



# FleetWise EV300

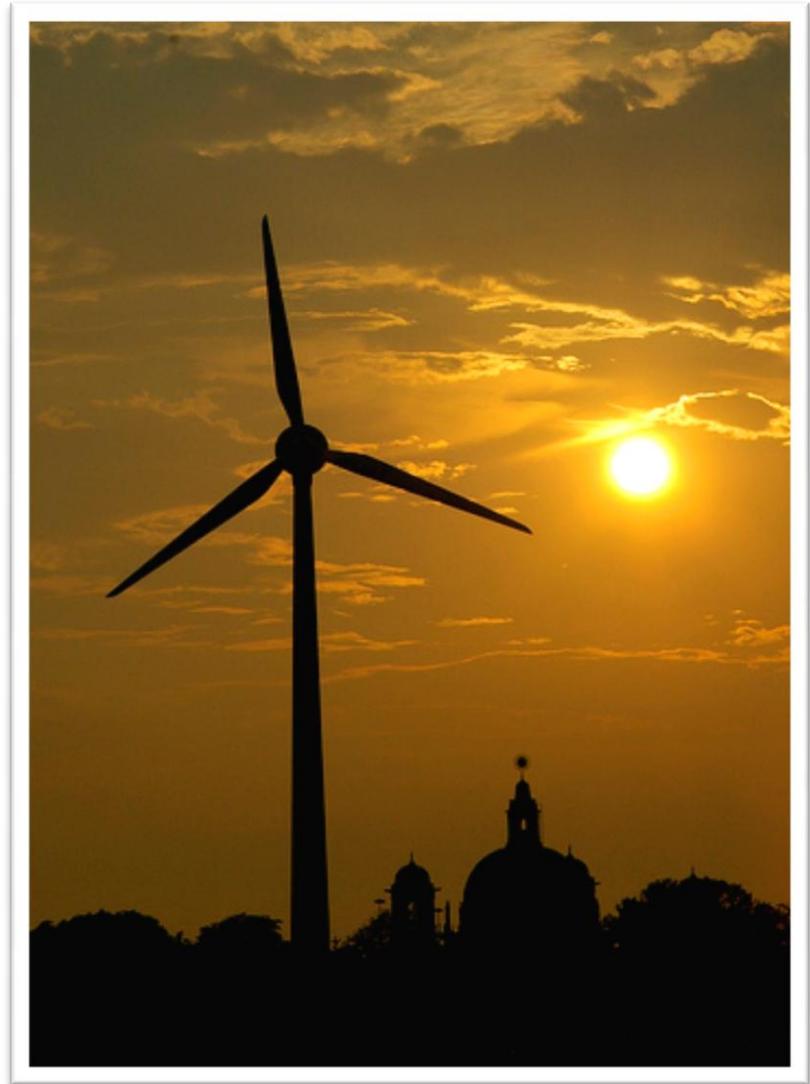
Making it easier  
to charge up your  
fleet



TAF is the City of Toronto's climate change agency, dedicated to helping the City, its residents and businesses reduce their climate impact.

TAF leverages its own endowment to incubate, test & accelerate solutions with the potential to result in significant greenhouse gas emission reductions.

[www.toronto.ca/taf](http://www.toronto.ca/taf)



**Grants** to non-profits

**Investments** in for-profits & social enterprises

**Direct program delivery** through fundraising & partnerships



## **Public and private fleets jointly procure, drive, charge, evaluate and promote 300 electric vehicles in the GTA by 2012.**



1. Deployment of highway-ready, certified plug-in hybrid electric (PHEV) and/or battery electric (EV) light duty vehicles.
2. EV-friendly policy enablers that will support widespread EV deployment in the region, including accessible charging infrastructure.
3. Marketing and education of EVs as a low-carbon transportation option and the GTA as an emerging and ready market to welcome EV & EVSE suppliers.



