

Enbridge

Proposed Battery Energy Storage Systems in St. Clair Township (Lambton County) Ontario
February 2, 2023



Agenda for today's meeting



- Recap of the information provided in our November 2022 Public Meeting
 - Enbridge's Renewable Energy Operations
 - Independent Electricity System Operator's goals and process
 - Enbridge's Proposed Battery Projects in St. Clair Township, Lambton County
 - Tecumseh Farm
 - Dow Moore
 - Petrolia
- Closer look at site maps, planning considerations, and local sensitivities
- Next Steps in Consultation

Land Acknowledgement



We would like to take a moment to acknowledge that the land where we are all joining this meeting from has been inhabited, and cared for, by the people Indigenous to Turtle Island since time immemorial.

We recognize and respect the historic connection to and harmonious stewardship by the Indigenous peoples over this shared land and, as such, we have a responsibility to preserve and care for the land, learn from the original inhabitants, and move forward together in the spirit of healing, reconciliation, and partnership.

Sun Exposure Risks

- Unprotected exposure to UV damages the DNA in skin cells, producing **genetic mutations** that can lead to **skin cancer** and **eye damage** (cataracts and eyelid cancers)
- The genetic mutations **accumulate** over one's life
- Tanning is the body's natural defense after cell damage has occurred
- Although tans reduce burning, **tans do not prevent further damage. All tans are unhealthy.**



Sun protection can prevent many of these risks

Types of Ultraviolet Light + Risks

UVA

- Penetrate deeper into skin
- Responsible for most **skin damage (aging)** than UVB
- Responsible for most **tanning**
- 500x more UVA rays than UVB (95% passes through ozone compared to 5% UVB)
- **Passes through clouds, windows, and ozone layer**
- **Proven to contribute to development of skin cancer**

UVB

- Responsible for most skin **cancers** (80-90%)
- 1000x more likely to cause **burning** than UVA*
- Causes delayed tanning
- Reflect off snow/ice



Both UVA and UVBs are harmful and carcinogenic

Types of Sun Protection - Sunscreen

SPF: Sun Protection Factor

- How long the sun's **UVB** rays would take to redden your skin compared to without sunscreen
- SPF 15 = it would take you 15x longer to burn than without sunscreen
- Rating assumes **proper application** - applied generously and evenly, and reapplied after 2h or after sweating or swimming
- Use **broad spectrum** to combat UVA and UVB
- Look for oxybenzone free – affects coral life and may irritate skin
- SPF 15 filter out about 93% UVB
- SPF 30 filter out about 97% UVB
- SPF 50 filters out about 98% UVB
- SPF 100 filters out about 99% UVB
- Recommended to wear sunscreen **every day**, especially when UV index is 3+

Types of Sun Protection - Other

- Clothing
 - Measured in UPF (Ultraviolet Protection Factor)
 - What fraction of the sun's **UVA and UVB** rays can penetrate the fabric. UPF 50 = 1/50th of the UV radiation reaches your skin
 - Darker/brighter, tighter woven, and dry clothing is more protective
- Sunglasses – ensure both UVA and UVB protecting
- Hats
- Avoid – limit time outdoors during midday or find shade








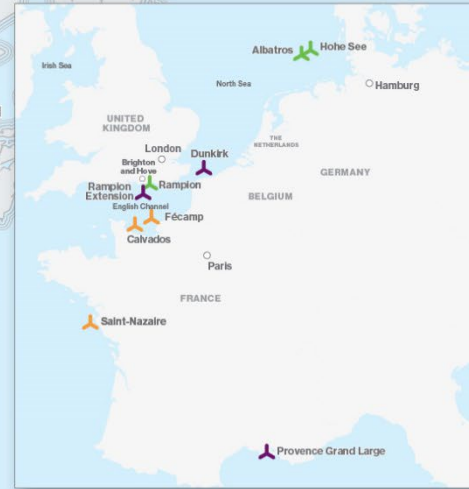
Enbridge – Renewable Power

Renewable Power Footprint



Assets (operating & under-construction):

-  23 Wind farms - onshore & offshore
-  17 Solar energy operations
-  5 Waste heat recovery facilities
-  1 Hydro facility
-  1 Geothermal facility



