



THERMAX

*Sustainable Solutions
in Energy & Environment*

Power Division

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International offices:
Bangladesh, Belgium, Brazil,
China, Hong Kong, Indonesia,
Kenya, Malaysia, Nigeria, Philippines,
Russia, Saudi Arabia, Sri Lanka,
Thailand, UAE, UK and USA.

Thermax Business Portfolio

Power

Absorption Cooling

Air Pollution Control

Boilers & Heaters

Chemicals

Water & Waste Solutions

Advantage Thermax

Over 9250 GWH of energy generated

Over 630,000 hours of operational
experience

Integrated turnkey solutions

Single-point responsibility

Fast track, on-time

Competitive cost per megawatt

Record time execution;
winning bonuses

Solutions for diverse sectors

Experience extends to long term
comprehensive plant O&M

Orders achieved against tough
international competition

Partnership with some of the
biggest brands

Power



POWER PLANTS



THERMAX

Improving your
business is our business

Thermax offers products, systems and solutions in energy and environment engineering to industrial and commercial establishments around the world. Its business expertise covers heating, cooling, waste heat recovery, power, water treatment & recycling, air pollution control & waste management and performance chemicals.

Thermax brings to customers extensive experience in industrial applications, and expertise through technology partnerships and strategic alliances.

Operating from its Headquarters in Pune (Western India), Thermax has built an international sales and service network spread across South East Asia, Middle East, Africa, Russia, UK and the US. It has a full-fledged ISO 9001: 2000 and ISO 14000 accredited manufacturing setup.

Power Business of Thermax

The Power division was set up in 1995 to address India's burgeoning need for power. The division single mindedly focused, pioneered and popularized the EPC (Engineering, Procurement and Construction) concept of setting up power plants in midsegment.

The value proposition for ownership is:

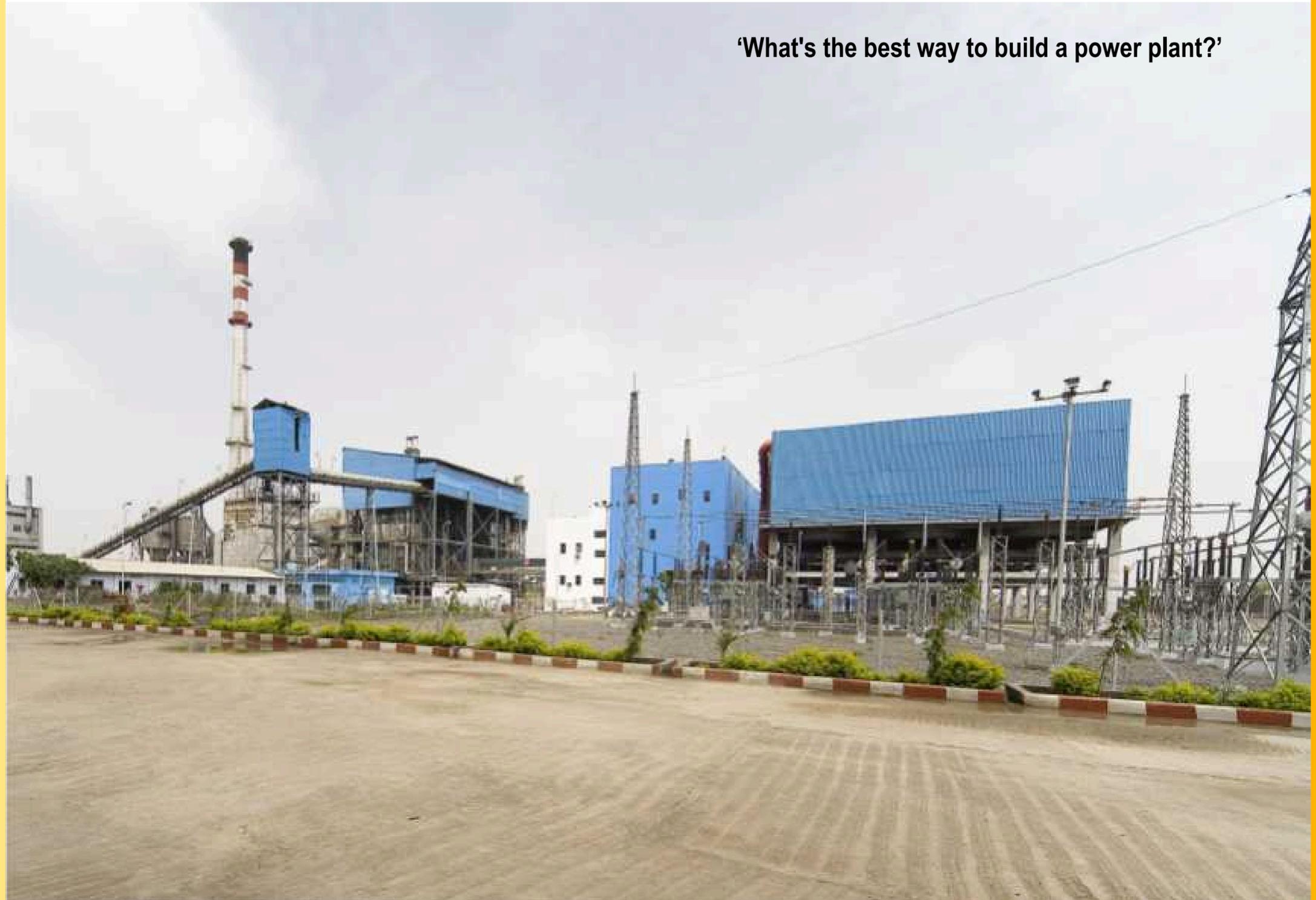
- Least cost and fixed cost
- On time, every time
- High performance, and long term support

