Volume 2

SUSTAINABLE HANOVER
ENERGY | ENVIRONMENT | COMMUNITY

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Considering an Electric Vehicle?

Ben Steele

This fall, we have been especially aware of the effects of climate change: devastating wild-fires, more frequent hurricanes, and a very hot summer. In order to keep climate change from getting worse, we need to stop burning fossil fuels. In New England, transportation is the biggest source of greenhouse gasses, bigger than heating and electricity generation. As part of Ready for 100, Hanover has adopted a goal of 100% renewable transportation by 2050. The best way to get there is to convert to electric vehicles (EV's). In addition to reducing your carbon footprint, there are three other reasons to consider an EV for your next car.

The first reason is that there are many different types to choose from. You are not limited to small compacts. The drive electric VT web site (https://www.driveelectricvt.com/why-go-electric/compare-vehicles) lists 36 different models. These include plug-in hybrids and fully electric vehicles (more about that later). Do you need all wheel drive for the winter? Fifteen have all wheel drive. Need an SUV? There are 10 different electric SUV's. Chrystler even has an electric minivan. And next year or soon after there will be pickup trucks available, not only an electric Ford F-150 and the Tesla Cybertruck, but four other companies are producing electric pickups.

The second reason to opt for an EV is that they are affordable. Sure, some Tesla's cost over $80,000 (they are really nice cars), but other EV's are much less expensive. Four models boast a list price under $30,000. Plus, many qualify for a federal tax credit of up to $7,500. (If you live in VT, there are state incentives as well.) You save money operating an EV too. Electricity costs about 33% of what gasoline costs for a unit of energy and the price of electricity is much more stable than gas. And if you have participated in Solarize Hanover and have solar panels on your roof, the fuel is free. Finally, there is much less maintenance for an EV. In a fully electric car, there is no engine oil, no transmission, no spark plugs, no radiator, etc. The electric engines are connected directly to the drive wheels, which also gives you immediate acceleration. Periodic maintenance involves checking windshield washer fluid levels and some diagnostic tests. The cost alone is enough reason to get an EV.

The third reason to consider an EV is convenience. Some potential buyers worry about charging, or about running out of charge while out on the road. Most EV owners do most of their charging at home, which simply means plugging in the vehicle when you get home, which is much more convenient than pulling into a gas station. Many owners simply use a regular 120-volt outlet, but most install a Level II charger, which charges at 240-volts, so is much faster. These cost about $500 plus installation. With the 240-volt model, an overnight charge will likely give you a full battery in the morning. But charging time and how long a full battery will last depend a lot on what EV you get.

A fully electric car just has a battery and electric engines (most have more than one). The Mini Cooper SE Electric and a few others can go 110-125 miles on a full charge, while the Chevy Bolt can go

250 miles and some Teslas can exceed 300 miles. The new pickup trucks may go more than 500 miles on a charge. While one charge can cover your local driving and short trips, for longer trips, you need to find a charging station. There are more than 100 public charging stations in NH, but a level II charger only gives you an extra 10-15 miles per hour of charging. That is fine if you are spending a day somewhere or staying overnight (many chargers are at hotels or ski areas), but if you are on a one-day trip longer than your car's range, you will want to find a DC fast charger or a Tesla Supercharger, which can recharge 80 percent of an EV battery in 30-40 minutes. More DC fast chargers being installed, but you will need to plan your drive to get to them. There are many more Tesla Superchargers, - you probably noticed the ones next to Price Chopper in West Lebanon - but those only work for Teslas.

The other type of EV is a plug-in hybrid. It will run completely on its (smaller) battery for a while, and then uses its gasoline engine to power the car and recharge the battery. And like other hybrids, it uses braking to recharge the battery. The number of miles that plug-in hybrids will go on battery power depends on the size of the battery. The all-electric range of available cars averages 30 miles and varies from 9 miles in the Mercedes-Benz GLC350e to 126 miles in the BMW i3 REx. Plug-in hybrids work well if the range covers your daily driving and you occasionally take longer trips and don't want to worry about remote charging. But the number of DC fast chargers is growing and at some point they will be as common as gasoline stations. Plus, more employers are installing level II chargers which will mean a car's range needs only to be a one-way trip to work.

So, getting an EV will not only reduce your carbon footprint, it will save you money and convenience. In the next decade or so, it may be the most common type of vehicle on the road.

Electric Vehicle Links for More Information
https://www.greencarreports.com/
https://electrek.co/2020/08/27/xeal-ev-chargers-make-money-building-owners/
https://www.virta.global/vehicle-to-grid-v2g

Community Power New Hampshire

April Salas, Sustainability Director
Town of Hanover

Hanover is working with other towns in New Hampshire to devise a new and better way to buy electricity.

