

# Enbridge

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Proposed Battery Energy Storage Systems in St. Clair Township (Lambton County) Ontario  
November 2022



# Agenda for today's meeting

- Enbridge's Renewable Power Activities
- Independent Electricity System Operator's goals and process
  - Energy needs in Ontario
  - Energy supply in Ontario
  - Capacity
  - Request for Proposals Process
- Enbridge's Proposed Battery Projects in St. Clair Township (Lambton County), Ontario
  - Tecumseh Farm
  - Dow Moore
  - Petrolia
- Next Steps in Consultation

# Land Acknowledgement



We are meeting virtually but it is still important 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.

# Safety Moment – 10 Things You Can Do to Prepare for Winter



- Clean and Stow Your Mower
- Remove Garden Hoses from Faucets
- Drain Your Sprinkler System
- Seal Air Leaks
- De-Gunk Your Gutters
- Eyeball Your Roof
- Direct Your Drainage
- Check Your Furnace
- Prune Plants
- Give Your Fireplace a Once-Over








# Enbridge – Renewable Power

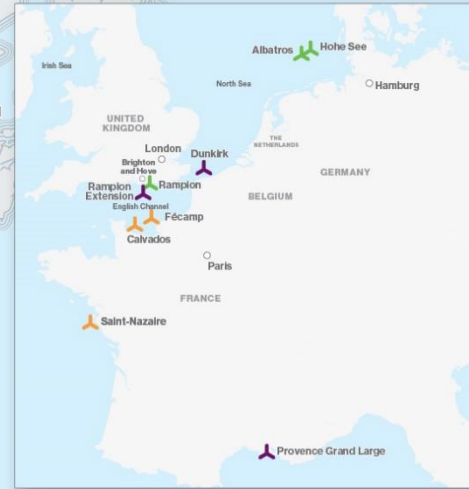
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# Renewable Power Footprint



## Assets (operating & under-construction):

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

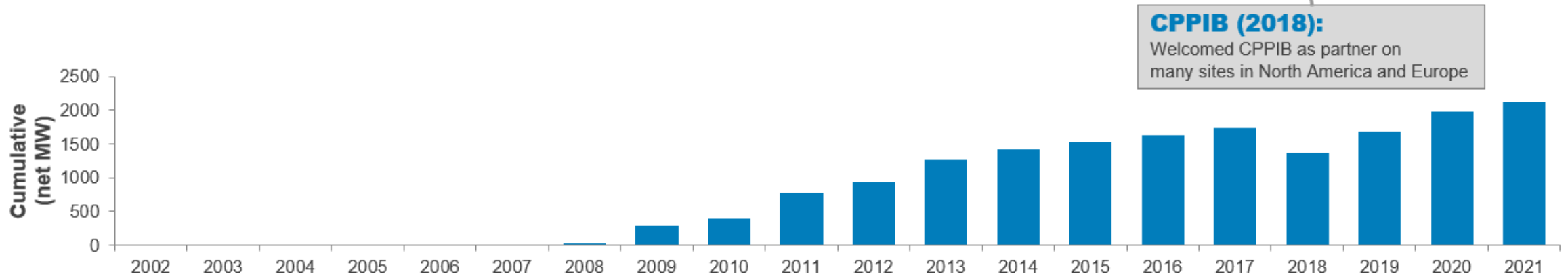
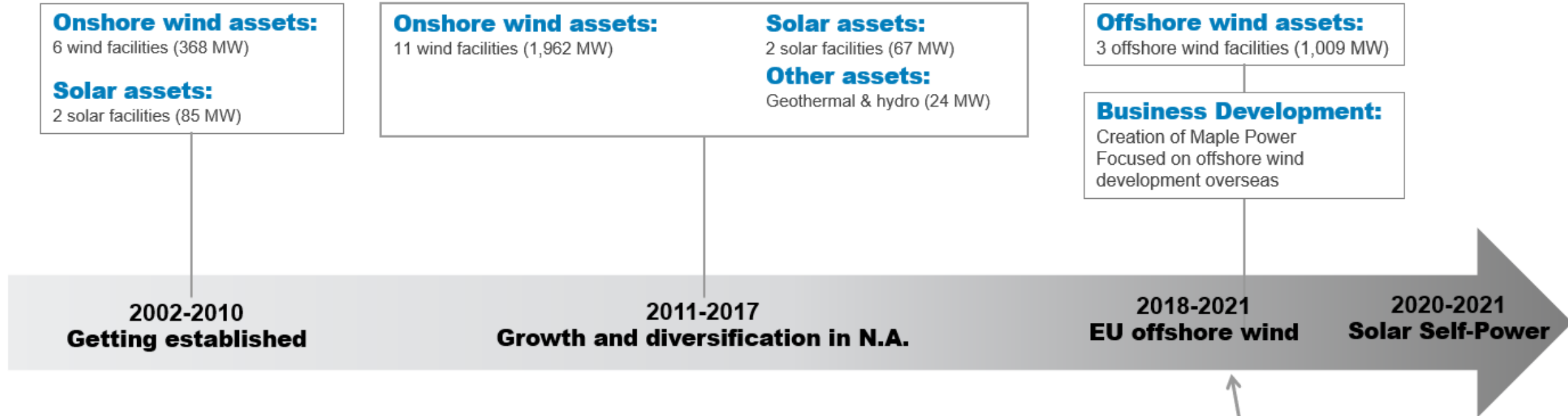


