

Meeting Minutes: Public Meeting for the Proposed Trail Road BESS Project

Evolugen hosted a Public Meeting to introduce the proposed Trail Road BESS Project at the Manotick Community Centre (5572 Dr Leach Dr, Manotick, ON K4M 1L7) in the Main Hall on Tuesday, November 28, 2023, from 6:30 – 8:30 p.m.

Background & Meeting Purpose

After more than a decade of strong supply, Ontario is entering a period of emerging electricity system capacity needs, driven by:

- Increasing demand
- Retirement of the Pickering nuclear plant
- Refurbishment of other nuclear generating units, as well as
- Expiring contracts for existing facilities

To address these needs, the Ontario Independent Electricity System Operator (IESO) is continuing their competitive procurement process through the Long-Term Request for Proposals for ~2,500 MW of year-round renewable energy (1,600 MW of energy storage and 900 MW of natural gas).

In response to the IESO RFP, Evolugen is proposing the Trail Road BESS project. The purpose of this meeting is to introduce the project to the local community and obtain feedback that can be incorporated or addressed if the project moves forward.

Agenda

- 6:30 7:00 pm: Welcome and open opportunity to engage with Project team members
- 7:00 7:30 pm: Project presentation
- 7:30 8:30 pm: Question and answer session

Participants

Internal

- Mike Peters, Director, Public Affairs (Presenter), Evolugen
- Alexandre Pépin-Ross, Vice-President, Asset Development, Evolugen

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- Rémi Moreau, Vice-President, Government and External Relations, Evolugen
- Zachary Benoit, Senior Analyst, Business Development, Evolugen
- Robyn Moffatt, Manager, External Relations, Evolugen
- Jocelyn Zuliani, Energy Storage Consultant, Hatch

External

• 24 participants signed-in, with ~5 more who opted not to sign in.

Meeting Minutes

Time	Details	
6:30 – 7:05 pm	Participants had the opportunity to read the eight Project poster boards located throughout the Hall and ask questions to the Project Team. (<i>Project poster boards are available on our website</i>).	
7:05 – 7:55 pm	Formal Project presentation (PowerPoint) displayed on the projector screen, presented by Mike Peters & Jocelyn Zuliani. (<i>Project presentation is available on our website</i>).	
	 our website). Welcome & Thanks for Attending Presentation Outline Who we are IESO LT1 RFP overview What is the Project Why this location Fire Safety Next steps Open Q&A Canadian Presence – asset map In Canada, Evolugen owns and operates 61 renewable energy facilities, including 33 hydroelectric facilities, 4 wind farms, and 24 solar sites, with a total installed capacity of 1,912 MW, located across British Columbia, Ontario and Quebec. Recently, Evolugen announced a new to-be-built ~40MW solar facility in Alberta. As a renewable energy industry leader, Evolugen provides sustainable solutions designed to accelerate the transition to a low-carbon 	



Ontario Presence – asset map
 In Ontario, Evolugen owns and operates 49 renewable facilities, including 21 hydroelectric facilities, 4 wind farms, and 24 solar sites (4 utility and 20 distributed generation installations), totaling an installed capacity of 1,448 MW. Evolugen continues to advance development projects across Ontario, including but not limited to the Fitzroy BESS. In addition to various renewable facilities, Evolugen has six Plant Offices (small offices) located across the province.
• Our Philosophy
 Foundation of our approach to doing business is a collaborative strategy to operating systemably.
 Operating sustainably. Operating sustainably - Growing our renewable power portfolio while also having a positive environmental, social and economic impact on the communities where we live and work.
 Partnering locally- Our relationships with the communities where we own and develop assets is key to the success of all and, is predicated upon building trust through open dialogue and shared knowledge. Developing collaboratively - Striving to be a trusted partner of choice for governments, organizations and Indigenous Peoples looking to sustainably develop Canada's renewable power resources.
Uniquely Positioned Partner
 Evolugen's capabilities include:
 Extensive experience owning and operating renewable assets
 Broad expertise in project development
 across multiple technologies
 Low-risk developer with reputation for delivering on-time and on-budget
 Significant experience partnering with host communities and First Nations
 Committed to long-term and sustainable partnerships
 Execution excellence in complex business environments
 Sophisticated in-house trading, risk management and control centre capabilities





