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Contents

Third Annual Energy Forum

Lessons Learned

Hanover's Commitment

SHC's Action Packed Year

Community Voices

Other

Your Lawn's Dirty Climate Secret - Krystyna Ozskinis

Weatherization Update - Barbara Callaway



Lessons Learned

Opening the Forum, Marcelo Gleiser (2019 Templeton Prize Laureate, and the Appleton Professor of Natural Philosophy at Dartmouth College) presented a more global approach to the climate issues facing us. He used the pandemic as an example of a bridge to codependency with the rest of the world. It was a clear indication that human kind was not above nature but very much a part of it. We are very dependent on nature being stable. Further, our existence has been a brief part of the history of the earth which is not dependent on us but rather we are dependent on it.

Industrialization has completely turned our relationship with nature upside down. As a result we are faced with challenges that are critical to our survival and we must develop new models if we're going to continue to exist. Developing fossil fuels, for example, is no longer doable. Collecting energy from renewable sources is the new model. We need to raise the moral bar about our obligations to the earth and each other. It is not a global abstraction and someone else's problem. The story we've been told for over 3000 years is that we are above all things. We need a new story – that we are children

of the earth, not above it, guardians of the planet, not abusers. The actions we take as individuals must be a part of this new story – eat locally, use less energy, and accept self sacrifice for the bigger cause. We need to work at the local level to prepare ourselves individually and as a community – Hanover High's tree planting is a prime example. Above all, embrace the story! (*Read more about Professor Gleiser's thoughts on sustainability and civilization at <https://bigthink.com/13-8/sustainability-rethinking-civilization-growth.>*)



Hanover's Commitment to Ready for 100

Hanover's Town Manager Julia Griffin opened her remarks by reminding everyone of the commitment the Town made in 2017 – transitioning to 100 percent clean and renewable energy by 2050 and 100% renewable electricity by 2030. Hanover was the 29th city in the country and the first in New Hampshire to set these goals. She felt it important the Town set the example for businesses, industry, Dartmouth College and residents to follow.

Indeed the gains have been impressive. By late Summer of 2021 Hanover will have solar array installations on Town buildings and on land totaling

almost 2.9 MW of electricity, meeting a demand of 3 MW. All Town buildings are targeted for heat pump conversions with Town Hall, Fire, Howe and Etna Library and the RWB Community center completed so far. Deep energy retrofits have also been accomplished – weatherization, windows, lighting (to LEDs) to all but three buildings. Eventually, working with Liberty Utilities, there is a plan to convert the street lights to LEDs. There are solar powered parking meters and pay stations, with more to come. The transition to hybrid police cruisers is underway, with and public utility light duty EV trucks planned for the future.

The next goal was to assist Hanover residents and businesses to move to 100% renewable energy. The Town, assisted by the Sustainable Hanover Committee, is actively promoting solarization and weatherization through information programs, contacts with vendors and identifying rebates where available. *Solarize Hanover* begins its third phase in the coming weeks with the final target of 250 solarized homes by the end of the year. Weatherization, another major effort, is one of those actions being promoted that result in immediate savings. Unfortunately *Weatherize Hanover* is on hold due to Public Utility Commission issues.

Most recently Hanover has joined other communities in New Hampshire to form the *Community Power Coalition of New Hampshire (CPCNH* www.cpcnh.org/). The goal will be to work with CPCNH to procure 100% green power for all Hanover customers at prices that rival Liberty's consumer prices as early as the Spring of 2022. In addition, efforts will be made to shift Hanover's large electricity consumers to long-term power purchase agreements, locking in fixed prices for green power.

Renewable Heating and Transportation by 2050 continues to be an important goal. As indicated earlier, efforts are underway to transition to electric heating, cooling and transportation. Non-fossil fuel technology will undoubtedly escalate as citizen, community and commercial demand increases.

Griffin ended her presentation by saying she was very optimistic about meeting Hanover's Ready for 100 goals. Hanover's commitment has become a model for other communities in New Hampshire and elsewhere.



