

Subject: Zero Emission Bus (ZEB) Envari Contract

File Number: ACS2023-TSD-EN-0010

Report to Joint Transit Commission and Audit Committee on 9 June 2023

and Council 14 June 2023

**Submitted on May 31, 2023 by Renée Amilcar, General Manager, Transit Services
Department**

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Ward: Citywide

Objet : Autobus à émission zéro – Contrat avec Envari

Numéro de dossier : ACS2023-TSD-EN-0010

**Rapport présenté au Commission du transport en commun et Comité de la
vérification**

Rapport soumis le 9 juin 2023

et au Conseil le 14 juin 2023

**Soumis le 31 mai 2023 par Renée Amilcar, Directrice générale, Services de
transport en commun**

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Quartier : À l'échelle de la ville

REPORT RECOMMENDATION

That the Joint Transit Commission and Audit Committee recommend that Council direct the General Manager, Transit Services to finalize negotiations and execute an agreement with Envari Energy Solutions for the design, procurement and installation of the Charging and Electrical Infrastructure, the provision of backup power and an energy management system to support OC Transpo's conversion to battery-electric buses.

RECOMMANDATION DU RAPPORT

Que le Comité de la vérification et la Commission du transport en commun recommandent conjointement à la directrice générale des Services de transport en commun de conclure les négociations et d'établir une entente avec Envari – Solutions énergétiques pour la conception, l'approvisionnement et l'installation de l'infrastructure électrique et de recharge, l'alimentation électrique d'urgence et un système de gestion de la recharge en vue d'appuyer l'électrification du parc de véhicules d'OC Transpo.

BACKGROUND

In April 2019, Council declared a climate emergency and directed staff to establish new 2030 midterm corporate and community GHG emissions reduction targets, review and update long-term GHG emissions targets and, identify concrete actions and resource implications to achieve new targets ([ACS2019-CCS-ENV-0005](#)).

In January 2020, Council approved the Climate Change Master Plan. Council committed to reducing 100 per cent of City's corporate GHG emissions by 2040. The OC Transpo fleet was identified as a major contributor of the City's corporate GHG emissions ([ACS2019-PIE-EDP-0053](#)). The Zero Emission Bus (ZEB) Pilot Project was initiated as part of the City of Ottawa's plan to be zero emission by 2030.

In June 2021, Council approved the purchase of zero-emission conventional buses for all future fleet needs, provided they meet operational requirements and subject to funding and financial agreements ([ACS2021-TSD-TS-0009](#)). At the same time, Council also delegated authority to the General Manager of Transportation Services (now Transit Services) to execute an agreement with Hydro Ottawa Holding Inc. and/or its subsidiaries for the provision of power and charging infrastructure to support the conversion to ZEB buses.

On February 9, 2023, TSD provided Transit Commission with an update on the ZEB infrastructure. TSD then presented the results of the 4-bus pilot project to Transit Commission on May 11, 2023 ([ACS2023-TSD-TS-006](#)). The technical review of the pilot project indicated that the electric buses performed well and were a good option for OC Transpo's future fleet. The report stated:

“The Zero Emission Bus (ZEB) Pilot Program has shown that Battery Electric Buses (BEB) can operate in service, as an alternative to diesel buses.”

As part of the pilot project, TSD partnered with Envari on detailed design, procurement, and installation of design infrastructure to support the electric buses. Envari Energy

Solutions is a wholly owned affiliate of Hydro Ottawa Holdings Inc.

DISCUSSION

The June 2021 report to Transit Commission and Council approved the purchase of zero-emission buses for all future transit bus fleet needs, as long as financing was secured, and the City did not spend more than planned in the Transit Long Range Financial Plan for the purchase of diesel buses ([ACS2021-TSD-TS-0009](#)). That report also approved the purchase of charging infrastructure and power to support the City's transition to ZEB technology.

The E-Buses began arriving in September 2021. OC Transpo performed a Pre-Delivery Inspection (PDI), which was completed by December 2021 for all buses. Charging infrastructure commissioning was completed in conjunction with the PDI process.

Training, documentation, and infrastructure were all reviewed and updated in preparation for the rollout of the E-Buses. A lane in the South Garage of 1500 St. Laurent Blvd. was outfitted with pantograph and plug-in chargers.

In February 2022, the E-Buses began revenue service. The model tested was the New Flyer XE40 electric bus, with a capacity of 525 kWh. Key Performance Indicators (KPI) were gathered, including Mean Distance Between Failure (MDBF), availability (E-Buses and Charger Infrastructure), mileage, efficiency, diesel savings and GHG emission reductions and, maintenance and operations costs ([ACS2023-TSD-TS-006](#)).

Audit of Zero-Emission Buses

The Audit of Zero-Emission Buses was approved as part of the Office of the Auditor General's (OAG) 2021 Interim Audit Workplan. To date, three sprint audit reports have been tabled with the Audit Committee on various aspects of the ZEB program. Management continues to work closely with the Auditor General and her staff to support ongoing and future audit sprints.

