

STEEL / SPONGE IRON CAPTIVE POWER PLANT PROFILE



AVANT-GARDE ENGINEERS AND CONSULTANTS (P) LTD

(AN ISO 9001:2015 AND ISO 17020:2012 ACCREDITED ORGANISATION)



Old No: 68A, New No: 79, Porur Kundrathur High Road, Porur

Chennai - 600 116, India

Tel: + 91 -44 -4598 1200 / 2482 8717 - 22

Fax: + 91 -44 -24828531

avantgarde@vsnl.com

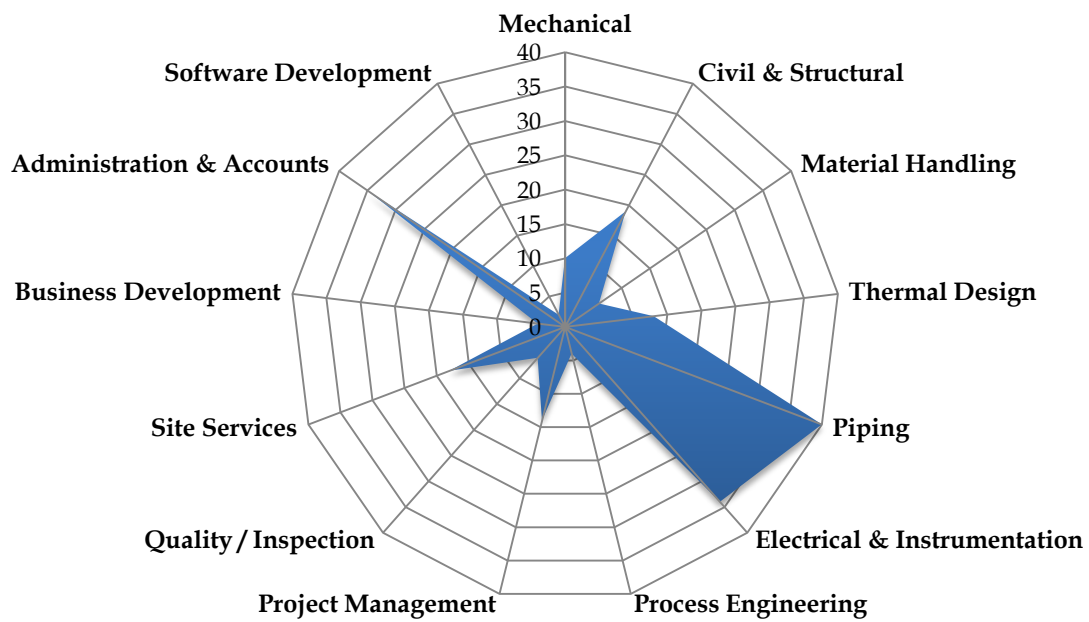
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INCEPTION

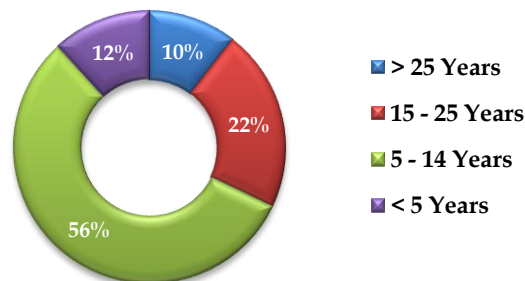
- ❖ YEAR OF ESTABLISHMENT - 1990

STAFFING

- ❖ MULTI DISCIPLINARY TEAM COMPRISE OF MORE THAN 200 WORKFORCE



YEARS OF EXPERIENCE



CONTACT PERSON

- ❖ P.S. SANKARANARAYANAN, DIRECTOR

ENGINEERING SERVICES OFFERED FOR

- Captive power plant
- Cogeneration plant
- Steam generator design and engineering
- Waste heat recovery systems
- Mini Hydro electric power plants
- Combined cycle power plants
- Solar Thermal & Solar PV power plants
- Sugar plant consultancy
- Distillery Plants
- Water and Waste Water treatment plants
- Industrial Effluent Treatment plants
- Process piping
- Equipment design
- Detailed engineering of electrical, mechanical, instrumentation, civil & structures
- Procurement & site supervision
- Third party inspection services
- Residual Life Assessment
- Energy Audit
- Engineering software development

SERVICES OFFERED FOR STEEL / SPONGE IRON CAPTIVE POWER PLANTS

BASIC ENGINEERING SERVICES

- Preparation of Feasibility Reports
- Preparation of Detailed Project Reports
- Power Purchase Agreement
- Thermal Cycle Optimisation
- Plant Engineering

DETAILED ENGINEERING SERVICES

- Plant Layout
- Equipment Layout
- Piping Engineering
- Electrical Engineering
- Switchyard Design
- Instrumentation - DCS, PLC, Micro-processor
- Plant Building Design
- Civil works, civil foundation design for plant, equipment, TG, chimney etc
- Structural design and engineering.

