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The Distributed Energy Resources (DER): The Direction and The Challenges for Electrical Grid System

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ABSTRACT

The Distributed Energy Resources (DER) is a new energy generation model to supply electricity nowadays. The DER offers a flexible energy generation system in the electrical grid system and offers a more efficient supply system to electricity users. With more DER in the electrical grid system, the dependency to conventional bulky power generation could be reduced and ease the loading capacity of transmission lines. In line with that benefit, it is anticipated that the potential of major blackout in the electrical grid system would be reduced. Though DER offers a lot of advantages to the electrical grid system, these flexible resources produce some challenges to electrical communities. This keynote would address the current direction related to DER and its challenges to the electrical grid system. A number of literature and research studies will be discussed to provide insight remarks for this new electricity model. The future of pursuing the research activities related to the DER area would be shared as it could offer a major breakthrough in the engineering area.

Keywords: Distributed Energy Resources (DER); Electrical Grid System; Loading Capacity; Transmission Line