

Transit Services Workplan 2020

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Treasurer, EV Society
Climate Reality Leader

8. Alternative Fuels Program for OC Transpo Fleet

- ▶ *As directed by Transit Commission, OC Transpo is procuring **two electric buses**, that will be into service by the end of the year, and the related infrastructure. The project team is working closely with other City departments and Hydro Ottawa to develop a comprehensive strategy to test and examine the functionality of integrating electric buses into OC Transpo's fleet. **The Request for Proposals was released in early February** with an estimated In-service date for the new vehicles in December 2020.*
- ▶
- ▶ *In addition, as part of the Transportation Master Plan (TMP) update, the Department, along with its consultants, will be producing a white paper on the potential future evolution of the OC Transpo bus fleet from diesel buses to lower-emission or zeroemission vehicles.*
- ▶
- ▶ *The Department will assemble a project team to integrate the:*
- ▶ *▣ results of the procurement; ▣ initial results from the operation of the pilot buses as part of the OC Transpo system; ▣ results of similar trials at transit systems in other cities; ▣ technical findings and recommendations from Hydro Ottawa; ▣ long-term conclusions and recommendations in the Transportation Master Plan and its white paper; and ▣ decisions of Council in the Long Range Financial Plan Transit and the Climate Change Master Plan and Energy Evolution strategy.*
- ▶ *From these sources, staff will construct a plan for the consideration of the Commission and Council for the acquisition and introduction into service of buses with **alternative energy sources**. That plan will include the details of **what type of buses could be acquired, what energy source could be used**, what infrastructure is required, and what are the capital and operating financial implications. This report will be presented to the Transit Commission **at the conclusion of the trial period at the end of 2021**.*

“procuring two electric buses”

- ▶ Mayor Watson instructed OC Transpo via a motion at Council on June 12th 2019:

“...BE IT FURTHER RESOLVED that staff pursue funding opportunities dedicated to transit and environmental initiatives that may arise at other levels of government to help fund this transition to cleaner sources of energy.”

-> 8 months ago

- ▶ *“procuring two electric buses”*
 - ▶ Would be funded by \$6M allocated by City in 2019
 - ▶ Indicates NO funding from other levels of government
- ▶ Why is Ottawa missing out when so many other municipalities have got funding?

Examples from other cities

City	No of e-buses	Federal Funding	Date
Kingston	2	\$500k	2019-09-05
Brampton	8	\$11M	2019-07-29
Edmonton	40	\$21.5M	2018-04-13
Toronto (TTC)	60		2017
Guelph	65	\$40M	2020-01-24

Edmonton did a winter pilot in 2015

- 5 years ago!

Why is Ottawa such a laggard?

RFP for e-buses

- ▶ *“The Request for Proposals was released in early February with an estimated In-service date for the new vehicles in December 2020.”*

RFP for electric buses



McDonald, Will <Will.McDonald@ottawa.ca>

To trevhache@gmail.com

Cc Baird, David (Procurement); Raymond Leury; McKenney, Catherine; Loan, David; Menard, Shawn; Theresa Kavanagh; Robb Barnes; Brockington, Riley



Tue 2/18/2020 10:52 AM

Mr Haché,

The electric bus procurement is in the final stages of development and will be released shortly on www.Merx.com.

In the interim, if you have any questions please do not hesitate to contact me.

Regards,
WM

Will McDonald

Chief Procurement Officer | Chef de l'Approvisionnement

- ▶ Who is telling the truth?

Minister of Infrastructure and Communities Mandate Letter

- ▶ “Make the federal commitment to fund public transit permanent and rise with the cost of construction over time. Ensure that new federal investments in public transit are used to support **zero-emission buses and rail systems starting in 2023** and work with municipalities to address any exceptional circumstances.”
- ▶ CNG is NOT zero emissions

OC Transpo Buses - Options

▶ Compressed Natural Gas (CNG)

- ▶ Better than diesel from a “pollution” point of view
 - ▶ Much less particulate matter
 - ▶ Not relevant from climate change perspective
- ▶ Produces 80% of the GHG emissions of diesel buses
- ▶ -> Only a 20% reduction in GHG
- ▶ -> If fugitive emissions included, about the same as diesel
- ▶ -> Just as bad as diesel from a GHG perspective
- ▶ Not enough by any stretch to get to ZERO emissions by 2040
- ▶ NOT A SOLUTION for climate change
- ▶ NOT aligned with Energy Evolution

OC Transpo Buses - Options

- ▶ Hydrogen Fuel Cells
 - ▶ Over 95% of hydrogen is produced using natural gas
 - ▶ This results in significant CO2 emissions
 - ▶ Not enough to get to ZERO emissions by 2040
 - ▶ Expensive and very low deployment numbers
- ▶ According to Burnaby's Ballard Power Systems, which manufactures fuel cell engines, Whistler's **hydrogen buses cost \$1.34 per kilometre to maintain, versus 65 cents per kilometre for diesel-powered buses.**
- ▶ Vancouver sold off it's fleet in 2014
- ▶ NOT A SOLUTION for climate change
- ▶ NOT aligned with Energy Evolution

