Overview of Power System Flexibility Options with Increasing Variable Renewable Generations

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Abstract

Many energy systems around the world tend to generate electricity from renewable energy sources as an alternative to the use of high-carbon fossil fuels. Increasing the rate of inclusion of renewable power plants in power systems at the expense of conventional power plants will result in new challenges in dealing with the unexpected generation capacity of these plants. This research discusses the various flexibility options for power systems in dealing with this variable and uncertain generating capacity at different time intervals to achieve the desired balance between generating capacity and load needs.

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