LCBA LOW CARBON BUSINESS ACTION CANADA

Challenge: LCBA - City of Toronto - Community scale residential energy storage

Challenge Statement/Synopsis:

Buildings currently generate approximately 50% of Toronto's GHG emissions. For Toronto to achieve its goal of net zero by 2050 any new, large district within Toronto must strive to be a zero-emission development. The City of Toronto is seeking innovative ideas that support the integration of community-scale renewable energy systems, specifically community-scale energy storage solutions.

Context:

TransformTO is Toronto's ambitious climate action strategy. Unanimously approved by City Council in July 2017, it includes a set of long-term, low-carbon goals and strategies to reduce GHG emissions. On October 2, 2019, City Council voted unanimously to declare a climate emergency and accelerate efforts to mitigate and adapt to climate change, adopting a stronger emissions reduction target of net zero by 2050 or sooner.

Community energy planning is a key component of TransformTO. Community Energy Planning (CEP) is a process that considers energy early in the land-use and infrastructure planning process and identifies opportunities to integrate local energy solutions at a building or neighbourhood-scale.

With the overall goal of reducing energy use and increasing the use of renewable-low carbon energy sources at a building and/or neighbourhood scale, examples of community energy planning include the extensive greening of homes and buildings, and the development and use of low carbon thermal energy networks (known as District Energy). The City has also implemented a voluntary 72-hour back-up power performance guideline for multi-unit residential buildings (MURBs), which will increase the need for on-site energy generation and storage.

Villiers Island is an ambitious plan to develop a new, sustainable neighbourhood on Toronto's waterfront. It is one of 17 global pilot cities committed to meeting the Climate Positive standard. The Climate Positive Framework is a high-level, non-prescriptive roadmap that leads new developments to reduce their emissions beyond zero by reducing the emissions they create and offsetting the remainder by removing emissions from their adjacent communities. Community-and neighbourhood-scale energy storage innovation will play a critical role in meeting emissions targets for Villiers Island and future projects.

This project is funded by the European Union

Response Criteria:

- The City of Toronto is seeking solutions for community-scale energy storage solutions that will accelerate the deployment of renewable energy within the City of Toronto. In-building, stand alone storage solutions for single mid-high-rise buildings is of particular interest, as is micro-grid (centralized) storage.
- The City of Toronto is targeting companies with solutions that land between TRL 6-9 of the technology readiness scale (TRL), although it will consider low TRL solutions on a demonstration basis if they are especially novel.
- Proponents must explain how their solutions meets safety and regulatory standards and provide a description of successful deployments where applicable.
- Provide CAPEX and OPEX details for the solution.
- If applicable, proponents should explain system capacity (i.e., how many units would be needed to serve a neighbourhood of 2500 homes), impact (i.e., how does the solution help Toronto achieve its Climate Emergency Action Plan targets), reliability (i.e., how well will the solution perform in real-world environments?).

The Opportunity:

- If chosen, conduct a demonstration project of the solution with the City of Toronto, one of Canada's largest, most sustainable cities.
- Pitch your solution during GLOBE Forum 2022, North America's longest running sustainable business conference.
- Meet new customers and access new markets.

About the City of Toronto:

Toronto is Canada's largest city and a world leader in such areas as business, finance, technology, entertainment and culture. The city is focused on building the necessary social and physical infrastructure to support Toronto's growth. Toronto has over $75 billion in existing infrastructure such as facilities, transit, parks and street and underground infrastructure. The Environment & Energy Division leads, coordinates and is accountable for the City's environment and energy sustainability outcomes. With the goal of making Toronto one of the most sustainable cities in the world, the division facilitates the development and implementation of strategic community and corporate-wide environment and energy policies and programs.

***Only non-confidential information should be included in your response ***