

# SUGAR PLANT PROFILE



**AVANT-GARDE ENGINEERS AND CONSULTANTS (P) LTD**

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



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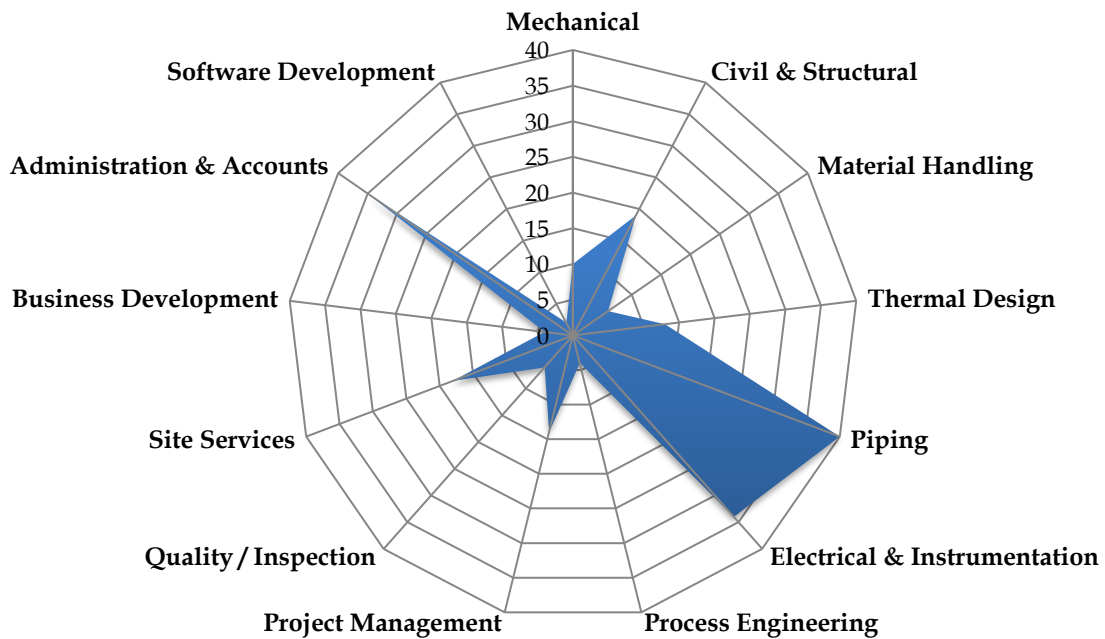
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## INCEPTION

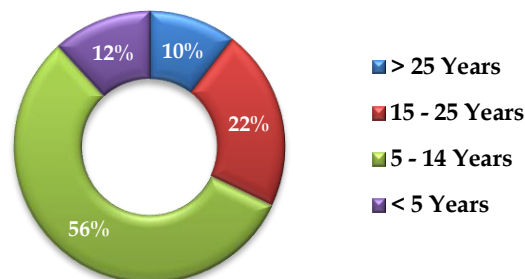
- ❖ YEAR OF ESTABLISHMENT - 1990

## STAFFING

- ❖ MULTI DISCIPLINARY TEAM COMPRISE OF MORE THAN 200 WORKFORCE



## YEARS OF EXPERIENCE



## CONTACT PERSON

- ❖ P.S. SANKARANARAYANAN, DIRECTOR

## **AREAS OF OPERATION**

- Captive Power plants
- Cogeneration plants
- 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 plants
- Distillery Plants
- Water and Waste Water 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

## **ENGINEERING SERVICES PROVIDED FOR SUGAR PLANT**

- Feasibility Report for new Sugar plant installation
- Feasibility Report for Sugar plant expansion with additional facilities
- Detailed Project Report for new Sugar plant installation
- Detailed Project Report for Sugar plant expansion
- Detailed Project Report for Sugar complex consisting of Sugar plant, Distillery and Cogeneration plants
- Plant layout, project design and equipment layout
- Sugar plant automation
- Detailed engineering of Electrical, Mechanical, Instrumentation, Civil & Structures for Sugar plant & ETP of Sugar plant
- Piping for process area, steam distribution
- Instrumentation - DCS, PLC, Micro-processor
- Plant Building Design
- Civil works, foundation design for plant, equipment, Sugar bins etc.,
- Structural Design and Engineering
- Cogeneration plant Steam Generator Design and Engineering
- Sugar plant boiler capacity upgradation, modification, trouble shooting etc.,
- Third party inspection services
- Procurement engineering for Sugar plant & machinery (mills, diffuser, boiling house, Sugar house, centrifugals etc)
- Sugar plant turnkey consultancy services