 Adds up to 150 MW of capacity and 600 MWh of energy
storage
 Interconnects to IESO using the nearby 230 kV circuit
 LFP chemistry batteries. We have not chosen a supplier yet.
What BESS Facilities Look Like
 An operational 100 MW BESS facility in Texas. Our facility would be
50% bigger, but this gives an idea of the container size, fencing,
and substation.
Why This Location
 We're exploring all options to be an economic driver in the
community, working with the City of Ottawa, First Nations and
partners to explore sustainable solutions
 The Trail Road BESS Project:
Is strategically positioned near an existing 230 kV
transmission line with available capacity to support a 150
MW BESS
Is located on Rural Land, avoiding development on
agricultural land, to conform with the City of Ottawa's
Official Plan
 Is situated more than 700 meters from the nearest
residential home to lower the impact of noise and visual
obstructions
 Is located ~45 minutes from our Gatineau office
\circ Evolugen is committed to working with the City to ensure
alignment with the Official Plan, relevant bylaws, and zoning
requirements.
Trail Road BESS Project Highlights
 Project adds renewable capacity and storage to meet Ontario's
rising energy demands, especially during peak-periods, reducing
the chance for power outages.
 Project represents a local innovative low-carbon solution,
supporting sustainability efforts by reducing reliance on higher
carbon intensive facilities.
 Project is in the feasibility stage; subject to the IESO determining
the Project to be best for Ontario ratepayers.
 Community benefit fund will be established to ensure contributions
from the Project into the local community to support various



programs and initiatives, and additionally, will contribute property		
taxes to the City of Ottawa		
Community Benefit Fund		
• Community benefit rund		
o we strongly believe in being an active partner in the Ottawa region,		
as mentioned earlier.		
 Itali Road BESS will establish a continuity benefit fund of \$150,000 enguelly, eigend at supporting local ergenizations 		
\$150,000 annually, almed at supporting local organizations		
that contribute to the well-being of the community.		
 As part of our culture, we support local programs, initiatives 		
and organizations, including the Ottawa Food Bank, the		
CHEO Foundation, Dress for Success Ottawa, Ottawa		
Riverkeeper and more.		
 We would seek community feedback on how to establish 		
and administer the fund to ensure there is local input on		
what organizations and projects are being chosen and		
supported.		
Environmental Considerations		
 We're committed to working with the community and authorities to 		
ensure safe and thoughtful planning of the Trail Road BESS Project.		
 Some of the primary considerations include: 		
 Noise 		
 Wildlife 		
■ Fire		
 Wetlands 		
 Trees 		
\circ If Evolugen is chosen by the IESO, we will need to obtain all		
required approvals and permits from the City of Ottawa and		
provincial authorities.		
Safety & Fire Mitigation		
 Our safety culture is exemplified by more than two decades of 		
experience and our track record of zero employee or contractor		
fatalities.		
 Core elements of our fire safety approach include: 		
 Prevent 		
 Technology and Supplier Selection (Tier 1) 		
 Design with safety in mind 		
 Safety Certification and codes 		
 Testing for Performance and Safety 		



