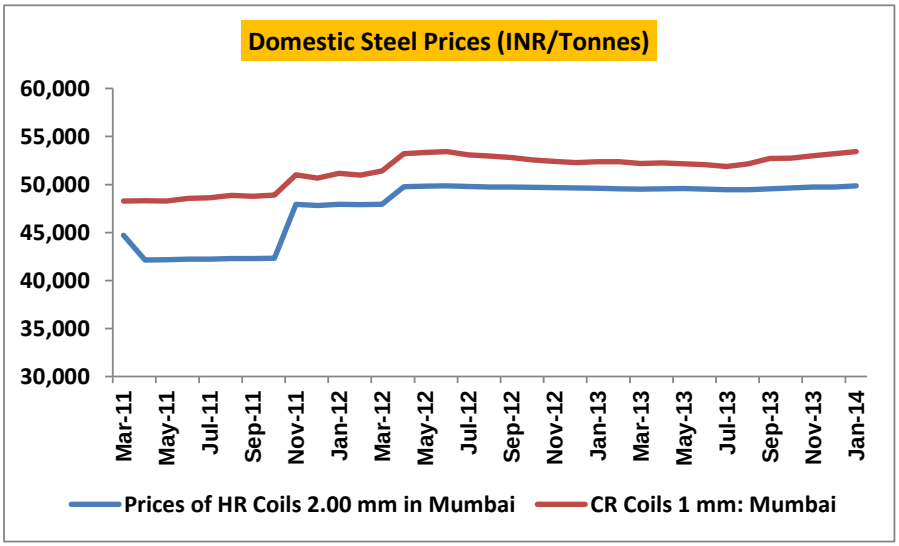
- The Industry can be categorized in – main producer of steel and the secondary producer. The secondary producer include producer of sponge iron, furnaces for induction or energy optimization, re-rolling firms etc.
- Steel Authority of India (SAIL), Tata Steel, JSW Steel, Essar Steel, Bhushan Steel, Uttam Galva Steels, Ispat Industries Ltd etc. are leading major steel producers in India.



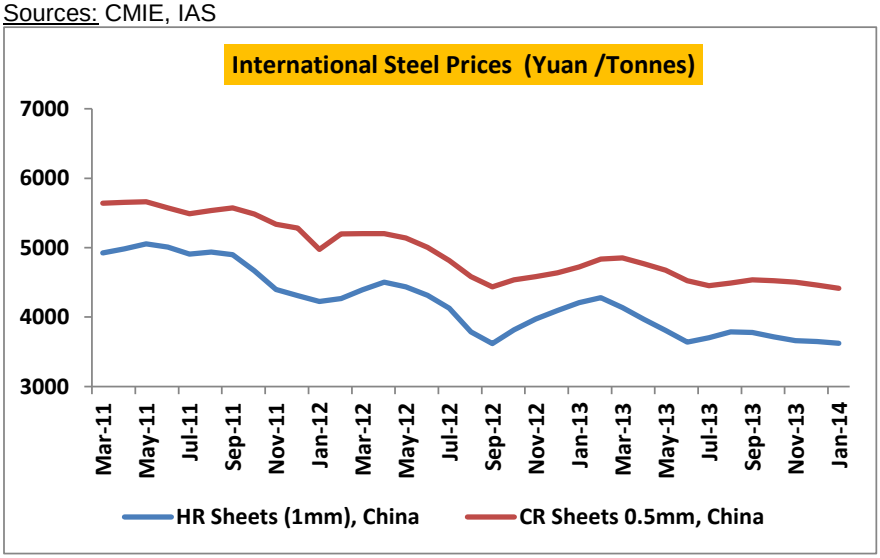
Sources: CMIE IAS

- In FY 2013, JSW Steel Ltd. accounted for 15.9% of the finished steel manufactured in India closely followed by SAIL.
- Most of the Indian stainless steel Companies are located in Orissa, as this state accounts for ~95% of country's chrome ore deposits of around 213 Mn tonnes.

Price Trend



Sources: CMIE, IAS



Sources: CMIE, IAS

- Domestic metal prices have exhibited an stable trend on the weak demand from the end user industries. Domestic as well as international steel prices which spiked at the start of FY 2011 went down subsequently to rise further at the end of the year.
- International prices witnessed a volatile trend over the March 2011- YTD FY 2014. However, international steel prices still quoting below FY 2011 level as a result of continuing weakness in global economy.

Competitor Analysis

Company	Net Sales (INR Bn)			PAT (INR Bn)		
	FY 2012	FY 2013	Y-o-Y %	FY 2012	FY 2013	Y-o-Y %
Steel Authority Of India Ltd.	456.12	435.46	-4.5%	35.43	21.70	-38.7%
Tata Steel Ltd.	332.78	372.12	11.8%	66.96	50.63	-24.4%
J S W Steel Ltd.	320.62	353.99	10.4%	16.26	18.01	10.8%
Essar Steel India Ltd.	163.49	150.09	-8.2%	(12.52)	(27.85)	NM
Bhushan Steel Ltd.	99.53	107.14	7.6%	10.11	9.06	-10.4%
Jindal Steel & Power Ltd	147.4	168.9	14.5%	20.6	15.9	-24.5%

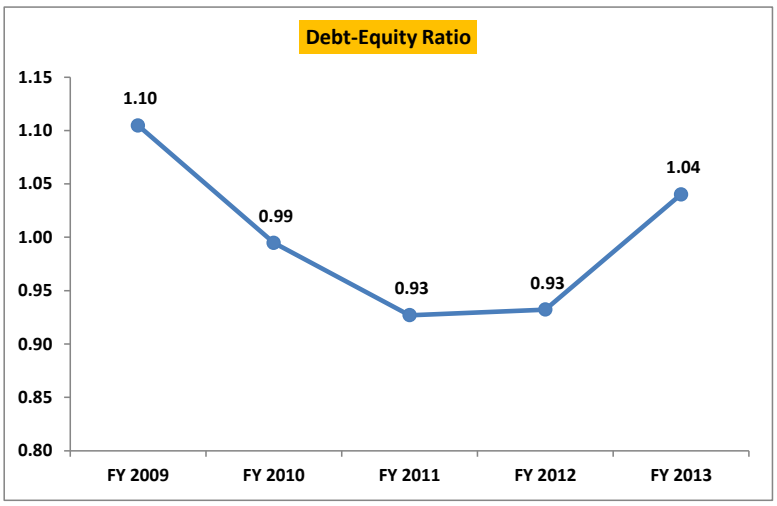
Source: CMIE Prowess; Top 5 Players by Net Sales (these account for about 80% of the sample size by revenue)

- In FY 2013, three out of five major Companies posted a positive growth in net sales on the back of better realization prices of the products and however the PAT of all major players (except JSW Steel ltd.) decline on the back of rising operating. Increase in interest expense too for all the Companies excluding Tata Steel adversely influenced the net profit margins of the industry in last fiscal.
- Also, net losses of the Essar Steel Industry grew substantially in FY 2013 on the back of rising raw material expense and interest expense. During FY 2013, the interest expenses of the Essar Steel swelled by 28%, while the net sales growth declined.

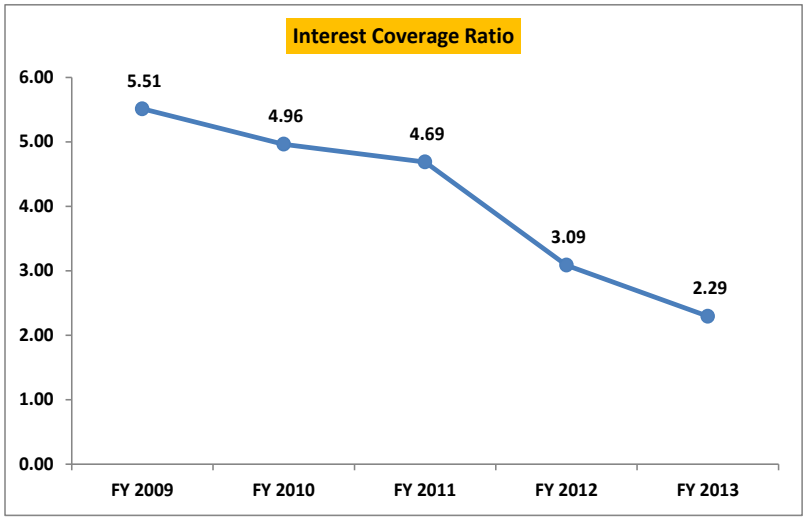
Financial Risk

Leverage Ratio

- Steel industry being capital intensive in nature, the debt equity ratio of the industry payers have remained relatively high in the range of 0.93-1.10. The overall debt of the steel sector has been a declining trend between period FY 2009-11 with a marginal and steep rise increase in FY 2012 and FY 2013, respectively. During period FY 2009-13, the networth of the industry grew by a higher CAGR of 18.4% while the debt grew by 16.6%%. Sources: CMIE Prowess, Sample Size 24 Companies



- Muted growth in net sales of the industry player admist the current slowdown during FY 2013 resulted in weak growth of just 4% in networth while the industry borrowing grew by 16% resulting in the steep rise in debt equity ratio to 1.04%.



Sources: CMIE Prowess, Sample Size 24 Companies

- Debt servicing ability of the industry has steadily declined over the period FY 2009-13 on the back of subdued growth in net sales and steady increase in industry borrowing. Muted sales growth and increase in operating expenses has impacted the industry's profitability while interest outgo expense has increased in line with increase industry borrowing.
- During period FY 2009-13, PBDIT of the industry grew by just 1.9% while the interest expense of the industry grew by 26.8%.

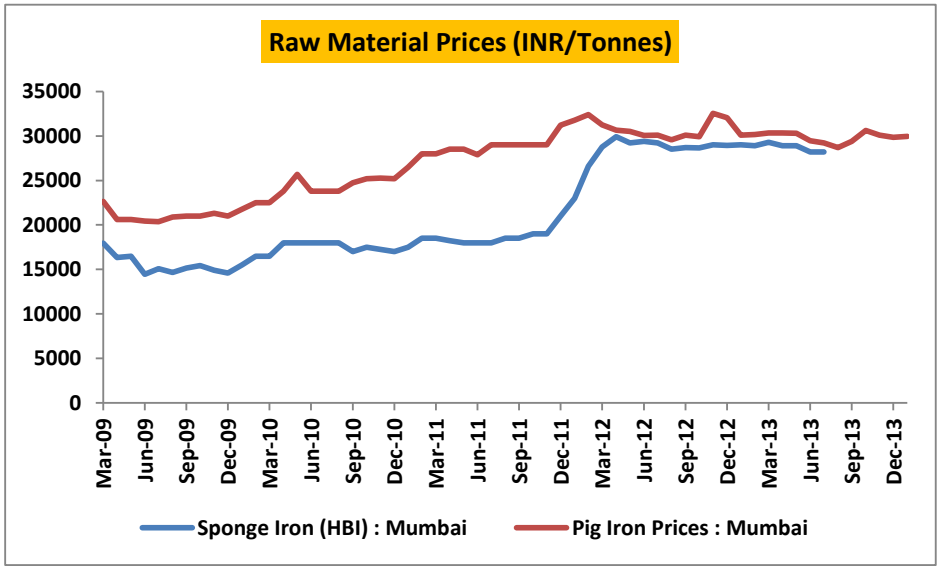
Cost Structure & Profitability

Year	Expenses as a % of Net Sales					Profit Margins %	
	Raw materials %	Power & Fuel %	Salaries & Wages %	SGA Expenses %	Interest Expense %	PBDIT Margin %	Net Margin %
FY 2009	49.0%	8.8%	8.6%	3.2%	4.4%	24.4%	9.8%
FY 2010	47.5%	8.3%	6.2%	3.2%	5.4%	27.0%	12.4%
FY 2011	53.5%	7.4%	7.0%	3.1%	5.1%	23.9%	10.7%
FY 2012	55.5%	8.0%	6.3%	3.1%	6.8%	21.1%	6.9%
FY 2013	55.9%	8.4%	6.5%	3.7%	7.8%	17.9%	3.7%

Source: CMIE Prowess, Sample Size, 24 Companies

- Raw material expenses including store and spare expense form a major part of the total expenses, constituting almost ~56% of the revenue. Key raw material used in the manufacturing of steel include pig iron, coal, and sponge iron (EAF process).
- Steel producers have been undertaking various R&D activities to deal with the issue of increasing raw material prices such as development of new technology to produce

low ash clean coal, beneficiation of low grade iron ore and coal agglomeration to increase use of low cost non coking coal.



Sources: CMIE, IAS

- Domestic prices of major raw materials such as pig iron, nickel and chromium was all volatile during the fiscal period FY 2010-13. The volatility in prices was on account of increasing demand for raw materials from China – the foremost producer of steel- and high cost of extraction. International prices of Pig Iron have increased by a CAGR of ~10% during period FY 2008-12 while prices of ferrochrome increased by ~20% since FY 2010. Higher demand coming from China was the major reason for this increase.
- Economic slowdown which affected the Chinese economy during the second half of FY 2012 reduced the steel consumption of the sector leading to a slow off take in raw materials. Although the supply of raw materials was loosened the unfavorable foreign exchange rate prevalent in the country kept the raw material prices high. Thus the higher raw material expense margin during FY 2013 was primarily on account of adverse currency movement.
- Higher operating expenses during FY 2013 coupled with muted net sale growth have caused immense pressure on the production cost of integrated steel producers and secondary producers as well. Rise in iron ore and coking coal prices have adversely affected the margins of steel manufacturers in FY 2013. This is well reflected by the increase in raw material expense as a proportion of net sale for steel and its impact on declining net profit margin in in the same period. The net profitability of the players too declined on account of mounting interest expense cost. Rising Interest expense and aadverse foreign exchange movement is likely to put pressure on both top line and bottom line figure of the industry players.

Interim Financial Performance

Key Indicator	Half Yearly Performance			As % of Net Sales	
	H1 FY 2013	H1 FY 2014	Y-o-Y % Change	H1 FY 2013	H1 FY 2014
Net Sales	476.6	514.5	8.0%		
Raw Material	296.8	284.1	-4.3%	62.3%	55.2%
Salary & Wages	47.1	54.6	16.1%	9.9%	10.6%
Other Expense	113.9	137.6	20.8%	23.9%	26.7%
Interest Expense	17.5	24.6	40.5%	3.7%	4.8%
PBDIT	68.3	60.1	-12.1%	14.3%	11.7%
PAT	19.0	6.4	-66.4%	4.0%	1.2%

Sample Size: 13 Players, CMIE Prowess

- Going forwards, domestic steel prices are expected to remain under pressure on the back of stagnancy registered in key end user industries like automotive, construction etc where any meaningful recovery in investment cycle is likely to be delayed.
- Recent high in policy rate is likely to impact construction and infrastructure projects unfavourably which inturn would keep an additional check on any substantial recovery in the demand for various steel products.

Key Ratios

Number of Companies = 24 Companies
The ratios are averaged over the FY 2011 2012, and 2013.

Ratios	Average Value
Gross Margin	35.2%
PBDIT Margin	20.8%
Net Margin	6.9%
Current Ratio	1.40
Quick Ratio	0.69
Account Receivables Days	32
Inventory Days	108
Account Payable Days	80
RONW	8.3%
ROA	9.8%
ROCE	12.8%
Long Debt-Equity	0.97
Net worth to Total Liabilities	39.0%
Interest Coverage Ratio	3.11
Fixed Asset Turnover	1.48

Asset Turnover	0.88
WC turnover ratio	17.37
Inventory Turnover	4.26
Fixed Assets to Net worth	0.82
Sales to Capital Employed	0.62

Source:CMIE Prowess

Project Cost

As per the information furnished by the Company, based on the quotation the Capex assessed as INR 63.00 Crores, out of that equity contribution works out to be INR 15.75 Crores and balance treated as TL, the same has been shared w.r.t in the ratio of term loan outstanding as on Cut Off Date (excluding Overdue interest & installment).

New TL:

Exhibit: New TL - INR. Crores	
Description	**Amount**
Slab Caster Spares & Parts-For Old	4.01
Slab Caster Spares & Parts-For New	15.09
Oxygen Plant	4.50
R/H Furnace-Burners Change/FES Change/Slab Charging Modernization	9.02
Motors, Drives, Panels in Electricals for HRM	2.50
PU Coating + Spare Rolls-CRM	2.51
Burners A.P. Line-CRM	4.00
Motors, Drives, Panels in Electricals for CRM	1.50
Down coiler Installation	6.00
Base Price	**49.13**
Add: Taxes & Duties @ 16%	7.86
Add: Packing & Freight @ 1.50%	0.74
Add: Commissioning Charges @ 10.00%	4.91
Total	**62.64**
Total - Rounded	**63.00**
Equity - 25%	15.75
TL - 75%	**47.25**

Note: Company wants to keep one slab caster as stand buy, since earlier some technical breakdowns leaded the Company for lower utilization levels, in order to overcome, company plans to keep on slab caster as stand by purpose for emergency needs.

Priority TL

Exhibit: Priority Debt - INR. Crores	
Description	**Amount**
Income Tax Pending	8.35
Demurrage Detention	15.00
Custom Duty on imported raw material released against advance license for which export obligation yet to be complete	43.41
Sub – total	**66.76**
Net liability	**66.76**

Note: Company will get the MODVAT refund of INR 28.02 Crores against Custom Duty on imported raw material released against advance license within two years, the same as been considered as other income for the projections 50% in FY 14-15 and remaining in next financial year.

License Number	Dated	Last Date of Export	Total Amount
210151402	1/12/2010	30-11-2013	5,02,68,926
210151745	8/12/2010	7/12/2013	10,79,82,191
210152625	24-12-2010	23-12-2013	1,62,96,471
510328273	25-06-2012	24-12-2013	4,38,38,541
210178881	25-06-2012	24-12-2013	6,35,59,713
510328508	26-07-2012	24-01-2014	15,21,70,063
Total			**43,41,15,905**

Means of Finance

Additional Capex

The additional capex requirement for the project is proposed to be funded as provided in exhibit below –

- The new term loan in the ratio of term loan outstanding as on cutt off date (excluding Overdue interest & installment) - (Slab Caster)
- Priority TL (Pressing Creditors) has been allocated in the ratio of sanction CC+ NFB Limit.

Exhibit: New TL - INR. Crores	
Description	**Amount**
Slab Caster Spares & Parts-For Old	4.01
Slab Caster Spares & Parts-For New	15.09
Oxygen Plant	4.50
R/H Furnace-Burners Change/FES Change/Slab Charging Modernization	9.02
Motors, Drives, Panels in Electricals for HRM	2.50
PU Coating + Spare Rolls-CRM	2.51
Burners A.P. Line-CRM	4.00
Motors, Drives, Panels in Electricals for CRM	1.50
Down coiler Installation	6.00
Base Price	**49.13**
Add: Taxes & Duties @ 16%	7.86
Add: Packing & Freight @ 1.50%	0.74
Add: Commissioning Charges @ 10.00%	4.91
Total	**62.64**
Total - Rounded	**63.00**
Equity - 25%	15.75
TL - 75%	**47.25**

Projected FITL:

D & B India considered, FITL on the exposures of TL, WCTL 1, WCTL 2, New TL form COD to September 30th, 2015 the same has been projected w.r.t to lenders year wise.

Exhibit: FITL - TL - INR. Crores				
Description	**FY 13-14**	**FY 14-15**	**FY 15-16**	**Total**
SBBJ	0.24	0.48	0.24	0.97
SBH	0.44	0.88	0.44	1.76
AB	0.38	0.76	0.38	1.53
DB	0.48	0.96	0.48	1.91
Uco	3.21	6.45	3.23	12.89
SB	0.58	1.16	0.58	2.31

IOB	0.34	0.68	0.34	1.35
SBM	1.22	2.45	1.23	4.90
LVBL	1.78	3.56	1.79	7.12
CBI	1.13	2.28	1.14	4.55
IB	3.73	7.48	3.75	14.96
TMBL	1.91	3.82	1.92	7.65
CB	0.98	1.96	0.98	3.92
FBL	0.74	1.48	0.74	2.97
TOTAL	**17.15**	**34.40**	**17.25**	**68.80**
Exhibit: FITL - WCTL 1 - INR. Crores				
Description	**FY 13-14**	**FY 14-15**	**FY 15-16**	**Total**
SBBJ	0.91	1.82	0.91	3.64
SBH	1.39	2.78	1.39	5.56
AB	1.37	2.74	1.37	5.48
DB	0.71	1.43	0.72	2.87
Uco	0.75	1.50	0.75	3.00
SB	0.21	0.43	0.21	0.86
IOB	0.34	0.68	0.34	1.37
SBM	0.22	0.45	0.23	0.90
LVBL	0.00	0.00	0.00	0.00
CBI	0.80	1.61	0.80	3.21
IB	0.72	1.44	0.72	2.89
TMBL	0.59	1.18	0.59	2.35
CB	0.24	0.48	0.24	0.95
FBL	0.12	0.24	0.12	0.48
TOTAL	**8.37**	**16.78**	**8.41**	**33.56**
Exhibit: FITL - WCTL 2 - INR. Crores				
Description	**FY 13-14**	**FY 14-15**	**FY 15-16**	**Total**
SBBJ	3.66	14.83	7.43	25.92
SBH	2.44	9.89	4.96	17.28
AB	1.68	6.81	3.41	11.90
DB	1.08	4.39	2.20	7.68
Uco	2.17	8.79	4.41	15.36
SB	0.81	3.30	1.65	5.76
IOB	1.06	4.28	2.15	7.49
SBM	0.68	2.75	1.38	4.80
LVBL	0.00	0.00	0.00	0.00
CBI	0.68	2.75	1.38	4.80
IB	0.47	1.91	0.96	3.34
TMBL	0.54	2.20	1.10	3.84
CB	0.10	0.40	0.20	0.69
FBL	0.00	0.00	0.00	0.00
TOTAL	**15.36**	**62.28**	**31.23**	**108.87**
Exhibit: FITL - New TL - INR. Crores				
Description	**FY 13-14**	**FY 14-15**	**FY 15-16**	**Total**
SBBJ	0.00	0.06	0.04	0.09
SBH	0.00	0.10	0.07	0.17

AB	0.00	0.09	0.06	0.15
DB	0.00	0.11	0.07	0.19
Uco	0.00	0.75	0.50	1.25
SB	0.00	0.13	0.09	0.22
IOB	0.00	0.08	0.05	0.13
SBM	0.00	0.28	0.19	0.47
LVBL	0.00	0.41	0.28	0.69
CBI	0.00	0.26	0.18	0.44
IB	0.00	0.87	0.58	1.45
TMBL	0.00	0.44	0.30	0.74
CB	0.00	0.23	0.15	0.38
FBL	0.00	0.17	0.11	0.29
TOTAL	**0.00**	**3.99**	**2.67**	**6.66**

D & B India considered, FITL on the CC for a period of 6 months the same has been projected w.r.t to lenders year wise.

Exhibit: FITL - CC limit - INR. Crores		
Description	**FY 13-14**	**Total**
SBBJ	3.76	3.76
SBH	5.74	5.74
AB	5.65	5.65
DB	2.96	2.96
Uco	3.09	3.09
SB	0.88	0.88
IOB	1.41	1.41
SBM	0.93	0.93
LVBL	0.00	0.00
CBI	3.31	3.31
IB	2.98	2.98
TMBL	2.43	2.43
CB	0.98	0.98
FBL	0.50	0.50
TOTAL	**34.64**	**34.64**

Description	FY 13-14	FY 14-15	FY 15-16	Total
FITL	75.51	117.45	59.55	**252.52**

Sanctioned Exposures:

Exhibit:	TL Sanctioned			CC/ LC/BG Sanctioned					Interest rates						
Description	**Unit 1**	**Unit 2**	**Unit 3**	**Total A**	**CC Limits**	**LC/BG**	**Total B**	**Total (A+B)**	**Unit 1**	**Unit 2**	**Unit 3**	**CC**	**Base Rate**		**Discount Rate**
SBBJ	10.00			**10.00**	85.00	135.00	**220.00**	**230.00**	13.75%			14.25%	**10.25%**		**14.75%**
SBH	20.00			**20.00**	130.00	90.00	**220.00**	**240.00**	14.20%			13.95%	**10.20%**		**14.70%**
AB	17.50			**17.50**	128.00	62.00	**190.00**	**207.50**	14.50%			13.75%	**10.25%**		**14.50%**
DB	20.00			**20.00**	67.00	40.00	**107.00**	**127.00**	15.00%			13.80%	**10.25%**		**16.00%**
Uco	0.00	124.00		**124.00**	70.00	80.00	**150.00**	**274.00**		13.50%		13.45%	**10.20%**		**16.20%**
SB		35.00		**35.00**	20.00	30.00	**50.00**	**85.00**		14.00%		14.25%	**10.25%**		**14.25%**
IOB		25.00		**25.00**	32.00	39.00	**71.00**	**96.00**		14.75%		14.00%	**10.25%**		**14.75%**
SBM		47.00		**47.00**	21.00	25.00	**46.00**	**93.00**		14.00%		14.65%	**10.15%**		**15.25%**
LVBL		50.00		**50.00**		0.00	**0.00**	**50.00**		14.50%		14.65%	**10.25%**		**14.50%**
CBI			40.00	**40.00**	75.00	25.00	**100.00**	**140.00**			12.25%	13.75%	**10.25%**		**13.75%**
IB		45.00	75.00	**120.00**	67.50	17.40	**84.90**	**204.90**		14.00%	12.50%	13.20%	**10.20%**		**14.00%**
TMBL		29.00	30.00	**59.00**	55.00	20.00	**75.00**	**134.00**		14.25%	14.00%	13.50%	**10.75%**		**15.50%**
CB			30.00	**30.00**	22.20	3.60	**25.80**	**55.80**			12.50%	12.35%	**10.25%**		**16.20%**
FBL			25.00	**25.00**	11.30	0.00	**11.30**	**36.30**			12.50%	14.50%	**10.55%**		**16.80%**
Total	**67.50**	**355.00**	**200.00**	**622.50**	**784.00**	**567.00**	**1,351.00**	**1,973.50**							

Present Exposure:

BANKS	Term Loan							Working Capital Limit					
	Principal Outstanding			Interest & Repayment Overdue									
	Unit 1 - A	Unit 2 - B	Unit 3 - C	Installments Due - D	Interest Dues - E	Others Dues - F	Amount to be restructured Total(A+B+C-D-E-F)	CC O/s - G	Interest due - H	LC Devolvement - I	LC Outstanding - J	Amount to be Restructured CC (G-H-I)	Total WC (G-H-I)
SBBJ	4.40				0.18		**4.40**	101.33	1.18	19.88	118.16	80.27	**80.27**
SBH	9.00			1.00	0.35		**8.00**	156.97	5.01	21.96	69.43	130.00	**130.00**
AB	7.83			0.88	0.33		**6.95**	117.03	5.22	25.81	84.14	86.00	**86.00**
DB	8.70				0.12		**8.70**	67.43	0.43		26.46	67.00	**67.00**
Uco		63.99		5.39	2.45		**58.60**	76.36	0.82	5.54	80.56	70.00	**70.00**
SB		10.50			0.12		**10.50**	20.13	0.13		29.97	20.00	**20.00**
IOB		7.39		1.25	0.31		**6.14**	32.42	0.42		44.20	32.00	**32.00**
SBM		24.44		2.17	0.62		**22.27**	21.00			25.00	21.00	**21.00**
LVBL		32.38					**32.38**					0.00	**0.00**
CBI			21.26	0.57	0.91		**20.69**	74.80			24.13	74.80	**74.80**
IB		25.82	44.25	2.06	0.85		**68.01**	68.23	0.73		17.40	67.50	**67.50**
TMBL		20.05	17.35	2.63	1.43		**34.77**	57.41	2.41		19.85	55.00	**55.00**
CB			19.69	1.85			**17.84**	22.75	0.55		3.55	22.20	**22.20**
FBL			14.58	1.09	0.51		**13.49**	11.41	0.14			11.27	**11.27**
Total	**29.93**	**184.57**	**117.13**	**18.89**	**8.18**	**0.00**	**312.74**	**827.27**	**17.04**	**73.19**	**542.85**	**737.04**	**737.04**

Sources: BRGIS

Note: D & B India considered the principal amount for restructuring, all the overdue as on Cut Off Date (Installments Due & Interest Dues) will be paid by the Company.

