

A comprehensive approach for computation and implementation of efficient electricity transmission network charges

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Abstract-

This paper presents a comprehensive design of electricity transmission charges that are meant to recover regulated network costs. In addition, these charges must be able to meet a set of inter-related objectives. Most importantly, they should encourage potential network users to internalize transmission costs in their location decisions, while interfering as least as possible with the short-term behaviour of the agents in the power system, since this should be left to regulatory instruments in the operation time range. The paper also addresses all those implementation issues that are essential for the sound design of a system of transmission network charges: stability and predictability of the charges; fair and efficient split between generation and demand charges; temporary measures to account for the low loading of most new lines; number and definition of the scenarios to be employed for the calculation and format of the final charges to be adopted: capacity, energy or per customer charges. The application of the proposed method is illustrated with a realistic numerical example that is based on a single scenario of the 2006 winter peak in the Spanish power system.

Index Terms- Transmission pricing; Cost allocation; Locational signals

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