

thyssenkrupp Uhde successfully commissions EnviNOx® emission reduction system for Covestro's NAUCI project in China

- **Removing N₂O and NO_x below 1 ppmv**
- **Seamless installation with low effort**
- **3rd EnviNOx® system commissioned in China (for various industries and customers)**

thyssenkrupp Uhde is proud to announce the successful commissioning of its EnviNOx® system for Covestro Polymers (China) Co. Ltd. at their nitric acid plant in Shanghai Chemical Industry Park (SCIP). This state-of-the-art technology will significantly reduce nitrogen oxides (NO_x) and nitrous oxide (N₂O) emissions. Covestro's NAUCI plant in SCIP is part of their global network of facilities dedicated to producing high-performance polymers and plastics such as polyurethanes, polycarbonates and precursors for paints, coatings, adhesives and sealants. The successful commissioning of the EnviNOx® system at this site marks another milestone in Covestro's journey towards full circularity and climate neutrality.

Michael Huang, General Manager of Covestro Integrated Site, Shanghai: "We are thrilled with the outstanding performance of the EnviNOx® system and the smooth project execution. This project is a testament to our environmental responsibility and Covestro's commitment to reach climate neutrality in scope 1 and 2 emissions until 2035."

Nadja Håkansson, CEO of thyssenkrupp Uhde: "The successful implementation of another EnviNOx® system in China underscores our capability to provide innovative solutions that address global environmental challenges."

The EnviNOx® technology, developed by thyssenkrupp Uhde, is a leading solution for the combined removal of N₂O and NO_x from industrial emissions. It has been successfully implemented in over 60 installations worldwide, reducing CO₂-equivalent emissions by more than 24 million metric tons annually. The system's ability to achieve near-zero NO_x emissions and significant N₂O reduction makes it an essential tool for industries aiming to meet stringent environmental regulations. Thanks to its versatile design, it can be easily installed into the tail gas systems of industrial chemical plants as a tertiary abatement solution. In addition, the tertiary EnviNOx® unit can ideally be combined with secondary measures/catalysts for N₂O removal.

World-leading, high-performance climate protection technology

The EnviNOx® system, licensed, engineered and supplied by thyssenkrupp Uhde, comes as a complete package of proprietary reactor, a proprietary high-performance tertiary catalyst manufactured by BASF, and all necessary components and control systems for integration into the tail gas system.

By additionally combining Uhde's EnviNOx® technology with a secondary catalyst from BASF, Covestro achieved a reduction in N₂O and NO_x emissions well beyond 99%, successfully lowering the levels to below 1 ppm. This advancement is expected to enable Covestro to reduce annual N₂O emissions in their nitric acid plant in addition by more than 200,000 tons of CO₂ equivalents. "Our combined expertise with thyssenkrupp Uhde is already making a difference in our joint goal to reduce greenhouse gas emissions. Our research and development teams are continuously pushing the boundaries of conventional thinking to design and produce catalysts with high activity and durability, supporting our customers in their sustainability transformation", said Detlef Ruff, Senior Vice President, Chemical Catalysts and Adsorbents at BASF.

Well-proven solution, designed and built to last

Originally developed for nitric acid plants, the EnviNOx® system can be adapted to various industrial processes. This flexibility makes it a versatile solution for emission control in various applications. In China, for example, it has first been successfully installed in caprolactam plants over 10 years ago. The current project for Covestro is the third EnviNOx® system in China in total, contributing to the country's environmental ambitions. The very first installation of an EnviNOx® unit at an industrial scale dates back more than 20 years. Since then, the EnviNOx® process and catalyst have been continuously developed further and optimized. With the experience of over 3000 chemical plants built in a broad range of process technologies, thyssenkrupp Uhde offers a robust, low-maintenance solution.

About thyssenkrupp Uhde

thyssenkrupp Uhde combines unique technological expertise and decades of global experience in the engineering, procurement, construction and service of chemical plants. We develop innovative processes and products for a more sustainable future and thus contribute to the long-term success of our customers in almost all areas of the chemical industry. Our portfolio includes leading technologies for the production of base chemicals, fertilizers and polymers as well as complete value-chains for green hydrogen and sustainable chemicals. www.thyssenkrupp-uhde.com

About Covestro:

Covestro is one of the world's leading manufacturers of high-quality polymer materials and their components. With its innovative products, processes and methods, the company helps enhance sustainability and the quality of life in many areas. Covestro supplies customers around the world in key industries such as mobility, building and living, as well as the electrical and electronics sector. In addition, polymers from Covestro are also used in sectors such as sports and leisure, telecommunications and health, as well as in the chemical industry itself.

The company is geared completely to the circular economy. In addition, Covestro aims to achieve climate neutrality for its Scope 1 and Scope 2 emissions by 2035, and the Group's Scope 3 emissions are also set to be climate neutral by 2050. Covestro generated sales of EUR 14.2 billion in fiscal year 2024. At the end of 2024, the company had 46 production sites worldwide and employed approximately 17,500 people (calculated as full-time equivalents).

About BASF Chemical Catalysts and Adsorbents

BASF is a leading global manufacturer of catalysts for the chemical industry, with solutions across the chemical value chain. The business comprises chemical catalysts, adsorbents and custom catalysts. Priority is given to developing new and improved products that enable the chemical industry transformation to net-zero emissions. To learn more, visit www.chemical-catalysts-and-adsorbents.basf.com.

BASF's Chemical Catalysts and Adsorbents business is part of the company's Performance Chemicals division. The division's portfolio also includes refinery catalysts, fuel and lubricant solutions, as well as oilfield chemicals and mining solutions. Customers from a variety of industries including Chemicals, Plastics, Consumer Goods, Energy & Resources and Automotive & Transportation benefit from our innovative solutions. To learn more, visit www.performancechemicals.basf.com.

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