

# BIOMASS / MSW 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](mailto:avantgarde@vsnl.com)

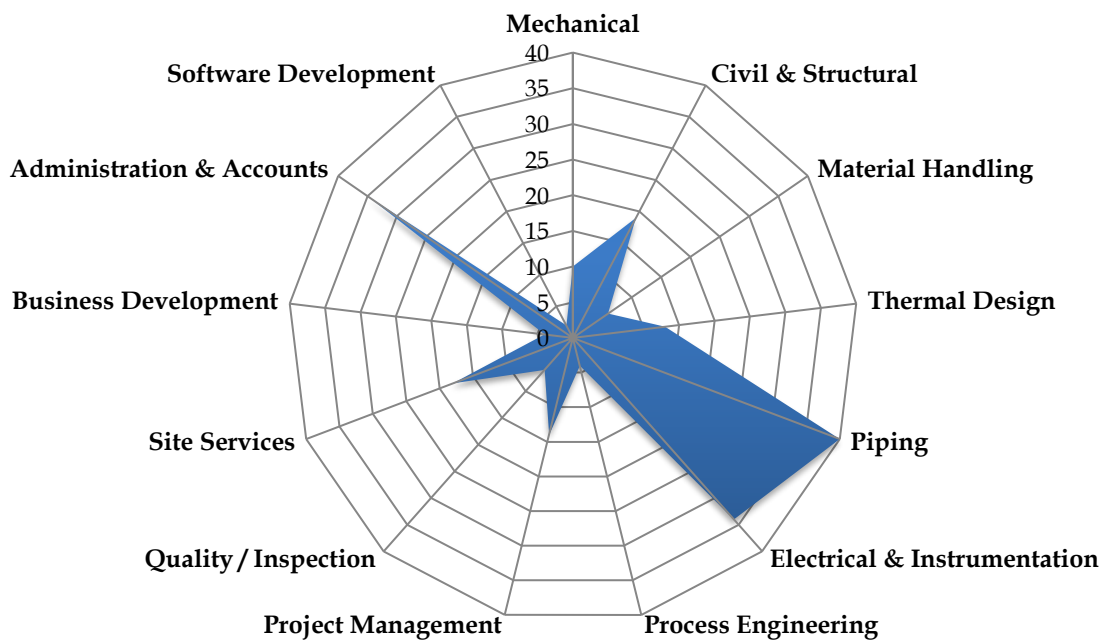
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## INCEPTION

