Parity Wind Power Energy Storage Project

What is co-locating energy storage with a wind power plant?
Co-locating energy storage with a wind power plant allows the uncertain,time-varying electric power output from wind turbines to be smoothed out,enabling reliable,dispatchable energy for local loads to the local microgrid or the larger grid.

How can a hybridization of distributed wind assets overcome technical barriers?
Many of these technical barriers can be overcome by the hybridization of distributed wind assets,particularly with storage technologies. Electricity storage can shift wind energy from periods of low demand to peak times,to smooth fluctuations in output,and to provide resilience services during periods of low resource adequacy.

Are distributed wind assets a good investment?
Distributed wind assets are often installed to offset retail power costs or secure long term power cost certainty, support grid operations and local loads, and electrify remote locations not connected to a centralized grid. However, there are technical barriers to fully realizing these benefits with wind alone.

Can wind-storage hybrid systems provide primary energy?
Thus, the goal of this report is to promote understanding of the technologies involved in wind-storage hybrid systems and to determine the optimal strategies for integrating these technologies into a distributed system that provides primary energy as well as grid support services.

What is integrated storage in a wind turbine?
This type of storage is known as an integrated storage in the DC linkof the wind turbine. A recent master's degree thesis at the Norwegian University of Science and Technology evaluated he modular multilevel converter for medium-voltage integration of a battery in the DC link (Rekdal 2018).

How can a wind-storage hybrid system be optimized?
Optimizing operation is governed by technical and economic requirements and can include multiple time scales or multiperiod formulation of the operation and dispatchof a wind-storage hybrid system. A margin for error must be included for a real-world system to ensure that its technical and economic goals are met.

Grid parity refers to the point at which alternative energy sources, such as wind and solar power, are able to generate electricity at a cost that is equal to or less than the price of purchasing ...

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