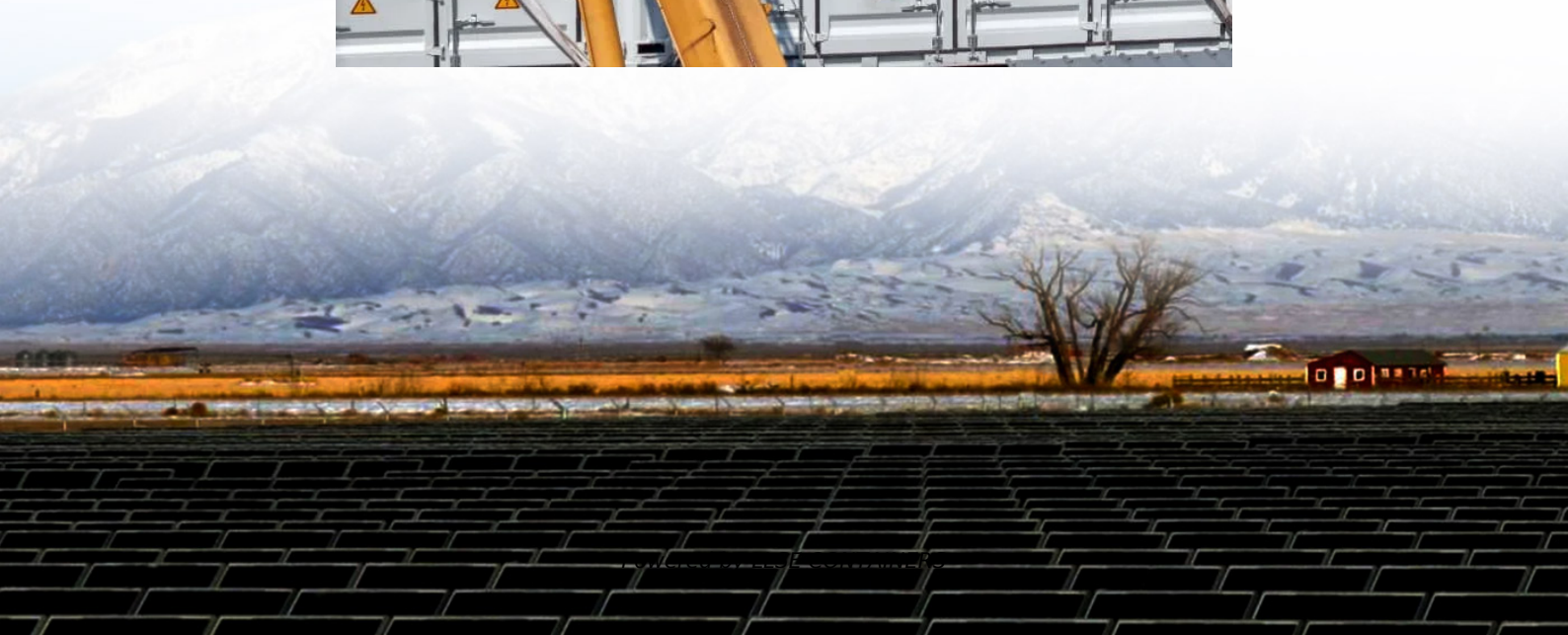


Static configuration of wind power generation system





Overview

How is voltage stability assessed in a wind farm?

The voltage, reactive power and active power of each bus in the system are collected for voltage stability assessment. The capacity of the wind farm is 200 MW and the power factor is set as 0.99. The power flow analysis results and voltage distribution of the test can be demonstrated in Fig. 4, Fig. 5, respectively. Fig. 3.

How does wind speed affect voltage stability?

The wind speed is the critical factor that influenced the stability assessments. As the wind speed increases 8 m/s to 15 m/s, the output active power and reactive power of the wind farm changes, which influences the voltage stability margin of the test system.

Does wind speed affect voltage stability margin?

As the wind speed increases 8 m/s to 15 m/s, the output active power and reactive power of the wind farm changes, which influences the voltage stability margin of the test system. It is clear that the proposed approach is able to reflect the change of the voltage stability margin as the wind speed increases. Table 1.

Does reactive power affect static voltage stability?

With the growing complexity of power system, there is an urgent need for in-depth research on the impact of reactive power on static voltage stability. This paper proposes a quantitative assessment approach of static voltage stability for the power system with high-penetration wind power based on the energy function.



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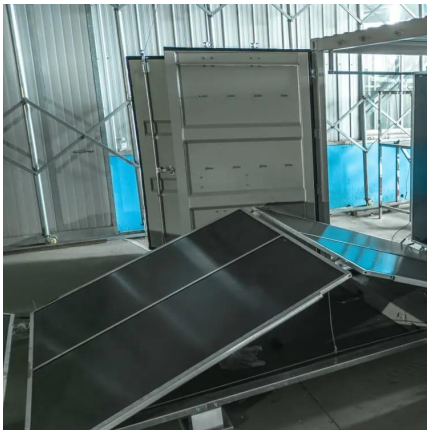
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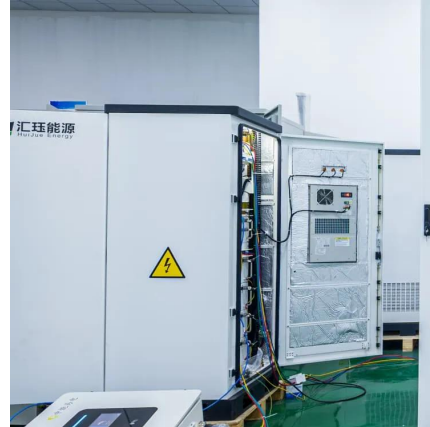
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