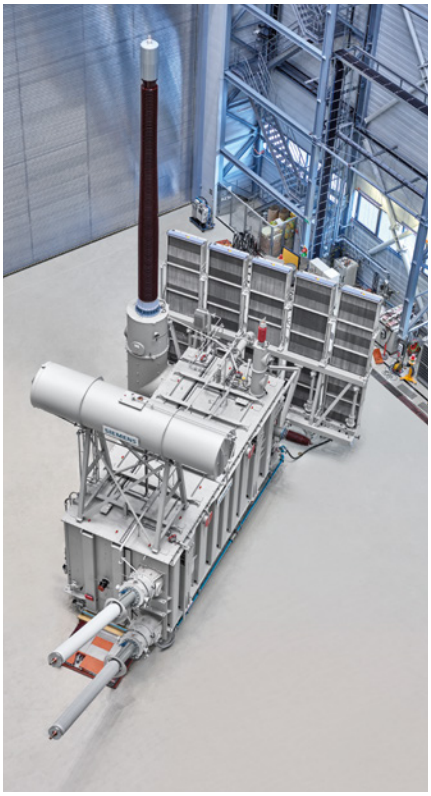
SIEMENS
Ingenuity for life

First HVDC transformer with 1,050 kV AC grid connection arrived in China

Reducing air pollution and CO_2 emissions is a top priority in China, where the "National Air Pollution Control Action Plan" enforces solutions that enable environmentally friendly power transmission and power supply. A highly ambitious 10 GW transmission project for energy from renewable sources from Inner Mongolia to the province of Shandong is part of the plan to significantly improve CO_2 emissions and air quality. The Ximeng-Taizhou project hereby relies on high-quality transformers from Siemens, the most innovative supplier of power transformers. To meet the demanding requirements of the project, an exceptionally large transformer had to be built. On February 3, the very first 1,050 kV high-voltage direct-current (HVDC) transformer for connection to the 800 kV UHVDC grid was tested successfully. Two of these units have arrived in Shanghai to support the transmission project, and two more units are in production in the Siemens Factory in Guangzhou.



Furthermore, Siemens is supplying the key components of the transformer to local partners to ensure the highest quality of the products manufactured in their local factories.

Siemens' engineers had to develop a transformer that was subject to strict test cycles throughout the factory acceptance test phase. These cycles were defined by State Grid Corporation of China (SGCC) in the equipment specification, and rigorously applied under the supervision of SGCC HVDC senior expert Mr. Lu Lichen. The new 1,050 kV HVDC transformer proved to have impressive insulation values for the critical transformer section, especially with the 1,050 kV alternating current aspect.

The design challenges of today's high end technology requires the adaption of facilities, machines, and processes. The transformer is the largest of its kind with its enormous 3,200 mm winding diameter and AC bushing length of almost 15 m.

Siemens transformers are perfectly suited to transfer 10 GW transmission capacities over a distance of 1,620 km. With their reliability and efficiency they will maximize the energy transmission from renewable sources to the final destination of the Yangtze region. Dr. Beatrix Natter, CEO of Siemens Transformers, is convinced: "With our development, we are helping to interconnect the global ultra-high-voltage three-phase grids and the ultra-high-voltage DC grids at the 800 kV level."

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