ENERGY AND CLIMATE COMMITTEE (ECC)

AGENDA

Wednesday, May 3, 2023, 8:00 AM City Hall, Second Floor Council Chambers

Members:

Zach Luse, Chair
Paul Roth, Vice Chair
Diana Duffy
Jake Pipp
Councilor Raleigh Ormerod
Jude Nuru
Peter Hansel
Clair Oursler
Kenneth Swymer
Councilor Bryan Lake
Beth Campbell
Lisa Maxfield, Alternate
Chuck Redfern, Alternate
Rowland Russell, Alternate

Staff:

Mari Brunner, Senior Planner

1. Call to Order and Roll Call
2. Approval of Minutes – April 5, 2023 & April 11, 2023
3. Guest Speaker: 2021 Energy Code – *Chris Skoglund, Clean Energy NH*
4. ECC Work Groups
    a. Retreat Recap
    b. Proposed work groups and assignments/membership
    c. Format for monthly report-outs
5. Community Power Program
    a. Update on program launch
    b. “Opt up to 100%” campaign
6. Report-outs on Recent ECC-Sponsored Events
    a. Monadnock Earth Festival – April 22
    b. NHSaves Button Up Workshop – May 1
7. Legislative Update
8. Committee Membership
9. New Business
    a. Potential Fall Retreat
10. Upcoming Meeting: Wednesday, June 7, 2023 – 8:00 am
11. Adjourn

Link to ECC Google Drive Folder:
https://drive.google.com/drive/folders/1O1WlR0fADTNijRt13v3DU7k2FxwXDcGs?usp=sharing

City of Keene
New Hampshire

ENERGY AND CLIMATE COMMITTEE MEETING MINUTES

Wednesday, April 5, 2023 **8:00 AM** **Council Chambers, City Hall**

Members Present:
Zach Luse, Chair
Paul Roth, Vice Chair
Councilor Raleigh Ormerod
Councilor Bryan Lake
Peter Hansel
Jake Pipp
Jude Nuru
Diana Duffy
Charles Redfern, Alternate
Lisa Maxfield, Alternate
Kenneth Swymer, Alternate
Rowland Russell, Alternate

Staff Present:
Mari Brunner, Senior Planner

Members Not Present:
Beth Campbell
Linsey Edmunds
Clair Oursler

1) Call to Order and Roll Call

Chair Zach Luse called the meeting to order at 8:05 AM. Alternates Mr. Charles Redfern and Ms. Lisa Maxfield were invited to be voting members.

2) Approval of Minutes- March 1, 2023

With no changes or edits suggested for the minutes, Chair Luse requested a motion to approve the March minutes. Mr. Peter Hansel made a motion to approve with a second from Mr. Paul Roth. The minutes from March 1, 2023, were unanimously approved.

3) Energy Plan Work Group Report-Outs

Chair Luse shared that Clean Energy Team member, Nancy Gillard, and her husband were in a significant car accident and she is still hospitalized. Ms. Mari Brunner had gotten a card to pass around for members to sign and send their well wishes.

A) Energy Efficiency/Weatherization

Chair Luse shared that the organizers of the window dressers event got together to discuss a path forward. They decided to reach out to Habitat for Humanity database of volunteers to find a lead volunteer. Should anyone know of anyone willing to take on the project manager role and organize all the different pieces, he requested they please let him know.

The group also discussed the NH Saves Button Up workshop that the Clean Energy Team is putting on May 1st at the Keene Recreational Center.

Ms. Brunner introduced herself and noted that they had received a request for sponsorship. As previously mentioned, Ms. Gillard is still hospitalized and not able to be here to represent that request. It is very similar to the many requests that were submitted in the past for the Button up New Hampshire Workshop. It is a home weatherization workshop for homeowners to learn about energy and how it works in their home, offers tips for saving energy, and teaches about the different incentives and rebates that are available through the utility programs. They typically ask the ECC to sponsor the program as a committee so that they can get the room fee waived.
Mr. Jake Pipp moved to approve sponsorship of the event and Councilor Bryan Lake seconded with unanimous approval from the committee.

B) Electric Vehicles

Councilor Bryan Lake shared that they talked with Director Jesse Rounds about various incentive programs and what current types are available to provide better direction for what levers they can/cannot pull. They had a high-level discussion regarding the availability of charging stations, parks, and neighborhoods that may not have easy access and potential opportunities near Pat Russell or Wheelock.

C) Community Solar

Mr. Peter Hansel shared that they met and updated themselves on sites most likely to be developed this year and tried to think of ways to keep the pressure on the city to keep moving forward on those sites. The sites in mind are the Rose Lane and the Monadnock View Cemetery site. It was a lively discussion, but nothing concrete to report.

