

# **Network tariff design with flexible customers: ex-post pricing and a local network capacity market for customer response coordination**

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## **Abstract-**

**This paper assesses the performance of differently implemented forward-looking network tariff designs in a future with many flexible customers. Theoretically, forward-looking approaches provide more cost-reflective signals than historical accounting approaches; they reveal to customers the trade-off between consuming more flexibly and long-term network expansion costs. We test forward-looking network tariff designs with higher locational differentiation, potentially leading to increased cost-reflectivity. However, we observe that if large shares of customers synchronize their responses to ex-ante-determined highly time-varying and locational-specific network charges, the peak-shifting effect materializes. Consequently, reinforcements occur earlier than envisioned. This scenario is plausible in an electrified and automatized future. Regulators should acknowledge this potential issue and consider to what extent respecting the predictability principle can offset economic efficiency in such a context. Ex-post&nbsp;**

**Index Terms- Distribution network charges; Forward-looking incremental charges; Locational granularity; Ex-post pricing; Customer response coordination; Local network capacity market**

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