① Enbridge, Inc. Headquarters Calgary, Alberta, Canada	 Wind assets (in operation)	 Solar assets (in development)
② U.S. Headquarters Houston, Texas, United States	 Wind assets (under construction)	 Waste heat recovery
③ Power Operations and Utilities Headquarters Toronto, Ontario, Canada	 Wind assets (in development)	 Geothermal power
	 Solar assets	 Hydroelectric power assets

Net generation  
**2.2 GW**

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

# Our Power business - chronology



# 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

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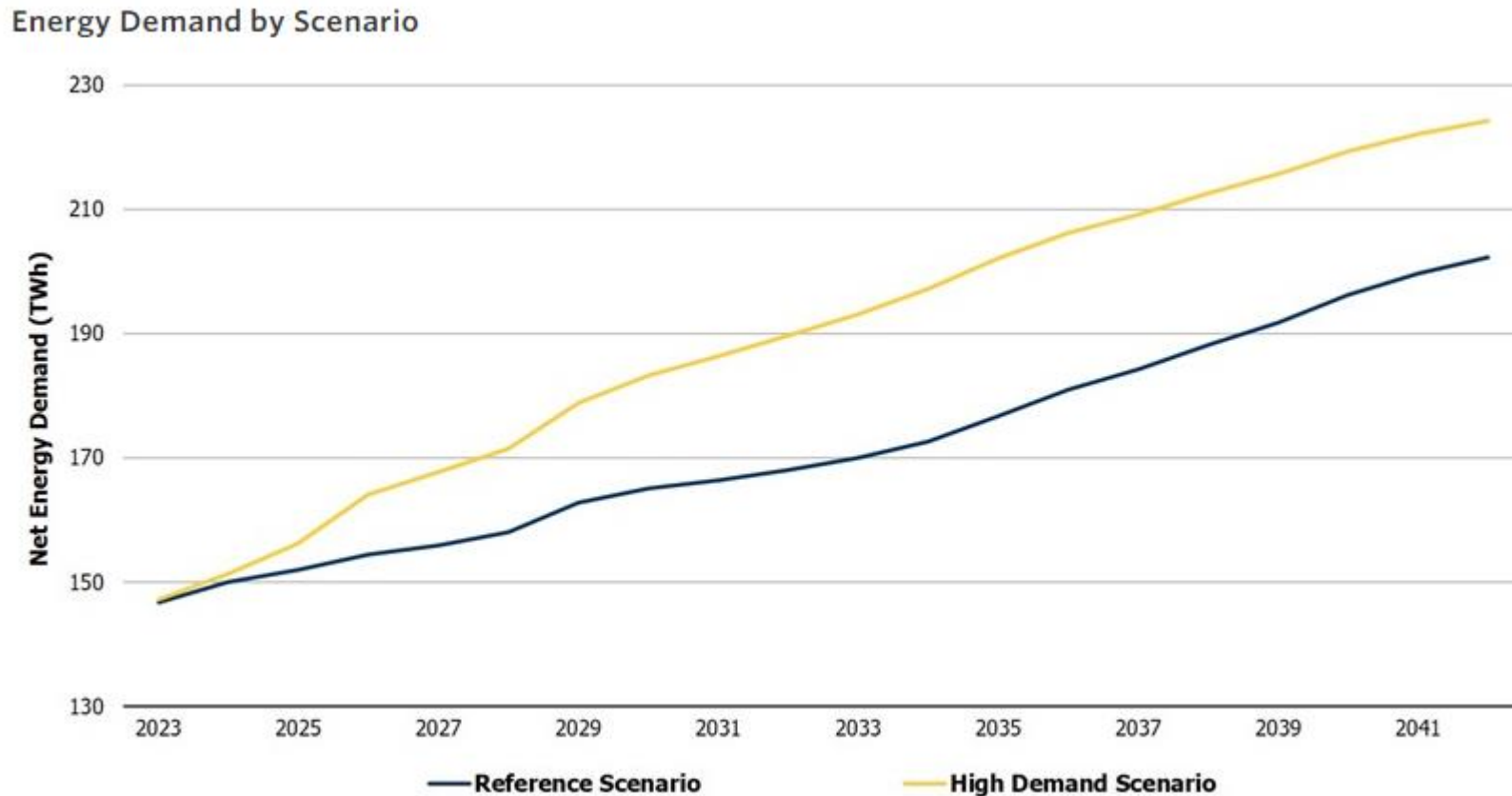
# Ontario electricity demand