- Site supervision services
- Engineering software development
- Sugar plant energy audit

#### **PROCUREMENT SERVICES**

- Vendor rating
- Preparation of Specification for bought out items
- Evaluation of offers received.
- Preparation of Draft Purchase Order.
- Vendor Drawing Review.
- Expediting Services

#### **SUGAR PLANT AUTOMATION SERVICES**

- Cane Feed Control
- Mill Automation
- Imbibitions Automation
- Juice Flow Stabilization
- Auto pH Control
- Evaporator Automation
- Pan Automation
- Condenser Automation

#### **OTHER SERVICES**

- Project Engineering and Co-ordination services
- Inspection services
- Supervision of Erection and Commissioning
- Performance Testing services

#### **SUGAR PLANT TURNKEY CONSULTANCY EXPERIENCE**

##### **A. LIST OF COMMISSIONED PROJECTS**

<b>S.No</b>	<b>Project</b>	<b>Description</b>
1.	Dhanalakshmi Srinivasan Sugars Private Ltd, Tamil Nadu (Energy Efficient Plant)	3500 TCD Sugar Plant, 21 MW Cogeneration Plant and 60 KLPD multi product Distillery with Slop firing system
2.	Hemarus Technologies Ltd, Maharashtra (Energy Efficient Plant)	3500 TCD Sugar Plant, 21MW Cogeneration plant and 50 KLPD multi product distillery with slop firing system
3.	Sunil HiTech Engineers Ltd, (Gangakhed Sugar & Energy Private Ltd), Maharashtra (Energy Efficient Plant)	6000 TCD Sugar Plant, 30MW Cogeneration Plant and 2 x 60 KLPD multi product Distillery with Slop firing system

S.No	Project	Description
4.	Lokmangal Mauli Industries Ltd, Osmanabad, Maharashtra	6000 TCD Sugar Plant (part detailed engineering), 30MW Cogeneration plant and surplus power export to MSEB Grid.
5.	K.P.R. Sugar Mills Ltd, Karnataka	6500 TCD Sugar plant, 30MW Cogeneration plant and 60 KLPD multi product Distillery with Slop firing system
6.	Gobind Sugar Mills Limited, Kheri, Uttar Pradesh	Sugar Plant capacity expansion from 7200 to 10000 TCD with 30 MW High Pressure Co-Generation Plant and addition of 500 TPD back-end Sugar Refinery Plant.

#### B. LIST OF PROJECTS UNDER VARIOUS STAGES OF IMPLEMENTATION

S.No	Project	Description
1.	Rajarambapu Patil SSK Ltd, Sangli, Maharashtra	Sugar Plant capacity expansion from 4000 TCD to 7000 TCD with 28 MW High Pressure Co-Generation Plant.
2.	Karmayogi Shankarraoji Patil S.S.K Ltd., Indapur, Maharashtra	Sugar Plant Modernisation and capacity expansion from 8000 TCD to 9000 TCD with 25 MW High Pressure Co-Generation Plant.
3.	Vikas Sahakari Sakhar Karkhana Ltd, Latur, Maharashtra (Unit - I)	Sugar Plant expansion from 3500 TCD to 5000 TCD with 24 MW High Pressure Co-Generation Plant.
4.	Athani Sugars Limited, Maharashtra (Unit - II)	Sugar Plant expansion from 2500 TCD to 6000 TCD with 28 MW High Pressure Co-Generation Plant.
5.	Shree Basveshwar Sugars Limited, Karnataka (Unit of Dhanalakshmi Srinivasan Sugars Private Ltd)	3500 TCD sugar plant, 26 MW cogeneration plant and 50 KLPD multi product distillery with slop firing system
6.	C.F. Energy & Biofuels Private Ltd, Gadag, Karnataka	Integrated sugar plant, ethanol and co-generation complex consisting of 5000 TCD sugar mill 175 KLPD ethanol 32MW bagasse based co-generation plant, slop firing in the distillery and 4MW distillery power plant
7.	FDRE Metals and Engineering Corporation, Ethiopia	Joint Design and Expert review Services for implementation of 12000 TCD Sugar Plant and suitable Power Plant

