

Optimal reconfiguration-based dynamic tariff for congestion management and line loss reduction in distribution networks - DTU Orbit (09/11/2017)

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This paper presents an optimal reconfiguration-based dynamic tariff (DT) method for congestion management and line loss reduction in distribution networks with high penetration of electric vehicles. In the proposed DT concept, feeder reconfiguration (FR) is employed through mixed integer programming when calculating the DT, leading to minimized energy cost and reduced DT as compared with the DT concept without FR. This paper further demonstrates that the line losses can be taken into account during the calculation of DT. As a result, the line loss reduction can be realized in a decentralized manner through the DT framework. Three case studies were conducted to validate the optimal reconfiguration-based DT method for congestion management and line loss reduction in distribution networks.

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