

IMPROVEMENT OF THE QUALITY OF SUPPLY OF THE ELECTRICITY NETWORK THROUGH DGFACTS FAVOURING THE PENETRATION OF DER

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ABSTRACT

Utility distribution systems have not been designed to accommodate a large amount of small-scale (uncontrolled) generation, and therefore, the overall network stability, quality and reliability might be jeopardized. In a heavily loaded electrical network with high penetration of Distributed Generation (DG) and Renewable Energy Sources (RES), case by case dedicated mitigation solutions (Custom Power) become increasingly prohibitive in terms of overall system costs and system efficiency.

DGFACTS systems apply the FACTS (Flexible AC Transmission Systems) concept to distribution networks by designing a set of modular systems for optimal voltage compensation, according to the characteristics and requirements of each distribution network. They can contribute to improving the Network Stability and Quality of Supply (QoS), and help obtain a high degree of Renewable Energy deployment.