

Electric Power Distribution in the World: Today and Tomorrow

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Abstract In light of the increasing importance of distributed energy resources (DERs) in the electricity system, there is an ongoing need to understand the current status of electric power distribution across the world. This review paper compiles key information about the distribution systems in 175 countries worldwide. The findings for each country include the number, legal structure and ownership of distribution system operators, the access to electricity they provide, distribution level voltages, electric power frequency and the significance of renewable electricity generation. This study covers 99.4% of the world's population. As of June 2018, there are around 7600 distribution system operators in these 175 countries. After reviewing today's distribution system status, this paper also reviews the various discussions and proposals for tomorrow's electric power distribution. The discussion covers both system operation and market platform roles as well as data management options for DSOs in the near future.

Keywords distribution system operator; DSO; market platform; transmission system operator; TSO

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