

Electric Vehicle Charging in Stratas

Submission to the BCUC Electric Vehicle Charging Service Inquiry
Bruce Mackenzie, March 15, 2018.

Background

I have experience with strata councils, including three years as a strata President, managing a building exterior renovation, installation of a solar panel system, and advocating for energy efficiency on a building committee. I have also been involved with the BC Sustainable Energy Association since 2005, and am a member of the Vancouver Island Strata Owners Association. The opinions in this document are mine alone and do not represent any organisation.

Vision

The BC Government has a clear goal of replacing fossil fueled vehicles with electric ones. Reducing barriers to charging them is a critical component. The most convenient time for charging most vehicles is overnight at home when they are out of use.

Most residential strata corporations provide parking stalls for their owners' and residents' vehicles. The laws, regulations and bylaws for these are well established from many years' experience. Access to electricity for electric vehicles in existing parking is a new business overlaid on an existing one, and will need time, thought and care to implement sustainably.

I believe there are several barriers to successful installation and management of EV charging infrastructure which are relevant to strata corporations:

Charge for electricity used

This is the most important change which falls within the BCUC's mandate.

Strata corporations are very conscious of fairness in allocating costs to owners. The amount of electricity used by an individual EV can vary by an order of magnitude between a light car like a Nissan Leaf used for occasional downtown trips and a Tesla X used for frequent intercity runs. It would be a big barrier for EV adoption if the strata cannot charge owners different amounts based on their electricity usage.

The March 7 change to the Strata Properties Act Regulations¹ clarifies that strata law allows strata corporations to charge a user fee based on consumption. The website announcing this change specifically mentions that this is to allow strata corporations to charge EV owners for electricity used. This is a great forward step. However, Section 21 of the Utilities Commission Act requires any entity selling electricity to register as a public utility. The Act sets too many onerous conditions for a strata corporation to become a public utility; therefore under current law it cannot sell (charge for) electricity to EV owners.

Recommendation: The Commission should be advising Government to change the Utilities Commission Act to allow strata corporations to charge for electricity by the kWh.

Broader application

Several cities within BC and around the world have adopted a 100% Renewable Energy by 2050 goal, to complement other levels of government in their commitments to mitigate climate change. If society is continue, this requires that the

¹ <https://www2.gov.bc.ca/gov/content/housing-tenancy/strata-housing/legislation-and-changes/changes-to-legislation> "Clarifying Strata User Fees..."

burning of fossil fuel be replaced by electricity, our primary carrier of renewable energy. Over time, every point of sale of propane, gasoline, diesel, etc. will need to be replaced with electrical outlets of one kind or another. To require that all of these be run by certified utilities is as unrealistic as to require that only oil refiners be permitted to sell gasoline or diesel.

The Commission's goal should be to apply only as much regulation as is required for safety and to avoid fraud and monopoly price gouging. The market mechanisms that regulate the current sale of gasoline should be transplanted to the sale of electricity, allowing competition for service and price to the consumer. Regulate only enough to prevent price gouging from monopolistic or anti-competitive behaviour.

The provision of electrical service through transmission and distribution to the point of the meter should likely stay with fully regulated utilities.

Recommendation: The Commission should provide regulations that allow dispensing electricity to movable vehicles, boats, batteries and maybe one day aircraft to be as open to the innovation of private enterprise as dispensing fossil fuels is today. Rather than granting strata corporations the ability to dispense electricity as a special case – include them as only one of many types of enterprises.

Administration of charges

The administration of charging stations requires specialised equipment to

- manage security and authentication of users/vehicles connecting
- measure time connected and electricity used
- regulate rates and times of charging to avoid overloads or take advantage of time of use rates
- communicate to central databases
- send invoices, statements, and handle payments and queries

There are currently at least two companies in Canada providing this service- ChargePoint and AddEnergie - although again they are forbidden from charging by the kWh.

Some strata corporations would likely wish to take these functions in-house and avoid the extra cost of a service provider.

There may be a business case for regulated utilities to provide these services 'after the meter' as an add-on service, in competition with other providers.

Recommendation: The Commission should keep an open playing field so that companies providing administration services for charging infrastructure are free to establish and compete on price and levels of service, and also allow owners of charging infrastructure to manage their own services in-house. The Commission should consider whether to allow regulated Utilities to provide this service.

Charger 'Level'

I expect that most strata residents will prefer overnight charging, so I don't see a case where a strata would justify costs in the \$50,000 range for a Level 3 charger.

For many EV drivers, Level 1 charging will be adequate, yielding 3-5 kms/hour. Overnight, that could be over 80 kms, so that over successive days most EVs will acquire a full charge unless they are used for long daily trips. A simple \$20 Kill-a-Watt meter will record the amount of electricity used, so the initial capital outlay for plugging into a 110V outlet is effectively zero if the strata council could read the meter and issue bills for electricity used. As more residents acquire EVs, the strata might install one or two Level 2 chargers in a shared stall for occasional 'top ups' before longer trips.

Other issues for stratas

Strata corporations must have a way to fairly allocate capital costs for installation of charging infrastructure to the unit owners who use them. This will be made more complicated in existing buildings by its incremental nature, as fossil fueled vehicles are gradually replaced by EVs. I have not learned enough to develop any opinions on this.

There will be a difference in installation cost between different parking stalls – e.g. the ones closest to the electrical room will probably be the lowest – but the EV owners may have the use of other stalls. Stalls which are registered to specific units in Land Titles currently need 100% agreement of all owners to change. This is a huge barrier to moving cars around to suit EV charging. I do not have enough information to know whether this is a significant cost difference or whether it falls within this Inquiry.

Time of use rates

Installation of smart meters throughout BC made ‘time of use’ rates possible. EV charging has potential to employ them as their demand can be set to run with timers or remote controls. This could reduce costs for EV owners and/or reduce grid load at peak times. Time of Use rates were ruled out by Energy Minister Rich Coleman in 2011 without a thorough consideration of their attributes, and it appears that our current Premier shared his views².

Recommendation: The Commission should recommend to the BC Government to reconsider Time of Use rates as a way to increase efficiencies in the electrical grid, and allow EV owners to reduce their costs by charging during off-peak hours.

² <https://www.theglobeandmail.com/news/british-columbia/no-time-of-use-billing-for-bc-energy-minister-insists/article595811/>