



To: Public Works and Transportation Committee **Date:** June 2, 2014
From: John Irving, P.Eng. MPA **File:**
Director, Engineering
Re: **Letter Supporting Continuation of Clean Energy Vehicles Rebate**

Staff Recommendation

That a letter supporting the continuation of the Clean Energy Vehicles for British Columbia be sent to the B.C. Minister of Energy and Mines and Responsible for Core Review under the Mayor's signature, with copies to Metro Vancouver members.

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Director, Engineering
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REPORT CONCURRENCE	
CONCURRENCE OF GENERAL MANAGER 	
REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE	INITIALS:
APPROVED BY CAO 	

Staff Report

Origin

The City's 2041 Official Community Plan sets aggressive energy and greenhouse gas (GHG) emissions reduction targets, and its Sustainability Framework calls for preventing GHG emissions. The City's 2014 Community Energy and Emissions Plan identifies Strategy #7: "Promoting Low Carbon Personal Vehicles" as important to reduce energy and GHG emissions.

Supporting continuation of incentives through the Clean Energy Vehicles for B.C. program also addresses Council's Term Goal #8 Sustainability: "Continued implementation and significant progress towards achieving the City's Sustainability Framework".

Background

The Clean Energy Vehicles for B.C. (CEVBC) program is administered by the Province of B.C. The program provides financial incentives to partially offset the cost premiums associated with purchasing alternative fuel vehicles. The program supports a range of alternative fuel vehicles, including electric vehicles (EVs), as well as compressed natural gas and hydrogen fuel cell vehicles. Since 2011, the CEVBC program has facilitated the purchase or lease of over 900 EV across the province, at a cost of \$2.26 million to the Province. The program ended March 31, 2014, and the Province has not indicated that it intends to renew funding.

On May 2, 2014, Metro Vancouver's Board moved to send a letter to the B.C. Minister of Energy and Mines and Responsible for Core Review, advocating for the continuation of the CEVBC program and recommending that the letter be forwarded to all Mayors and Councils in the GVRD.

The City has benefited from CEVBC incentives for new vehicles in the City's vehicle fleet. Procuring alternative fuel vehicles is one part of the City's Green Fleet Action Plan, which guides action to reduce costs, energy and emissions from the City's corporate fleet. The City has received \$20,000 from the CEVBC program for four EVs procured for its fleet.

The City has also taken a number of actions to support the transition to EVs in Richmond's community. As part of the B.C. Community Charging Infrastructure program, the City installed public electrical charging stations at various locations throughout the community. The 2041 Official Community Plan requires that 45 percent of parking spots in new multi-family developments accommodate future electric vehicle charging equipment; this policy has been implemented since November 2012. Additionally, larger commercial development rezoning processes have included provisions for electric vehicle charging equipment. Support for the CEVBC program can continue the City's leadership on EVs and low carbon transportation.

Discussion

Personal automobile use accounts for approximately 3 out of every 4 trips in Richmond, and contributes 41 per cent of community GHG emissions. Additionally, vehicle travel contributes to air pollution and other environmental issues. The City has set a target of reducing reliance on

vehicle travel to 49 per cent of all trips by 2041 through strategies that support more sustainable modes, including, transit, walking and biking.

The remaining vehicular trips can have less impact through a transition to non-emitting vehicles, such as EVs. EVs fuelled via low carbon electricity on B.C.'s electric grid represent a key opportunity to reduce emissions (see Attachment 1). According to analysis by Metro Vancouver, over a 12-year lifespan, an EV that travels 20,000 km annually will save about 47 tonnes of GHGs, and will save the owner approximately \$20,000 in fuel costs, compared to a comparable gasoline vehicle. Given that residents of the Metro Vancouver region are experiencing near-record high gas prices (see Attachment 2), encouraging alternatives to gasoline vehicles is important to reducing cost burdens on Richmond households and businesses.

In part due to the combination of Provincial incentives, and municipal and private charging stations and promotions, electric vehicle sales have increased significantly in B.C., growing by 78 per cent between 2012 and 2013. While EVs are still a small segment of the marketplace, B.C. is leading Canada in EV sales per capita. This growth is expected to continue; however, the loss of incentive funding represents a setback for future growth in market share and associated GHG reductions. As a new technology with limited distribution, EVs are more expensive than comparable conventional vehicles; to illustrate, the cost for the all-electric Nissan Leaf is \$31,700 compared with a \$17,000 mid-level gasoline Nissan Versa. While various industry analyses project that the cost of EVs will decrease in the future due to declining battery costs and other technological innovations, in the near term incentives are required to make EVs cost competitive. Such incentives can drive market transformation towards low emitting vehicles, providing early sales and enhancing consumer confidence and experience with EVs. In turn, greater market penetration leads to reduced prices and widespread uptake.

Other provinces continue to provide incentives for EVs. The Quebec and Ontario governments provide up to \$8,000 and \$8,500 per vehicle in purchase incentives, respectively, and both programs are continuing beyond March 2014. In the U.S., the government provides a federal tax credit of up to \$7,500 for the purchase of an EV.