- 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 - Demand

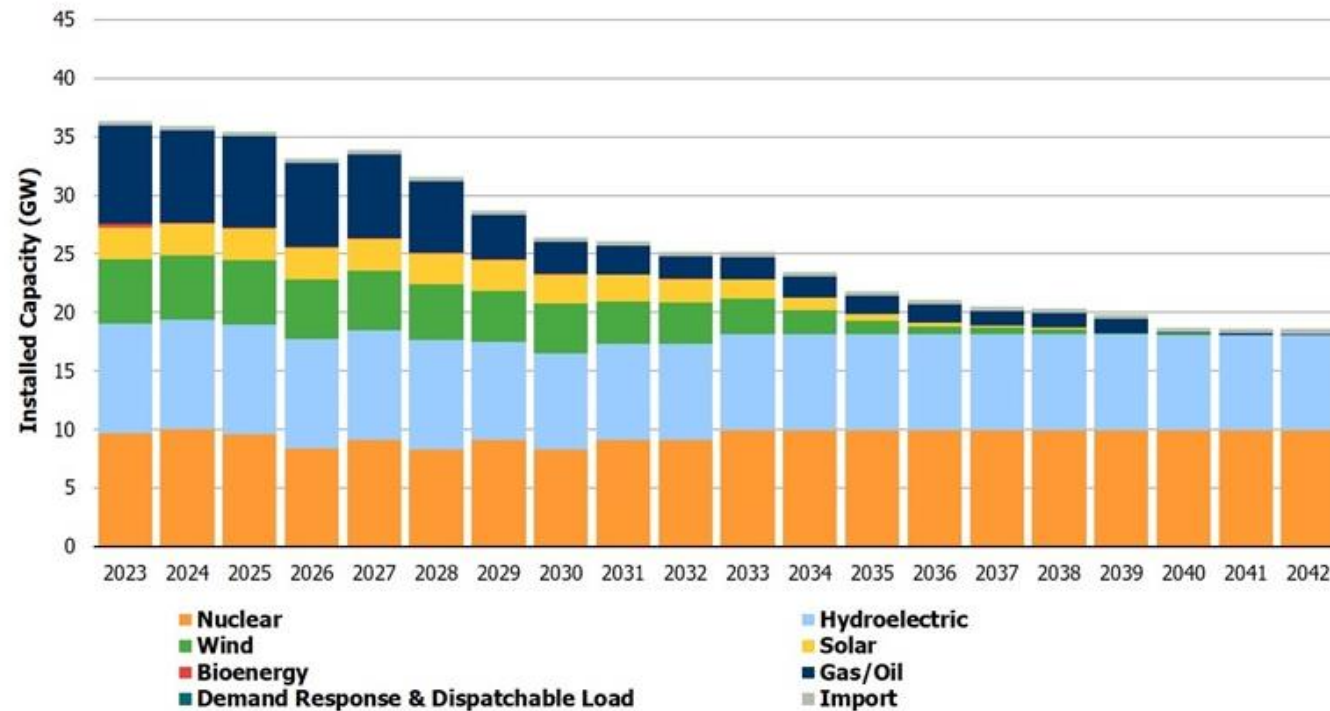
- Demand is increasing in Ontario due to population growth, electrification of certain sectors and vehicles, and economic growth, including in the mining, industrial, and agricultural sectors.
- Depending on the speed of electrification and electric vehicle adoption, this demand could climb very rapidly.