	Emergency Response Plan	
	 Monitor 	
	 Battery Management System (BMS) to monitor 	
	temperature, voltage, and more	
	 24/7 staffed monitoring facility, located in our 	
	Gatineau office	
	 Maintenance program to ensure adequate BESS 	
	health	
	 Respond 	
	 Fire response training and coordination 	
	 Water is the preferred suppressant for firefighting 	
	 Work with local first responders to ensure safe 	
	and effective response in case of an emergency	
	 Battery System Make-up (photos) 	
	 Individual Cell 	
	 Cells within the Module 	
	 Module 	
	 Cabinet Set Up 	
	Fire Safety: Prevent	
	 Safety is applied at all design levels of battery systems – cells, 	
	modules, racks, enclosure, and Battery Management System.	
	Rigorous testing and certification is required for all products.	
	 Equipment Design to ensure prevention include: 	
	 LFP Chemistry 	
	 Cell Design (Specialized separator/layers to prevent thermal 	
	runaway, vent system to prevent build up of pressure)	
	 Propagation Prevention 	
	 Rack level electrical protection 	
	 Fire Suppression System 	
	 Ventilation System 	
	Appropriate clearances to prevent propagation	
	• Prevention Testing & Certification	
	Battery Cells, Modules & Racks and Battery Management	
	System	
	UL1973 & UL1642	
	Sarety reatures and design	
	 resting completed at cell, module and unit lough 	
1	unit ievei	



 UL9540A tests behavior in thermal runaway event 		
 Battery System 		
 UL9540 Container & System level safety 		
 NFPA 855 Container Design and Site Design Safety 		
Fire Safety: Monitor		
• Facility will be monitored 24/7 by Evolugen's remote control center.		
Multiple levels of monitoring, including at the cell, rack, container		
and site level.		
 System Monitoring Includes: 		
 Battery Management System 		
 Cell & Module Level Monitoring 		
 Temperature sensors and protection 		
 Overcharge/Over-discharge (voltage) sensors and 		
protection		
 Overcurrent sensors and protection 		
 Container will disconnect in event of alarm 		
 Container smoke, heat & temperature detection 		
 Any alarms will be sent to Evolugen, Battery Supplier and 		
First Responders		
Fire Safety: Respond		
 Evolugen will develop a comprehensive Emergency Response Plan and will work with the comprehensive and first respondent to develop 		
the plan and approach		
1: Automatic Response		
System Alarms		
 Sent to Monitoring Facility & Fire 		
Department		
System is shutdown automatically		
 Ventilation is activated to vent any gases 		
built up		
 2. First Responders 		
Advanced Training for First Responders		
Assess Situation & Coordinate Response		
Fire Suppression		
 Water is the preferred suppressant due to cooling 		
capabilities		



r				
	 3. Cor 	 3. Contain 		
	•	 Prevent spread to other containers 		
	•	Clearances		
	•	 Spray with water as needed 		
	•	Continue to monitor & respond as needed		
	 Project Timeline & N 	ct Timeline & Next Steps		
	 May 2023: RF 	May 2023: RFP Launches		
	IESO	 IESO launches RFP and posts Draft LT1 RFP & Contract 		
	 Sept 2023: De 	eliverability Results Posted		
	IESO (concludes Deliverability Test, sharing which projects		
	are de	eliverable		
	 Nov 2023: Op 	ben House		
	 Hostin 	ng our open house tonight to introduce the Project		
	o Dec 12, 2023	: IESO bid submission due		
	 Evolu 	gen must submit Project submission to the IESO		
	 Q2 2024: IESC 	D Contract Announcement		
	IESO	will announce contract offers for successful projects		
	 Permitting: o 	Permitting: obtain permits from the City of Ottawa, Rideau Valley		
	Conservation	Conservation Authority and provincial authorities		
	• Q2/Q3 2025:	Q2/Q3 2025: Construction Commences		
	 If the 	 If the Project is awarded a contract and obtains all necessary 		
	permi	permits & approvals, construction will commence		
	 Q2 2028: Fac 	Q2 2028: Facility to be operational		
	 2048: Fixed C 	2048: Fixed Contract Duration		
	If suce	 If successful, the Project would be awarded a 20+ year 		
	contra	contract with the IESO with a fixed monthly payment based		
	on the	on the submitted Fixed Capacity Price (FCP).		
7:55 – 8:45	Questions	Answers		
pm	A			
	Are you exploring	With the Ontario Independent Electricity System		
	for Trail Dood RECC2	operator's (IESO) long-term request for proposals,		
	Similar to what the	projects this is a bulk request. However, should the		
	United States has been	Trail Road RESS Project he awarded a contract from		
	doing smaller	the IESO it would complement other projects		
	decentralized systems	delivering service and reliability to the overall grid		
	accentianzed systems.	denvering service and reliability to the overall gha		