Sustainable Hanover Committee's Action Packed Year

Last year's mixture of in-person and zoom meetings didn't prevent the Sustainable Hanover Committee (SHC) from meeting a number of important milestones. Yolanda Baumgartner, SHC's Co-Chair, began her presentation by thanking everyone who has served on the Committee and, in particular, the Town's staff for their dedication. She also noted that there has been an increase in the number of sub-committees indicating an expanding interest in sustainability issues. These now include Energy, Community Climate Connections, Sustaining Landscapes, Transportation and Waste Reduction/Recycling. A new website is also in the process of being developed to better reflect the Committee's goals and activities (www.sustainablehanovernh.org).

Alluding to Julia Griffin's comments about the progress Hanover has made in meeting its Ready for 100 goals, Baumgartner presented two graphics – one indicating the rapid rise of the use of alternative energy sources, notably solar, since the first solarize campaign. While led by the Town's ambitious efforts, the residential installations (over 200) have been noteworthy - an indication that the 2030 goal of 100% renewable energy is within reach. The second graphic, based on data from Liberty Utilities, indicates a 15% decrease in use of electricity from the grid in the past 8 years. While COVID-19 probably accounts for some of the commercial decrease, much of it is also traced to the work of Andrew Hatch, Energy Efficiency Program Manager for Resilient Buildings Group, in helping businesses and local industry move to LEDs as a primary lighting source.

Local solar has seen rapid growth. Relatively new on the scene is community solar. This offers residents whose homes are not well sited for solar installations to take advantage of alternative energy sources. Another benefit of the *Solarize Hanover*

program is the commitment by solar installers to donate a percentage of their fee to providing solar energy for senior housing apartments on Summer Street. This helps meet an important Sustainable Hanover Committee goal of equity, inclusion, and social justice.



Voices of the Community

This year's Forum introduced a new segment called Voices of the Community, a series of videos where members of the community talk about efforts they have undertaken that contribute to a more sustainable future for our community. The videos were produced by Dartmouth student volunteer Abby Wiseman '22.

In the first video, three Hanover High seniors, Catherine Bregou, Casey McGuire, and Nika Renshaw, talked about their activities with the HHS Environmental Club. The group developed a Climate Action Plan for the school, led discussions about environmental justice, supported composting and recycling, and have started a program for planting 200 trees over the next four years. As Professor Gleiser noted in his remarks, their commitment was inspiring.

Another video featured Hanover resident Judy Payne who decided she would take on composting after listening to a climate change talk at her church. In Judy's words, when compostables go into landfills, they create greenhouse gas and more landfill. She built a compost bin to take care of her food waste and invited her neighbors to join in. Because Judy used mostly repurposed and scrap materials, many parts of the bin had intriguing histories, such as the 2x4s rescued from a beach on Lake Michigan.

Videos also revealed some excellent energy efficiency work happening on Hanover's "Main Street". Three business owners were featured. They had all worked with Andrew Hatch, Energy

Efficiency Program Manager for Resilient Buildings Group, who is based in the Upper Valley to help businesses and other organizations reduce electric consumption through Liberty's NHSaves program. Aharon Boghosian of Gilberte Interiors (www.gilberteinteriors.com) noted that the switch from fluorescent to LED fixtures gave a return on investment in just four months. Moreover, the quality of light was far superior. The next step for the company will be to install solar panels on one of their warehouses.

Newcomer Allie Levy of Still North Books (www.stillnorthbooks.com) used the remodeling period before opening her business to upgrade lighting, taking advantage of NHSaves incentives which were especially important with the COVID downturn. She and building owner Jay Campion teamed up to "go with the most energy efficient systems", including HVAC improvements, efficient lighting and the use of reclaimed materials for attractive and fun fixtures. Allie applied sustainability principles while pursuing her goal to create a comfortable and welcoming atmosphere.

The final Voices of the Community video featured John Hockreiter of Computac (www.computac.com), a software development company located on Buck Road. John's first consideration in working with Andrew was efficiency, but he discovered the lighting upgrade meant fewer fixtures were needed and the result was infinitely better light. Based on his "extremely satisfied" experience, John is encouraging other businesses to install LEDs, lighting controls and water sensors to lower costs and use resources more effectively.



