Vanadium battery?
Test results and use in combination with wind power

Bindner, Henrik W.; Krog Ekman, Claus; Gehrke, Oliver; Cronin, Tom

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The intermittency of power production from wind turbines is an inherent challenge for the integration of the technology. Vanadium batteries offer a solution to this as they facilitate higher levels of wind power penetration in energy systems.

A 15kW/120kWh vanadium battery has been installed at Risø DTU as part of the SYSLAB facility. The battery has been tested and characterized and it has been operated in parallel with an 11kW wind turbine in order to smooth out the wind power production.

The paper will present the results of the tests and the parallel operation with the wind turbine.

A 15kW/120kWh vanadium redox battery has been installed at Risø DTU as part of the SYSLAB facility. The battery has been operated almost continuously since early 2008 without any faults. Various tests have been executed in order to understand and characterize the unit and its parts (cell stacks, storage, power converter, etc.). The results of the tests give the opportunity to understand the performance of the technology and to make realistic modelling of vanadium battery integration in power systems. The battery has also been operated in parallel with an 11kW wind turbine in order to smooth out the power output.

The paper will present results from the tests, performance characteristics of the battery, and results on the parallel operation of wind turbine and battery.