NEU-JKF

Dust extraction in recycling

DEDICTED TO CLEAN AIR

Dust extractions systems for recycling lines

Recycling is a fundamental pillar of a modern and sustainable economy.

Converting waste into valuable secondary raw materials reduces the consumption of natural resources, lowers CO_2 emissions and supports long-term environmental protection. As the industry continues to grow, so do technical and regulatory requirements.

One of the key operational challenges in recycling lines is effective dust extraction. Sorting, shredding, screening and material handling processes generate significant and highly variable dust loads. Without properly engineered extraction systems, dust negatively impacts employee safety, equipment reliability, plant uptime and environmental compliance.

Dust extraction is not a secondary system – it is a vital part of every recycling line.

At NEU-JKF we understand that for recycling operators, efficiency, safety and compliance are non-negotiable – they are essential. Our systems are engineered to optimize performance, ensure safe operation, and meet strict compliance standards – proven in large-scale municipal and industrial facilities.

Process challenges in recycling applications

Recycling lines operate under highly dynamic conditions.

Dust extraction systems must handle:

- variable dust types and loads,
- light, fibrous and airborne fractions,
- abrasive and mixed-material streams,
- explosion risk (ATEX zones),
- odour management (organic waste fractions),
- integration into compact or existing facilities,
- continuous operation with minimal downtime.

Different waste materials have unique characteristics that demand careful assessment of airflow, filtration efficiency, and safety requirements. NEU-JKF designs solutions that are customized to each process, combining reliability, energy efficiency, and full ATEX compliance.

Types of dust we are handling – typical applications:

- MSW
- WEEE
- Plastics (rigid and film fractions)
- Wood waste and biomass
- Metals
- Tires
- Paper
- Glass
- RDF / SRF

Technologies for efficient recycling

We support our partners at every technical stage of a recycling line project.

ENGINEERING & DESIGN

- airflow and pressure loss calculations,
- system dimensioning based on process data,
- ATEX risk assessment and explosion protection design,
- layout optimisation for space-restricted installations,
- complete 2D and 3D drawings for the entire system.

SYSTEM COMPONENTS

In-house production of:

- high-efficiency modular bag filters (up to 99.9% filtration efficiency) – designed for easy maintenance and flexible system expansion,
- energy-optimised industrial fans,
- cyclones and pre-separators,
- rotary valves and discharge systems,
- ATEX-certified safety components,
- ducting systems adapted to line layout.

All designed to ensure smooth, efficient, safe operation.

INTEGRATION & COMMISSIONING

- interface coordination with shredders, conveyors and screens,
- retrofit integration into existing infrastructure,
- installation supervision,
- performance validation and start-up support.

All NEU-JKF systems are reliable, easy to operate, and maintainable.