# IESO - Supply

- Supply is anticipated to naturally reduce in the coming years, due to the retirement of the Pickering Nuclear Generation Facility, other nuclear refurbishment outages, and expiring contracts, particularly to oil and gas fired generation.
- Some of this could be preserved by re-contracting with wind and solar but clean energy regulations could mean that the retiring gas will not be replaced.

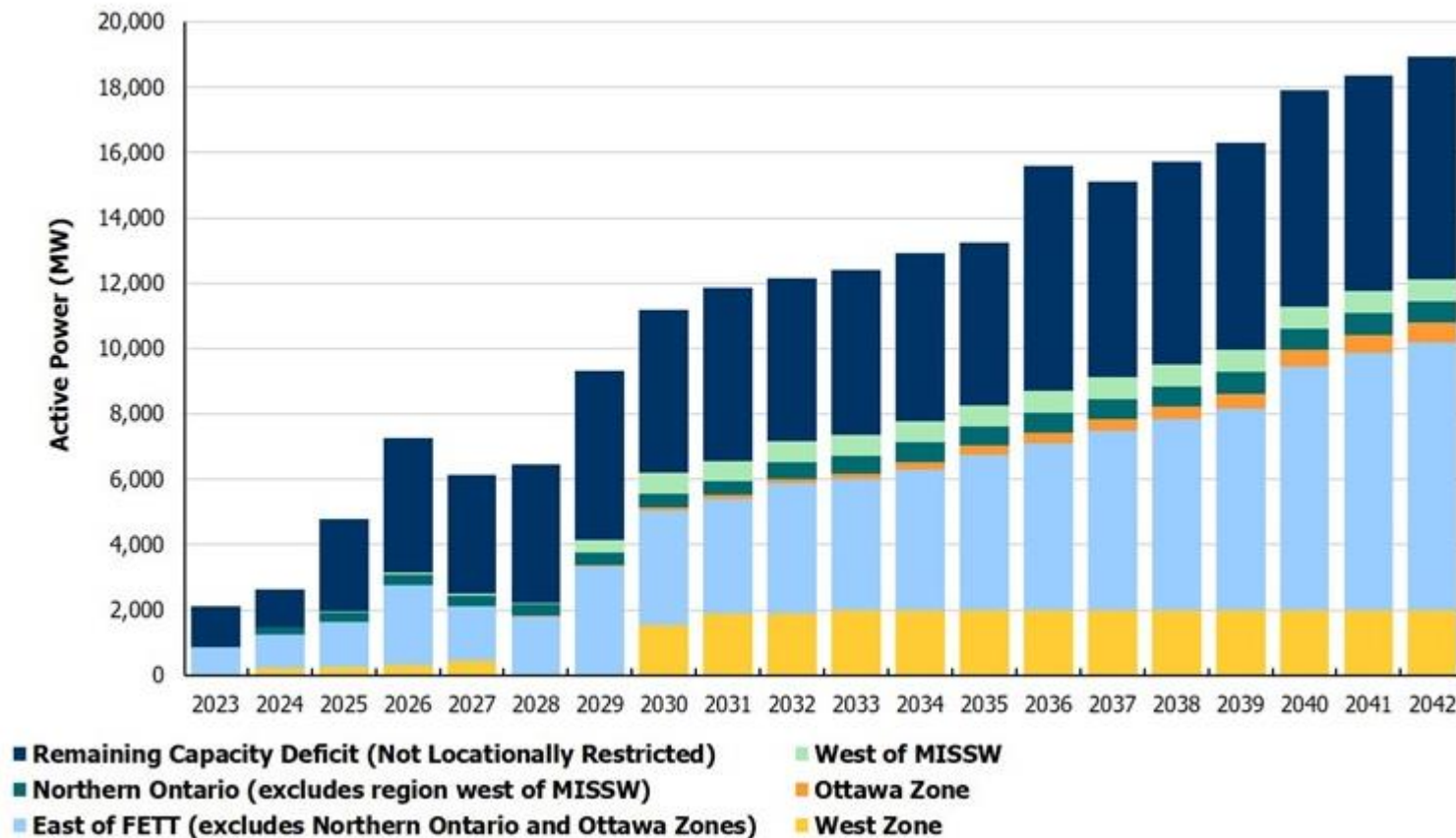
Installed Capacity Without Reacquisition of Expired Contracts



