# Energy Modeling Initiative Central Workshop Case Study





# CONTEXT

- The Learnington-Kingsville area is home to the greatest concentration of greenhouses in North America.
- Over 2800 acres of under glass agriculture accounts for \$1B in economic activity in the Province.
- The sector is undergoing rapid transformation and expansion and is looking for innovative flexible energy system solutions to meet future load growth in the most timely and economic manner.







### CONTEXT

- Ontario growers are increasingly integrating LED lights to extend daily and seasonal growing periods.
- Operations are also becoming automated, from packing processes to harvesting routines.
- Many are looking to increase production intensity and expand.
- These load increases are being multiplied throughout the expanding sector.







# CONTEXT

Planned expansions have future load growth expected to increase more than 5-fold over the next 5 years. This poses some challenges:

- CAPACITY
  - To meet the new demand with gridsupplied electricity will require buildout of new transmission infrastructure.
- ENVIRONMENTAL FOOTPRINTS
  - Growers want to expand while minimizing their carbon and water footprints.
- COST
  - Energy costs have a substantial impact on profit margins in this sector.







# CONTEXT

- It is unrealistic to expect completion of a transmission project of this magnitude in the timeframe required.
- Innovative and strategic transmission deferral solutions are an option to enable expansion without delay.





# **RELEVANCE TO ONTARIO'S LTEP**

- Ontario's approach to grid modernization is to create the right environment for LDCs to make the best decisions for their systems and their customers.
- To get there, the government and its partners need to address the barriers to innovation.
- To meet the challenges of the future, LDCs may need to adopt more flexible and innovative approaches to service delivery than have been allowed in the past.





### **RELEVANCE TO ONTARIO'S LTEP**

- To encourage change in the energy sector, the government will work with utilities and other partners to build a culture of innovation, and will look to the OEB to explore, where costappropriate:
  - The deployment of renewable distributed generation and other distributed energy resources that provide value to customers;
  - The use of innovative, non-wires solutions that could, among other things, allowing utilities to manage their systems better and encourage customer choice including the principles of efficiency and cost-effectiveness;
  - The regulatory treatment of LDC capital and operational expenditures, which can inhibit the uptake of these non-wires solutions;
  - Opportunities for utilities to partner with their customers to use in-front and behind-themeter applications to address system needs.





# **STAKEHOLDER PERSPECTIVES**

- Lucas Semple, Under Sun Acres
- Alec Warzin, Hydro One
- Dave Arkell, 360 Energy
- Vicki Gagnon, IESO





### **COLLABORATIVE ANALYSIS**

• (IT SOUNDS SO MUCH BETTER THAN "BRAINSTORMING").

