

Study on Calculation Method of Carbon Emission in Utilization of ACCC Conductor in New or Modified Power Lines

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Session 4

Keywords: global energy interconnection, aluminum conductor composite core (ACCC), carbon emission, calculation method

Abstract

Driven by higher energy and electricity demand, the world's power grid system has leapfrogged from conventional grids to modern grids, and from isolated urban grids to transregional and transnational interconnected large grids. Some technologies and equipment have been innovated to adapt the acceleration of global energy interconnection. A new type of overhead conductor with a polymer composite core (ACCC) is attracting more attention in global energy interconnection owing to their outstanding mechanical properties and operating characteristics. The ACCC conductor exhibited greater ampacity than ACSR conductor at all operating temperatures. Hence, the transmission capacity of grid can be enhanced by utilization the ACCC conductor without replacement of steel tower and other facilities. This paper puts forward a theoretical calculation method about emission reductions of retrofit measures for utilization of ACCC conductor in new or modified power lines, based on the characteristics of line loss parameters, which are complex energy consumption status and comprehensive utilization of energy-saving technologies.

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