

April 8 2014

From: James Adcock, Electrical Engineer (MIT) and Electric Car Owner.

Re: PSE Program to support Level 2 Chargers for study purposes

Docket No. **UE-131585**

Thank you for this opportunity to comment, which I will use to help orient others – non-Electric Vehicle Owners – to the general issue of charging and Electric Vehicle ownership in Washington State.

I was one of the first “early adopters” of a Nissan Leaf after the Japanese Tsunami devastation. I have a residential Level 2 charger installed by Blink “for free” as part of the early Federal study. The Blink charger, and the Blink organization has had a very troubled history. I hope instead PSE will be thoughtful in their choice of chargers and support organization.

The Blink Charger program has resulted in many useful reports which may be accessed at:
<http://www.theevproject.com/documents.php>

Please note in particular the striking difference in charge usage between utilities which provide off-peak (late night) charging incentives vs. not providing late night incentives: When late night incentives are offered the great majority of EV charging happens after midnight. Without the late night incentive charging happens immediately after EV owners get home at night – right during the afternoon/evening peak power demands.

The early Nissan Leaf vehicles only charge at a 3 kilowatt Level 2 residential charging rate (15 amp 240V). More recent Leafs, and Tesla Model 3s charge at a 6 kilowatt charging rate (30 amp 240V). Typical charging durations after a day’s use might be 3 to 6 hours. These are the two most popular EVs locally.

While there are Level 2 chargers at business locations, for example a row of 5 or 10 a Bellevue Square, most EV owners prefer to either charge at home, or to make use of the rare high power “DC Quick Charger” aka “CHAdEMO” or High Power Station, available at select public locations, see for example: <http://www.plugshare.com>. These units might provide power at a 40 kilowatt rate, recharging a Nissan Leaf to 80% full in typically about 15 minutes. These fast units have in turn also had a troubled rollout, with state support as part of the West Coast Green Highway program: <http://www.westcoastgreenhighway.com/> -- Oregon has had a more successful rollout.

Seattle has a very active EV community with the Seattle Electric Vehicle Association:
<http://www.seattleeva.org>

Nissan Leafs have a strong presence on Facebook: <http://www.facebook.com/groups/seattlenissanleaf>

One can imagine where off-peak charging might help alleviate some of the problems with what BPA calls “Oversupply” – where Wind Production conflicts with BPA desire to at the same time use high spring

runoff to generate huge amounts of hydro power – and this duo Wind/Water combination leads to more desire to produce power than there are customers are available to consume – especially at night time – right when EVs could be incentivized to take power “Late Night.”

<https://www.bpa.gov/Projects/Initiatives/Oversupply/Pages/default.aspx>

Intelligent research on the regional issue of Wind/Solar/Hydro integration can be found in NREL’s recent report “Western Wind and Solar Integration Study Phase II”

http://www.nrel.gov/electricity/transmission/western_wind.html

I believe programs, such as PSE seems intent on researching, which properly incentivize customers – all customers, not just EV customers – to move discretionary use of power Off Peak, are very good ideas, making more economic use of our electrical generation and transmission lines, and helping avoid terrible regional conflicts such as PSE’s Energize Eastside project: <http://www.energizeeastside.com/>

Jim Lazar has also championed discretionary time-shifting of load, for example by using smart-responsive electric hot water heaters.

Many EV owners are also solar electric owners [I am not one of these] or green power purchasers [but I am one of these] and perhaps PSE’s proposed program can also shed light on these important correlations. If EV ownership leads to higher green power participation, well, that is definitely a Win-Win!

While many people consider electric vehicles as a method to reduce CO2 emissions, helping the state to meet its increasingly implausible “1990 Levels by 2020” goals, it is important to remember that EVs also have equally important benefits in reducing levels of local air pollution from vehicles, including significant reductions in Childhood Asthma.

Finally, in closing please note that contrary to utility predictions no transformers have exploded in my neighborhood, which is proud to be home to several EVs.

Thank you for your interest in this important subject, and I encourage everyone to learn more about electric vehicles.

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