Hanover was the first community in the state of New Hampshire to formally endorse and adopt the Sierra Club's "Ready for 100" targets for achieving 100% renewables at the Town Meeting in May of 2017. Focused on the first, interim goal of 100% renewable-powered electricity by 2030, Sustainable Hanover and the energy subcommittee undertook a process of establishing community values to guide our efforts to achieve our goals. Now we are joined by more than 165 cities and towns, and eight states across the U.S. representing over 95 million Americans (nearly a third of the U.S.Population). We are joined by Concord, Plainfield, Cornish, and Keene in New Hampshire, and Burlington, VT, 5 cities in Massachusetts, and the entire states of Maine and New York. Wow! We are not alone.

Last year, the New Hampshire legislature approved and Gov. Sununu signed into law the Community Power Law (SB286), which aimed to "provide small customers with similar opportunities to those available to larger customers" and to "encourage voluntary, cost effective and innovative solutions to local needs with careful consideration of local conditions and opportunities." State law previously enabled communities to join together to implement Community Power Aggregations but had required that community member's individually choose to join, or "opt-in" to the program. Surveying difficulties with this approach nationally, we determined that it was not a viable solution for Hanover. The new law, SB286, changed that. It says that, if the plan is adopted at Town Meeting,

the entire community is now in the program, except for any individual customers who opt out.

The Town and Sustainable Hanover have been working diligently over the last six months with Clean Energy New Hampshire, Community Choice Partners, and our fellow communities of Nashua, Lebanon, Cheshire County, and the Monadnock Sustainability Hub, to explore the launch of a New Hampshire-based community power aggregation called Community Power NH (CPNH). We are excited about the potential benefits that Community Power Aggregations can bring to our residents and businesses. We look forward to opportunities to lower electricity costs, procure electricity from sustainable sources, and improve competitive markets for local businesses that can offer innovative energy products and services.

Community Power Aggregations are democratically controlled, market-oriented, and accountable to local voters. In contrast, utilities are investor-owned monopolies regulated by the Public Utilities Commission. We are excited to continue to update the community as we make further progress on setting up CPNH. The Sustainable Hanover Committee established an Electric Aggregation Committee (EAC) in 2019 to research and share information on what Hanover might do in regard to enhancing our access to greater choice and lower prices. We plan to hold a number of informational sessions between now and town Meeting 2021, at which we expect to vote on formally combining our resident, business , and municipal electric load with CPNH to achieve those lower rates, and perhaps add in important services like weatherization and solarization. Look for more information from me soon!

For Additional Information on Community Power
http://www.communitypowernh.org/
https://www.cleanenergynh.org/
California has been a leading state in community power development;
https://www.svcleanenergy.org/
https://ebce.org/
https://ilsr.org/2019-community-power-scorecard/

SHC Recycling Report

Susan Edwards, Chair Recycling Sub-Committee

The last few months have seen very little activity by the Recycling Committee. The Yard Sale which usually consumes our summer months was cancelled due to COVID-19. We are still pursuing a method for collecting textiles but it will mean finding a drop off point in town.

With significant declines in the market for recycling materials, the town entered into a new contract with Casella which changed the recycling program. Since that happened we have fielded multiple questions and complaints from residents regarding various aspects of the new contract and the recent ordinance passed by the Select Board regarding timing of putting recyclables at the curb.

1. Change is challenging yet we hope many of the issues will work themselves out as we figure out new ways of doing things. As a committee we are concerned that many people will simply stop recycling at all.With luck we will soon have a drop-off point for glass in Hanover. In the meantime residents are being advised to take it to the Lebanon Recycling Center or put it in the trash.
2. The size of the new 96 gallon toter was a surprise to many people but it is possible to get a smaller one by calling the Dept. of Public Works. They offer a smaller 48 gallon toter. Note that trucks will not be entering driveways. Call Adriane at 643.3327 if you would like a smaller toter.

Composting remains an area we would like to promote better. Whether you compost at home or use a pick up or drop off service, you can remove an enormous amount of food waste from your trash. Remember, food waste does not compost in the landfill but is a huge producer of methane gas. You can find more information on composting at the town website.

Home Insulation Can Help Save the Planet

Barbara Callaway

Aside from switching to renewable energy, improving energy efficiency is the primary means by which the world can reduce greenhouse gas consumption, and among the most cost-effective. That's the conclusion of the International Energy Agency. It also reduces the size and capital equipment cost of shifting to renewable energy sources for your HVAC needs in the future time.

And it's why Sustainable Hanover is encouraging residents to "weatherize."

WEATHERIZE HANOVER is an initiative of Sustainable Hanover to help residents save money, stay warm in winter, keep cool in summer, and reduce their cost and energy use. It is a key contributor to meeting the town's goals to achieve 100% renewable electricity by 2030 followed by 100% renewable transportation, heating and cooling by 2050.

