

INDEPENDENT / CAPTIVE POWER PLANT PROFILE



AVANT-GARDE ENGINEERS AND CONSULTANTS (P) LTD

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



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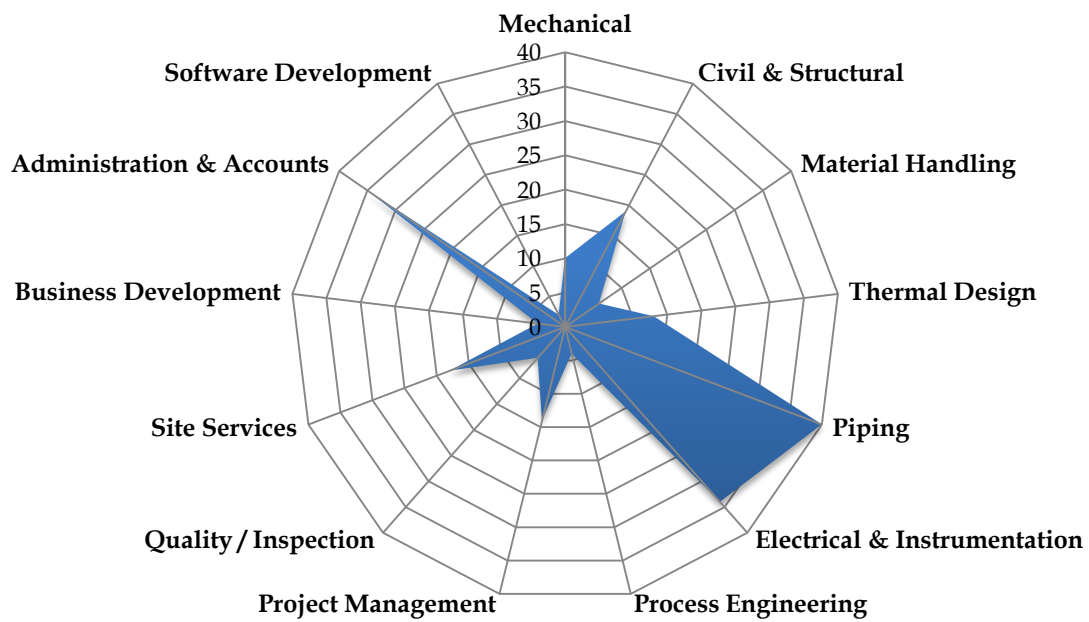
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INCEPTION

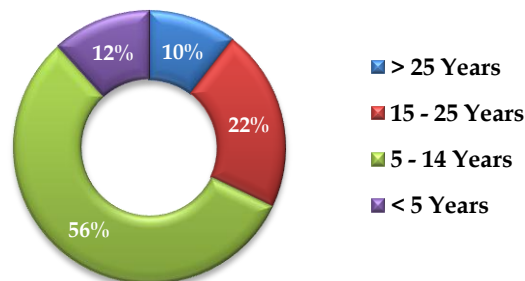
- ❖ YEAR OF ESTABLISHMENT - 1990

STAFFING

- ❖ MULTI DISCIPLINARY TEAM COMPRISE OF MORE THAN 200 WORKFORCE



YEARS OF EXPERIENCE



CONTACT PERSON

- ❖ P.S. SANKARANARAYANAN, DIRECTOR

AREAS OF OPERATION

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

OTHER SERVICES

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

A. LIST OF COMMISSIONED PROJECTS

| S.No | Project | Capacity | Fuel |
|------|--|-------------|---|
| 1 | Kamachi Sponge Iron Ltd, Gummidipoondi, Tamil Nadu | 10 MW | Waste Heat Recovery |
| 2 | Chettinad Cement Ltd Ariyalur | 15 MW | Coal / Lignite / Petcoke |
| 3 | Grasim Industries Ltd, Tamil Nadu | 12 MW | Coal / lignite |
| 4 | Dalmia Cement (Bharat) Ltd., Ariyalur | 27 MW | Indian Coal / Imported Coal, Lignite |
| 5 | Chettinad Cement, Puliyur, Tamil Nadu | 15 MW | Coal / lignite / Petcoke |
| 6 | Chettinad Cement Corp. Ltd., Ariyalur, Unit - III | 15 MW | Coal / Lignite / pet coke |
| 7 | Chettinad Cement Corporation Limited, Karikali (Unit - III) | 30 MW | Coal / Lignite / Pet coke |
| 8 | EID Parry, Ennore | 4 MW | Waste Heat Recovery |
| 9 | Sitapuram Power Ltd., Andhra Pradesh | 43 MW | Coal |
| 10 | Ultratech Cement, A/c. TKIL, Tadipatri, Andhra Pradesh | 2 X 25 MW | Coal/ Petcoke/ Washery rejects |
| 11 | JP Cements, Balaji, Andhra Pradesh | 35 MW | Coal / Lignite / pet coke |
| 12 | Penna Cement Limited, Andhra Pradesh | 2 X 38.5 MW | Coal / Petcoke |
| 13 | Kalyani Gerdau Steels Ltd., Tadipatri, Andhra Pradesh | 6 MW | Blast Furnace gas |
| 14 | The KCP Limited, Andhra Pradesh | 2 X 18 MW | Indian Coal |
| 15 | Chettinad Cement Corp. Ltd., Karikkali, Unit - II | 30 MW | Coal / Lignite / pet coke |