WCTL 1:

Exhibit: WCTL 1- INR. Crores					
Description	**CC Sanction limit**	**Short Fall**	**Available DP**	**WCTL I**	**WCTL %**
SBBJ	85.00	16.54	68.46	16.54	10.84%
SBH	130.00	25.29	104.71	25.29	16.58%
AB	128.00	24.90	103.10	24.90	16.33%
DB	67.00	13.04	53.96	13.04	8.55%
Uco	70.00	13.62	56.38	13.62	8.93%
SB	20.00	3.89	16.11	3.89	2.55%
IOB	32.00	6.23	25.77	6.23	4.08%
SBM	21.00	4.09	16.91	4.09	2.68%
LVBL	0.00	0.00	0.00	0.00	0.00%
CBI	75.00	14.59	60.41	14.59	9.57%
IB	67.50	13.13	54.37	13.13	8.61%
TMBL	55.00	10.70	44.30	10.70	7.02%
CB	22.20	4.32	17.88	4.32	2.83%
FBL	11.30	2.20	9.10	2.20	1.44%
Total	**784.00**	**152.54**	**631.46**	**152.54**	**100.00%**
Transfer to WCTL II against LC devolvement	(146.94)				

Note: As per the stock audit, the drawing power shortfall considered as INR 299.47 Crores. As per the sanctioned limits (excluding the interchangeability from Non Fund Based to Fund Based) of INR 784.00 Crores. As per the stock audit the outstanding considered as INR 890.94 Crores. Therefore in view of the Company INR 146.94 Crores which is related to LC devolvement's reflected in O/s. As per the information furnished by the Company, D & B India considered INR 146.94 Crores transferred to INR WCTL 2, which are primarily LC devolvement's. D & B India considered the shortfall of INR 152.54 Crores and shared to respective lenders based on the sanctioned (Fund Based) limits.

As informed by the Company, D & B India considered the sharing of WCTL 1 on the basis of fund based sanctioned limits (CC: INR 784.00 Crores)

WCTL 2: LC Devolvement's

Exhibit: LC Devolvement Bankwise - INR. Crores			
Description	**NFB: Sanctioned**	**WCTL 2**	**%**
SBBJ	135.00	134.81	23.81%
SBH	90.00	89.87	15.87%
AB	62.00	61.91	10.93%
DB	40.00	39.94	7.05%
Uco	80.00	79.89	14.11%
SB	30.00	29.96	5.29%
IOB	39.00	38.95	6.88%
SBM	25.00	24.96	4.41%

LVBL	0.00	0.00	0.00%
CBI	25.00	24.96	4.41%
IB	17.40	17.38	3.07%
TMBL	20.00	19.97	3.53%
CB	3.60	3.59	0.63%
FBL	0.00	0.00	0.00%
Total	**567.00**	**566.20**	**100%**

Note: D & B India considered the sanctioned (Non Fund Based Limits as on COD) percentage for the allocation of WCTL 2.

Economic Viability

Operating Plan

Due to unavoidable internal and external reasons led to decline in operating performance and, in turn, financial position of BRGIS. The major factors that adversely impacted are as follows –

1. **Delay in the release of enhancement of working capital**
2. **Critical maintenance in "Slab Caster" machine**
3. **Blockage of Raw Materials**

With successful implementation of the proposed restructuring scheme, the proposed operating plan is discussed in the subsequent sections.

Capacity utilisation

As per the technical Specifications, the Installed Capacities are assumed w.r.t Unit wise and product wise for the full year (365 Days) and same has been derived to Operational days (330 Days).

Unit 1:

Exhibit: Installed Capacity - MTs - PA											
Installed Capacity	**FY 13-14**	**FY 14-15**	**FY 15-16**	**FY 16-17**	**FY 17-18**	**FY 18-19**	**FY 19-20**	**FY 20-21**	**FY 21-22**	**FY 22-23**	**FY 23-24**
Sponge Iron	73,000	73,000	73,000	73,000	73,000	73,000	73,000	73,000	73,000	73,000	73,000
SS Slabs 200 Series & 300 Series											
- SS Slabs Grade 1% Nickel - Plates	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000
- SS Slabs Grade 304 - Plates	81,250	81,250	81,250	81,250	81,250	81,250	81,250	81,250	81,250	81,250	81,250
- SS Slabs Grade 316 - Plates	31,250	31,250	31,250	31,250	31,250	31,250	31,250	31,250	31,250	31,250	31,250
- SS Slabs General Grade 200 Series Coils	12,500	12,500	12,500	12,500	12,500	12,500	12,500	12,500	12,500	12,500	12,500
- SS Slabs Grade 304 - Coils	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000
- SS Slabs Grade 316 - Coils	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
Mild Steel Slabs	189,000	189,000	189,000	189,000	189,000	189,000	189,000	189,000	189,000	189,000	189,000
Ferro Manganese	18,241	18,241	18,241	18,241	18,241	18,241	18,241	18,241	18,241	18,241	18,241
Medium Carbon Sillico Manganese	9,740	9,740	9,740	9,740	9,740	9,740	9,740	9,740	9,740	9,740	9,740
Exhibit: Installed Capacity - MTs - Operating Days											
Installed Capacity	**FY 13-14**	**FY 14-15**	**FY 15-16**	**FY 16-17**	**FY 17-18**	**FY 18-19**	**FY 19-20**	**FY 20-21**	**FY 21-22**	**FY 22-23**	**FY 23-24**
Sponge Iron	66,000	66,000	66,000	66,000	66,000	66,000	66,000	66,000	66,000	66,000	66,000
SS Slabs 200 Series & 300 Series											
- SS Slabs Grade 1% Nickel - Plates	8,137	8,137	8,137	8,137	8,137	8,137	8,137	8,137	8,137	8,137	8,137
- SS Slabs Grade 304 - Plates	73,459	73,459	73,459	73,459	73,459	73,459	73,459	73,459	73,459	73,459	73,459
- SS Slabs Grade 316 - Plates	28,253	28,253	28,253	28,253	28,253	28,253	28,253	28,253	28,253	28,253	28,253

- SS Slabs General Grade 200 Series Coils	11,301	11,301	11,301	11,301	11,301	11,301	11,301	11,301	11,301	11,301	11,301
- SS Slabs Grade 304 - Coils	24,411	24,411	24,411	24,411	24,411	24,411	24,411	24,411	24,411	24,411	24,411
- SS Slabs Grade 316 - Coils	45,205	45,205	45,205	45,205	45,205	45,205	45,205	45,205	45,205	45,205	45,205
Mild Steel Slabs	170,877	170,877	170,877	170,877	170,877	170,877	170,877	170,877	170,877	170,877	170,877
Ferro Manganese	16,492	16,492	16,492	16,492	16,492	16,492	16,492	16,492	16,492	16,492	16,492
Medium Carbon Sillico Manganese	8,806	8,806	8,806	8,806	8,806	8,806	8,806	8,806	8,806	8,806	8,806

Unit 2:

Exhibit: Installed Capacity - MTs - PA											
Description	**FY 13-14**	**FY 14-15**	**FY 15-16**	**FY 16-17**	**FY 17-18**	**FY 18-19**	**FY 19-20**	**FY 20-21**	**FY 21-22**	**FY 22-23**	**FY 23-24**
MS Plate	378,000	378,000	378,000	378,000	378,000	378,000	378,000	378,000	378,000	378,000	378,000
SS Plate Grade 1% Nickel	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000
SS Plate Grade 304	54,000	54,000	54,000	54,000	54,000	54,000	54,000	54,000	54,000	54,000	54,000
SS Plate Grade 316	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
SS Coil - General 200 Series	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
SS Coil - 304 Grade	62,500	62,500	62,500	62,500	62,500	62,500	62,500	62,500	62,500	62,500	62,500
SS Coil - 316 Grade	162,500	162,500	162,500	162,500	162,500	162,500	162,500	162,500	162,500	162,500	162,500
Exhibit: Installed Capacity - MTs - TPA (Operating Days)											
Description	**FY 13-14**	**FY 14-15**	**FY 15-16**	**FY 16-17**	**FY 17-18**	**FY 18-19**	**FY 19-20**	**FY 20-21**	**FY 21-22**	**FY 22-23**	**FY 23-24**
MS Plate	341,753	341,753	341,753	341,753	341,753	341,753	341,753	341,753	341,753	341,753	341,753
SS Plate Grade 1% Nickel	16,274	16,274	16,274	16,274	16,274	16,274	16,274	16,274	16,274	16,274	16,274
SS Plate Grade 304	48,822	48,822	48,822	48,822	48,822	48,822	48,822	48,822	48,822	48,822	48,822
SS Plate Grade 316	90,411	90,411	90,411	90,411	90,411	90,411	90,411	90,411	90,411	90,411	90,411
SS Coil - General 200 Series	22,603	22,603	22,603	22,603	22,603	22,603	22,603	22,603	22,603	22,603	22,603
SS Coil - 304 Grade	56,507	56,507	56,507	56,507	56,507	56,507	56,507	56,507	56,507	56,507	56,507
SS Coil - 316 Grade	146,918	146,918	146,918	146,918	146,918	146,918	146,918	146,918	146,918	146,918	146,918

Unit 3:

Exhibit: Installed Capacity - MTs - PA											
Description	**FY 13-14**	**FY 14-15**	**FY 15-16**	**FY 16-17**	**FY 17-18**	**FY 18-19**	**FY 19-20**	**FY 20-21**	**FY 21-22**	**FY 22-23**	**FY 23-24**
SS Circles - 200 Grade	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000
SS Coils - 200 Grade	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000
SS Circles - 304 Grade	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000
SS Coils - 304 Grade	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000
SS Coils - 316 Grade	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000
Exhibit: Installed Capacity - MTs - TPA (Operating Days)											
Description	**FY 13-14**	**FY 14-15**	**FY 15-16**	**FY 16-17**	**FY 17-18**	**FY 18-19**	**FY 19-20**	**FY 20-21**	**FY 21-22**	**FY 22-23**	**FY 23-24**
SS Circles - 200 Grade	26,219	26,219	26,219	26,219	26,219	26,219	26,219	26,219	26,219	26,219	26,219
SS Coils - 200 Grade	26,219	26,219	26,219	26,219	26,219	26,219	26,219	26,219	26,219	26,219	26,219
SS Circles - 304 Grade	26,219	26,219	26,219	26,219	26,219	26,219	26,219	26,219	26,219	26,219	26,219
SS Coils - 304 Grade	26,219	26,219	26,219	26,219	26,219	26,219	26,219	26,219	26,219	26,219	26,219
SS Coils - 316 Grade	26,219	26,219	26,219	26,219	26,219	26,219	26,219	26,219	26,219	26,219	26,219

Capacity Utilization

Unit 1

Exhibit: Operating Capacity - %											
Operating Capacity	**FY 13-14**	**FY 14-15**	**FY 15-16**	**FY 16-17**	**FY 17-18**	**FY 18-19**	**FY 19-20**	**FY 20-21**	**FY 21-22**	**FY 22-23**	**FY 23-24**
Sponge Iron	30%	50%	60%	70%	80%	90%	90%	90%	90%	90%	90%
SS Slabs 200 Series & 300 Series											
- SS Slabs Grade 1% Nickel - Plates	30%	50%	60%	70%	80%	85%	90%	90%	90%	90%	90%
- SS Slabs Grade 304 - Plates	30%	50%	60%	70%	80%	85%	90%	90%	90%	90%	90%
- SS Slabs Grade 316 - Plates	30%	50%	60%	70%	80%	85%	90%	90%	90%	90%	90%
- SS Slabs General Grade 200 Series Coils	30%	50%	60%	70%	80%	85%	90%	90%	90%	90%	90%

- SS Slabs Grade 304 - Coils	30%	50%	60%	70%	80%	85%	90%	90%	90%	90%	90%
- SS Slabs Grade 316 - Coils	30%	50%	60%	70%	80%	85%	90%	90%	90%	90%	90%
Mild Steel Slabs	30%	50%	60%	70%	80%	85%	90%	90%	90%	90%	90%
Ferro Manganese	30%	45%	55%	70%	80%	85%	90%	90%	90%	90%	90%
Medium Carbon Sillico Manganese	30%	45%	55%	70%	80%	85%	90%	90%	90%	90%	90%

Unit 2

Exhibit: Capacity Utilisation %											
Description	**FY 13-14**	**FY 14-15**	**FY 15-16**	**FY 16-17**	**FY 17-18**	**FY 18-19**	**FY 19-20**	**FY 20-21**	**FY 21-22**	**FY 22-23**	**FY 23-24**
MS Plate	10%	23%	35%	55%	70%	80%	85%	85%	90%	95%	95%
SS Plate Grade 1% Nickel	10%	23%	35%	55%	70%	80%	85%	85%	90%	95%	95%
SS Plate Grade 304	10%	23%	35%	55%	70%	80%	85%	85%	90%	95%	95%
SS Plate Grade 316	10%	23%	35%	55%	70%	80%	85%	85%	90%	95%	95%
SS Coil - General 200 Series	10%	23%	35%	55%	70%	80%	85%	85%	90%	95%	95%
SS Coil - 304 Grade	10%	23%	35%	55%	70%	80%	85%	85%	90%	95%	95%
SS Coil - 316 Grade	10%	23%	35%	55%	70%	80%	85%	85%	90%	95%	95%

Unit 3:

Exhibit: Capacity Utilisation %											
Description	**FY 13-14**	**FY 14-15**	**FY 15-16**	**FY 16-17**	**FY 17-18**	**FY 18-19**	**FY 19-20**	**FY 20-21**	**FY 21-22**	**FY 22-23**	**FY 23-24**
SS Circles - 200 Grade	5%	23%	35%	55%	70%	80%	85%	85%	90%	95%	95%
SS Coils - 200 Grade	5%	23%	35%	55%	70%	80%	85%	85%	90%	95%	95%
SS Circles - 304 Grade	5%	23%	35%	55%	70%	80%	85%	85%	90%	95%	95%
SS Coils - 304 Grade	5%	23%	35%	55%	70%	80%	85%	85%	90%	95%	95%
SS Coils - 316 Grade	5%	23%	35%	55%	70%	80%	85%	85%	90%	95%	95%

Operating MT's

Unit 1:

Exhibit: Operating Capacity - MTs - Operating Days											
Operating Capacity	**FY 13-14**	**FY 14-15**	**FY 15-16**	**FY 16-17**	**FY 17-18**	**FY 18-19**	**FY 19-20**	**FY 20-21**	**FY 21-22**	**FY 22-23**	**FY 23-24**
Sponge Iron	19,800	33,000	39,600	46,200	52,800	59,400	59,400	59,400	59,400	59,400	59,400
SS Slabs 200 Series & 300 Series											
- SS Slabs Grade 1% Nickel - Plates	2,441	4,068	4,882	5,696	6,510	6,916	7,323	7,323	7,323	7,323	7,323
- SS Slabs Grade 304 - Plates	22,038	36,729	44,075	51,421	58,767	62,440	66,113	66,113	66,113	66,113	66,113
- SS Slabs Grade 316 - Plates	8,476	14,127	16,952	19,777	22,603	24,015	25,428	25,428	25,428	25,428	25,428
- SS Slabs General Grade 200 Series Coils	3,390	5,651	6,781	7,911	9,041	9,606	10,171	10,171	10,171	10,171	10,171
- SS Slabs Grade 304 - Coils	7,323	12,205	14,647	17,088	19,529	20,749	21,970	21,970	21,970	21,970	21,970
- SS Slabs Grade 316 - Coils	13,562	22,603	27,123	31,644	36,164	38,425	40,685	40,685	40,685	40,685	40,685
Mild Steel Slabs	51,263	85,438	102,526	119,614	136,701	145,245	153,789	153,789	153,789	153,789	153,789
Ferro Manganese	4,948	7,421	9,071	11,544	13,193	14,018	14,843	14,843	14,843	14,843	14,843
Medium Carbon Sillico Manganese	2,642	3,963	4,843	6,164	7,045	7,485	7,925	7,925	7,925	7,925	7,925

Unit 2:

Exhibit: Operating Capacity - TPA											
Description	**FY 13-14**	**FY 14-15**	**FY 15-16**	**FY 16-17**	**FY 17-18**	**FY 18-19**	**FY 19-20**	**FY 20-21**	**FY 21-22**	**FY 22-23**	**FY 23-24**
MS Plate	34,175	76,895	119,614	187,964	239,227	273,403	290,490	290,490	307,578	324,666	324,666
SS Plate Grade 1% Nickel	1,627	3,662	5,696	8,951	11,392	13,019	13,833	13,833	14,647	15,460	15,460
SS Plate Grade 304	4,882	10,985	17,088	26,852	34,175	39,058	41,499	41,499	43,940	46,381	46,381
SS Plate Grade 316	9,041	20,342	31,644	49,726	63,288	72,329	76,849	76,849	81,370	85,890	85,890
SS Coil - General 200 Series	2,260	5,086	7,911	12,432	15,822	18,082	19,212	19,212	20,342	21,473	21,473
SS Coil - 304 Grade	5,651	12,714	19,777	31,079	39,555	45,205	48,031	48,031	50,856	53,682	53,682
SS Coil - 316 Grade	14,692	33,057	51,421	80,805	102,842	117,534	124,880	124,880	132,226	139,572	139,572

Unit 3:

Exhibit: Operating Capacity - TPA											
Description	**FY 13-14**	**FY 14-15**	**FY 15-16**	**FY 16-17**	**FY 17-18**	**FY 18-19**	**FY 19-20**	**FY 20-21**	**FY 21-22**	**FY 22-23**	**FY 23-24**
SS Circles - 200 Grade	1,311	5,899	9,177	14,421	18,353	20,975	22,286	22,286	23,597	24,908	24,908
SS Coils - 200 Grade	1,311	5,899	9,177	14,421	18,353	20,975	22,286	22,286	23,597	24,908	24,908
SS Circles - 304 Grade	1,311	5,899	9,177	14,421	18,353	20,975	22,286	22,286	23,597	24,908	24,908
SS Coils - 304 Grade	1,311	5,899	9,177	14,421	18,353	20,975	22,286	22,286	23,597	24,908	24,908
SS Coils - 316 Grade	1,311	5,899	9,177	14,421	18,353	20,975	22,286	22,286	23,597	24,908	24,908

Based on the condition of plant and machinery on site, D&B India finds estimated capacity utilization reasonable. For all the units capacity utilization arrived based on the actuals furnished by the Company on the past records, as per the machinery performance and healthy condition of the existing plants, utilization of the project seems to be reasonable.

Revenue Stream

In an ISP, various intermediate products are manufactured, which are used in-house for further value addition and surplus, if any, can be sold in the market. Revenue projections for the restructuring tenure is described in the following exhibit –

Unit 1:

Exhibit: Sales Values - INR. Crores											
Description	**FY 13-14**	**FY 14-15**	**FY 15-16**	**FY 16-17**	**FY 17-18**	**FY 18-19**	**FY 19-20**	**FY 20-21**	**FY 21-22**	**FY 22-23**	**FY 23-24**
Sponge Iron	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stainless Steel Slabs 200 Series & 300 Series											
- SS Slabs Grade 1% Nickel - Plate	3.49	0.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
- SS Slabs Grade 304 - Plate	197.23	318.60	344.43	308.86	306.28	293.39	309.51	314.95	281.50	247.60	247.60
- SS Slabs Grade 316 - Plate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
- SS Slabs General Grade 200 Series Coil	4.69	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

- SS Slabs Grade 304 - Coil	42.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
- SS Slabs Grade 316 - Coil	9.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mild Steel Slabs	50.48	7.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ferro Manganese	35.39	31.09	37.43	48.13	55.61	59.64	63.22	63.67	63.71	63.72	63.72
Medium Carbon Sillico Manganese	1.69	0.69	1.83	5.07	6.19	6.93	7.38	7.67	7.70	7.70	7.70

Note: Considering the Captive consumptions.

Unit 2:

Exhibit: Sales - INR. Crores											
Description	**FY 13-14**	**FY 14-15**	**FY 15-16**	**FY 16-17**	**FY 17-18**	**FY 18-19**	**FY 19-20**	**FY 20-21**	**FY 21-22**	**FY 22-23**	**FY 23-24**
MS Plate											
Finished Product	118.50	270.02	429.47	675.25	873.52	1,009.20	1,080.93	1,088.59	1,146.38	1,209.89	1,216.82
By Product	2.48	5.58	8.69	13.65	17.37	19.85	21.09	21.09	22.33	23.58	23.58
SS Plate Grade 1% Nickel											
Finished Product	29.86	30.57	46.47	72.89	94.29	108.93	116.67	117.50	123.74	130.59	131.34
By Product	0.41	0.91	1.42	2.24	2.85	3.25	3.46	3.46	3.66	3.86	3.86
SS Plate Grade 304											
Finished Product	64.41	149.07	237.22	373.00	482.52	557.46	597.08	601.32	633.24	668.32	672.15
By Product	2.54	5.71	8.89	13.97	17.78	20.32	21.59	21.59	22.86	24.12	24.12
SS Plate Grade 316											
Finished Product	157.53	352.64	560.52	881.29	1,140.04	1,317.12	1,410.74	1,420.73	1,496.15	1,579.04	1,588.08
By Product	4.70	10.58	16.46	25.86	32.92	37.62	39.97	39.97	42.32	44.68	44.68
SS Coil - General Grade 200 Series											
Finished Product	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
By Product	0.32	0.71	1.11	1.75	2.22	2.54	2.70	2.70	2.86	3.01	3.01
SS Coil - 304 Grade											
Finished Product	33.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
By Product	1.78	4.01	6.23	9.79	12.46	14.25	15.14	15.14	16.03	16.92	16.92
SS Coil - 316 Grade											
Finished Product	241.25	511.58	819.21	1,288.32	1,672.84	1,937.42	2,078.84	2,096.84	2,205.51	2,327.62	2,343.90

By Product	7.20	16.19	25.19	39.58	50.38	57.57	61.17	61.17	64.77	68.37	68.37

Note: Considering the Captive consumptions.

Unit 3:

Exhibit: Sales - INR. Crores											
Description	**FY 13-14**	**FY 14-15**	**FY 15-16**	**FY 16-17**	**FY 17-18**	**FY 18-19**	**FY 19-20**	**FY 20-21**	**FY 21-22**	**FY 22-23**	**FY 23-24**
SS Circles - 200 Grade											
Finished Product	13.24	52.94	86.00	135.37	175.13	202.34	216.72	218.26	229.84	242.58	243.96
By Product	1.50	6.76	10.52	16.53	21.04	24.05	25.55	25.55	27.06	28.56	28.56
SS Coils - 200 Grade											
Finished Product	13.24	52.94	86.00	135.37	175.13	202.34	216.72	218.26	229.84	242.58	243.96
By Product	0.12	0.55	0.85	1.34	1.70	1.95	2.07	2.07	2.19	2.31	2.31
SS Circles - 304 Grade											
Finished Product	24.32	97.24	157.95	248.65	321.68	371.64	398.06	400.88	422.16	445.55	448.10
By Product	4.07	18.32	28.49	44.78	56.99	65.13	69.20	69.20	73.27	77.34	77.34
SS Coils - 304 Grade											
Finished Product	27.02	108.04	175.50	276.28	357.42	412.94	442.29	445.42	469.06	495.05	497.89
By Product	0.36	1.61	2.50	3.93	5.00	5.72	6.08	6.08	6.43	6.79	6.79
SS Coils - 316 Grade											
Finished Product	30.27	121.04	196.61	309.50	400.40	462.59	495.47	498.98	525.47	554.58	557.76
By Product	0.42	1.88	2.92	4.59	5.84	6.67	7.09	7.09	7.51	7.92	7.92
Total Sales	**114.56**	**461.32**	**747.35**	**1,176.34**	**1,520.34**	**1,755.36**	**1,879.24**	**1,891.78**	**1,992.83**	**2,103.26**	**2,114.60**

Note: Considering the Captive consumptions.