PROCUREMENT SERVICES

- Vendor rating
- Engineering specification for bought out items (WHRSG, FBC, TG, etc)
- Evaluation of offers received.
- Draft Purchase Order / Contract agreement.
- Vendor Drawing Review.
- Expediting Services

OTHER SERVICES

- Project Engineering and Co-Ordination Services
- Inspection Services
- Supervision of Erection and Commissioning
- Performance Testing Services

AVANT-GARDE EXPERIENCE IN CAPTIVE POWER PLANT FOR STEEL INDUSTRY

Avant-Garde have prepared / are preparing detailed project reports for the following projects. These projects are captive power plants for the sponge iron / steel industry which are either connected to grid or installed for in-house captive power generation.

S.No	Project	Capacity
1.	Shyam Sel Ltd., West Bengal (Burdhwan) (3 x 50 TPD Kilns WHRSG + FBC) Grid paralleled inhouse use of Electric power.	5.00 MW
2.	Shyam Sel Ltd., West Bengal (Mangalpur) (3 x 100 TPD Kilns WHRSG) Grid paralleled inhouse use of Electric power.	8.00 MW
3.	Jai Balaji Sponge Ltd., West Bengal (Ranigunj) (7 x 50 TPD Kilns WHRSG + FBC) In-house usage of electric power.	12.00 MW
4.	Sri Ram Rupai Balaji Ltd., West Bengal (4 x 100 TPD Kilns WHRSG + 1 CFBC boiler) In-house usage of electric power .	30.00 MW
5.	Adhunik Corporation Ltd., West Bengal (Durgapur) (3 x 100 TPD Kilns WHRSG + FBC) Grid paralleled inhouse use of electric power.	16.00 MW
6.	Ankit Steel Works Pvt.Ltd., West Bengal (Bankura) (1 x 350 TPD Kilns WHRSG) Grid paralleled inhouse use of electric power.	8.50 MW
7.	Electrosteel Castings Limited, Haldia, West Bengal (2 Batteries of 34 coke ovens WHRSG) Grid paralleled inhouse use & export of electric power.	12.00 MW
8.	Neo Metallicks Ltd., Durgapur, West Bengal (BFG based captive power plant-Stage-1)	4.50 MW

S.No	Project	Capacity
9.	Ma Chandi Durga Ispat Pvt. Ltd., Durgapur, West Bengal (2 x 100 TPD + 3 x 50 TPD Kilns WHRSG) In-house usage of electric power.	8.50 MW
10.	Shri Ramrupai Balaji Steels Limited, Durgapur, West Bengal (4 x 100 TPD Sponge Iron Kilns WHRSG & 3 BFG fired boilers + 2 FBC fired boilers) (2 x 20MW)	40.00 MW
11.	Rashmi Ispat (I) Ltd., Midnapore dist., West Bengal 3 x 100 TPD kiln, WHSRG + 1 FBC boiler	10.00 MW
12.	Bihar Sponge Iron Ltd., Jamshedpur, (1 x 500 TPD kiln WHRSG + 1 x 100 TPD kiln WHRSG) Grid paralleled export of power	18.00 MW
13.	Singhal Enterprises Pvt. Ltd., Chhatisgarh (Raigarh), (4 x 100 TPD Kilns WHRSG + FBC) Grid paralleled inhouse use of Electric power.	16.00 MW
14.	Satya Power and Ispat Ltd, Chhattisgarh (2 x 100 TPD Kilns WHRSG + 1 AFBC) Grid paralleled inhouse use of electric power.	12.00 MW
15.	Jai Balaji Jyothi Steels Ltd, Orissa (2 x 30MW) (8 x 100 TPD Kilns WHRSG + 2 CFBC) in-house usage of electric power with grid connection	60.00 MW
16.	Neepaz Metaliks Limited (Adhunik Group), Orissa (5x100 TPD kilns WHRSG + 1 FBC boilers) Grid paralleled inhouse use of power	34.00 MW
17.	Adhunik Alloys & Power Ltd., Jharkhand (2 x 350 TPD Kilns WHRSG + 2 AFBC) Grid paralleled inhouse use of electric power.	25.00 MW
18.	Sunvik Steel Private Ltd., Karnataka (2 x 100 TPD Kilns WHRSG + 1 AFBC) Grid paralleled inhouse use of electric power.	10.00 MW
19.	BMM Ispat Limited, Karnataka (2 x 100 TPD kilns WHRSG + 1 FBC boilers) Grid paralleled inhouse use of power	25.00 MW
20.	Gupta Metalicks & Power Ltd., Nagpur, Maharashtra (4x100 TPD kilns WHRSG + 2 FBC boilers) Grid paralleled inhouse use of power	40.00 MW
21.	Gallant Metal Limited, Gandhidham, Gujarat. (3x100 TPD kilns WHRSG + 1 FBC boiler) Grid paralleled inhouse use of power)	25.00 MW
22.	Bhatia International, Gummidipoondi, Chennai Coke oven gas fired boilers (2 nos of 20 TPH)	9.00 MW
	TOTAL	428.50 MW

