Modeling Start-Up Times in Unit Commitment by Limiting Temperature Increase and Heating

Abstract:

The integration of variable renewable energy sources leads to an increased cycling of conventional power plants, necessitating a detailed model of the start-up process. Based on the recently developed temperature formulation for start-up costs in Unit Commitment, we model the off-time-dependent start-up times of thermal units by limiting temperature increase and heating. Numerical results indicate that limiting heating speed is more efficient and leads only to a moderate increase in computational time.

Stichworte:

Unit Commitment, Start-up Times, Power Plant Temperatures, Integration of Renewables

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