Result

A team of qualified, experienced and committed people, who build the finest of power plants for a wide spectrum of industries.

Centuries after electricity was discovered, the power struggle across India continues unabated. While capacity addition is taking place, a plethora of other critical issues have raised their collective heads crying for attention. Among these is the burning issue of

'What's the best way to build a power plant?'





- Single Point Responsibility
- Fast Track, On Time

EPC - The winning solution for building a Power Plant



Why EPC?

- Single point responsibility - assured
- Cost and time to completion - guaranteed
- Financial investment - risk free
- State-of-the-art technology - committed
- Plant interfacing - seamless
- Engineering practices - best-in-class
- Peace of mind - guaranteed

The Problem: For any energy intensive company in non-power business, in these days of severe crunch of trained manpower, retention of highly experienced and dedicated team to set and run power project is a challenge not related to core business, exposing the business to unwanted risks.

The Risks:

- Cost Overruns - Escalations Vs Fixed Project Cost
- Suppliers-Integration hurdles
- Construction - Resource Mobilisation, Subcontractor experience, Productivity
- Project management - detailed planning to tertiary levels leading to unforeseen risks

- Quality - Poor Site Fabrication, Selection of low cost yet inexperienced Vendors
- Procurement Management - The risk of one time buy Vs Experienced buying of Equipment
- Engineering - Risks of rework, missouts, inadequate manhours
- Scheduling - Tracking the Project at Sub levels, Monitoring Vendors
- Performance - Overall Plant output vs Individual Equipment Performance, Emissions, Reliability, Plant availability

All these with little or no recourse on the project,

Solution: INSULATION FROM RISKS - EPC concept comes as a relief as the entire risk is transferred to the EPC company. A good EPC company will ensure Guaranteed performance, Overall completion schedule, Fixed cost and all of these backed by a strong bankable performance security.

Result: PEACE OF MIND - Once the entire set of risks associated with your power projects are effectively transferred to a reputed and reliable EPC company, with matching securities, you can have unflinching focus on your core business.



■ Integrated Turnkey Solutions

■ Millions of Man-hour Experience

Thermax
Your Reliable EPC Partner



Thermax's distinctive competency stems from its rich familiarity with varied fuels as also its successful demonstration of well-engineered thermal power plants. Over and above its EPC capability Thermax now offers complete plant operation services (O&M) with guarantees on uptime.

Simply put the promoter provides land, water and fuel and Thermax will ensure round the clock power and steam.

Bonus cheque awarded for setting up 36 MW power plant in record time

Thermax Power - Where Experience meets Expertise

- The first to commission captive power projects and cogen systems on EPC basis across a wide spectrum of industries like steel, sponge iron, cement, textiles and chemicals
- Dedicated and well staffed functions exclusively for EPC
- Completed largest number of plants with high plant availability, delivered on time.
- Expertise in wide range of fuels including waste heat recovery solutions specially for cement & steel
- Over Rs. 3800 crore worth (over 1050MW) power projects on EPC basis alone.

Thermax Firsts - Leading the EPC revolution with India's first:

- EPC based power project on CFBC boiler, and combined cycle cogen plant in captive segment
- Pioneered the EPC concept in mid-range for power
- Waste heat recovery project on EPC in Steel & Cement industry
- Petcoke based power plant on EPC basis
- Gas/Naphtha fed EPC plant with zero liquid effluent discharge
- The unique distinction of completing CPP projects ahead of schedule and winning series of bonuses
- Only experienced EPC company offering O&M (EPCOM) contracts



- Competitive Cost Per Megawatt
- Over 630,000 Hours Of Operational Experience

The Thermax Edge Unmatched Experience and Expertise



Combustion Expertise across a wide range of fuels: Our extensive experience in heating equipment and combustion expertise in a wide range of fuels ensures fast track power plant commissioning on available fuel and reduction in overall energy costs.

Thermax commissioned power plants are designed and engineered for a wide range of fuels in various grades including naphtha, gas, pet coke, biomass, coal, lignite, industrial waste gases and washery rejects.

