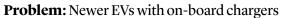


Research case study > electric vehicles

Impacts on grid: electric vehicles

Version 1 (updated May 31, 2017)

Context: The increasing uptake of electric vehicles (EV) and transportation has many jurisdictions working to develop the best approach for introducing and developing the necessary infrastructure to support their proliferation.



rated at 6 kW or greater can overload the system, depending on the time of charge and ambient temperature. As the size of on-board chargers and the number of vehicles increase, effect on the distribution system needs to be assessed. This constitutes the challenge being addressed.

Solution: Developing a business model specific to EVs, building an effective policy framework that supports this model and a successful consumer engagement campaign are part of a three-point strategy for addressing the barriers and opportunities for EV deployment.

Impact: In addition to providing insight into the challenges and opportunities facing cities this project lends itself to use a process template, constituting the basis of an analytical and empirical tool capable of informing the ongoing development of EV system strategies.

CUE's role: CUE researchers undertook scenario development and simulations as a mean of investigating the best-case and worst-case impacts of EVs on the distribution system.



Partners:

Hydro One, Ontario Research Fund

Timeline:

January 2011-April 2014

Research Team:

Bala Venkatesh, Travis Xu

Key stats

9,179 5% 406,119 Electric vehicles in Ontario Market share target by 2020 Capacity for EVs in Toronto