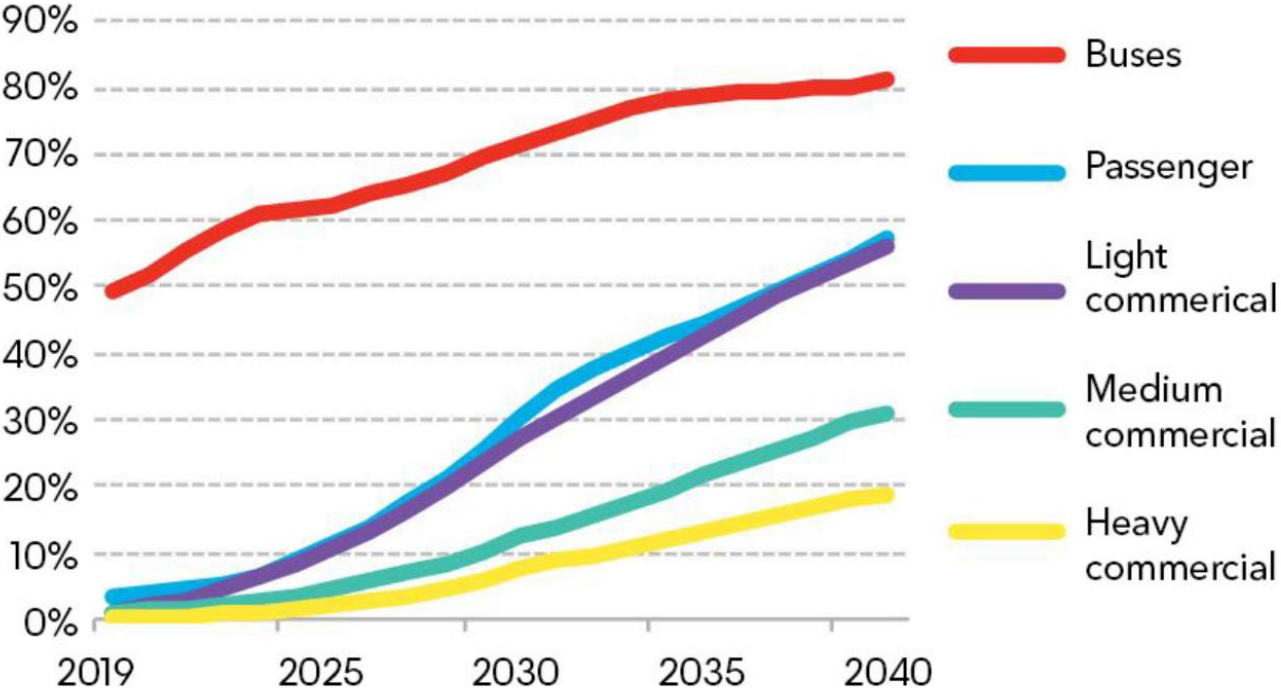
OC Transpo Buses - Options

- ▶ Electric Buses - e-Buses
 - ▶ ZERO emissions
 - ▶ 50% market share in 2019
 - ▶ The highest EV market share of ANY category
 - ▶ Almost all of these are long range e-buses
 - ▶ Lower total cost of ownership
 - ▶ TTC saving \$56,000 per year per bus on diesel costs alone
 - ▶ EVCO had estimated \$30,000 per year
 - ▶ EVCO estimates about \$20,000 less maintenance per year per bus
- ▶ Only SOLUTION for climate change
- ▶ Aligned with Energy Evolution

Bloomberg NEF (New Energy Finance)

EV share of annual vehicle sales by segment

EV share of sales



Source: BloombergNEF. Note: Passenger car and bus figures are global. Commercial vehicle segment adoption figures in both charts cover the main markets of China, Europe and the U.S.

<https://about.bnef.com/blog/electric-transport-revolution-set-spread-rapidly-light-medium-commercial-vehicle-market/>

Timelines with current plans

- ▶ Receive 2 e-buses - end of 2020 (at the earliest)
- ▶ “Pilot” - 2021
- ▶ Report publication - late 2021/early 2022
- ▶ Engineering work for charging infrastructure - 2022
- ▶ Order e-buses early 2022
 - ▶ Lead time 12-18 months
- ▶ Large numbers of e-buses in service in 2024

Alternative Timelines

- ▶ Receive 2+ e-buses - end of 2020 (at the earliest)
- ▶ “Pilot” - 2021
- ▶ Report publication - 2020
- ▶ Engineering work for charging infrastructure - 2020
- ▶ Order e-buses - late 2020
 - ▶ Lead time 12-18 months
- ▶ Large numbers of e-buses in service in 2022
- ▶ 250,000 tons of CO2 emissions avoided
- ▶ \$100M in operational savings

Recommendations

- ▶ Realize that e-buses are the only choice
- ▶ Cancel report outlining alternative energy choices
- ▶ Speed up procurement
- ▶ Design charging infrastructure in 2020
- ▶ Start deploying large numbers of e-buses in 2021/2

Conclusion

- ▶ Ottawa has the ability to reduce its corporate emissions by 45%
 - ▶ One single measure will do that
 - ▶ It will take 15 years to replace the fleet
- ▶ Ottawa can save \$50M per year of operational costs by doing what's right for the planet
- ▶ **This project would be worth doing even if it was not saving money**
 - ▶ **125,000 tons of GHG per year**
- ▶ It's time for Council to set policy, lead and provide an example
- ▶ Ottawa has declared a climate emergency
 - ▶ Now is the time to act!
 - ▶ This is the single biggest impact council can have