- ① Enbridge, Inc. Headquarters
Calgary, Alberta, Canada
- ② U.S. Headquarters
Houston, Texas, United States
- ③ Power Operations
and Utilities Headquarters
Toronto, Ontario, Canada

-  Wind assets (in operation)
-  Wind assets (under construction)
-  Wind assets (in development)
-  Solar assets
-  Solar assets (in development)
-  Waste heat recovery
-  Geothermal power
-  Hydroelectric power assets

Net generation
2.2 GW

Over \$8 billion invested in renewable power generation since 2002

Operating our assets

- Optimizing operations of our assets is a key priority.
- We self-operate many of our assets and collaborate with partners on others.
- We have strong operational experience and are working to deepen our capabilities every year.
- Focus areas include:
 - 24/7 monitoring to detect trends and alerts and keep assets online and operating
 - Standardizing safety and operational frameworks to ensure a consistent safety culture and send everyone home safe
 - Working with partners to maximize performance and efficient operations



Ontario – Electricity Objectives

Ontario electricity demand

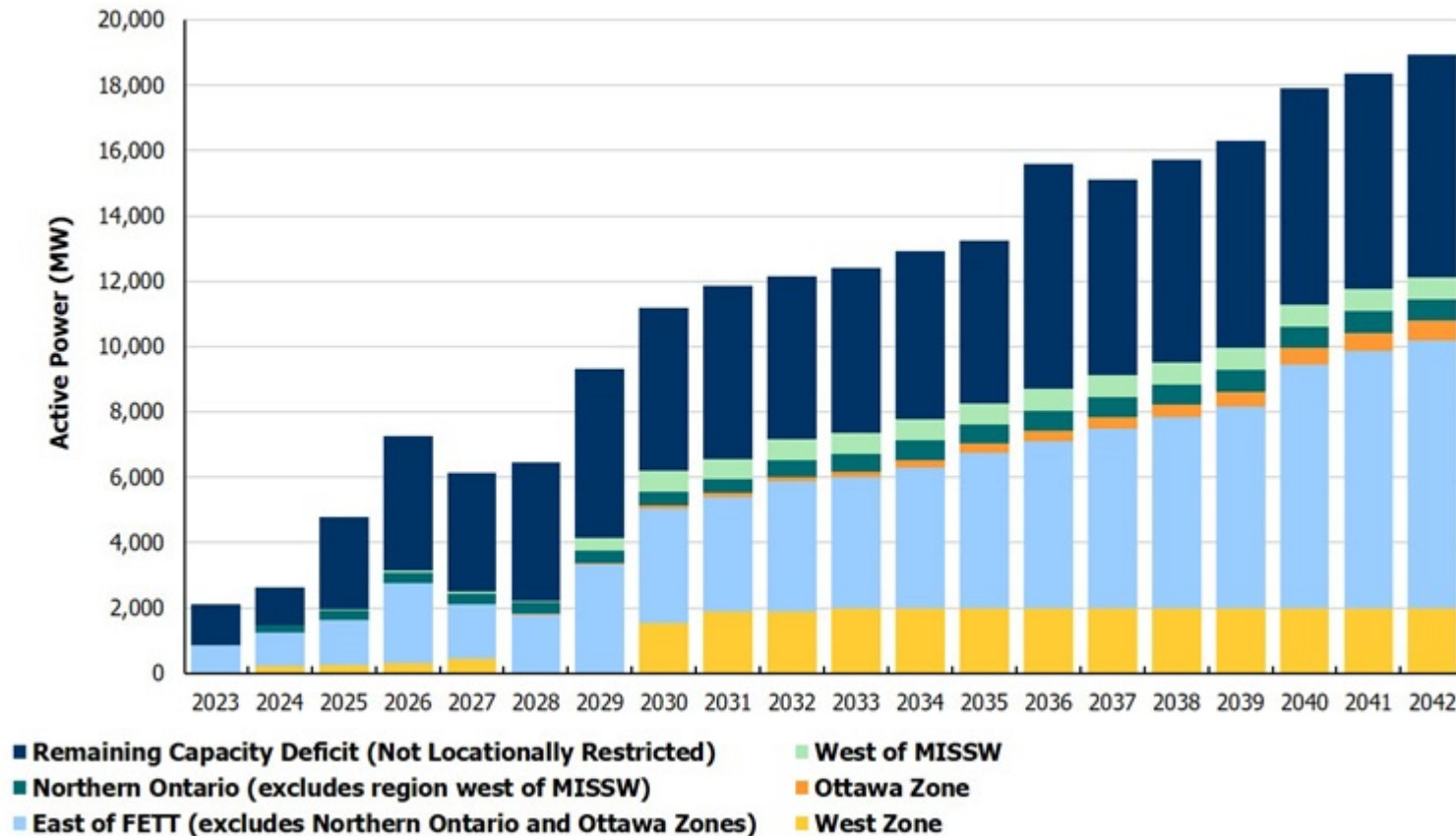
- Independent Electricity System Operator (IESO) is responsible for operating Ontario's electricity grid
- IESO must identify likely changes in demand and supply to create a forecast that it updates annually.
- IESO must then use those forecasts to ensure that Ontario ratepayers have an affordable, reliable supply of electricity to meet their needs.
- In recent years, a third priority has emerged, which is to ensure the electricity supply is sustainable, which also means a low-carbon, clean supply.
- To help keep rates affordable, IESO procures a portion of its electricity supply through competitive processes.



