

ESP Case Study



Boiler Application In Jute Industry



**Champdany Industries Ltd.,
Kolkata**

THE CUSTOMER PROFILE

Champdany Industries Ltd (formerly Wellington Jute Mills) - a Kolkata based manufacturer and exporter of high quality jute products like yarn/twine, fine hessian cloth, jute bags, decorative jute fabrics and blended fabrics. Their manufacturing unit is at Rishra, about 25 kms from Kolkata. The plant's steam requirements are met by a Thermax make 5 TPH boiler, fired on coal and jute caddy/briquettes.

THE CHALLENGE

The requirement called for a sustainable solution - taking into account the mix of fuels being burnt - not only on the combustion side but also on the pollution control side. The challenge was to come up with a system that would help the customer slash their energy costs, keeping emissions low at the same time.

Initially Electrostatic Precipitators (ESPs) were not in the reckoning, since they were not considered viable for boilers with capacities less than 10 TPH. But, with options like scrubbers and bag filters being ruled out on fuel mix and other technical grounds, the choice finally narrowed down to the ESP. The challenge was not only to achieve the desired results, but to do so in very limited space - a typical constraint especially in such old units dating back to pre-independence times.

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THE THERMAX-ENVIRO SOLUTION

Thermax came up with a new product to handle emissions from small boiler a 'baby' ESP. This uniquely designed ESP, developed in-house at Enviro, blends the best elements drawn from technology absorbed from two earlier collaborators.

That Thermax has in fact delivered more than what was committed is visible from achieved emission levels of less than 50 mg/Nm³ as against the contractual 100 mg/Nm³.

TYPICAL 'BABY' ESP BOILER APPLICATIONS

Can be designed for different combustion systems based on:

- **Coal** - Indian, Indonesian, Chinese, South African, Australian etc.
- **Lignite** - Kutch, Neyveli etc.
- **Agro Waste** - Coconut/ Groundnut shells, Coffee waste, Tea leaves, Jute caddy, Chilli powder etc.
- **Wood**
- **Oil**
- **Multi-fuel**
- **Waste heat recovery** - from Sponge iron kilns, DG sets etc.

PROCESS PARAMETERS

Boiler: 5 TPH, Manual, Coal / Jute Caddy Fired

Fuel	Coal	Jute Caddy
Gas Volume (Am ³ /hr)	14,076	14,520
Temperature (deg. C)	180	180
Inlet Dust Load (gm/Nm ³)	15	20
Guaranteed Emission (mg/Nm ³)	100	100
Actual Emission (mg/Nm ³)	50	50



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