

# WELCOME

to the



**Oxford Battery Energy  
Storage Project**

Open House

# BORALEX



# About Boralex



**Canadian-based** company



**Major player** in renewable energy in **North America** and **Europe**



More than **30 years** of experience, including **10 years in Ontario**



**3,051 MW** of installed capacity



We **develop, build and operate** wind, solar, hydro electricity generation systems and storage

# Boralex around the World

## An international presence with strong growth potential

Guided by social and environmental values, Boralex provides its customers with clean energy in the most competitive way possible. The Corporation generates profitable and sustainable growth, thereby creating and sharing value while respecting its stakeholders.

Total installed capacity

**3,051 MW**



2,613 MW



255 MW



178 MW

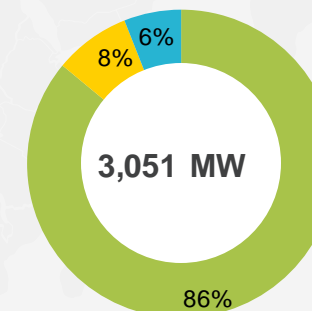


5 MW

Portfolio of projects in  
development and construction

**6.2 GW**

Segment breakdown



WIND

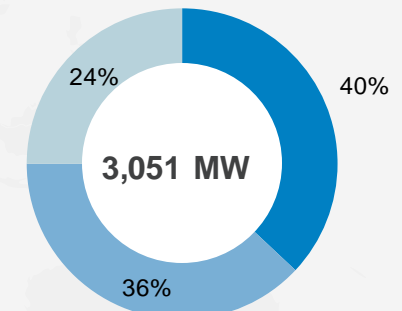


SOLAR



HYDRO

Geographic breakdown



FRANCE

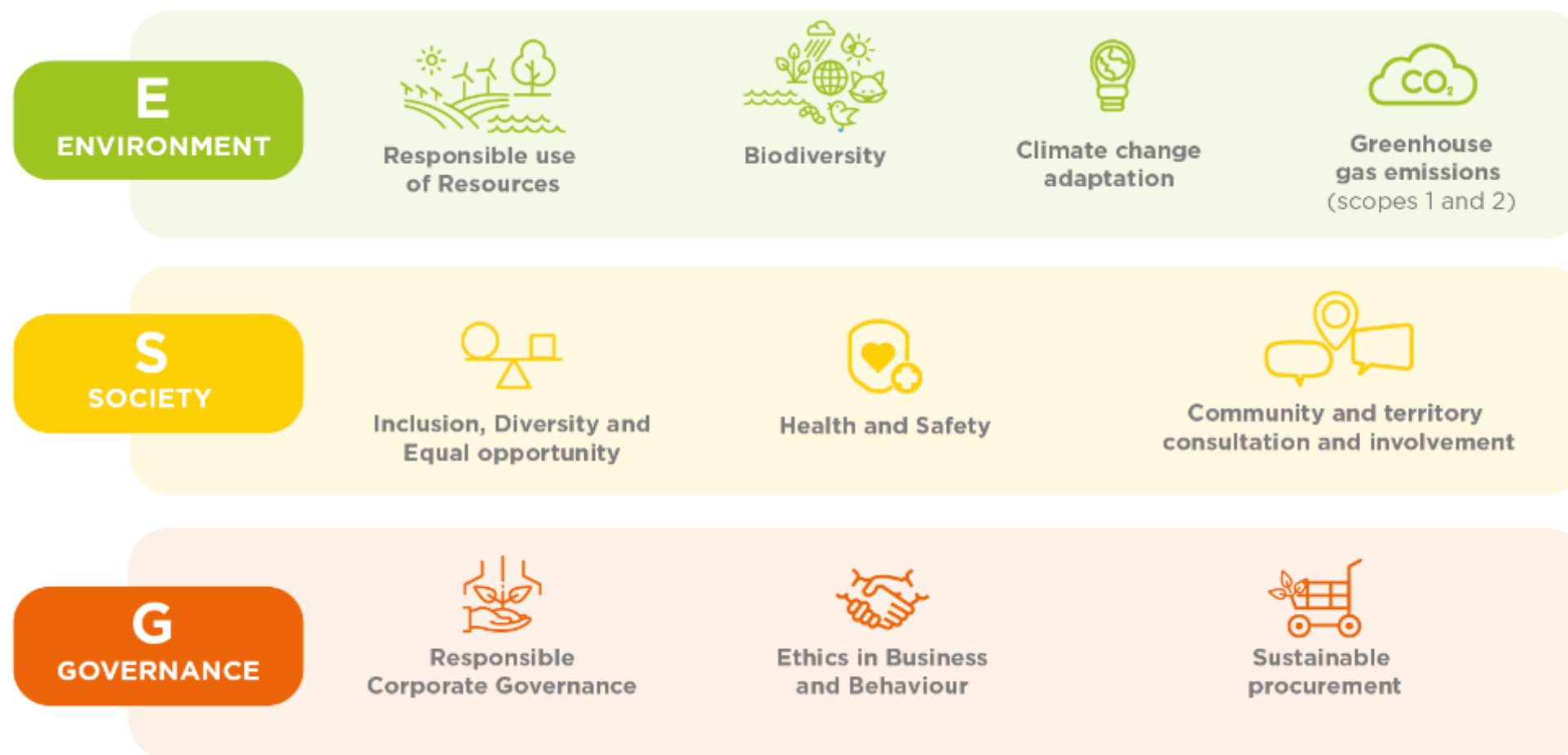


CANADA



UNITED STATES

Our strategy includes **10 CSR priorities** that support the strategic directions of our plan.



# Why Battery Energy Storage Systems (BESS)



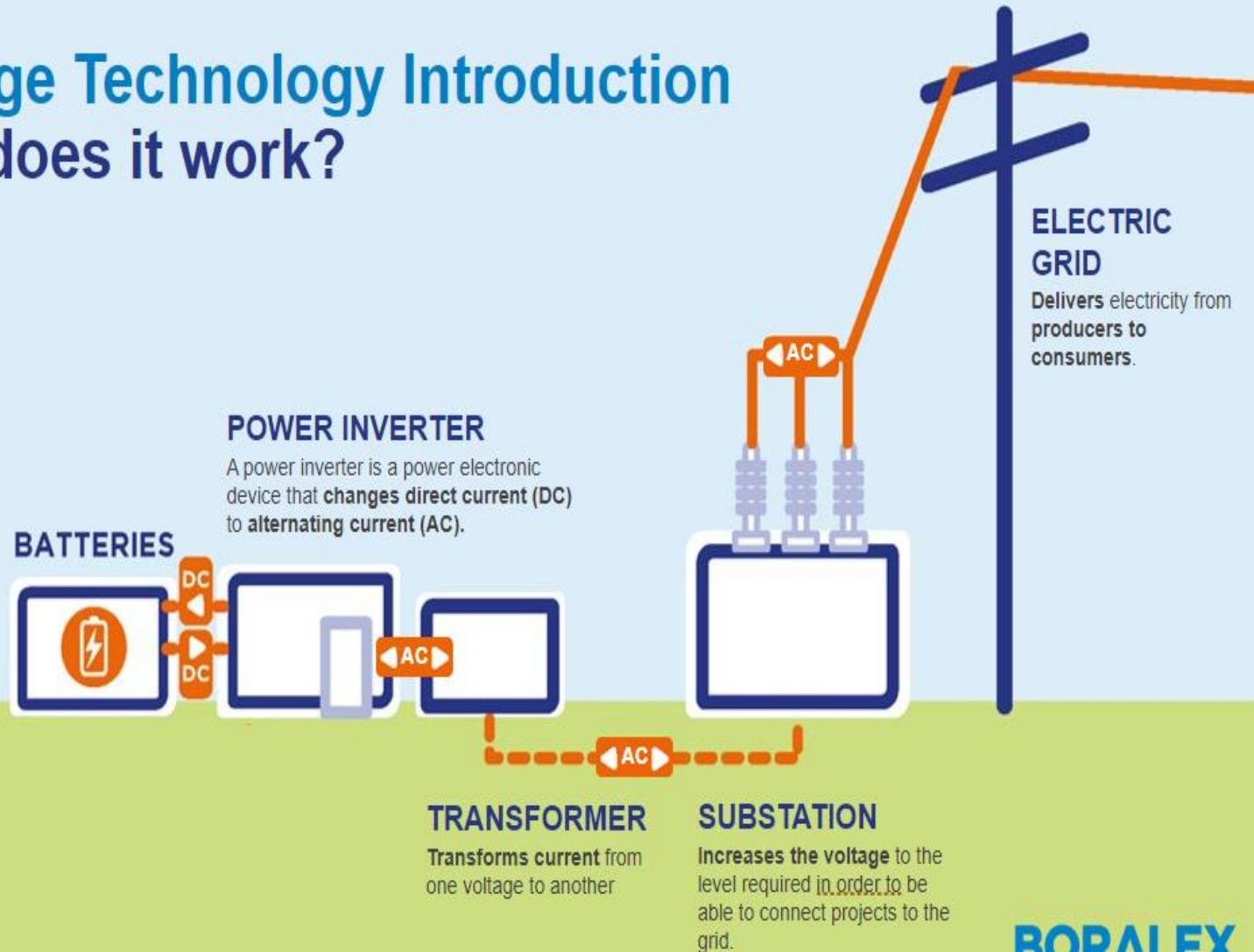
- Enables electricity to be stored during times of excess supply and released when the electrical grid needs it the most.
- Supports grid reliability.
- Reduces the cost for rate payers by reducing the reliance on natural gas and discharging energy when it is most needed.
- Provides an alternative to building new transmission lines.
- Reduces greenhouse gas emissions.
- Addresses the need for efficient energy storage with its exceptional scalability, compact footprint, and cost-effectiveness