### C. LIST OF BANKABLE DETAILED PROJECT REPORTS

S.No	Project	Description
1.	Dhanalakshmi Srinivasan Sugars Private Ltd, Tamil Nadu	3500 TCD Sugar Plant, 21 MW Cogeneration plant and 60 KLPD multi product Distillery with slop firing system
2.	Dharani Sugars and chemicals Ltd, Unit-II, Tamil Nadu	2500 TCD Sugar Plant expansion to 4000 TCD
3.	Dharani Sugars and chemicals Ltd, Unit-III, Tamil Nadu	3500 TCD Sugar Plant, 22 MW Cogeneration plant and 60 KLPD multi product Distillery with slop firing system
4.	Manakula Vinayagar Sugars Private Limited, Tamil Nadu	3500 TCD Sugar Plant, 18 MW Cogeneration plant, 30 KLPD multi product Distillery & Slop firing system
5.	Bannari Amman Sugar Mills Ltd., Tamil Nadu	4000TCD boiling house revamping
6.	Coromandal sugars Ltd., Andhra Pradesh	5000 TCD Sugar Plant with 28MW Cogeneration plant
7.	Sri Sarvaraya Sugars Limited., Andhra Pradesh	3500 TCD sugar plant with 24 MW cogeneration plant
8.	Daulat Shetkari SSK Ltd., Maharashtra	Existing plant expansion to 5000 TCD with installation of 16 MW cogeneration plant and 20 KLPD ethanol plant
9.	Hemarus Technologies Ltd, Maharashtra	3500 TCD sugar plant, 21MW cogeneration plant and 50 KLPD multi product distillery with slop firing system
10.	Sunil HiTech Engineers Ltd, (Gangakhed Sugar & Energy Private Ltd), Maharashtra	6000 TCD sugar plant, 30MW cogeneration plant and 2 X 60 KLPD multi product distillery with slop firing system
11.	Lokmangal Sugar Ethanol and Co-generation Industries Ltd, Solapur, Maharashtra	Capacity upgradation of 2500 TCD plant to 6000 TCD plant and additional co-generation plant capacity of 16 MW
12.	Lokmangal Mauli Industries Ltd, Osmanabad, Maharashtra	6000 TCD sugar plant, 30MW cogeneration plant and surplus power export to Grid.
13.	Lokmangal Agro Industries Ltd, Solapur, Maharashtra	Capacity up gradation of 2500 TCD plant to 6000 TCD plant and new high pressure co-generation plant capacity of 30 MW and surplus power export to MSEB grid.
14.	Shri Makai Sahakari Sakhar Karkhana Ltd, Solapur, Maharashtra	Sugar plant modernization cum expansion from 1250 TCD to 4000 TCD and installation of 18MW high pressure co-generation plant and surplus power export to MSEB grid