		and the IESO. At this time, we are not exploring decentralized solutions.
	What are the economics of the Project?	The Ontario Independent Electricity System Operator (IESO) will be procuring projects that are deemed best for Ontario ratepayers.
	How will the Project reduce blackouts? If this Project has 4 hours of capacity, and power goes out for a week, can the battery supply that?	The Trail Road BESS Project would contribute to the overall reliability of the grid by providing additional capacity. During a blackout, the Trail Road BESS Project cannot repower the entire community, but the Project can help prevent these types of blackouts from occurring with reliable storage.
	In your presentation you mentioned that you own and operate wind, hydro and solar, but not battery storage. Is this your first BESS project?	Brookfield Renewable, our parent company, is a global owner and operator of renewable power facilities, including battery energy storage. We leverage expertise from our global teams. This would be our first BESS project in Canada.
	Are these types of projects getting safer?	Yes, the technology continues to advance, and safety standards and certifications are updated constantly to ensure safe operations. If awarded a contract from the IESO, the Trail Road BESS Project would meet and comply with all required standards and certifications, from the UL (Underwriters Laboratories, a main standard organization) codes to NFPA (National Fire Protection Association) codes and standards.
	You mention safety continues to improve, but the fire risk is still ~5%, not 0?	We understand that there are risks associated with virtually everything we do, but we are working to ensure the safest standards at the Trail Road BESS, approaching the facility as if we live next door. There are rigorous standards in place for the implementation of BESS projects and the Trail Road



		BESS Project will comply with all industry safety standards, codes and certifications.	
	What are you doing to protect the Project from extreme weather events like ice storms and windstorms?	Evolugen has safely owned and operated large hydropower facilities for more than 20 years, which are monitored and controlled from our national control centre at our Gatineau office. For the Trail Road BESS Project, we will work with professional engineers and consultants to ensure the facility is designed to withstand local weather conditions.	
			To prepare for severe weather events like ice storms and windstorms, we will include a specific section in our Emergency Preparedness & Prevention section of our Emergency Response Plan.
		Our design will also follow the Canadian National Building Code that prescribes site-specific climate related load (wind, snow, rainfall, earthquake, etc.) requirements. Also, based on our experience and professional engineers' recommendation, Evolugen may opt to increase the safety factors on some of the climate related design parameters to account for the impact of climate change.	
	What happens if your 24/7 monitoring facility at your Gatineau office loses power and the Trail Road BESS loses power?	We operate all our facilities from our national control centre at our Gatineau office. In the case that our Gatineau office should lose power, the control centre has its own back-up diesel generator to ensure we maintain control and communication with all our facilities. On top of this, we also have an N-1 redundancy for our control centre, where we can relocate our control centre to an alternate location, that is kept secret, that also has back-up power generation.	
			Should we lose power that the Trail Road BESS site, we will have a back-up generator activated to power



