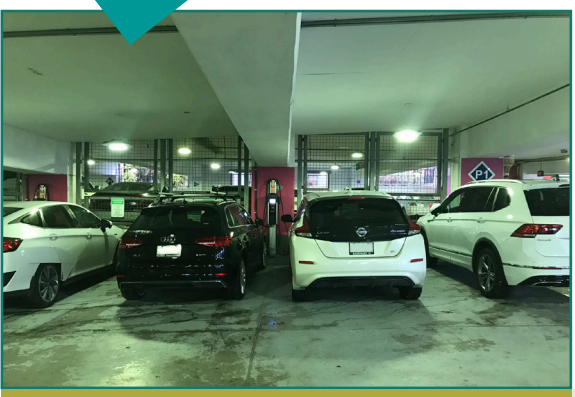
ZEV Leader Profile

PLUG 'N DRIVE



Sunnybrook electrifies to meet zero-emissions vehicle challenge

A cure for climate change

Toronto's Sunnybrook Health Sciences Centre is Canada's largest trauma centre and has a proud history of environmental stewardship which has helped to reduce the environmental impact of hospital activities and allowed Sunnybrook to better realize its vision of inventing the future of health care.

The five keys to their success include: energy conservation, green procurement, waste management, an awareness and education campaign and sustainable transportation which in 2017 saw them begin their quest to add zero-emission vehicle (electric vehicle/ZEV) charging stations into their infrastructure.

At that time, the Plant Operations & Maintenance Department began evaluating the potential of installing ZEV technology on the Bayview campus. With $32,000 in capital funding from the hospital, four Type Two charging stations were installed in Garage One during the 2019 fiscal year. Thanks to provincial funding in 2018, through the Workplace Electric Vehicle Charging Incentive Program (WEVCIP), staff were able to leverage available in-house funding to expand the project to a total of 20 stations with the $150,000 incentive.

For Sunnybrook, the benefits of going ZEV were many:

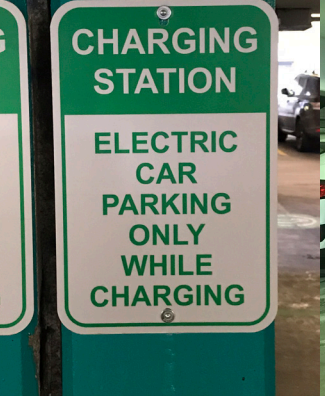
- Increased employee attraction and retention – Requests from staff for chargers were increasing as evidenced by unauthorized use of 120-volt receptacles in parking garages,
- Reinforced Sunnybrook's reputation for innovative and leading-edge environmental thinking including supporting the province's ongoing transition towards electrification/EVs over the next decade,
- Contributed to Sunnybrook's reputation as a green leader, noting that carbon and air emissions from electric vehicles are much lower than conventional gasoline and diesel vehicles.

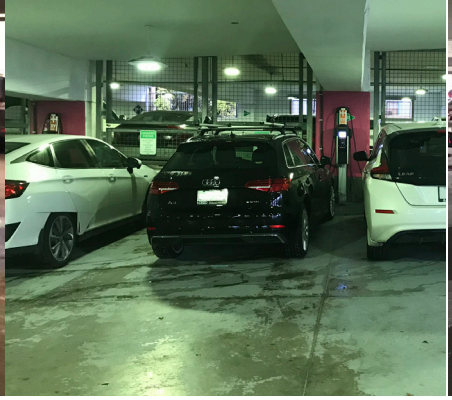
In total, Sunnybrook now has 24 Type Two charging stations across three parking garages with approximately 75% usage between 8:00 am and 5:00 pm weekdays.

According to Saleh Daei, Sunnybrook's Manager of Energy & Sustainability, "The feedback has been very positive. We have about 60 EV drivers and typically 18 to 19 users every day. Staff love it."

"It isn't as easy as just installing charging stations. The chargers themselves might only be 20-40% of the total cost. You then need to factor in the human behavioural element and plan for that."

Saleh Daei, Manager Energy & Sustainability





Annual GHG reduction due to installation of electric chargers at Bayview campus exceeds 20 metric tons in 2019

Based upon current success, Sunnybrook has its eye on installing at least twenty more Type Two chargers once adequate funding can be secured.

To health care organisations looking to adopt ZEV technology, Daei stresses they must first do their homework by confirming sufficient consumer demand and the presence of adequate facility infrastructure to support the charger network and draw on the power grid. "You might find yourself digging up pavement, and needing to install electrical infrastructure such as transformers, power panels and wiring. In addition, you will need a platform capable of managing the new infrastructure and chargers."

Unless the organisation wants to take on the burden of management and maintenance of the chargers, Daei suggests contracting with a third-party to deal with the ongoing day-to-day matters such as inoperative chargers, broken charger cables, and charger software issues.

Organisations also need to consider how they will deal with ticketing of improperly parked vehicles at charging stations, charging time limits, and charging fees - which may or may not apply.

Then follow up with an extensive communications campaign. "It isn't as easy as just installing charging stations," he stresses. "The chargers themselves might only be 20-40% of the total cost. You then need to factor in the human behavioural element and plan for that."

In the eight weeks immediately following activation of the chargers, Sunnybrook's parking staff were handing out warning notices. Following the grace period, they began issuing fines. Staff soon learned the new charging spaces were for "charging, not parking" and the issuance of tickets has diminished greatly.

Whether or not to charge a fee for the use of the charging system, and what that fee should be, will depend on a number of factors including installation costs, ongoing maintenance and operating fees, corporate climate and preparedness to be transportation electrification champions, and any specific conditions associated with project funding.

Financial Considerations

Project Costs

Design Fees	$ 24,000
Chargers (10 dual units)	$ 67,000
Installation & Infrastructure	$110,000
Provincial Incentives*	($150,000)

*Workplace Electric Vehicle Charging Incentive Program (WEVCIP)

Annual Operating Costs

Charger Management Contract	$ 10,600
Electricity	$ 5,000
User Fees**	($ 5,000)

** Starting December 1, 2018 users were charged $1 as a connection fee; free for the first four hours and $0.25 per hour afterwards. (i.e., a four hour charge costs $1, eight hours costs $2 and ten hours costs $2.50. Pricing was set to:

1. The incentive program condition to cover only the cost of electricity,
2. Encourage users to move cars when not actively charging, and
3. Free up charging spaces for other ZEV owners.

All images courtesy Sunnybrook Health Sciences Centre.

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Sunnybrook HEALTH SCIENCES CENTRE

PLUG 'N DRIVE A national resource for all your EV questions www.plugndrive.ca

The Canadian Coalition for Green Health Care
Coalition canadienne pour un système de santé écologie

The Canadian Coalition for Green Health Care is Canada's premier green health care resource network and is leading the evolution of green in Canada's health sector as a national voice and catalyst for environmental change. Collaboratively, we strive to reduce health care's ecological impact from compassionate care delivery while providing a nurturing platform upon which to discuss and promote best practices, innovation, environmental responsibility and climate change resiliency. www.greenhealthcare.ca