



NMDC IRON & STEEL PLANT

NAGARNAR, CHHATTISGARH

NMDC 3.0 MTPA INTEGRATED STEEL PLANT AT NAGARNAR

Prasant Dash
Executive Director

S K Chaurasiya
Jt. General Manager

Arpan Sarkar
Manager

Presented by-

S.K.Chaurasiya
Jt. General Manager
NMDC Iron & Steel Plant, Nagarnar.



NMDC IRON & STEEL PLANT

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- NMDC Limited is a “Navratna” Public sector company under the Ministry of Steel, Government of India Incorporated in the year 1958.
- NMDC is pioneer in exploration of minerals and is primarily engaged in the business of developing mines to produce raw materials for the industry.
- NMDC Ltd is setting up an Integrated steel plant of 3.0 MTPA at Nagarnar, in the tribal district of Bastar, Chhattisgarh which will boost the socio- economic stature & standard of living in this tribal belt.



NMDC IRON & STEEL PLANT

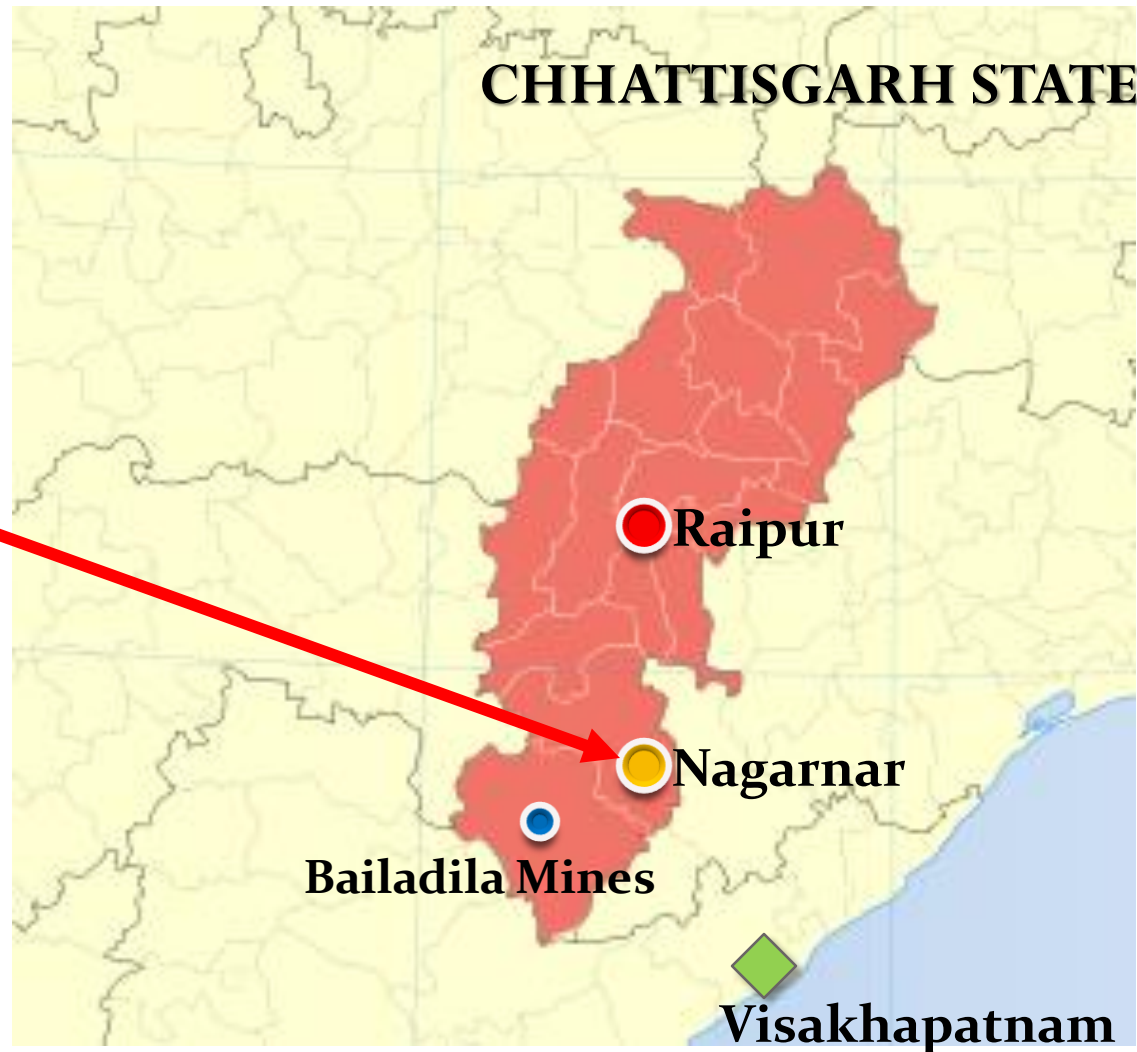
NAGARNAR, CHHATTISGARH

- NMDC being a mining company was not having any expertise in steel. The estimated time period for the project was about four years which is already overrun by one and half years. NMDC has hired MECON as our Engineering consultant & as well as PMC contractor and awarded all the major packages on EPC basis.
- An attempt is being made in this case study to identify the major challenges and learning's of project execution in steel industry in order to complete future projects with zero cost and time overrun.

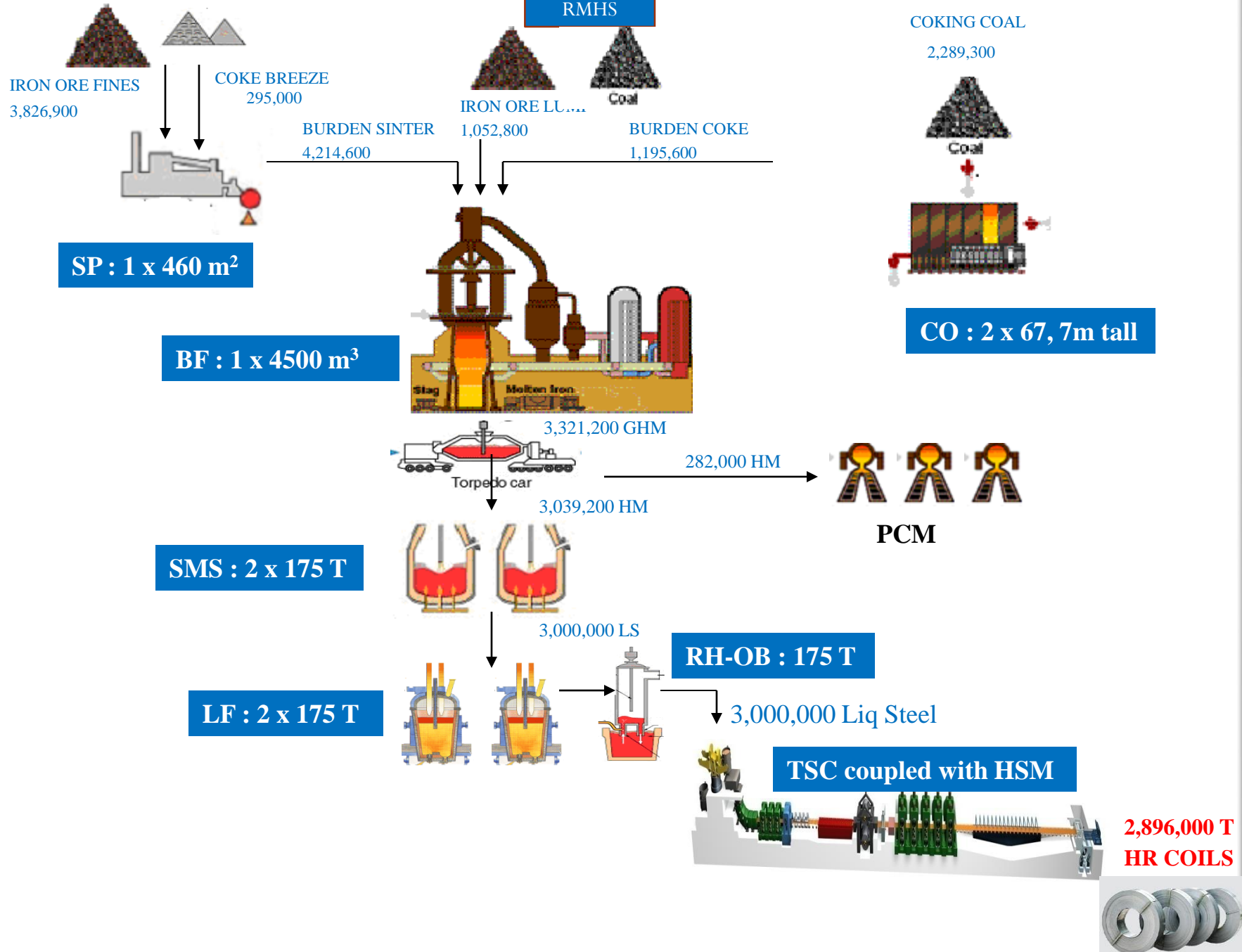


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PROCESS-CUM-MATERIAL FLOW SHEET





