

Zero Emission Bus Committee Terms of Reference (TOR)

(February 16, 2023)

1.0 Background

During the 2021 Work Program planning exercise, the OPTA Board recommended the establishment of a zero-emission bus (ZEB) Committee in response to the need expressed by members for the ability to learn from and share with one-another as revenue and non-revenue fleets are transitioned to zero-emission technology.

The board recognized that several other groups and forums were already in place, however there was consensus that an Ontario-specific group would be beneficial to the OPTA membership. The committee will identify the need for sub-groups or larger group discussions as required.

2.0 Mandate

The ZEB Committee's mandate is to establish and maintain a forum for OPTA members to develop and share best practices, lessons learned, standards documentation, and key metrics for the implementation of zero-emissions vehicle technology. To this end, there are four workstreams under which the ZEB Committee will research, exchange, develop, issue and maintain industry guidelines as follows:

1. ZEB Operations and Maintenance

This work stream provides oversight and guidance related to ZEB operations, program-level maintenance considerations including potential estimated fuel and maintenance cost savings, feasibility modelling and implementation planning considerations, performance benchmarking and reporting, ZEB and EV system safety processes and procedures, and related training.

1.a Planning, Scheduling, and Operations

- Conducts research and establishes best practices for ZEB scheduling, planning, and operations through focus groups, workshops, surveys, and stakeholder outreach.
- Disseminates findings and recommendations to members to assist in areas of defining scope for feasibility modelling and implementation planning, including the potential operational cost implications.
- Coordinates with OPTA's Planning & Scheduling Committee, and with CUTA's Planning & ITS Subcommittee of the Technical Services Committee on ZEB planning, scheduling, and operations considerations.

1.b Safety, Training, and Maintenance

- The adoption of ZEBs will drive out the work carried out by this sub-stream, and this work will be integrated with the other work streams and other OPTA Committees including the Maintenance Committee, Marketing & Communications, and the HR Committee.
- Benchmarks and coordinates with CUTA (through Ontario Regional Committee, Technical Services Committee, Workforce Development (and their respective applicable Subcommittees) on areas applicable to ZEB safety, training, and maintenance programs.
- Collaborates with other North-American agencies such as APTA, CALSTART, TRB, and other ZEB public transit agencies through WS2c on ZEB safety, training, and maintenance programs.
- Develops guidelines, drafts policy and operating procedure templates, standard codes of practice, training program outlines and considerations.
- Integrates information into various other work streams to ensure the safety of ZEBs and EV systems are always of primary consideration.

1.c ZEB Performance Monitoring and Reporting Dashboard

- Coordinates the cross sharing of ZEB and EV system information. Establishes standardized method of data collection, empirical data analysis, and shared comparative reporting.
- This work includes the design, build and implementation of a cloud-based data trust framework that will securely and confidentially collect and analyze the input data from operational zero-emission buses (battery-electric buses and hydrogen fuel cell electric buses).
- Data will be presented the data analytics outcomes on an interactive dashboard with a predetermined set of performance indicators.
- Benchmarks and coordinates with other applicable Canadian not-for-profit industry organizations including:
 - CUTA (through Ontario Regional Committee and the Technical Services Committee (and its Subcommittees including the Maintenance and Vehicle Technology Sub-committee, and the Statistics Sub-committee).
 - CUTRIC (through the ZEB Committee) and manages the ZEB Performance Analytics Dashboard Project (for OPTA).
- Collaborates with other North-American agencies such as APTA, CALSTART, TRB, and other ZEB public transit agencies through WS2c.

2. ZEB Engineering

This work stream will use a cross-section of representatives from the public and private sectors of the public transit industry to develop technical standards that guide transit agencies in the procurement of electric vehicles (buses, paratransit, non-revenue) as well as electrification infrastructure and energy management systems to ensure a successful procurement, minimizing risk associated with the adoption of these new technologies and complex systems while considering Ontario transit agency specific challenges and requirements.

2.a Infrastructure Requirements

Conduct research and establish guidelines for the selection and design of both electric vehicle charging and infrastructure energy management systems.

2.b Light and Heavy Duty Vehicle Requirements

Conduct research and review of existing electric vehicle technical guidelines, identify gaps and supplement with additional guidance to address industry and Ontario specific challenges.

2.c Technical Working Group (hosted by TTC)

Provide access to a regularly scheduled technical call with 45+ North American Transit Agencies to discuss and exchange information regarding ongoing electric vehicle and charging infrastructure technical challenges.

3 ZEB Procurement and Vendor Engagement

3.a Conventional Bus Commercial Management

Providing joint procurement opportunities focused on zero-emission buses. The goal of this collaboration is to develop a single bus procurement specification to reduce cost and standardize customer experience, operations and maintenance. Transit agencies will provide lessons learned were shared with OPTA members, with the intention of providing the members an opportunity to participate in ZEB joint bus procurement opportunities. Working sessions will be held with OPTA members to participate in specification development and ultimately joint procurement.

3.b Paratransit ZEV Commercial Management

There are many organizations that provide Paratransit services within Ontario. This stream will focus on market scans for ZEVs that meet Ontario and Canadian standards and specifications by developing a survey to be issued to specialized transit EV manufacturers and dealers. The survey results will yield a directory of available paratransit units categorized by general attributes. This may also include onsite vehicle demonstrations, as well as alignment with other OPTA subcommittees such as the Specialized Transit subcommittee. Some work may overlap with other provinces to enable knowledge sharing on this topic. The longer term objective is exploring the possibility of a joint procurement. Regular updates on the progress of this stream will be presented at OPTA ZEB committee meetings.

