South ossetia utility-scale energy storage

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With the declining cost of energy storage technology, solar batteries are an increasingly popular addition to solar installations. It"s not just residential and commercial solar shoppers that benefit from installing energy storage. Utility-scale battery storage is also playing a significant role in the operation of the electric grid, providing cost savings, environmental benefits, and new flexibility.

Utility-scale storage, or large-scale or grid-scale storage, has historically been provided by resources such as pumped hydro. In a pumped hydro system, a facility will pump water uphill into a reservoir at times when the cost of electricity is inexpensive (in the middle of the night, for instance) and then run that water back downhill through a turbine when electricity costs are higher, and the grid needs extra energy. With declining battery energy storage costs and the increased introduction of renewable energy, batteries are beginning to play a different role at the grid-scale.

Utilities and grid operators often say that utility-scale battery storage is "a new tool in the toolbox," referring to the many ways battery storage can support the grid.

Storage can act like a load (charging from the grid when electricity prices and demand are both low) or like a generator (pushing electricity back onto the grid when demand and prices are both high). Moreover, when power plants take minutes or even hours to turn on, battery storage can inject electricity onto the grid in milliseconds. This level of flexibility from a resource is unprecedented, and the possibilities for harnessing this capability are endless.

Utility-scale battery storage is beneficial when paired with renewable resources like solar or wind farms. While these renewables are fantastic resources for producing affordable clean energy, they can be unpredictable when weather patterns change. Utility-scale battery storage allows resource developers to smooth out the output from these resources, ensuring that renewable energy is injected into the grid when needed.

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There are a few primary players in the battery energy storage industry at the utility-scale level. Perhaps the best-known provider is Tesla, whose 100 MW battery in South Australia made waves a few years ago. Beyond this deployment, Tesla has also contributed to the Aliso Canyon storage projects to help alleviate the need for the leaky natural gas facility. The company markets the Powerpack, its original utility-scale storage solution, and the Megapack, a new product designed for even larger-scale applications.

Another major player in the utility-scale battery storage space is AES Energy Storage. Like Tesla, AES also developed a storage project in a couple of months in response to the Aliso Canyon gas facility crisis. Recently, AES announced the groundbreaking of a new 400 MWh battery storage facility in Southern California Edison"s service territory, which will be among the most extensive battery storage facilities ever brought online.

A Boston-based company, Enel X (formerly EnerNOC), is a leading global player in the energy storage space. The company has developed storage projects for clients and grid operators throughout North America and recently announced a new storage project in Peru.