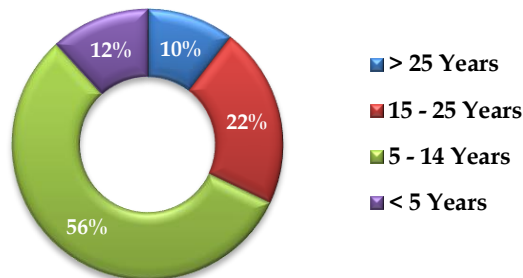
- ❖ YEAR OF ESTABLISHMENT - 1990

## STAFFING

- ❖ MULTI DISCIPLINARY TEAM COMPRISE OF MORE THAN 200 WORKFORCE



## YEARS OF EXPERIENCE



## CONTACT PERSON

- ❖ P.S. SANKARANARAYANAN, DIRECTOR

## **AREAS OF EXPERTISE**

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

- **PROJECT ENGINEERING AND CO-ORDINATION SERVICES**

- **INSPECTION SERVICES**

- **SUPERVISION OF ERECTION AND COMMISSIONING**

- **PERFORMANCE TESTING SERVICES**

### A. BIOMASS BASED POWER PLANTS EXPERIENCE

#### I. LIST OF COMMISSIONED PROJECTS

S.No	Project	Capacity (MW)
1.	Jyoti Bio Energy Ltd., Andhra Pradesh	4.50
2.	Ind Bharat (For M/s.WIL), Andhra Pradesh	6.00
3.	SLS Power Projects Ltd., Andhra Pradesh (A.P)	6.00
4.	Gayatri Agro Power Projects Ltd. (for WIL), A.P	6.00
5.	Ritwik Energy Systems Ltd., Andhra Pradesh	6.00
6.	Shriram EPC Ltd., (Shalivahana Const. Ltd), A.P	6.00
7.	Shriram EPC Ltd., (Ritwik Power Proj. Ltd)A.P	6.00
8.	Veeraiah Non-Conventional Power Proj. Ltd., A.P	4.50
9.	Indur Green Power Pvt. Ltd., Andhra Pradesh	6.00
10.	Perpetual Energy Systems Ltd., Andhra Pradesh	6.00
11.	Agri Gold Projects Ltd, Andhra Pradesh	6.00
12.	Jyoti Bio Energy Ltd, (Expansion) Andhra Pradesh	6.00
13.	Satyamaharshi Power Projects Ltd., Andhra Pradesh	6.00
14.	Shri Balaji Biomass Power (P) Ltd., Andhra Pradesh	6.00
15.	Foods, Fats & Fertilizers Limited, Andhra Pradesh	7.50
16.	Singaraya Hills green Powergenco Pvt Ltd.,A.P	6.00
17.	Kalpataru Power Transmission Ltd., Rajasthan	7.50
18.	Kalpataru Power Transmission Ltd, Unit II,Rajasthan	7.50
19.	Konark Power Projects Ltd., Karnataka	6.00
20.	Koganti Power Limited, Karnataka	7.50
21.	Nahar Industrial Enterprises Ltd., Lalru, Punjab	5.00

S.No	Project	Capacity (MW)
22.	Oswal Woollen Mills Ltd., Ludhiana, Punjab	3.50
23.	Nahar Spinning Mills Ltd., Ludhiana, Punjab	3.50
24.	Nahar Industrial Enterprises Ltd., Lalru, Punjab	12.00
25.	Nahar Spinning Mills Ltd., Lalru, Punjab	5.00
26.	Nahar Industrial Enterprises Ltd, Lalru, Punjab(Unit II)	12.00
27.	A.B.Grains, Punjab	5.50
28.	Viaton Energy (P) Ltd., Mansa, Punjab	10.00
29.	Bharat Starch Industries, Haryana	2.00
30.	Malwa Power Pvt Ltd., Haryana	6.00
31.	Star Wire (India) Ltd., Sirsa	8.00
32.	Agrawal Vidyut, Chhattisgarh	8.50
33.	ISA Power (P) Limited, Chhattisgarh	7.50
34.	Ecofren Power Projects Ltd., Chhattisgarh	7.50
35.	Rukmani Power & steels Ltd., Chhattisgarh	10.00
36.	Prathyusha Power Limited., Tamil Nadu	10.00
37.	Mohan Breweries and Distilleries Ltd., Tamil Nadu (Plant Expansion from 12MW to 18 MW)	18.00
38.	Manali Petrochemicals Ltd., Unit I & II, Tamil Nadu	4.20
39.	Auromira Biopower India Pvt. Ltd	15.00
40.	Abhijeet Infra Structure Limited., West Bengal	10.00
41.	Roquette Riddhi Siddhi Pvt. Limited, Pantnagar, Uttarkhant	12.00
42.	Spark Green Energy Ltd., Maharashtra, Unit - I	12.50
	<b>TOTAL</b>	<b>310.70 MW</b>

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

S.No	Project	Capacity (MW)
1.	Aujasya Agro Power Limited, Chhattisgarh	10.00
2.	Chadha Papers Ltd., Rampur, Uttar Pradesh	12.50
3.	Nahar Industrial Enterprises Ltd., Lalru, Punjab	21.00
4.	Patel Power Limited., Gujarat	10.00
5.	Spark Green Energy Ltd., Maharashtra, Unit - II	25.00
6.	Green Infra Limited, Rajasthan	8.00
7.	Vidul Biomass (Private) Limited, Srilanka	3.00
	<b>TOTAL</b>	<b>89.50</b>

### III. LIST OF BANKABLE DETAILED PROJECT REPORTS

S.No	Project	Capacity (MW)
1.	Kalpataru Power Transmission Ltd., (Bharatpur), Rajasthan	6.00
2.	Diadem Enterprises, Tamil Nadu	6.00
3.	GEA Energy Systems (I) Ltd., Tamil Nadu	12.00
4.	P.S.K.Shanmugarajan & Sons (P) Ltd., Tamil Nadu	4.00
5.	Tagros Chemicals Ltd., Tamil Nadu	1.30
6.	Sattur Power Private Limited	10.00
7.	Kakatiya Alloys Pvt Ltd., Andhra Pradesh	6.00
8.	Bhoruka Power Corporation Ltd., Karnataka	6.00
9.	JCT Mills Ltd., Phagwara, Punjab	5.00
10.	JCT Mills Ltd., Hoshiarpur, Punjab	8.00
11.	Spark Green Energy Ltd., Maharashtra, Unit - II	25.00
12.	Vuda Renewable Energy, Fiji Islands	10.00
	<b>Total</b>	<b>99.30</b>

