Investorstack Research Report

Thermax Limited

What Thermax Limited does

Thermax Limited, headquartered in Pune, has been in the energy and environment space since 1966. It is a comprehensive provider of industrial solutions covering heating, cooling, power generation, air pollution control, water and wastewater treatment, and performance chemicals. The company's core promise is "Conserving Resources, Preserving the Future" — it helps industries decarbonise, reduce emissions, recycle water, and improve energy efficiency.

Thermax operates 16 manufacturing facilities (28 domestic and 4 international), has 49 subsidiaries, and serves customers in over 90 countries. It employs 5,601 permanent staff and 1,164 permanent workers. The group serves industries from metals and steel to pharmaceuticals and data centres, offering both equipment (products) and turnkey project execution (EPC), as well as long-term utility services on a build-own-operate (BOO) basis.

The company positions itself as a partner in energy transition. It has moved beyond traditional boilers into biofuels, green hydrogen (via a SOEC licensing partnership with Ceres), carbon capture, and digital asset management through its IIoT platform Thermax EDGE Live.

Business segments

Thermax reports four segments. The revenue mix percentages are from FY25.

Industrial Products (42% of total sales)

This segment delivers packaged boilers, fired heaters, turnkey process heating, absorption chillers and heat pumps, air pollution control systems (electrostatic precipitators, bag filters, scrubbers), water and wastewater treatment plants, and digital platforms like Thermax EDGE Live. It serves 13+ end markets including chemicals, pharmaceuticals, food & beverages, textiles, and steel. It is the most profitable segment, contributing about 70% of the company's total segment profit. Growth is driven by regulatory push on clean air and water, infrastructure spending, and the shift to biomass and electric heating.

Industrial Infra (44% of gross operating revenue)

This segment contains three main businesses:

- **Projects and Energy Solutions (P&ES):** Turnkey power plants (captive, cogeneration, waste heat recovery), sulphur recovery blocks, flue gas desulphurisation (FGD) systems, and O&M services. Serves power, cement, steel, oil & gas, and distillery sectors.
- **Thermax Babcock & Wilcox Energy Solutions (TBWES):** Large industrial boilers and fired heaters, including supercritical boilers (breakthrough order of ~₹1,600 crore from MB Power in Q4 FY26), waste-to-energy boilers, and waste heat recovery. Also provides specialised heaters for refineries and petrochemicals.
- **Thermax Bioenergy Solutions Private Limited (TBSPL):** EPC for bio-CNG plants using feedstocks like rice straw, press mud, and municipal solid waste. Produced ~6,200 tonnes per day of compressed biogas in FY25.

Green Solutions (6.4% of gross operating revenue)

This segment operates on a BOO (build-own-operate) model, generating recurring revenue from long-term contracts (10-25 years).

- **Thermax Onsite Energy Solutions (TOESL):** Supplies biomass-based steam, heat, chilled water, and power to industrial customers. Operates 46 sites in India and Sri Lanka.
- **First Energy Private Limited (FEPL):** Develops solar, wind, and hybrid renewable power projects for commercial and industrial customers under open access. Had 213.5 MWp cumulative capacity by March 2025.

Chemicals (7.1% of gross operating revenue)

Manufactures and sells Tulsion® ion exchange resins, water treatment chemicals, oil field chemicals, construction chemicals (admixtures, flooring, sealants, acquired Buildtech in Dec 2024), and high-performance polymers. The segment is undergoing transformation through new subsidiaries (Thermax Chemical Solutions Private Limited, Thermax Vebro Polymers, Thermax Chemical Europe A/S) and partnerships (Oswaldo Cruz Química from Brazil). Serves chemicals, food & beverage, oil & gas, paper & pulp, pharmaceuticals, and electronics.

Products and business detail

Heating and cooling products

- **Effitron** – a compact, zero-emission electric boiler for small-scale applications.
- **GreenPac and GreenBloc** – low-density biomass-fired systems that convert agricultural waste like rice straw into clean energy.
- **Instaheat 2.0** – high-efficiency hot water generator with precise temperature control using steam.
- **Compact Pressurised Condensate Recovery System (CPCRS)** – saves energy and floor space by recovering high-temperature condensate.
- **Hybrid closed loop cooling tower (CLCT)** – launched under SustainX growth unit, targets water and energy savings.
- **Industrial heat pumps** – part of SustainX portfolio, expanding into international markets (e.g., first export order to Vietnam).

