

Transmission planning under uncertainty and short-term operational constraints
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Models usually tend to lie at two extremes of the spectrum – Planning or Operations. It is important to bridge the gap between long-term investments and short-term operations modeling effectively. Transmission planning studies for renewable integration usually apply heuristic methods to decide which transmission lines to build, but optimization has been proposed. In this study, we ask whether operational constraints such as plant ramp-rates, zonal reserve requirements, and start-up decisions would significantly affect investments chosen by a two-stage stochastic transmission optimal expansion model. The value of integrating these features (in terms of improved expected performance) is compared to the value of perfect information and the value of the stochastic solution. An algorithm inspired by previous works of Pereira and Conejo is proposed and tested.