To:                  Dr. Erika Paterson

From:              Daniel Tsui

Date:               October 15, 2021

Subject:          Proposal for reducing carbon emissions by incentivizing the use of electric vehicles on UBC Vancouver Campus

**Introduction**

As on-campus activities and classes resume back to normal, many students prefer to use alternate transportation methods that do not include public transportation due to COVID-19 concerns. Many students and faculty staff do not live on campus and live all around the Greater Vancouver Regional District. On an average distance basis, one drives an estimated combined distance of 50 kilometers round-trip on average each school day. This equates to approximately 1000 kilometers driven per month, per car when driving on every weekday. The average car in Canada consumes 8.9 liters of gasoline per 100 kilometers. This equates to 89 liters consumes every month which contributes to around 205kg of CO2 released into the environment per month, per car.

**Statement of Problem**

The current global warming temperature rate of increase is rising faster than ever. As countries around the world are declaring the switch to all-electric solutions but the switch to all-electric is simply too slow and we must make all efforts to reduce carbon emissions. As stated in the introduction, many students do not live close to campus and there may be some people that live even further than the estimated average distance. Public transportation is simply not good enough of an alternative for distant students and faculty as it takes too much time and is not easily accessible in some areas. Currently, UBC provides 10 EV charging stalls per parkade, but this is not sufficient as they frequently are full on peak hours and have a time limit of 4 hours. This makes charging for people cumbersome as they must move their car before the time limit is elapsed to avoid getting a violation ticket.

As a university that prides in sustainability in recycling and waste nationwide, curbing the carbon emissions through encouragement, will contribute even more to our sustainability efforts. This aims to set an example for other universities and large-scale office towers for others to follow suit. We must try our best to help the planet, even if it only makes a little difference.

**Proposed Solution**

A possible solution is to provide solutions for the recurring questions for users that make a switch to an electric vehicle such as providing ample and adequate charging spots located around UBC parkades. Introduction of high-speed chargers and even a Tesla Supercharger station will ease the demand for charging at peak times. By curbing the concerns that most people have, it makes the transition to electric vehicles feasible and accessible even for those that do not have access to a charger at home. Additionally, by offering discounts to parking and charging costs, prime parking spots, this can incentivize users to transition to electric vehicles.

**Scope**

Gauging feasibility of the incentivization of EV vehicles, the following questions are to be answered by UBC parking users:

1. How far is your daily commute, round-trip?
2. What are your main concerns of owning/switching to an electric vehicle?
3. Will incentivizing parking costs, increased accessibility to chargers, and prime parking spots convince you to switch to an electric vehicle?
4. Are there any negatives to implementing such? Additionally, do the benefits significantly outweigh the consequences if there is any?

**Methods**

One of the primary sources of research will involve interviewing current users of all UBC parkades around campus to understand the challenges users face and to possibly raise awareness to users. Secondary sources will involve national average statistics, UBC parking statistics and general information of a typical vehicle in Canada.

**Qualifications**

I am currently studying in Computer Science at UBC as my second degree. I do live quite far from campus and rely on non-public transportation due to the very same reasons. I have switched to a fully electric vehicle considering this to help the environment out.

**Conclusion**

Although UBC recommends for using public transportation as a means for getting to and from school, it is simply not viable in many situations due to the inaccessibility of the transit system. Incentivizing the use of electric vehicles will surely make a difference in the environment we all belong to and by transitioning to such, many more institutions may follow suit and adopt similar protocols. Following your approval, research and questionnaires will commence.