Go to: hanovernh.org/weatherize for complete guides to all steps in the weatherization process as well as a list of other resources. We aim to provide information and help to residents who want to "tighten up" their homes. We do this by:

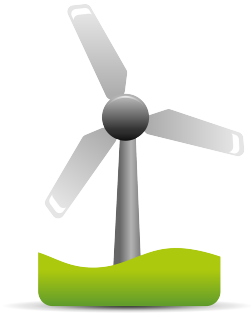
1. telling residents where and how to start.
2. providing a list of contractors who are vetted for quality assurance and reasonable pricing.
3. helping people apply for rebates from utility companies for home weatherization projects. (The efficiency incentives and rebates for projects that qualify, based on energy use per square foot, was 1/2 of the price up to $4000 in 2020. The amount for 2020 is still undecided.)
4. giving residents a place to ask questions and get more information.

The first step in weatherization is to conduct an energy audit of your home. Audit results provide a clear and logical road map for your home energy upgrades. A certified technician comes out to inspect your house, especially the attic and basement, and conducts an airflow test by blowing air in through an exterior doorway and measuring whole-house air leakage. The audit may also include infrared scans that zero in on the location of any areas of poor insulation, air leakage, and moisture intrusion. It may also identify if mechanical ventilation is needed to provide acceptable indoor air quality (more important now due to Covid-19).

With a visual inspection and these test results, the auditor can suggest strategies to improve the tightness of your house. The homeowner decides what remedies to pursue and in what sequence, whether using a contractor or on a DIY basis. A contractor may provide an estimate of how long it will take to recoup your weatherization investment in energy cost savings, which may be as little as five years.

The cost of the audit can vary depending on the auditor, but, if it is done through NHSaves, a joint venture of electric utilities it costs $100. The average cost for a home weatherization project is $5,000-12,000. There are low-and no -interest loans available to finance your weatherization project from NH Saves.

Even old homes can benefit from weatherization. Listen to what one Hanover resident said about his weatherization - "Our home built circa 1799, is a 'plank' house with walls of vertical two-inch-thick boards with clapboards on the outside and sheetrock on the inside-not much opportunity to add insulation without building another house envelope either outside or inside. So our focus over the years has been on wind-sealing the envelope, selectively insulating, improving summer ventilation, modernizing the heating system, and foaming the basement walls and foundation inside. What I have learned, though, is that the biggest and cheapest first benefit of weatherizing is the improved comfort that results from sealing cold air leaks. Steps in the right direction for energy savings provide immediate and physically tangible benefits in comfort, health, and well being."



E-bike Library Cycles into Hanover

Yolanda Baumgartner

Interest in electric bikes is booming! More and more people are finding the pedal assist from an e-bike enables them to commute, run errands and enjoy a low-carbon way of getting around our hilly New England terrain on two wheels instead of four.

The Upper Valley E-Bike Lending Library offers Hanover residents a chance to experience an e-bike first-hand. Throughout the month of October interested residents can test ride a Library e-bike through a series of Demo Days and overnight rentals coordinated by Sustainable Hanover. The program is free, but advance reservation is required to pickup bikes at specific locations. Borrowers must be at least 18 years of age.

E-bikes rolled out to the first group of Hanover borrowers on October 4. One borrower is considering replacing their second car with an e-bike. Another reports finding e-biking to the store took less time than driving. A third was just glad to have "the chance to try out new (and fun!) forms of transportation". As of October 6, the month's reservations were 60 percent booked.

The Library offers try-outs on three kinds of e-bikes: a mid-priced commuter e-bike, a heftier cargo e-bike, and an e-bike converted from a conventional bicycle. Demo Days provide the opportunity to try one or more models in a one-hour appointment. Borrowers who opt for an overnight two day rental choose a specific model and have more time to see how that a particular e-bike might fit into their daily routine.

Both Demo Days and rental pick-up/return events follow COVID-19 guidelines with masks, social distancing and disinfecting procedures for the e-bikes. Borrowers are assisted by volunteers from Hanover Bike Walk and the Upper Valley E-Bike Initiative at these events.

The UV E-Bike Library was developed by eight Upper Valley Energy Committees (including Sustainable Hanover) facilitated by Vital Communities. Co-sponsors are Hanover Bike Walk, Hanover Parks and Recreation, and the Upper Valley E-Bike Initiative. The Library is administered by Local Motion, a Burlington-based non-profit that specializes in e-bike rentals.

Questions? Email sustainablehanovernh@gmail.com.

Sue Folger of Etna tried all 3 ebike models on Demo Day. This cargo ebike was her favorite.

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