

How battery energy storage could help businesses cut power costs

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Ontario has been bleeding manufacturing jobs since the 2008 recession, and high-priced electricity is a root cause: That's the finding of a recent report from The Fraser Institute, a non-partisan Canadian research organization. According to this organization, Ontario's manufacturing output fell by 18 percent and manufacturing employment fell by 28 percent between 2005 and 2015.

What drove businesses out of the province? "Ontario now has the highest electricity costs among all Canadian provinces and some of the highest costs in North America," noted a 2017 research write-up. "In 2016, large industrial consumers (with a power demand of five megawatts and monthly consumption of 3,060 megawatt hours) in Toronto and Ottawa paid almost three times more than consumers in Montreal and Calgary and almost twice as much as consumers in Vancouver."

Relief in storage

One of the biggest drivers of high electricity rates for Class A customers is global adjustment, a billing component often computed based on how much the customer's peak demand contributes to provincial peak demand. Consequently, lowering peak electricity use delivers significant savings on electric bills for Class A customers.

Battery energy storage systems (BESS) help these Class A organizations lower peak demand because they can charge the battery in off-peak hours and discharge when peak occurs. By using the BESS in this way, analysts at [Aegent Energy Advisors](#) estimate that a Class A customer could slash global adjustment as much as \$500,000 annually per avoided megawatt.

While those savings are impressive, they must be balanced against the cost of installing a BESS itself. Right now, there is an absence of standards governing the requirements associated with hooking battery energy storage systems up to the grid. That means power providers can require customers to implement costly grid-protection technology even when it's not needed.

On a power trip

Called "transfer trip," the technology in question is a system that sends a "shut off" or trip

command from a substation to a remote circuit breaker when utility power lines must be de-energized for maintenance or repairs. Utilities use these systems when they have a lot of distributed energy resources – like large, customer-owned storage installations – that could put power back onto lines that must be de-energized for worker safety.

Here's the problem: Battery systems used for mitigating global adjustment never feed back onto the grid. They're designed to serve their owners' loads only. This makes transfer trip technology unnecessary.

It's also time-consuming and expensive. When organizations must support transfer trip technology before they can hook a BESS onto the grid, it can add between 10 and 30 percent to the cost of a BESS installation. In addition, it extends implementation time by as much as six months. And as noted earlier, this technology generally isn't necessary at all.

Spark Power has created a detailed brief explaining why utilities may want to add transfer trip requirements for BESS, as well as why regulators should stabilize the rules by imposing some common-sense standards. For more information, please contact marketing@sparkpower.ca.