S.No	Project	Description
15.	Jarandeshwar Sugar Mills Ltd, Satara, Maharashtra	Sugar plant modernization cum expansion from 2500 TCD to 4000 TCD and installation of 20.5 MW high pressure co-generation plant and surplus power export to grid
16.	Rajarambapu Patil SSK Ltd, Sangli, Maharashtra	Capacity up gradation of 4000 TCD plant to 7000 TCD Sugar plant and new high pressure Co-generation plant capacity of 30 MW and surplus power export to grid.
17.	Lokmangal Agro Industries Limited, Sholapur, Maharashtra	Sugar Plant capacity expansion from 2500 TCD to 6000 TCD
18.	Karmayogi Shankarraoji Patil S.S.K Ltd., Indapur, Maharashtra	Sugar Plant Modernisation and capacity expansion from 8000 TCD to 9000 TCD with 25 MW High Pressure Co-Generation Plant.
19.	Cane Agro Energy India Ltd, Sangli, Maharashtra	Sugar Plant Expansion from 3500 TCD to 7000 TCD with High Pressure Cogeneration plant
20.	Vikas Sahakari Sakhar Karkhana Ltd, Latur, Maharashtra (Unit - I)	Sugar Plant expansion from 3500 TCD to 5000 TCD with 24 MW High Pressure Co-Generation Plant.
21.	Vikas Sahakari Sakhar Karkhana Ltd, Latur, Maharashtra (Unit - II)	Sugar Plant expansion from 2500 TCD to 5000 TCD with 24 MW High Pressure Co-Generation Plant.
22.	Daund Sugar Pvt. Ltd, Maharashtra	Sugar Plant Expansion to 10000 TCD with 39 MW Cogeneration plant
23.	Jarandeshwar Sugar Mills Pvt. Ltd, Maharashtra	Sugar Plant Expansion to 6000 TCD with 30 MW Cogeneration plant
24.	Astoria Agro and Allied Industries Pvt. Ltd, Maharashtra	Sugar Plant Expansion to 5600 TCD with 24 MW Cogeneration plant
25.	Athani Sugars Limited, Maharashtra (Unit - II)	Sugar Plant expansion from 2500 TCD to 6000 TCD with 28 MW High Pressure Co-Generation Plant.
26.	Bhoruka Power Corporation Ltd (Bhagyalaxmi SSK Ltd) Karnataka	2500 TCD Sugar Plant expansion to 3500 TCD with 20MW Cogeneration plant and 45 KLPD multi product Distillery with slop firing system
27.	Sri Chamundeswari Sugars Limited, (Hemavathy SSK Ltd) Unit-II, Karnataka	2000 TCD existing Sugar Plant to be expanded to 3000 TCD sugar plant with 14 MW Cogeneration plant and 50 KLPD distillery
28.	Sri Chamundeswari Sugars Limited, (Holenarsipura) Unit-III, Karnataka	3500 TCD Sugar Plant expandable to 5000 TCD Sugar Plant with 21 MW Cogeneration plant

<b>S.No</b>	<b>Project</b>	<b>Description</b>
29.	Sovereign Distilleries Ltd, Karnataka	3500 TCD Sugar Plant expandable to 5000 TCD with 24 MW cogeneration plant
30.	Shri Prabhulingeshwar Sugars & Chemicals Ltd, Karnataka	Sugar plant capacity expansion from 6000 TCD to 10000 TCD & installation of an additional 27MW Cogeneration plant with surplus power export to KPTCL grid.
31.	Shree Basaveshwar Sugar Mills Ltd, Karnataka (A unit of Dhanalakshmi Srinivasan Sugars Private Ltd)	3500 TCD Sugar Plant, 21 MW cogeneration plant and 60 KLPD multi product distillery with slop firing system
32.	C.F.Energy & Biofuels Private Ltd, Gadag, Karnataka	Integrated sugar plant complex consisting of 5000 TCD sugar mill 175 KLPD Ethanol 32MW bagasse based Cogeneration plant, slop firing in the distillery and 4MW power plant
33.	Athani Sugars Ltd, Athani, Karnataka	Sugar Plant expansion from 5000 TCD to 7500 TCD with 36 MW High Pressure Co-Generation Plant
34.	The Naranja SSK Ltd, Bidar, Karnataka	Sugar Plant Expansion from 2500 TCD to 5000 TCD with 35 MW Cogeneration and 60 KLPD Distillery with slop fired Cogeneration plant
35.	Birla Sugars Ltd., Hargaon Unit, U.P	Existing 5000 TCD sugar plant expansion to 7500 TCD plant with cogeneration and energy efficiency
36.	Gobind Sugar Mills Limited, Kheri, Uttar Pradesh	Sugar Plant expansion from 7200 TCD to 10000 TCD with 30 MW High Pressure Co-Generation Plant
37.	The Kanoria Sugar and General Manufacturing Co Ltd, Captainganj, Uttar Pradesh	Sugar Plant expansion from 6000 TCD to 11160 TCD with 40 MW High Pressure Co-Generation Plant
38.	Nzoia Sugar Company Ltd, Bungoma, Kenya	Plant stabilisation at 3000 TCD with expansion in two phases upto 8000 TCD, with cogeneration plant and distillery
39.	Tana Delta Integrated Sugar Project, Tana region, Kenya	Preparation of feasibility report for 34MW co-generation power plant and surplus power export to KPLC grid for a 10000 TCD Sugar plant complex
40.	Kibos Sugar and Allied Industries Ltd., Kisumu, Kenya	Study of existing plant and preparation of project report for sugar plant capacity increase to 2750 TCD and addition of cogeneration plant with surplus power export to Grid.