Engineering Excellence: Thermax, with its state-of-the-art technology and highly experienced & committed team has always operated on optimum, widely accepted practices and international engineering standards. With millions of man-hours spent in the

energy and environment industry, engineering perfection is a natural way of working at Thermax. We use specialised software solutions like:

CAESAR - Pipeline Stress Analysis, STAAD - Structural Design, PDS - Planned Design Software, STEAM PRO & GT PRO

Our O&M experience helps us design maintenance-friendly plants, reducing operating costs over the lifetime of the power plant.

Benefits: Tried and tested combustion technology, engineered & customized for your needs, to ensure exceptionally high performance parameters, making it most cost-effective solution over project lifetime.

Specialized Supply-chain Management: Besides a seamlessly integrated engineering and construction interface, Thermax has long term relations with top-of-the-line vendors, who deliver to strict engineering standards and time schedules.

A scheduled monitoring system of vendors and sub-vendors, and a specialized timeline tracking software helps us complete projects ahead of schedule and earn bonuses.

Planned Project & Construction Management: Our detailed project management, unique network scheduling till tertiary levels, use of advanced tools like MS Project, Primavera, others techniques and systematic monitoring of schedules at various levels ensure timely completion of projects.

The Power Division plans & works in synergy with other Thermax divisions to offer most of the power plant systems and equipment, which have been perfected over three decades of experience:

- Boiler and auxiliaries
- Water management products and systems
- Water & specialty chemicals
- Air-conditioning, ventilation & air pollution control systems
- Our own construction management company

Benefits: Projects delivered in time consistently, exceeding stringent International standards & using the best of components.



- Lifetime Service Support
- Over 9250 GWH of Energy generated

Thermax EPCOM

An Outright Winner On Every Count



Unwavering commitment towards quality and performance has earned Thermax the status of preferred supplier for power plants amongst most of its clients. The multitude of repeat orders is the proof of their faith in Thermax's capabilities.

Thermax CPP projects always carry a guarantee of costs, schedule, quality and performance and are handled by a highly experienced team onsite. Consistently delivering on this promise, has seen Thermax win many a feathers for its cap.

- **Highest number of projects finished in time**
- **Highest number of repeat orders in category**
- **Highest number of bullet bonuses earned**

Successful collaborations with clients and consultants, has been a hallmark of all Thermax projects.

Client	Repeat Orders
Sree Metaliks (P) Ltd.	2
Madras Cement Limited	4
JK Group	6
Arvind Mills Ltd.	2
Bombay Rayon	2
Aditya Birla Group	3

Project Consultants	
Avant Garde	Indo Canadian
Black & Veatch, USA	MN Dastur
DCPL	SPB-PC
Fichtner	TCE, Bangalore
Desein	MECON

For more details on our projects, please refer our Projects Profile



- Fixed Costs
- Guaranteed Performance

Thermax O&M Services Maximise Returns from your Investment



In consonance with our mission to provide reliable power at the competitive cost per Megawatt, we now offer comprehensive operation and maintenance services for power plants through our own manpower and proprietary processes. Thermax has pioneered this concept of comprehensive lifetime service support.

The key objective is to keep our customer's investments productive by continuously optimizing their operations with an aim to enhance availability, output, efficiency and plant life. A scientific program of preventive maintenance and periodic repair ensures that the plant remains in peak condition. As a part of the O&M services, Thermax monitors/manages fuel quality & consumption, water quality & consumption, chemicals, spares, and other consumables.

We also take care of compliance with all statutory requirements such as IBR, air and water pollution, grid code etc.

The client benefits are compelling and include:

- Fixed costs
- Guaranteed availability
- Guaranteed performance
- Ability to sell surplus power
- Maintenance/inspection optimization
- No requirement of inhouse experienced team of O&M staff
- Maintenance cost reduction

- Plant life Extended
- Plant operation flexibility
- Increased operating safety
- Performance improvements through innovation and cross learning
- Availability and reliability improvements
- As on date Thermax is extending its O&M Services to over 13 plants, totaling to about 525 MW

Thus, it is no surprise that Thermax EPCOM is the preferred model by progressive organizations to efficiently manage their current and future power requirements.

Thermax - Global solution provider in energy and environment engineering



Global Footprint

Bangladesh
Belgium
Brazil
China
Indonesia
Kenya
Malaysia
Nigeria
Philippines
Russia
Saudi Arabia
Sri Lanka
Thailand
UAE
UK
USA

Thermax Limited is an engineering multinational headquartered in India with its subsidiaries and offices spread over 25 locations in 13 countries across the globe. Today it is a global solution provider in energy and environment engineering and brings to every project rich experience gained from customer engagements around the world. Through technology partnerships and strategic alliances, such as the exclusive licensee for Babcock Wilcox in this part of the world, it provides superior value to help industry perform efficiently and profitably.

With a dedicated sales & service network spread over South East Asia, Middle East, Africa, Russia, India, UK and the US, Thermax ensures innovative solutions and reliable support for client's business improvement. Thermax Limited has a global approach and employs engineers from around the globe, who have contributed to the development of world-class products. All Thermax solutions are benchmarked against the best in the category globally and meet the most stringent international quality norms.