### IV. OVERSEAS BIOMASS BASED POWER PROJECTS

- (2X13.8 MW) Sylvi Watt power plant France for AREVA France
- 3 X 20 MW Soffimat Power Project, France for AREVA France
- 1 X 10 MW SIIF Almeria biomass fired power plant for AREVA Spain
- 1 X 6 MW Aldebaran Energia Del Guadal Quivir, Spain
- 1 X 21 MW bagasse / cane trash fired power plant at CEBU Philippines for AREVA, India
- 1 X 7 MW bagasse / biogas fired power plant at Philippines for a Ethanol plant AREVA, India
- 1 X 14 MW biomass based cogeneration plant for KIM LOONG POWER SDN BHD, MALAYSIA
- 2 X 9.9 MW Buasomai Power Plant Thailand for AREVA, India

### B. MUNICIPAL SOLID WASTE (MSW) BASED POWER PLANT EXPERIENCE

#### I. LIST OF COMMISSIONED PROJECTS

S.No	Project	Capacity (MW)
1.	Shriram Energy Systems Ltd, Andhra Pradesh	6.00
2.	Delhi MSW Solutions Ltd, Delhi	24.00
	<b>Total</b>	<b>30.00</b>

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

S.No	Project	Capacity (MW)
1.	Ramky Enviro Energy Ltd., Pimpri, Maharashtra	7.50
2.	Ramky Enviro Energy Ltd., Guwahati	7.50
3.	Ramky Enviro Energy Ltd., Bangalore	10.00
4.	East Delhi Waste processing Company, New Delhi	10.00
5.	Hyderabad Integrated MSW Ltd, Hyderabad	24.00
6.	Ramky Guwahati Waste Management Company Private Limited, Guwahati	12.00
7.	Ramky Energy and Environment Ltd, Bangalore	12.00
	<b>Total</b>	<b>83.00</b>

## III. LIST OF BANKABLE DETAILED PROJECT REPORTS

S.No	Project	Capacity (TPD)
1.	Ramky Energy & Environment Ltd, Bangalore	1 X 600
2.	Hi MSW Ltd, (Group of Ramky Energy, Hyderabad)	2 X 600
3.	Timarpur-Okhla Waste Managemenet Co. Pvt. Ltd, New Delhi (C/o.IL & FS, New Delhi)MSW and Biomethanisation Plant	1 X 1300 & 100
4.	Pune Bio-Energy Systems Private Limited, Pune	1 X 600
5.	IL & FS, Mumbai (Pune Project)	1 X 600
6.	IL & FS, Mumbai (Ghaziapur Project)	1 X 600
7.	IL&FS Energy Development Company Limited, Gurgaon (Puducherry Project)	1 X 600
8.	Delhi MSW Solutions Ltd, (Group of Ramky Energy, Delhi)	2 X 600
9.	Ramky Enviro Engineers Ltd, Pimpri	1 X 600
10.	Guwahati Waste Management Company Pvt.Ltd, (Group of Ramky), Guwahati	1 X 600
11.	Hi MSW Ltd, Nalgonda	2 X 600

## FUELS THAT HAVE BEEN TRIED IN VARIOUS BOILERS INSTALLED IN THE BIOMASS POWER PLANTS FOR WHICH AVANT-GARDE HAVE PROVIDED ENGINEERING SERVICES

- Sugarcane Bagasse
- Cane Trash
- Rice Husk
- Rice Straw
- De Oiled Bran
- Prosopis Juliflora(wood)
- Mustard stalk

- Cotton stalk
- Bengal gram stalk
- Chilli stalk
- Palm Oil Mill Effluent
- Empty Fruit Bunches (EFB)
- Palm shell
- Coconut shell
- Coconut coir pith
- Woodchips of different species
- Saw dust
- Ground nut shell
- Casuarina woodchip
- Subabul wood
- Poultry litter

#### **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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