| S.No | Project | Capacity | Fuel |
|-------------|---|-----------------|--|
| 16 | Sunvik Steels Private Limited, Karnataka | 10 MW | WHRB, Coal / Char |
| 17 | Dhruvdesh Metasteel Private Limited, Koppal, Karnataka | 10 MW | Coal / kiln hot gas |
| 18 | Chettinad Cement Corporation Limited, Sangam, Karnataka | 2 X 30 MW | Coal / Lignite / pet coke |
| 19 | Ultratech Cement, Rajshree, Karnataka | 2 X 25 MW | Coal/ petcoke/ imported coal / Washery rejects |
| 20 | Philips Carbon Black Ltd., Kochi, Kerala | 10 MW | Tail Gas from Carbon black |
| 21 | Aarti Steels Ltd., Orissa (Phase - I) | 40 MW | Washery rejects, coal, char |
| 22 | Adhunik Metalliks Ltd., Rourkela, Orissa | 2 X 17 MW | Coal / Char / Washery Rejects |
| 23 | Action Ispat & Power (P) Ltd., Jharsuguda, Orissa | 12 MW | Coal / Char / Washery Rejects |
| 24 | OCL Limited, Orissa | 14 MW | Washery Rejects / Coal/ Char |
| 25 | OCL Ltd., Rajgangpur | 2 X 27 MW | Indian Coal / Washery Rejects |
| 26 | Aarti Steels Ltd., Phase -II, Orissa | 50 MW | Char / coal, washery rejects |
| 27 | MGM Steels Limited, Orissa | 8 MW | Kiln hot gas |
| 28 | Rungta Mines Limited, Kamando, Orissa | 2 X 20 MW | Coal / Dolochar & Hot Gas |
| 29 | Adhunik Ferro Alloys Ltd., Jamshedpur, Jharkhand | 16 MW | Waste heat recovery and AFBC |
| 30 | AML Steel and Power (P) Ltd, Jamshedpur, Jharkhand | 9.6 MW | Waste heat recovery |
| 31 | Kohinoor Steels Ltd Jamshedpur, Jharkhand | 17 MW | Waste heat recovery, Dolochar |
| 32 | Rungta Mines Limited, Chaliyama, Jharkhand | 2 X 20 MW | Coal / Dolochar & hot gas |
| 33 | Jaiprakash Associates - Dalla, Uttar Pradesh | 27 MW | Coal |
| 34 | Continental Carbon India Limited, Ghaziabad, U.P. | 15 MW | Tail gas from Carbon black |
| 35 | J. P.Cements, Chunar, Uttar Pradesh | 38 MW | Coal |
| 36 | Gallant Metals Ltd., Gorakhpur, UP | 18 MW | Waste heat recovery, Dolochar / coal |
| 37 | Shri Ramrupai Balaji Steels Ltd, Durgapur, West Bengal | 2 X 25 MW | Waste heat, recovery, Dolochar & Washery Rejects |