Financial Impact

None at this time. Should the City of Richmond continue to purchase EVs for our corporate fleet, availability of incentive funds will have a positive financial impact.

Conclusion

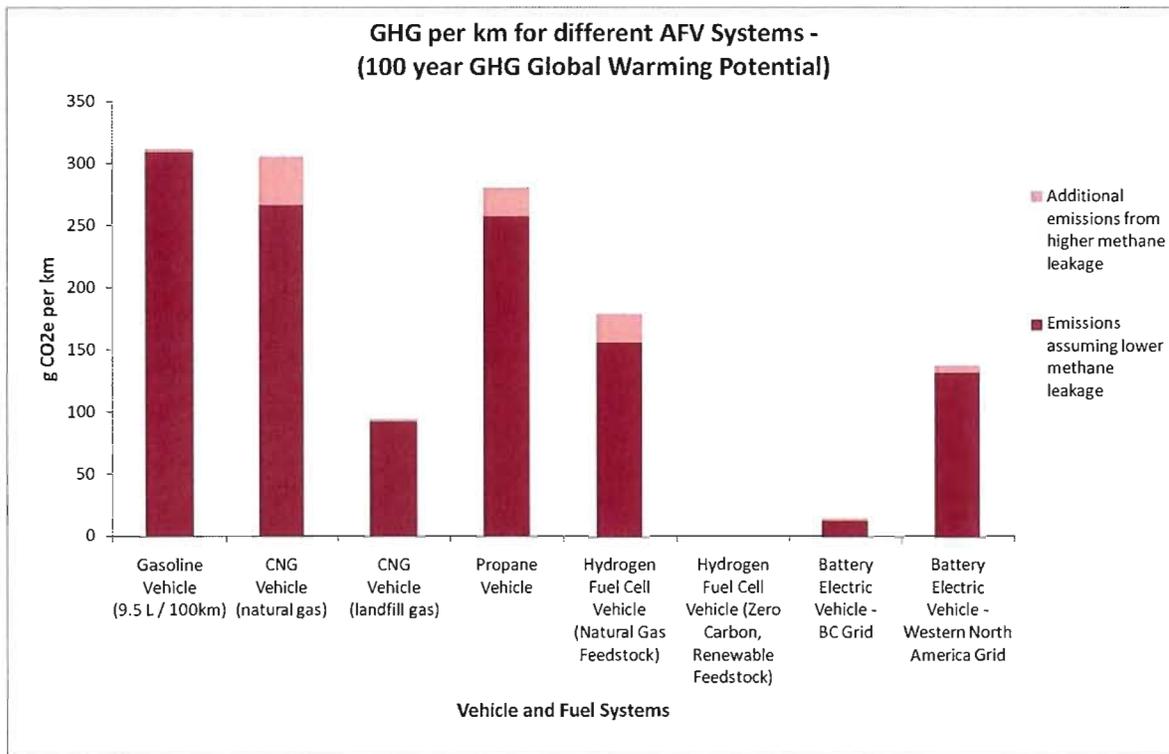
Continued Provincial funding for the Clean Energy Vehicles for B.C. program, and associated efforts to support EVs through charging infrastructure, outreach, and other means, represent an important opportunity to reduce Richmond's community GHG emissions and energy spending. This report recommends that a letter under the Mayor's signature be sent to the B.C. Minister of Energy and Mines and Responsible for Core Review, calling for continued support for Clean Energy Vehicles for B.C.



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BM:bm

GHG Emissions per Kilometre Traveled for Different Alternative Fuel Technologies – Impacts on Global Warming After 100 Years



Notes: Estimates are relative to a gasoline vehicle achieving 9.5L / 100km (25 miles per gallon).

Produced using the *California Air Resource Board – Low Carbon Fuel Standard Life Cycle Analysis (CA-GREET)*.

GHG emissions factors from: IPCC, 2013. *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate*. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 1535 pp.

Lower methane leakage scenario from: Burnham et al. October 2013. *Updated Fugitive GHG Emissions for Natural Gas Pathways in the GREET Model* assumptions for conventional natural gas.

Higher methane leakage scenario from: US EPA. 2011. *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2009*, and from Alvarez et al. 2012. “Greater focus needed on methane leakage from natural gas infrastructure”. *Proceedings of the National Academy of Sciences*.

BC electricity fuel mix from: BC Ministry of Energy and Mines. *Electricity Generation and Supply*. <http://www.empr.gov.bc.ca/EPD/Electricity/supply/Pages/default.aspx>.

Western North America Grid for the Western Interconnect from: Sopinka and Pitt. *Trends in the Western Electricity Coordinating Council: Retrospect and Prospect*. Pacific Institute for Climate Solutions.

Attachment 2

Historical gasoline prices (Canadian cents per L of fuel) in Metro Vancouver Region – 2004 - 2014



Source: <http://www.vancouvergasprices.com>