The selling price considered in the financial analysis has been based on the input received from the BRGIS Steel, which is net of excise duty. The selling prices are in conformity with the current average producers prices. For judicious evaluation of feasibility, fixed price concept has been adopted.

Raw material consumption

The following exhibit shows the raw material consumption norms for various production processes along with scrap generation and yield expected during the production and also their unit rates as provided by BRGIS, which is in line with the current market trend.

Unit 1:

Exhibit: Raw Material Requirement

Raw material Requirement	**Unit (MT)**	**INR**	**FY 13-14**	**FY 14-15**	**FY 15-16**	**FY 16-17**	**FY 17-18**	**FY 18-19**	**FY 19-20**	**FY 20-21**	**FY 21-22**	**FY 22-23**	**FY 23-24**
Sponge Iron	**Norms per MT**	**Cost per MT**											
Crushed Iron Ore	1.810	6,000	35,845	59,741	71,690	83,638	95,586	107,534	107,534	107,534	107,534	107,534	107,534
Coal - 'D' Grade	1.500	2,750	29,700	49,500	59,400	69,300	79,200	89,100	89,100	89,100	89,100	89,100	89,100
Dolomite/Limestone	0.025	1,750	495	825	990	1,155	1,320	1,485	1,485	1,485	1,485	1,485	1,485
Stainless Steel Slabs 200 Series & 300 Series													
- Stainless Steel Slabs Grade 1% Nickel - Plate Purpose	**Norms per MT**	**Cost per MT**											
Sponge Iron	0.325	19,000	793	1,322	1,587	1,851	2,116	2,248	2,380	2,380	2,380	2,380	2,380
Ferro Manganese	0.120	55,000	293	488	586	684	781	830	879	879	879	879	879
Medium Carbon Sillico Manganese	0.040	60,000	98	163	195	228	260	277	293	293	293	293	293
Scrap	0.374	23,500	913	1,521	1,825	2,129	2,433	2,585	2,738	2,738	2,738	2,738	2,738
Ferro Chrome	0.260	72,500	635	1,058	1,269	1,481	1,692	1,798	1,904	1,904	1,904	1,904	1,904
Ferro Silicon	0.025	70,000	61	102	122	142	163	173	183	183	183	183	183
Nickel	0.010	960,225	24	41	49	57	65	69	73	73	73	73	73
Copper	0.016	488,250	39	65	78	91	104	111	117	117	117	117	117
Molybedenum	0.000	1,872,439	0	0	0	0	0	0	0	0	0	0	0
Oxygen	50.000	9	122,0	203,4	244,1	284,7	325,4	345,8	366,1	366,1	366,1	366,1	366,1

			55	25	10	95	79	22	64	64	64	64	64
Nitrogen	20.000	5	48,822	81,370	97,644	113,918	130,192	138,329	146,466	146,466	146,466	146,466	146,466
Argon	2.000	45	4,882	8,137	9,764	11,392	13,019	13,833	14,647	14,647	14,647	14,647	14,647
Titanium	0.000	435,000	0	0	0	0	0	0	0	0	0	0	0
Vanadium	0.000	3,500,000	0	0	0	0	0	0	0	0	0	0	0
Niobium	0.000	2,692,000	0	0	0	0	0	0	0	0	0	0	0
Total			**178,615**	**297,691**	**357,229**	**416,767**	**476,305**	**506,075**	**535,844**	**535,844**	**535,844**	**535,844**	**535,844**
- Stainless Steel Slabs Grade 304 - Plate Purpose	**Norms per MT**	**Cost per MT**											
Sponge Iron	0.325	19,000	7,162	11,937	14,324	16,712	19,099	20,293	21,487	21,487	21,487	21,487	21,487
Ferro Manganese	0.000	55,000	0	0	0	0	0	0	0	0	0	0	0
Medium Carbon Sillico Manganese	0.050	60,000	1,102	1,836	2,204	2,571	2,938	3,122	3,306	3,306	3,306	3,306	3,306
Scrap	0.374	23,500	8,238	13,730	16,476	19,222	21,968	23,341	24,714	24,714	24,714	24,714	24,714
Ferro Chrome	0.350	72,500	7,713	12,855	15,426	17,997	20,568	21,854	23,140	23,140	23,140	23,140	23,140
Ferro Silicon	0.025	70,000	551	918	1,102	1,286	1,469	1,561	1,653	1,653	1,653	1,653	1,653
Nickel	0.080	960,225	1,763	2,938	3,526	4,114	4,701	4,995	5,289	5,289	5,289	5,289	5,289
Copper	0.000	488,250	0	0	0	0	0	0	0	0	0	0	0
Molybedenum	0.000	1,872,439	0	0	0	0	0	0	0	0	0	0	0
Oxygen	45.000	9	991,695	1,652,825	1,983,390	2,313,955	2,644,521	2,809,803	2,975,086	2,975,086	2,975,086	2,975,086	2,975,086
Nitrogen	20.000	5	440,7	734,5	881,5	1,028,	1,175,	1,248,	1,322,	1,322,	1,322,	1,322,	1,322,

			53	89	07	425	342	801	260	260	260	260	260
Argon	9.000	45	198,339	330,565	396,678	462,791	528,904	561,961	595,017	595,017	595,017	595,017	595,017
Titanium	0.000	435,000	0	0	0	0	0	0	0	0	0	0	0
Vanadium	0.000	3,500,000	0	0	0	0	0	0	0	0	0	0	0
Niobium	0.000	2,692,000	0	0	0	0	0	0	0	0	0	0	0
Total			**1,657,317**	**2,762,195**	**3,314,634**	**3,867,073**	**4,419,512**	**4,695,731**	**4,971,951**	**4,971,951**	**4,971,951**	**4,971,951**	**4,971,951**
- Stainless Steel Slabs Grade 316 - Plate Purpose	**Norms per MT**	**Cost per MT**											
Sponge Iron	0.325	19,000	2,755	4,591	5,509	6,428	7,346	7,805	8,264	8,264	8,264	8,264	8,264
Ferro Manganese	0.000	55,000	0	0	0	0	0	0	0	0	0	0	0
Medium Carbon Sillico Manganese	0.000	60,000	0	0	0	0	0	0	0	0	0	0	0
Scrap	0.339	23,500	2,872	4,786	5,744	6,701	7,658	8,137	8,615	8,615	8,615	8,615	8,615
Ferro Chrome	0.300	72,500	2,543	4,238	5,086	5,933	6,781	7,205	7,628	7,628	7,628	7,628	7,628
Ferro Silicon	0.025	70,000	212	353	424	494	565	600	636	636	636	636	636
Nickel	0.100	960,225	848	1,413	1,695	1,978	2,260	2,402	2,543	2,543	2,543	2,543	2,543
Copper	0.000	488,250	0	0	0	0	0	0	0	0	0	0	0
Molybedenum	0.020	1,872,439	170	283	339	396	452	480	509	509	509	509	509
Oxygen	45.000	9	381,421	635,702	762,842	889,983	1,017,123	1,080,693	1,144,264	1,144,264	1,144,264	1,144,264	1,144,264
Nitrogen	20.000	5	169,521	282,534	339,041	395,548	452,055	480,308	508,562	508,562	508,562	508,562	508,562
Argon	9.000	45	76,284	127,140	152,568	177,997	203,425	216,139	228,853	228,853	228,853	228,853	228,853
Titanium	0.000	435,000	0	0	0	0	0	0	0	0	0	0	0
Vanadium	0.000	3,500,00	0	0	0	0	0	0	0	0	0	0	0

		0											
Niobium	0.000	2,692,000	0	0	0	0	0	0	0	0	0	0	0
Total			**636,624**	**1,061,041**	**1,273,249**	**1,485,457**	**1,697,665**	**1,803,769**	**1,909,873**	**1,909,873**	**1,909,873**	**1,909,873**	**1,909,873**
- Stainless Steel Slabs General Grade 200 Series Coil Purpose	**Norms per MT**	**Cost per MT**											
Sponge Iron	0.325	19,000	1,102	1,836	2,204	2,571	2,938	3,122	3,306	3,306	3,306	3,306	3,306
Ferro Manganese	0.120	55,000	407	678	814	949	1,085	1,153	1,221	1,221	1,221	1,221	1,221
Medium Carbon Sillico Manganese	0.040	60,000	136	226	271	316	362	384	407	407	407	407	407
Scrap	0.374	23,500	1,267	2,112	2,535	2,957	3,380	3,591	3,802	3,802	3,802	3,802	3,802
Ferro Chrome	0.240	72,500	814	1,356	1,627	1,899	2,170	2,305	2,441	2,441	2,441	2,441	2,441
Ferro Silicon	0.025	70,000	85	141	170	198	226	240	254	254	254	254	254
Nickel	0.008	960,225	25	42	51	59	68	72	76	76	76	76	76
Copper	0.018	488,250	61	102	122	142	163	173	183	183	183	183	183
Molybedenum	0.000	1,872,439	0	0	0	0	0	0	0	0	0	0	0
Oxygen	45.000	9	152,568	254,281	305,137	355,993	406,849	432,277	457,705	457,705	457,705	457,705	457,705
Nitrogen	20.000	5	67,808	113,014	135,616	158,219	180,822	192,123	203,425	203,425	203,425	203,425	203,425
Argon	9.000	45	30,514	50,856	61,027	71,199	81,370	86,455	91,541	91,541	91,541	91,541	91,541
Titanium	0.000	435,000	0	0	0	0	0	0	0	0	0	0	0
Vanadium	0.000	3,500,000	0	0	0	0	0	0	0	0	0	0	0
Niobium	0.000	2,692,000	0	0	0	0	0	0	0	0	0	0	0
Total			**254,787**	**424,645**	**509,574**	**594,503**	**679,432**	**721,897**	**764,361**	**764,361**	**764,361**	**764,361**	**764,361**

- Stainless Steel Slabs Grade 304 - Coil Purpose	**Norms per MT**	**Cost per MT**											
Sponge Iron	0.33	19,000	2,380	3,967	4,760	5,553	6,347	6,744	7,140	7,140	7,140	7,140	7,140
Ferro Manganese	0.00	55,000	0	0	0	0	0	0	0	0	0	0	0
Medium Carbon Sillico Manganese	0.05	60,000	366	610	732	854	976	1,037	1,098	1,098	1,098	1,098	1,098
Scrap	0.37	23,500	2,738	4,563	5,475	6,388	7,300	7,756	8,213	8,213	8,213	8,213	8,213
Ferro Chrome	0.35	72,500	2,563	4,272	5,126	5,981	6,835	7,262	7,689	7,689	7,689	7,689	7,689
Ferro Silicon	0.03	70,000	183	305	366	427	488	519	549	549	549	549	549
Nickel	0.08	960,225	586	976	1,172	1,367	1,562	1,660	1,758	1,758	1,758	1,758	1,758
Copper	0.00	488,250	0	0	0	0	0	0	0	0	0	0	0
Molybedenum	0.00	1,872,439	0	0	0	0	0	0	0	0	0	0	0
Oxygen	50.00	9	366,164	610,274	732,329	854,384	976,438	1,037,466	1,098,493	1,098,493	1,098,493	1,098,493	1,098,493
Nitrogen	20.00	5	146,466	244,110	292,932	341,753	390,575	414,986	439,397	439,397	439,397	439,397	439,397
Argon	20.00	45	146,466	244,110	292,932	341,753	390,575	414,986	439,397	439,397	439,397	439,397	439,397
Titanium	0.00	435,000	0	0	0	0	0	0	0	0	0	0	0
Vanadium	0.00	3,500,000	0	0	0	0	0	0	0	0	0	0	0
Niobium	0.00	2,692,000	0	0	0	0	0	0	0	0	0	0	0
Total			**667,912**	**1,113,186**	**1,335,824**	**1,558,461**	**1,781,098**	**1,892,417**	**2,003,735**	**2,003,735**	**2,003,735**	**2,003,735**	**2,003,735**
- Stainless Steel Slabs Grade 316 - Coil Purpose	**Norms per MT**	**Cost per MT**											
Sponge Iron - Capitive Consumption	0.325	19,000	3,452	7,346	8,815	10,284	11,753	12,488	13,223	13,223	13,223	13,223	13,223

Ferro Manganese	0.000	55,000	0	0	0	0	0	0	0	0	0	0	0
Medium Carbon Sillico Manganese	0.000	60,000	0	0	0	0	0	0	0	0	0	0	0
Sponge Iron - Purchase	0.325	19,000	955	0	0	0	0	0	0	0	0	0	0
Scrap	0.339	23,500	4,595	7,658	9,190	10,721	12,253	13,019	13,785	13,785	13,785	13,785	13,785
Ferro Chrome	0.300	72,500	4,068	6,781	8,137	9,493	10,849	11,527	12,205	12,205	12,205	12,205	12,205
Ferro Silicon	0.025	70,000	339	565	678	791	904	961	1,017	1,017	1,017	1,017	1,017
Nickel	0.100	960,225	1,356	2,260	2,712	3,164	3,616	3,842	4,068	4,068	4,068	4,068	4,068
Copper	0.000	488,250	0	0	0	0	0	0	0	0	0	0	0
Molybedenum	0.020	1,872,439	271	452	542	633	723	768	814	814	814	814	814
Oxygen	50.000	9	678,082	1,130,137	1,356,164	1,582,192	1,808,219	1,921,233	2,034,247	2,034,247	2,034,247	2,034,247	2,034,247
Nitrogen	20.000	5	271,233	452,055	542,466	632,877	723,288	768,493	813,699	813,699	813,699	813,699	813,699
Argon	20.000	45	271,233	452,055	542,466	632,877	723,288	768,493	813,699	813,699	813,699	813,699	813,699
Titanium	0.000	435,000	0	0	0	0	0	0	0	0	0	0	0
Vanadium	0.000	3,500,000	0	0	0	0	0	0	0	0	0	0	0
Niobium	0.000	2,692,000	0	0	0	0	0	0	0	0	0	0	0
Total			**1,232,133**	**2,051,963**	**2,462,356**	**2,872,748**	**3,283,141**	**3,488,337**	**3,693,533**	**3,693,533**	**3,693,533**	**3,693,533**	**3,693,533**
Mild Steel Slabs	**Norms per MT**	**Cost per MT**											
Sponge Iron - Capitive consumption	0.70	19,000	0.00	370	1,536	2,005	2,411	5,911	3,530	3,595	3,600	3,601	3,601
Ferro Manganese	0.00	55,000	0	0	0	0	0	0	0	0	0	0	0
Medium Carbon Sillico Manganese	0.01	60,000	513	854	1,025	1,196	1,367	1,452	1,538	1,538	1,538	1,538	1,538

Sponge Iron - Purchases	0.70	19,000	35,884	59,437	70,232	81,725	93,280	95,760	104,122	104,058	104,052	104,052	104,052
Scrap	0.46	23,500	23,743	39,571	47,486	55,400	63,314	67,271	71,229	71,229	71,229	71,229	71,229
Ferro Chrome	0.00	72,500	0	0	0	0	0	0	0	0	0	0	0
Ferro Silicon		70,000	0	0	0	0	0	0	0	0	0	0	0
Nickel	0.00	960,225	0	0	0	0	0	0	0	0	0	0	0
Copper	0.00	488,250	0	0	0	0	0	0	0	0	0	0	0
Molybedenum	0.00	1,872,439	0	0	0	0	0	0	0	0	0	0	0
Oxygen	20.00	9	1,025,260	1,708,767	2,050,521	2,392,274	2,734,027	2,904,904	3,075,781	3,075,781	3,075,781	3,075,781	3,075,781
Nitrogen	2.00	5	102,526	170,877	205,052	239,227	273,403	290,490	307,578	307,578	307,578	307,578	307,578
Argon	0.00	45	0	0	0	0	0	0	0	0	0	0	0
Titanium	0.00	435,000	0	0	0	0	0	0	0	0	0	0	0
Vanadium	0.00	3,500,000	0	0	0	0	0	0	0	0	0	0	0
Niobium	0.00	2,692,000	0	0	0	0	0	0	0	0	0	0	0
Total			**1,187,926**	**1,979,507**	**2,374,316**	**2,769,822**	**3,165,392**	**3,359,879**	**3,560,248**	**3,560,183**	**3,560,178**	**3,560,177**	**3,560,177**
Ferro Manganese	**Norms per MT**	**Cost per MT**											
Manganese Ore	2.250	10,500	11,132	16,698	20,409	25,975	29,685	31,541	33,396	33,396	33,396	33,396	33,396
Charcoal	0.170	7,500	841	1,262	1,542	1,963	2,243	2,383	2,523	2,523	2,523	2,523	2,523
Coke	0.330	12,500	1,633	2,449	2,993	3,810	4,354	4,626	4,898	4,898	4,898	4,898	4,898
Coal	0.170	1,500	841	1,262	1,542	1,963	2,243	2,383	2,523	2,523	2,523	2,523	2,523
Dolomite	0.100	1,000	495	742	907	1,154	1,319	1,402	1,484	1,484	1,484	1,484	1,484

Electrode	0.015	125,000	74	111	136	173	198	210	223	223	223	223	223
Quartz	0.100	400	495	742	907	1,154	1,319	1,402	1,484	1,484	1,484	1,484	1,484
Total			**15,511**	**23,266**	**28,436**	**36,191**	**41,362**	**43,947**	**46,532**	**46,532**	**46,532**	**46,532**	**46,532**
Medium Carbon Sillico Manganese	**Norms per MT**	**Cost per MT**											
Manganese Ore	1.850	10,500	4,887	7,331	8,960	11,404	13,033	13,847	14,662	14,662	14,662	14,662	14,662
Charcoal	0.170	7,500	449	674	823	1,048	1,198	1,272	1,347	1,347	1,347	1,347	1,347
Coke	0.330	12,500	872	1,308	1,598	2,034	2,325	2,470	2,615	2,615	2,615	2,615	2,615
Coal	0.170	1,500	449	674	823	1,048	1,198	1,272	1,347	1,347	1,347	1,347	1,347
Dolomite	0.100	1,000	264	396	484	616	704	749	793	793	793	793	793
Electrode	0.015	125,000	40	59	73	92	106	112	119	119	119	119	119
Quartz	0.500	400	1,321	1,981	2,422	3,082	3,522	3,743	3,963	3,963	3,963	3,963	3,963
Total			**8,282**	**12,423**	**15,184**	**19,325**	**22,086**	**23,466**	**24,846**	**24,846**	**24,846**	**24,846**	**24,846**

Exhibit: Production Cost - INR. Crores

Production of Cost	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24
Sponge Iron	29.76	49.60	59.52	69.44	79.36	89.28	89.28	89.28	89.28	89.28	89.28
Stainless Steel Slabs 200 Series & 300 Series											
- SS Slabs Grade 1% Nickel - Plate											
Cost of Raw Material - Purchase	11.58	19.30	23.16	27.02	30.88	32.81	34.74	34.74	34.74	34.74	34.74
Cost of Raw Material - Captive production	2.57	5.26	6.39	7.45	8.51	9.04	9.57	9.56	9.56	9.56	9.56
- SS Slabs Grade 304 - Plate											
Cost of Raw Material - Purchase	250.43	417.38	500.86	584.34	667.82	709.55	751.29	751.29	751.29	751.29	751.29
Cost of Raw Material - Captive production	17.30	29.49	35.32	41.13	46.99	49.91	52.84	52.79	52.78	52.78	52.78
- SS Slabs Grade 316 - Plate											
Cost of Raw Material - Purchase	140.57	234.28	281.14	328.00	374.85	398.28	421.71	421.71	421.71	421.71	421.71

Cost of Raw Material - Captive production	4.67	7.83	9.38	10.92	12.47	13.25	14.03	14.01	14.01	14.01	14.01
- SS Slabs General Grade 200 Series Coil											
Cost of Raw Material - Purchase	15.20	25.33	30.40	35.47	40.54	43.07	45.60	45.60	45.60	45.60	45.60
Cost of Raw Material - Captive production	3.57	7.30	8.87	10.35	11.82	12.56	13.29	13.28	13.28	13.28	13.28
- SS Slabs Grade 304 - Coil											
Cost of Raw Material - Purchase	83.62	139.36	167.23	195.10	222.97	236.91	250.85	250.85	250.85	250.85	250.85
Cost of Raw Material - Captive production	5.75	9.80	11.74	13.67	15.62	16.59	17.56	17.54	17.54	17.54	17.54
- SS Slabs Grade 316 - Coil											
Cost of Raw Material - Purchase	227.46	376.07	451.29	526.50	601.72	639.32	676.93	676.93	676.93	676.93	676.93
Cost of Raw Material - Captive production	5.85	12.53	15.00	17.47	19.95	21.20	22.45	22.42	22.42	22.42	22.42
Mild Steel Slabs											
Cost of Raw Material - Purchase	124.95	207.55	246.98	287.74	328.62	342.79	368.14	368.02	368.01	368.01	368.01
Cost of Raw Material - Captive production	2.40	4.88	7.70	9.33	10.87	17.23	13.60	13.71	13.71	13.71	13.71
Ferro Manganese											
Cost of Raw Material - Purchase	15.48	23.23	28.39	36.13	41.29	43.87	46.45	46.45	46.45	46.45	46.45
Cost of Raw Material - Captive production											
Medium Carbon Sillico Manganese											
Cost of Raw Material - Purchase	7.20	10.80	13.20	16.80	19.20	20.40	21.60	21.60	21.60	21.60	21.60
Cost of Raw Material - Captive production											

Unit 2:

Exhibit: Raw Material Requirement - TPA													
Raw material Requirement	**Unit (MT)**	**INR**	**FY 13-14**	**FY 14-15**	**FY 15-16**	**FY 16-17**	**FY 17-18**	**FY 18-19**	**FY 19-20**	**FY 20-21**	**FY 21-22**	**FY 22-23**	**FY 23-24**
MS Plate	**Norms / MT**	**Cost / MT**											
MS Slab - Captive consumption	1.030	31,500	35,201	79,201	100,327	117,557	134,657	144,132	152,760	153,697	153,781	153,788	153,789
MS Slab - Purchase from Outside	1.030	31,500	0	0	22,875	76,046	111,747	137,473	146,445	145,508	163,024	180,617	180,617

SS Plate Grade 1% Nickel	**Norms / MT**	**Cost / MT**											
SS Slab 200 - 1% Nickel Grade - Plate Purpose - Captive consumption	1.030	75,000	1,676	3,771	4,776	5,598	6,412	6,863	7,274	7,319	7,323	7,323	7,323
SS Slab 200 - 1% Nickel Grade - Plate Purpose - Purchase from outside	1.030	75,000	0	0	1,091	3,621	5,321	6,546	6,974	6,929	7,763	8,601	8,601
SS Plate Grade 304	**Norms / MT**	**Cost / MT**											
SS Slab - 304 Grade - Plate Purpose - Captive consumption	1.030	135,000	5,029	11,314	17,600	27,658	35,201	40,229	42,744	42,744	45,258	47,772	47,772
SS Slab - 304 Grade - Plate Purpose - Purchase from outside	1.030	135,000	0	0	0	0	0	0	0	0	0	0	0
SS Plate Grade 316	**Norms / MT**	**Cost / MT**											
SS Slab - 316 Grade - Plate Purpose- capital consumption	1.030	185,000	7,553	13,429	16,582	19,437	22,265	23,831	25,258	25,413	25,427	25,428	25,428
SS Slab - 316 Grade - Plate Purpose- purchase from outside	1.030	185,000	1,759	7,524	16,011	31,781	42,922	50,667	53,897	53,742	58,384	63,039	63,039
Stainless Steel Coil - General Grade 200 Series	**Norms / MT**	**Cost / MT**											
S.S. Slab- 200 Series Coil Purpose- capital consumption	1.040	70,000	2,351	5,289	6,633	7,775	8,906	9,533	10,103	10,165	10,171	10,171	10,171
S.S. Slab- 200 Series Coil Purpose- purchase from	1.040	70,000	0	0	1,595	5,154	7,549	9,273	9,878	9,816	10,985	12,160	12,160

outside													
Stainless Steel Coil - 304 Grade	**Norms / MT**	**Cost / MT**											
S.S. Slab- 304 Grade Coil Purpose- capital consumption	1.040	145,000	5,877	11,813	14,344	16,795	19,237	20,590	21,823	21,957	21,969	21,970	21,970
S.S. Slab- 304 Grade Coil Purpose- purchase from outside	1.040	145,000	0	1,410	6,224	15,527	21,900	26,423	28,129	27,995	30,922	33,859	33,859
Stainless Steel Coil - 316 Grade	**Norms / MT**	**Cost / MT**											
S.S. Slab- 316 Grade Coil Purpose- capital consumption	1.040	175,000	15,279	21,812	26,559	31,101	35,624	38,130	40,413	40,661	40,683	40,685	40,685
S.S. Slab- 316 Grade Coil Purpose- purchase from outside	1.040	175,000	0	12,567	26,920	52,936	71,332	84,105	89,463	89,215	96,832	104,470	104,470

