

عنوان مقاله:

Distribution of Electrical Power to Rural Areas- Australian Experience and Implementation Possibility in Developing Countries

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خلاصه مقاله:

The broad development needs of rural areas place numerous demands on the power utility systems. There are a number of different schemes to supply electrical power to rural areas, such as extension of the power grid (network), local diesel generation, renewable energies including photovoltaic, wind energy, and small hydropower plants. Each of these techniques may have different types, each with its specific advantages and disadvantages. For example, extending the power grid may be performed with different distribution system configurations with different levels of complexity, cost and reliability. In this paper, these various options will be discussed. Then, the paper will focus on the technologies used in Australia. Especially, a cost-effective distribution technique, called Single-Wire Earth-Return (SWER) system, will be explained. Its advantages and disadvantages will be discussed. Some issues with regard to the increase in load demands in rural areas related to the SWER systems will be raised, with possible solutions using the emerging technologies. The possibility of implementing this distribution system in some rural areas in Iran will be investigated.

کلمات کلیدی:

Electrification of Rural Areas, Single-Wire Earth-Return Distribution Systems, Renewable Energy

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