Mr. Jude Nuru added that SB270 is scheduled to be implemented in June of this year. He wanted to use the opportunity to appeal to the committee members. They are looking to identify potential sites and ask committee members to keep their eyes and ears open for 5 acre parcels of land with potential for development for a one megawatt solar. Development will be provided by Eversource and will be managed by Eversource. Mr. Nuru believed this to be an easy approach to build a solar system at this scale. He shared the subcommittee plans to discuss how to go out and pursue opportunities to find land or locations that they, themselves, can get ready for implementation of this bill. He shared that the group believes that this will bring the city to a larger scale system deployment and increase the potential to decarbonize the city.

Mr. Hansel mentioned the large solar project that is proposed for the city on land that is not too far from Goose Pond. It was going to be brought before the zoning board for a waiver because it far exceeds that 20-acre maximum size that the city has in its zoning. He did not feel that this committee needs to weigh in on that but does feel the group should monitor it.

Chair Luse said he had learned during the Monadnock Energy forum that the county is working on some sort of solar sighting project that is grant funded. He wondered if there is some discussions or collaborations that should happen around that.

D) Renewable Energy Loans

Mr. Hansel said there was nothing new to report.

E) Outreach and Education

Chair Luse said he had not yet scheduled a meeting with Nora Hanke for next steps. He is hoping to have a discussion by the time of the retreat, if not by the next meeting.

Mr. Charles Redfern asked if the committee was having a booth at the festival. Chair Luse and Ms. Brunner both believed that to be true.

4) Community Power Update

A) June 2023 Program Launch

Ms. Brunner spoke and mentioned that Mr. Bob Hayden was present at the meeting. They were thrilled to announce that they went out to bid on March 7th with a few other towns and were thrilled with the pricing. They were happy to announce that the pricing they received for the community power was eight cents per kilowatt cheaper than Eversource. In talking with Good Energy, that pricing is unheard of, and they have never seen such a big cost difference. If someone wants to opt-up to 100% renewable energy, it is still over six cents cheaper than Eversource's rate. The consultant team has been working hard behind the scenes to get everything ready for launch. The supplier they selected was Direct Energy, a national energy company.

B) Public Meeting: 4/25, 6 PM, Keene Public Library

There is a state law requirement to send out an opt-out within 30 days of the program, which must be mailed. They have to add on 3 days before and after sending out the mailer to account for travel time. The target date is April 12th. Keene residents who are currently on Eversource's default supply should be receiving a letter next week or early the following week. A postcard has also been sent informing customers to look for the letter as it will contain a lot of information, instructions for opting out and contact information for any questions. Within 15 days of that letter being sent, they are required by statute to hold a public information meeting. They plan to

hold that meeting April 25th at 6 PM at the Keene Public Library's Heberton Hall. Due to that being school vacation week and not being able to secure the Council Chambers, they will not have a virtual option. As such, they will hold a second informational session one week later. It is outside the 15-day timeframe but will cover the same information and will be held in Council Chambers on May 2nd at 6 PM and there will be a zoom option.

They will also be sending out a letter to those not on Eversource's default supply for how to opt-in. They will not be automatically enrolled, but can choose to opt-in.

Mr. Brunner suggested one item the committee might want to consider is sharing information with folks about how they could opt-up to the 100% option because there is a unique situation right now where 100% of the renewable energy option is cheaper than the Eversource default and by a significant amount.

Mr. Roth asked Mr. Brunner what two other towns were involved. Mr. Brunner clarified that it was actually three towns including Swanzey, Marlborough and Wilton.

Councilor Raleigh Ormerod asked Ms. Brunner to clarify whether everyone had to opt-in. Mr. Luse clarified that everyone on Eversource's default supply will automatically be converted and will need to opt-out if not interested or will need to opt-up if interested in the 100% renewable energy option. Those not on the default supply will be offered the chance to opt-in and will have the opportunity to opt-up to the 100% renewable energy option.

Ms. Brunner clarified that the default option offered through the City's program is still better than the Eversource default in terms of renewable energy. It will have about 33% renewable energy, while Eversource is around 23%.

Mr. Hansel asked if there was any crystal ball reading of what Eversource was going to do when they have their next round of rates and is there any chance, they will come down below the Direct Energy proposal. Mr. Hayden said there are a lot of possibilities on that specific point, and it is interesting that the market has essentially crashed, which is why they received such a great rate for the plan.

Mr. Hayden clarified the opt-in process to provide some of the numbers. To speak to Councilor Ormerod's point, for those on the default plan, if they do nothing and ignore all the mailings, they will get the default plan, which is 11.4 cents and that includes the additional 10% renewable energy. The RPS, the renewable portfolio standard, says that all electricity has to have a minimum of 23.4% renewable energy in it, so an additional 10% would bring that up to 33.4. On the card, there are three options: no additional renewable energy, a 50% option (50% renewable energy) and 100% option (100% renewable). As far as he is concerned, there is only one choice and that is the 100% renewable energy option at 13.9 cents. That is the product that should be the target and what should be focused on for public education and information in encouraging people to opt-up.