Exhibit: Production of Cost - INR. Crores											
Description	**FY 13-14**	**FY 14-15**	**FY 15-16**	**FY 16-17**	**FY 17-18**	**FY 18-19**	**FY 19-20**	**FY 20-21**	**FY 21-22**	**FY 22-23**	**FY 23-24**
MS Plate											
Cost of Raw Material - Purchase	0.00	0.00	72.06	239.55	352.00	433.04	461.30	458.35	513.53	568.94	568.94
Cost of Raw Material - Captive production	97.19	245.40	311.54	364.34	417.18	445.87	472.67	475.58	475.57	475.57	475.57
SS Plate Grade 1% Nickel											
Cost of Raw Material - Purchase	0.00	0.00	8.18	27.16	39.91	49.10	52.30	51.97	58.22	64.51	64.51
Cost of Raw Material - Captive production	10.58	24.81	31.50	36.85	42.20	45.16	47.83	48.12	48.12	48.12	48.12
SS Plate Grade 304											
Cost of Raw Material - Purchase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cost of Raw Material - Captive production	63.59	144.32	224.05	351.33	447.01	510.87	542.46	542.46	574.04	605.90	605.90
SS Plate Grade 316											

Cost of Raw Material - Purchase	32.54	139.20	296.20	587.95	794.05	937.34	997.09	994.23	1,080.11	1,166.22	1,166.22
Cost of Raw Material - Captive production	133.07	238.41	293.82	343.69	393.57	421.28	446.22	448.97	448.97	448.97	448.97
SS Coil - General Grade 200 Series											
Cost of Raw Material - Purchase	0.00	0.00	11.16	36.08	52.84	64.91	69.14	68.71	76.90	85.12	85.12
Cost of Raw Material - Captive production	264.35	33.41	42.01	49.15	56.28	60.24	63.80	64.18	64.18	64.18	64.18
SS Coil - 304 Grade											
Cost of Raw Material - Purchase	0.00	20.45	90.25	225.14	317.55	383.14	407.87	405.93	448.36	490.96	490.95
Cost of Raw Material - Captive production	53.82	148.62	183.16	214.24	245.33	262.59	278.13	279.84	279.83	279.83	279.83
SS Coil - 316 Grade											
Cost of Raw Material - Purchase	0.00	219.92	471.09	926.38	1,248.32	1,471.84	1,565.60	1,561.26	1,694.56	1,828.23	1,828.22
Cost of Raw Material - Captive production	204.16	382.65	471.55	551.59	631.64	676.11	716.14	720.55	720.55	720.55	720.55

Unit 3:

Exhibit: Raw Material Requirement - TPA													
Raw material Requirement	**Unit (MT)**	**INR**	**FY 13-14**	**FY 14-15**	**FY 15-16**	**FY 16-17**	**FY 17-18**	**FY 18-19**	**FY 19-20**	**FY 20-21**	**FY 21-22**	**FY 22-23**	**FY 23-24**
SS Circles - 200 Grade	**Norms / MT**	**Cost / MT**											
SS - HR Coil- 200 Series - from Captive Production	1.260	80,000	1,652	4,756	7,574	11,909	15,406	17,799	19,064	19,199	20,218	21,338	21,461
SS - HR Coil- 200 Series - Purchased from outside	1.260	80,000	0	2,677	3,989	6,261	7,719	8,630	9,017	8,882	9,514	10,046	9,924
SS Coils - 200 Grade	**Norms / MT**	**Cost / MT**											
SS - HR Coil- 200 Series - from Captive production	1.020	80,000	362	0	0	0	0	0	0	0	0	0	0
SS - HR Coil- 200 Series- Purchased from outside	1.020	80,000	975	6,017	9,360	14,709	18,720	21,395	22,732	22,732	24,069	25,406	25,406
SS Circles - 304 Grade	**Norms / MT**	**Cost / MT**											

SS - Circles- 304 Grade- from Captive production	1.150	150,000	1,508	6,784	10,553	16,584	21,106	24,122	25,629	25,629	27,137	28,644	28,644
SS - Circles- 304 Grade- Purchased from outside	1.150	150,000	0	0	0	0	0	0	0	0	0	0	0
SS Coils - 304 Grade	**Norms / MT**	**Cost / MT**											
SS - Coil- 304 Grade- from Captive production	1.010	150,000	1,324	5,106	8,381	13,189	17,409	20,376	22,031	22,369	23,409	24,702	25,007
SS - Coil- 304 Grade- Purchased from outside	1.010	150,000	0	853	887	1,375	1,128	809	478	141	424	456	150
SS Coils - 316 Grade	**Norms / MT**	**Cost / MT**											
SS - HR Coil- 316 Grade- from Captive production	1.010	205,000	1,324	5,958	9,268	14,565	18,537	21,185	22,509	22,509	23,833	25,157	25,157
SS - HR Coil- 316 Grade- Purchased from outside	1.010	205,000	0	0	0	0	0	0	0	0	0	0	0

Exhibit: Production of Cost - INR. Crores

Description	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24
SS Circles - 200 Grade											
Cost of Raw Material - Purchase	0.00	21.42	31.91	50.09	61.75	69.04	72.13	71.05	76.11	80.37	79.39
Cost of Raw Material - Captive production	192.87	59.64	51.88	83.08	108.34	125.54	134.42	135.27	142.65	151.01	151.95
SS Coils - 200 Grade											
Cost of Raw Material - Purchase	7.80	48.14	74.88	117.67	149.76	171.16	181.86	181.86	192.55	203.25	203.25
Cost of Raw Material - Captive production	42.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SS Circles - 304 Grade											
Cost of Raw Material - Purchase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cost of Raw Material - Captive production	14.19	88.68	145.25	233.41	299.71	343.71	365.13	364.88	386.98	409.82	410.05
SS Coils - 304 Grade											
Cost of Raw Material - Purchase	0.00	12.79	13.31	20.63	16.93	12.14	7.18	2.11	6.36	6.84	2.25

Cost of Raw Material - Captive production	12.46	66.74	115.36	185.63	247.20	290.34	313.86	318.46	333.82	353.41	357.98
SS Coils - 316 Grade											
Cost of Raw Material - Purchase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cost of Raw Material - Captive production	17.98	106.07	168.08	263.30	335.32	382.93	406.61	406.48	429.85	453.85	453.98

Based on the experience of executing similar assignments in recent past, D&B India finds the raw material consumption norm as reasonable.

Consumables & Stores & Spares

Provision towards stores, spares and consumables as per the norms for the major supporting ancillary products as raw materials.

Unit 1:

Particulars - Inputs for Other Expenses	Cost Rs. / MT	Qty / MT	Sponge Iron	SSS Grade 1% Nickel - Plate purpose	SSS Grade 304 - Plate purpose	SSS Grade 316 - Plate purpose	SSS - 200 Series General Grade - Coil purpose	SSS - 304 Grade- Coil purpose	SSS - 316 Grade Coil purpose	MS Slabs	Ferro Manganese	Medium Carbon Silico Manganese
Power	4.75		100	450	450	450	450	450	450	500	2,750	4,250
Furnace Oil	50		15									
Stores	250		1	0	0	0	0	0	0	0	2	2
Burnt Lime	6,000			0	0	0	0	0	0	0	0	0
Burnt Dolomite	6,000			0	0	0	0	0	0	0	0	0
Electrode	150			0	0	0	0	0	0	3	0	0
Lime	4,000			0	0	0	0	0	0	0	0	0
Refractory	1,000			1	1	1	1	1	1	1	0	0
Misc. Stores	500			1	1	1	1	1	1	1	0	0
Handling Expenses	50			1	1	1	1	1	1	1	1	1
Casting Expenses	50			1	1	1	1	1	1	1	1	1
Repairs & Maintenance	100		1	1	1	1	1	1	1	1	1	1
Salary & Wages	200		1	1	1	1	1	1	1	1	1	1

Contractor Charges	150		1	1	1	1	1	1	1	1	1	1

Unit 2:

Exhibit: Inputs for Other Expenses								
		Qty / MT						
Particulars	**Cost INR. / MT**	**MS Plate**	**SS Plate Grade 1% Nickel**	**SS Plate Grade 304**	**SS Plate Grade 316**	**SSS - 200 Series General Grade - Coil**	**SSS Grade 304 - Plate**	**SSS Grade 316 - Plate**
Furnace Oil	53.00	25	25	25	25	25	25	25
Rolls	300.00	1	1	1	1	1	1	1
Power	4.75	140	140	140	145	145	145	145
Make Fuel/Gases	100.00	0	0	0	0	1	1	1
Salary & Wages	175.00	1	1	1	1	1	1	1
Repairs & Maintenance	2,300.00	0	1	1	1			
Handling Charges	50.00	1	1	1	1	1	1	1

Unit 3:

Exhibit: Inputs for Other Expenses						
		Qty / MT				
Particulars	**Cost INR. / MT**	**SS Circles 200**	**SS Coils 200**	**SS Circles 304**	**SS Coils 304**	**SS Coils 316**
Salary & Wages	175	1	1	1	1	1
Furnace Oil Annealling	1,350	2	2	2	2	2
Suplhuric Acid	450	1	1	1	1	1
Nitric Acid	750	1	1	1	1	1
Hydro Flouric Acid	450	1	1	1	1	1
Power (400Kwh/MT)	1,900	1	1	1	1	1
Spares & Rolls	250	1	1	1	1	1
Effluent Treatment Expenses	250	1	1	1	1	1
Circle Blanking Expenses	500	1	0	1	0	0

The utilities cost as considered for the purpose of financial evaluation is in line with the standards.

Selling, Administrative & Distribution Expenses

The major costs considered in the selling, general and administrative expenses are –

- Selling, Administrative and distribution – has been estimated at INR 4.50 Crores with 5% increment YOY of the total sales. The selling and distribution expenses take into consideration the expenses related to brokerage and commissions to brokers, sales promotion, mailing and communication expenses etc.

Selling, general and administrative expenses considered for the projections are as per the industry standard.

Operating profit

Based on the above discussion of income and operating expenses, projected operating profit during the restructuring tenure is detailed in the following exhibit:

Grand EBDIT	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24
Sales	1,098.17	2,105.50	3,178.64	4,757.97	6,061.05	6,941.93	7,433.63	7,493.07	7,834.30	8,214.80	8,262.97
Sale - Captive Consumption	1,148.69	1,615.84	2,132.59	2,786.92	3,350.01	3,704.40	3,930.61	3,948.11	4,047.85	4,154.49	4,160.37
By Products	25.89	72.82	113.28	178.01	226.55	258.92	275.10	275.10	291.28	307.47	307.47
Total Sale	**2,272.75**	**3,794.16**	**5,424.51**	**7,722.90**	**9,637.62**	**10,905.24**	**11,639.34**	**11,716.28**	**12,173.43**	**12,676.76**	**12,730.80**
Increase /(decrease) in Stock	78.35	(174.23)	(164.54)	(244.52)	(192.32)	(122.42)	(69.34)	0.18	(51.65)	(52.02)	(0.03)
Raw Material -Purchase	946.59	1,964.82	2,871.22	4,337.18	5,440.36	6,148.01	6,521.08	6,501.94	6,853.18	7,200.90	7,195.33
Raw Material - Captive production	1,148.69	1,615.84	2,132.59	2,786.92	3,350.01	3,704.40	3,930.61	3,948.11	4,047.85	4,154.49	4,160.37
Power	43.27	76.54	98.14	127.24	150.68	164.41	174.13	174.13	177.82	181.50	181.50
Furnace Oil	12.84	32.00	48.90	75.64	95.82	109.44	116.00	116.00	122.56	129.12	129.12
Stores	1.94	3.77	4.98	6.67	8.02	8.91	9.36	9.36	9.64	9.92	9.92
Burnt Lime	9.05	14.99	18.01	21.13	24.15	25.65	27.16	27.16	27.16	27.16	27.16
Burnt Dolomite	2.09	3.46	4.16	4.88	5.57	5.92	6.27	6.27	6.27	6.27	6.27

Electrode	1.92	3.20	3.84	4.49	5.13	5.45	5.77	5.77	5.77	5.77	5.77
Lime	1.44	2.39	2.87	3.35	3.83	4.07	4.31	4.31	4.31	4.31	4.31
Refractory	10.85	18.08	21.70	25.32	28.93	30.74	32.55	32.55	32.55	32.55	32.55
Misc. Stores	8.46	18.96	26.29	36.91	45.34	50.65	53.76	53.76	55.97	58.17	58.17
Handling Expenses	0.94	1.77	2.42	3.34	4.08	4.54	4.82	4.82	5.00	5.18	5.18
Casting Expenses	0.58	0.96	1.15	1.35	1.55	1.64	1.74	1.74	1.74	1.74	1.74
Repairs & Maintenance	4.94	10.30	15.22	22.84	28.66	32.50	34.48	34.48	36.27	38.05	38.05
Salary & Wages	4.10	7.87	10.64	14.56	17.71	19.73	20.86	20.86	21.61	22.36	22.36
Contractor Charges	2.04	3.38	4.06	4.76	5.44	5.82	6.11	6.11	6.11	6.11	6.11
Total COGS	**2,278.08**	**3,604.12**	**5,101.66**	**7,232.05**	**9,022.95**	**10,199.45**	**10,879.66**	**10,947.55**	**11,362.15**	**11,831.58**	**11,883.88**
Contribution	**(5.33)**	**190.05**	**322.86**	**490.85**	**614.66**	**705.80**	**759.68**	**768.74**	**811.29**	**845.18**	**846.93**
EBITDA	**(5.33)**	**190.05**	**322.86**	**490.85**	**614.66**	**705.80**	**759.68**	**768.74**	**811.29**	**845.18**	**846.93**
EBITDA margin	**-0.23%**	**5.01%**	**5.95%**	**6.36%**	**6.38%**	**6.47%**	**6.53%**	**6.56%**	**6.66%**	**6.67%**	**6.65%**

INR. Crores

Description	FY	FY	FY 10-	FY 11-	FY 12-	FY	FY	FY 13-	FY 14-	FY 15-	FY 16-	FY 17-	FY 18-	FY 19-	FY 20-	FY 21-	FY 22-	FY 23-

	08-09	09-10	11	12	13	13-14	13-14	14	15	16	17	18	19	20	21	22	23	24
	A	A	A	A	A	30-Sep-13	30-Sep-13	Proj	Proj	Proj	Proj	Proj	Proj	Proj	Proj	Proj	Proj	Proj
Gross Turnover:																		
- Sale	383.92	697.35	1,957.51	2,652.01	2,621.32	972.72	972.72	1,233.90	2,365.74	3,571.52	5,346.06	6,810.20	7,799.95	8,352.43	8,419.22	8,802.62	9,230.15	9,284.27
- By product								29.10	81.82	127.28	200.01	254.56	290.92	309.10	309.10	327.29	345.47	345.47
-Job Work charges received			0.12	1.00	0.39	0.00	0.00											
-DEPB Entitlement	1.28	(0.04)	0.13	1.37	0.00	1.97	1.97		14.01	14.01								
Less: Excise duty	19.24	12.30	21.76	159.17	246.56	102.12	102.12	138.93	269.24	406.88	610.09	777.15	890.02	952.80	960.15	1,004.32	1,053.35	1,059.31
Net Sales	**365.96**	**685.01**	**1,935.99**	**2,495.21**	**2,375.15**	872.57	872.57	**1,124.06**	**2,192.33**	**3,305.93**	**4,935.98**	**6,287.61**	**7,200.85**	**7,708.73**	**7,768.17**	**8,125.58**	**8,522.27**	**8,570.44**
% Rise (+) or fall (-) in net Sales		87.18%	182.62%	28.89%	-4.81%	-6.63%	-6.63%	-52.67%	95.04%	50.80%	49.31%	27.38%	14.52%	7.05%	0.77%	4.60%	4.88%	0.57%
Total Income	**365.96**	**685.01**	**1,935.99**	**2,495.21**	**2,375.15**	**872.57**	**872.57**	**1,124.06**	**2,192.33**	**3,305.93**	**4,935.98**	**6,287.61**	**7,200.85**	**7,708.73**	**7,768.17**	**8,125.58**	**8,522.27**	**8,570.44**
-																		
Cost of Sales:																		
Raw Material Cost	277.95	592.93	1,792.27	2,110.70	2,217.19	950.83	950.83	946.59	1,964.82	2,871.22	4,337.18	5,440.36	6,148.01	6,521.08	6,501.94	6,853.18	7,200.90	7,195.33
(Increase)/Decrease in stock	11.79	(6.63)	(104.69)	28.44	(147.92)	(143.98)	(143.98)	78.35	(174.23)	(164.54)	(244.52)	(192.32)	(122.42)	(69.34)	0.18	(51.65)	(52.02)	(0.03)

-Consumable of Store & Spares	1.80	4.39	5.41	20.00	17.40	0.00	0.00	16.44	27.82	33.86	40.51	46.69	50.00	52.87	52.87	53.15	53.42	53.42
-Power & Fuel	20.09	21.78	41.26	44.52	41.62	36.51	36.51	56.11	108.54	147.04	202.88	246.50	273.85	290.13	290.13	300.38	310.63	310.63
-Repairs to Machinery	1.04	0.44	0.11	0.05	0.16	0.00	0.00	4.94	10.30	15.22	22.84	28.66	32.50	34.48	34.48	36.27	38.05	38.05
-Salary & Wages	5.67	7.32	9.08	15.12	16.16	6.25	6.25	6.14	11.25	14.70	19.32	23.15	25.55	26.98	26.98	27.72	28.47	28.47
-Other Manufacturing Expenses						0.00	0.00	20.83	39.78	51.56	66.93	79.90	87.57	92.87	92.87	95.25	97.64	97.64
-Administrative Expenses	2.73	3.81	1.29	2.72	3.25	0.00	0.00	2.00	2.10	2.21	2.32	2.43	2.55	2.68	2.81	2.95	3.10	3.26
-Selling & Distribution Expenses	4.83	0.85	1.13	2.17	2.59	0.00	0.00	2.50	2.63	2.76	2.89	3.04	3.19	3.35	3.52	3.69	3.88	4.07
Total cost of sales	**325.90**	**624.90**	**1,745.85**	**2,223.72**	**2,150.45**	**849.62**	**849.62**	**1,133.90**	**1,993.00**	**2,974.03**	**4,450.34**	**5,678.41**	**6,500.79**	**6,955.08**	**7,005.77**	**7,320.95**	**7,684.07**	**7,730.84**
EBDITA	**40.06**	**60.11**	**190.15**	**271.49**	**224.70**	**22.95**	**22.95**	**(9.83)**	**199.33**	**331.90**	**485.64**	**609.19**	**700.05**	**753.65**	**762.40**	**804.64**	**838.20**	**839.60**
EBIDTA Margins (%)	10.95%	8.78%	9.82%	10.88%	9.46%	2.63%	2.63%	-0.87%	9.09%	10.04%	9.84%	9.69%	9.72%	9.78%	9.81%	9.90%	9.84%	9.80%

Operating profit is at 9.09% to 9.90%. Company's decision for integrated steel plant can be vindicated through the savings made by the backward-forward linkage of various manufacturing stages as indicated in the following exhibit.

It can be observed that production of each of the intermediate products and captive power will save cost and strengthen bottom line as well as the top line in very significant manner. This also ensures in-house supply of various input materials shielding the Company from market risks and fluctuations.

Working Capital Requirement

Based on the industry practice, holding periods assumed for assessing working capital requirement is indicated in the following exhibit –

Based on the above assumption for various holding periods, working capital requirement is reckoned in the following exhibit:

Parameter	HP	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24
RM -(Imported +Domestic)		687.11	983.47	1451.42	1808.59	2037.08	2159.92	2154.62	2262.30	2369.35	2368.19
Stock of Consumable Stores	2.00	4.64	5.64	6.75	7.78	8.33	8.81	8.81	8.86	8.90	8.90
Stock of WIP	0.33	102.50	143.05	203.38	250.80	281.01	298.09	298.05	310.83	323.70	323.71
Stock of Finished Goods	1.00	314.86	438.85	623.05	767.94	860.16	912.42	912.28	951.15	990.30	990.33
Sundry Debtors	3.00	548.08	826.48	1234.00	1571.90	1800.21	1927.18	1942.04	2031.40	2130.57	2142.61
Total CA		**1657.20**	**2397.50**	**3518.59**	**4407.01**	**4986.79**	**5306.42**	**5315.80**	**5564.53**	**5822.82**	**5833.74**
Less: Creditors		**692.87**	**947.33**	**1426.90**	**1715.57**	**1882.89**	**1962.69**	**1917.91**	**2052.15**	**2151.89**	**2117.98**
- Indigenous	2.10	401.87	554.33	840.90	1014.57	1115.89	1162.69	1136.91	1218.15	1278.89	1258.98
- Indigenous - LC	0.00	291.00	393.00	586.00	701.00	767.00	800.00	781.00	834.00	873.00	859.00
Net Working Capital Gap		**964.33**	**1450.18**	**2091.69**	**2691.44**	**3103.90**	**3343.74**	**3397.89**	**3512.38**	**3670.93**	**3715.76**
Less: Margin		**192.87**	**290.04**	**418.34**	**538.29**	**620.78**	**668.75**	**679.58**	**702.48**	**734.19**	**743.15**
Margin on Stock	20%	83.25	124.74	171.54	223.91	260.74	283.31	291.17	296.20	308.07	314.63
Margin on Debtors	20%	109.62	165.30	246.80	314.38	360.04	385.44	388.41	406.28	426.11	428.52
Bank Borrowings		**771.46**	**1160.14**	**1673.35**	**2153.16**	**2483.12**	**2483.12**	**2483.12**	**2483.12**	**2483.12**	**2483.12**
Bank Borrowings		**771.46**	**1160.14**	**1673.35**	**2153.16**	**2483.12**	**2483.12**	**2483.12**	**2483.12**	**2483.12**	**2483.12**

Note: FY 19-20 onwards the bank finance maintained constant, it is advisable based on the Companies performance, the assessment of working capital is recommended for the future years.

LC Requirement:

Letter of Credit (Inland LC Requirement)												
Particulars	**Months**	**FY 13-**	**FY 14-15**	**FY 15-16**	**FY 16-17**	**FY 17-18**	**FY 18-19**	**FY 19-20**	**FY 20-21**	**FY 21-22**	**FY 22-23**	**FY 23-24**

		14										
Annual Purchase (Rounded)	100.00 %	339.00	749.00	1,158.0 0	1,914.0 0	2,375.0 0	2,669.0 0	2,786.0 0	2,738.0 0	2,965.0 0	3,146.0 0	3,101.0 0
Out of the (1) on basis other than usance LC	81.00%	274.59	606.69	937.98	1,550.3 4	1,923.7 5	2,161.8 9	2,256.6 6	2,217.7 8	2,401.6 5	2,548.2 6	2,511.8 1
Out of the (1) on usance LC basis	19.00%	64.41	142.31	220.02	363.66	451.25	507.11	529.34	520.22	563.35	597.74	589.19
Average of (3) per month		5.37	11.86	18.34	30.31	37.60	42.26	44.11	43.35	46.95	49.81	49.10
Lead time (in terms of months)	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Usance Period (-do-)	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
Usance LC requirement (5 + 6) x 4 (Rounded)		**27.00**	**59.00**	**92.00**	**152.00**	**188.00**	**211.00**	**221.00**	**217.00**	**235.00**	**249.00**	**245.00**
Margin Money	10.00%	2.70	5.90	9.20	15.20	18.80	21.10	22.10	21.70	23.50	24.90	24.50
Letter of Credit (Foreign LC Requirement)												
Particulars	**Months**	**FY 13-14**	**FY 14-15**	**FY 15-16**	**FY 16-17**	**FY 17-18**	**FY 18-19**	**FY 19-20**	**FY 20-21**	**FY 21-22**	**FY 22-23**	**FY 23-24**
Annual Purchase/ Import - Rounded	100%	963.00	1,548.0 0	2,009.0 0	2,891.0 0	3,423.0 0	3,707.0 0	3,858.0 0	3,758.0 0	3,996.0 0	4,162.0 0	4,093.0 0
Out of the (1) on basis other than usance LC	80%	770.40	1,238.4 0	1,607.2 0	2,312.8 0	2,738.4 0	2,965.6 0	3,086.4 0	3,006.4 0	3,196.8 0	3,329.6 0	3,274.4 0
Out of the (1) on usance LC basis	20%	192.60	309.60	401.80	578.20	684.60	741.40	771.60	751.60	799.20	832.40	818.60
Average of (3) per month		16.05	25.80	33.48	48.18	57.05	61.78	64.30	62.63	66.60	69.37	68.22
Lead time (in terms of months)	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Usance Period (-do-)	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50
Usance LC requirement - Rounded		**144.00**	**232.00**	**301.00**	**434.00**	**513.00**	**556.00**	**579.00**	**564.00**	**599.00**	**624.00**	**614.00**
Margin Money	10.00%	14.40	23.20	30.10	43.40	51.30	55.60	57.90	56.40	59.90	62.40	61.40
Total LC Requirement		171.00	291.00	393.00	586.00	701.00	767.00	800.00	781.00	834.00	873.00	859.00
Total Margin Money on LC		17.10	29.10	39.30	58.60	70.10	76.70	80.00	78.10	83.40	87.30	85.90

Promoter's Contribution	**INR.**	**FY 13-**	**FY 14-**	**FY 15-**	**FY 16-**	**FY 17-**	**FY 18-**	**FY 19-**	**FY 20-**	**FY 21-**	**FY 22-**	**FY 23-**

