

Abstract

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Research and Practice of Distributed Renewable Energy Integrated to the Power Grid in China

Yuehui Huang

**Professorate Senior Engineer, Renewable Energy Research Department, CEPRI
Beijing, China**

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Abstract:

In recent years, distributed renewable energy, especially distributed photovoltaics, has developed rapidly in China. SGCC has connected distributed photovoltaics with a capacity of over 200GW, mainly distributed in load center provinces such as Shandong, Zhejiang and Henan, etc. Due to its small capacity, low access voltage level, and fast development speed, it poses a huge challenge to the operation of power grid, including power balance, voltage fluctuation issues. SGCC conducted extensive research and practical work in order to support the development of distributed renewable in China. The integration standards suitable for the development of distributed photovoltaics were drafted. A method for evaluating the ability of the power grid to carry distributed power sources is proposed. A prediction and scheduling operation management method for distributed photovoltaics is introduced. Based on a practical specific case, the problems encountered in the operation of distributed PV and related solutions are presented in detail. Finally, the development trend of distributed renewable energy operation is presented.