

عنوان مقاله:

Technical and Economic Assessment of AC/DC Distribution System Configurations

محل انتشار:

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خلاصه مقاله:

Facing today's distribution networks with over increasing penetration of distributed generation sources which are mostly DC output and sensitive electronic loads which consume DC power, in one hand, and recent advances in the field of power electronics devices which have made these equipment cheaper and more accessible, motivate planners to move to more cohesive networks of DC and AC systems and combining the advantages of both networks to reach more efficient distribution systems. In this paper several configurations are proposed for AC/DC distribution systems. Each configuration is based on one of the two conventional AC systems, European or North American, on one hand and on the other hand use of AC or DC system in the primary or secondary side of the distribution system. Furthermore the DC system can be unipolar or bipolar structure which lead to various AC/DC distribution system configurations. In the next step, these configurations have been applied to supply a specified area and have been assessed technically and economically. Results show that depending on the degree of importance of factors such as .reliability, network losses or capital costs, different configuration may be suitable for different areas

کلمات کلیدی:

AC/DC, distribution system configurations, economic assessment, technical assessment

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