	Crores	14	15	16	17	18	19	20	21	22	23	24
Promoter's Contribution-25% of Sacrifice	**51.14**											
Promoter's Contribution-Upfront	**51.14**		46.89									
Promoter's Contribution- WC	**436.07**		4.25	4.24	96.85	128.51	119.75	82.46	0.00	0.00	0.00	0.00
Promoter's Contribution- New TL	**15.75**		15.75									
TOTAL	**502.96**	**0.00**	**66.89**	**4.24**	**96.85**	**128.51**	**119.75**	**82.46**	**0.00**	**0.00**	**0.00**	**0.00**
Manner of Contribution												
Equity Share Capital	46.89	0.00	46.89									
Unsecured Loan	20.00	0.00	20.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Internal Accrual				4.24	96.85	128.51	119.75	82.46	0.00	0.00	0.00	0.00
TOTAL	**66.89**	**0.00**	**66.89**	**4.24**	**96.85**	**128.51**	**119.75**	**82.46**	**0.00**	**0.00**	**0.00**	**0.00**

Depreciation

The following depreciation rate has been assumed while preparing the depreciation schedule detailed below:

	Particulars	FY 13-14 Proj	FY 14-15 Proj	FY 15-16 Proj	FY 16-17 Proj	FY 17-18 Proj	FY 18-19 Proj	FY 19-20 Proj	FY 20-21 Proj	FY 21-22 Proj	FY 22-23 Proj	FY 23-24 Proj
	Gross Block as on 30.06.12											
	Gross Block - Land Freehold	15.08	15.08	15.08	15.08	15.08	15.08	15.08	15.08	15.08	15.08	15.08
	Addition/Deletion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00%	Less:- Depreciation @ 0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Net Block	15.08	15.08	15.08	15.08	15.08	15.08	15.08	15.08	15.08	15.08	15.08
	Gross Block - Office Building	25.24	25.24	25.24	25.24	25.24	25.24	25.24	25.24	25.24	25.24	25.24
	Addition/Deletion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00%	Less:- Depreciation @ 5%	3.80	4.87	5.89	6.86	7.78	8.65	9.48	10.27	11.02	11.73	12.40

	Net Block	21.44	20.36	19.35	18.38	17.46	16.59	15.76	14.97	14.22	13.51	12.83
	Gross Block - Factory Building	175.64	175.64	175.64	175.64	175.64	175.64	175.64	175.64	175.64	175.64	175.64
	Addition/Deletion											
10.00%	Less:- Depreciation @ 10%	51.65	64.05	75.20	85.25	94.29	102.42	109.74	116.33	122.26	127.60	132.40
	Net Block	123.99	111.59	100.43	90.39	81.35	73.22	65.89	59.30	53.37	48.04	43.23
	Gross Block - Plant & Machinery	1,255.74	1,255.74	1,342.46	1,342.46	1,342.46	1,342.46	1,342.46	1,342.46	1,342.46	1,342.46	1,342.46
	Addition/Deletion	0.00	86.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13.91%	Less:- Depreciation @ 13.91%	483.73	603.18	706.01	794.54	870.76	936.37	992.86	1,041.49	1,083.35	1,119.39	1,150.42
	Net Block	772.01	739.28	636.45	547.92	471.70	406.09	349.60	300.97	259.11	223.07	192.04
	Gross Block - Vehicles	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84
	Addition/Deletion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25.89%	Less:- Depreciation @ 25.89%	3.44	3.81	4.07	4.27	4.42	4.53	4.61	4.67	4.72	4.75	4.77
	Net Block	1.40	1.04	0.77	0.57	0.42	0.31	0.23	0.17	0.13	0.09	0.07
	Gross Block - Furniture & Fixture	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
	Addition/Deletion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18.10%	Less:- Depreciation @ 18.10%	2.19	2.52	2.78	3.00	3.18	3.33	3.45	3.55	3.63	3.70	3.75
	Net Block	1.81	1.48	1.21	0.99	0.81	0.67	0.55	0.45	0.37	0.30	0.25
	Gross Block - Office Equipment	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
	Addition/Deletion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13.91%	Less:- Depreciation @ 13.91%	0.60	0.67	0.74	0.79	0.84	0.88	0.91	0.94	0.97	0.99	1.01
	Net Block	0.53	0.46	0.40	0.34	0.29	0.25	0.22	0.19	0.16	0.14	0.12
	Gross Block - Computer	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82
	Addition/Deletion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40.00%	Less:- Depreciation @ 40%	1.61	1.69	1.74	1.77	1.79	1.80	1.81	1.81	1.81	1.82	1.82

	Net Block	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
	Gross Block - Construction Equipments	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
	Addition/Deletion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7.80%	Less:- Depreciation @ 7.80%	0.59	0.62	0.65	0.68	0.70	0.72	0.75	0.76	0.78	0.80	0.81
	Net Block	0.39	0.36	0.33	0.31	0.28	0.26	0.24	0.22	0.20	0.19	0.17
	Gross Block - Goodwill	23.35	23.35	23.35	23.35	23.35	23.35	23.35	23.35	23.35	23.35	23.35
	Addition/Deletion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20.00%	Less:- Depreciation @ 25%	18.68	23.35	23.35	23.35	23.35	23.35	23.35	23.35	23.35	23.35	23.35
14.03	Net Block	4.67	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
	Gross Block - Computer Software	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
	Addition/Deletion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20.00%	Less:- Depreciation @ 20%	0.05	0.06	0.08	0.09	0.10	0.11	0.11	0.12	0.12	0.12	0.13
	Net Block	0.09	0.07	0.06	0.05	0.04	0.03	0.02	0.02	0.02	0.01	0.01
	Total Dep. During the Year	**145.48**	**138.49**	**115.71**	**100.08**	**86.60**	**74.96**	**64.91**	**56.22**	**48.72**	**42.23**	**36.62**
	Total Gross Block - Tangible Assets	1,484.60	1,484.60	1,571.33	1,571.33	1,571.33	1,571.33	1,571.33	1,571.33	1,571.33	1,571.33	1,571.33
	Total Gross Block - Intangible Assets	4.67	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
	Total Additions	0.00	86.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total Accumulated Depreciation	552.32	690.81	806.51	906.60	993.19	1,068.15	1,133.06	1,189.29	1,238.00	1,280.24	1,316.86
	Total Net Block	936.95	880.52	764.81	664.73	578.13	503.17	438.27	382.04	333.32	291.09	254.47

Income Tax

Following assumption has been considered while estimating the income tax for the project –

Description	Unit	Value

Income Tax – Base Rate	%	30.00
Surcharge	%	10.00
Education Cess	%	3.00
Effective Income Tax	%	33.99
MAT – Base rate	%	18.50
Surcharge	%	10.00
Education Cess	%	3.00
Effective MAT	%	20.96

Financial Evaluation

Proposed CDR Scheme

The following section discusses the proposed restructuring scheme.

- The cut-off date for CDR scheme would be October 1st , 2013
- The Company has availed several loans for the various projects that it has implemented.
- Moratorium period for repayment of TLs (TL, WCTL 1, WCTL 2, New TL & Priority TL) from COD to Sep 30th, 2015 including repayment.
- To transfer interest of TLs (TLs, WCTL 1, WCTL 2, New TL) from COD to Sep 30th, 2015 to Funded Interest Term Loan (FITL).
- D & B India considered FITL on the above TLs, WCTL 1, WCTL 2, New TL, not on the proposed Priority TLs, interest will be serviced by the Company on the respective Priority TLs.
- D & B India assumed the New Term Loan & Priority TL will be raised by Company before June 30th, 2014.
- FITL on CC considered for 6 Months from the COD
- D & B India considered the principal amounts for restructuring the TL's, all the interest dues and instalment dues as on COD will be cleared by Company.
- Discount Rate for the TL's are as follows.

Exhibit:	TL Sanctioned			CC/ LC/BG Sanctioned					Interest rates						
Description	Unit 1	Unit 2	Unit 3	Total A	CC Limits	LC/BG	Total B	Total (A+B)	Unit 1	Unit 2	Unit 3	CC	Base Rate		Discount Rate
SBBJ	10.00			**10.00**	85.00	135.00	**220.00**	**230.00**	13.75%			14.25%	**10.25%**		**14.75%**
SBH	20.00			**20.00**	130.00	90.00	**220.00**	**240.00**	14.20%			13.95%	**10.20%**		**14.70%**
AB	17.50			**17.50**	128.00	62.00	**190.00**	**207.50**	14.50%			13.75%	**10.25%**		**14.50%**
DB	20.00			**20.00**	67.00	40.00	**107.00**	**127.00**	15.00%			13.80%	**10.25%**		**16.00%**
Uco	0.00	124.00		**124.00**	70.00	80.00	**150.00**	**274.00**		13.50%		13.45%	**10.20%**		**16.20%**
SB		35.00		**35.00**	20.00	30.00	**50.00**	**85.00**		14.00%		14.25%	**10.25%**		**14.25%**

IOB		25.00		**25.00**	32.00	39.00	**71.00**	**96.00**		14.75%		14.00%	**10.25%**		**14.75%**
SBM		47.00		**47.00**	21.00	25.00	**46.00**	**93.00**		14.00%		14.65%	**10.15%**		**15.25%**
LVBL		50.00		**50.00**		0.00	**0.00**	**50.00**		14.50%		14.65%	**10.25%**		**14.50%**
CBI			40.00	**40.00**	75.00	25.00	**100.00**	**140.00**			12.25%	13.75%	**10.25%**		**13.75%**
IB		45.00	75.00	**120.00**	67.50	17.40	**84.90**	**204.90**		14.00%	12.50%	13.20%	**10.20%**		**14.00%**
TMBL		29.00	30.00	**59.00**	55.00	20.00	**75.00**	**134.00**		14.25%	14.00%	13.50%	**10.75%**		**15.50%**
CB			30.00	**30.00**	22.20	3.60	**25.80**	**55.80**			12.50%	12.35%	**10.25%**		**16.20%**
FBL			25.00	**25.00**	11.30	0.00	**11.30**	**36.30**			12.50%	14.50%	**10.55%**		**16.80%**
Total	**67.50**	**355.00**	**200.00**	**622.50**	**784.00**	**567.00**	**1,351.00**	**1,973.50**							

Restructuring of term loans

The Company has proposed that the term loans sanctioned and disbursed under unit wise. The following table provides the details of the loans to be combined, along with the sanctioned and disbursed amounts –

BANKS	Term Loan							Working Capital Limit					
	Principal Outstanding			Interest & Repayment Overdue									
	Unit 1 - A	Unit 2 - B	Unit 3 - C	Installements Due - D	Interest Dues - E	Others Dues - F	Amount to be restructured Total(A+B+C-D-E-F)	CC O/s - G	Interest due - H	LC Devolvement - I	LC Outstanding - J	Amount to be Restructured CC (G-H-I)	Total WC (G-H-I)
SBBJ	4.40				0.18		**4.40**	101.33	1.18	19.88	118.16	80.27	**80.27**
SBH	9.00			1.00	0.35		**8.00**	156.97	5.01	21.96	69.43	130.00	**130.00**
AB	7.83			0.88	0.33		**6.95**	117.03	5.22	25.81	84.14	86.00	**86.00**
DB	8.70				0.12		**8.70**	67.43	0.43		26.46	67.00	**67.00**
Uco		63.99		5.39	2.45		**58.60**	76.36	0.82	5.54	80.56	70.00	**70.00**
SB		10.50			0.12		**10.50**	20.13	0.13		29.97	20.00	**20.00**
IOB		7.39		1.25	0.31		**6.14**	32.42	0.42		44.20	32.00	**32.00**
SBM		24.44		2.17	0.62		**22.27**	21.00			25.00	21.00	**21.00**
LVBL		32.38					**32.38**					0.00	**0.00**
CBI			21.26	0.57	0.91		**20.69**	74.80			24.13	74.80	**74.80**

IB		25.82	44.25	2.06	0.85		**68.01**	68.23	0.73		17.40	67.50	**67.50**
TMBL		20.05	17.35	2.63	1.43		**34.77**	57.41	2.41		19.85	55.00	**55.00**
CB			19.69	1.85			**17.84**	22.75	0.55		3.55	22.20	**22.20**
FBL			14.58	1.09	0.51		**13.49**	11.41	0.14			11.27	**11.27**
Total	**29.93**	**184.57**	**117.13**	**18.89**	**8.18**	**0.00**	**312.74**	**827.27**	**17.04**	**73.19**	**542.85**	**737.04**	**737.04**

WCTL 1:

Exhibit: WCTL 1- INR. Crores					
Description	**CC Sanction limit**	**Short Fall**	**Available DP**	**WCTL I**	**WCTL %**
SBBJ	85.00	16.54	68.46	16.54	10.84%
SBH	130.00	25.29	104.71	25.29	16.58%
AB	128.00	24.90	103.10	24.90	16.33%
DB	67.00	13.04	53.96	13.04	8.55%
Uco	70.00	13.62	56.38	13.62	8.93%
SB	20.00	3.89	16.11	3.89	2.55%
IOB	32.00	6.23	25.77	6.23	4.08%
SBM	21.00	4.09	16.91	4.09	2.68%
LVBL	0.00	0.00	0.00	0.00	0.00%
CBI	75.00	14.59	60.41	14.59	9.57%
IB	67.50	13.13	54.37	13.13	8.61%
TMBL	55.00	10.70	44.30	10.70	7.02%
CB	22.20	4.32	17.88	4.32	2.83%
FBL	11.30	2.20	9.10	2.20	1.44%
Total	**784.00**	**152.54**	**631.46**	**152.54**	**100.00%**
Transfer to WCTL II against LC devolvement	(146.94)				

Note: As per the stock audit, the drawing power shortfall considered as INR 299.47 Crores. As per the sanctioned limits (excluding the interchangeability from Non Fund Based to Fund Based) of INR 784.00 Crores. As per the stock audit the outstanding considered as INR 890.94 Crores. Therefore in view of the Company INR 146.94 Crores which is related to LC devolvement's reflected in O/s. As per the information furnished by the Company, D & B India

considered INR 146.94 Crores transferred to INR WCTL 2, which are primarily LC devolvement's. D & B India considered the shortfall of INR 152.54 Crores and shared to respective lenders based on the sanctioned (fund Based) limits.

As informed by the Company, D & B India considered the sharing of WCTL 1 on the basis of fund based sanctioned limits (CC: INR 784.00 Crores)

WCTL 2: LC Devolvement's

Exhibit: LC Devolvement Bankwise - INR. Crores			
Description	**NFB: Sanctioned**	**WCTL 2**	**%**
SBBJ	135.00	134.81	23.81%
SBH	90.00	89.87	15.87%
AB	62.00	61.91	10.93%
DB	40.00	39.94	7.05%
Uco	80.00	79.89	14.11%
SB	30.00	29.96	5.29%
IOB	39.00	38.95	6.88%
SBM	25.00	24.96	4.41%
LVBL	0.00	0.00	0.00%
CBI	25.00	24.96	4.41%
IB	17.40	17.38	3.07%
TMBL	20.00	19.97	3.53%
CB	3.60	3.59	0.63%
FBL	0.00	0.00	0.00%
Total	**567.00**	**566.20**	**100%**

Note: D & B India considered the sanctioned (Non Fund Based Sanctioned Limits as on COD) percentage for the allocation of WCTL 2.

New TL:

Exhibit: New TL - INR. Crores	
Description	**Amount**
Slab Caster Spares & Parts-For Old	4.01
Slab Caster Spares & Parts-For New	15.09
Oxygen Plant	4.50
R/H Furnace-Burners Change/FES Change/Slab Charging Modernization	9.02
Motors, Drives, Panels in Electricals for HRM	2.50
PU Coating + Spare Rolls-CRM	2.51
Burners A.P. Line-CRM	4.00
Motors, Drives, Panels in Electricals for CRM	1.50
Down coiler Installation	6.00
Base Price	**49.13**
Add: Taxes & Duties @ 16%	7.86
Add: Packing & Freight @ 1.50%	0.74
Add: Commissioning Charges @ 10.00%	4.91
Total	**62.64**
Total - Rounded	**63.00**
Equity - 25%	15.75
TL - 75%	**47.25**

Priority TL

As per the information furnished by the Company, the payables towards the statutory creditors are considered as Priority TL, accepting or non-accepting is up to the financial institutions.

Exhibit: Priority Debt - INR. Crores

Description	Amount
Income Tax Pending	8.35
Demurrage Detention	15.00
Custom Duty on imported raw material released against advance license for which export obligation yet to be complete	43.41
Sub – total	**66.76**
Net liability	**66.76**

Note: Company will get the MODVAT refund of INR 28.02 Crores against Custom Duty on imported raw material released against advance license within two years, the same as been considered as other income for the projections 50% in FY 14-15 and remaining in next financial year.

Repayment schedule

Exhibit: Repayment %											
Description	**FY 13-14**	**FY 14-15**	**FY 15-16**	**FY 16-17**	**FY 17-18**	**FY 18-19**	**FY 19-20**	**FY 20-21**	**FY 21-22**	**FY 22-23**	**FY 23-24**
TL's											
TL's	0.00%	0.00%	2.50%	5.00%	7.50%	10.00%	10.00%	15.00%	20.00%	20.00%	10.00%
WCTL 1											
WCTL 1	0.00%	0.00%	2.50%	5.00%	7.50%	10.00%	10.00%	15.00%	20.00%	20.00%	10.00%
WCTL 2											
WCTL 2	0.00%	0.00%	2.50%	5.00%	7.50%	10.00%	10.00%	15.00%	20.00%	20.00%	10.00%
FITL											
FITL - TL	0.00%	0.00%	5.00%	10.00%	10.00%	17.50%	17.50%	20.00%	20.00%		0.00%
FITL WCTL 1	0.00%	0.00%	5.00%	10.00%	10.00%	17.50%	17.50%	20.00%	20.00%		0.00%
FITL WCTL 2	0.00%	0.00%	5.00%	10.00%	10.00%	17.50%	17.50%	20.00%	20.00%		0.00%
FITL CC	0.00%	20.00%	30.00%	50.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
New TL											
New TL	0.00%	0.00%	2.50%	7.50%	10.00%	10.00%	10.00%	15.00%	15.00%	20.00%	10.00%
Priority TL											
Priority TL	0.00%	0.00%	45.00%	35.00%	20.00%						0.00%
FITL - New TL											
FITL - New TL	0.00%	0.00%	5.00%	10.00%	10.00%	17.50%	17.50%	20.00%	20.00%	0.00%	0.00%

Interest Rate:

Exhibit: Interest Rates %											
Description	**FY 13-14**	**FY 14-15**	**FY 15-16**	**FY 16-17**	**FY 17-18**	**FY 18-19**	**FY 19-20**	**FY 20-21**	**FY 21-22**	**FY 22-23**	**FY 23-24**
TL's											
TL's	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%
WCTL 1											
WCTL 1	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%
WCTL 2											
WCTL 2	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%
FITL											
FITL - TL	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%
FITL WCTL 1	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%
FITL WCTL 2	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%
FITL CC Limit	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%
CC											
CC	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%
New TL											
New TL	11.25%	11.25%	11.25%	11.25%	11.25%	11.25%	11.25%	11.25%	11.25%	11.25%	11.25%
Priority TL											
Priority TL	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%
FITL - New TL											
FITL - New TL	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%

Sacrifice

Exhibit: Sacrifice - Loans - INR. Crores											
Description	**TL's**	**WCTL 1**	**WCTL 2**	**FITL - TL's**	**FITL - WCTL's 1**	**FITL - WCTL's 2**	**CC**	**CC FITL**			**Total**
SBBJ	0.66	2.65	20.42	0.10	0.39	2.67	2.06	0.24			**29.20**
SBH	1.23	4.01	13.45	0.19	0.59	1.76	2.86	0.36			**24.45**
AB	1.05	3.76	8.82	0.15	0.55	1.15	2.62	0.34			**18.46**
DB	1.66	2.69	7.75	0.26	0.39	1.01	1.39	0.25			**15.40**
Uco	10.58	2.90	16.02	1.83	0.43	2.09	1.27	0.27			**35.39**
SB	1.47	0.55	4.00	0.22	0.08	0.52	0.49	0.05			**7.37**
IOB	0.99	1.00	5.90	0.14	0.15	0.77	0.71	0.09			**9.75**
SBM	3.63	0.73	4.22	0.59	0.11	0.55	0.57	0.07			**10.46**
LVBL	4.89	0.00	0.00	0.72	0.00	0.00	0.00	0.00			**5.61**
CBI	2.23	1.77	2.86	0.37	0.26	0.37	1.54	0.16			**9.57**
IB	8.00	1.72	2.16	1.32	0.25	0.28	1.11	0.15			**15.00**
TMBL	5.88	2.01	3.54	0.96	0.30	0.46	1.02	0.19			**14.36**
CB	3.03	0.92	0.72	0.56	0.13	0.09	0.22	0.09			**5.77**
FBL	2.56	0.51	0.00	0.46	0.08	0.00	0.11	0.05			**3.77**
TOTAL	**47.85**	**25.23**	**89.88**	**7.87**	**3.71**	**11.75**	**15.97**	**2.30**	**0.00**	**0.00**	**204.56**
Equity Infusion											**51.14**

The promoters' share of contribution towards the sacrifice of the lenders would be INR 51.14 Crores. However, the promoters shall be required to bring in 25% of the sacrifice.

Profitability Projections

Profit & loss account statement, cash flow statement and balance sheet and other financial ratio calculations are furnished as Annexure.

Financial Analysis

Margin

The average EBDITA margin works out to be ~ 8% to 9.61%, while the net profit margin is ~ 1.64%.

The EBIDTA margin of the Company is largely in line with the standard.

Debt Equity Ratio

As per D&B India estimates, the Debt-Equity Ratio of the Company is about 3.68:1 for the FY 2014-15.

(Total Secured Loans – Working Capital Finance) / (Equity + Share Application Money + Unsecured Loans + Total Reserves & Surplus)

Important Ratios

For the purpose of CDR proposals, the important ratios which have to be considered are discussed in the following paragraphs.

Particulars	Details	Benchmark	Actual
ROCE	A minimum ROCE equivalent to 5 year G-Sec plus 2% may be considered as adequate	9.26%	13.65%
Adjusted DSCR	The adjusted Debt Service Coverage Ratio (DSCR) should be >1.25 within the 5 years period in which the unit should become viable and on year-to-year basis DSCR to be above 1.	>1.25	1.36
DSCR	The normal DSCR for 10 years repayment period should be around 1.33:1.	>=1.33	1.33
Gap between IRR, ACoF & WACC	The benchmark gap between Internal Rate of Return and Average Cost of Funds should be at least one percent		
IRR			11.33%

ACoF			7.26%
WACC			4.06%
Benchmark LLR	A benchmark LLR of 1.4, which would give a cushion of 40% to the amount of loan to be serviced, may be considered adequate.	>=1.4	1.43

Return on Capital Employed

BRGIS is expected to generate an average return on capital employed of 13.65%.

Exhibit: Return on Capital Employed (ROCE) - INR. Crores

Particulars	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24
Earnings											
PBT	(302.45)	(166.69)	(69.55)	50.09	144.98	223.95	302.76	339.35	412.29	478.61	508.19
Finance Cost	147.13	227.53	285.75	335.47	377.62	401.14	385.98	366.83	343.63	317.35	294.78
Total Earnings	**(155.31)**	**60.84**	**216.20**	**385.56**	**522.60**	**625.09**	**688.74**	**706.18**	**755.92**	**795.97**	**802.97**
Capital Employed											
Net Fixed Assets	960.68	880.52	764.81	664.73	578.13	503.17	438.27	382.04	333.32	291.09	254.47
Current Assets including cash	1,020.02	1,837.47	2,613.02	3,755.76	4,661.28	5,297.72	5,628.28	5,724.60	5,996.62	6,314.39	6,555.39
Non Current Assets	476.85	418.27	359.69	311.61	283.42	271.78	215.75	112.95	0.65	0.00	0.00
Total Assets	**2,457.55**	**3,136.26**	**3,737.52**	**4,732.10**	**5,522.83**	**6,072.68**	**6,282.30**	**6,219.59**	**6,330.59**	**6,605.48**	**6,809.86**
Less: Current Liabilities	218.20	636.20	938.65	1,498.02	1,811.58	2,000.45	2,116.77	2,079.66	2,229.19	2,404.55	2,381.34
Total (B)	**2,239.34**	**2,500.06**	**2,798.87**	**3,234.08**	**3,711.25**	**4,072.22**	**4,165.52**	**4,139.93**	**4,101.40**	**4,200.94**	**4,428.52**
ROCE (A/B)	**-6.94%**	**2.43%**	**7.72%**	**11.92%**	**14.08%**	**15.35%**	**16.53%**	**17.06%**	**18.43%**	**18.95%**	**18.13%**
Average ROC	**13.65%**										

Internal Rate of Return

As per the analysis carried out, the Company's internal rate of return is expected to be about 11.33%.

Exhibit: Internal Rate of Return (IRR)

Particulars	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24
Cash outflow											
Capital employed	2,239.34										
Incremental capital employed		260.71	298.81	435.21	477.17	360.97	93.30	(25.60)	(38.53)	99.54	227.58
Total (a)	**2,239.34**	**260.71**	**298.81**	**435.21**	**477.17**	**360.97**	**93.30**	**(25.60)**	**(38.53)**	**99.54**	**227.58**
Cash Inflow											
PAT	(302.45)	(166.69)	(69.55)	39.59	114.59	177.01	239.30	179.79	218.43	315.28	335.46
Finance Cost	147.13	227.53	285.75	335.47	377.62	401.14	385.98	366.83	343.63	317.35	294.78
Depreciation	145.48	138.49	115.71	100.08	86.60	74.96	64.91	56.22	48.72	42.23	36.62
Add: W/off investment & Loans	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Terminal Value											2,214.26
Total (b)	**(9.83)**	**199.33**	**331.90**	**475.14**	**578.81**	**653.11**	**690.19**	**602.84**	**610.78**	**674.87**	**2,881.12**
Net Cash inflow	**(2,249.18)**	**(61.38)**	**33.09**	**39.93**	**101.64**	**292.14**	**596.89**	**628.44**	**649.31**	**575.33**	**2,653.54**
IRR	**11.33%**										

Cost of capital

The cost of capital is estimated at 7.26% – which is arrived by considering the average cost of debt @ 11.00% discounted by the present tax, which is equals to 7.26%.