# How it works?

ENERGY STORAGE IS THE PROCESS OF CAPTURING AND RETAINING ENERGY AT ONE POINT IN TIME, SO THAT IT CAN BE USED AT ANOTHER POINT IN TIME.

## Storage Technology Introduction How does it work?



- Energy is generated from sources including wind, solar, natural gas, hydro and nuclear.
- This energy enters the grid
- The energy is constantly metered and monitored by a battery management system.
- If there is a surplus energy, energy from the grid is converted from AC to DC for storage in the BESS.
- The energy is stored and the battery management system continuously monitors and controls the flow of energy and optimizes how batteries are charged/ discharged.
- When there is a need for more energy on the grid, energy is discharged from the BESS and converted from DC to AC to feed back into the grid.

# Building a BESS Facility



The steps to construct a BESS facility include:

**Civil Work:** The ground is prepared to ensure the facility is built on a flat surface.

**Perimeter Fencing:** A fence and safety signage is installed around the perimeter of the facility.

**Foundation Work:** Concrete slabs or helical piles will be installed as foundations that will accommodate the battery modules and electrical components.

**Battery Installation:** Modular containers that host the batteries are installed in conjunction with a power conversion system (PCS) and transformer.

**Electrical Components:** Balance of electrical equipment includes a project substation with High Voltage metering, breakers, main power transformer and control building. Alternating current (AC) collection cables are used to interconnect the project substation to the battery system rows.

# What a BESS Project Looks Like



The footprint of battery energy storage infrastructure is small compared to other forms of energy.



Each BESS container is equipped with a monitoring system and automatic shut off systems for enhanced safety.



Boralex will work with authorities to ensure a safe and reliable system that meets all required regulations.

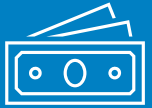


# BESS Benefits



## Employment

**Creating jobs in host communities:** ~ 75 Jobs created during construction. ~ 1-2 full time employees for operation.



## Economy

**Procuring local:** Expect to procure **materials and services** from host communities (e.g. aggregates, civil works, machinery).



## Consumers

**Reduce energy bills:** Significant benefits to **Ontario's ratepayers** by **reducing the need and cost** associated with using gas-fired power plants during times of peak demand.



## Environment

**Sustainable Energy:** Fosters **penetration of renewable energies** by reducing carbon emissions from traditional energy systems (e.g. fossil fuels).

## Supporting the Local Community

Boralex is dedicated to being a good neighbour and an integrated part of the community.

Every year we support local non-profit organizations, charities, and events that contribute to the vitality of the area.

