

The first transmission phase shifter in the country shows remarkable results in power grid supply guarantee

YANGZHOU, CHIAN, August 23, 2024 /EINPresswire.com/ -- Recently, employees of State Grid Yangzhou Power Supply Company conducted inspections on the country's first 110 kV transmission phase shifter at 220 kV Ping'an Substation to ensure the reliable operation of the equipment. It is reported that thanks to the adjustment of power flow in the power grid by this transmission phase shifter, the maximum load of No. 2 main transformer of 220 kV Anyi Substation in Baoying, Yangzhou has dropped to 44,700 kilowatts, which is less than half of the historical highest level. This effectively alleviates the pressure on Anyi Substation to supply power to the load center of Baoying urban area and guarantees high-quality and efficient power supply of Yangzhou power grid in summer.



The Baoying area of Yangzhou is rich in wind and solar resources, and the development of new energy has been rapid in recent years. As of the end of July, the installed capacity of new energy in the whole county has reached 1,492,200 kilowatts, and the annual power generation is 2.511 billion kilowatt-hours. However, 92% of the new energy in this area is concentrated in the eastern suburbs, and 55% of the power consumption load is distributed in the western central urban area. The reverse distribution of new energy generation and power consumption load makes the load of power facilities in the east and west of this area unbalanced, affecting the power supply safety and economic operation of the power grid.

For this reason, State Grid Jiangsu Electric Power Co., Ltd. selected the Baoying area as a pilot and took the lead in carrying out the construction of a scientific and technological demonstration project of transmission phase shifters.

By installing a transmission phase shifter on the 110 kV connection line between Anyi Substation

and Ping'an Substation, two 220 kV substations in the main urban area of Baoying, intelligent and efficient flow of electric energy is realized. Li Qun, vice president of State Grid Jiangsu Electric Power Research Institute, said: "The transmission phase shifter is equivalent to adding an 'intelligent valve' to the power grid in Baoying, Yangzhou. By intelligently and accurately adjusting the power flow between Anyi Substation and Ping'an Substation, the load distribution between the two substations is balanced, and the power is allocated on demand."

Through the transmission phase shifter, up to 100,000 kilowatts of new energy power can be accurately transmitted to the urban center, equivalent to 15.9% of the total power consumption load in Baoying area. This greatly alleviates the power supply pressure at the load center, effectively reduces the frequency of overweight and overload of power facilities, and ensures the safe, stable and economic operation of the power grid.

It is reported that the application of this equipment fills the gap in the application of economic and compact power flow control technology in China. In the past year of operation, a total of 260 million kilowatt-hours of new energy power has been adjusted to the power consumption load center. The maximum load of the main transformers of the two connected substations has both dropped by about 50%, and the average load difference between the main transformers has also dropped by about 40%. At the same time, the new energy consumption capacity of Ping'an Substation has been increased by about 100,000 kilowatts. (Zheng Baoyuan, Zhang Ningyu)

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