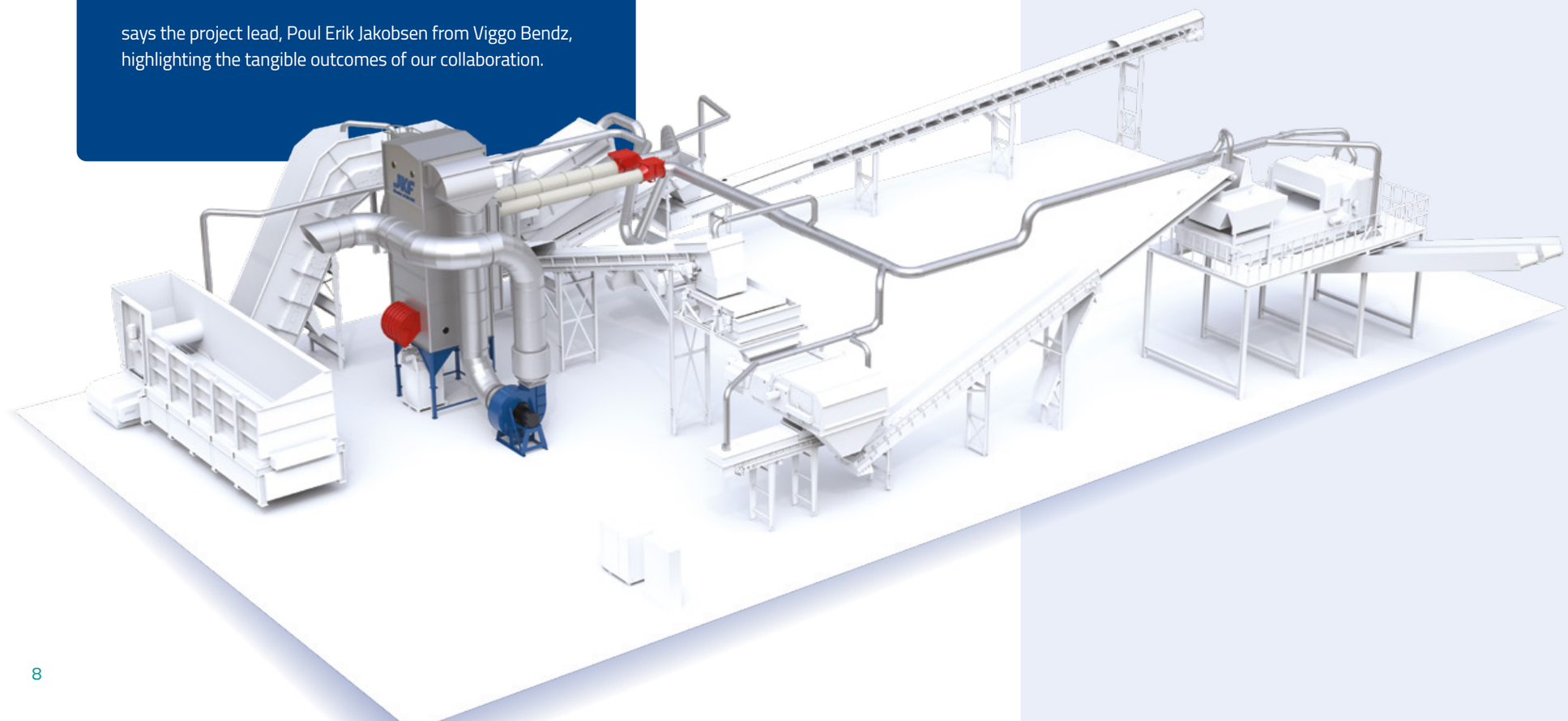
Modular design allows installation in both small and large plants, reducing maintenance, lowering energy consumption, and improving operational efficiency under fluctuating loads.

Reference projects: Norrecco

Commercial and Industrial (C&I) Waste Recycling Facility

“Witnessing the system perform beyond our expectations has been immensely rewarding”,

says the project lead, Poul Erik Jakobsen from Viggo Bendz, highlighting the tangible outcomes of our collaboration.



The project, carried out for Norreco, is an excellent example of NEU-JKF’s comprehensive and flexible approach to dust extraction challenges across various industrial sectors.

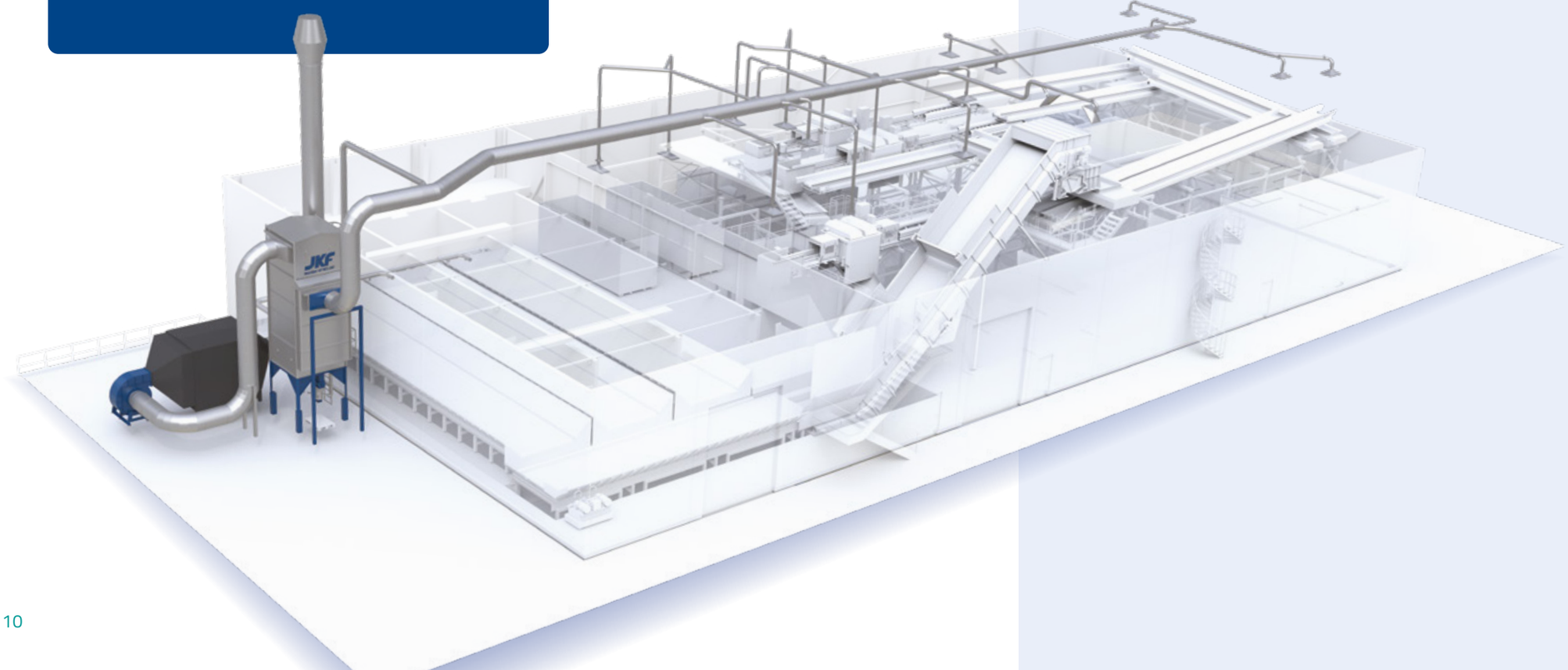
It is particularly significant in the recycling industry, where the variability of material composition and multiple dust emission sources require individually tailored solutions.