# 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 Procurement



- 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 will be 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)

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# 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.

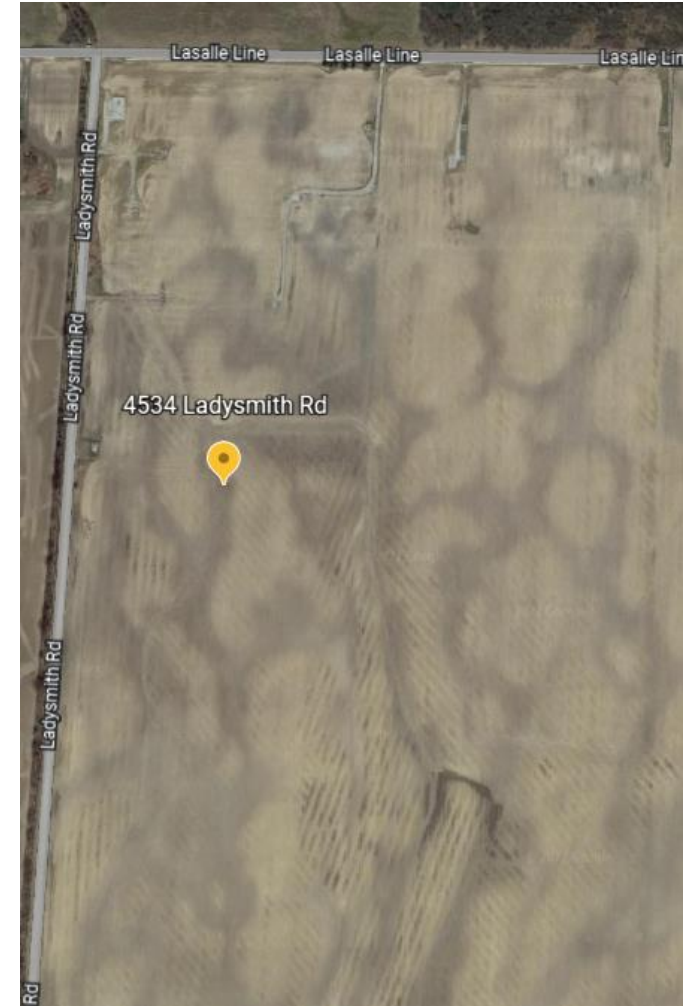


# Land requirements

- BESS equipment located on Enbridge-owned land
- Nameplate capacity to be determined pending IESO assessment
- Equipment being finalized
- Project will not require a large share of existing agricultural land
- Sample seen here, not final