3.c Non-Revenue Vehicle Commercial Management

Non-revenue vehicles play an important part in supporting transit services. Some types include change-off/relief vehicles, route supervisory vehicles, maintenance support vehicles, yard trucks, infrastructure vehicles, and more. Zero-emission non-revenue vehicles have been adopted at a greater pace than the heavy-duty market. This stream will focus on conducting a market scan of vehicle types and specifications, product availability, and discuss pros/cons and challenges with the adoption of zero-emission transit support vehicles. The forum may include regular

meetings/discussions with interested transit agencies, as well as collaborating with other work streams and private sector.

3.d Vendor Engagement

Engaging with the private sector for the purpose of OPTA ZEB discussions and collaboration with public transit systems in Ontario. OPTA Business Members and the larger vendor community play a crucial role in ZEB adoption. In the short-term, there are two key mandates as part of this work stream: Market Sounding Report and Open-House Webinar Series Presentations from the Vendor Community.

- For the market sounding report, OPTA will develop a key set of questions for areas of work including but not limited to Bus OEMs, Component Suppliers, Vendor Repair Shops, Consultants, Power Providers, and Software Providers. Information will be collected from the results of the study, and will be used as an input to the market sounding report and cross-collaboration with other work streams.
- For the webinar series, OPTA will be providing the opportunity to invite business members and other vendor organizations to present the products/services they offer to the OPTA ZEB sub-committee members. The webinar series presentations will held monthly and involve 3 to 5 sessions which are 30 minutes in length (10 minute presentations and 20 minute Q/A period).

4. ZEB Intergovernmental Advocacy

4.a ZEB Market Visualization

This work stream will coordinate a community of transit advocates to amplify the significance (environmental, health and social outcomes) of bus electrification within the larger transportation electrification field. Advocacy work will identify regulatory and policy impediments to transit electrification. The initial focus of this work stream will be advocacy at the provincial level with a focus on understanding the rate regulation environment and opportunities to reduce capital and operating costs that would otherwise be passed on to transit customers in the form of higher fares. Advocacy efforts will align to the greatest extent possible with CUTRIC's efforts to position transit agencies as part of a made-in-Ontario innovation program, and with CUTA's efforts at the federal level to secure funding for capital projects.

4.b Regulatory Framework for ZEB Technician Training

In collaboration with Work Stream 1.b, and the OPTA eMobility Subcommittee of the OPTA Maintenance Committee, identify the training required, existing sources of training, standards required and the preferred regulatory framework.

For clarity, this Committee will integrate its work plan with that of other OPTA Committees, or their subcommittees, to avoid duplication and to keep each other informed.

3.0 Composition

Participation on the ZEB Committee is open to all Transit System member agencies. As of November 2022, OPTA Business Members and OEMs will be invited to participate in monthly update meetings, and other meetings as required. As of March 2023, CUTA Transit System members have been invited to join the OPTA ZEB Committee.

Minutes, agendas, and correspondence related to the ZEB Committee will be shared with all committee members via posts in the Member-Only Forums of the OPTA website. The committee membership list will be maintained in the Member-Only section of the OPTA website.

4.0 Committee Structure and Term

The committee will have a Chair and Vice Chairs, each of which will be filled, for the first year, by asking for volunteers. The terms will be for 2 years, with one of the Vice Chairs becoming the Chair the following year. A vote for Chair and Vice Chair will be held during the first meeting each calendar year. The committee will meet monthly, or as needed. Remote options will be available for all meetings.

5.0 Subcommittees

The ZEB Committee may strike standing or ad hoc subcommittees, comprised of committee members only, to accomplish specific workstream deliverables, tasks, and/or projects. In all cases the subcommittee(s) will report back to the Committee.

6.0 Length of Committee Term

The term of the ZEB Committee will be ongoing, at the discretion of the OPTA Board of Directors.

7.0 Administration and Meetings

OPTA staff will serve as the administrative support to the Chair and Vice Chairs by producing agendas, taking minutes, maintaining the roster, and posting information to the website. Additional project support will be assessed on an as-needed basis, with direction from the OPTA Board.

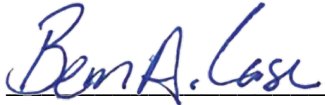
8.0 Confidentiality and Conflict of Interest

It is assumed that each transit system member is participating on the Committee in their capacity as an employee of a member municipality and as such will be governed by the confidentiality and conflict of interest policies of their employer.

Acknowledgement

These Terms of Reference will be re-confirmed each year, by the new Chair and Vice Chair:

Acknowledged and Agreed on this _____ day of _____, 2023 by:



Per: Chair
Name: Bem Case, TTC

and



Per: Vice Chair, Operations and Maintenance
Name: Scott Gillner, Brampton Transit



Per: Vice Chair, Engineering
Name: Mike Macas, TTC

and



Per: Vice Chair
Procurement and Vendor Engagement
Name: Stephen Bacchus, MiWay

Per: Vice Chair, Intergovernmental Advocacy
Name: _Vacant _____