IESO – Capacity needs

- In the short-term, the retiring nuclear and gas capacity will lead to a capacity shortfall on a regular basis, particularly in the summer months as early as next year, but really picking up in 2025 and 2026.

Summer Capacity Needs including Locational Requirements, without Continued Availability of Existing Resources



- IESO is looking to procure 4 GW of new capacity this year and next year:
 - 1.5 GW will be procured under the Expedited Long-Term RFP, which was issued in December 2022 and projects will enter operation in May 2025. (900 MW will come from Battery Energy Storage Systems (BESS))
 - 2.5 GW will be procured under the Long-Term 1 RFP, which will be issued in 2023 and projects will enter operation in 2027. (A minimum 600 MW will come from BESS)
- The projects awarded contract under these two RFPs will be focused on capacity, which means that projects do not have to produce new electricity. They can do so, but projects can also just help make better use of existing energy generation.
- **As such, Enbridge is proposing three Battery Energy Storage System (BESS) projects in St. Clair Township on Enbridge-owned land.**
- Battery Energy Storage Systems (BESS):
 - Connect to either its own electricity source, e.g., a solar project, or to the grid at large, e.g., just like any electricity purchaser
 - Charge the battery when electricity demand is low, e.g., overnight when people don't have their lights on or have their air conditioning turned down, or midday when electricity demand is steady but solar panels are producing more power than is needed.
 - Feed electricity back into the grid when electricity demand is very high and/or when generation is low.

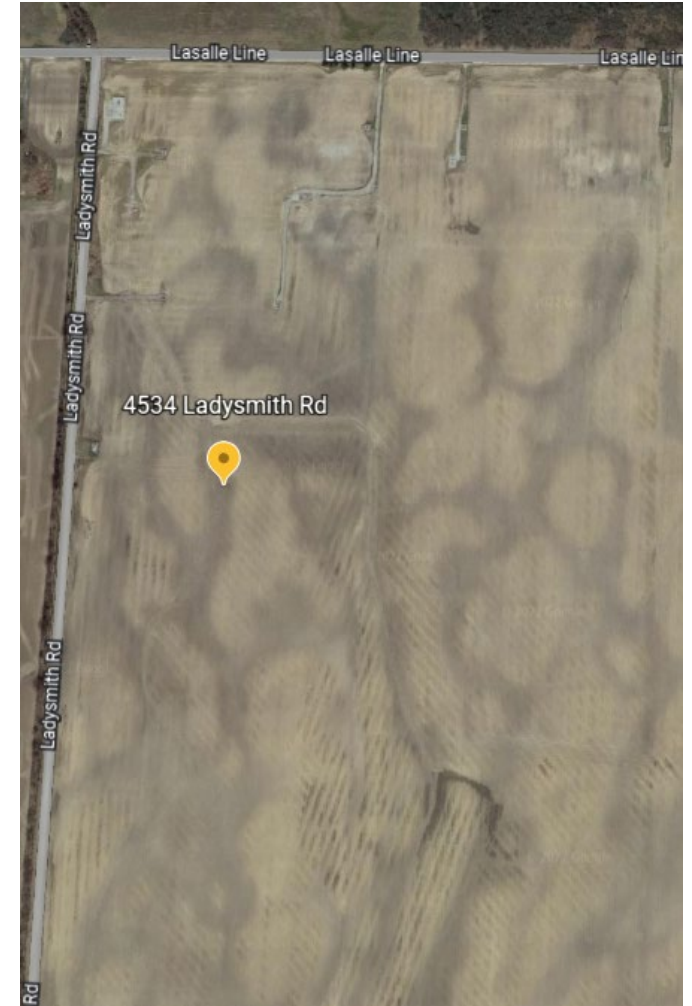
Enbridge – BESS proposed for St. Clair Township (Lambton County)