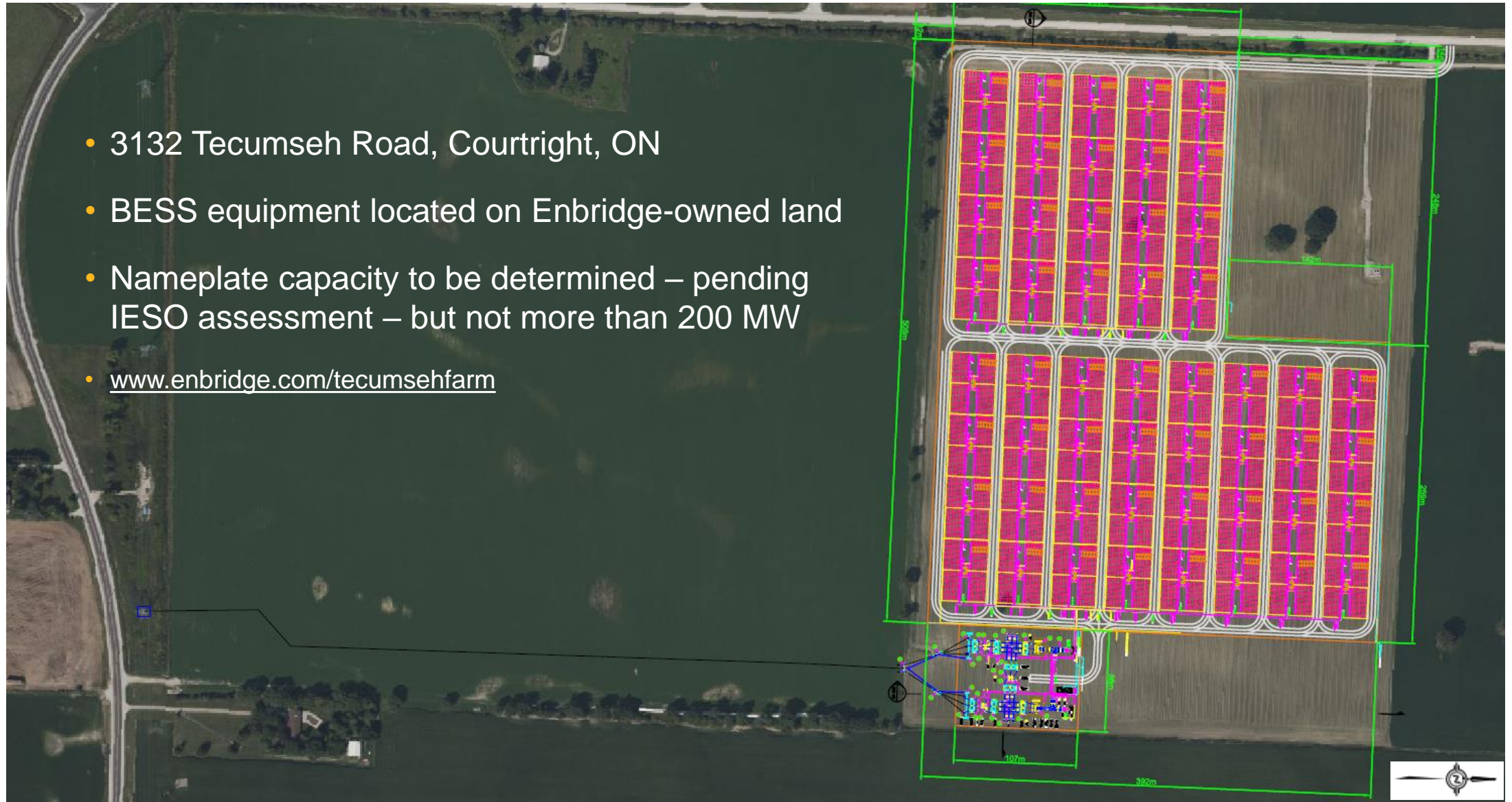
# Project locations





# Tecumseh Farm Energy Storage

- 3132 Tecumseh Road, Courtright, ON
- BESS equipment located on Enbridge-owned land
- Nameplate capacity to be determined – pending IESO assessment – but not more than 200 MW
- [www.enbridge.com/tecumsehfarm](http://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



