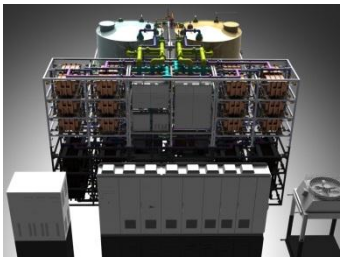
Prudent Energy
VRB® Systems





CEPRI Project – Fact Sheet

Name of Project	**Renewable Energy Smoothing and Integration Using Prudent Energy's VRB-ESS® at China's Power Research and Testing Center at Zhangbei, Hebei Province**
Type of Energy Storage	**500 kW, 1 MWh VRB® Energy Storage System**
VRB® System Owner	**China Electric Power Research Institute (CEPRI), in association with the State Grid Corporation of China (SGCC). CEPRI conducts research and development in the areas of power generation, transmission, and energy storage.**
Type of Sale	**Direct sale. Scope: Equipment, installation, and commissioning.**
Lead Project Developer	**CEPRI**
Customer/Host	**CEPRI**
Main Technology Providers	**Prudent Energy, General Electric**
Lead EPC Contractor	**China CEPRI Sci & Tech Co., Ltd.**
Suppliers/Integrators	**China CEPRI Sci & Tech Co., Ltd.**
Onsite Power Generation	**Wind turbines and grid-based power supplies**
Project Funding	**100% funded by SGCC**
Commissioning Date	**December 25, 2011**
Market Opportunity	**Prudent Energy's project with CEPRI is a major step forward for the effective integration of wind power and energy storage in China. The Center uses 30 wind turbines with at least 78 MW of generating capacity, and 640 kW of solar photovoltaic (PV) capacity, to test and deploy the most promising advanced energy storage and related technologies. Prudent's patented VRB-ESS® is recognized as an ideal solution for wind power management and integration, due to the VRB® system's automated ability to match power output precisely with demand, within milliseconds, in very large quantities, for almost countless times each day.**

Energy Management Objectives	**Prudent's 500 kW (750 kW pulse), 1 MWh VRB-ESS® at CEPRI helps the State Grid Corporation of China meet its energy management objectives to balance load – so that more of the country's electricity production is utilized cleanly and efficiently. The VRB-ESS® installation is also proving its superior ability to "bridge" power to avoid breaks in electricity service, and to regulate voltage and frequency, all of which are increasingly important demands of China's high-tech manufacturers and companies with sensitive electronic equipment and around-the-clock operations.**
Design and Installation Approach	**Prudent Energy was responsible for the design, engineering and commissioning of the VRB® energy storage system, which was successfully commissioned on December 25, 2011. By pre-assembling cell stack modules and testing them prior to delivery, Prudent was able to shorten on-site installation and commissioning time, while cutting costs and eliminating project risks.**
Results/Outcomes	**This first-of-its-kind flow battery project demonstrates how advanced energy storage technologies are helping to integrate renewable energy into China's power networks while ensuring grid stability. Rapid and deep cycling energy storage technologies in particular have many advantages to qualify as an essential component of the modern electricity grid. Prudent's VRB® technology provides unparalleled performance by virtue of:** - **Unlimited daily cycling – 100% Depth of Discharge** - **Instantaneous response to dispatch signals** - **Variable operating states of charge for wind power** - **Accurate, real-time capacity measurement** - **Low operation and maintenance costs**

For more information, see www.pdenergy.com