

Building & Industry

NOVENCO 

SCHAKO Group

The most climate-neutral solution for a 700-metre deep mine shaft with a NOVENCO® ZerAx® fan

The mission to secure a modern mine

GTS Grube Teutschenthal Sicherungs GmbH & Co. KG, part of the Geiger Group in Sachsen-Anhalt, operates one of Europe's most advanced backfill mines. Until 1982, the site produced potash and rock salt.

Today, the mine ensures long-term environmental safety by stabilising the underground cavities with mineral waste materials. Each year, more than 200,000 tonnes are brought 700 metres below ground. This sustainable backfilling plays a key role in protecting the environment for decades to come.



View on the new ventilation system from above



GTS Grube Teutschenthal Sicherungs, Germany

Implementing the latest technology

To upgrade the ventilation of the mine, the main contractor Jeremias® Chimney Systems delivered a purpose-built 36-metre chimney, complete with steel structure and ductworks.

For a solution focused on sustainability, the mine owner selected the NOVENCO ZerAx axial flow fan. With up to 98% recyclability and outstanding efficiency, the fan supported the project in qualifying for a state subsidy.

The 2-metre ZerAx fan is paired with an IE5 Nidec PM motor (Dyneo+) and a Danfoss VLT frequency converter. Together, they form a high-performance EC+ configuration with exceptional system efficiency.

The greenest watt is the one never produced

For the GTS chimney installation, the ZerAx fan reaches efficiencies up to 92%, supported by an IE5 Nidec PM motor and a Danfoss VLT frequency converter.

The motor delivers 220 kW of power and weighs around half a ton less than a traditional 220 kW IE3 motor. By comparison, conventional 4-pole AC motors of the same physical size offer only 132 kW.

This project confirms that synchronous EC+ technology can deliver top-tier energy performance with a significantly reduced environmental footprint. Lower energy use means fewer raw materials and reduced CO2 emissions. Combined with up to 92% fan efficiency, a 98% recyclability rate and a lifetime of more than 20 years, the solution ensures long-lasting environmental benefits.



2-metre ZerAx fan ready for installation

Facts:

- Latest EC+ technology
- PM motor technology
- Energy savings
- Highest system efficiency
- Innovative fan design