



## Report to Council

### From the Office of Mayor Rob Vagramov

---

Date: February 17, 2022

Subject: Re-Investing in EV Infrastructure

---

#### Purpose

To advocate for investment of electric vehicle (EV) charging infrastructure, and lower user rates.

---

#### Recommendation

**THAT Staff report back with costs and options of expanding EV charging infrastructure in the City of Port Moody, including an assessment of potential sites for EV charging (to include city owned lands near Rocky Point Park, Snake Hill, along the Murray-Clarke corridor, and the Former Barnet Landfill site), as recommended in the report dated February 17, 2022 from the Office of Mayor Rob Vagramov regarding Re-Investing in EV Infrastructure;**

**AND THAT the foregoing report include an assessment of, and options for, lowering Port Moody's charging rates for EV charging to increase uptake;**

**AND THAT Staff solicit private-sector interest in increasing public charging opportunities at rates similar or lower to current Port Moody rates, including developers of upcoming or existing large-scale development projects;**

**AND THAT the City of Port Moody call on all levels of government (federal, provincial, regional, local) and BC Hydro to increase investment in EV infrastructure and decrease and freeze user fees (including Step 2 EV exemptions) until EV uptake is sufficient;**

**AND THAT the City of Port Moody call on the Province of British Columbia to immediately make all necessary legislative and regulatory changes to allow for the sale of electricity by unit of energy;**

**AND THAT the following resolution be endorsed and sent to the Lower Mainland:**

**WHEREAS British Columbia and Metro Vancouver have shown exceptional leadership for electric vehicle (EV) uptake due in large part to generous incentives and early infrastructure upgrades;**

---

**AND WHEREAS the current level of EV ownership must increase to meet agreed-upon climate targets and cannot be considered sufficient at this time;**

**BE IT RESOLVED THAT all levels of government (federal, provincial, regional, local) and BC Hydro to increase investment in EV infrastructure and decrease and freeze user fees (including Step 2 EV exemptions) until EV uptake is sufficient;**

**AND THAT the Province of British Columbia to immediately make all necessary legislative and regulatory changes to allow for the sale of electricity by unit of energy.**

---

## Background

Across North America, jurisdictions have struggled to incentivize electric vehicle ownership. British Columbia stands head and shoulders above other North American jurisdictions in our rate of EV adoption. Much of the success can be attributed to significant investments in electric vehicle charging infrastructure, including a network for free chargers operated by BC Hydro across the province.

Recently, both BC Hydro and many municipalities have ended the practice of free or low-cost charging, instead relying on a relatively arbitrary 'market rate' for charging for charging. This signalled a shift in our approach to the electrification of our transportation network, as if to say *the job is done*, when in reality we are nowhere close to the level of electrification experience and other developed countries such as Norway, nor are we anywhere close to the level of electrification needed to comply with climate commitments made.

Further exacerbating the issue is an obscure provincial rule that prohibits the sale of electricity by unit of energy, requiring both public and private entities to charge users by the minute. Due to the physics involved in charging an electric vehicle this results in significant price fluctuations that are neither justified nor necessary, based on the state of charge of the vehicle.

Locally Port Moody charger some of the highest prices across the lower mainland for charging electric vehicles. Port Moody's growth patterns have also increasingly been focused on high density residential growth, leaving tens of thousands of existing residents without reliable access to charging infrastructure, and countless more, should development requirements not eventually be updated to mandate charging infrastructure for all.

## Discussion

### How we charge to charge

The rate of electrical flow can be measured in Watts (W) - a light bulb may use 10W, where an air conditioner may use upwards of 1000W, or 1kW.

An amount of electricity is measured in Watt-Hours (Wh) - if left on for one day (24hrs), that same light bulb would consume 240Wh, whereas the air conditioner would consume 24,000Wh, or 24kWh.

Despite the amount of energy being the useful product that a consumer seeks, public and private entities in British Columbia are prohibited from selling electricity, unless they are registered utilities. As a workaround to this, providers technically sell “charge time”, rather than selling electricity. So rather than paying to fill your Nissan Leaf with 30kWh of electricity, you are actually paying for an amount of time to plug in your car.

This creates headaches for a number of reasons, not the least of which is physics. As a lithium battery is charged, the rate at which it can accept energy drops. While your Nissan Leaf can accept 50kW of power at the beginning of your charge, you’d be lucky to be getting half that rate by the time your battery hits 80%. BC Hydro draws a parallel between a movie theatre – if the theatre is empty, folks can flood in and choose any seat; When the theatre fills up, it takes longer and longer for each individual or group to find free seats.

All the while, you’re being charged by the minute, which means you could be charged 5x or more for the same units of energy, simply depending on the state of charge of your battery, for no reason other than out dated red tape. Many forward-looking jurisdictions have changed their rules, allowing EV charging to be priced per-kWh, rather than by the minute. This report recommends advocating to the Provincial government for an immediate change to this framework.