Battery Energy Storage Systems



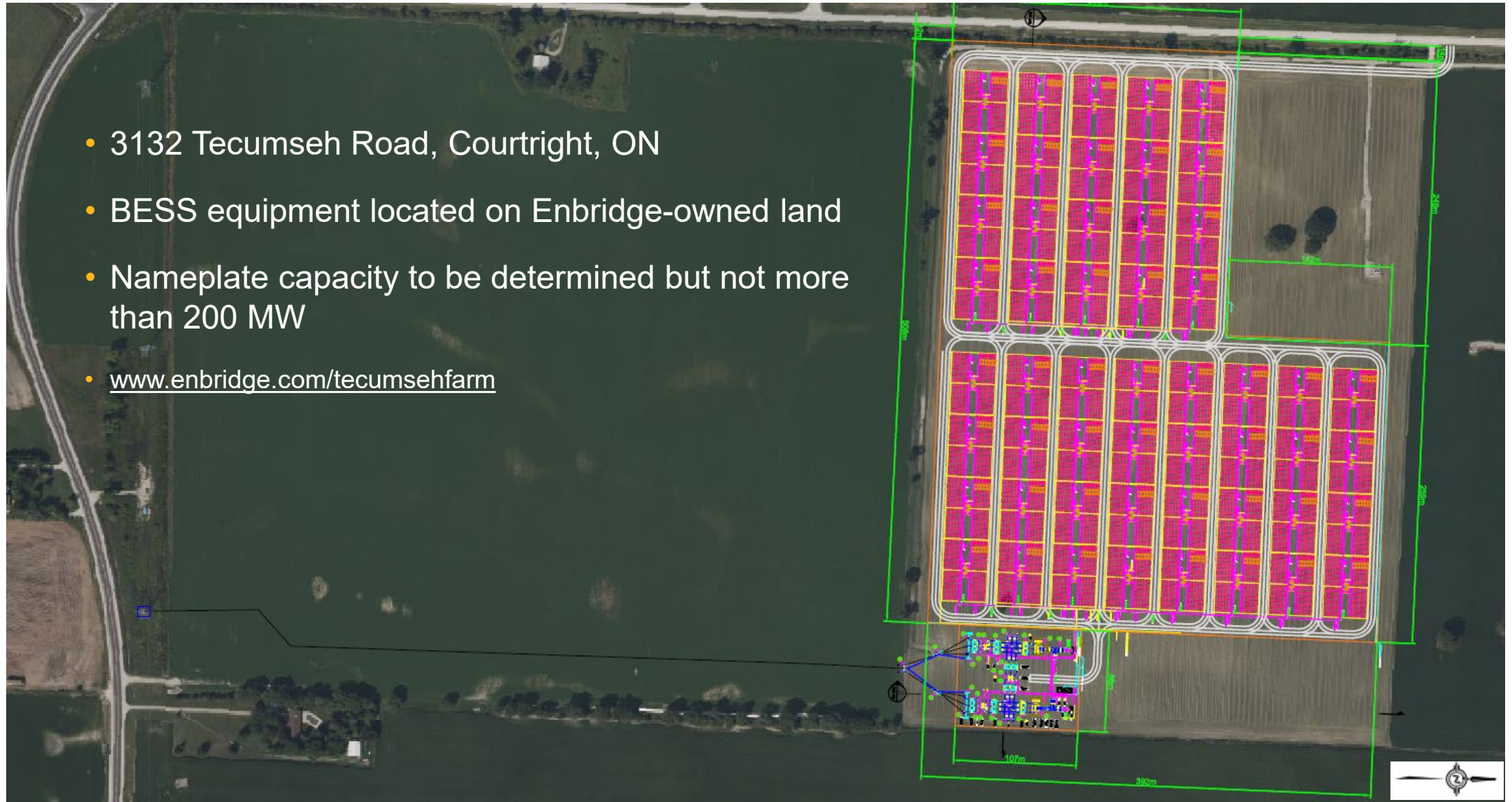
- BESS is on the rise around the world as nations work to replace coal and oil-fired generation with lower-carbon electricity resources, including wind and solar power.
- BESS helps balance the electricity grid by charging when demand is low and feeding electricity into the grid when demand is high and/or generation from other resources is low.
- The United States had over 8.2 GW of BESS installed as of Q3 2022, according to American Clean Power, and that number is expected to continue growing.* The existing capacity helps balance the renewable energy projects in California and Texas that provide significant portions of their energy supplies and helped them avoid capacity shortfalls this past summer.
- Global installed BESS is expected to reach 80 GW by 2030, a lot of which is in China and India.
- Canada is lagging behind other countries on BESS, in part because of our excellent nuclear and hydro resources. We have only a couple small projects in Saskatchewan and Prince Edward Island, but the federal government and all provincial governments are working to enable power storage development to help the transition to net-zero.

