

VRB Technology in Japan

J-Power Proves VRB Ability to Smooth Wind Power on a Utility Scale

J-Power can look back on its history spanning over half a century as an electric power wholesaler with a proven track record of reliable, low-cost power supply.

J-Power has built and operated 67 power plants with a total output capacity of 16,985 megawatts and a transmission network of roughly 2,400 kilometers of power lines.

Strategies for Reducing Carbon Emissions—VRB-Wind Project in Japan



J-Power strives to enhance its value to shareholders by ensuring its operations reinforce competitiveness *and* promote sustainable environmental practices.

Why VRB Technology?

J-Power operated the first large-scale wind farm project integrating energy storage on Hokkaido Island. (Another 7 installations have also used VRB technology in Japan, ranging from 100kW-2MW for peak-shaving, wind turbine stabilization, PV hybrid, and UPS applications).

The VRB system deployed on Hokkaido had a dramatic effect on total wind farm output, providing an exact match of power supply and demand

under all weather conditions. The system was sized at 4MW with a 6MW pulse and 1.5 hours of energy storage. Operating for three years with 32MW of Vestas wind turbine capacity, the VRB system was cycled over 270,000 times!

The VRB system was especially effective in its ability to manage the state of charge based on highly accurate, real-time capacity measurements. This unique feature ensured optimal performance of the entire wind farm, yielding increased profits for the operator.

For more information, contact Prudent Energy at www.pdenery.com.

Prudent Energy



Industry:
Power Utilities

Established:
1952

Headquarters:
Tokyo, Japan

Website:
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Energy Storage System:
4 MW, 1.5 hours for wind farm output smoothing

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Results from VRB Technology Smoothing Wind Output

Exact Power Supply-Demand Match at J-Power Installations:

- At only 20% of nameplate capacity, VRB technology had a dramatic effect on total wind farm + battery output.
- The energy storage system intelligently recharged to maintain a 50% State of Charge (SOC) – validating its uniqueness as a battery system with SOC measured under load at all times, ensuring utmost safety of operation through no overcharging.