Exhibit: Cost of Capital

Loans	Amount	Post tax cost of capital (%)	Proportion	Weighted Average Cost of Capital (WACC)
Term Loan	312.74	7.26%	15.41%	1.12%
Wcap	631.46	7.26%	31.11%	2.26%
WCTL I	152.54	7.26%	7.52%	0.55%
WCTL II	566.20	7.26%	27.90%	2.03%
New Term Loan	47.25	7.43%	2.33%	0.17%
Priority Term Loan	66.76	7.26%	3.29%	0.24%
FITL	252.52	7.26%	12.44%	0.90%
TOTAL	**2,029.47**		**100.00%**	**7.26%**

The difference between the IRR and CoC is 4.06% which is above the prescribed benchmark as per the CDR guidelines. (IRR = 11.33%, Cost of Debt = 7.26%, Cost of Capital (WACC) = 7.26%, GAP b/w IRR & WACC = 4.06% which is more than 1%)

Loan life ratio

The loan life ratio is estimated at 1.43 which are more than the benchmark of 1.40 as per the CDR Guidelines.

Exhibit: Loan Life Ratio

PARTICULARS	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24
Available Cash Flow (ACF)	161.98	273.81	240.06	259.88	243.18	302.01	250.46	372.29	328.76	298.07	343.81
Average cost of capital	7.26%										
Present Value Of ACF	1,996.74										
Maximum Amount of sustainable debt	1,398.00										
Loan Life Ratio	**1.43**										

Debt Service Coverage Ratio

The DSCR has been calculated as follows –

Exhibit: DSCR - INR. Crores											
Particulars	**FY 13-14**	**FY 14-15**	**FY 15-16**	**FY 16-17**	**FY 17-18**	**FY 18-19**	**FY 19-20**	**FY 20-21**	**FY 21-22**	**FY 22-23**	**FY 23-24**
Profit After Tax	(302.45)	(166.69)	(69.55)	39.59	114.59	177.01	239.30	179.79	218.43	315.28	335.46
Add: Depreciation	145.48	138.49	115.71	100.08	86.60	74.96	64.91	56.22	48.72	42.23	36.62
Add: W/off Book entries	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Add: Interest on Term Loan / WCTL / FITL / New Term Loan(Dr. to P&L a/c)	45.59	136.85	150.28	139.68	126.75	112.66	96.84	78.07	53.80	26.75	4.46
Add: Interest Paid on WC funded through FITL	34.64	0.00									
Total A	**(76.74)**	**108.65**	**196.43**	**279.35**	**327.94**	**364.63**	**401.05**	**314.08**	**320.96**	**384.26**	**376.54**
Repayment made of Term Loan / WCTL / FITL / New Term Loan	99.85	6.93	78.29	117.59	117.23	146.00	146.00	205.39	256.96	215.75	107.87
Repayment of Vehicle	4.02	4.02	1.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest Paid on Term Loan/ WCTL/ FITL	4.71	19.40	90.73	139.68	126.75	112.66	96.84	78.07	53.80	26.75	4.46
Total B	**108.58**	**30.35**	**170.59**	**257.27**	**243.98**	**258.66**	**242.84**	**283.46**	**310.76**	**242.49**	**112.33**
Yearly DSCR (A/B)	**-0.71**	**3.58**	**1.15**	**1.09**	**1.34**	**1.41**	**1.65**	**1.11**	**1.03**	**1.58**	**3.35**
Average DSCR	**1.33**										

The DSCR is in line with the benchmark of 1.33 as per the CDR guidelines.

Adjusted DSCR:

Exhibit: Adjusted DSCR - INR. Crores											
Particulars	**FY 13-14**	**FY 14-15**	**FY 15-16**	**FY 16-17**	**FY 17-18**	**FY 18-19**	**FY 19-20**	**FY 20-21**	**FY 21-22**	**FY 22-23**	**FY 23-24**
Cash profit before interest on term loans	(76.74)	108.65	196.43	279.35	327.94	364.63	401.05	314.08	320.96	384.26	376.54
Add:Promoter's contribution & additional MM	(0.00)	66.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Add: Additional Working Capital	29.09	140.00	388.68	513.21	479.80	329.97	0.00	0.00	0.00	0.00	0.00
Add: New Capex	0.00	47.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Add: Priority Term Loan	0.00	66.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Add: WCTL I	152.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Add: WCTL II	566.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Add: FITL	40.88	117.45	59.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Add: FITL - CC	34.64	0.00									
Less: Capital expenditure assumed	0.00	63.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Less: Current Asset build up	(584.62)	(336.19)	(404.60)	(532.69)	(564.57)	(392.58)	(150.58)	58.21	7.80	(86.19)	(32.72)
Less: statutory Payments											
Available Cash Flow (ACF) - A	**161.98**	**273.81**	**240.06**	**259.88**	**243.18**	**302.01**	**250.46**	**372.29**	**328.76**	**298.07**	**343.81**
Repayment made of Term Loan / WCTL I / WCTL II/FITL	103.87	10.95	79.87	117.59	117.23	146.00	146.00	205.39	256.96	215.75	107.87
Interest Paid on Term Loan/ WCTL I/WCTL II/ FITL	4.71	19.40	90.73	139.68	126.75	112.66	96.84	78.07	53.80	26.75	4.46
Total (B)	**108.58**	**30.35**	**170.59**	**257.27**	**243.98**	**258.66**	**242.84**	**283.46**	**310.76**	**242.49**	**112.33**
Yearly DSCR (A/B)	**1.49**	**9.02**	**1.41**	**1.01**	**1.00**	**1.17**	**1.03**	**1.31**	**1.06**	**1.23**	**3.06**
Average DSCR (FY13-14 to FY 23-24)-10 yrs	**1.36**										
Average DSCR (Upto 2018-19)-5 yrs		**1.37**									

Sensitivity Analysis

A sensitivity analysis was carried out to assess the impact of the following scenarios on the major financial parameters.

Exhibit: Sensitivity Analysis						
Description	DSCR Normal	Adjusted DSCR	ROCE	IRR	Sacrifice Value	FITL
Base Case	1.33	1.36	13.65%	11.33%	204.56	252.52
5% Increase in Raw Material Cost	0.45	0.39	9.15%	9.08%	204.56	252.52
5% Increase in Sales	2.32	2.42	17.24%	13.43%	204.56	252.52
5% Decrease in Raw Material Cost	2.15	2.23	16.72%	13.03%	204.56	252.52
5% Decrease in Sales	0.23	0.18	7.95%	8.39%	204.56	252.52
10.75% Interest Rate for total exposure	1.35	1.38	13.56%	11.10%	217.65	246.93
11.25% Interest Rate for total exposure	1.29	1.33	13.78%	11.53%	191.40	258.11
11.50% Interest Rate for total exposure	1.26	1.29	13.92%	11.74%	178.16	263.69

Observations

- DSCR and IRR are more sensitive to changes in selling price than raw material prices.
- With a 5% increase in raw material cost both DSCR and IRR falls down to 0.45 and 9.15% respectively. As per the market trend in any incremental prices in variable cost (like raw materials) will be mitigated by the incremental in sales (sale price on finished prices) in the market.

Better procurement policies of raw material are required and at the same time checking with the market prices and updating the selling prices is also necessary, since marginal change in both of them will lead major impact on the profitability.

Observations

- **The viability of the scheme depends on the basic capacity utilization level that has been considered in the financial analysis. Any downwards revision of the same will affect the overall project. Company has to firm to the level of Capacity utilization on printed corroboration to the financial institutions.**
- **Since the different components of the integrated steel plant have been financed by various lenders, the Company should put in place a system to ensure that the operating profit of each and every component can be identified separately. This would allow the lenders to monitor the working of the component that they have financed.**
- **The Company needs to monitor the costs incurred very closely, as any extra cost on any segment will result in cascading effect on cost of input for the subsequent section.**
- **The time-lines for the project need to be adhered to very strictly in terms of finalization towards the package and implementing the Slab Caster, any delay in time line will result in negative impact on the profitability of the project and hence the viability.**

Risk Analysis and Mitigation

The risk analysis, allocation and mitigation measures are shown in the following table –

Key Risk	Risk Carrier	Mitigation Measure
Experience and Capability	BRGIS	The promoters have track record of successfully running various business enterprises. Further, the Group has been operational in steel industry for over a decade. Hence experience and capability risk is not associated with the project.
Time Over-run	BRGIS	Currently the plants are under operation. As per the planned schedule of the project, no time overrun is envisaged if they manage to conduct usual maintenance services at the earliest and scheduling the man power issues. Company has to take appropriate permissions from DGFT for release the material from customs area.
Statutory Approvals	BRGIS	The plants have already been established and were in operation for over two years period of time. Hence no major approvals are needed apart from the intimation to the Inspector of Factories and other statutory bodies regarding the above. It is expected that the Company would stick to deadlines as per the schedule.
Marketing Risk	BRGIS	As per the information submitted by the Company, it has already established network of consumers for its product under BRGIS. Also the Group already has footprint of over 2 decades in the steel industry; hence no marketing risk is envisaged.
Pricing level and sustainability	BRGIS	The cost of raw material and the product is highly variable in nature. Proper mechanism should be devised to monitor the price variation of the both the commodities. The Company has experience in buying raw materials for its group business; hence it is expected that the Company will be able absorb any shock on account of the fluctuation of raw material and product prices.

Replacement/ Substitution risk	BRGIS	The group has established itself in the steel sector for over 10 years and also done business in market through BRGIS for last two years. The established network of consumers will support them to sustain them in the market.
Operating Risks	BRGIS	Qualified personnel are available for the Company to monitor and review the project. The group Companies are well-established entity in the steel industry; this will be a major support in their day to day operation.
Force Majeure	BRGIS/Insurer	It informed that BRGIS has already taken adequate insurance cover for insurable force majeure risks.

SWOT Analysis

Strength

- The promoters of the Company are technically qualified and have experience in the Iron & Steel Industry including Ferro alloys and stainless steel over more than two decades. Over the years the promoters have also gathered experience of implementing various iron and steel projects in the group.
- Growing demand for the study products.
- Strong project management team.
- Significant financial capabilities.
- Management team is a good mix of experience and youth.
- The Company units has an advantage of being located NH – 2, village – Kuranti, PS Motanga, Dist Dhenkanal, Odisha. The site has good connectivity in terms of road and rail, which is considered essential in the steel industry as regards to the transportation of raw materials and finished goods.

Weakness

- Increase in the prices of raw material.
- Unavailability of basic raw material like iron ore, coal, due to Supreme Court ruling.

Opportunity

- Value added products.
- Products diversification.
- Company having an Stainless Steel facility can enjoy cost competitiveness and are likely to limit their exposure to the volatility of raw materials prices
- D&B domestic steel consumption is likely to expand at a CAGR of ~ 6%-7% over the period FY 2013-2017 to touch ~90 to 93 Mn Tonne. This anticipated increase in demand will be supported by the Government`s continued focus to boost the infrastructure sector.
- With Indian Government focusing on infrastructure developments like Power, Telecommunication, Ports, Roads, irrigation, gas transportation, housing etc., the demand for steel is expected to grow at a decent pace.
- The domestic steel industry, especially for the integrated players, is attractive and profitable in the long run. The domestic market is under supplied and the market increasingly demands quality and performance, bargaining power of buyers is therefore regarded as medium. Buyers are largely sensitive to product quality and increasingly emphasize on product performance. On an overall, bargaining power of suppliers to this industry is medium.

Threat

- Generic threat of global economic slowdown.
- Increased competition.

Conclusion

The objective of the study was to assess techno economic viability of the existing integrated steel plant of BRGIS at West Bengal and evaluate the capability of the Company to repay the loan as per CDR proposal.

D&B India has assessed the techno economic viability of the project based on the data provided by the Company and other market information based on primary and secondary research.

While assessing the viability of the project, D&B India considered the following major factors:

- Technical capabilities
- Project specific attributes, both positive and negative as per CDR proposal.
- Expected market rates based on primary survey & secondary research.
- Reasonableness of the Project Cost as per CDR proposal.
- Financial projections as per CDR proposal

Financials Projection as per CDR Guidelines

The financial details as per CDR guidelines are shown in the next exhibit. The details on the project financials as per D&B India's assessment with comparison to CDR guidelines is given below:

Particulars	Details	Benchmark	Actual
ROCE	A minimum ROCE equivalent to 5 year G-Sec plus 2% may be considered as adequate	9.26%	13.65%
Adjusted DSCR	The adjusted Debt Service Coverage Ratio (DSCR) should be >1.25 within the 5 years period in which the unit should become viable and on year-to-year basis DSCR to be above 1.	>1.25	1.36
DSCR	The normal DSCR for 10 years repayment period should be around 1.33:1.	>=1.33	1.33
Gap between IRR, ACoF & WACC	The benchmark gap between Internal Rate of Return and Average Cost of Funds should be at least one percent		
IRR			11.33%
ACoF			7.26 %
WACC			4.06 %
Benchmark LLR	A benchmark LLR of 1.4, which would give a cushion of 40% to the amount of loan to be serviced, may be considered adequate.	>=1.4	1.43

Economic Viability

As per D&B India's assessment, considering the various elements the Company is expected to meet its debt servicing obligations. At the given assumptions, the overall financial, liquidity and profitability parameters of the project are considered reasonable and satisfactory.

Subject to the above assessment and the impact of various scenarios as envisaged under sensitivity analysis study, the project of the Company is viewed as techno economically viable with the required parameters of the project meeting the set CDR benchmarks.

Site Photographs

2 X 9 MVA Furnaces at Ferro Alloy Plant

100 Ton Rotary Kiln in Sponge Iron Section

Material Handling System at Sponge Iron Unit

Liquid Metal Pouring in Steel Melting Shop

Sub-Station at Unit – 1

Billet Castor located at Site

Finished Steel Slabs at Unit – 1

Steel Slabs entering the 60 Ton Reheating Furnace at Unit – 2

Heated Slab from Reheating Furnace sent for Coil Making

HR Coil Passing Through Rolls at Unit – 2

New Reheating Furnace at Site, awaiting to be re - commissioned

Finished Plate at Unit – 2

Cold Rolling Machine at Unit – 3, Left for Mild Steel and Right for Stainless Steel

Manpower working of CR Line

Cold Rolled Coils stores at Unit – 3

Finished Product – Circles of CRC Coil at Unit - 3

Annexure 1: Profit & Loss Account – Projected

Description	FY 08-09	FY 09-10	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 13-14	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24
	A	A	A	A	A	30-Sep-13	30-Sep-13	Proj	Proj	Proj	Proj	Proj	Proj	Proj	Proj	Proj	Proj	Proj
Gross Turnover:																		
- Sale	383.92	697.35	1,957.51	2,652.01	2,621.32	972.72	972.72	1,233.90	2,365.74	3,571.52	5,346.06	6,810.20	7,799.95	8,352.43	8,419.22	8,802.62	9,230.15	9,284.27
- By product								29.10	81.82	127.28	200.01	254.56	290.92	309.10	309.10	327.29	345.47	345.47
-Job Work charges received			0.12	1.00	0.39	0.00	0.00											
-DEPB Entitlement	1.28	(0.04)	0.13	1.37	0.00	1.97	1.97		14.01	14.01								
Less: Excise duty	19.24	12.30	21.76	159.17	246.56	102.12	102.12	138.93	269.24	406.88	610.09	777.15	890.02	952.80	960.15	1,004.32	1,053.35	1,059.31
Net Sales	**365.96**	**685.01**	**1,935.99**	**2,495.21**	**2,375.15**	872.57	872.57	**1,124.06**	**2,192.33**	**3,305.93**	**4,935.98**	**6,287.61**	**7,200.85**	**7,708.73**	**7,768.17**	**8,125.58**	**8,522.27**	**8,570.44**
% Rise (+) or fall (-) in net Sales		87.18%	182.62%	28.89%	-4.81%	-6.63%	-6.63%	-52.67%	95.04%	50.80%	49.31%	27.38%	14.52%	7.05%	0.77%	4.60%	4.88%	0.57%
Total Income	**365.96**	**685.01**	**1,935.99**	**2,495.21**	**2,375.15**	**872.57**	**872.57**	**1,124.06**	**2,192.33**	**3,305.93**	**4,935.98**	**6,287.61**	**7,200.85**	**7,708.73**	**7,768.17**	**8,125.58**	**8,522.27**	**8,570.44**
Cost of Sales:																		
Raw Material Cost	277.95	592.93	1,792.27	2,110.70	2,217.19	950.83	950.83	946.59	1,964.82	2,871.22	4,337.18	5,440.36	6,148.01	6,521.08	6,501.94	6,853.18	7,200.90	7,195.33
(Increase)/Decrease in stock	11.79	(6.63)	(104.69)	28.44	(147.92)	(143.98)	(143.98)	78.35	(174.23)	(164.54)	(244.52)	(192.32)	(122.42)	(69.34)	0.18	(51.65)	(52.02)	(0.03)
-Consumable of Store & Spares	1.80	4.39	5.41	20.00	17.40	0.00	0.00	16.44	27.82	33.86	40.51	46.69	50.00	52.87	52.87	53.15	53.42	53.42
-Power & Fuel	20.09	21.78	41.26	44.52	41.62	36.51	36.51	56.11	108.54	147.04	202.88	246.50	273.85	290.13	290.13	300.38	310.63	310.63
-Repairs to Machinery	1.04	0.44	0.11	0.05	0.16	0.00	0.00	4.94	10.30	15.22	22.84	28.66	32.50	34.48	34.48	36.27	38.05	38.05
-Salary & Wages	5.67	7.32	9.08	15.12	16.16	6.25	6.25	6.14	11.25	14.70	19.32	23.15	25.55	26.98	26.98	27.72	28.47	28.47
-Other Manufacturing Expenses						0.00	0.00	20.83	39.78	51.56	66.93	79.90	87.57	92.87	92.87	95.25	97.64	97.64
-Administrative Expenses	2.73	3.81	1.29	2.72	3.25	0.00	0.00	2.00	2.10	2.21	2.32	2.43	2.55	2.68	2.81	2.95	3.10	3.26
-Selling & Distribution Expenses	4.83	0.85	1.13	2.17	2.59	0.00	0.00	2.50	2.63	2.76	2.89	3.04	3.19	3.35	3.52	3.69	3.88	4.07

Total cost of sales	325.90	624.90	1,745.85	2,223.72	2,150.45	849.62	849.62	1,133.90	1,993.00	2,974.03	4,450.34	5,678.41	6,500.79	6,955.08	7,005.77	7,320.95	7,684.07	7,730.84
EBDITA	**40.06**	**60.11**	**190.15**	**271.49**	**224.70**	**22.95**	**22.95**	**(9.83)**	**199.33**	**331.90**	**485.64**	**609.19**	**700.05**	**753.65**	**762.40**	**804.64**	**838.20**	**839.60**
EBIDTA Margins (%)	10.95%	8.78%	9.82%	10.88%	9.46%	2.63%	2.63%	-0.87%	9.09%	10.04%	9.84%	9.69%	9.72%	9.78%	9.81%	9.90%	9.84%	9.80%
Depreciation/Amortisation/Impairment	9.86	11.69	103.50	147.23	137.45	52.98	52.98	145.48	138.49	115.71	100.08	86.60	74.96	64.91	56.22	48.72	42.23	36.62
Operating Profit before Interest	**30.20**	**48.42**	**86.65**	**124.26**	**87.25**	**(30.03)**	**(30.03)**	**(155.31)**	**60.84**	**216.20**	**385.56**	**522.60**	**625.09**	**688.74**	**706.18**	**755.92**	**795.97**	**802.97**
Finance Cost:																		
-On Term Loan	9.22	7.60	0.00	0.00	0.00	0.00	0.00	20.35	34.40	34.39	32.90	30.86	27.95	24.58	20.43	14.63	7.75	1.29
-On Working Capital	5.70	5.61	44.24	65.75	140.98	63.39	63.39	98.12	84.86	127.62	184.07	236.85	273.14	273.14	273.14	273.14	273.14	273.14
-On WCTL I						0.00	0.00	8.37	16.78	16.77	16.05	15.05	13.63	11.99	9.97	7.13	3.78	0.63
-On WCTL II						0.00	0.00	15.36	62.28	62.26	59.56	55.86	50.61	44.50	36.99	26.48	14.03	2.34
-New Term Loan						0.00	0.00	0.00	3.99	5.31	5.03	4.59	4.05	3.53	2.89	2.56	1.20	0.20
-Priority Term Loan						0.00		0.00	5.51	6.95	3.08	0.92	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
-FITL						0.00	0.00	1.51	13.89	24.59	23.06	19.48	16.41	12.24	7.79	3.00	(0.00)	(0.00)
-Bank charges/Others	0.87	1.44	7.32	11.02	11.90	0.00	0.00	3.42	5.82	7.86	11.72	14.02	15.34	16.00	15.62	16.68	17.46	17.18
Total Finance Cost	**15.79**	**14.65**	**51.56**	**76.77**	**152.88**	**63.39**	**63.39**	**147.13**	**227.53**	**285.75**	**335.47**	**377.62**	**401.14**	**385.98**	**366.83**	**343.63**	**317.35**	**294.78**
Operating Profit before Tax	**14.41**	**33.77**	**35.09**	**47.49**	**(65.63)**	**(93.42)**	**(93.42)**	**(302.45)**	**(166.69)**	**(69.55)**	**50.09**	**144.98**	**223.95**	**302.76**	**339.35**	**412.29**	**478.61**	**508.19**
A. Add other non-operating income																		
a) Interest received	0.36	0.65	1.60	4.32	7.38	1.83	1.83											
b) DEPB Entitlement	0.00	0.00	0.00	0.00			0.00											
c) Profit/(loss) on sale of Fixed Assets(net)	0.26	0.00	0.00	0.00	98.10		0.00											
d) Misc. Receipt	0.07	0.10	0.30	0.18	0.41		0.00											
Total Non Operating Income	**0.69**	**0.75**	**1.90**	**4.49**	**105.88**	**1.83**	1.83	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
B. Deduct other non-operating expenses																		
a) Misc. Expenditure	0.16	0.11	8.40	10.49	8.05		0.00											
b) Preliminary Expenses Written off	0.05	0.00	0.00	0.00			0.00											

c) Sundry Balance Written off	0.03	0.19	0.00	0.00			0.00											
d) Net loss on Foreign Exchange Flactuation	0.00	0.59	(3.35)	5.13	27.54		0.00											
Total Non Operating Expenses	**0.24**	**0.89**	**5.05**	**15.61**	**35.59**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
C. Net of other non-operating income/ exps.	**0.45**	**(0.14)**	**(3.15)**	**(11.12)**	**70.29**	**1.83**	**1.83**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
-																		
Profit / (Loss) before tax	**14.86**	**33.63**	**31.94**	**36.37**	**4.66**	**(91.59)**	**(91.59)**	**(302.4 5)**	**(166.6 9)**	**(69.55)**	**50.09**	**144.98**	**223.95**	**302.76**	**339.35**	**412.29**	**478.61**	**508.19**
Current Tax	1.68	6.24	17.54	7.96	0.93		0.00	0.00	0.00	0.00	10.50	30.39	46.94	63.46	115.34	140.14	162.68	172.73
Mat Credit Entitlement	(1.68)	(1.94)	(0.21)	(7.28)	(0.93)		0.00	0.00										
Provision for deferred tax Liability/(Assets)	6.22	2.50	(7.64)	10.32	8.54		0.00	0.00										
Income Tax Earlier year	0.07	0.00	0.00	0.15			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.21	53.72	0.65	0.00
Net Profit/ (Loss) After Tax	**8.56**	**26.83**	**22.25**	**25.22**	**(3.88)**	**(91.59)**	**(91.59)**	**(302.4 5)**	**(166.6 9)**	**(69.55)**	**39.59**	**114.59**	**177.01**	**239.30**	**179.79**	**218.43**	**315.28**	**335.46**
Prior Period Items							0.00	0.00										
Distribution of Profits																		
(a) Equity Dividend Paid				0.00	0.00	0.00	0.00											
(b) Dividend Tax including surcharge@ 17%				0.00	0.00	0.00	0.00											
Total Dividend	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Retained Profit / (Loss)	**8.56**	**26.83**	**22.25**	**25.22**	**(3.88)**	**(91.59)**	**(91.59)**	(302.4 5)	(166.6 9)	(69.55)	39.59	114.59	177.01	239.30	179.79	218.43	315.28	335.46
Retained Profit (%age)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Cash Profit / (Loss)	**18.58**	**38.63**	**134.14**	**182.94**	**141.62**	**(38.61)**	**(38.61)**	**(81.45)**	**89.25**	**105.70**	**139.67**	**201.19**	**251.97**	**304.21**	**236.01**	**267.15**	**357.52**	**372.08**
PAT / Net Sales								**- 26.91 %**	**-7.60%**	**-2.10%**	**0.80%**	**1.82%**	**2.46%**	**3.10%**	**2.31%**	**2.69%**	**3.70%**	**3.91%**