| S.No | Project | Capacity | Fuel |
|------|--|-------------|--|
| 38 | Jai Balaji Sponge Iron Ltd., West Bengal | 12 MW | Waste heat recovery & AFBC |
| 39 | Electro Steel Castings Ltd., West Bengal | 3.5 MW | BFG / Oil |
| 40 | Neo Metaliks Limited, Kolkata | 4.5 MW | BFG |
| 41 | Supersmelters Limited, West Bengal | 35 MW | WHRB & Coal / Char / Washery |
| 42 | Ind Synergy Limited., Raipur | 50 MW | Coal / Char / Washery Rejects |
| 43 | Govind Ispat Ltd, Chhattisgarh | 15 MW | Waste heat recovery and AFBC |
| 44 | Ultratech Cement, Rawan, Chhattisgarh | 30 MW | Including Coal/ petcoke/ imported coal / Washery rejects |
| 45 | Shri Shyam Ispat (India) Private Limited, Chhattisgarh | 17 MW | Coal / Kiln hot Gas |
| 46 | Mangalam Cement Ltd-Rajasthan | 17.5 MW | Coal |
| 47 | Binani Cement Ltd - Rajasthan | 2 X 22.3 MW | Coal / Lignite / Petcoke |
| 48 | Aditya Cement, A/c.TKIL, Shambupura, Rajasthan | 2 X 25 MW | Coal / Lignite / Petcoke |
| 49 | Grasim Industries Ltd., Kotpuli, Rajasthan | 2 X 23 MW | Coal / lignite |
| 50 | Gujarat Anjan Cement, Bhuj, Unit II | 25 MW | Coal / Lignite |
| 51 | Gallant Metals Limited, Ahmedabad | 25 MW | Coal / Kutch, Kutch Lignite |
| 52 | SWIL Ltd, Gujarat | 15 MW | Furnace Oil |
| 53 | Gujarat Anjan Cement, Bhuj, Gujarat, Unit - I | 35 MW | Coal / Lignite |
| 54 | J.P.Cements, Bagheri , Himachal Pradesh | 30 MW | Coal / Washery Petcoke / MSW |
| 55 | Jaiprakash Associates - Sidhi, Chattisgarh | 35 MW | Coal / Rice Husk |
| 56 | Arasmeta Captive Power Company Pvt., Ltd., | 43 MW | Coal |
| 57 | Bharat Starch Industries Limited, Haryana | 2 MW | Biomass / Coal |
| 58 | J.P. Rewa Cements, Madhya Pradesh | 38.5 MW | Coal |
| 59 | Vasavadatta Cement | 17.5 MW | Coal |
| 60 | Bhushan Power & Steel Limited | 2 X 8 MW | Coke oven gas based waste heat recovery |

| S.No | Project | Capacity | Fuel |
|--------------|---|-------------------|---|
| 61 | Bhushan Power & Steel Limited, Rengali, Orissa | 130 MW | Coal / Char |
| 62 | Himatsingka Linens Ltd. | 12.5 MW | Indian Coal / Imported coal |
| 63 | Middle East Paper Company Limited, Jeddah, Saudi Arabia | 2 X 15 MW | Oil fired based Power Plant |
| 64 | FLsmidth (A/c. D G Khan) | 8.4 MW | Cement Waste heat recovery (Kalina Cycle) |
| 65 | FLsmidth (A/c. Star Cements, Dubai) | 4.75 | Cement Waste heat recovery (Kalina Cycle) |
| 66 | FLsmidth (A/c. Vicat Sagar) | 8.4 MW | Cement Waste heat recovery |
| Total | | 1828.75 MW | |

B. LIST OF PROJECTS UNDER VARIOUS STAGES OF IMPLEMENTATION

| S.No | Project | Capacity | Fuel |
|------|---|-----------|--|
| 1 | Ultratech Cement, Karur, Tamil Nadu | 2 X 30 MW | Coal/ Petcoke/ Imported coal / Washery rejects |
| 2 | Kalyani Gerdau Steels Ltd., Tadipatri, Andhra Pradesh | 15 MW | Coke Oven Gas (WHRSG) |
| 3 | NCL Industries Ltd, Andhra Pradesh | 30 MW | Indian Coal |
| 4 | Matrix Thermal Private Limited, Andhra Pradesh | 36 MW | Coal / Washery Rejects |
| 5 | Dalmia Cement (Bharat) Ltd., Karnataka | 27 MW | Indian Coal / Imported Coal |
| 6 | Inland Power Limited, Ramgarh, Jharkhand | 65 MW | Coal / Char / Washery |
| 7 | Abhijeet Infrastructure Ltd, Jharkhand | 2 X 30 MW | Coal / Char / Washery |
| 8 | Corporate Ispat alloys Limited, Saraikela, Jharkhand | 2 X 30 MW | WHRB, Coal based |
| 9 | Techno Electric Engineering Co, Ltd, Kolkata | 45 MW | Captive Power Plant |
| 10 | Abhijeet Infra Ltd, Durgapur, West Bengal | 10 MW | Biomass / coal |
| 11 | Techno Electric & Engineering Company | 10 MW | Biomass / Coal |
| 12 | Bhushan Power & Steel Limited, Rengali, Orissa | 8 MW | Coal |