Air pollution control

Thermax provides electrostatic precipitators, bag filters, scrubbers, and flue gas desulphurisation systems. It recently commissioned the largest stock house dust extraction system (<5 mg/Nm³) and a baghouse on a sinter WHRB (<10 mg/Nm³) — both represent industry-leading performance.

Water and wastewater solutions

- **Biofilter Pro** – next-generation sewage treatment system for urban and industrial environments.
- **TSA Process Equipments** (acquired 51% in Apr 2024) adds high-purity water systems (multi-column distillation, pure steam generators) for pharmaceutical and biotech applications.

Digital platforms

- **Thermax EDGE Live®** – AI/ML-powered IIoT platform now monitoring 4,800+ assets across 195+ customers. Won the Gold Award at CII IQ and the AI Gamechanger Award by NASSCOM. ISO 27001 certified.
- **Urthh** – a brand launched for urban water management, including IoT-enabled monitoring and water recycling.
- **Digital projects** – 66 out of 147 digital projects across value streams went live in FY25, covering e-auction, vendor onboarding, sustainability accounting, and project management.

Gas enrichment and green hydrogen

- **Thermax Ne0** – gas enrichment solutions including hydrogen purification (up to 99.999% purity) and biogas upgrading using VSA technology. Successfully commissioned a 2 TPD biogas upgrading unit for a large biogas facility, delivering >96% methane purity with <3% slippage.
- **Ceres SOEC licensing partnership** – co-developing solid oxide electrolysers for green hydrogen production. Aim to have a working model by 2027, targeting hard-to-abate sectors like steel and fertilisers.

Service business – "Thermax Serve"

Launched to deepen aftermarket engagement. Covers retrofitting, revamping, spares, and O&M services across all equipment brands. Includes "Project Amplify" to grow service revenue via digital tools like EDGE Live and new platforms (Urban Water, Steam-as-a-Service). Over 337 O&M sites managed with 95% renewal rate.

Data centre opportunity

Thermax has entered the data centre cooling market with absorption chillers and heat pumps. In Q3 FY26 it booked orders for cooling solutions. Additionally, a data centre boiler opportunity emerged in Q4 FY26 — the company is "reasonably confident" of winning an order for a steam turbine-based energy solution for a global data centre. This is executed through TBWES.

> *"There's one which we are reasonably confident of having a win, which is on the data centre side. But that's more on the energy front for our Industrial Infra business." – CFO, Q4 FY26 concall (May 2026)*

Customers

Thermax serves a wide range of industries: metals & steel, power, mining, food & beverages, chemicals, sugar/distillery, engineering, fertiliser & agro, paper & pulp, refinery & petrochemicals, cement, drugs & pharmaceuticals, textiles, oil & gas, automotive, data centres, and commercial establishments. The customer base is highly diversified; no single customer accounts for a material share of revenue.

Key named customers include:

- **MB Power** – won a supercritical boiler order worth ~₹1,600 crore, a breakthrough in the private-sector power space.
- **Dangote (Nigeria)** – large order from one of Africa's largest industrial groups.
- **Leading Indian conglomerate** – O&M contract for bio-CNG plants.
- **Global food major** – multiple green steam projects under BOO model by TOESL in Gujarat, Karnataka, Punjab, and Sri Lanka.

Buying relationship and switching costs

- Almost all orders are fixed-price (concall confirmation). This means Thermax bears raw material risk, but also benefits from operational improvements during execution.
- Large projects (supercritical boilers, bio-CNG plants) have execution cycles of 40-45 months. These involve deep engineering, site work, and long-term relationship management, creating high switching costs for customers once a partner is selected.
- For BOO contracts (Green Solutions), contracts last 10-25 years, ensuring recurring revenue. Customer default risk is addressed by alternative off-taker options for FEPL and careful customer selection for TOESL.
- Service business (Thermax Serve) sees high renewal rates (95% for O&M), indicating sticky relationships.
- No significant customer concentration disclosed in the annual report.

Competitive landscape

Thermax operates in several product and project markets, each with different competitive dynamics. The annual report identifies "intensifying competition" from both well-established international players and low-cost local manufacturers as a key threat.