Project locations



Tecumseh Farm Energy Storage

- 3132 Tecumseh Road, Courtright, ON
- BESS equipment located on Enbridge-owned land
- Nameplate capacity to be determined but not more than 200 MW
- www.enbridge.com/tecumsehfarm



Tecumseh Farm Energy Storage – View 1



View: from the North within Enbridge's property line, looking South

Tecumseh Farm Energy Storage – View 2



View: from the South over 3052 Tecumseh Road, looking North

Tecumseh Farm Energy Storage - View 3



View: from the Southwest on Tecumseh Road, looking Northeast

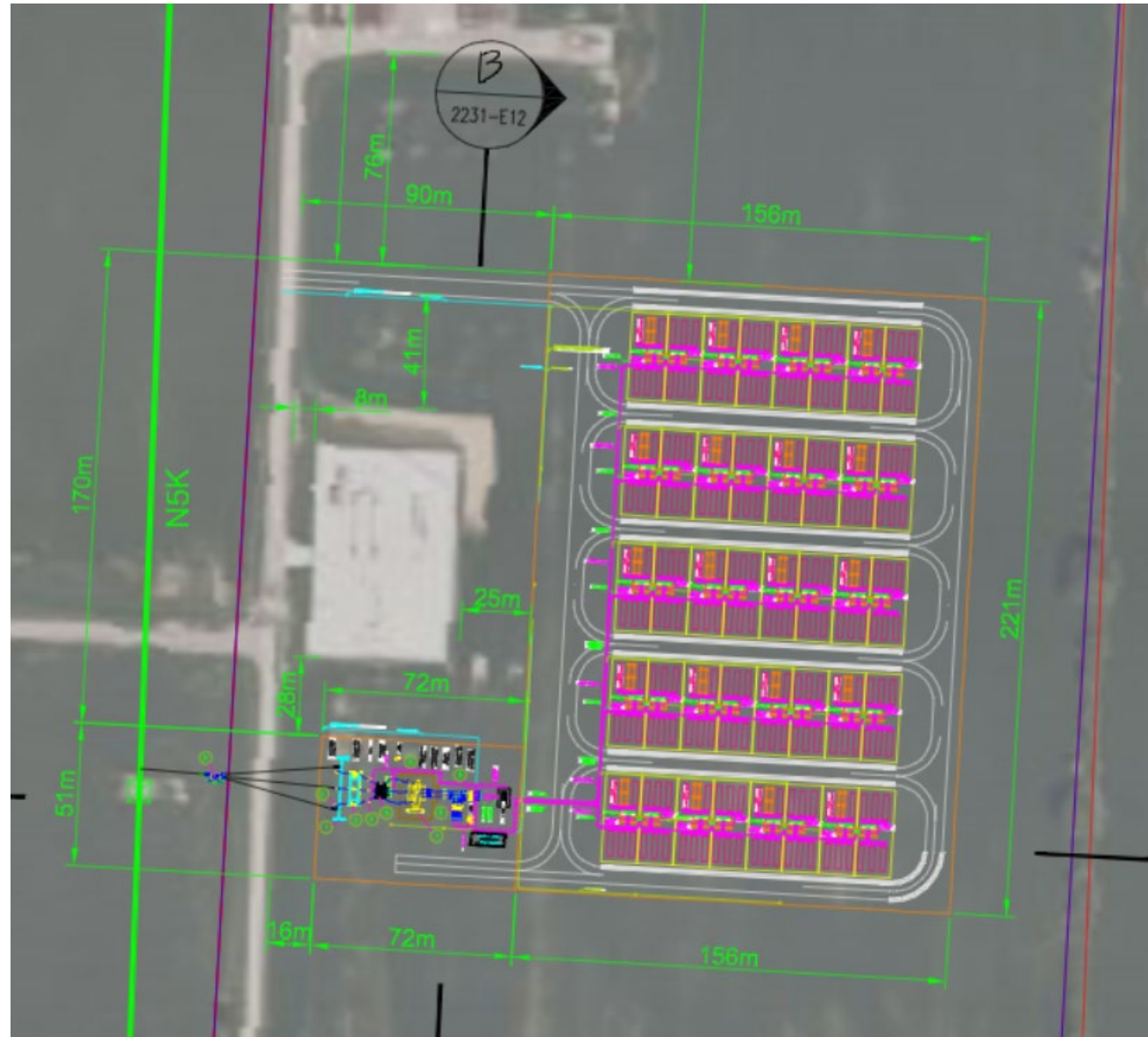
Tecumseh Farm Energy Storage – View 4



View: from the Northwest on Tecumseh Road, looking Southeast

Petrolia Energy Storage

- 1129 Petrolia Line, Corunna, ON
- BESS equipment located on Enbridge-owned land
- Nameplate capacity to be determined but not more than 200 MW
- www.enbridge.com/petrolia



Petrolia Energy Storage – View 1



View: from the Northeast within Enbridge's property, looking Southwest

Petrolia Energy Storage – View 2



View: from the South within Enbridge's property, looking North toward Petrolia Line

Petrolia Energy Storage – View 3



View: from the Northeast within Enbridge's property, looking South

Petrolia Energy Storage – View 4



View: from the Northwest within Enbridge's property, looking South

Dow Moore Energy Storage

- 4534 Ladysmith Road, Corunna, ON
- BESS equipment located on Enbridge-owned land
- Nameplate capacity to be determined but not more than 200 MW
- www.enbridge.com/dowmoore



Dow Moore Energy Storage – View 1



View: from the Northeast within Enbridge's property, looking Southwest

Dow Moore Energy Storage – View 2



View: from the West over Ladysmith Road, looking East

Dow Moore Energy Storage – View 3



View: from the Northwest on Ladysmith Road, looking Southeast

Dow Moore Energy Storage – View 4



View: from the Southwest on Ladysmith Road, looking Northeast

What to expect



- In the event that one or all of these BESS projects are selected under IESO's RFP in May 2023,
