

Watt's Happening? #147

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The EV/Solar connection: free fuel from the sun!



Ernie Freeman of Fort St. John plugs in his all-electric Nissan Leaf at the Peace Energy Co-op solar electric vehicle (EV) charger at our office in Dawson Creek: free fuel from sunlight! With EV model choices

going way up while the costs of EVs are coming way down, having your own solar vehicle charger will soon be a no-brainer.

Ever since this very cold weather moved into northeast BC, my neighbour has been running his truck non-stop, all day and all night for a solid week. I assume he is doing this because if he doesn't the truck will not start.

At Peace Energy Co-op we are talking a lot these days about electric vehicles and plug-in hybrids. We are part

of a province-wide campaign called EmotiveBC that is raising public awareness about these new vehicles, providing info and busting myths.

Here's a big myth we hear from folks often, and I'm going to bust it right now: ***“Electric vehicles will never work up here because it's so cold in the winter.”***

COLD WEATHER FACTS

First off, electric vehicles will always start. That's because there is actually nothing to “start.” Like an electric light or your smart phone, you just press the “on” button. No “starting”, no wasteful idling and useless air pollution, just turn on and go.

Normally your electric pickup or car will be plugged in

charging at home overnight. This charge can come from a special fast-charger or just a plain outlet. Either way, by morning your vehicle will have a full charge and its full range of 300 to 500 km or more.

On a cold winter morning, you can use your phone app to pre-heat your EV's cab to a cozy temperature, turn on the seat warmers, check you charge and range, etc. from the warmth of your home, all without "starting" the vehicle. In very cold weather, the car will also automatically warm its batteries up a bit to keep them happy.

All this is done while still plugged into the grid, so none of this uses the energy stored in your on-board battery.

Very cold weather WILL reduce the range of your EV, but let's remember that cold weather seriously reduces the range and efficiency of your gas or diesel vehicle too. What kind of mileage is my neighbor getting with his idling truck? Zero miles per gallon, and 100 percent pollution!

Comparing the simplicity and ease of an EV with the problems so many of us have in the north with our regular vehicles, I would say it's the internal combustion engine that is not well-suited for a cold climate.

Norway (another cold country) started into electrics just six years ago. Now, they are a world leader in electrifying their transportation systems. One third of cars sold in Norway are now pure electric, and if you include hybrids, that goes to two-thirds. If EVs work so well there, they'll work here too.

FREE FUEL FROM SUNLIGHT

Here's a really cool thing that EVs make possible: *free fuel!*

Put a small grid-tied solar array on your roof, and you can effortlessly make free solar fuel for your EV... essentially forever. And because most of us drive gas-guzzlers, the payback is super fast!

Here are the numbers: in a reasonably sunny location like northeast BC, a small 3-kilowatt solar array on your roof will provide about 15,000 km worth of solar electricity per year for an average EV.

A 3-kilowatt solar array and a Level 2 car charger will cost you about \$12,000 installed (it's also an asset that increases the value of your home). If you are running a standard pickup or SUV, you are paying about \$3500 per year for gasoline, sometimes much more. That's a 3 to 4 year payback, then free fuel for the next 30 to 40 years!

This is not some wild pie-in-the-sky idea. At Peace Energy Co-op we are already installing solar EV chargers for our clients, and in fact we have a charger attached to the solar array at our office, giving a free charge to anybody who wants to plug in and power their electric vehicle with sunlight. With EV model choices going way up while the costs are coming way down, this will soon be a no-brainer.

Electric vehicles: super-low maintenance; zero pollution; fantastic acceleration, performance, comfort and convenience; and with a small solar array, free fuel for the rest of your life.

And no matter how cold it gets, your electric car or truck will always start ... with just the press of a button.

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