



Flywheel energy storage canada

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Minto Project Team Developer/Owner: NRStor Technology manufacturer/EPCM: Temporal Power Project management: HH Angus (Angus Power) Quality assurance: S& C Electric Co. System operator/Offtake: IESO Utility: Westario Power

Hello, Earthlings! This is our weekly newsletter on all things environmental, where we highlight trends and solutions that are moving us to a more sustainable world. (Sign up here to get it in your inbox every Thursday.)

Last week, we looked at some of the hydro- and gravity-based energy storage technologies being explored, along with batteries, in order to integrate wind and solar power more effectively into the grid. That's because clean energy isn't necessarily generated at the times when people use the most power, and often needs to be saved for later.

Here are some other energy storage technologies that have been tested in Canada in recent years or are being tested and used right now.

Compressed air energy storage

This is similar to pumped hydro, except that it involves using surplus power to compress and pump air instead of water into a space such as a cave or mine shaft. The air is later released to drive a turbine.

The first commercial installation of this kind was built in salt caves in Germany in 1978, and it's still operating.

In Canada, Toronto-based Hydrostor built two demonstration plants:

A plant in a former salt mine in Goderich, Ont., billed as the world's first emission-free compressed air facility. It can feed 10 megawatts of power into the grid for up to five hours.

A smaller demonstration that stored the air in balloons 55 metres below the surface of Lake Ontario.

Flywheels (or rotors) spin at very high rates (up to 50,000 revolutions per minute), typically in a vacuum so air friction doesn't slow them down. Power is stored as kinetic energy by using a motor to accelerate the flywheels, and energy can be discharged by reversing the process so the flywheel drives a motor or some other electrical generation device.



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