

Project Case Study



Summerland Energy Center: British Columbia's First Grid-Scale Solar-Storage Project

How the fully integrated EVLO 1000 BESS is saving
Summerland hundreds of thousands in annual peak
demand costs

Project: Summerland Energy Center

Client: District of Summerland

Location: Summerland, BC

BESS model: EVLO 1000

Battery capacity: 1 MW / 4 MWh

PV size: 0.412 MW

EPC: Wildstone Construction Group

PV developer: Skyfire Energy



1.01
GWh

Annual Energy
Stored

984
MWh

Annual Energy
Discharged

97.4%

Annual round-
trip efficiency
(RTE)

98%

Annual uptime
during the first
year of operation*

\$260_k

Annual demand
and operational
savings



The Customer

The District of Summerland is one of only five municipalities in British Columbia that owns and operates its own electric utility. Initially established in the early 1900s as Summerland Light and Power, it was among the first communities in the Okanagan to generate its own electricity, using a Pelton hydro turbine on Okanagan Lake to power streetlights. Since that plant was decommissioned, Summerland has not had an energy source of its own—until now.

The Challenge

The District of Summerland faced significant peak demand charges, reaching up to \$200,000 per month (\$15,000 per MW). The utility incurred two types of demand fees: one based on the highest 15-minute demand recorded in the past 11 months and another for the peak demand within each billing cycle.

To address these escalating costs, Summerland set out to:

- Mitigate volatile power costs and reduce reliance on external sources
- Optimize costs and improve utility gross margins
- Generate local power to support energy independence

With electrification on the rise—driven by electric vehicles, heat pumps, and energy demands—Summerland sought a proactive solution to curb demand charges and create long-term savings for the community.

*Site availability excludes planned maintenance and downtime caused by unrelated client-side maintenance.

The Solution

After eight years of planning, the District of Summerland developed a solar-plus-storage money-saving project to lower peak demand charges, reduce energy use, and return the community to its energy-generating roots for added resilience. With \$6 million in federal grant funding, the municipality repurposed an unused works yard into the Summerland Energy Center, featuring a 412 kW solar array and a 1 MW / 4 MWh battery energy storage system (BESS).



The thinking was: if we could generate a little bit of our own electricity, we could help stabilize the grid and get some costs under control

Doug Holmes, Mayor of Summerland



The BESS is designed to charge from solar power during the day and the grid at night, strategically discharging during peak periods—particularly winter evenings—to help stabilize the grid and reduce costly demand charges. By smoothing out short-term demand spikes and lowering peak loads, the system provides significant cost savings for the utility and minimizes rate pressure on residents.





EVLO, a subsidiary of Hydro-Québec (North America's largest renewable energy producer), was selected as the BESS provider for the Summerland Energy Center, building on their existing relationship with Wildstone Construction Group, which was awarded the EPC and Civil/Mechanical contract in 2022 alongside SkyFire Energy for the PV portion. After Wildstone had a poor experience with another integrator on a previous project, their head of business development, Matt Simard, reached out to EVLO's VP of Sales, Martin Rheault, to collaborate on the project.



Our customer appreciated our technical expertise, our high-quality product, and the level of safety developed by our team. We, therefore, had a very competitive proposal for this project in terms of product, expertise, and price.

Bruno Soulières, former Director of Sales & Offers at EVLO



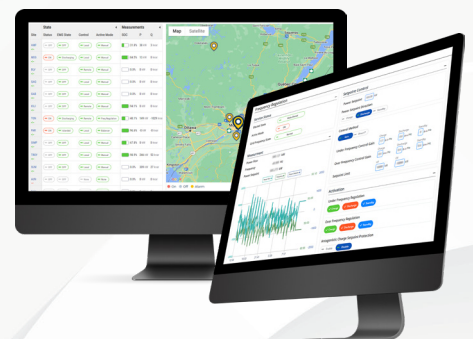
To meet these goals, Summerland selected four EVLO 1000 BESS units for their safety, reliability, and seamless integration with the existing energy infrastructure. The fully containerized system, made almost entirely in North America, enables scheduled peak shaving based on historical demand data, effectively reducing peak loads and lowering demand charges by approximately 5% annually. The system can also operate in island mode, ensuring power availability to critical facilities, such as the local arena, in the event of a grid failure.



