

Brilliant Battery Applications

Introduction

GE's battery applications are part of its Brilliant Turbine platform. The battery technology enables short-term energy storage as part of the complete turbine system. Integrating the battery into the wind turbine allows wind farm operators to benefit from energy storage without the high costs of farm-level battery storage installation.

This revolutionary configuration integrates battery technology with three software applications. The resulting system enables power producers and the wind turbines themselves to make data-informed decisions and provide short-term predictable power.

Technical Description

The battery software applications run on the existing control platform. The hardware connects to the existing converter, minimizing the changes required to accommodate the battery system.

Product Specifications

Battery sizing varies on the application and fleet size and can be adjusted to suit customer needs.

The system connects to the existing converters of 1.5 MW and 2.5 MW product lines. This system is available for new units and for retrofitting most existing GE turbines.

Applications and Benefits

GE engineers have configured three battery enabled software applications that integrate with the wind turbine to provide enhanced availability. Developers and operators may select the application or combination of applications that best suit individual site needs.

- **Ramp Control:** Today, when wind speed increases quickly, the grid cannot always absorb the extra wind power produced. GE's Ramp Control App allows the brilliant turbine to capture "wasted" wind power and store it in the battery, so operators can capture revenue previously left on the table.
- **Predictable Power:** Power producers must be able to provide consistent and predictable power to the grid, but the variability of wind can make smooth grid integration challenging. The Predictable Power App smooths out the short-term peaks and valleys in wind power and makes it predictable over periods of 15 to 60 minutes.
- **Frequency Regulation:** Power demand changes throughout the day and grid operators must keep up with its constant fluctuation. The Frequency Regulation App allows wind farms to store energy in the battery and respond immediately to load changes with ultimate precision.