| S.No | Project | Capacity | Fuel |
|------|--|---------------|--|
| 13 | SPS Steel & Power Ltd., Jharsuguda, Orissa | 30 MW & 40 MW | Indian Coal / Char |
| 14 | Riddhi Siddhi Corn Processing Pvt Ltd., Uttarakhand | 12 MW | Coal |
| 15 | Singhal Enterprises., Chhattisgarh | 7.2 MW | Waste heat recovery from sponge iron plant |
| 16 | Salasar Steel & Power Ltd., Raigarh, Chattisgarh | 63 MW | Washery rejects / Char / Coal |
| 17 | Concast Ispat Limited, Rourkela | 18 MW | WHRB, Coal based |
| 18 | Jaiprakash Associates, Churk, Uttar Pradesh | 4 X 60 MW | Indian Coal / Washery Rejects |
| 19 | Spark Green Energy (Ahmednagar) Ltd., | 2 X 12.5 MW | Biomass / Coal |
| 20 | Gujarat Anjan Cement Limited, Bhuj - III | 60 MW | Coal / Petcoke/ Kutch lignite |
| 21 | Philips Carbon Black Ltd, Palej, Gujarat | 8 MW | Tail gas from Carbon black |
| 22 | Nirma Limited, Bhavnagar, Gujarat | 70 MW | Coal / Petcoke/ Imported coal |
| 23 | Aditya Birla Nuvo Ltd., Veraval, Gujarat (Indian Rayon Unit) | 25 MW | Imported coal |
| 24 | Sri Jyoti Renewable Energy Pvt. Ltd, Haryana | 9.85 MW | Biomass / coal |
| 25 | Jaiprakash Associates Limited, Bagheri | 10 MW | Coal/Washery/Petcoke/ MSW |
| 26 | Ultratech Cement Ltd, Rawan, Chhattisgarh | 14.64 MW | Cement waste heat recovery |
| 27 | Ultratech Cement Ltd, Rajashree, Karnataka | 10.77 MW | Cement waste heat recovery |
| 28 | Ultratech Cement Ltd, Awarpur, Maharashtra | 13.62 MW | Cement waste heat recovery |
| 29 | Ultratech Cement Ltd, Aditya, Rajasthan | 10 MW | Cement waste heat recovery |
| 30 | Ultratech Cement Ltd, Hirmi, Chhattisgarh | 10 MW | Cement waste heat recovery based PP |
| 31 | Ultratech Cement Ltd, Gujarat Cement Works | 10 MW | Cement waste heat recovery based PP |
| 32 | Ultratech Cement Limited, Kotputli Cement Works, Rajasthan | 6 MW | Cement waste heat recovery based PP |

| S.No | Project | Capacity | Fuel |
|--------------|---|-------------------|---------------------------------------|
| 33 | B.S. Sponge Private Limited | 15 MW | Char / Washery |
| 34 | Chandil Power Private Limited | 20 MW | Hot Kiln Gas & AFBC (Char/Washery) |
| 35 | Sandeep Energy & Steel S.A. (SEAS), Mali, Africa | 25 MW | Coal |
| 36 | Dangote Cement PLC, Nigeria | 3 X 30 MW | Coal |
| 37 | Dangote Industries Limited, Tanzania | 3 X 25 MW | Coal |
| Total | | 1344.08 MW | |

C. UTILITY POWER PLANT EXPERIENCE

| S.No | Project | Capacity | Fuel | Remarks |
|------|---|--------------------------------------|---|--|
| 1 | L.K.Power Corporation Karnataka | 260 MW | Coal | Detailed Project Report & Shifting of used power plant from Germany |
| 2 | L.K Power Corporation Karnataka | 55 MW | Coal | Detailed Project Report |
| 3 | Lanco Industries Ltd., Andhra Pradesh | 2.5 MW | BFG / Oil | (Performance Improvement & Revamping) |
| 4 | Indu Projects Limited, Hyderabad | 2 X 600 MW | Coal | Prebid Engineering Services |
| 5 | Indu Projects Limited, Hyderabad | 2 X 250 +20% MW | Coal / Lignite | Prebid Engineering Services |
| 6 | Sinarmas Pulp & Paper, Karnataka | 30 MW | Coal | (Piping engineering) |
| 7 | Bhushan Steels & Strips Ltd., Orissa | 33 MW & 77 MW | Char & Washery Rejects | Piping Engineering, System Engineering & Instrumentation |
| 8 | Bhushan Limited., Orissa | 40 MW (2 x 52 TPH, 1 x 75 TPH) | Waste Heat Recovery and AFBC | Piping Engineering & Instrumentation |
| 9 | Bhushan Limited, Orissa | 60 MW | Coal, Char and Washery Rejects | Piping Engineering, System engineering & Instrumentation |
| 10 | Kanoria Chemicals, U.P | 30 MW | Coal | (Piping Engineering) |
| 11 | Matrix Global Private Limited, Uttar Pradesh | 3 X 6 MW DG | HFO | Pre-bid engineering services |