## Program benefits

- ✧ Selecting the right vehicles to replace with an EV
- ✧ Business case development
- ✧ Assistance with EV & charging infrastructure procurement and installation
- ✧ Third-party in-service performance reporting
- ✧ Information exchange with other fleets



## Additional benefits

- ✧ Assessment of EV-grid interconnection issues and lifecycle GHG emission impact of EV deployment
- ✧ Support for the establishment of EV-friendly policies, particularly at the municipal level



**Public education through the communication of best practices and knowledge outcomes gained by FleetWise EV300 partners to key stakeholders, locally, nationally and internationally.**



# Strategic & Fleet Partners



MINISTRY OF TRANSPORTATION



Electric Mobility Canada / Mobilité électrique Canada



Hamilton



Natural Resources Canada

Ressources naturelles Canada



TORONTO PEARSON



*Fleet Management partner:*

**Fleet Challenge Ontario** is a not-for-profit program of the Canadian Energy Efficiency Alliance that helps fleets reduce fuel consumption and lower operating costs.



# Current OEM Partners



- ✓ Custom analysis to determine the best fit with your fleet
- ✓ Centralized voice to OEMs for best pricing and earliest delivery
- ✓ Individual choice in the vehicles your fleet acquires



## Building the business case

- ✓ Assessment of your fleet to identify candidates for EV replacement
- ✓ Evaluation tool to forecast EV performance as a replacement for your current vehicle
- ✓ Comprehensive ROI support tool based on total life cycle cost
- ✓ 3<sup>rd</sup> party in-service performance monitoring with quarterly reports on individual and group benchmarks

	Baseline ICE Vehicle	Alt 1 EV Brand 1	Alt 2 EV Brand 2
Vehicle Price \$	20,000	35,000	40,000
Government Incentive \$	-	8,200	8,200
Other Incentives \$	-	-	-
<b>Net Acquisition Price \$</b>	<b>20,000</b>	<b>26,800</b>	<b>31,800</b>
Annual Km	15,000	15,000	15,000
Veh Retention Period yrs	8	8	8
Cash Flow Study Period yrs	8	8	8
# Veh Replacements	1	1	1
<b>Ownership Cost \$/Yr</b>			
Capital or Lease Cost \$/Yr	2,992	4,009	4,757
Insurance \$/Yr	1,261	1,471	1,471
Licensing \$/Yr	85	85	85
Administration \$/Yr	252	252	252
Other Fixed Cost \$/Yr	102	102	102
<b>Total \$/Yr</b>	<b>4,692</b>	<b>5,920</b>	<b>6,668</b>
Total \$/Km	0.31	0.39	0.44
<b>Energy Cost \$/Yr</b>			
Gas Cost \$/Yr	1,441	-	-
Electricity Cost \$/Yr	-	220	220
<b>Total \$/Yr</b>	<b>1,441</b>	<b>220</b>	<b>220</b>
Total \$/Km	0.10	0.01	0.01



## FleetCarma vehicle selector tool BETA



### Current Vehicle



Camry

Project: EV300  
Company: City of Toronto  
Contact: Ben Marans  
Vehicle: 2010 Toyota Camry

Log Dates: Nov 2 – Nov 19, 2010  
Log Time: 16 Days, 14 hours

Operation Hours: 34.6 hours (2.1 h/day average)  
Distance: 1094 km (68 km/day average)

Consumption: 9.2 L/100km  
822 Wh/km  
Carbon Emissions: 215 g/km

Furthest Trip:  
24 km  
29 minutes

Shortest Trip:  
0.08 km  
31 seconds

		Toyota	Ford	Nissan	Mitsubishi	Toyota	Chevrolet
		Camry	Transit Connect-EV	Leaf	i-MiEV	Prius Plug-In	Volt
Energy & Emissions	Total Energy [Wh/km]	822	158	117	97	180	152
	Fuel Consumption [L/100km]	9.2				1.22	0.37
	Electrical Consumption [Wh/km]	822				109	33
	Tailpipe CO <sub>2</sub> Emissions [CO <sub>2</sub> /km]	215	0	0	0	28	9
Capability	Performance Match [off by >3.2km]		98%	100%	98%	100%	100%
	Range Capable [% of days]		94%	100%	100%	100%	100%
	Charge Capable [% of days]		100%	100%	100%	100%	100%

### Summary

The Leaf, Prius Plug-In and Volt were fully capable of meeting the range, charging, and speed of this particular usage pattern. The i-MiEV was able to meet the range and charging requirements, but was unable to accelerate sufficiently for this pattern. The Transit Connect-EV able to fully charge at night, but did not have sufficient range for one of the days and lagged in speed.