DETAILED ENGINEERING SERVICES EXPERIENCE

S.No	Project	Capacity
1.	Sponge Iron India Ltd., Andhra Pradesh (Kothagudam) 2 x 100 TPD Kilns WHRSG* In house usage of electric power	5.00 MW
2.	Electro Steel Castings Ltd., Kalahasthi, A.P. through Techno Electric Company Ltd., coke oven gas based power plant	12.00 MW
3.	Aarthi Steel Ltd., Orissa (Cuttack) (Stage-1) 1 x 500 TPD Kilns WHRSG + FBC In-house usage of electrical power.	40.00 MW
4.	Aarthi Steel Ltd., Orissa (Cuttack) (Stage-2) 1 x 500 TPD Kilns WHRSG + FBC In-house usage of electrical power.	40.00 MW
5.	OCL India Ltd., Orissa (Rajgangpur) (3 x 100 TPD Kilns WHRSG + FBC)	8.00 MW
6.	Bhushan Ltd., Orissa (Sambalpur) Stage-I 2 x 500 TPD kilns WHRSG + FBC	40.00 MW
7.	Bhushan Ltd., Orissa (Sambalpur) Stage-I A 2 x 500 TPD kilns WHRSG + FBC	60.00 MW
8.	Bhushan Steel & Strips Ltd., Orissa	110.00 MW
9.	Rungta Mines Ltd, Kamando, Orissa (6 x 100 TPD kilns+ 1 x 350 TPD kilns WHRSG + 1 AFBC boiler) in house power only (2 x 20 MW) units	40.00 MW
10.	Rathi Steel and Power Ltd, Sambalpur, Orissa in house power and grid connection	25.00 MW
11.	Bhushan Power and Steel Ltd, Jharsuguda, Orissa (4 x 350 TPD kilns + 1 CFBC boiler of 390 TPH steaming capacity) in house power (130 + 40 MW)	170.00 MW
12.	Neepaz Metaliks Limited (Adhunik Group), Orissa (5x100 TPD kilns WHRSG + 1 FBC boilers) Grid paralleled inhouse use of power	30.00 MW
13.	Action Ispat & Power Ltd., Orissa (1 x 350 TPD kiln WHRSG+1 FBC boiler) Grid paralleled inhouse use of power	12.00 MW
14.	Bhushan Ltd., Sambalpur, Orissa (coke oven based captive power plant. Grid paralleled inhouse use of power	16.00 MW
15.	Electro Steel Castings Ltd., Haldia, Orissa, through Techno Electric Company Ltd., coke oven gas based power plant	12.00 MW
16.	MGM Steels Ltd., Orissa - Phase I 1 x 350 TD kiln WHRSG and CPP for steel plant	8.00 MW
17.	Concast Ispat Ltd, Rourkela, Orissa WHRSG and FBC based Captive Power Plant	15.00 MW