Envari Contract

On June 23, 2021, Council delegated authority to the General Manager, Transportation Services (the department became Transit Services in October 2021) to enter into an agreement with Hydro Ottawa Holding Inc. and/or its subsidiaries for supply and operation of charging infrastructure and electrical power ([ACS2021-TSD-TS-0009](#)). As stated in the Council-approved recommendation, the agreement includes energy

supply, the provision of backup power, and the supply and operation of charging infrastructure for the battery-electric buses.

The City's partnership with Envari leverages their significant technical expertise and experience in electrical infrastructure, as well as the City's existing relationship with Hydro Ottawa as the local electrical utility.

The charging infrastructure that will be the subject of the Agreement with Envari is comprised of the electricity distribution, on site, standby power and charging stations needed to charge the ZEBs at the maintenance facility. The City's intent is to contract with Envari for the design, procurement, installation, and commissioning of the charging infrastructure for 350 ZEBs. This agreement is intended to cover the period from 2023 to 2027.

Members of the Audit Committee and Transit Commission will be provided a briefing on the details of the Agreement with Envari on June 9, 2023, and will have the opportunity to ask any questions about the agreement. In addition, a hard copy of the draft agreement has been provided to the Clerk's Office for members of Council to review in confidence.

Now that the terms of the agreement with Envari are close to being finalised, staff are requesting that the Audit Committee and Transit Commission jointly recommend that Council direct the General Manager of Transit Services to finalise and execute the agreement with Envari to provide the charging infrastructure and power supply to support OC Transpo's continued transition to zero emission buses.

FINANCIAL IMPLICATIONS

The budget authority for the charging infrastructure was included in the Financial Update for Zero-Emission Bus Program Funding ([ACS2023-FSD-FIN-0001](#)) report to Council, as follows:

- Additional budget authority for the Zero-Emission Bus (ZEB) Program in the amount of \$425 million; \$350 million from the Infrastructure Canada (INFC) grant and \$75 million drawdown on the Canada Infrastructure Bank (CIB) credit facility.

LEGAL IMPLICATIONS

There are no legal impediments to approving the recommendation as outlined in the report. External counsel, Borden Ladner Gervais, and Legal Services have been involved in the preparation and negotiations of the contract throughout the process.

COMMENTS BY THE WARD COUNCILLOR(S)

Citywide

ACCESSIBILITY IMPACTS

Accessibility has been integral to the procurement process for zero-emission vehicles. Staff have considered the concerns expressed by the City's Accessibility Advisory Committee and other accessibility stakeholders about the low levels of noise produced by electric vehicles and the increased risk this poses to pedestrians, particularly those who are blind or partially sighted. Staff mitigated this risk by outfitting the City's first four pilot battery-electric buses with an Acoustic Vehicle Alerting System (AVAS).

In 2022, staff also engaged stakeholders in two orientation sessions to familiarize them with the AVAS. These sessions involved testing the AVAS on-street in different locations and under different scenarios, as well as identifying the other accessibility features on board the vehicle. The feedback received was positive. As a result, all future zero-emission buses will be equipped with the equivalent AVAS technology, and the same on-board accessibility features.

OC Transpo continues to monitor new developments in legislation, regulations and emerging AVAS technology, and to monitor and respond to feedback from accessibility stakeholders and customers with disabilities.

ASSET MANAGEMENT IMPLICATIONS

The recommendations documented in this report are consistent with the City's Comprehensive Asset Management (CAM) Program objectives. The implementation of the Comprehensive Asset Management program enables the City to effectively manage existing and new infrastructure to maximize benefits, reduce risk, and provide safe and reliable levels of service to community users. This is done in a socially, culturally, environmentally, and economically conscious manner. The acquisition of ZEBs and the supporting infrastructure aligns with the guiding principle of sustainability by considering climate impacts in the decision to acquire new assets.

When the City commits to the acquisition of new assets, consideration must also be given to the City's commitment to fund future operations, maintenance and renewal costs. It must also account for future depreciation when reviewing long term financial sustainability. When reviewing the long-term impacts of asset acquisition, it is useful to consider the cumulative value and lifecycle costing of the acquired assets being taken on by the City.

CLIMATE IMPLICATIONS

The ZEB Program is part of the City's Climate Change Master Plan and responds to the identification of the OC Transpo bus fleet as a major contributor of the City's corporate GHG emissions. The agreement with Envari supports OC Transpo's conversion to zero emission vehicles, which will significantly reduce OC Transpo's contribution to air pollution and climate change.

RISK MANAGEMENT IMPLICATIONS

Transit Services has completed an extensive Pilot Program to confirm the viability of the ZEB Pilot Program and is in the process of an audit by the City's Auditor General. Transit Services has worked closely with Finance and Corporate Services and with Infrastructure and Water Services to manage risks associated with this project and to respond to all of the Auditor General's recommendations to date. TSD will continue to bring regular updates to the Transit Commission on its progress to convert OC Transpo's bus fleet to zero emission buses. Council has approved the budget for the first procurement of zero emission buses and delegated authority to staff to enter into financing agreements with the Canada Infrastructure Bank and with Infrastructure Canada.

DISPOSITION

The General Manager, Transit Services, will exercise the delegated authority granted by Council to conclude negotiations and execute an agreement with Envari.