Annexure 2: Balance SHeet

Particulars	FY 08-09	FY 09-10	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 13-14	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24
	A	A	A	A	A	30-Sep-13	30-Sep-13	Proj	Proj	Proj	Proj	Proj	Proj	Proj	Proj	Proj	Proj	Proj
LIABILITIES																		
SOURCES OF FUNDS																		
Shareholder's Funds:																		
Equity Share Capital	56.55	74.05	207.15	245.57	245.57	245.57	245.57	245.57	292.46	292.46	292.46	292.46	292.46	292.46	292.46	292.46	292.46	292.46
Share Application Money	31.53	0.20	76.83	71.92	101.00	101.00	101.00	101.00	101.00	101.00	101.00	101.00	101.00	101.00	101.00	101.00	101.00	101.00
Reserves & Surplus :							0.00											
-General Reserve	56.53	74.03	290.86	329.28	329.28	329.28	329.28	329.28	329.28	329.28	329.28	329.28	329.28	329.28	329.28	329.28	329.28	329.28
-Securities Premium Account	0.00	0.00	0.00	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63
-Surplus in P&L a/c	9.99	36.82	67.67	92.26	88.38	(3.20)	(3.20)	(214.06)	(380.75)	(450.31)	(410.71)	(296.12)	(119.12)	120.19	299.97	518.41	833.69	1,169.15
Total Reserves & Surplus	**66.52**	**110.85**	**358.54**	**422.17**	**418.29**	**326.71**	**326.71**	**115.85**	**(50.84)**	**(120.40)**	**(80.81)**	**33.78**	**210.79**	**450.09**	**629.88**	**848.31**	**1,163.60**	**1,499.05**
NET WORTH	**154.60**	**185.10**	**642.52**	**739.66**	**764.86**	**673.28**	**673.28**	**462.42**	**342.62**	**273.07**	**312.66**	**427.25**	**604.26**	**843.56**	**1,023.35**	**1,241.78**	**1,557.06**	**1,892.52**
Loan Funds																		
Secured Loans:																		
-Term Loan	86.62	148.91	605.89	506.62	393.70	331.63	331.63	312.74	312.74	304.92	289.28	265.83	234.56	203.28	156.37	93.82	31.27	(0.00)
-Vehicle Loan	43.87	41.14	16.15	12.69	9.61	9.61	9.61	5.59	1.57									

-Working Capital Loan	0.46	0.68	236.08	468.77	602.38	832.68	648.50	631.46	771.46	1,160.14	1,673.35	2,153.16	2,483.12	2,483.12	2,483.12	2,483.12	2,483.12	2,483.12
-WCTL I	0.00	0.00	0.00	0.00		0.00	152.54	152.54	152.54	148.72	141.10	129.66	114.40	99.15	76.27	45.76	15.25	(0.00)
-WCTL II	0.00	0.00	0.00	0.00		0.00	566.20	566.20	566.20	552.05	523.74	481.27	424.65	368.03	283.10	169.86	56.62	(0.00)
-New term loan	0.00	0.00	0.00	0.00		0.00	0.00	0.00	47.25	46.07	42.53	37.80	33.08	28.35	21.26	14.18	4.73	(0.00)
-Priority Term Loan						0.00	0.00	0.00	66.76	36.72	13.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00
- FITL	0.00	0.00	0.00	0.00		0.00	0.00	40.88	158.33	206.99	185.20	163.41	125.28	87.15	43.58	0.00	0.00	0.00
`-FITL CC								34.64	27.71	17.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Secured Loans	**130.95**	**190.73**	**858.13**	**988.08**	**1,005.68**	**1,173.92**	**1,708.48**	**1,744.04**	**2,104.56**	**2,472.92**	**2,868.55**	**3,231.12**	**3,415.09**	**3,269.08**	**3,063.70**	**2,806.74**	**2,590.99**	**2,483.12**
Unsecured Loans:																		
From Body Corporates	0.00	0.00	17.20	2.85	0.00	0.00	0.00											
From Directors	0.00	0.00		0.00	0.00	0.00	0.00	0.00										
From Shareholders						0.00	0.00											
- Others						0.00	0.00	0.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
Total Unsecured Loans	**0.00**	**0.00**	**17.20**	**2.85**	**0.00**	**0.00**	**0.00**	**0.00**	**20.00**	**20.00**	**20.00**	**20.00**	**20.00**	**20.00**	**20.00**	**20.00**	**20.00**	**20.00**
Total Loan Funds	**130.95**	**190.73**	**875.32**	**990.93**	**1,005.68**	**1,173.92**	**1,708.48**	**1,744.04**	**2,124.55**	**2,492.92**	**2,888.54**	**3,251.12**	**3,435.08**	**3,289.08**	**3,083.70**	**2,826.74**	**2,610.99**	**2,503.12**
Deferred Tax Liability	13.05	15.55	16.74	27.06	35.60	32.06	32.06	32.06	32.06	32.06	32.06	32.06	32.06	32.06	32.06	32.06	32.06	32.06
OTHER LONG TERM LIABILITIES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Long Term Provisions	0.00	0.00	0.00	0.73	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Current Liabilities & Provisions																		
Sundry Creditors:																		
- For Goods	40.30	63.94	357.06	612.25	684.94	799.33	211.12	112.08	401.87	554.33	840.90	1,014.57	1,115.89	1,162.69	1,136.91	1,218.15	1,278.89	1,258.98

`- For Goods Under LC	1.46	2.05	5.23	39.74	68.78	0.00	0.00	85.50	203.70	353.70	586.00	701.00	767.00	800.00	781.00	834.00	873.00	859.00
`- Advances from Customers								15.00	25.00	25.00	55.00	60.00	65.00	85.00	85.00	85.00	85.00	85.00
Payable for Capital goods	0.00	0.00	69.75	19.93	56.47	0.00	0.00	0.00										
Deposits	0.00	0.00	0.03	60.02	85.00	0.00	0.00	0.00										
Interest accrued but not due on borrowing	0.00	0.00	6.67	6.24	4.69	0.00	0.00	0.00										
Other Current Liabilities	0.27	0.26	3.23	2.98	3.63	88.93	88.93	0.00										
Provision for Income Tax	2.74	8.84	16.90	19.37	32.54	0.00	0.00	0.00	0.00	0.00	10.50	30.39	46.94	63.46	71.13	86.42	162.03	172.73
Short term provision	0.00	0.00	0.00	6.94	7.94	5.62	5.62	5.62	5.62	5.62	5.62	5.62	5.62	5.62	5.62	5.62	5.62	5.62
Total Current Liabilities & Provisions	**44.78**	**75.09**	**458.87**	**767.47**	**943.99**	**893.88**	**305.68**	**218.20**	**636.20**	**938.65**	**1,498.02**	**1,811.58**	**2,000.45**	**2,116.77**	**2,079.66**	**2,229.19**	**2,404.55**	**2,381.34**
LIABILITIES	**343.37**	**466.47**	**1,993.45**	**2,525.86**	**2,751.15**	**2,774.16**	**2,720.52**	**2,457.74**	**3,136.45**	**3,737.72**	**4,732.30**	**5,523.0**	**6,072.87**	**6,282.49**	**6,219.79**	**6,330.79**	**6,605.68**	**6,810.06**
ASSETS																		
FIXED ASSETS:																		
Tangible Assets	186.49	204.46	540.38	1,283.60	1,484.60	1,484.60	1,484.60	1,484.60	1,571.33	1,571.33	1,571.33	1,571.33	1,571.33	1,571.33	1,571.33	1,571.33	1,571.33	1,571.33
Intangible assets	0.00	0.00	18.68	14.01	9.34	9.34	9.34	4.67	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Less: Depreciation	15.59	27.28	131.44	274.06	406.84	459.82	459.82	552.32	690.81	806.51	906.60	993.19	1,068.15	1,133.06	1,189.29	1,238.00	1,280.24	1,316.86
Net Block	**170.90**	**177.17**	**427.62**	**1,023.55**	**1,087.10**	**1,034.12**	**1,034.12**	**936.95**	**880.52**	**764.81**	**664.73**	**578.13**	**503.17**	**438.27**	**382.04**	**333.32**	**291.09**	**254.47**
Capital work in progress	45.00	45.87	639.11	65.51	23.72	23.72	23.72	23.72										
Investments	0.00	0.00	0.00	0.00	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
CURRENT ASSETS:																		
INVENTORY:																		
(a) Raw Materials	4.96	42.0	220.7	702.3	760.8	1,324	1,324	355.5	687.1	983.4	1,451	1,808	2,037	2,159	2,154	2,262	2,369	2,368

		2	3	3	1	.73	.73	2	1	7	.42	.59	.08	.92	.62	.30	.35	.19
(b) Stores & Spares	1.85	2.63	45.72	79.19	78.88	0.00	0.00	2.74	4.64	5.64	6.75	7.78	8.33	8.81	8.81	8.86	8.90	8.90
(c) Finished Goods	0.65	6.65	88.79	127.96	217.26	0.00	0.00	183.31	314.86	438.85	623.05	767.94	860.16	912.42	912.28	951.15	990.30	990.33
(d) WIP	0.00	0.00	82.22	26.51	104.23	0.00	0.00	59.83	102.50	143.05	203.38	250.80	281.01	298.09	298.05	310.83	323.70	323.71
(e) By Products	0.00	0.00																
Total Inventory	**7.45**	**51.30**	**437.46**	**935.99**	**1,161.17**	**1,324.73**	**1,324.73**	**601.40**	**1,109.11**	**1,571.02**	**2,284.59**	**2,835.11**	**3,186.58**	**3,379.24**	**3,373.76**	**3,533.13**	**3,692.26**	**3,691.13**
SUNDRY DEBTORS:																		
More than 6 months	2.45	0.52	16.63	8.61	3.82	3.82	3.82	3.82	3.82	3.82	3.82	3.82	3.82	3.82	3.82	3.82	3.82	3.82
Other Debts	50.20	28.07	163.39	205.33	188.98	203.78	203.78	281.02	548.08	826.48	1,234.00	1,571.90	1,800.21	1,927.18	1,942.04	2,031.40	2,130.57	2,142.61
Less: Provision for doubtful debts																		
Total Sundry Debtors	**52.65**	**28.59**	**180.03**	**213.94**	**192.80**	**207.60**	**207.60**	**284.84**	**551.90**	**830.30**	**1,237.81**	**1,575.72**	**1,804.03**	**1,931.00**	**1,945.86**	**2,035.21**	**2,134.39**	**2,146.43**
Cash & Bank Balances	0.45	3.97	4.32	14.79	4.90	6.79	6.79	6.35	11.03	20.95	23.56	22.75	66.11	73.73	162.57	180.56	236.14	467.62
LOANS & ADVANCES :																		
Fixed Deposits	2.87	4.81	52.35	132.87	97.54	77.23	23.58	17.10	29.10	39.30	58.60	70.10	76.70	80.00	78.10	83.40	87.30	85.90
Security Deposits	15.51	19.61	22.89	23.38	23.31	23.31	23.31	23.31	23.31	23.31	23.31	23.31	23.31	23.31	23.31	23.31	23.31	23.31
Capital Advances	0.00	0.00	80.89	7.56	7.60	7.27	7.27	7.27										
Prepaid Expenses	0.08	0.12	0.11	0.03	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tax Deducted at Sources	0.10	0.17	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cenvat/VAT Receivable	4.11	4.39	34.36	37.11	31.95	28.50	28.50	28.50	19.00	6.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Advance Tax	1.47	3.51	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Advances to suppliers & others	40.17	122.40	114.31	63.84	112.49	32.47	32.47	51.25	94.01	121.80	127.89	134.29	141.00	141.00	141.00	141.00	141.00	141.00

Total	**64.31**	**155.01**	**304.92**	**264.80**	**273.03**	**168.79**	**115.14**	**127.43**	**165.42**	**190.74**	**209.80**	**227.70**	**241.01**	**244.31**	**242.41**	**247.71**	**251.61**	**250.21**
TOTAL CURRENT ASSETS	**124.87**	**238.87**	**926.72**	**1,429.52**	**1,631.91**	**1,707.91**	**1,654.26**	**1,020.02**	**1,837.47**	**2,613.02**	**3,755.76**	**4,661.28**	**5,297.72**	**5,628.28**	**5,724.60**	**5,996.62**	**6,314.39**	**6,555.39**
Non Current Assets	**2.61**	**4.55**	**0.00**	**7.28**	**8.21**	**8.21**	**8.21**	**476.85**	**418.27**	**359.69**	**311.61**	**283.42**	**271.78**	**215.75**	**112.95**	**0.65**	**0.00**	**0.00**
Other - Slow moving stock								468.64	410.06	351.48	292.90	234.32	175.74	117.16	58.58	0.00	0.00	0.00
Sticky Debtors								0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-MAT credit entitlement	2.61	4.55	0.00	7.28	8.21	8.21	8.21	8.21	8.21	8.21	18.71	49.10	96.04	98.58	54.37	0.65	0.00	0.00
Micsellaneous Exp not written off	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Deffered Tax Assets																		
ASSETS	**343.37**	**466.47**	**1,993.45**	**2,525.86**	**2,751.15**	**2,774.16**	**2,720.52**	**2,457.74**	**3,136.45**	**3,737.72**	**4,732.30**	**5,523.03**	**6,072.87**	**6,282.49**	**6,219.79**	**6,330.79**	**6,605.68**	**6,810.06**

Note: As per the discussion with Company members, the slow moving stock worth of INR 468.64 Crores has been realized in 8 years on conservative mechanism, if any short fall in retaliation to that extent of shortfall Company has to infuse the equity or Company has to maintain the adjusted DSCR levels. As per the audit report, the finished goods which were expected to be exported by the company were meant for consumption in some of the Oil Majors located in Middle East and Central Asian countries. This specific grade of plates can primarily be utilized in the Gulf countries for their Oil & Gas pipeline network. It has been explained that the same can also be sold in the domestic market in smaller lots as the demand for similar material is low in India. Although the company has again requested for extension of time and shown its eagerness to export the material but it seems that the buyer yet to extend the same.

Company has already cleared about 11,406.03 M.T under Advance License without paying the customs duty. It is now obligatory for the company to export this material after conversion into finished product to comply with the export obligation norm of the advance licenses issued to them or they have to make payment of the customs duty with interest from the date of import and penalties thereon, if any. The duty saved amount is about INR.30.84 crores (Approx).

Annexure 3: Funds Flow

Exhibit: Funds Flow - INR. Crores											
Particulars	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24
	Proj	Proj	Proj	Proj	Proj	Proj	Proj	Proj	Proj	Proj	Proj
Cash Inflows											
Retained Profit/ (Loss)	-302.45	-166.69	-69.55	39.59	114.59	177.01	239.30	179.79	218.43	315.28	335.46
Depreciation (Total)	145.48	138.49	115.71	100.08	86.60	74.96	64.91	56.22	48.72	42.23	36.62
Cash Accruals	**-156.96**	**-28.20**	**46.15**	**139.67**	**201.19**	**251.97**	**304.21**	**236.01**	**267.15**	**357.52**	**372.08**
Increase in share capital	-	46.89	-	-	-	-	-	-	-	-	-
Increase in Share Application money	-	-	-	-	-	-	-	-	-	-	-
Increase in General Reserve	-	-	-	-	-	-	-	-	-	-	-
Increase in Share Premium	-	-	-	-	-	-	-	-	-	-	-
Increase in DTL	-	-	-	-	-	-	-	-	-	-	-
Increase in Secured Loan	738.36	360.51	368.37	395.62	362.58	183.96	-	-	-	-	-
Increase in Unsecured Loan	-	20.00	-	-	-	-	-	-	-	-	-
Increase in Current liabilities & Provisions	-	418.00	302.45	559.37	313.56	188.87	116.32	-	149.53	175.35	-
Decrease in Gross Block & WIP	4.67	-	-	-	-	-	-	-	-	-	-
Decrease in Investments	-	-	-	-	-	-	-	-	-	-	-
Decrease in Inventory	559.78	-	-	-	-	-	-	5.48	-	-	1.13
Decrease in Debtors	-	-	-	-	-	-	-	-	-	-	-
Decrease in Loans & Advances/Other Current Assets	145.60	-	-	-	-	-	-	1.90	-	-	1.40
Decrease in Non Current Assets	-	58.58	58.58	48.08	28.19	11.64	56.03	102.80	112.30	0.65	-
Decrease in Misc. Assets.	-	-	-	-	-	-	-	-	-	-	-
Total Inflows	**1,291.44**	**875.78**	**775.55**	**1,142.74**	**905.52**	**636.44**	**476.56**	**346.19**	**528.98**	**533.52**	**374.61**
Cash Outflows											

Decrease in share capital	-	-	-	-	-	-	-	-	-	-	-
Decrease in Share Application Money	-	-	-	-	-	-	-	-	-	-	-
Decrease in General Reserve	-	-	-	-	-	-	-	-	-	-	-
Decrease in Securities Premium	-	-	-	-	-	-	-	-	-	-	-
Decrease in Secured Loan	-	-	-	-	-	-	146.00	205.39	256.96	215.75	107.87
Decrease in Unsecured Loans	-	-	-	-	-	-	-	-	-	-	-
Decrease in DTL	3.54	-	-	-	-	-	-	-	-	-	-
Decrease in CL & Provisions	725.78	-	-	-	-	-	-	37.11	-	-	23.21
Increase in Gross Block/Capital WIP	-	58.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Increase in Investment	-	-	-	-	-	-	-	-	-	-	-
Increase in Inventory	-	507.72	461.91	713.57	550.52	351.47	192.66	-	159.38	159.12	-
Increase in Debtors	92.03	267.07	278.40	407.51	337.91	228.31	126.97	14.86	89.35	99.17	12.04
Increase in Loans & Advances/Other Current Assets	-	37.99	25.33	19.06	17.89	13.31	3.30	-	5.30	3.90	-
Increase in Non Current Assets - Slow Moving Stock	468.64	-	-	-	-	-	-	-	-	-	-
Increase in Misc Assets	-	-	-	-	-	-	-	-	-	-	-
Total Outflows	**1,289.99**	**871.10**	**765.63**	**1,140.14**	**906.32**	**593.09**	**468.94**	**257.35**	**510.99**	**477.94**	**143.12**
Opening Balance	4.90	6.35	11.03	20.95	23.56	22.75	66.11	73.73	162.57	180.56	236.14
Increase / Decrease in Cash	1.45	4.68	9.92	2.61	-0.80	43.35	7.62	88.84	17.99	55.58	231.48
Closing Balance	**6.35**	**11.03**	**20.95**	**23.56**	**22.75**	**66.11**	**73.73**	**162.57**	**180.56**	**236.14**	**467.62**

Annexure 4: Electrical Load Details

STECKEL MILL AREA				
Sl. No	**Motor Name**	**KW**	**No of Motors**	**Total KW**
1	Mill Motor	2,237.00	4.00	8,948.00
2	Furnace Coiler Motor	550.00	2.00	1,100.00
3	Rotary Drum Shear Motor	550.00	1.00	550.00
4	Deflector Roll Motor	55.00	2.00	110.00
5	Up Coiler Motor	300.00	1.00	300.00
6	Pinch Roll at Up Coiler Motor	150.00	1.00	150.00
7	Wrapper Roll Motor	37.00	3.00	111.00
8	Hy. AGC Pump	132.00	1.00	132.00
9	Hy. AGC Circulation Pump	5.50	1.00	5.50
10	Hy. Roll Bending Pump	45.00	1.00	45.00
11	Hy. Roll Bending Circulation Pump	2.20	1.00	2.20
12	Hy. LP Drive Side Pump	55.00	1.00	55.00
13	Hy. LP Drive Side Circulation Pump	3.70	1.00	3.70
14	Hy. LP Operator Side Pump	55.00	1.00	55.00
15	Hy. LP Operator Circulation Pump	3.70	1.00	3.70
16	Centralize Lub. Pump at Mill Area	45.00	1.00	45.00
17	Morg oil pump	15.00	1.00	15.00
18	Hy. LP Up Coiler Area Pump	55.00	1.00	55.00
19	Hy. LP Up Coiler Area Circulation Pump	3.70	1.00	3.70
20	Centralize Lub. Pump at Up Coiler Area	7.50	1.00	7.50
21	Side Guide Before Pinch Roll At Up Coiler	5.50	1.00	5.50
22	Side Guide Before Up Coiler	5.50	1.00	5.50
23	Centralized Oil Lub. System Heater	9.00	3.00	27.00
24	Morgoil System Heater	9.00	2.00	18.00
25	Centralized Oil Lub. System Heater at Up Coiler	5.00	3.00	15.00
26	Mill Ventilation Blower Motor	37.00	8.00	296.00
27	Furnace Coiler Ventilation Blower Motor	15.00	2.00	30.00
28	Pinch Roll Cum Dancing Roll Ventilation Blower Motor	11.00	2.00	22.00
29	Rotary Drum Shear Ventilation Blower Motor	11.00	2.00	22.00
30	Deflector Roll Ventilation Blower Motor	2.20	2.00	4.40
31	Up Coiler Ventilation Blower Motor	11.00	1.00	11.00
32	Pinch Roll at Up Coiler Ventilation Blower Motor	3.70	2.00	7.40
33	Wrapper Roll Ventilation Blower Motor	2.20	3.00	6.60
34	Sump Pump # 1	2.20	3.00	6.60
35	APPROCH TABLE 1 (GR. O)	15.00	7.00	105.00
36	APPROCH TABLE 1 (GR. 1)	15.00	4.00	60.00
37	APPROCH TABLE 1 (GR. 2)	15.00	4.00	60.00
38	APPROCH TABLE 2	9.30	6.00	55.80
39	APPROCH TABLE 3	9.30	3.00	27.90
40	PINCH ROLL CUM SCALE BREAKER	9.30	2.00	18.60
41	PINCH ROLL SCALE BREAKER	30.00	1.00	30.00
42	ROLLER TABLE AT ENT. FUR. COILER	9.30	5.00	46.50
43	MILL ENT. ROLLER TABLE	22.00	1.00	22.00
44	MILL EXT. ROLLER TABLE	22.00	1.00	22.00
45	ROLLER TABLE AT EXT. FUR. COILER	22.00	6.00	132.00
46	HOT RUN OUT TABLE GR. # 1	5.50	8.00	44.00
47	HOT RUN OUT TABLE GR. # 2	5.50	8.00	44.00
48	HOT RUN OUT TABLE GR. # 3	5.50	8.00	44.00
49	HOT RUN OUT TABLE GR. # 4	5.50	8.00	44.00
50	HOT RUN OUT TABLE GR. # 5	5.50	8.00	44.00
51	HOT RUN OUT TABLE GR. # 6	5.50	8.00	44.00
52	HOT RUN OUT TABLE GR. # 7	5.50	8.00	44.00
53	HOT RUN OUT TABLE GR. # 8	5.50	9.00	49.50
54	HOT RUN OUT TABLE GR. # 9	5.50	9.00	49.50
55	HOT RUN OUT TABLE GR. # 10	5.50	9.00	49.50
56	IC PUMP MOTOR	125.00	2.00	250.00
	TOTAL			**13,460.60**
Plate Mill				
Sl No	**EQUIPMENT /LOCATION**	**KW**	**No of MOTORS**	**T0TAL KW**
1	WHF CHARGING DOOR MOTOR	2.20	1.00	2.20

2	WHF DISCHARGING DOOR MOTOR	3.70	1.00	3.70
3	WHF COMBUSTION BLOWER MOTORS(ZN 0)	11.00	1.00	11.00
4	WHF COMBUSTION BLOWER MOTORS(ZN 1)	15.00	1.00	15.00
5	WHF COMBUSTION BLOWER MOTORS(ZN 2)	15.00	1.00	15.00
6	WHF COMBUSTION BLOWER MOTORS(ZN 3)	15.00	1.00	15.00
7	WHF COMBUSTION BLOWER MOTORS(ZN 4)	15.00	1.00	15.00
8	WHF MAIN COMBUSTION BLOWER MOTORS	30.00	1.00	30.00
9	WHF EXHAUST BLOWER MOTORS(ZN 0)	15.00	1.00	15.00
10	WHF EXHAUST BLOWER MOTORS(ZN 1)	15.00	1.00	15.00
11	WHF EXHAUST BLOWER MOTORS(ZN 2)	15.00	1.00	15.00
12	WHF EXHAUST BLOWER MOTORS(ZN 3)	15.00	1.00	15.00
13	WHF EXHAUST BLOWER MOTORS(ZN 4)	15.00	1.00	15.00
14	WHF CHARGING SIDE HPP MOTORS(1-2)	37.00	1.00	37.00
15	WHF CHARGING SIDE HPP RECIRCULATION PUMP MOTOR	4.00	1.00	4.00
16	WHF DISCHARGE SIDE HPP MOTOR	30.00	1.00	30.00
17	WHF DISCHARGE SIDE HPP RECIRCULATION PUMP MOTOR	2.20	1.00	2.20
18	SLAB RECEIVING TABLE MOTORS(1-13)	5.50	7.00	71.50
19	MILL APPROACH TABLE MOTORS(1-11)	5.50	6.00	32.50
20	MILL RUN IN TABLE MOTORS(1-17)	7.50	9.00	127.50
21	ENTRY TURN TABLE MOTORS(1-10)	4.50	5.00	45.00
22	EDGER CARRYOVER TABLE MOTORS(1-6)	5.50	6.00	33.00
23	ENTRY BREAST ROLL MOTOR	7.50	1.00	7.50
24	EXIT BREAST ROLL MOTOR	7.50	1.00	7.50
25	EXIT TURN TABLE MOTORS(1-10)	4.50	5.00	45.00
26	MILL TOP MOTOR	2,500.00	1.00	2,500.00
27	MILL BOTTOM MOTOR	2,500.00	1.00	2,500.00
28	MILL TOP MOTOR VENTILATION BLOWER MOTOR	55.00	1.00	55.00
29	MILL BOTTOM MOTOR VENTILATION BLOWER MOTOR	37.00	1.00	37.00
30	SCREW DOWN VENTILATION BLOWER MOTOR	5.50	1.00	5.50
31	ENTRY TURN TABLE VENTILATION BLOWER MOTOR	30.00	1.00	30.00
32	EXIT TURN TABLE VENTILATION BLOWER MOTOR	37.00	1.00	37.00
33	ROLL & SPINDLE BALANCING HPP MOTORS(1-2)	37.00	1.00	37.00
34	ROLL CHANGE & SIDE GUIDE HPP MOTORS(1-2)	37.00	1.00	37.00
35	AGC HPP CIRCULATION PUMP MOTOR	15.00	1.00	15.00
36	MORG OIL LUBRICATION PUMP MOTORS(1-2)	3.50	1.00	3.50
37	GEAR OIL LUBRICATION PUMP MOTORS(1-2)	11.00	1.00	11.00
38	BEARING LUBRICATION RECIRCULATION PUMP MOTOR	3.70	1.00	3.70
39	BEARING LUBRICATION OIL PUMP MOTORS(1-5)	2.20	5.00	11.00
40	HYDRAULIC CELLAR SUMP PUMP MOTORS(1-2)	3.70	2.00	7.40
41	MILL DELIVERY TABLE MOTORS(1-18)	5.50	9.00	47.50
42	SHEAR RUN IN TABLE MOTORS(1-18)	5.50	9.00	47.50
43	SHEAR DELIVERY TABLE MOTORS (1-5)	5.50	5.00	27.50
44	BLOWER MOTOR FOR SHEAR MOTOR	3.70	1.00	3.70
45	SCRAP BOOGIE MOTOR	2.20	1.00	2.20
46	GAUGE ADJUST MOTOR	3.70	1.00	3.70
47	GUAGE LIFT MOTOR	5.50	1.00	5.50
48	UPCUT SHEAR SIDE PILER MOTORS(1-2)	5.50	2.00	11.00
49	UPCUT SHEAR SIDE GUIDE MOTOR	11.00	1.00	11.00
50	SHEAR DELIVERY TABLE MOTORS(1-13)	0.75	13.00	9.70
51	ANNEANING FURNACE RUN IN TABLE MOTORS(1-13)	0.75	13.00	9.70
52	ROLER HEARTH AC MOTORS(1-4)	2.20	4.00	8.80
53	ROLLER HEARTH DC MOTORS(1-4)	6.00	4.00	24.00
54	ROLLER HEARTH DC MOTORS BLOWER(1-4)	0.12	4.00	0.48
55	ANNEALING FURNACE CHARGING DOOR MOTOR	2.20	1.00	2.20
56	ANNEALING FURNACE DISCHARDING DOOR MOTOR	2.20	1.00	2.20
57	ANNEALING FURNACE COMBUSTION BLOWER MOTORS(1)	11.00	1.00	11.00
58	ANNEALING FURNACE COMBUSTION BLOWER MOTORS(2)	15.00	1.00	15.00
59	ANNEALING FURNACE COMBUSTION BLOWER MOTORS(3)	15.00	1.00	15.00
60	ANNEALING FURNACE COMBUSTION BLOWER	5.50	1.00	5.50