S.No	Project	Description
41.	South Nyanza Sugar Company Limited, Sare - Awendo, Kenya	Study of existing plant and preparation of feasibility report for optimization of steam, power generation and ethanol production.
42.	Asiatic Oxygen Limited, Kisii, Kenya	Greenfield Sugar Plant Complex consisting of Sugar Plant of capacity 2500 TCD expandable to 5000 TCD, 45 KLPD Distillery Plant with Slop fired Co-Generation Plant and 18 MW High Pressure Bagasse based Co-Generation Plant
43.	Lopez Sugar Company Ltd., Philippines	Study of existing plant and project report for increasing capacity of the refinery and raw sugar plant along with energy efficiency study, addition of cogeneration plant

**STUDY OF THE SUGAR PLANT PROCESS AREA FOR QUALITY IMPROVEMENT, ENERGY EFFICIENCY IMPROVEMENT**

S.No	Project	Description
1.	Mumias Sugar Company Ltd., Kenya	Sugar colour improvement study and Kestner tube failure studies
2.	Mumias Sugar Company Ltd., Kenya	Energy audit in the Sugar plant and consultancy services for implementation of energy efficient equipment.
3.	Nzoia Sugar Company Ltd., Kenya	Process house study for stable operation at 3000 TCD level and introduction of energy efficient equipment
4.	Modi Sugar Mills Ltd., U.P	Energy audit in the Sugar plant and furnishing recommendations
5.	The Seksaria Biswan Sugar Factory Limited	Sugar plant expansion to 10,000 TCD
6.	ICL Sugars Ltd., Karnatka	Energy audit in the Sugar plant and furnishing re-commendations
7.	Chadha Sugars Ltd., Punjab	Energy audit in the Sugar plant and furnishing recommendations
8.	Shree Ambika Sugars Ltd., Pennadam Unit, Tamil Nadu	Project report preparation and consultancy for implementation for reducing steam consumption and implementation of energy efficiency equipment under IREDA schemes.
9.	EID Parry Sugar Industries Ltd (Shadha Siva Sugars unit), Karnataka	Study of 2500 TCD Sugar plant and preparation of report on reduction in process Steam consumption and capacity upgradation.

S.No	Project	Description
10.	Parry Sugar Industries Ltd (Haliyal unit), Karnataka	Study of 3500 TCD Sugar plant and preparation of report on reduction in process Steam consumption and Optimisation.
11.	Lopez Sugar Company Ltd., Philippines	Study of existing plant and preparation of project report for increasing capacity of the refinery and raw Sugar plant along with energy efficiency study, addition of Cogeneration plant.

#### OTHER AREAS OF SPECIALISATION

- Detailed Engineering services for Boiler capacity up-gradation to increase the crushing capacity of Sugar plants
- Detailed Project Report preparation for distillery plant complex
- Turnkey Consultancy services for distillery plant
- Turnkey consultancy services for SLOP / Vinase fired boilers to achieve zero discharge from distilleries
- Turnkey Consultancy services for co-generation plants of Sugar plants
- Supply of improved efficiency combustion system components
- Supply of continuous bagasse feeding system equipment to ensure smooth operation of Cogeneration power plants in Sugar industry
- Third party inspection services
- Stress Analysis
- Waste Heat Recovery
- Power & Process Piping
- Plant Layout
- Power Plant Design
- Energy Conservation
- Detailed Engineering Services

#### 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)
- Consultancy Development Centre (CDC)
- 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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