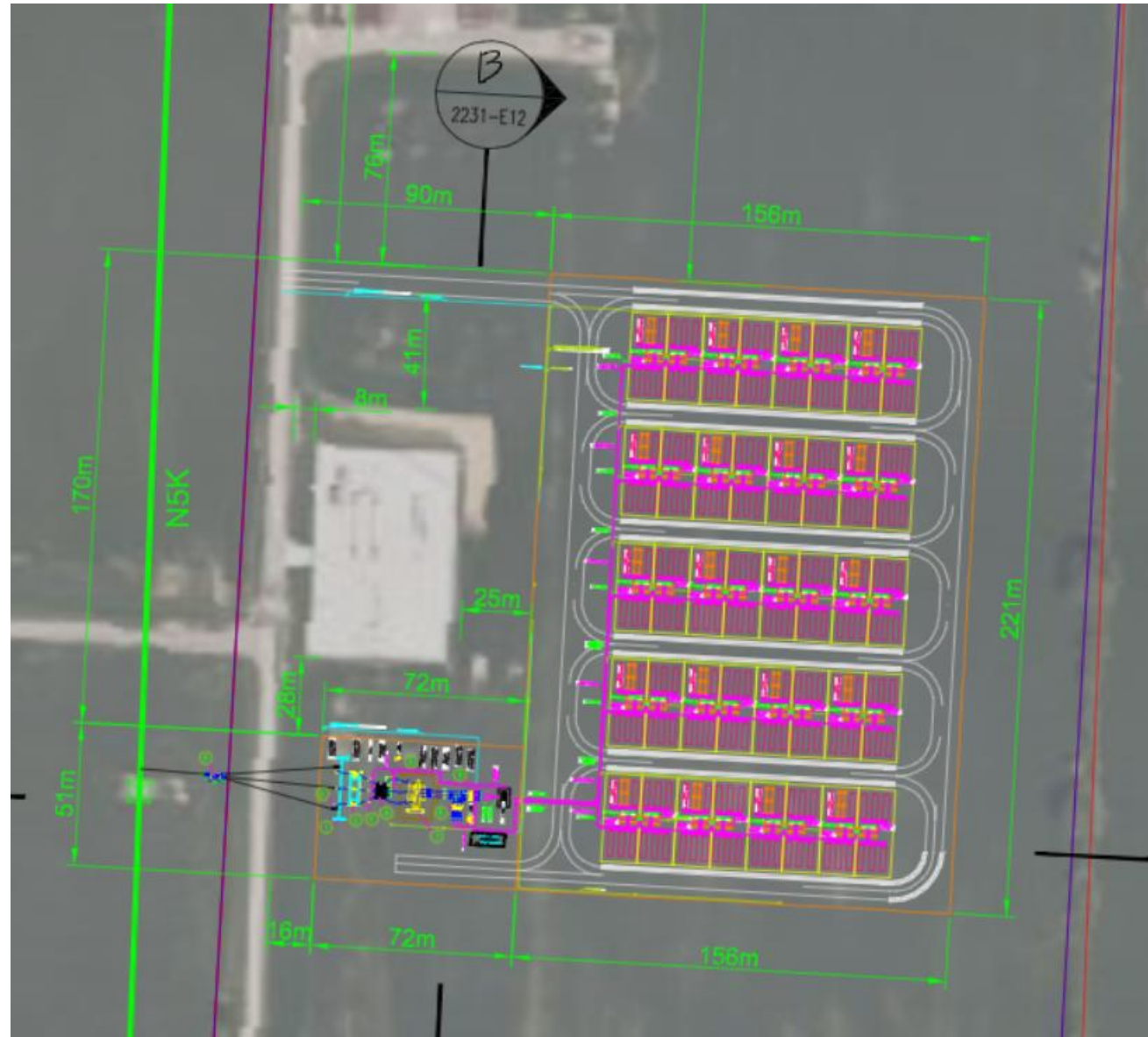
# Tecumseh Farm Energy Storage – View 4



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 – pending IESO assessment – but not more than 200 MW
- [www.enbridge.com/petrolia](http://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 – pending IESO assessment – but not more than 200 MW
- [www.enbridge.com/dowmoore](http://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 March 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.

# Community Engagement

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# 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.
- IESO will tell proponents later this month whether there is available transmission capacity, and what sizes they are eligible to bid. We will update our project websites if IESO determines that we are not able to bid any of the projects at this time due to transmission constraints.
- We will otherwise continue work for our approved projects until the bid date of January 24, 2023.
- IESO will select winning projects in March 2023. In the event we are successful, we will hold a follow-up virtual meeting on those projects, including final size and technology details, and additional opportunity for comments and questions.
- We are undertaking consultations directly with Indigenous communities and will continue those in line with the above.
- We will also keep the project webpages up to date as we work through the environmental and municipal permitting processes, and as we pass key project milestones.

# Questions?

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Denise Heckbert  
Sr. Advisor, Strategy & Markets Policy, Power  
Enbridge Inc.

Sumesh Guptar  
Technical Manager, Self-Power & Energy Storage, Power  
Enbridge Inc.

[power.operations@enbridge.com](mailto:power.operations@enbridge.com)