	MOTORS(4)			
61	ANNEALING FURNACE EXHAUST BLOWER MOTORS(1)	11.00	1.00	11.00
62	ANNEALING FURNACE EXHAUST BLOWER MOTORS(2)	11.00	1.00	11.00
63	ANNEALING FURNACE EXHAUST BLOWER MOTORS(3)	18.50	1.00	18.50
64	ANNEALING FURNACE EXHAUST BLOWER MOTORS(4)	7.50	1.00	7.50
65	ANNEALING & QUENCHING EXHAUST BLOWER MOTOR	55.00	1.00	55.00
66	QUENCHING WATER CIRCULATION MOTOR	22.00	1.00	22.00
67	QUENCHING WATER PUMP MOTOR	5.50	1.00	5.50
68	QUENCHING SUMP PUMP MOTOR	1.50	1.00	1.50
69	QUENCHING APPROACH TABLE MOTORS(1-30)	0.75	30.00	22.50
70	QUENCHING TABLE -2 (1-3)	15.00	3.00	45.00
71	PINCH ROLL LUBRICATION MOTOR	1.50	1.00	1.50
72	PINCH ROLL BLOWER MOTOR	11.00	1.00	11.00
73	QUENCHING DELIVERY TABLE MOTORS(1-11)	0.75	11.00	8.25
74	HOT LEVELER APPROACH TABLE MOTORS(1-7)	0.75	7.00	5.25
75	HOT LEVELLER MOTOR	150.00	1.00	150.00
76	HOT LEVELLER BLOWER MOTOR	1.50	1.00	1.50
77	HOT LEVELLER AIR BLOWER MOTOR	30.00	1.00	30.00
78	HOT LEVELLER SIDE GUIDE MOTOR	5.50	1.00	5.50
79	HOT LEVELLER SPINDLE LUBRICATION MOTOR	3.70	1.00	3.70
80	HOT LEVELLER ENTRY SCREW DOWN MOTOR	7.50	1.00	7.50
81	HOT LEVELLER EXIST SCREW DOWN MOTOR	7.50	1.00	7.50
82	HOT LEVELLER HPP MOTOR	3.70	1.00	3.70
83	HOT LEVELLER DELIVERY TABLE MOTORS(1-5)	0.75	5.00	3.75
84	COOLIING BED RUN IN TABLE MOTORS(1-11)	0.75	11.00	8.25
85	COOLING BED ENTRY HPP MOTOR	18.50	1.00	18.50
86	COOLING BED EXIT HPP MOTOR	18.50	1.00	18.50
87	COOLING BED ENTRY CHAIN TRANSFER MOTOR	4.00	1.00	4.00
88	COOLING BED MAIN TRANSFER CHAIN MOTOR	15.00	1.00	15.00
89	COOLING BED DELIVERY CHAIN TRANSFER MOTOR	4.00	1.00	4.00
90	COOLING BED RUN OUT TABLE MOTORS(1-11)	0.75	11.00	8.25
91	SIDE SHEAR ENTRY TABLE MOTORS(1-5)	0.75	5.00	3.25
92	LEFT SIDE MANIPULATOR MOTORS(1-4)	3.50	4.00	14.00
93	RIGHT SIDE MANIPULATOR MOTORS(1-3)	3.50	3.00	10.50
94	LEFT SIDE MANIPULATOR SLOW MOTORS(1-4)	0.37	4.00	1.48
95	RIGHT SIDE MANIPULATOR SLOW MOTORS(1-3)	0.37	3.00	1.11
96	LS SIDE SHEAR HPP MOTOR	0.75	1.00	0.75
97	RS SIDE SHEAR HPP MOTOR	0.75	1.00	0.75
98	SIDE SHEAR ROLLER TABLE1 MOTORS(1-13)	0.75	13.00	9.70
99	SIDE SHEAR ROLLER TABLE2 MOTORS(1-12)	0.75	12.00	9.00
100	SIDE SHEAR RUN OUT TABLE MOTORS(1-8)	0.75	8.00	6.00
101	PTU HORIZONTAL ROLLER TABLE MOTOR	1.40	1.00	1.40
102	PTU VERTICAL ROLLER MOTOR	3.00	1.00	3.00
103	PTU LIFTING ARM MOTOR	7.50	1.00	7.50
104	SHOT BLAST VERTICAL ROLLER MOTOR	5.50	1.00	5.50
105	L S SHOT BLASTING MOTORS(1-4)	15.00	4.00	60.00
106	R S SHOT BLASTING MOTORS(1-4)	15.00	4.00	60.00
107	FILTER FAN MOTOR	15.00	1.00	15.00
108	DUST EXTRATOR MOTOR	0.37	1.00	0.37
109	BUCKET ELEVATOR MOTORS(1)	4.00	1.00	4.00
110	BUCKET ELEVATOR MOTORS(2)	3.70	1.00	3.70
111	PICKLING VERTICAL ROLLER MOTOR	2.20	1.00	2.20
112	ACID CIRCULATION PUMP MOTORS -1	15.00	1.00	15.00
113	ACID CIRCULATION PUMP MOTORS-2	45.00	1.00	45.00
114	ACID TRANSFER PUMP MOTORS(1-2)	3.70	1.00	3.70
115	HOT RINSE PUMP MOTORS(1-2)	37.00	2.00	74.00
116	FUME EXHUST FAN	11.00	1.00	11.00
117	INSPECTION & GRINDER VERTICAL ROLLER MOTOR(1-2)	2.20	2.00	4.40
118	PTD VERTICAL ROLLER MOTOR	3.00	1.00	3.00
119	PTD HORIZONTAL ROLLER TABLE MOTOR	1.40	1.00	1.40
120	PTD LIFTING ARM MOTOR	7.50	1.00	7.50

121	TRANSFER TABLE MOTORS(1-14)	0.75	14.00	10.50
122	VACUUM LIFT1 PUMP MOTOR	2.20	1.00	2.20
123	VACUUM LIFT1 TRAVEL MOTOR	3.70	1.00	3.70
124	COLD SHEAR ENTRY TABLE MOTORS(1-10)	0.75	10.00	7.50
125	COLD SHEAR DELIVERY TABLE MOTORS(1-10)	0.75	10.00	7.50
126	COLD SHEAR LUBRICATION PUMP MOTOR	0.75	1.00	0.75
127	COLD SHEAR MOTOR	30.00	1.00	30.00
128	COLD LEVELLER APPROACH TABLE MOTORS(1-12)	0.75	12.00	9.00
129	COLD LEVELLER RUN OUT TABLE MOTOR(1-12)	0.75	12.00	9.00
130	COLD LEVELLER MOTOR	110.00	1.00	110.00
131	COLD LEVELLER BLOWER MOTOR	2.20	1.00	2.20
132	COLD LEVELLER ENTRY SCREW DOWN MOTOR	3.75	1.00	3.75
133	COLD LEVELLER EXIT SCREW DOWN MOTOR	3.75	1.00	3.75
134	COLD LEVELLER LUBRICATION PUMP MOTOR	2.20	1.00	2.20
135	COLD LEVELLER HPP MOTOR	2.20	1.00	2.20
136	ETP LIME SOLUTION PREPARATION TANK(2)	1.10	1.00	1.10
137	FLASH MIXTURE(2)	0.37	1.00	0.37
138	FLASH MIXTURE	0.75	1.00	0.75
139	DOSING(3)	0.75	1.00	0.75
140	POLY ELECTROLYTE PUMP	0.37	1.00	0.37
141	SODIUM META BISULPHATE PUMP	0.37	1.00	0.37
142	LIME SOLUTION PUMP	0.75	1.00	0.37
143	REACTION TANK CUM GRAVITY	2.20	1.00	2.20
144	CARBON FILTER PUMP	1.50	1.00	1.50
145	SCREW PUMP	2.20	1.00	2.20
146	ACID PUMP	3.70	1.00	3.70
147	RINSE PUMP	2.20	1.00	2.20
148	DESCALING PUMP1 LUBRICATION OIL PUMP MOTOR	2.20	1.00	2.20
149	DESCALING PUMP2 LUBRICATION OIL PUMP MOTOR	2.20	1.00	2.20
150	DESCALING COMPRESSOR MOTOR (1-3)	75.00	2.00	150.00
151	NEAR WORK SHOAP COMPRESSOR	30.00	1.00	30.00
152	PRESSURE FILTER BACKWASH PUMP MOTOR	45.00	1.00	45.00
153	INDIRECT COOLING PUMP MOTORS(1-2)	125.00	1.00	125.00
154	SCALE PIT PUMP MOTORS(1-3)	75.00	2.00	150.00
155	DIRECT COOLING TOWER FAN MOTORS(1-4)	22.00	4.00	88.00
156	INDIRECT COOLING TOWERR FAN MOTORS(1-4)	18.50	4.00	74.00
157	SUBMERCIBLE PUMP MOTOR	1.50	1.00	1.50
158	GAS YARD VAPOR RECOVERY COMPRESSOR MOTOR(1)	7.50	1.00	7.50
159	GAS YARD VAPOR RECOVERY COMPRESSOR MOTOR(2)	11.00	1.00	11.00
160	GAS YARD UNLOADING PUMP MOTORS(1-2)	2.20	1.00	2.20
161	GAS YARD UNLOADING PUMP MOTORS(3)	2.20	1.00	2.20
162	GAS YARD VAPOURISATION WATER CIRCULATION MOTOR(10)	0.37	5.00	1.85
163	ROLL GRINDER ROLL MOTOR	37.00	1.00	37.00
164	ROLL GRINDER WHEEL MOTOR	22.00	1.00	22.00
165	ROLL GRINDER SAADLE MOTOR	4.00	1.00	4.00
166	ROLL GRINDER SPINDLE LUBRICATION OIL PUMP MOTOR	0.75	1.00	0.75
167	ROLL GRINDER GEAR LUBRICATION OIL PUMP MOTOR	0.25	1.00	0.25
168	ROLL GRINDER COOLANT PUMP MOTORS	5.50	1.00	5.50
169	ROLL GRINDER CROSS TRAVEL MOTORS	2.20	1.00	2.20
170	PAPER FILTER MOTOR	0.12	1.00	0.12
171	ROLL GRINDER ROLLER BLOWER MOTORS	1.50	1.00	1.50
172	LATHE MACHINE MOTOR 1	2.20	1.00	2.20
173	LATHE MACHINE MOTOR 2	3.70	1.00	3.70
174	LATHE MACHINE MOTOR 3	3.70	1.00	3.70
175	LATHE MACHINE MOTOR 4	3.70	1.00	3.70
176	LATHE MACHINE MOTOR 5	15.00	1.00	15.00
177	HAND GRINDER MOTORS NEAR SLAB YARD	15.00	1.00	15.00
178	POWER HACK SAW MOTOR	2.20	1.00	2.20
179	PEDESTAL GRINDER MOTOR	0.75	1.00	0.75
180	SHAPER MOTOR	3.70	1.00	3.70

181	NEW VACUUM LIFT LT MOTOR	4.50	1.00	4.50
182	NEW VACUUM LIFT CT MOTOR	2.20	1.00	2.20
183	NEW VACUUM LIFT HOIST MOTOT	3.70	1.00	3.70
184	NEW VACUUM LIFT VACUUM MOTOR	2.20	1.00	2.20
185	NEW VACUUM LIFT COPRESSOR MOTOR	3.70	1.00	3.70
186	MILLING MACHINE MH MOTOR(1-2)	7.50	2.00	15.00
187	MILLING MACHINE CROSS FEED MOTOR	2.20	1.00	2.20
188	MILLING MACHINE LIFT UP DOWN MOTOR	3.70	1.00	3.70
189	MILLING MACHINE LONG TRAVELL MOTOR	5.50	1.00	5.50
190	MILLING MACHINE HPP MOTOR	0.10	1.00	0.10
	AB BAY CRANE (1)			
191	LT MOTOR(1-2)	4.50	2.00	9.00
192	CT MOTOR	4.50	1.00	4.50
193	AUXILLARY HOIST MOTOR	13.50	1.00	13.50
194	MAIN HOIST MOTOR	36.00	1.00	36.00
	AB BAY CRANE (2)			
195	LT MOTOR(1-2)	6.70	2.00	13.40
196	CT MOTOR	4.50	1.00	4.50
197	AUXILLARY HOIST MOTOR	9.00	1.00	9.00
	BC BAY CRANE(1)			
198	LT MOTOR(1-2)	18.00	2.00	36.00
199	CT MOTOR	6.00	1.00	6.00
	CD BAY CRANE (1)			
200	LT MOTOR(1-2)	5.50	2.00	11.00
201	CT MOTOR	4.50	1.00	4.50
	CD BAY CRANE (2)			
202	LT MOTOR	20.00	1.00	20.00
203	CT MOTOR	13.00	1.00	13.00
204	AUXILLARY HOIST MOTOR	28.00	1.00	28.00
205	MAIN HOIST MOTOR	31.10	1.00	31.10
	DE BAY CRANE(1)			
206	LT MOTOR(1-2)	4.30	2.00	8.60
207	CT MOTOR	2.60	1.00	2.60
208	MAIN HOIST MOTOR	36.00	1.00	36.00
	DE BAY CRANE(2)			
209	LT MOTOR	4.50	1.00	4.50
210	LT MOTOR	5.10	1.00	5.10
211	CT MOTOR	4.50	1.00	4.50
212	AUXILLARY HOIST MOTOR	13.50	1.00	13.50
	DE BAY CRANE(3)			
213	LT MOTOR(1-2)	4.50	2.00	9.00
214	CT MOTOR	2.60	1.00	2.60
	TOTAL			8,481.99

Annexure 5: Unit wise Break up of Fixed Assets

Unit Wise Break Of Fixed Assets – March 31st, 2013 (Extract from the Audited Balance Sheet Of BRG Iron & Steel Co. Pvt Ltd.) *(Amt. In Lacs)*			
Sl No.	**Particulars**	**Gross Block**	**Net Block**
1	**Unit -1**		
	Tangible Assets	44,620.49	30,492.12
	Intangible Assets	2,346.22	943.01
	Sub Total	**46,966.71**	**31,435.13**
2	**Unit -1**		
	Tangible Assets	63,842.07	45,538.2
	Intangible Assets	1.85	1.84
	Sub Total	**63,843.92**	**45,540.04**
3	**Unit -1**		
	Tangible Assets	39,984.23	31,734.95
	Intangible Assets	0.4	0.35
	Sub Total	**39,984.63**	**31,735.3**
	TOTAL	**150,795.26**	**108,710.47**

Note: Without Considering the CWIP
Sources: As per the Companies information (BRGIS)

Annexure 6: BEP

Exhibit: Break Even											
Description	**FY 13-14**	**FY 14-15**	**FY 15-16**	**FY 16-17**	**FY 17-18**	**FY 18-19**	**FY 19-20**	**FY 20-21**	**FY 21-22**	**FY 22-23**	**FY 23-24**
Total Income (A)	**1,124.06**	**2,192.33**	**3,305.93**	**4,935.98**	**6,287.61**	**7,200.85**	**7,708.73**	**7,768.17**	**8,125.58**	**8,522.27**	**8,570.44**
Variable Cost:											
Material Consumed	1,024.94	1,790.59	2,706.68	4,092.65	5,248.04	6,025.58	6,451.73	6,502.12	6,801.53	7,148.87	7,195.29
-Consumable of Store & Spares	16.44	27.82	33.86	40.51	46.69	50.00	52.87	52.87	53.15	53.42	53.42
-Power & Fuel	56.11	108.54	147.04	202.88	246.50	273.85	290.13	290.13	300.38	310.63	310.63
-Repairs to Machinery	4.94	10.30	15.22	22.84	28.66	32.50	34.48	34.48	36.27	38.05	38.05
-Salary & Wages	6.14	11.25	14.70	19.32	23.15	25.55	26.98	26.98	27.72	28.47	28.47
-Other Manufacturing Expenses	20.83	39.78	51.56	66.93	79.90	87.57	92.87	92.87	95.25	97.64	97.64
-W.cap Int	98.12	84.86	127.62	184.07	236.85	273.14	273.14	273.14	273.14	273.14	273.14
Total Variable Cost (B)	**1,227.52**	**2,073.14**	**3,096.68**	**4,629.20**	**5,909.79**	**6,768.19**	**7,222.19**	**7,272.58**	**7,587.44**	**7,950.23**	**7,996.65**
Contribution (A-B)	(103.45)	119.19	209.25	306.78	377.82	432.65	486.54	495.59	538.14	572.04	573.78
Contribution %	-9.20%	5.44%	6.33%	6.22%	6.01%	6.01%	6.31%	6.38%	6.62%	6.71%	6.69%
Fixed Cost :-											
-Administrative Expenses	2.00	2.10	2.21	2.32	2.43	2.55	2.68	2.81	2.95	3.10	3.26
-Selling & Distribution Expenses	2.50	2.63	2.76	2.89	3.04	3.19	3.35	3.52	3.69	3.88	4.07
Finance Cost	49.01	142.67	158.14	151.40	140.77	128.00	112.84	93.69	70.48	44.21	21.64
Depreciation	145.48	138.49	115.71	100.08	86.60	74.96	64.91	56.22	48.72	42.23	36.62
Total Fixed Cost (A)	**198.99**	**285.89**	**278.81**	**256.69**	**232.84**	**208.70**	**183.77**	**156.25**	**125.85**	**93.42**	**65.59**
Break Even Point (A/B)	-192.35%	239.85%	133.24%	83.67%	61.63%	48.24%	37.77%	31.53%	23.39%	16.33%	11.43%
Cash Break Even Point	-51.72%	123.66%	77.94%	51.05%	38.71%	30.91%	24.43%	20.18%	14.33%	8.95%	5.05%

Limiting Conditions

The revenue and cost estimates for the proposed project are given on the basis of assumptions and not on the basis of actual calculations. The revenue and costs considered are based on the findings from primary survey and secondary research, as detailed in the methodology section. There may be changes in the revenue and cost estimates depending on the market conditions. The revenue and costs are comparable to the industry benchmarks.

- The TEV Report (Hereafter referred to as the "Report") is not based on comprehensive market research of the overall market for all possible situations. M/s. Dun & Bradstreet Information Services India Pvt. Ltd. ("D&B-India") has covered specific markets and situations, which are highlighted in the Report. D&B-India has not carried out comprehensive field research based analysis of the market and the industry given the limited nature of the scope of the assignment. In this connection, D&B-India has relied solely on the information supplied to D&B-India and updated it by reworking the critical assumptions underlying such information as well as incorporating published or otherwise available information.
- D&B-India has endeavoured to develop forecasts on demand, supply and pricing on assumptions that were considered relevant and reasonable at that point of time. All of these forecasts are in the nature of likely or possible events/occurrences and the Report does not constitute a recommendation to BRGIS (M/s. BRG Iron & Steel Co. Private Limited) (hereafter referred to as the "Client") or its affiliates and subsidiaries or its customers or any other party to adopt a particular course of action. The use of the Report at a later date may invalidate the assumptions and bases on which forecasts have been generated and is not recommended as an input to a financial decision.
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- The Report reflects matters as they currently exist. Changes may materially affect the information contained in the Report.
- All assumptions made in order to study the identified markets are based on information or opinions as current. In the course of the analysis, D&B-India has relied on information or opinions, both written and verbal, as current obtained from third parties provided with, including limited information on the market, financial and survey data, which has been accepted as accurate in bona-fide belief. No responsibility is assumed for technical information furnished by client and the third party organizations and this is bona-fidely believed to be reliable.

This Report containing various documents is subject to the following conditions:-

BASIS:

D&B-India's assumptions are based on the information obtained from owners, prevailing rules and regulations of statutory authorities, prevailing site conditions on the date of inspection and best judgment of the undersigned.

DISPOSAL COSTS AND LIABILITIES:

No allowances are made for any expenses of realization, or for taxation which might arise in the event of a disposal. All property is considered as if free and clears of all mortgages or other charges which may be secured thereon.

SOURCE OF INFORMATION:

D&B-India presumes that complete and correct information is provided to it by the owners. In case, if the information given to D&B-India is incomplete or incorrect, D&B-India shall assume no liability or responsibility for the same, and D&B-India may modify the report to that extent if so required.

DOCUMENTATION:

D&B-India does not normally read leases or documents of title. D&B-India assumes, unless informed to the contrary, that each Structure has good and marketable title, that all documentation are satisfactorily drawn and that there are no encumbrances, restrictions, easements or other outgoing of an onerous nature which would have a material effect on the value of interest under consideration, nor material litigation pending. Where D&B-India has been provided with documentation, D&B-India recommends that reliance should not be placed on its interpretation without verification by legal advisors.

TOWN PLANNING AND OTHER STATUTORY REGULATIONS:

D&B-India recommends that verification be obtained from legal advisors to the effect that:

I. The position is correctly stated in the report:
II. The property is not adversely affected by any other decision made, or conditions prescribed by public authorities.
III. There are no outstanding statutory notices.
IV. D&B-India's reports are prepared on the basis that the Owners comply with all relevant statutory regulations, including enactment relating to fire regulations, safety and environmental considerations and stipulation of respective statutory provisions.

PHYSICAL SURVEYS:

D&B-India has not carried out Physical Survey and levelling exercise of the Structures and advice Owners to carry out actual Physical Survey of the site along with levels if desired. This report is based on documents forwarded to D&B-India by Owners, Government Records made available to D&B-India and on D&B-India's cursory inspection of site.

STRUCTURAL SURVEYS:

D&B-India has not carried out a structural survey, nor has D&B-India tested the services of the Owners and D&B-India therefore does not give any assurance that any Structure or the immoveable assets are free from defects. In D&B-India's general observations, the Structures are erected normally and appear to have been maintained properly. However, no guarantee or opinion can be inferred about the conditions of Structure and Machinery about safe working of the same.

DELETERIOUS MATERIALS:

D&B-India does not normally carry out investigations on site to ascertain whether any Structure was constructed or altered using deleterious materials or techniques (including, by way of example high alumina cement concrete, wood wool as permanent shuttering, calcium chloride or asbestos). Unless D&B-India was otherwise informed, our report is on the basis that no such materials or techniques have been used.

SITE CONDITIONS:

D&B-India has not carried out investigations on site in order to determine the suitability of ground conditions and services for the purposes for which they are, or are intended to be put, to use, nor does D&B-India undertake archaeological, ecological or environmental surveys. Unless D&B-India is otherwise informed, D&B-India's report is on the basis that these aspects are satisfactory and that, where development is contemplated, no extraordinary expenses or delays will be incurred during the construction period due to these or any other matters related to site.

ENVIRONMENTAL CONTAMINATION:

D&B-India has not carried out physical site surveys or environmental assessments, or investigated historical records, to establish whether any land or premises are, or have been, contaminated. Therefore, unless advised to the contrary, D&B-India's report is carried out on the basis that properties are not affected by environmental contamination.

OUTSTANDING DEBTS:

In case of Structure where construction works are in hand, or in case of machinery where erection is in progress or has recently been completed, D&B-India does not normally make

allowance for any liability already incurred but not discharged, in respect of completed works, or obligations in favour of contractors, subcontractors or any members of the professional or design team.

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