

# Incentive Regulation and Utility Benchmarking for Electricity Network Security

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Tooraj Jamasb and Rabindra Nepal

## Abstract

The incentive regulation of costs related to physical and cyber security in electricity networks is an important but relatively unexplored and ambiguous issue. These costs can be part of a cost efficiency benchmarking or alternatively dealt separately. This paper discusses the issues and proposes on the options for incorporating network security costs within incentive regulation in a benchmarking framework. The relevant concerns and limitations associated with network security costs accounting and classification, choice of cost drivers, data adequacy and quality and the relevant benchmarking methodologies are discussed. The discussion suggests that the present regulatory treatment of network security costs using benchmarking is rather limited to being an informative regulatory tool than being deterministic. We discuss how alternative approaches outside of the benchmarking framework such as the use of stochastic cost-benefit analysis and cost-effectiveness analysis of network security investments can complement the results obtained from benchmarking.

**Keywords** benchmarking, network security, incentive regulation, exceptional events

**JEL Classification** L94, L51, L98

Contact tooraj.jamasb@durham.ac.uk; r.nepal@uq.edu.au  
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