

# International Benchmarking of Electricity Transmission by Regulators: Theory and Practice

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**Abstract** Benchmarking of electricity networks has a key role in sharing the benefits of efficiency improvements with consumers and ensuring regulated companies earn a fair return on their investments. This paper analyses the theory and practice of international benchmarking of electricity transmission by regulators. We examine the literature relevant to electricity transmission benchmarking and conduct a survey of 48 national electricity regulators. Consideration of the literature and our survey indicates that electricity transmission benchmarking is significantly more challenging than electricity distribution benchmarking. New panel data techniques aimed at dealing with unobserved heterogeneity and the validity of the comparator group look intellectually promising but are in their infancy for regulatory purposes. In electricity transmission choosing variables is particularly difficult, because of the large number of potential variables to choose from. Failure to apply benchmarking appropriately may negatively affect investors' willingness to invest in the future. While few of our surveyed regulators acknowledge that regulatory risk is currently an issue in transmission benchmarking, many more concede it might be. New regulatory approaches – such as those based on tendering, negotiated settlements, a wider range of outputs or longer term grid planning - are emerging and will necessarily involve a reduced role for benchmarking.

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