

Special Issue on
**Solutions for Improving the Thermal Rating of Overhead
Transmission Lines**

CALL FOR PAPERS

Transmission system operators (TSOs) generally limit the transport capacity of power lines in a static manner. However, this is in conflict with our evolving electrical needs. For instance, the common practice of running lines at saturation severely limits the possibilities for integration of renewable sources.

Stringent environmental constraints make it increasingly difficult to identify new energy corridors for the development of infrastructure, and it is therefore necessary to examine alternative solutions. One adopted solution concerns the replacement of old conductors with new High-Temperature Low-Sag (HTLS) conductors that allow better exploitation of existing energy corridors. Some global examples of reconductoring technologies include Thermal resistant Aluminum Conductor Steel Reinforced (TACSR) conductors, Super Thermal resistant Aluminum Conductor Steel Reinforced (ZTACSR) conductors, Aluminum Conductor Composite Core (ACCC) conductors, Gap-Type conductors, and Invar conductors.

Another methodology concerns the Dynamic Thermal Rating (DTR) that, allowing for some environmental factors, allows estimation in real time of the transport capacity of a power line. The advancement of sensory technologies with competitive prices has made the DTR system an attractive option for enhancing the capacity of transmission lines. Thus, there is a general consensus worldwide for a need to increase the capacities of transmission lines, while at the same time minimizing the amount of physical alteration done on existing transmission structures.

The aim of this special issue is to bring together researchers and engineers, especially from transmission system operators (TSOs) and distribution system operators (DSOs). We hope they will discuss their experiences and develop innovative solutions for improving the thermal rating of overhead transmission lines, especially with consideration of the economic impacts. The scope covers all aspects of theoretical studies and engineering applications related to the increase in transmission capacity of overhead lines.

Potential topics include but are not limited to the following:

- ▶ Dynamic Thermal Rating (DTR) of overhead lines
- ▶ Real-time monitoring of overhead lines
- ▶ Direct method measurement devices (weather monitoring sensors, power donuts, power line sensors, conductor replicas, etc.)
- ▶ Reconductoring of overhead lines using High-Temperature Low-Sag conductors: TACSR, ZTACSR, ACSS, GTACSR, GZTACSR, TACIR, ZTACIR, and so on

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/jece/power.systems/olrr/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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