NEXT STEP: ROI CALCULATOR



## Once you have your EV

- ✓ Driver training to help your operators maximize EV performance
- ✓ Opportunity to learn from other partners with monthly conference calls, webinars and specially-themed workshops
- ✓ Consolidated quarterly reporting on maintenance issues & vehicle performance



## Community outreach

- ✓ FleetWise EV300 logo alongside your organization's brand to maximize visibility of your commitment
- ✓ Joint opportunities to publicize involvement in the program and recognize your fleet's use of low-carbon vehicles
- ✓ Recognizing leadership and leveraging partnerships



## Points-based affiliation fee over the project period

	# Vehicles	Points		Total Points	Fee
Number of EVs to be purchase by 2012	1-2	1		2	\$1,000
	3-5	3		4	\$2,500
	> 5	5		6	\$5,000
Number of light duty vehicles your fleet operates in GTA <sup>1</sup>	< 25	1		8	\$7,500
	25-100	3		10	\$10,000
	>100	5			

<sup>1</sup> Include sedans, passenger mini-vans, sport utility vehicles, cross over vehicles, pick-ups and commercial mini-vans



Sample Fee Calculation	# Vehicles	Points
EVs by 2012	4	3
Vehicles <sup>1</sup> in GTA	50	3
<b>Total Points</b>		<b>6</b>
<b>Fee</b>		<b>\$5,000</b>



## Become an EV300 Fleet Partner

- MOU
- Demand projections
- FleetCarma tool
- Business case calculator

## Procurement of EVs

- EV driver training
- Monitoring & verification
- Regular teleconferences

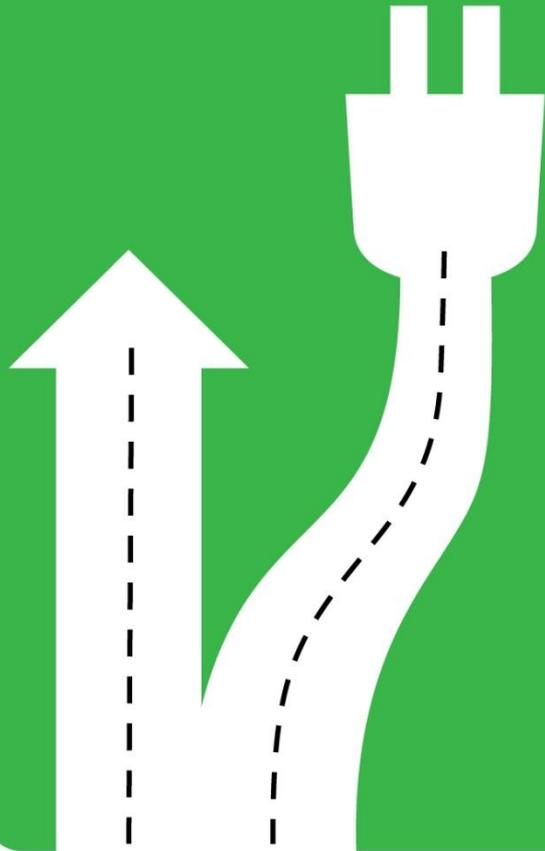
## Help us to tell our story

- Media releases
- Press events

## Charging up your fleet

- Policy alignment for infrastructure
- Reducing emissions & saving money





# FleetWise EV300

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 **TORONTO** Atmospheric Fund

[www.toronto.ca/taf](http://www.toronto.ca/taf)