By combining advanced technologies with extensive experience, NEU-JKF delivered a system that ensures a high level of safety, improved working conditions, and tangible support for sustainable development.

Reference projects: Meldgaard Aalborg

Municipal Solid Waste Sorting Facility

The facility receives 48,000-58,000 tons of municipal waste per year. At the Meldgaard sorting plant in Alborg, about 25-33% is food waste.



At waste sorting plants like Meldgaard, mechanical processes such as shredding and screening generate significant amounts of unpredictable, heterogeneous dust from pulverized municipal and organic waste. Because this variable waste stream is difficult to manage, NEU-JKF designed a specialized dust extraction plant.

It offers high operational flexibility, excellent filtration efficiency, and robust resistance to the demanding conditions typical of recycling facilities.

Key elements of the installation

Norrecco

Customer	Viggo Bendz for the Municipality of Copenhagen
Application	Central dust extraction for shredding and sorting area
Annual throughput	approx. 15,000 tons of waste
Key challenges	Variable dust loads, retrofit integration, high filtration efficiency with system flexibility, strict environmental compliance.
Solution	Comprehensive filtration system with SuperJet filter, designed for scalability, full ducting, integration with existing layout, ATEX protection. System capacity: 40,000 m³/h
Result	99.9% filtration efficiency, improved working conditions, full compliance, increased safety.

Key elements of the installation

Meldgaard Aalborg

Customer	Meldgaard Miljø A/S for the Municipality of Aalborg
Application	Dust extraction from shredding, screening, and separation processes.
Annual throughput	48,000–58,000 tons of waste (25–33% organic fraction)
Key challenges	Highly variable dust fractions, light and fibrous particles, explosion risk (ATEX zones), odour.
Solution	Flexible, high-efficiency dust extraction system with SuperJet filter, carbon filter for odour reduction, full ducting with optimized extraction points in key process areas, ATEX protection, full integration with the plant's infrastructure. System capacity: 34,900 m³/h
Result	Significant dust reduction, odour control, improved process stability, reduced downtime, increased safety.

Why NEU-JKF?

We are a technical partner – not just a supplier.

Our customers choose us because we:

- Understand the operational realities of recycling plants
- Minimise technical and compliance risks
- Design based on real process data
- Ensure stable performance under fluctuating loads
- Deliver integration-ready systems
- Manage projects from concept to commissioning

Engineered for Safety and Efficiency

In-house production of filters, fans, separators, cyclones, rotary valves, ducting systems, and custom components. All designed to ensure smooth, efficient, and safe operation.

ATEX-compliant solutions, our innovative VFV® Vertical Flameless Venting, engineered for workplace safety, process reliability, and regulatory compliance.

NEU-JKF | Sfpi GROUP

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