Distributed generation and distribution pricing: why do we need new tariff design methodologies?

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Abstract— Due to the increasing amount of DG (distributed generation) in distribution grids, new challenges are arising in the distribution sector in many countries. Depending on the DG penetration, location, concentration, size and generation technology, the DG impact on network costs can be either negative or positive. These additional costs or benefits can be allocated to the DG owners through network tariffs. New cost allocation methodologies, based on a cost causation principle, are therefore required.

This paper addresses several issues arising within network tariff design due to the integration of DG. Furthermore, it reviews the methodologies proposed so far to tackle those issues. Recommendations for setting up a new, cost causation-based, methodology are finally drawn.

Index Terms— Distributed generation; Distribution tariffs; Cost allocation methodologies; Net Metering; Cost Causality Principle; Innovative Tariffs

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