Key features of the EVLO 1000 BESS:

- **Comprehensive safety:** State-of-the-art battery modules exceed the most stringent fire safety requirements, with a patent-pending emergency venting system, active and passive ventilation, dry pipe sprinklers, and a fast-acting H₂ gas detector.
- **Robust cybersecurity:** Multi-layered infrastructure safeguards the BESS against cyber threats, including automated vulnerability scans, secure VPNs, log analysis, and intrusion detection systems.
- **High-precision temperature monitoring:** Over 200 sensors monitor temperature in real-time with advanced thermal and SOC management systems.
- **Extended battery life:** Designed for long life—up to 7,000 cycles or a 20-year life span—without the need to replace the battery module.
- **Durable design:** Withstands harsh environmental conditions with an operating range of -40°C° to 55°C (-40°F to 131 °F).

The energy storage system is managed by EVLOGIX, EVLO's powerful energy management software (EMS), which optimizes battery performance, extends lifespan and ensures secure remote monitoring. With built-in cybersecurity protections, fire suppression systems, and advanced thermal management, the BESS enhances grid reliability while supporting Summerland's cost-reduction goals and long-term energy independence with a resilient and secure grid-scale energy storage system.



Implementation

EVLO worked closely with the EPC Wildstone to oversee the deployment of the Summerland Energy Center's BESS, ensuring smooth execution despite unforeseen challenges, including forest fire delays. To prioritize crew safety, the cold commissioning phase was postponed by about one month. However, since the EVLO 1000 was pretested and fully integrated, the project remained on schedule.

The cold commissioning process was completed in just one week—half the initially estimated time. Hot commissioning began on-site but was successfully completed remotely, marking a first for EVLO and demonstrating the company's ability to support cost-effective project execution in remote locations.

To ensure a seamless installation, EVLO provided hands-on training for Wildstone's team at the beginning of the installation, enabling high-quality execution throughout the project. Additionally, EVLO worked directly with the District of Summerland for a week of joint maintenance activities, ensuring the local utility team was well-equipped to operate and manage the system moving forward.

EVLO's rigorous pretesting at their world-class testing facility and integration processes helped streamline commissioning, mitigate risks, and enhance efficiency, keeping the project on track while reinforcing safety and performance standards.





Results and impact

The Summerland Energy Center has been a resounding success, with EVLO exceeding expectations by continuing to support system management and monitoring beyond the contractual scope. Jeremy Storvold, Director of Utilities at Summerland, praised EVLO's commitment, stating,



EVLO went above and beyond, adjusting peak shaving strategies to optimize performance even after the project was substantially completed.



The project was completed on time and within budget, thanks to strong collaboration between Wildstone and EVLO. The grand opening on November 14, 2023, marked a milestone as British Columbia's first solar-plus-storage project. Vincent David, EVLO's VP of Deployment and Operations, highlighted the efficient project execution, noting,



The collaboration was awesome. We were able to put it in service and commission everything on time, and we were even able to complete the commissioning remotely from Montreal



Reliability was a key factor, as uptime is critical for peak shaving. In its first full year of operation (February 2024 to February 2025), the four EVLO 1000 units achieved a 98% uptime—a strong result, especially considering that initial operation periods typically require maintenance and system adjustments. “We were happy with the amount of downtime we had last year. It was better than expected,” said Storvold.

Financially, the project has already delivered significant savings. By reducing overall power purchases and strategically managing peak demand, Summerland expects to save approximately \$260,000 annually (\$200,000 net of operational costs). In the first year alone during the period of April 1, 2024 to March 31, 2025, the battery system completed 281 cycles, storing 1.01 GWh of energy and discharging 984 MWh. Additional savings are anticipated through deferred infrastructure investments and improved grid reliability.