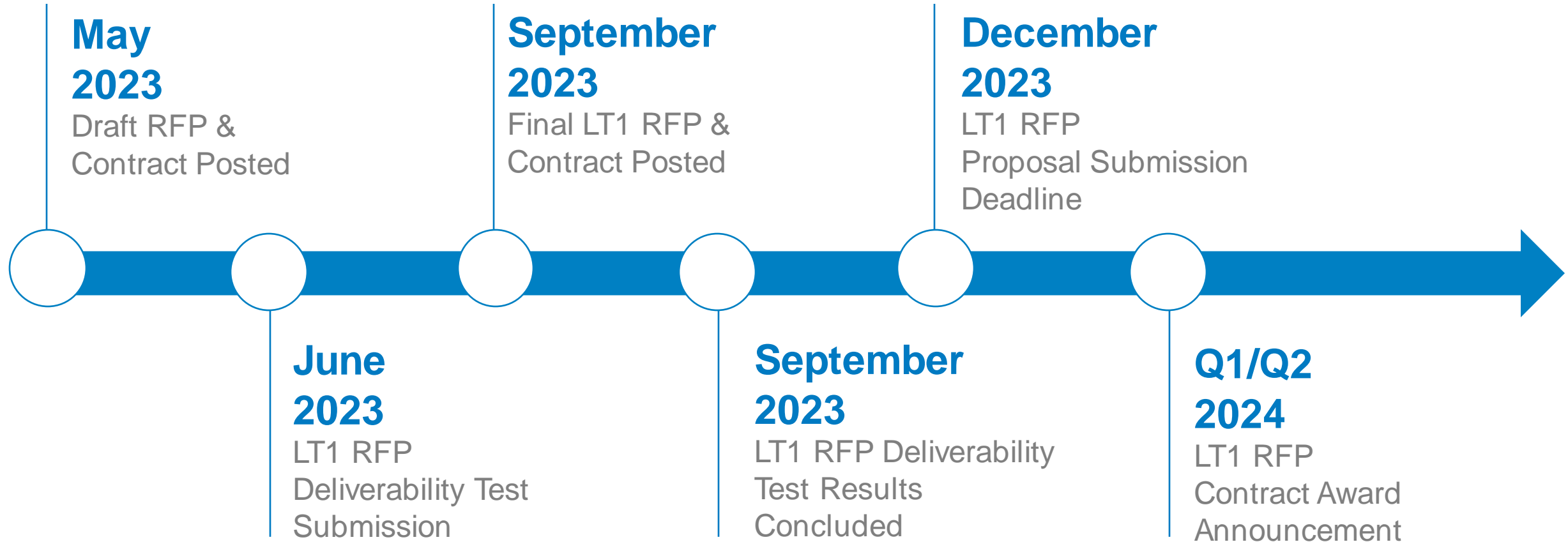
We believe a successful project benefits the entire host community.



# Context for Battery Energy Storage Systems (BESS) in Ontario

- Ontario is entering a period of emerging electricity system needs that will require new electricity resources **this decade**.
- To address this need, The Independent Electricity System Operator (IESO) is competitively securing up to **4,000 MW** through the **first long term request for proposals** process (LT RFP).
- In 2022, the IESO held an expediated process, E-LT1 RFP, securing up to 1,500 MW of capacity, 900 MW to come from energy storage.
- As part of the E-LT1 RFP, Boralex was **the Leading Awardee**, with **Two Storage Projects Totaling 380 MW Selected by IESO**
  - ✓ Hagersville Battery Energy Storage Park is a 300 MW, four-hour duration battery storage project near the Town of Hagersville, Haldimand County, Ontario.
  - ✓ Tilbury Battery Storage Project is an 80 MW, four-hour duration battery storage project near existing Hydro One infrastructure in the Municipality of Lakeshore, Ontario.
- The IESO is now holding another competitive procurement, **LT1 RFP**, to secure up to 2,500 MW of capacity, of which **1,600 MW** is to come from energy storage.