Industrial Products (Boilers, cooling, air pollution, water)

- **Heating and boilers:** In packaged boilers, competition comes from Forbes Marshall, Cochran (UK), and local fabricators. Thermax's edge is its ability to handle multiple fuels (biomass, oil, gas, electric) and its integrated combustion expertise. The Biomass Centre of Excellence and digital monitoring via EDGE Live create differentiation.
- **Cooling:** Absorption chillers face competition from Broad (China), Carrier, and Trane. Thermax's advantage lies in waste-heat-driven solutions and its new SustainX growth unit, which has booked 15 heat pump units and expanded into international markets.
- **Air pollution control:** Competitors include FLSmidth, Lurgi, and domestic players. Thermax is a leading supplier of electrostatic precipitators and bag filters for industries like cement and steel. Recent orders in Myanmar, Turkmenistan, and Thailand show international traction.
- **Water and wastewater:** Global players like Veolia, SUEZ, and domestic firms like VA Tech Wabag and Ion Exchange. Thermax's strength is its combined offering of chemicals, resins, and equipment, enabling integrated solutions. The acquisition of TSA Process Equipments adds high-purity water systems.

Industrial Infra (Large boilers, EPC, bio-CNG)

- **Large boilers (TBWES):** In utility and industrial boilers, BHEL, L&T, and Doosan are primary competitors. Thermax's strategy is to focus on private-sector orders (not public-sector supercritical) to avoid margin erosion. The MB Power supercritical order is a breakthrough, but the company remains cautious on PSU projects. For waste-to-energy boilers, competition comes from Chinese suppliers, but Thermax leverages its waste-heat recovery and combustion technology.
- **FGD systems:** Market dominated by Ducon, FLSmidth, and BHEL. Thermax is executing two large FGD projects and has seen reduced new orders as the thermal power FGD wave fades.
- **Bio-CNG (TBSPL):** The market is nascent with players like GPS Renewables, and a few technology providers. Thermax's edge is its ability to handle difficult feedstocks (rice straw, MSW) and its O&M experience, but it has

faced technology scale-up challenges that hurt margins.

Green Solutions (BOO)

- **Biomass steam (TOESL):** Few organised competitors; mostly local boiler operators. Thermax's strength is its national footprint, fuel supply chain, and ability to finance and operate long-term contracts.
- **Renewable power (FEPL):** Competes with independent power producers like Amplus, CleanMax, and Amp Energy. FEPL focuses on captive C&I clients and recently secured 300 MW of CTU connectivity for hybrid wind-solar projects.

Chemicals

- **Ion exchange resins:** Competed with LANXESS (formerly Sybron Chemicals), Purolite, and Ion Exchange India. Thermax's Tulsion® brand is well-established in India and exports. The partnership with OCQ (Brazil) expands into Latin America.
- **Construction chemicals:** Companies like Sika, Fosroc, and BASF are global leaders. Thermax's acquisition of Buildtech and the Vebro Polymers JV give it a strong entry into admixtures and industrial flooring.
- **Water treatment chemicals:** Many small local players, but Thermax's vertical integration with resin manufacturing provides cost advantage.

Thermax wins where customers value integrated solutions, long-term reliability, and a single partner across energy, water, and air. It loses when price is the sole criterion, especially against Chinese suppliers or low-cost local fabricators. The management has been explicit about avoiding low-margin public-sector supercritical orders and being cautious on margins in large EPC projects.

Industry

Demand drivers

The Indian energy and environment solutions market is driven by several structural forces:

- **Government push for energy transition:** Policies like the Panchamrit targets (500 GW non-fossil capacity by 2030, net zero by 2070), the Carbon Credit Trading Scheme (CCTS), and SATAT for bio-CNG.
- **Mandatory bio-CNG blending:** 1% from FY25-26, increasing to 5% by FY28-29. This directly benefits Thermax's TBSPL business.
- **Infrastructure spending:** PM Gati Shakti, PLI schemes in solar, green hydrogen, and capital goods expansion boost demand for cement, steel, power, and process equipment.
- **Stricter emission norms:** Compliance-mechanism guidelines for nine industries under CCTS, forcing investment in air pollution control and energy efficiency.
- **Corporate ESG goals:** Industries are under pressure from customers and investors to decarbonise, creating demand for biomass boilers, electric boilers, heat pumps, and digital optimisation tools.

Industry size

According to the International Trade Administration (ITA), the Indian environmental technology market was valued at approximately $23 billion in 2023 and is projected to grow at a CAGR of 7.5% from 2023 to 2028.

India's place in the global supply chain

India is the third-largest generator of electricity from wind and solar (2024). The country's exports to the US reached $86.51 billion in FY24-25, up from $77.52 billion in FY23-24. Indian engineering companies like Thermax are increasingly exporting equipment and EPC services to Africa, the Middle East, Southeast Asia, and Latin America. The annual report notes rising waste-to-energy investments in Brazil, Thailand, and Central America are creating export opportunities for air pollution control and biomass solutions.

