A reference network model for large-scale distribution planning with automatic street map generation

C. Mateo Domingo; T. Gómez San Román; A. Sánchez Miralles; J.P. Peco González; A. Candela Martínez

Abstract-

A Reference Network Model (RNM) is a large-scale distribution planning tool that can help regulators to estimate efficient costs in the context of incentive regulation applied to distribution companies. This paper presents the main features of an RNM developed for planning distribution networks from scratch, greenfield planning, or incrementally from an existing grid. Two properties of the model are highlighted: the simultaneous planning of high-, medium-, and low-voltage networks by using simultaneity factors; and the layout of cables in urban areas, taking into consideration the street map, which is automatically generated by the model. A case study evaluates the impact of these features on the results.

Index Terms- Power distribution , power distribution planning , power system planning , regulators

Due to copyright restriction we cannot distribute this content on the web. However, clicking on the next link, authors will be able to distribute to you the full version of the paper:
[Request full paper to the authors]

If you institution has a electronic subscription to IEEE Transactions on Power Systems, you can download the paper from the journal website:
[Access to the Journal website]

Citation:
Mateo, C.; Gómez, T.; Sánchez, A.; Peco, J.; Candela, A. "A reference network model for large-scale distribution planning with automatic street map generation", IEEE Transactions on Power Systems, vol.26, no.1, pp.190-197, February, 2011.