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An approach to calibrate incentives for continuity of supply in the Spanish electricity distribution system

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Abstract— This paper proposes an approach to calibrate incentives for continuity of supply in electricity distribution in Spain. This approach consists on the estimation of the impact of continuity of supply improvements on distribution network costs. For this purpose, distribution costs resulting from different continuity of supply requirements are computed by a Reference Network Model (RNM). The results obtained from the RNM are used to estimate a cost-function that considers continuity of supply a cost driver for distribution costs. This methodology is applied to three Spanish areas of service (an urban one, a semi-urban one and a rural one) in such a way that differences in distribution costs caused by the characteristics of the area type can be taken into account. The analysis indicated that distribution costs are more sensitive to continuity of supply improvements in rural areas of service. It also demonstrated that the incentive for reducing number of service interruptions should be higher than the incentive for reducing duration of service interruptions. Finally, the current Spanish incentive scheme for continuity of supply was analyzed under the perspective of the proposed approach.

Index Terms— Continuity of supply, incentive, electricity distribution

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