

Watt's Happening? #178

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How to Decarbonize Part 1



Just a few of the happy electric vehicle owners in the BC Peace Region. Choosing electric transportation is probably one of the best things you can do to reduce your personal carbon footprint.

We need to listen to the children and stand with them: it's time to decarbonize, now. Governments and industry are predictably slow to respond, but there's a lot we can do right at home.

The easiest emissions we can eliminate are the ones we have direct control over as a consumer: the fuel we put in our vehicles and the way we heat and power our homes, for instance. Focusing on just a few key items, we can quickly reduce our personal carbon footprint by half, while in the long run saving money, improving our personal comfort, our health and our security too.

ELECTRIFY YOUR VEHICLE

Reducing carbon at home means electrifying

everything we can while making sure most or all of that electricity comes from a clean energy source like solar or wind.

Your expensive-to-run and maintain gas-guzzling vehicle is probably your largest source of carbon pollution.

There are dozens of electric vehicles to choose from now, with more coming out every year. Tesla, BMW, Jaguar, Bollinger, the Chevy Bolt, Fiat 500, Hyundai Kona – these are all fantastic fully electric vehicles: fast, comfortable, cheap to run and cheap to maintain...and fun to drive!

If you are not quite ready for the fully electric vehicle, get a plug-in hybrid like the Toyota Prius Prime or the Chevy Volt. These give you 50 to 100 kilometers on full electric (about 80% of most people's driving), then unlimited range on gasoline.

If none of these EVs turn your crank quite yet, wait a year or two. From the Tesla Cybertruck to the electric Ford F-100 due out this year or next, lots more options are coming soon.

Meanwhile, don't buy a new internal combustion vehicle. Hold on to your current vehicle until you see what you want. It won't be long.

ELECTRIFY YOUR HEAT

Most of our heating infrastructure has moved to "natural" gas (methane). Touted as a "bridge" fuel to a decarbonized future, methane, especially "fracked" methane, has proven to be about as carbon intensive as coal or oil.

In your home gas is probably used in three main ways: gas heat (the big one), water heating (next), and stove top/oven.

HEAT PUMPS

Heat pumps are the new, super energy efficient way to space heat with electricity. They use about one third of the electricity that a regular electric baseboard "resistance heater" uses and they can be scaled to heat a single room or your entire house.

Heat pumps extract heat from either the outside air (air-source heat pumps) or the ground (also known as geothermal or geexchange heating systems).

It's hard to believe, but even outside air at twenty below holds a lot of heat, and about 2 meters underground the temperature is a constant 15 C. The heat pump extracts that heat and concentrates it, blowing it into a single room or into your existing ductwork for the whole house.

HOT WATER

Old-fashioned gas hot water heaters can account for up to 30% of your household carbon footprint. Rheem and other manufacturers now make heat pump hot water heaters that use half the electricity of regular electric hot water heaters. These are simple drop-in replacements.

INDUCTION STOVES

Cooking with gas has been culturally accepted as the "best" way to cook. Not any more. Induction ranges provide instant heat and more control, and are super electricity-efficient. Numerous studies suggest that breathing the combustion products of fossil fuels in the home leads to respiratory issues. Electrifying your kitchen will probably improve your health.

PUT SOLAR ON YOUR ROOF

If we put solar arrays on all the empty roofs in Canada, we could power the country with sunlight. Installing your own solar array and generating your own power right at home eliminates most of the transmission and distribution losses of grid electricity, and provides you with pretty well the cleanest source of electricity yet. A solar array is a home asset that keeps its value over decades, and starts to pay for itself as soon as you turn it on. It can fuel your car, heat your home, heat your hot water, and cook your food while effortlessly running all of your electronics.

Next: more ways to decarbonize at home.

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