### **Locally**

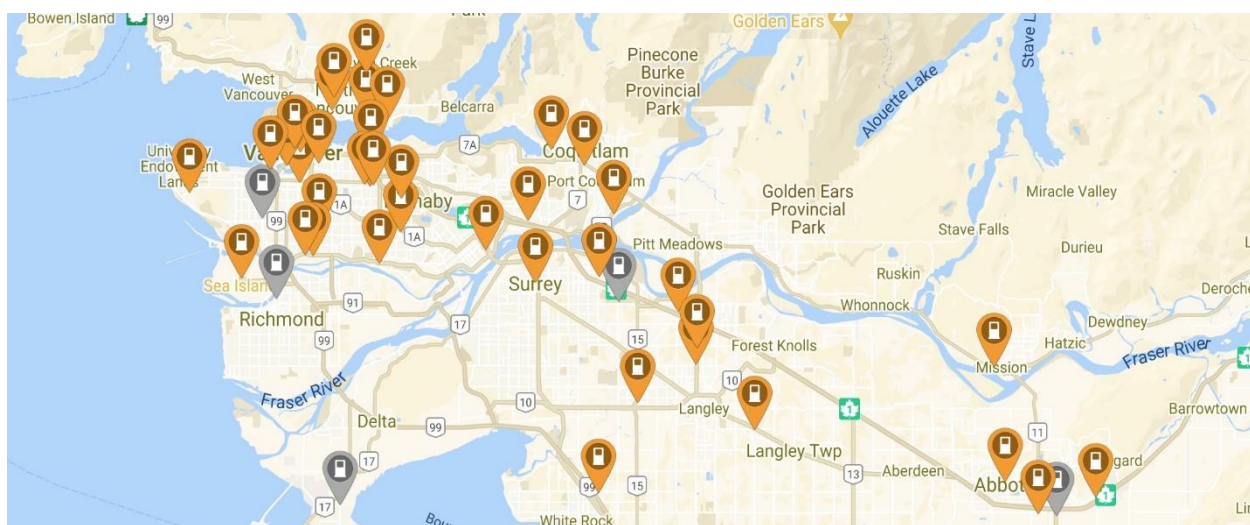
The Tri Cities area, and Port Moody in particular, is limited in the number of public fast charging stations available. Only one location exists within municipal bounds for fast charging, and the slower Level 2 chargers experience heavy usage. This report recommends the re-investment of funds collected from EV users, in addition to further investment as directed by Council, in the deployment of new EV charging infrastructure around town. Some providers, such as Tesla, provide options where the company covers all costs in exchange for securing a space to place their chargers. Other providers have similar arrangements that they offer, which is why this report’s recommendation directs staff to investigate this further to find the best bang for the city’s buck. EVs parked for too long have also been reported, and measures (such as idle fees during daytime hours, increased bylaw enforcement) should be explored.

Due to the high number of multi-family units concentrated in Port Moody, inequities related to charging infrastructure become apparent. Incentivizing overnight charging with lower rates is one method that could address these barriers to EV ownership, and is something that should be explored. Whether or not we are able to offer lower rates for Port Moody residents should be explored as well, to ensure that benefits of investing local tax dollars are felt locally. The last rate change was in 2020, so a reassessment is recommended to see if lower fees are possible.

### **More Broadly**

Generally speaking, it is clear that we are nowhere near ideal EV adoption rates. With 2040 less than two decades away, the share of electric vehicles needs to increase from approximately 9.48% in BC currently, to 100% of new car sales. The job is not yet done.

While there are many fast-charging stations in the Vancouver area, the further out you go, the less common they are. In fact, once you pass Port Coquitlam, there are no fast chargers until Mission along Highway 7:



This is no issue for road-trippers coming out of/through the area, as even the most basic EV can hop from charger to charger and continue up the Trans-Canada Highway or the Coquihalla Highway. Issues arise instead for commuting residents. At each pin, there are usually two, sometimes only one charger available at a time, which results in backups and delays for the very folks we should be incentivizing at every step.

With a large percentage of current and future residential units in Metro Vancouver being multi-family units, the issue of charging inequity also exists regionally. Those who are doing the most to help with climate goals - living densely, adopting EVs early - carry the highest burden. From line-ups to unfair billing schemes, it is clear that the system is not adequately rewarding those who should be. Single family homeowners on the other hand, have it the easiest. They are able, and financially incentivized to, install charging stations at their home, allowing for an unbeatable (and unbeatably fair, being billed for energy) rate as low as \$0.09 per kWh. That being said, even single family homeowners are not left out of strange billing logic – BC Hydro’s “Step 2” energy metering regime increases the price by ~50% once a home reaches a certain energy use threshold. Great idea for general conservation, but the threshold only represents about 20 charges per month for a Chevy Bolt, effectively dis-incentivizing driver from going electric. This report recommends BC Hydro exempt EV owners or finds some other way around this measure.

Finally, quality of life for Port Moody residents will be directly impacted by a share of our eastward-based thru-traffic that will be burning fuel and releasing toxic exhaust. This report recommends lowering user fees and increasing investments in new and upgraded infrastructure in our region, and across the Province.

## Conclusion

While advocating to senior levels of government, this report also recommends putting our money where our mouth is, and investing local dollars in local solutions. The City of Port Moody

has collected approximately \$52,000 in charging fees to date, and while expenses must be accounted for, this serves as a good starting point for discussions around re-investment. It is recommended that the report from Staff include a number of options, including options that would require additional investment from Council. Private partners may also play a role in further expanding our network, and smaller slices of city-owned land along major arterials could serve as a catalyst for new public charging options. Finally, emerging technologies may be available that could help us further improve our situation.

## Financial Implications

Staff time for a report to Council regarding EV infrastructure as recommended in this report.

## Council Strategic Plan Objectives

- Reduce the City's impact on the planet
- Reduce the impacts of through-traffic
- Address global climate change with local actions
- Broaden the City's sustainability programs
- Ensure resiliency of City infrastructure and assets
- Encourage innovative, critical, and creative thinking
- Encourage green, clean, or creative light industry
- Commit to a high and consistent standard of service
- Strengthen relationships with other levels of government
- Plan for the impact of emerging transportation technologies
- Maintain the "no call too small" community safety service level
- Be proactive in identifying and responding to emerging industries
- Respond and adapt to climate change through planning and policy development
- Ensure plans and programs take into account the diverse needs of residents
- Leverage funding for projects with grants and partnerships
- Review customer processes on a regular basis to improve efficiency