# IESO LT1 RFP Draft Procurement Schedule

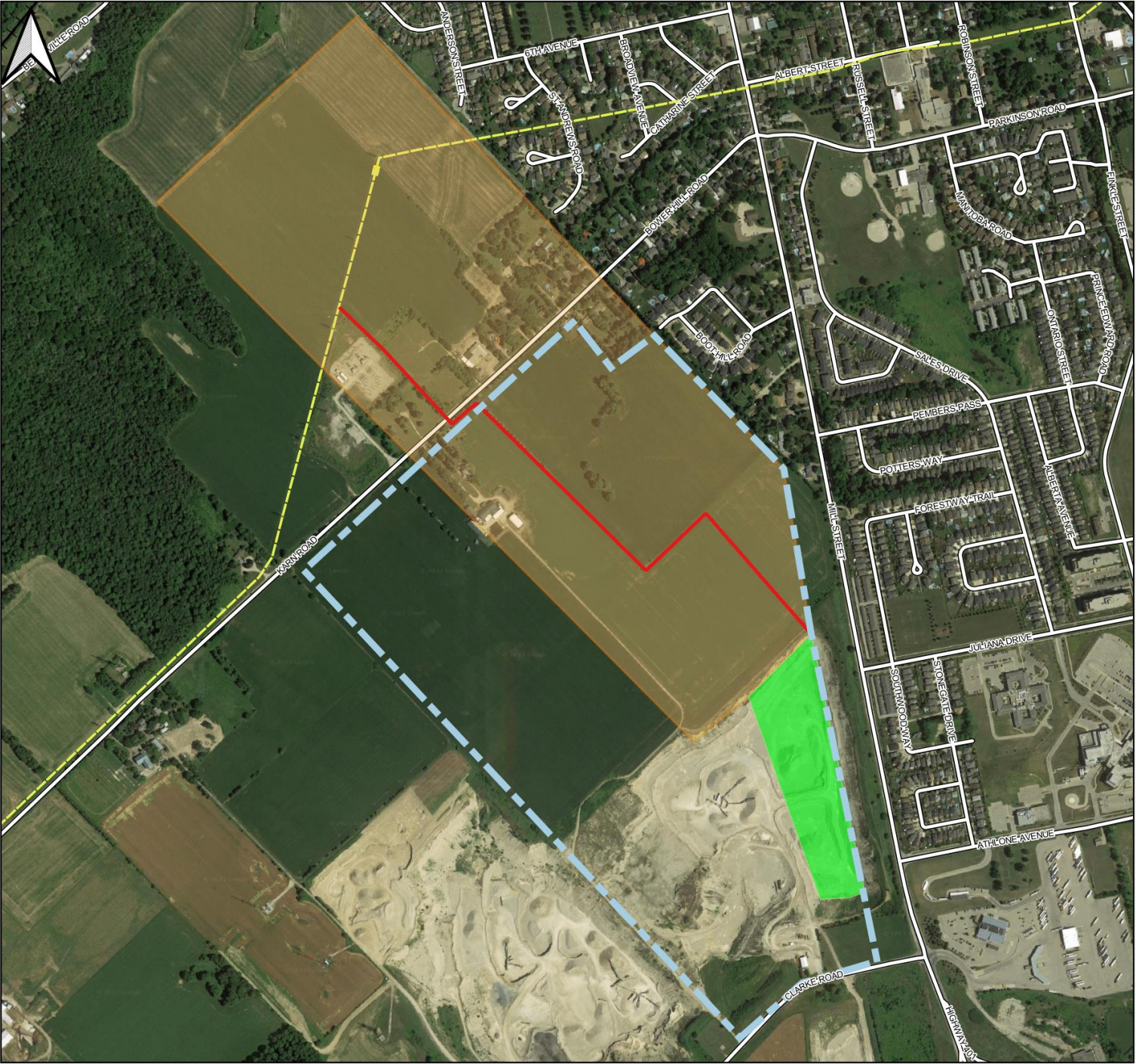


# Why South-West Oxford



- Through ongoing discussions and the guidance from South-West Oxford, it was determined that an **ideal location** for a battery project would be to utilize depleted aggregate land.
- Utilizing aggregate-depleted land for a battery energy storage project **minimizes environmental impact and repurposes non-arable land**, reducing conflicts with agricultural or ecological interests.
- The inherent sound barriers formed by the surrounding aggregate pit walls make this **site naturally conducive to sound reduction**.
- After **outreach with several** area companies, Hydro One, aggregate operators, the landowner's family and South-West Oxford staff, the site was selected.





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**Oxford  
Battery Storage**


**Site Map**

**Project Site**


 Project area

**Proposed Layout**


 Battery containers and associated infrastructure


 Proposed line of interconnection\*

\*Alternate routes under consideration

 Area under consideration for alternative interconnection routes

**Existing infrastructure**

 Transmission line

 Road

 Railway

0 100 200 m

Projection : NAD83 / UTM zone 17N  
Basemaps : Google Satellite  
2023-09-18



# Oxford Battery Energy Storage Project

- Located in the **Township of South-West Oxford**
- Connecting to the existing 115kV transmission line.
- Capacity targeting **75-125 MW** capacity for 4 hours
- Approx. **12 acres** anticipated footprint

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# Permitting Process Overview



## ENVIRONMENTAL

- **Class Environmental Assessment (EA)** for Minor Transmission Facilities to be obtained from the Ministry of Environment, Conservation and Parks (MECP)
- **Environmental Compliance Approval (ECA)** for noise to be obtained from the MECP
- **Municipal building permits**  
Other permits and approvals as determined by baseline condition characterization



