Case Study

Driving Efficiency and Sustainability

A biomass boiler success story for a leading Pharmaceutical manufacturer

Customer
Pharmaceutical manufacturer

Challenges
Navigating the complexities of a brownfield project

Solution
Thermax's Reciprocating Grate-based Biomass Boiler

Customer Benefits
- Reduced Steam Costs
- Operational Excellence
- Environmental Impact
- Space Efficiency

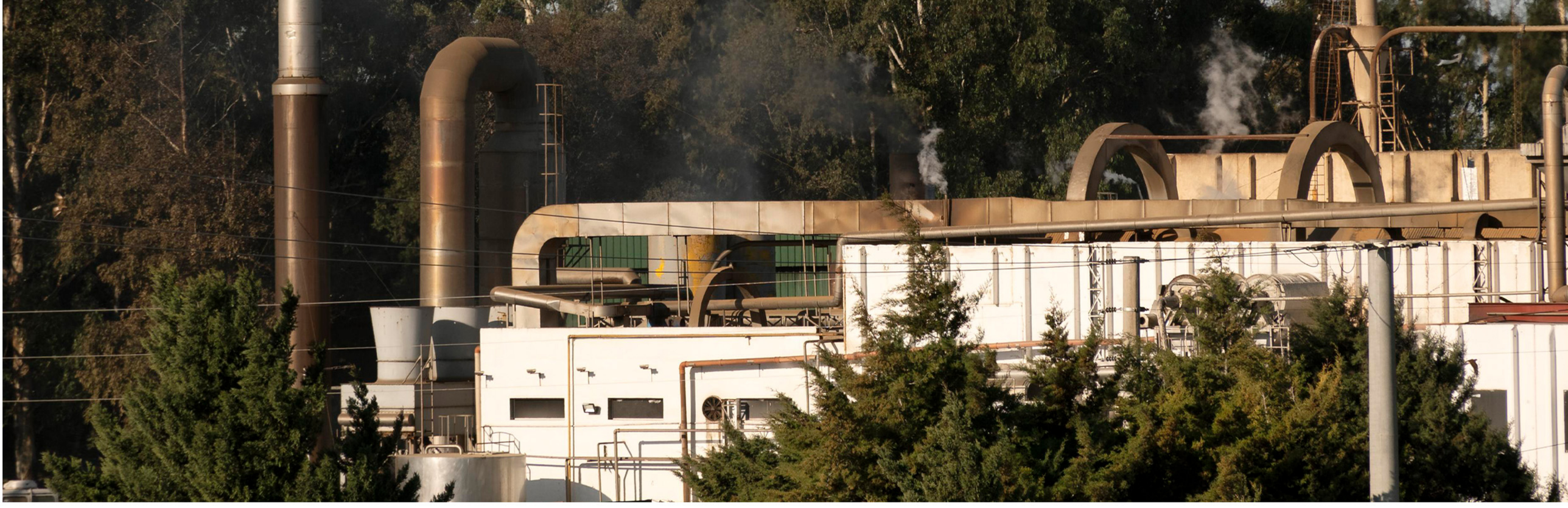
Cost-Effective and Eco-Friendly Steam Solutions with Thermax's Biomass Boiler Technology

Project Overview

A global leader in the pharmaceutical sector, with a robust footprint in Europe, the US and emerging markets, turned to Thermax to enhance its steam generation process at its Western India facility. Having previously collaborated with Thermax, the client aimed to shift from expensive fossil fuel-powered boilers to a sustainable and cost-efficient biomass-fired boiler solution.

Customer Profile

The client specialises in manufacturing active pharmaceutical ingredients (APIs) and formulations. Steam plays a vital role in their operations, supporting HVAC systems and multi-effect evaporators, among other critical applications.



Challenges

Navigating the complexities of a brownfield project

- **Space limitations:** Being a brownfield project, the boiler had to be seamlessly integrated within an existing, constrained boiler house
- **Stringent compliance requirements:** The pharmaceutical industry demands installations that adhere to high cleanliness standards
- **High steam costs:** Reliance on oil and gas-fired boilers resulted in elevated steam production expenses
- **Sustainability goals:** Transitioning to biomass fuel was key to meeting the client's carbon emission reduction targets

Solution: Thermax's Reciprocating Grate-based Biomass Boiler

Location	Gujarat
Model	UltraPac – UPRG100
Fuel	Biomass briquettes
Capacity	10 TPH (F&A 100°C)
Design Pressure	10.54 kg/cm²
Operating Pressure	8 kg/cm²

Thermax delivered an end-to-end turnkey solution centered on a 10 TPH UltraPac biomass boiler, featuring advanced Reciprocating Grate Technology. The solution incorporated:

- **Compact and modular boiler:** A 10 TPH boiler with a design pressure of 10.54 kg/cm², tailored for space-efficient installations
- **Emission control systems:** Integration of an electrostatic precipitator (ESP) and scrubber for efficient particulate emission control
- **Clean operation mechanisms:** Inclusion of a dedusting system and automatic ash handling system to maintain an orderly and clean workspace
- **Emission monitoring:** Provision of an online SOx, NOx, and SPM analyser to ensure strict adherence to environmental standards

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Customer Benefits

- **Reduced Steam Costs:** Transitioning from oil and gas to biomass drastically reduced steam generation expenses
- **Operational Excellence:** The boiler's unique configuration delivers outstanding efficiency, multi-fuel flexibility and an exceptional uptime
- **Environmental Impact:** Achieved substantial sustainability milestones, with an estimated annual reduction of 9,750 tonnes of CO_2 emissions and particulate matter emissions contained below 50 mg/Nm^3
- **Space Efficiency:** The compact and modular design proved ideal for the brownfield site, enabling seamless installation within a limited footprint

Ready to transform your business with sustainable energy solutions?

Contact Us Today!

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