Your Lawn's Dirty Climate Secret

*Krystyna Ozskini**

Because many conventional gas and diesel lawn mowers do not have strong emission controls, they are widely recognized as a major source of smog-forming air pollution. According to the EPA, a 6HP

diesel or gas mower running for an hour creates the equivalent emissions of driving your car 160 miles.

Not only do old-fashioned lawn mowers burn fossil fuels, they also create ground-level ozone and haze. And, an estimated 17 million gallons of gas is spilled each year as Americans refuel mowers, which can pollute drinking water for humans and wildlife.

And there are also other benefits to going electric:

- Making your next lawn mower electric will also save you maintenance time and cost, as you will no longer have to work about spark plugs, fuel filters, oil changes, etc. Not to mention they start at the push of a button.
- Electric mowers are quieter. Each model is different, but an electric mower tends to reduce noise pollution by about 50%.
- Many states and electrical companies offer rebates and incentives for converting to electric machinery.

Other ways to leverage the land that you steward to make a positive ecological impact:

- Reduce the amount of space you mow regularly. Ask yourself what you truly need for walking paths, playing children, or a special vista. Reducing mowing especially makes sense for steep slopes and wet areas that are difficult to mow anyway.
- Add native trees and shrubs. Beyond the benefits of carbon sequestration and supporting our struggling populations of pollinators, studies are showing that native trees and shrubs are essential for the reproduction of most of our favorite song birds.

Did you know a family of chickadees need approximately 600-900 caterpillars to raise a clutch of babies to adulthood? Where do all these caterpillars come from? They feed on the foliage of native trees and shrubs. For example, an oak tree supports over 500 species of caterpillars while a non-native ornamental shrub tends to support less than 10. The New Hampshire State Forest Nursery is a great source of affordable young native trees and shrubs (<https://www.nh.gov/nhnursery/>

Resources:

Regional Organizations

Ecological Landscaping Organization (ELA):

<https://www.ecolandscaping.org>

Wild Seeds Project:

<https://wildseedproject.net/>
<https://wildseedproject.net/>

Xerces Society:

<https://xerces.org/>

Rooted Gardens: TheElectricLawn.com
802-281-0781

Native Plant Purchasing:

Our local nurseries such as EC Brown, Honey Field Farm, and Henderson's Northeast Pollinator Plants, NH State Forest Nursery .

**Author is the owner of Rooted Gardens, TheElectricLawn.com, (www.myrootedgardens.com) a new business in Norwich specializing in low carbon lawn maintenance.*



Weatherization

Funding for Liberty Utility home weatherization rebates is still frozen, but there has been some movement at the state level which may help get the funds unfrozen. Unfortunately there is no change yet.

Those interested in applying for home weatherization rebates and weatherizing your home are encouraged to begin the process by going to NHSaves and filling out the application to see if you qualify. If you qualify you will be added to a wait list for the funding. It would be good to get your name on the list and have the application done so you will be ready to go once the funds become available.

Go to www.sustainablehanovernh.org/weatherize for more information on weatherizing in general and the application process for applying for a home weatherization rebate in particular. Remember, you can receive up to \$8000 on the cost of your weatherization project.

Questions? Email Barbara Callaway: bcallaway65@gmail.com



Solarize Hanover is back!

Solarize Hanover opened its 2021 season with an online presentation "What's New with Panels, Heat Pumps and Other Possibilities". Panelists were Solarize partners Rob Adams of Solaflect Energy and Tom Hobbs of ReVision Energy. They explained the basics of PV panels and net-metering, financing availability, and gave a brief overview of the associated technologies that are increasingly paired with solar systems, such as batteries, heat pumps, hot water heaters and chargers for electric cars.

The first step for residents interested in going solar is to sign up at Solarize Hanover's new webpage (www.sustainablehanovernh.org/solarize). This starts the process for a free site visit to determine if their property has a suitable location for solar electricity production. Systems installed in 2021 and 2022 are eligible for a 26% federal tax credit.

Hanover has over 200 homes using electricity generated by on-site or community solar systems. Sustainable Hanover is working towards a goal of 250 solar homes by the end of 2021.

