

## **MICROGRID COMPATIBILITY OF PHOTOVOLTAIC AND WIND POWER SYSTEMS**

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### **ABSTRACT**

Renewable energy sources, like wind and photovoltaic (PV) power plants can be used to provide grid-friendly services in the form of additional active and reactive control for frequency and voltage regulation respectively. Current wind and PV power systems are operated in simply an energy supply mode and are not required to participate in ancillary power services. These services will become critical when operating in an islanded microgrid. The maximum active and reactive power capability of the wind and photovoltaic power plants along with their limitations are formulated and discussed. A direct power control scheme is simulated with both types of resources in a test microgrid. Simulation results display the potential of wind energy when utilized either in parallel with or islanded from the main grid.