

Electricity Consumption of our EV

This isn't related to ham radio but I thought some might find it interesting...

We've had our EV for a year now (and drove 18,500 km), so today I pulled the last 3 years of data from our BC Hydro account to see the impact of charging the car at home.

Our average consumption was:

	Daily (kWh)	Monthly (kWh)
Before EV	24.7 \pm 12.2	748 \pm 315
After EV	31.7 \pm 18.9	978 \pm 390

The numbers after \pm signs in the table above are the standard deviations, which give a measure of how much the data fluctuates from the average (because of seasons and other factors).

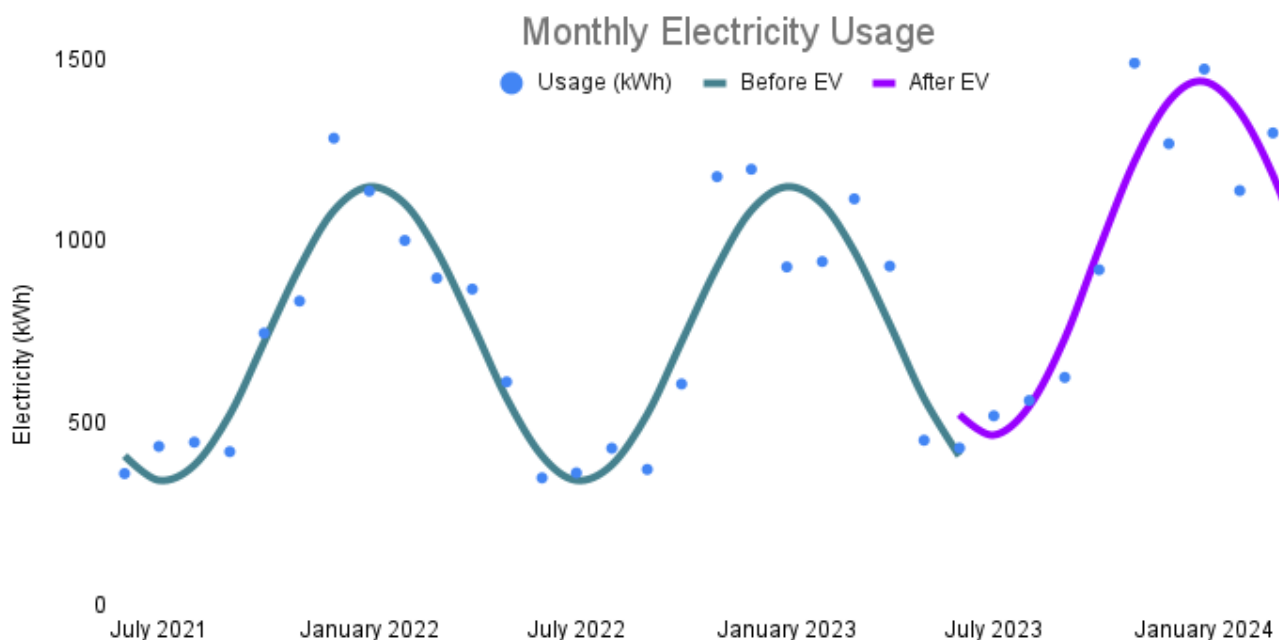
It seems that charging our EV increased our average monthly consumption by 230 kWh (30%). To put this extra load in perspective, it's worth noting that the average difference between the maximum usage in the winter and the minimum usage in the summer is about 800 kWh.

This extra 230 kWh a month costs roughly \$35, which translates to about \$2.30 / 100 km.

I also did a least square regression to a sine function and got similar numbers for the average:

	Daily (kWh)	Monthly (kWh)
Before EV	24.6 \pm 13.5	746 \pm 401
After EV	31.2 \pm 16.3	954 \pm 486

This time, the numbers after the \pm sign are the amplitudes of the sinusoidal models.



It's interesting to see how the daily consumption after getting the EV is much more scattered than it was before. This is because we don't charge the car everyday so we get spikes when we charge, and regular usage when we don't. To even out the load, we programmed the car to start charging at 11pm. That way, the extra 30A draw doesn't impact our regular usage during the day.