Mr. Hayden moved on to address Mr. Hansel's previous question regarding the market. The utilities are constricted in how they can buy electricity for the marketplace. They buy it in six-month chunks. The next chunk will start on August first and buying will occur in a three-day window around June 20th. It is a very narrow window of when they can purchase, and it is also for a short period of time. With the plan that was selected for Keene's Community Power, it is a 30-month plan. That time frame allows for a significant amortization of the risk factors associated with the pricing stack. A short period of time means those risks are all stacked up and causes the price to go up.

Therefore, regarding Mr. Hansel's question they believe they will see a rate from Eversource between 14-16 cents but are in a market that has been very problematic as the primary driver of the cost of electricity has been natural gas. Natural gas is the biggest variable. Other things are predictable and in many cases under longer-term contracts, but the market for natural gas is a daily commodity market. When Eversource's rate was 22.5 cents, the rate for natural gas on the day they bought was $9.34/dekatherm. When they bought the most current rate, it was about $7/dekatherm. Currently, the cost of natural gas is $2/dekatherm. The market has crashed, and the reason is because it has been a mild winter and weather has been milder pretty much across the world. As a result, the price of natural gas is very low, and the reserves are high again. One other addition that has helped the New England marketplace is that this area gets the extra power not used by the Hydro Quebec contract that eventually was signed by New England ISO.

The things that will drive the price higher are a couple of natural gas plants that are coming offline in 25, other odd actions in the war in Europe and other things that might impact the load, like electrification.

Mr. Hansel asked a follow-up question wondering if people are starting to put solar panels on their houses and they are net metered into the system, how does or how will this affect that? Mr. Hayden responded that they are still working with Eversource to get the best possible answer to that question. On the mailer, they have put a toll-free number for people to call and talk about their specific situation. If there is no answer from Eversource, there might be no answer for it yet. Personally, he makes 115% of the electricity he uses with the solar on his roof. Because of that, he is credited from net energy metering 100% of the value of the bill other than the connect charge, which is $13.84. That has been his bill for 37 months. With that said, he banks 15% every year and that 15% is credited right now at .20 cents per kilowatt essentially because that is its value. The 20.221 plus the .10 delivery cost. He would always decline community power because if the cost of community power is less than the Eversource rate, he would receive less revenue in his program. Somebody who is in net energy metering 2 and they produce 20% of their overall load would be very different because they would never have revenue from their solar project, and they would always want the lowest rates. The expectation is that Eversource will help us to a point where that person can enjoy the full benefit of their solar energy and then reduce the rate on the other 80% of their load. They are working on that currently. Right now, they can give an evolution of the answer as it occurs.

Ms. Diana Duffy asked Ms. Brunner if in regard to the arrangement with Direct Energy, whether the city has any fiduciary responsibilities or link to Direct Energy or if it was just a pass-through. Ms. Brunner responded that the city is not paying anyone for this program as all of the payment is coming directly out of the rate.

Ms. Duffy asked Mr. Hayden if Direct Energy was obligated through the New Hampshire PUC to submit a disclosure label for their fuel mix. She heard 33% and was wondering what the other fuel mixes were made up of and where people can go to find that out.

Mr. Hayden responded that the RPS requirement is the defining answer to that. The renewable portfolio standard is managed and dealt with through the PUC and now the DOE. That defines the renewable energy credits, how they work, and what proportions are required in any default service and then the secondary products that Direct will add on top of the local program. It should be a future goal to have all or as much as possible of local renewable energy credits defining what the renewability is.

Ms. Brunner added that her understanding is that the additional renewable energy that the program requires above and beyond the RPS has to come from New Hampshire class one or local renewable energy, so she would expect that the extra 10% at least is coming from New Hampshire class one as that is what our plan requires.

Chair Luse thanked Mr. Hayden and stated that he believed they had an opportunity to get as many people as possible to opt-up and get that 100% renewable option and believed that should be a big focus at the retreat.

Ms. Lisa Maxfield asked Ms. Brunner if there was something in the literature that is going out later this month about the solar and is there anything that could be added to make the solar look more enticing?

Ms. Brunner explained that there is information in the mailer about all of the different program options and information. She explained that because of the way the state law is written, they focused on the opt-out process. The opt-up process is not as well explained and it not as easy as it requires going to the website or calling the number to specifically ask for assistance.

5) Monadnock Energy Forum Debrief

The coop is finally moving forward with their fast chargers. The date is still up in the air but expected to be the end of this year or early next year.

Chair Luse said he plans to discuss ways in which the committee would work with the sustainability hub and John Kondos on projects that might come out of the retreat.

Ms. Brunner added that they got a legislative update from Sam Evans Brown, director of Clean Energy New Hampshire. She also heard about a bill the city decided to support expanding net metering for municipalities.