Next steps

The Summerland Energy Center is just one piece of a broader initiative to enhance sustainability and energy resilience in the community. A planned adjacent “eco-village” will feature highly efficient homes designed to minimize water and energy use, co-located with the solar and battery storage system to promote sustainable living.

“This kind of area will be full of clean tech, and it’s a way of forward-thinking kind of approach to community development,” said Mayor Holmes.

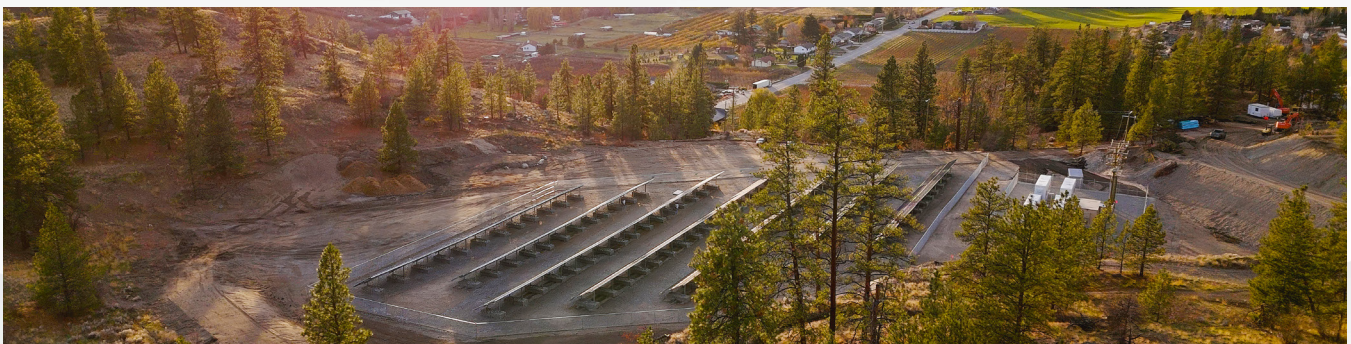
In the future, the District of Summerland plans to explore opportunities to expand local renewable energy generation and battery storage, depending on economic feasibility and available government funding, to further strengthen the community’s energy resilience and maximize cost savings.

Conclusion

The District of Summerland’s successful deployment of the EVLO 1000 BESS highlights how small utilities can leverage battery storage to enhance energy resilience and reduce costs. By integrating battery storage with solar power, Summerland has lowered peak demand charges, improved grid stability, and taken a step toward greater energy independence.

At EVLO, we go beyond being a BESS provider or integrator—we’re a true partner, working alongside utilities and communities to offer a seamless end-to-end experience from conception to operation.

We continue to push the boundaries of battery storage technology with leading-edge fire safety protection solutions, such as the 2.5 MWh EVLOFLEX and latest 5 MWh liquid-cooled EVLO SYNERGY, prioritizing safety, efficiency, and seamless integration to ensure long-term and reliable performance for every project.



Cut demand charges with EVLO's fully-integrated BESS

EVLO designs and delivers safe, intelligent BESS systems that help utilities, IPPs, and microgrids reduce peak demand costs, optimize energy use, and enhance grid resilience. With industry-leading fire safety, advanced EMS software, and rigorous testing at a world-class facility, our fully-adapted grid-scale BESS solutions set a new standard for performance and reliability.

Stop overpaying for peak demand. Discover how EVLO's intelligent BESS solutions can help you take control of demand costs and build a resilient future.

Contact us today: evloenergy.com/contact



About EVLO

EVLO Energy Storage Inc. (EVLO) is a fully integrated battery energy storage systems and solutions provider and subsidiary of Hydro-Québec, North America's largest producer of renewable energy. EVLO's utility-scale battery energy storage systems and controls software deliver superior safety and reliability backed by decades of R&D. Our advanced modeling and testing and comprehensive approach to BESS integration streamline project development to accelerate the transition to a cleaner, more reliable grid.

To learn more: evloenergy.com

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