## CONSTRUCTION

**Implement standard construction mitigation practices**

**Elements that will be carefully considered**

- Air Quality
- Sound
- Environment & Wildlife
- Local Traffic Safety
- Fire Management
- Erosion and Sediment Control



## OPERATION

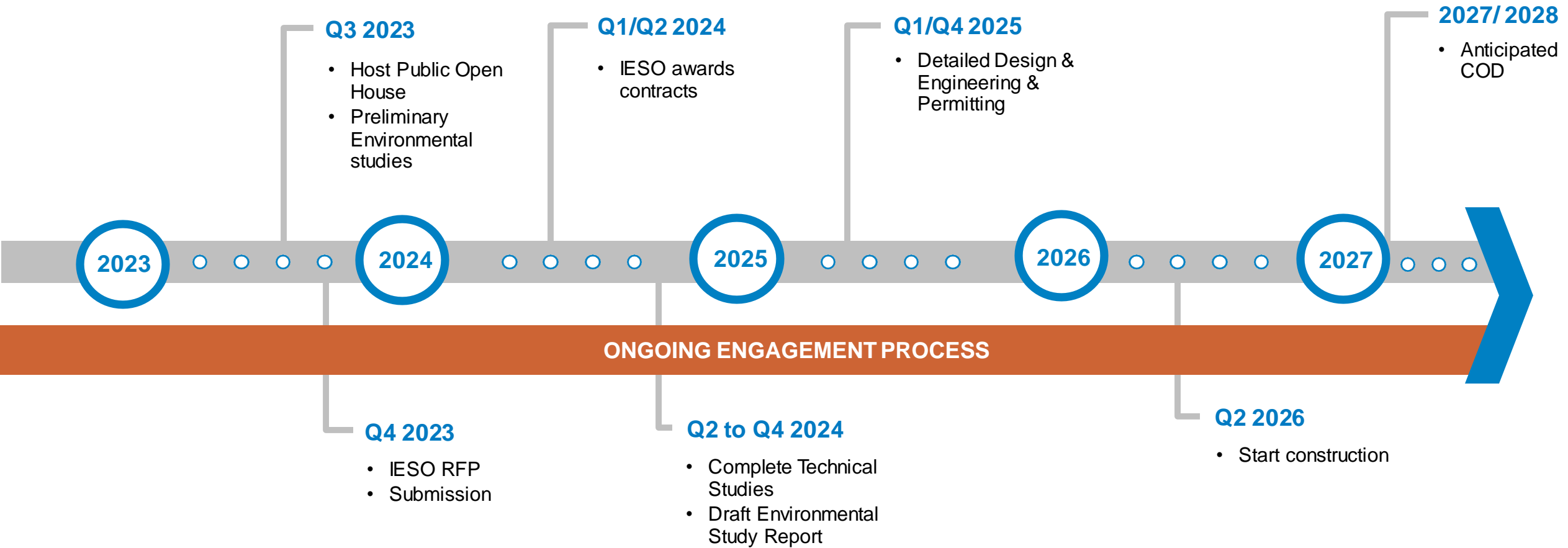
**Comply with requirements**

**Procedures that will be carefully enforced**

- Emergency Response
- Fire Management
- Sound
- Environment
- Vegetation Management



# Anticipated Timeline

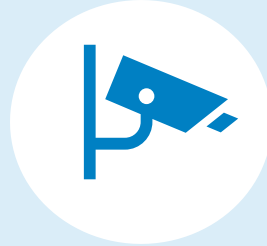


# Our Commitment to Fire Safety



## PREVENTION

- Retained a **verified third-party Fire Safety Expert**.
- Selecting BESS equipment designed to meet **National Fire Code of Canada, NFPA 68 and/or 69 standards**.
- Batteries are designed and manufactured to **adhere to and pass evolving safety tests** prior to operation including **UL 9540 and UL 9540A**.



## MONITORING & DETECTION

- Thermal **management systems (fans, ventilations, cooling)** to maintain safe operating temperatures.
- In equipment **safety controls (sensors)** to detect potential abnormal battery behaviours.
- Control room **monitors to detect potential** variances in battery behaviors.



## EMERGENCY RESPONSE

- Prepare **comprehensive emergency response plan** in collaboration with third-party Fire Safety Experts and local fire departments.
- Provide rigorous **Safety Training for first responders & onsite personnel**.



# Thank you !

Have more questions or looking  
for additional information?

Please visit Boralex's project website for Oxford  
<https://www.boralex.com/projects/oxford/>



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