6) Upcoming Events

A) ECC Annual Retreat-Tuesday, April 11, 1-3 PM, Keene Recreational Center, Room 14

Ms. Maxfield agreed to take on organizing food. Estimated to be about ten committee members and various workgroup members with a plan to expect fifteen people.

B) Monadnock Earth Festival- 4/22, 12-4 PM, Monadnock Food Co-op

Chair Luse invited Nora Hanke to speak regarding her two Earth Day events. She is the program manager for the Monadnock Sustainability Hub and they are partnered with Monadnock Food Co-op, who has asked them to participate in their tenth anniversary events, which are starting 10 days prior to Earth Day and culminate on Earth Day.

During that period, the Hub is going to be presenting an IRA workshop on Thursday, April 20th at 5:30 PM in the conference room located near the cafe. No signup required, just show up. The presentation will be focused on IRA (Inflation Reduction Act) incentives that help reduce the use of fossil fuels.

On the 22nd, as well as tabling, they will be presenting a "Drive Electric Expo". There will be at least twelve different vehicles with two dealers present. Most of the vehicles that will be there are from private owners, so there likely will not be many new models. Many buyers are going to be looking for secondhand vehicles and there are incentives to support that. They believe it will be of interest to a wide variety of people who might be interested in buying a car.

C) NHSaves Button Up Worksop-5/1, 6:30 PM, Keene Recreational Center, Room 14

Chair Luse stated they were looking to see if they could do a virtual zoom option but were unsure as to where that ended up.

7) Legislative Update

Ms. Brunner explained there is a Clean Energy NH webinar that was expected for Monday but got rescheduled because their staff was attending a committee hearing that ran late.

This is not a request, more an attempt to keep the committee informed of SB 68. Clean Energy NH sent out a call asking communities to sign on over the weekend. Ms. Brunner did not see it

until after the committee hearing had already gotten underway. This bill would have helped the City of Keene. Last year or the year before they expanded net metering for individual projects from one megawatt to 5 megawatts, but only for political subdivisions of the state, so that would be towns, school districts, etc. There was language in there that said it had to be within your geographic jurisdiction that got modified. It made it impossible for the city to use that bill to benefit the solar installation at the Wastewater Treatment Plant because it is in the Town of Swanzey. As a city, they are supportive of the bill because it would expand what the city is able to do. The city does not have a significant amount of land in its own geographic boundary to do renewable energy.

Mr. Nuru mentioned SB 161 is coming up and is a bill that would allow housing authorities to participate in the Department of Energy LMI grant, which is a grant for low-moderate income (LMI) communities. The bill does not allow a situation where the housing authority pays the electric rate for their tenants. This would give them the opportunity to allow them to apply for the grant and to participate.

8) Committee Membership

Chair Luse announced that Mr. Rowland Russell would be confirmed the following night as an alternate member.

9) New Business

Councilor Raleigh Ormerod announced that he is hosting a monthly radio show on the third Saturday of the month from 10 AM to Noon. He has a full slate this month, but in May he would like to get four guests related to the community power and energy initiatives in the city, so he asked the committee to be thinking about that and asked Ms. Brunner to share if she had any ideas of people to have. They are half-hour slots and people can call in; they do not need to attend in person.

10) Upcoming Meeting: Wednesday, May 3, 2023- 8:00 AM

11) Adjournment

There being no further business, Chair Luse adjourned the meeting at 9:00 AM.

Respectfully submitted by,
Amanda Trask, Minute Taker

Reviewed and edited by,
Mari Brunner, Senior Planner

City of Keene
New Hampshire

ENERGY AND CLIMATE COMMITTEE
MEETING MINUTES

Tuesday, April 11, 2023 **8:00 AM** **Recreation Center, Room 22**

Members Present:
Zach Luse, Chair
Paul Roth, Vice Chair
Councilor Raleigh Ormerod
Councilor Bryan Lake
Peter Hansel
Jake Pipp
Jude Nuru
Clair Oursler
Kenneth Swymer, Alternate
Charles Redfern, Alternate
Lisa Maxfield, Alternate
Rowland Russell, Alternate

Staff Present:
Mari Brunner, Senior Planner

Members Not Present:
Diana Duffy
Beth Campbell

1) Call to Order and Roll Call

Chair Zach Luse called the meeting to order at 1:05 PM.

2) Guest Speaker: Julia Griffin, Clean Energy NH Board Member and former Town Manager of Hanover

Chair Luse introduced Ms. Julia Griffin and said she is here today to share the successes and lessons learned from her time as the Town Manager of Hanover. Ms. Griffin talked about Sustainable Hanover and their initiatives. She noted that Hanover decided to move forward despite the lack of support from the state. She talked about opportunities that she sees for the Keene committee to affect change, such as monitoring what is going on at the State level and with the New England ISO. A question was asked about what "ISO" means. Ms. Griffin said it stands for "Independent System Operators" – these are entities created by the Federal Energy Regulatory Commission (FERC) that are responsible for ensuring reliability and overseeing competitive wholesale electricity markets.