 - We will undertake environmental studies, land use studies, and interconnection studies to ensure the project can be built safely for employees, the community, and the environment.
 - Construction would likely begin in 2024 and would include laying foundations for the batteries to rest on at the site, and then trucking in the batteries.
 - Unlike some other projects you may be more familiar with, these BESS projects are fairly straightforward to build as the batteries are built offsite and are moved in, like small shipping containers.
 - There would be increased traffic on the road and some related noise and dust, but relatively little compared to other major construction work.
 - This work would offer job opportunities to local vendors for the studies required, site preparation, fencing, substation construction, foundation work and other civil work at the site.
- We cannot yet discuss dollar amounts, due to the competitive bid process, but these projects would also result in significant new tax revenue for St. Clair Township in addition to a Community Fund, which Enbridge establishes for all our renewable energy projects.

Community Engagement

Next Steps



- Your input is important to Enbridge and to the development of these proposed projects.
- We encourage you to reach out with any questions or comments at the email address on the next slide (also on the project websites). We will endeavour to provide answers to all your questions and to address your feedback.
- We will continue work for our approved projects until the bid date of February 16, 2023. We expect to have our next public meeting in March or April 2023 – we will send notices and post the update on the websites noted in this presentation.
- IESO will select winning projects in May 2023. In the event we are successful, we will continue to hold public meetings at key development stages of the project to ensure community members have ample additional opportunity for comments and questions.
- We are undertaking consultations directly with Indigenous communities and will continue those in line with the above.

Questions?

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