Airnord

Lowest emissions
Highest ambitions



CASE STUDY

# 8 MG/NM³ GUARANTEED. WITH ESP TECHNOLOGY ALONE.

*How Coromax® enabled an exceptionally low emission guarantee for the sinter waste-gas ESPs at JSW's Sinter Plant 5 in India.*

**Why sinter-strand dust challenges ESP performance**

Achieving ultra-low particulate emissions in steel sintering is no easy task. Sinter-strand dust contains extremely fine particles with moderate electrical resistivity – a demanding combination for electrostatic precipitators (ESPs).

Even at exceptionally low emission levels, advanced ESP technology remains a compelling choice for sinter-gas dedusting, combining high collection efficiency with substantially lower operating costs than fabric filters. At JVML, Airnord demonstrated what is possible when proven ESP engineering is combined with Coromax® micro-pulse technology.

For its new 5.75 million tonnes-per-year Sinter Plant 5 at Vijayanagar, India, JSW Vijayanagar Metallics Limited (JVML) initially specified a particulate emission limit of 10 mg/Nm³ for the sinter waste-gas ESPs.

Airnord went further, offering an emission guarantee of just 8 mg/Nm³ – using ESP technology alone.

**Coromax® micro-pulse power makes the difference**

The key to this demanding guarantee was Airnord's Coromax® micro-pulse technology.

Conventional ESP power supplies, including transformer-rectifier (T/R) sets and switch-mode power supplies (SMPS), struggle to charge and collect the extremely fine particles found in sinter-strand dust. Coromax addresses this challenge by applying ultra-short, high-voltage pulses that improve particle charging and collection efficiency.

This enhanced performance can reduce the collecting area required compared with conventional T/R-based designs, making it possible to engineer smaller and more cost-effective ESPs for demanding emission requirements.

At JVML, the advantages of Coromax enabled Airnord to offer an exceptionally low emission guarantee with a technically and commercially competitive pure ESP solution. Airnord's design calculations also indicated approximately 40% lower electrical power consumption compared with conventional T/R power supplies designed to achieve the same emission level.



**Three ESPs and 2,800 tonnes of steel delivered on schedule**

The project comprised two large sinter waste-gas ESPs, each with an emission guarantee of 8 mg/Nm³, and one plant dedusting ESP guaranteed to 30 mg/Nm³.

Airnord also performed computational fluid dynamics (CFD) studies to optimise gas distribution and support high collection efficiency throughout the ESPs.

The scale of the project was considerable: approximately 2,800 tonnes of fabricated steel, including collecting plates, were supplied within just ten months, requiring close coordination across multiple manufacturing subcontractors.

All contractual supplies were completed on schedule. The three ESPs were successfully commissioned in September and October 2024 and formally handed over to JVML for continuous operation.

**A performance the customer is proud to share**

Since commissioning, all three ESPs have been operating satisfactorily, with positive feedback from JVML.

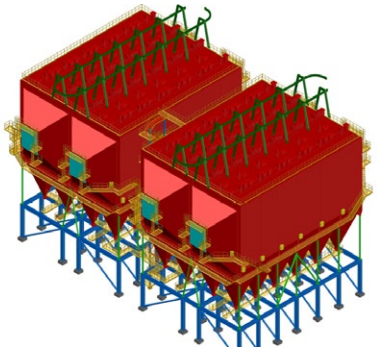
Indeed, the customer was sufficiently impressed to display a prominent billboard at the plant celebrating the installation:

"Breathing Easy Everyday. Our sinter plant's emissions reduced to unprecedented levels of <10 mg/Nm³, thanks to our cutting-edge ESP technology."

– JSW Vijayanagar Metallics

The installation has also become a reference site, with JVML sharing its positive experience with prospective Airnord customers.

For steel producers and engineering contractors facing increasingly stringent emission requirements, JVML Sinter Plant 5 demonstrates what advanced ESP technology can offer: an exceptionally demanding emission guarantee, delivered through proven technology and the enhanced collection efficiency of Coromax.



FIND OUT MORE ABOUT THE PRODUCT AT WWW.AIRNORD.COM

Airnord
Lowest emissions
Highest ambitions

Headquarters
Kirsten Walthers Vej 3
2500 Valby, Copenhagen
Denmark

+45 32 74 60 32
contact@airnord.com
www.airnord.com

Copyright © 2026 Airnord. ALL RIGHTS RESERVED. Airnord and PIACS are registered trademark of Airnord. This brochure makes no offers, representations or warranties (express or implied), and information and data contained in this brochure are for general reference only and may change at any time.