

EES Showcases Proven Solutions for Slagging Challenges in Indian and Imported Coals at India Power Forum 2025

Fuel additive technologies showcased for improving boiler reliability, efficiency, and cleaner operation across coal, biomass, and industrial power plants.

STAMFORD, CT, UNITED STATES, October 13, 2025 /EINPresswire.com/ -- Environmental Energy Services (EES) showcased its global expertise in tackling slagging and fouling at the [India Power Forum 2025](#) – Clean Coal &

Industrial Power Edition organized by [Krishnan & Associates](#). In a technical presentation, Robert Santangeli, VP Engineering, highlighted how EES's coal treatment programs have delivered measurable results in coal and biomass power plants worldwide and outlined their potential for India's high-ash coal landscape.



“

Slagging isn't just an engineering challenge — it's a bottom-line issue. With the right chemistry, plants can unlock millions in efficiency gains while running cleaner and more reliably.”

Robert Santangeli

The Growing Challenge of Slagging

Slagging continues to be a major operational issue for coal-fired and biomass boilers. Deposits cause derates, forced outages, tube wastage, and increased maintenance costs. In India, where 73% of electricity generation comes from coal, the challenge is compounded by domestic bituminous coals with 30–50% ash content and imported Indonesian blends with lower slagging temperatures.

“Every ton of coal burned carries a hidden penalty if slagging is left unmanaged. The cost of derates and

unplanned outages can far exceed the modest cost of treatment,” Santangeli noted.

EES's Approach and Technology Platform

EES applies a structured, data-driven process:

- Coal and ash analysis to establish slagging and fouling indices.
- Modeling of deposit propensities based on mineral composition.

- Demonstration programs with high temperature furnace probes, IR and visual imaging, and boiler parametric analyses

- Tailored additives:

- Additive blends for high-sulfur, iron-rich bituminous coals.

- Additive formulations with and without catalysts for lignite and sub-bituminous imports.

These solutions modify ash chemistry, raise melting points, and introduce friable inclusions into deposits, making them easier to shed.

Case Study: Indonesian Coal, 600 MW Unit

Mr. Santangeli shared a case study from a 600 MW tangentially fired boiler burning Indonesian coal:

- Baseline: severe furnace and penthouse slagging, derates, and frequent soot-blowing every 1–2 days.
- Treatment: CoalTreat® CT-300 combined with a proprietary catalyst.
- Results:
- Ash fusion temperature raised by 150°C.
- Deposits converted to friable, easily removable ash.
- Furnace images showed tubes shedding deposits within days.
- 0.9% efficiency gain, saving \$1.25 million annually in fuel costs.
- Reduced derates, improved boiler cleanliness, and enhanced reliability.

Audience Dialogue and Industry Insights

The interactive discussion reinforced the broad applicability of EES's solutions:

- On biomass boilers: Slagging from potassium and sodium can be effectively managed with CT300 additive, with demonstrated cases of extending cleaning intervals from two weeks to months.
- On ESP performance: Additives can influence ash particle size distribution, but at typical low dosages (under 1 lb/ton), no negative impact is observed. On the contrary, high-melting point, friable, deposits reduce carryover, supporting ESP operation.
- On Indian vs. imported coals: While Indian coals generally have higher slagging temperatures, reducing atmospheres and design issues can create localized problems. Imported Indonesian coals, when blended beyond certain ratios, tend to increase slagging risks due to lower melting points.

The Bottom Line



Robert Santangeli presenting at India Power Forum 2025 – Clean Coal & Industrial Power Edition. Photo courtesy of Krishnan & Associates, Inc.

EES's programs have now been successfully applied to over 11,000 MW of generation capacity worldwide, including coal, biomass, and waste-to-energy units. For Indian utilities and industrial power producers, the technology offers:

- Fuel savings and efficiency gains.
- Reduced forced outages and derates.
- Extended tube and equipment life.

"Slagging isn't just an engineering challenge — it's a bottom-line issue. With the right chemistry, plants can unlock millions in efficiency gains while running cleaner and more reliably," Mr. Santangeli concluded.

About EES

Environmental Energy Services (EES) is a clean energy company specializing in innovative chemistry and engineering solutions that improve energy efficiency and reduce emissions. EES offers a full suite of combustion, boiler performance, water treatment, and pollution control technologies to energy and industrial clients worldwide. www.eescorp.com

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