

# Canadian rechargeable energy storage battery



## Overview

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BESS is the fastest growing energy storage technology in Canada and is also the dominant storage technology in terms of capacity and number of sites. All but four projects proposed to be commissioned by 2030 are battery storage, with two CAES and two PHS projects also proposed. What is the largest battery energy storage facility in Canada?

July 25, 2025 – With 278 lithium-ion battery units—each weighing more than 84,000 lb—now drawing and storing power from Ontario’s electricity grid, the Oneida Energy Storage Project has officially entered commercial operation, becoming the largest battery energy storage facility in operation in Canada, and among the largest globally.

What is a battery energy storage system?

Battery Energy Storage Systems (BESS) are tools that store electrical energy. Within Canada, all energy storage projects currently under construction are BESS. Proposed and under-construction projects have a power range between 1 MW and 411 MW, with an average storage capacity range of 0.5 hours to 6 hours.

Are ESS batteries the future of energy storage?

“It’s like a trend that will come soon, but it does not come as soon as we expect it, so while we are waiting, we have this opportunity from the (energy storage system) ESS market.” ESS batteries are essentially large, rechargeable batteries that store energy during off-peak hours and release it at times of need.

What are the different types of batteries used for energy storage?

There are different types of batteries used for large-scale energy storage, such as lithium-ion, lead acid, redox-flow, and molten salt.<sup>11</sup> Among these, lithium-ion batteries are the most commonly installed for new projects.<sup>12</sup> Challenges with batteries may vary with the type, such as cost or charging and discharging capacities.

## Why do we need energy storage system batteries?

That's made "everyone thirsty for electricity," Lee said. In turn, greater electricity demand is driving demand for energy storage system batteries (ESS), which make electrical grids more efficient and help operators manage demand and electricity load.

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