

Managing uncertainty in implementation times of competitively-procured transmission via risk-sharing and winner selection functions

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Abstract— We develop a MILP framework to optimally design risk-sharing/winner-selection mechanisms, applying a principal-agent approach to bidding processes to select transmission agents, with attention to cases when uncertainties in implementation times of transmission facilities are an issue and regulators must deal with uncertain information regarding efficiency and risk-aversion of possible bidders. Conclusions are drawn with aid of case studies.

Index Terms— Transmission implementation, risk-sharing, winner-selection, principal-agent approach, competitive bidding.

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