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## Toronto Environment Office, Electric Vehicle Comment Wall: Summary of Feedback Received

### General

On September 27, 2010, the City of Toronto launched a "comment wall" feature on the Toronto Environment Office (TEO) website, seeking feedback from members of the public on electric vehicles (EVs). As of February 8, 2011, the Toronto Environment Office had received 72 comments.

Generally speaking, Toronto residents have shown a great deal of interest in electric vehicles (EVs). Residents have asked the City to compare itself to what other cities are doing, to analyze the full life cycle cost of EVs, to prioritize other carbon neutral modes of transportation (eg. biking, walking), to lead by example on the world stage in promoting EVs, and to generally support all types of EVs including electric trains, public transit, electric school buses and car shares.

This feedback will be considered as TEO staff prepare a report on electric vehicles for City Council consideration in June 2011.

The following is a summary of the key themes we observed amongst the comments received and the City's response regarding EVs and their place in Toronto.

### E-Bikes

**Public Summary:** We received 21 comments related to e-bikes. Some respondents suggested that e-bikes should be allowed to travel where regular bikes travel or charge at existing bike stands. Other comments related to the availability of (free) parking, provision of (free) charging stations and offering incentives, cash and otherwise, to those wishing to purchase e-bikes.

**City Response:** The Toronto Environment Office's report to City Council on electric vehicles will address the role that electric bikes will play in electric vehicle infrastructure. At this time, the City does not provide cash incentives for e-bikes or other electric vehicles.

### Public Infrastructure to Accommodate EVs

**Public Summary:** We received 17 comments related to public infrastructure to accommodate EVs. Residents demonstrated public interest in EV technology (e.g. quick charge stations and battery swap programs) and using technology to establish a widespread charging network including charge spots located in Toronto's "Green P" parking lots, shopping malls, condominiums and on-street locations. Residents also expressed interest in having the City host a website which can relate data about the location of charge spots and their real time charging availability.

**City Response:** Toronto Hydro started installing EV charging stations in November 2010. One station with two charge spots has been installed at Toronto Hydro's office at 14 Carlton Street and is primarily used by Toronto Hydro's fleet. Other charge stations have been installed at the Sheraton Hotel and the Mercedes Benz Midtown dealership. A demonstration charging station is also available for viewing at the Evergreen Brickworks located at 550 Bayview Avenue.

Research has shown that within the first five years of EV introduction, most EV buyers will focus their charging activities at home.<sup>1</sup> The City recognizes the obstacles faced by homeowners located in the downtown core, condominiums and other non-conventional home charging scenarios (ie. homes without driveways and garages). The City will explore what can be done to facilitate charging in these situations and to better understand issues related to the existence of free-standing charging stations: costs, local grid impacts, public safety considerations, and city operations like snow clearing.

Plans are currently in place to make charging stations available on a City map tool by the Spring of 2012.

## Incentives

**Public Summary:** We received 16 comments related to incentives for EV buyers. Ideas for incentives include both financial and non-financial incentives. Financial incentives suggested subsidizing the purchase of EVs, helping multi-residential developers pay for upgrades in their parking garages, free or subsidized charging rates for electricity, and tax credits to condominium corporations to install stations. Non financial incentive suggestions included: provision of free parking at City lots, access to High Occupancy Vehicle (HOV) lanes, parking spots located near entrances to building.

**City Response:** At this time, the City is considering only **non-financial** incentives for EV buyers. Both financial and non-financial incentives are currently being offered through the Ontario government. More information on these incentives can be found at:

<http://www.mto.gov.on.ca/english/dandv/vehicle/electric/electric-vehicles.shtml>

## Renewable Energy Applications

**Public Summary:** We received 12 comments related to incorporating renewable energy into any plans the City might have for EV charging infrastructure. Ideas ranged from installing on site solar panels on "Green P" parking lots to making sure that the power used in parking situations was purchased from renewable energy generators.

**City Response:** As part of the "Power to Live Green" ([http://www.toronto.ca/livegreen/downloads/2009-0\\_report.pdf](http://www.toronto.ca/livegreen/downloads/2009-0_report.pdf)), the City of Toronto is committed to greening its grid by ensuring that any City ABCCD will be able to accommodate the installation of renewable energy systems on public and private property<sup>2</sup>. Greening our energy sources means that the City's energy consumption will also be environmentally sustainable.

## Technology

**Public Summary:** We received 6 comments expressing interest or concern regarding EV technology. The main concerns were: battery technology and battery expense, uncertainty as to whether current battery technology could perform well in cold climates, and the development of fuel cell technology for vehicles.

**City Response:** The majority of electric vehicles in development and production today use lithium ion batteries. Lithium ion batteries are widely believed to be the type of battery that will be used for EVs between now and 2018. The technology, however, is still very much in the development phase and EV manufacturers predict that battery technology will continue to improve in terms of power and in terms of reducing battery weight.<sup>3</sup> The ever-changing nature of the technology necessitates that the City follow the development of EV-related technology closely in order to adapt appropriately.

<sup>1</sup> "Exploring Electric Vehicle Adoption in New York City", January 2010, City of New York, [http://www.nyc.gov/html/om/pdf/2010/pr10\\_nyc\\_electric\\_vehicle\\_adoption\\_study.pdf](http://www.nyc.gov/html/om/pdf/2010/pr10_nyc_electric_vehicle_adoption_study.pdf), retrieved February 16, 2011

<sup>2</sup> "The Power to Live Green, ([http://www.toronto.ca/livegreen/downloads/2009-0\\_report.pdf](http://www.toronto.ca/livegreen/downloads/2009-0_report.pdf)) p. 25

<sup>3</sup> Electric Vehicle Technology Roadmap for Canada, Natural Resources Canada cited in "Electric Car Report" by the Polaris Institute, <http://www.polarisinstitute.org/files/electriccarreport.pdf>, retrieved February 23, 2011

## Conservation and Grid Issues

**Public Summary:** We received 6 comments expressing interest or concern in energy conservation and grid impacts with respect to EVs. Some of the concerns identified a fear that low consumption periods may not occur once EVs are introduced since most EV users would be charging at night when low consumption periods currently exist. Related to this was the concern that time-of-use rates would increase by this increased use in energy.

**City Response:** Toronto Hydro, a City of Toronto corporation, is currently analyzing the grid impacts that EVs may have on the City.

## Building Requirements

**Public Summary:** We received 5 comments requesting that buildings in the city be required to rough in charging spots and that building codes be modified to accommodate charging infrastructure.

**City Response:** Through the Toronto Green Standard (TGS) for institutional and commercial buildings, the current "Tier 1" standard requires that additional parking spaces, above and beyond what is allotted for a particular building, be either designated for carpool/car share vehicles or be 'roughed-in' conduits for plug in electric vehicles including cars, bicycles and scooters. The City is examining how we can update this standard and will bring recommendations forward to City Council by the end of 2011.