

EAST END LIVING

Want to Save Costs and Cut Emissions? Generate Your Own Renewable Electricity



THE AVERAGE HOMEOWNER RECOUPS THEIR SOLAR PANEL INVESTMENT THROUGH ENERGY SAVINGS WITHIN SEVEN YEARS.

BY FRANK DALENE

In my recent piece on the Department of Energy's recent push to accelerate the production and use of heat pumps, I mentioned that generally speaking, from an energy perspective, electric heat pumps are neither more cost effective nor better for the environment. The same is true of electric vehicles. Why? Because both use electricity — and if that electricity comes from a grid that generates electricity using fossil fuels, the greenhouse gas output from the electricity generation surpasses the emissions produced by fuel-powered heating or vehicles. This is why I frequently argue against the push toward "All-Electric" — because, currently, using electricity instead of fuel is almost never actually cheaper or better for the environment.

Now, if you are operating on a grid powered by renewable energy, all-electric is, in fact, better for the environment. If you could charge your electric vehicle on a renewable grid, then the carbon emission reduction of an electric vehicle would surpass a gas-powered vehicle. Likewise, if you live on a 100% renewable grid, then all-electric appliances would indeed

create less emissions.

This is the case in East Hampton, where almost all of the electricity supplied to East Hampton residences is produced by an offshore windfarm, South Fork Wind. This windfarm is actually the first grid-sized offshore windfarm built in the U.S. — I was the chair at the time of the Town of East Hampton Energy Sustainability Committee that made it happen. The governor even invited me to her news conference when they announced the completion of South Fork Wind!

Even if you don't live on a renewable grid, you can offset the carbon footprint of the electricity you use through a mechanism called Renewable Energy Credits, or RECs. RECs work similarly to carbon offsets: the purchase of RECs justifies the electricity as renewable, regardless of its source. Using RECs, it is possible to get electricity from a wind farm in the Midwest, or a solar farm in the Southwest, or a hydroelectric plant in Niagara or the St. Lawrence Seaway, whether you are geographically close to those sources or not.

This can be done on a municipal level, but RECs can also be used by individuals. With RECs, you can become

a 100% renewable energy user. Say someone builds a solar farm; for every kilowatt of energy the farm produces, they earn RECs, which is almost identical to a carbon offset credit. Like carbon offset credits, RECs are sold on a marketplace. If you, as an individual, want all the electricity in your house to be 100% renewable, you can purchase RECs off the marketplace equal to the amount of energy you use.

This helps answer the environmental impact part of the issue — but it does not address the more pressing issue for most consumers: cost.

When our grid shifted from fossil fuel energy to renewable energy from the windfarm, we knew our carbon footprint had changed — but our costs didn't. When the grid was producing electricity using fossil fuels, our electricity cost ranged from 23 to 30 cents a kilowatt/hour, depending on the cost of the fossil fuels. Now, the grid is getting renewable energy from this wind farm — but they are still charging us the same amount of money.

But there is a way to reduce both carbon footprint and costs. In fact, individual consumers have the power in their own hands to make EVs, electric heat pumps and other "environ-

mentally friendly" devices actually environmentally friendly and cheaper — even free!

How? By generating their own renewable electricity.

If you charge your EV or power your electric heat pump using the electricity from your own solar panels, not only would you truly be eliminating the carbon footprint of your vehicle or appliance — you would also be saving yourself the cost of electricity from the grid. But that's not all: you can also end up producing more electricity than you need. For example, the solar panels on our home produce more electricity than we consume — 40% more. Right now, I am producing 140% of the electricity I consume averaged over a year!

The excess electricity is sent to the grid in a mechanism called net-metering. Our electric utility, PSEG-LI, tracks the excess electricity sent to the grid in an "Energy Credit Bank" much like a savings account. Since our solar panels began producing electricity in November 2019, we have accumulated 22,120 kWh as of October 8, 2024. At our current retail cost of electricity — \$0.30 per kWh — the cost savings from electricity produced by our solar panels equals \$6,636.00.

I recently bought an electric pickup truck as my local daily driver. When I plugged it into my house to charge, not only was it more convenient than having to go to the gas station — it was also free! It cost nothing for me to charge it. Operating all our electric appliances and fixtures costs us nothing, except for a monthly minimum charge to use the grid for net metering of \$15.50.

Where you really see the cost difference is not from utilities embracing renewable energy; it's from individual people producing their own electricity from renewable sources. Yes, there is an initial cost to purchase and install something like solar panels — but if you do the math, there is a financial benefit: solar panels take about seven years to make up their initial cost in electrical savings; the lifespan of solar panels is 30 to 40 years. That means you get 23 to 33 years of free electricity!

It is going to take some time for utilities to be able to provide enough renewable electricity to make "all-electric" feasible from an environmental standpoint — for reasons I'll discuss in an upcoming piece. But the power is currently in the individual consumer's hands to save money and curb emissions — and maybe make those electric heat pumps actually a worthwhile investment!

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