

IoT Systems Based Microgrid: A Review

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Abstract: Smart microgrids, as the foundations of the future smart grid, combine distinct Internet of Things (IoT) designs and technologies for applications that are designed to create, regulate, monitor, and protect the microgrid (MG), particularly as the IoT develops and evolves on a daily basis. A smart MG is a small grid that may operate individually or in tandem with the electric grid, and it is ideal for institutional, commercial, and industrial consumers, as well as urban and rural societies. A MG can operate in two methods (stand-alone and grid-connected), with the ability to transition between modes due to local grid faults, planned maintenance, expansions, deficits and failures in the host system, and other factors. Energy storage is the process of storing and converting energy that can be used for a variety of purposes, including voltage and frequency management, power backup, and cost optimization. IoT is designed to deliver solutions for optimal energy management, security protocols, control methods, and applications in the MG, with numerous distributed energy resources (DER) and interconnected loads. The use of IoT architecture for MG operations and controls is discussed in this research. With the use of power grid equipment and IoT-enabled technology.

Keywords: smart microgrid; internet of things; cost of electricity; information and communication technology.