SALIENT FEATURES OF THE PLANT

- **Capacity (Liquid Steel)** : 3 MTPA
- **Cost of Project** : 15525 Crores
- **Land Acquired** : 1900 acres
- **Capacity (HR coils/sheets/plates)** : 2.89 MT/yr.
- **Coke Oven & CDCP** : 7 mtr Tall Batteries, 2 Nos.
- **Sinter Plant** : 460 Sqm, 1 No.
- **Blast furnace** : 4506 Cum
- **Pig Casting Machine** : 1700 tpd, 3 machines
- **Steel Melting Shop** : 2 x175 T BOF Converters
- **Thin Slab Caster + HSM** : 2 Strand CC and HSM
2RM+4FM+2 Down Coiler
- **Other Units** : By Product Plant, RMHS



SPECIAL FEATURES OF THE PLANT

- The entire plant is installed in less than 1800 Acres having 25m width green belt all around the boundary wall with wide in-plant roads.
- Optimum use of water and power.
- Biggest Blast Furnace in India with 4506 m³ useful volume.
- Totally Automated material handling system in the BOF Shop (First time in PSU steel producer).
- All the units are designed for Zero Discharge.
- About 40% energy required for the plant is being generated within the plant.
- Latest dedusting system, ETP, Pollution monitoring system are adopted.



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General challenges faced by NMDC for setting up a green field project are:

- Land Acquisition.
- Environmental & Forest clearances.
- Resettlement & Rehabilitation policy of displaced persons.
- Poor logistics for transportation by Rail and Road.
- Scarcity of skilled and trained manpower in the area.
- Limited availability of quality education and medical facilities
- Delay in getting statutory clearance and permission



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Overall Progress			
Activity	Scope	Progress	%
RCC	995000	894700	89.92
STRU SUPP	280000	246387	88.00
STRU ERE	280000	212561	75.91
EQP SUPP	212000	186648	88.04
EQP EREC	212000	109871	51.83
REF SUPP	111600	73963	66.28
REF EREC	111600	58111	52.07



NMDC IRON & STEEL PLANT

NAGARNAR, CHHATTISGARH

We plan to supply our quality products to:

- Automobile and Rail Wagon Manufacturers
- LPG Cylinder Manufacturers
- Construction Company
- Infrastructure and Highway development company
- Pressure Vessels manufacturers
- Pipe manufacturer
- Ship builders
- Electrics manufacturers



BENCHMARKING NISP WITH OTHER STEEL PLANTS

Parameter	International Standards	SAIL	RINL	TATA Jamshedpur	JSW Bellary	NMDC Steel Plant
BF Productivity (t/m ³ /day)	2.5-3.5	1.58	1.45 (1.1-1.5)	2.41 (1.4-2.6)	2.64	2.1
		(1.15-1.68)			(2.5-2.7)	
BF Coke Rate (kg/thm)	275-350	489	543 (532-571)	380 (353-545)	398-490	360
		(464-499)				
BF PCI/CDI Rate (kg/thm)	200-225	58	5 (10-2)	168 (40-191)	85.0-135.3	150
		(21-125)				
LD Productivity (heats/conv/yr)	10000-12000	315	6915	10795 (9732-12523)	9097-10754	8640
		(261-372)				
Specific Energy Consumption (Gcal/tcs)	4.5-5	6.51	6.4	5.77	6.41	5.5
		(6.42-6.70)				
Specific CO ₂ Emission (t/tcs)	1.8-1.9	2.6	2.8	2.26	2.61	2.5
Water Consumption (m ³ /tcs)	2-2.5	3.51	4.68	3.98	2.8	3.0



MANPOWER COMPARISON

Organisation	Capacity (MTPA)		Manpower
NMDC	3.0		3500
RINL	3.5	16400	18395
	2.8	1995	
JSW	4.0	1689	* 3189
	3.0	1500	



Blast Furnace





BY PRODUCT PLANT









Steel Melting Shop





Mills Area





Thank You