| S.No | Project | Capacity | Fuel | Remarks |
|------|--|--------------------------------------|--------------------------------|--|
| 12 | Kadakia Alkalies, Gujarat | 10.5 MW DG | Furnace oil | Shifting of used power plant |
| 13 | Indian Seamless Metal Tubes Limited, (ISMT), Maharashtra | 40 MW | Indian Coal | Detailed Project Report |
| 14 | Associated Stone Industries (Kotah) Ltd, Mumbai | 40 MW | Coal (Imp & Indian) | Detailed Project Report |
| 15 | Andhra Sugars Limited, Saggonda, Andhra Pradesh | 36 MW | Coal | Techno-Economic Feasibility Report |
| 16 | Nalco, Damanjodi, Orissa | 18.5 MW | - | Detailed Engineering for addition of TG Package |
| 17 | Ultratech Cement Ltd, Dhar | 2 X 20 MW | Coal | Techno-Economic Feasibility Report |
| 18 | Lanco Industries Ltd., Andhra Pradesh | 2.5 MW | BFG / Oil | (Performance Improvement & Revamping) |
| 19 | Indu Projects Limited, Hyderabad | 2 X 600 MW | Coal | Pre-bid Engineering Services |
| 20 | Indu Projects Limited, Hyderabad | 2 X 250 +20% MW | Coal / Lignite | Pre-bid Engineering Services |
| 21 | Sinarmas Pulp & Paper, Karnataka | 30 MW | Coal | (Piping engineering) |
| 22 | Bhushan Steels & Strips Ltd., Orissa | 33 MW & 77 MW | Char & Washery Rejects | Piping Engineering, System Engineering & Instrumentation |
| 23 | Bhushan Limited., Orissa | 40 MW (2 x 52 TPH, 1 x 75 TPH) | Waste Heat Recovery and AFBC | Piping Engineering & Instrumentation |
| 24 | Bhushan Limited, Orissa | 60 MW | Coal, Char and Washery Rejects | Piping Engineering, System engineering & Instrumentation |
| 25 | Kanoria Chemicals, U.P | 30 MW | Coal | (Piping engineering) |
| 26 | Matrix Global Private Limited, Uttar Pradesh | 3 X 6 MW DG | HFO | Prebid engineering services |
| 27 | Kadakia Alkalies, Gujarat | 10.5 MW DG | Furnace oil | Shifting of used power plant |
| 28 | Indian Seamless Metal Tubes Limited, (ISMT), Maharashtra | 40 MW | Indian Coal | Detailed Project Report |

| S.No | Project | Capacity | Fuel | Remarks |
|------|---|------------------------------------|---------------------|--|
| 29 | Associated Stone Industries (Kotah) Ltd, Mumbai | 40 MW | Coal (Imp & Indian) | Detailed Project Report |
| 30 | Andhra Sugars Limited, Saggonda, Andhra Pradesh | 36 MW | Coal | Techno-Economic Feasibility Report |
| 31 | Nalco, Damanjodi, Orissa | 18.5 MW | - | Detailed Engineering for addition of TG Package |
| 32 | Ultratech Cement Ltd, Dhar | 2 X 20 MW | Coal | Techno-Economic Feasibility Report |
| 33 | Mitsui Babcock Energy Ltd., U.K | 2 X 350 MW Dandong & Dalian, China | Coal | (Part Engineering for Steam Generators Island) |
| 34 | Mitsui Babcock Energy Ltd., U.K | 2 X 350 MW Dandong & Dalian, China | Coal | (Part Engineering for Steam Generators Island) |
| 35 | Mitsui Babcock Energy Ltd., U.K | 2 X 350 MW Fuzhou, China | Coal | (Part Engineering for Steam Generators Island) |
| 36 | TSK Associates, Singapore | 2 X 350 MW | Mazout oil / Gas | Compilation of tender document for 2 x 350 MW Oil & Gas fired power plant by Egyptian authority on behalf of Marubeni Corpn. Japan |
| 37 | PEC Consulting Group LLC | 20 MW | Coal & WHR System | Basic Engineering services for a Power Plant in Congo. |
| 38 | Indian Oil Corporation Ltd (IOCL), Panipat | 7.2 MW | WHR System | Techno - Economic Feasibility Study for Implementation of Kalina Cycle based WHR System |
| 39 | Nirma Ltd, Gujarat | 100 MW | Coal | Techno - Economic Feasibility Study for Implementation of Power Plant |

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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