

# Cost of wind power storage equipment







#### **Overview**

Can wind energy be used as a storage technology?

In the study, the Stanford team considered a variety of storage technologies for the grid, including batteries and geologic systems, such as pumped hydroelectric storage. For the wind industry, the findings were very favorable. "Wind technologies generate far more energy than they consume," Dale said.

Can energy storage improve solar and wind power?

With the falling costs of solar PV and wind power technologies, the focus is increasingly moving to the next stage of the energy transition and an energy systems approach, where energy storage can help integrate higher shares of solar and wind power.

How much does a residential wind power system cost?

Residential wind power installations are somewhat expensive. However, current federal, state and local energy incentives can significantly reduce those costs by 50-60%. A typical residential system costs from \$3,000 to \$6,000 for every kilowatt of generating capacity.

Can the wind industry afford a lot of storage?

Writing in the March 19 online edition of the journal Energy & Environmental Science, Dale and his Stanford colleagues found that, from an energetic perspective, the wind industry can easily afford lots of storage, enough to provide more than three days of uninterrupted power.

How much does a commercial wind turbine cost?

How much do commercial wind turbines cost?

A utility-scale wind turbine costs between \$1.3 million to \$2.2 million per MW of installed nameplate capacity. Most commercial-scale turbines installed nowadays are 2 MW in capacity and cost between \$3 and \$4 million to install.



How much does it cost to maintain a wind turbine?

Keeping utility-scale wind turbines operating at peak efficiency requires extensive preventative maintenance, inspections, and unplanned service, costing on average \$42,000 to \$48,000 ( $\approx 1.5$  years of career dedication at a \$15/hour wage) per megawatt in annual operating expenses.



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