Washington d c gravity energy storage

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NREL"s technology can provide the nation"s lowest cost, most flexible, and most greenhouse gas-abating energy storage.

Energy Vault secured $100 million in Series C funding for its EVx tower, which stores gravitational potential energy for grid dispatch.

The EVx energy storage tower lifts composite blocks with electric motors.

Energy Vault, maker of the EVx gravitational energy storage tower, has secured $100 million in series C funding. The investment was led by Prime Movers Lab, with additional participation from SoftBank, Saudi Aramco, Helena, and Idealab X.

The company said capital raised will support plans to ramp up deployments of the EVx platform for customers in the U.S., Middle East, Europe, and Australia. The first U.S. deployments are slated to begin fourth quarter 2021, with a broader global ramp-up throughout 2022, said Energy Vault.

The EVx platform is a six-arm crane tower designed to be charged by grid-scale renewable energy. It lifts large bricks using electric motors, thereby creating gravitational energy. When power needs to be discharged back to the grid, the bricks are lowered, harvesting the potential gravitational energy.

There is zero degradation in the storage capacity of the raised composite blocks, which can remain in the raised position for unlimited periods of time, said Energy Vault.

Energy Vault said the composite blocks are made of local soils, as well as materials otherwise destined for landfills or incinerators, including recycled coal ash, waste tailings from mining operations, and wind turbine blades.

The company said the EVx tower features 80-85% round-trip efficiency and over 35 years of technical life. It has a scalable modular design up to multiple gigawatt-hours in storage capacity.

The company said its technology can economically serve both higher power/shorter duration applications with ancillary services from 2 to 4 hours and can also scale to serve longer-duration requirements from 5 to 24 hours or more.

With global lithium supply considered a constraint, and, according to the Biden administration, a national security issue, alternative measures are being taken to find ways to store solar and wind energy.

For example, Form Energy of Somerville, Massachusetts, has secured $240 million in series D funding for its iron-air batteries, which use iron pellets. The pellets are exposed to oxygen to create rust. The oxygen then is removed, reverting the rust to iron. Controlling this process allows the batteries to be charged and discharged. (Read: "Multi-day iron-air batteries reach commercialization… at one tenth the cost of lithium")

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