Ms. Griffin continued, saying she also recommends focusing on initiatives where there is energy and volunteers willing to help – this may shift priorities. In terms of wins, she said that Hanover has had great success working with Dartmouth students and suggested that the committee work with Keene State College students.

Ms. Griffin said that, after Hanover adopted the "Ready for 100" goals, they decided to take a year to get up to speed and do some research. They worked with a firm called "3 Degrees" and they were very helpful. They also looked at organizations that work with local municipalities and had two volunteers work with RMI and take online courses. They came back to the Town with a lot of energy and knowledge, which triggered a lot of work that the Town did with Community Power and a Virtual Power Purchase Agreement scheme (incl. their school district, dept. of energy, food co-op, and others). They have a couple Dartmouth faculty that are the "content experts" for that effort. They also attended National Renewable Energy Laboratory (NREL) trainings, which opened up lots of doors.

Ms. Griffin also spoke to the power of municipal involvement in the NH legislature, and suggested the committee might want to form a legislative subcommittee to track legislation the city might be interested in commenting on. She also said that it is very effective for citizens to speak rather than staff, which are paid to be there. In addition, Hanover found it was helpful to connect with Congresswoman Kuster and Senator Shaheen to get earmarked funding for projects such as off-street bicycle paths and installation of heat pumps in municipal buildings.

Ms. Griffin said that hiring a part-time Sustainability Director greatly increased the Town's capacity to do the work that needs to be done. She said it isn't cheap, but it is worthwhile if you can figure out how to make it work. Finally, she said that in New Hampshire, local action is the only thing that will work, which means that volunteers are critical. We need people to track legislation, do the research, and get the work done.

Chair Luse asked how Hanover measures success. Ms. Griffin said it is easy for concrete programs, like how many solar installations have been done as part of a solarize campaign, how many EVs are registered each year, how many heat pumps are being installed. Now, with Community Power, both Hanover and Keene will be able to see how many people are choosing 100% renewable energy. These metrics are basic, but they work for them.

Chuck Redfern said that Cheshire County has two grant writers, but Keene doesn't have a person dedicated to grant writing. He asked how effective a sustainability director at the county level would be vs. having a grant writer at the local level. Ms. Griffin said it will depend on how closely the City works with the County, but she doesn't see why it couldn't be effective. The only difference is that the politics of the overall county may be more conservative than the city (this is the case in Grafton County). She noted that she prefers to have the ability to direct the staff person and have control over what that person does. Mr. Roth noted that he has found that NH is not a county-oriented state, NH is a "Mother May I" state (i.e. towns and counties have to get permission from the state). Counties aren't always able to be as effective as they would like.

Peter Hansel said, getting back to ISOs, that they determine how much renewables are getting into our state. He referred to a handout that Ms. Griffin shared ("New England Power Grid State Profiles 2022-2023") and said NH seems to be low on the priority list. Ms. Griffin said that ISOs have operated in relative anonymity in the past, it would be great if Keene kept an eye on what they are doing because they shouldn't be operating without observers who are engaged and informed. It would be helpful for the rest of the state to know what they are doing.

Lisa asked who the New England ISO answers to, Ms. Griffin replied that they answer to FERC; however, FERC is very hands-off in dictating the ISO cultures, which has created a large diversity of ISOs across the nation. The Mid-Atlantic ISO is an example of one that has more engaged communities.

Jude Nuru thanked Ms. Griffin for attending and speaking to the committee. He said that he works across the state and her reputation proceeds her. He asked what roadblocks she has encountered, and how did they keep moving in spite of them? Ms. Griffin said that the biggest obstacle was Liberty Utilities, it's probably the same with Eversource. Every time the town tried to do anything Liberty would make it very difficult. For example, their solar installation was slowed down and had to be split into two phases, and it became significantly more expensive as a result. Another time, they tried to work with Liberty Utilities to offer a green power option to their customers, and they refused and said there was no interest in that option. This spurred the Town to be one of the founding members of the Community Power Coalition of New Hampshire. They (utilities) are holding the entire state back, and the ISOs are in a position to change that because they are in charge of the grid. They are "ripe for citizen action."

Chair Luse thanked Ms. Griffin again for attending and sharing her knowledge with the group. He felt inspired and she gave them a lot of next steps to consider. Ms. Griffin left the meeting.

3) <u>Overview of Keene Energy and Climate Goals / Policies</u>

Chair Luse said that Ms. Brunner has prepared an overview to provide some context for the discussion today. Mari referred to the handout that was in the packet and gave a brief overview of the city's history with climate action.