Import substitution

Thermax's Chemicals segment is benefiting from the "Make in India" push for specialty chemicals. The new manufacturing facility in Indonesia and partnerships for advanced resins aim to reduce import dependence. In capital goods, BIS certification for raw materials used in biomass boilers is being mandated, which Thermax advocated for and which will strengthen domestic manufacturing.

Regulation

- **SATAT scheme (2018):** Promotes CBG plants; government has increased CBG off-take prices and relaxed digestate regulations.
- **Carbon Credit Trading Scheme (CCTS):** Bureau of Energy Efficiency released compliance guidelines for nine industries in July 2024. First trades expected from 2025.
- **Green hydrogen certification:** MNRE's GHCI scheme recognises SOEC technology (Thermax's Ceres partnership) for lower lifecycle carbon. Also, green tariffs and RE sourced via trading platforms (G-TAM, G-DAM) are accepted for proof of green hydrogen origin.
- **State-level policies:** Andhra Pradesh's Integrated Clean Energy Policy offers incentives for bio-CNG; other states are expected to follow.

Cyclicality

Demand for Thermax's products and services is linked to industrial capital expenditure cycles, which are influenced by economic growth, interest rates, and global energy prices. The company has historically seen order inflow volatility, with FY25 order bookings relatively flat ex-large projects. The management noted that "the impact of war prolonging and any other further impact that could be having across various industries" is a risk to Q2/Q3 FY27. However, the installed base and service revenue provide some counter-cyclical stability. The Green Solutions BOO model offers long-term contracted revenue, but the upfront capex makes it sensitive to financing costs.

Growth triggers

- **Data centre cooling and boiler solutions for hyperscalers, globally.** Thermax has already booked cooling orders for data centres in Q3 FY26 and is reasonably confident of winning a boiler-based energy solution for a data centre in the global market, executed through TBWES. This opens a new, high-growth vertical for both Industrial Products and Industrial Infra. (Q4 FY26 concall, May 2026)
- **Supercritical boiler breakthrough in the private sector power.** Thermax booked a ~INR 1,600 crore supercritical boiler order from MB Power, a private sector customer. Management has previously clarified it avoids public sector supercritical orders due to execution complexity. This order validates that private sector supercritical opportunities are accessible and can be won at target margins. Execution runs 40-45 months, providing multi-year revenue visibility. (Q4 FY26 concall, May 2026)

- **Compressed Biogas (CBG) blending mandate creates a regulated demand driver.** The government has set CBG Blending Obligations at 1% for FY2025-26, rising to 5% by FY2028-29. This mandates oil marketing companies to blend bio-CNG with natural gas. Thermax's subsidiary TBSPL is positioned as a market leader in large-capacity bio-CNG plants. The policy push directly addresses the viability gap that has held back order inflows. (Annual Report FY25; Q4 FY26 concall, May 2026)
- **Green hydrogen via Ceres SOEC licensing partnership.** Thermax signed a non-exclusive global licensing agreement with Ceres to manufacture solid oxide electrolyser stacks and develop balance-of-module systems. The target is to have a working model by 2027, focusing initially on hard-to-abate sectors like steel and refineries. This positions Thermax in the next wave of industrial decarbonisation. (Annual Report FY25)
- **Coal gasification and other green solutions await policy support.** Thermax has the technology ready for coal gasification but has not won orders because commercial viability is absent. Management is hopeful that government viability gap funding will catalyse this segment. Similarly, the Research, Technology and Innovation Centre (RTIC) is advancing carbon capture and upcycling, and biofuels. These are medium-term triggers with no near-term order visibility. (Q4 FY26 concall, May 2026)