S.No	Project	Capacity
18.	Jai Balaji Sponge Ltd., West Bengal (Ranigunj) (7 x 50 TPD Kilns WHRSG + FBC) In-house usage of electric power.	18.50 MW
19.	Electro steel Castings Ltd., West Bengal BFG based Power plant design and engineering	3.50 MW
20.	Shri Ramrupai Balaji Steels Limited, Durgapur, West Bengal (4 x 100 TPD Sponge Iron Kilns WHRSG & 2 BFG fired CFBC boilers)	50.00 MW
21.	Neo Metallicks Ltd., Durgapur, West Bengal (BFG based captive power plant-Stage-1)	4.50 MW
22.	Salasar Sponge & Power Ltd., Raigarh, Chhattisgarh (2x100 TPD kilns + 1 AFBC boiler) Inhouse power paralleling with grid	15.00 MW
23.	Shyam Ispat Ltd, Raigarh, Chhattisgarh (2 x 100 TPD kilns + 1 CFBC boiler) in house power and grid connection.	30.00 MW
24.	Singhal Enterprises Pvt. Ltd., Chhatisgarh (Raigarh) (4 x 100 TPD Kilns WHRSG + FBC) Grid paralleled inhouse use of electric power.	16.00 MW
25.	Ind Synergy Limited , Raigarh, Chhattisgarh Coal based CPP for steel plant	50.00 MW
26.	Rungta Mines Ltd, Chaliyama Jharkhand (7 x 100 TPD kilns WHRSG + 1 AFBC boiler) in house power (2 x 20 MW) units	40.00 MW
27.	Kohinoor Steel P..Ltd., Jamshedpur, Jharkhand (4 x 100 TPD kiln WHRSG boiler + 1 AFBC boiler) Grid paralleled in-house use of power	17.00 MW
28.	AML Steel Ltd., Jamshedpur, Jharkhand (4 x 100 TPD kilns) Grid paralleled in-house use of power	11.00 MW
29.	Gallant Metal Limited, Gandhidham, Gujarat. (3x100 TPD kilns WHRSG + 1 FBC boilers) Grid paralleled in-house use of power)	25.00 MW
30.	BMM Ispat Limited, Karnataka (2x100 TPD kilns WHRSG + 1 FBC boilers) Grid paralleled in-house use of power	25.00 MW
31.	Kamachi Sponge Iron Corpn.Ltd., Gummidipoondi, Tamilnadu (4 x 100 TPD kiln WHRSG boiler) Grid paralleled inhouse use of power	10.00 MW
32.	Hothur Steels Ltd., Bellary, Karnataka 4 x 100 TPD kiln WHRSG and 45 T AFBC boiler	10.00 MW
33.	Sunvik Steel Private Ltd, Tumkur, Karnataka 3 x 100 TPD kiln + AFBC boiler	10.00 MW
34.	Sandeep Energy & Steel S.A. WHRSG + FBC based Power Plant in Mali, West Africa	25.00 MW
	TOTAL	1003.50 MW
	*Part Detailed Engineering only	

DETAILED PROJECT REPORTS

S.No	Project	Capacity (MW)
1.	Shyam Group of Companies, Burdhan	5.00
2.	Shyam Group of Companies, Ranigarh	7.38
3.	Adhunik Alloys and Energy Ltd	30.00
4.	Singhal Enterprises, Chattisgarh	7.2
5.	Jai Balaji Sponge Iron Ltd., West Bengal	12.00
6.	Chandil Power P Ltd., Jamshedpur	20.00
7.	Satya Power Private Ltd., Chattisgarh	12.00
8.	Electro Steel Castings Ltd., Haldia (Feasibility Report)	12.00
	Total	105.58

OTHER SERVICES PROVIDED BY AVANT-GARDE FOR STEEL / SPONGE IRON PLANTS

- Boiler design and engineering for sponge iron waste heat recovery boilers
- Boiler design and engineering for BFG / coke oven gas / oil fired boilers
- Power plant engineering for sponge iron & steel plants
- Trouble shooting and revamping of boiler and power plant machinery
- Plant Piping design and engineering
- Surplus power export to grid
- Energy efficiency improvement.

GROUP COMPANY

- Avant-Garde Systems and Controls (P) Limited, Chennai.
- Avant-Garde Engineers & Consultants FZC, Sharjah, U.A.E

AFFILIATIONS & MEMBERSHIP

- CEAI - Consulting Engineers Association of India (CEAI is member of **FIDIC International Federation of Consulting Engineers**)
- Registered with Indian Renewable Energy Development Agency (IREDA)
- Enlisted with Power Finance Corporation of India and Asian Development Bank
- IIT, Chennai - Industrial Associateship Scheme (IAS) Membership and Library Membership
- Anna University - Industrial Associateship Scheme (IAS) Membership and Library Membership
- BIS - Bureau of Indian Standards Library Membership
- Institute of Engineers Fellow Membership - Directors (Chartered Engineers)
- Indian Chamber of Commerce and Industry (ICCI)
- Madras Chamber of Commerce and Industry (MCCI)
- Indian Wind Power Association

- Indian Welding Society
- Institute of Fire Engineers
- Bureau of Energy Efficiency (BEE)
- Maharashtra Energy Development Agency
- South Indian Sugarcane and Sugar Technologists Association
- Sugar Technologist Association of India (STAI)
- Engineering Export Promotion Council (EEPC)

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