<u>Greenhouse Gas Reduction Goals</u>

Mari said the city signed on to the International Council for Local Environmental Initiatives (ICLEI) "Cities for Climate Protection" campaign in the year 2000 and formed this committee, which was originally called the "Cities for Climate Protection Committee." This campaign included a specific cycle that starts with measuring your baseline, then setting targets, then developing a plan, then implementing that plan, then measuring your progress and re-starting the cycle.

Mari continued, saying that Keene did their first greenhouse gas inventory in 2001 with help from an ICLEI intern for the baseline year 1995. In 2004, the City of Keene adopted a Climate

Action Plan that set two goals: 1) reduce local government emissions by 20% from 1995-2015, and 2) reduce community emissions (residents, businesses, etc.) by 10% from 1995-2015. She said the city focused on internal actions and was very successful at reducing its own emissions. Without including the capped landfill, the city reduced emissions by 25%, but if you include the capped landfill (which was capped in 1999) that number is significantly higher. The community, however, only reduced emissions by less than 3%. She referred to a pie chart that shows the breakdown of GHG emissions from the community (transportation – 46%, commercial and industrial – 23%, residential – 28%, and solid waste – 3%).

In 2017/2018, the committee was grappling with this issue and trying to decide what the new targets should be. At the same time, a citizens group formed called the Clean Energy Team, and they were excited about the Sierra Club "Ready for 100" campaign. This campaign calls for cities to commit to transitioning to 100 percent renewable energy by 2050. The Clean Energy Team did a lot of the groundwork to build support for these goals and were very successful in getting the Keene City Council to adopt them in early 2019.

Climate Adaptation and Resilience

Mari said that, going back in time, parallel to all of this work the city began working on climate adaptation in ~2006. ICLEI knew that Keene was an early adopter of the climate action plan model, so when they were launching a climate adaptation and resilience program, they asked Keene to be a pilot community. The committee, city staff, and staff from ICLEI worked together to develop one of the first climate adaptation and resilience plans in the nation in 2007. The full plan and executive summary is available on the Energy and Climate Committee's webpage. She said that this plan is organized around three sectors – "Built Environment," "Social Environment," and "Natural Environment." There are many different goals and strategies outlined in the plan.

Sustainable Energy Goals

Mari said that the main effort over the past few years has been focused on the City's goal to transition to 100 percent renewable energy by 2050. The interim goal is to transition all energy consumed for electricity to renewable energy by 2030. After these goals were adopted in 2019, this committee spent two years developing a plan to reach those goals. Then, in 2021, the focus shifted to implementation, which is when the energy plan implementation work groups started.

Paul Roth asked about measuring progress and whether the city has a baseline for energy use. Mari responded that there is a baseline in the energy plan, along with a chapter on measuring progress; however, there are many challenges with getting a comprehensive baseline. She gave an example of the community GHG inventory, and how that took a lot of effort and wasn't very specific to Keene due to a lack of local data sources. The group discussed the merits of using more readily accessible measures, such as "number of solar installations" and "number of registered EVs" rather than trying to get an overall number for the community.

Finally, Mari reviewed the structure of the energy plan (1 – reduce energy use, 2 – generate as much renewable energy locally as possible, 3 – buy renewable energy to cover the remaining demand, and 4 – throughout the whole process, work on outreach, education, and advocacy. She also reviewed some of the actions the city has taken to reduce GHG emissions and generate renewable energy, which were summarized in the agenda packet. Peter Hansel added that the city worked with Honeywell, an energy services contractor, to reduce energy use in all city buildings which was a huge cost savings for the city and had a big impact.

4) ECC Overview: Role, Purpose, & Recent Progress

Next, Chair Luse asked Mari to go over the committee's role. Mari again referred to the packet and reviewed the committee's role, functions, and guidelines as stated in city code. Next, she briefly reviewed the recent progress of the committee's work groups, including home energy labeling (research and participation in the Northeast Energy Efficiency Partnership's cohort), weatherization and energy efficiency (annual "Keene Energy Week," commercial energy audits in 2021, Window Dressers in 2022, partnership with the Clean Energy Team to host NH Saves Button Up Workshops), community solar (identifying parcels for solar development), electric vehicles (research and proposal to create incentives, guidelines, or other policies to promote EVs), renewable energy loans (research and reaching out to local financial institutions to gauge interest in a program in Keene), and outreach and education (creating an outreach list of like-minded organizations to quickly disseminate information).

5) Priorities for 2023-2024

Chair Luse said that the ECC has done a lot; he'd like to see the committee narrow its focus and choose a few things to do really well. He also would like to see the committee pursue funding to hire a sustainability coordinator and get some of this work done. He noted that the committee has spread itself thin and he wants to make sure that the committee is able to remain effective.

Rowland said, with respect to the sustainability coordinator idea, the group might consider working with the directors of the Antioch Environmental Studies program to develop a fellowship for students in the PhD program. Those students are around for several years and might be able to do really great work at an affordable rate.