		all the ancillary load of the systems, meaning we would not lose control nor communication with the site, and all the safety systems would still be functional. Finally, we can also dispatch resources to the site for local control in the event remote operation would not be possible from either control centre locations.
	Will the Trail Road BESS be fed into the Nepean line?	During the meeting, we unfortunately did not know the answer to the question, but further to our commitment to providing attendees with updated Project information, we confirm that the Project will connect to the E34M circuit.
	What efficiency loses will the facility experience? Especially in the winter when it snows?	The Trail Road BESS will be equipped with a heating and cooling system to maintain a temperate of 10- 35°C, optimally 22°C. Given the battery cells are kept in an insulated and heated/cooled enclosure, we don't anticipate efficiency losses during the winter. During cold weather, should the heat generated by the battery system not be sufficient to keep the battery at its optimal temperature, we would activate the heaters in the enclosures to operate the battery within the optimal operating temperature range. We do expect degradation over time of the batteries; however, we plan to add more containers every 5-10 years to ensure efficiency remains consistent. The project footprint and maps communicated are considering the total footprint at the end of life of the asset (in 2048).
	Will your company be responsible for	Yes, we will be responsible for constructing and maintaining the access road.



	constructing the access road?	
	Will your company also be responsible for building the connection lines?	Yes, we would need to build connection lines to connect our Trail Road BESS substation to the grid. HONI will be responsible to build the switching equipment at the connection point.
	Are you going to build a well on-site?	We are aware that there is no on-site water at the Trail Road BESS. We will work with the Ottawa Fire Service and local emergency responders to ensure there is an adequate plan for water and together, we will determine whether upgrades are required or whether tanker trucks can shuttle water from nearby hydrants. Constructing a well is one of the options being considered, but to clarify, BESS systems do not need access to water for normal operations.
	What does your decommissioning plan look like?	If awarded a contract from the IESO, the latest it would start is May 2028 and last 20 years, so 2048. At the end of the 20-year contract, if there is still a need for the battery to ensure the resilience of the electrical system and we are able to obtain another contract from the IESO, we would extend the life of the facilities including battery replacement if necessary. If, however, there was no longer a need for the system, we would remove the batteries and remediate the site.
	What do you do with batteries after their lifecycle? Can you recycle them in Ontario?	The battery recycling processes continue to be developed and evolve. Recycling processes are being developed which recycle lithium-iron phosphate batteries, as well as other lithium-ion chemistries used more commonly in electric vehicles. The batteries are recycled to capture as many minerals as possible and materials to reuse them in future purposes.



		We do know of a battery recycling company that is headquartered in Kingston, Ontario, but do not know where their processing facilities are.
	From looking at your map, will you own 53 acres? Is the project not on 8 acres?	We have a conditional offer to purchase the 53 acres of private land if the Project is awarded a contract from the IESO. We would develop the Project on ~8 acres of the 53 acres and the remainder will be untouched. There will be no net tree loss from the Project, which may include planting additional trees on the property or in a suitable area near the property.
	How much money will your company make from this Project?	The core business case for the project is the contract that successful applicants will receive from the IESO. This contract will compensate projects for having capacity ready to inject into the grid when it is required. The IESO is procuring projects that are deemed best to Ontario ratepayers.
	What happens if you sell the Project? Or if your company goes bankrupt?	We would be the owner and operator of the facility and if the facility were to be sold, that new owner would inherit the contractual commitments that we made with the IESO. If we were to sell, from an operational perspective the buyer would then need to take on the contract and legal obligations.
	Are there other local benefits from the Project?	We think of benefits at a scalable level. Firstly, at the provincial level by providing grid reliability and stability. Secondly, at the City of Ottawa level by paying property taxes and building up the experts, working with local suppliers and contractors in Ottawa. Lastly, we look at the community level, through our community benefit fund of \$150,000 annually, we will work with local residents to gather input on what organizations and projects are being chosen and supported. We already work with various local organizations, from the Ottawa Food Bank and



	harvesting vegetables at their farm or participating in CHEO's Race for the Kids.
As time goes on will you switch the technology of the batteries?	Overall degradation is planned throughout the lifecycle of the project, but we do not expect to switch the technology chemistry, although it's not impossible. We would have a 20-year contract with the IESO as well as battery suppliers. We expect the LFP chemistry to continue leading battery safety.