Key risks

- **Raw material cost and supply chain volatility in a fixed-price order book.** Thermax's orders are overwhelmingly fixed price, with few price variation clauses. The Industrial Products business, with shorter inventory coverage, is exposed to commodity price swings in steel, copper, nickel, and styrene. The Chemicals business is already facing supply disturbances and price increases on styrene and other inputs. If the Middle East crisis escalates, the impact will flow through to margins in Q1/Q2 FY27. (Q4 FY26 concall, May 2026)
- **Execution delays in large, complex projects causing cost overruns and working capital build-up.** Bio-CNG plants, FGD systems, and large boiler projects have multi-year cycles and involve site work, civil construction, and customer coordination. Delays at customer sites lead to revenue slippage, retention build-up, and cost overruns. Working capital increased in Q4 FY26 precisely because of project delays and collection delays. (Q4 FY26 concall, May 2026)
- **Technology scale-up risks in green solutions.** TBSPL's bio-CNG plants faced reliability issues during scale-up, requiring additional technology intervention costs of Rs. 66 crore in FY25. The First Energy business (Green Solutions) had a partner failure on a wind-solar hybrid project, forcing Thermax to step in and incur cost overruns. Scaling new technologies like SOEC and carbon capture carries similar risk of unforeseen technical hurdles. (Annual Report FY25; Q4 FY26 concall, May 2026)
- **Geopolitical and credit risk from international exposure.** Thermax has a meaningful order book in the Middle East (including a ~INR 450 crore order in Industrial Infra booked in Q2/Q3) and a large Dangote order in Nigeria. Prolongation of the Middle East conflict could impact execution in Q2/Q3 FY27. Nigeria's foreign currency availability has stabilised, but past history shows risk. Thermax mitigates via letters of credit, but credit risk remains. (Q4 FY26 concall, May 2026)
- **Partner and contractor performance risk.** The same EPC partner failed to perform on a First Energy project in South India, causing cost overruns. This is not a systemic issue across multiple partners, but it highlights the risk in relying on third parties for complex project execution, especially in greenfield green energy projects. (Q4 FY26 concall, May 2026)

Walk the talk

Management has been consistently cautious on margins in the Industrial Infra segment, particularly for large EPC orders. In the Q4 FY26 call, Rajendran Arunachalam reiterated:

> *"On the EPC front, on the Industrial infra, what we have been telling the market is that we have been cautious on the margin front. And that I think would apply here as well."*

The actual outcome was mixed. The new supercritical and data centre cooling orders were booked with margins within the target profile. However, Industrial Infra segment margins were dragged down by legacy low-margin orders in bio-CNG and FGD. The bio-CNG business, in particular, required additional technology intervention costs of Rs. 66 crore in FY25. Management acknowledged that those legacy orders are now nearly executed, with FGD orders stabilising and bio-CNG plants in performance trials expected to close in Q1/Q2 FY27. So the promise of caution is being followed, but the impact of past decisions continues to weigh on reported margins.

On carbon emissions, Thermax made a public commitment to reduce absolute carbon emissions by 25% by FY2024-25 against a FY2018-19 baseline. As the Annual Report FY25 states:

> *"Thermax has not only surpassed its target of 25% but has impressively achieved a 37% reduction in carbon emissions in FY 2024-25."*

This was driven by fuel switching (LDO to PNG at Chinchwad), renewable energy procurement, and energy efficiency measures. The company has now set a new target of 50% reduction by FY2029-30. This is a clear example of over-delivering on a stated goal.

Scenarios

Bull case

The bio-CNG blending mandate triggers a flood of orders as oil marketing companies rush to meet the 1% obligation, and TBSPL's plants demonstrate reliable operations after the technology fixes. Thermax wins multiple data centre contracts globally for both cooling and boiler-based energy solutions, establishing a recurring revenue stream from hyperscalers. The supercritical boiler order executes smoothly, and private sector power companies place follow-on orders, building a credible track record. Green hydrogen via Ceres moves from pilot to commercial scale by 2028, opening a new multi-billion dollar addressable market. Legacy project overhangs clear, margins expand, and working capital normalises as collections improve.

Base case

The 27% higher order book converts into steady revenue growth over FY27, driven by execution of the supercritical job, data centre cooling orders, and regular industrial products demand. Bio-CNG order inflows remain lumpy but pick up gradually as state-level policies firm up. Margins in Industrial Infra stay near current levels as new, better-margin orders replace legacy ones. Raw material headwinds are manageable, with price increases passed through over time on the shorter-cycle products business. Working capital improves over two quarters as project delays ease. The company continues to invest in R&D and capacity, and the Chemicals business stabilises after supply chain disruptions.

Bear case

The Middle East crisis deepens, causing a sustained spike in commodity prices (steel, copper, styrene) and disrupting supply chains. The Industrial Products business, with its short inventory coverage and fixed-price orders, sees material margin compression. Execution on the Dangote (Nigeria) order faces delays due to currency or political issues, requiring provisioning. Bio-CNG plants continue to encounter reliability issues, necessitating further technology intervention costs and delaying the closure of legacy projects. The supercritical order runs into site-level delays, stretching working capital further. Partner performance issues recur on another Green Solutions project, forcing additional cost overruns. The combination of margin pressure, working capital lock-up, and project delays leads to a weak financial year, with the company forced to raise debt to fund capex and operations.

Source coverage note: Only 1 of 4 concalls were readable. This report is built from 1 concall transcript(s) (May 2026) and the FY 2025 annual report.