Chair Luse added that measuring progress is also critical and is high on the list for him. He doesn't want to spend time today trying to come up with solutions, but rather identify priorities. Peter added that with the IRA and other federal funding, there may be opportunities to find funding to help with this. There could be money out there that Keene could tap into. There is also the Monadnock Energy Circuit Rider, which is a resource the committee should keep in mind. He is mostly working with smaller communities but could help Keene as well.

Chair Luse said that the Monadnock Sustainability Hub is another partnership to keep in mind. It is helpful to have specific goals and initiatives that we are looking for help with. Chuck said that it might be helpful to call the position "Sustainability and Energy Director" to give it more focus. Chair Luse added that it is important to have dedicated staff time for this topic. Peter added that

the current staff support is stretched thin and doesn't have as much time to devote to this as is needed.

Bruce Norlund (guest) said that the Monadnock Earth Festival is coming up on April 22nd and he will have his EV there, he also mentioned Clean Energy NH. He is trying to get involved with many different organizations to see what they are doing.

Paul Roth said that Keene needs to "get its flag out there" – education and outreach is key to energizing the community. Peter added that we need to report back to the community on the progress that has been made. He appreciates Rowland's idea to use students from Antioch. Lisa Maxfield suggested that we create a larger poster version of the "What we have done" slide from the packet. Zach asked Mari if the city's communications director could help with that.

Zach said that Home Energy Labeling is a work group that is dependent on funding. Mike Metell (guest) said that NH is the only state in NEEP's area that doesn't participate. This makes it challenging to get funding. Paul asked how Keene could participate – do we need to lobby the state to join? Mike added that it would be a big boon to get NH to participate in NEEP.

Paul said it's important to get a voice in Concord. Peter said that the committee has been active in the past in sending letters and people to testify, but we need to keep this up. This might rise to the level of a work group. Clean Energy NH has helped with that. Chuck Redfern asked if we have a connection with Donovan Fenton, our state senator.

Zach said that the energy efficiency group could potentially work on another commercial energy audit or other audit program. The Window Dressers program was impactful, but they need someone who is willing to step up and be the program manager for that if they want to do it again.

Chuck said he would like to see funding as a goal, such as pursuing grants.

Jude Nuru mentioned current legislation, SB 270, which is low-hanging fruit for the committee to pursue.

Chair Luse asked the group to think about how they can be most effective. For example, Cheshire County got a grant to hire a consultant to evaluate sites for solar – would this be a better approach for Keene, rather than spending volunteer time doing that? Peter and Jude both thought the community solar work group should continue.

6) ECC Work Groups

Chair Luse said that there isn't much time left and he wanted to go over the work groups for the upcoming year. He is hearing that community solar is one that should continue. Peter said that the renewable energy loans group can probably stop for now and get picked up again in the

future. Peter also said that he doesn't want to forget the agriculture work group that Rowland proposed.

Bryan said that the EV work group is working on a few items, but it doesn't necessarily need a work group to keep that moving. Some of that work could be absorbed by the education and outreach work group. Lisa noted that transportation is 46% of Keene's greenhouse gas emissions, so she thinks EVs are important to continue focusing on. Bryan agreed; however, he felt the outreach and education group will probably be more effective than the EV work group. The group discussed the importance of outreach and education, also advising City Council on the importance of EVs, EV infrastructure, alternative and public transportation, etc.

Chair Luse said that the outreach and education work group is a high priority for him because it is woven throughout all of the city's energy and other climate-related goals.

Rowland said that he has been working on how the agriculture and food security work group could be structured. He's looking to structure it with three focus groups: 1) agriculture sector, 2) residential sector (e.g. conversion of lawns to gardens, community gardens, etc.), 3) food security – focusing on people who need the food. Over the course of the next year, the idea would be to get together three times, each focus group would meet three times with different themes each time. Rowland said he is happy to do all of the coordination without any help from other committee members, but he would welcome any help. He has identified people to participate already. In the future, hopefully themes will emerge that would direct future work, like how to localize our food supply. Rowland said he would like authorization from this committee to go out and get started. He recognizes that this isn't the main focus of this group right now, but it is related to the climate adaptation plan.

Paul asked what the name of this group would be; Rowland said it would be a food security group. Mari gave some background and noted that after the 2007 Climate Adaptation Plan was adopted, the city formed a new committee – the Agriculture Commission – to implement many of the strategies listed in the plan because the intersection of these three sectors is "food security." However, the Agriculture Commission became dormant due to lack of volunteers willing to do the work, and the city decided to inactivate this committee about a year ago. Mari noted that, shortly after that, Rowland Russell reached out to the city about forming a committee to work on food security. Due to the recent experience with the Agriculture Commission, the Mayor did not feel that re-forming that commission made sense at this time. He asked Rowland to see if this work would fit within the purview of an existing committee in order to be more efficient with staff and city resources. The group agreed that this work group doesn't fit within the energy plan goals; however, it is aligned with the adaptation plan that a previous version of this committee prepared, so they gave Rowland the go-ahead to get the group up and running.

