

# Battery energy storage latest farmland use debate

## Farm groups push for more oversight of the use of farmland for battery backup systems

Farmers and residents in municipalities across Ontario are raising concerns about farmland Battery Energy Storage Systems (BESS) proposals.

BESS are rechargeable batteries with multi-source energy storage capacity, allowing off-peak hour storage dispatchable onto the grid to meet electricity demand.

**Why it matters:** Farmers are concerned with the [loss of land](#) due to industrial and residential development and battery storage facilities are another new area of development to take up land.

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"Electricity demand is growing everywhere, so (we're looking) at all different areas of the province," said Andrew Dow. "In some cases, it's building new transmission lines to get the power to where it needs to go. In other cases, it's building generation or storage."

Dow, Independent Electricity System Operator (IESO) spokesperson, said they initiated the competitive BESS procurement process; however, it's the municipality's final decision and requires meeting environmental and land use approvals and local permit processes.

IESO prequalified the Alectra-Convergent joint venture to build BESS

facilities in Vaughan, Guelph, Greenock and Belwood.

Ontario's electricity use is down 15 per cent due to conservation programs and, until recently, demand was relatively flat, he explained; now, industrial electrification and [electric vehicles](#) are driving demand at a projected two per cent a year for the next 25 years.

Ethan Wallace, Ontario Federation of Agriculture (OFA) executive member representing Huron and Perth, said increasing energy access and cost savings for Ontarians through BESS is positive.

It doesn't negate the need for responsible placement and standardized North American rules and regulations.

"At OFA, none of us are naive enough to believe we'll never build on another acre of farmland, whether it be battery storage, ag plants or homes," said Wallace.

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"We need to do it efficiently, so we lose the minimal amount of farmland, and at the end of the day, everybody benefits — both farmers and the rest of the province."

Prime farmland is the best production land for producing food, fuel, fibre and flowers in any given area, and not limited to classes one through four.

A recent OFA policy letter advocates that BESS proposals be subject to a stringent environmental approval process, contractual obligations for environmental restoration in the event of a battery failure or decommissioning, an increased distance separating facilities from homes and livestock operations, and for the province to focus energy infrastructure on commercial and industrial land.

Representatives from Distributed Energy Solutions (Alectra) and SVP Development (Convergent) addressed concerns around proposed farmland BESS locations at the Greenock Community engagement and Belwood public meetings in November 2023 and February 2024.

According to meeting minutes, the Alectra-Convergent partnership approached Hydro One to host one of the two 19-acre sites on Hydro One's land, but the energy giant declined.

"We lobbied very hard to push the IESO to incentivize development of these assets closer into the cities," the minutes recorded. "The IESO explicitly refused to do so because the areas close to the cities don't have the capacity for the projects that we need."

Dow explained Hydro One and IESO provided locations with available capacity to ensure BESS won't overload the grid.

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"We need projects to be located, generally, where there's available space on the transmission line to pump that power out and get it to where it needs to go," Dow explained.

"From the IESOs' point of view, because we manage the provincial electricity system, it's more 'bigger picture,' like this city is a no go, or this region of the province is a no go."

Dow said nine of the 15 IESO-qualified projects stretching from southern to eastern Ontario have a 50 per cent or better participation by Indigenous people.

The Alectra-Convergent representatives said restrictions kept their proposals south of Barrie along the North to Southern transmission corridor

because of potential northern wind projects.

Windsor, Sarnia and most of the GTA were off-limits, with limited access to Ottawa due to significant load growth.

## Safety concerns

Wallace said rural BESS sites could tie up rural emergency services and fire service assets, leaving surrounding communities vulnerable and creating an additional financial burden to fund additional emergency training and equipment even if facility emergency alert systems, internal fire suppression, or mitigation were required.

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"We have a very robust provincial mutual aid system, whether firefighters are tied up at a battery storage system, barn fire, large-scale wildland fire, or anything else," said Deputy Fire Chief Rob Grimwood, president of the Ontario Association of Fire Chiefs (O AFC).

He added that every region, county, and district has a mutual-aid coordinator ensuring balanced protection to cover fire stations out on an extended call.

The O AFC developed a Solar Electricity and Battery Storage Systems Safety Handbook for Firefighters designed to educate and protect firefighters in BESS and solar photovoltaic installation situations.

The priority of any fire involving an electrical component is to isolate electricity flow and utilities to the facility and protect nearby exposure to prevent spread, he said; otherwise, it's a "let burn" protocol.

Municipalities with BESS-approved sites should speak with manufacturers to

learn the system's nuances because "These types of fires don't react obviously very well to water," he explained. "Foam has been found not to be very effective and even dry chemical in large quantities is not effective."

The small lithium-ion batteries used in e-bikes, e-mobility devices, cell phones and laptops start more fires day-to-day, he said, not the large storage systems.

Grimwood suspects the same respiratory protection protocols used to address electric vehicles and e-mobility devices in thermal runaway, which produce a highly toxic off-gas, would apply to BESS facilities.

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While rural water supply and site access are concerns, they aren't specific to BESS sites. He said municipalities could mandate property owners to ensure proper site access, paved roads, and water availability during the approval and development phases.

Grimwood suggested that municipalities with BESSs could utilize fire service budget development charges to reroute increased training and equipment costs.

"We always push for more regulation. We push municipalities to make sure that they are requiring the highest standard of safety," shared Grimwood. "That said, I wouldn't say I'm specifically concerned."

OFA's meetings with provincial agriculture, energy, and environment ministries will continue in hopes they adopt the suggested BESS regulation requests.

"At the end of the day, you hope for it all to be addressed, but we're not there yet," shared Wallace.



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