The group continued discussing priorities. Chuck reiterated that a priority should be getting grant funding and dedicated staff to measure progress and do programming. Ken said that legislative tracking and advocacy (incl. ISO) sounds like it should be a priority. Peter thought the group

should seek help from Antioch for grant funding, legislation, and getting dedicated staff. Chair Luse noted that for legislation, it would be important to be able to activate people to go testify. Rowland said that it seems like some of these topics could be clustered, and the group agreed.

Bryan asked how many work groups total they should be aiming for. Chair Luse said he'd like to keep it to three or four, if possible. The group discussed combining some of them, which would reduce the number of meetings and could help coordination.

7) Wrap-up and Next Steps

Peter suggested that a summary of this discussion be sent out to the full committee, and then asked people to sign up for a specific group at the next meeting. Chair Luse asked about the measurement group – how do people feel about that? Paul said that should be done by dedicated staff. Rowland said a fellow from Antioch could help with that as well.

Chair Luse said it looks like there are five work groups on the table - Education/Outreach/Opt-up, Legislative Tracking, Food Security, Grant Funding/Partnerships, & Community Solar.

8) Adjournment

There being no further business, Chair Luse adjourned the meeting at 3:00 pm.

Respectfully submitted by,
Mari Brunner, Senior Planner

Reviewed and edited by,
Zach Luse, Chair

New Hampshire Can Save Energy, Money, and Mitigate the Effects of Climate Change through Building Energy Codes

Buildings built to the latest energy codes represent a significant opportunity to save energy, lower utility bills, and reduce the environmental impact of the built environment. Building energy codes and standards establish minimum efficiency and performance requirements for new and renovated buildings, assuring reductions in energy use and emissions over the life of the building. Buildings built in accordance with modern building standards are not only more efficient, but are healthier, more comfortable, and more resilient to extreme weather, natural disasters, and other adverse events. Nationally, building energy codes represent an opportunity to reduce utility bills by $138 billion and avoid 900 MMT of CO_2 emissions in residential and commercial buildings[1], benefiting states, local governments, households and businesses alike.

Building Energy Codes Provide Lasting Impacts

Buildings last a long time, typically from 50 to 100 years, and many for even longer. As a building's environmental impact is largely determined by upfront decisions, energy codes present a unique opportunity to assure savings through efficient building design, technologies, and construction practices. Once a building is constructed, it is significantly more expensive to retrofit to achieve higher efficiency levels. Energy codes ensure that a building's energy use is included as a fundamental part of the design and construction process—and making this early investment in energy efficiency pay dividends to owners and occupants for years to come.

The average new homeowner in New Hampshire can expect to save 15.1% which equates to $537 annually on their utility bills

[1] *Tyler M et al.. 2021. Impacts of Model Building Energy Codes - Preliminary Update, Pacific Northwest National Laboratory, Richland, Washington. Available at http://www.pnnl.gov/main/publications/external/technical_reports/PNNL-31437.pdf*

Residential Buildings

New homes built to the 2021 IECC will save homeowners energy which translates into lower operating costs and utility bill savings. While investments in energy efficiency can increase the incremental "first costs" of construction, the resulting savings outweigh any increases in costs, as shown in the table below. Life-cycle cost (LCC)[2] is the best metric for assessing the cost-benefit and economic impacts of building energy codes, and it best balances first costs against longer term savings, and accounts for maintenance, repairs, replacements, and other operational costs which can have a significant impact on the overall cost of ownership[3].

When net LCC savings are positive, the updated code edition is cost effective for homeowners. **Net LCC savings in New Hampshire are $10,956, with most households seeing positive cashflow in as little as 2 years.**

The results shown below are weighted averages for common home configurations, including foundation and fuel types, across all climate zones in New Hampshire. Learn more about how the U.S. Department of Energy assesses the energy and cost impacts of building energy codes at energycodes.gov[4].

Metric	Residential Buildings
Down payment increase	$401
Annual mortgage increase	$61
Annual reduction in energy bill	$537
Years to positive net savings	2 years
Net annual consumer cash flow in year 1	$337
Net present value of LCC savings	$10,956
Simple payback	6 years

Commercial Buildings

New commercial buildings built to ASHRAE Standard 90.1-2019 save energy and experience lower operational costs, which results in lower utility bills for building owners and businesses. Life-cycle costing (LCC) methods are used to assess the savings and economic impact of commercial building energy codes, through separate cost scenarios representing both publicly- and privately-owned buildings.

Net LCC savings is calculated based on the present value of energy savings for a building built under the updated code compared to the previous code, less the incremental costs of construction, and other costs such as replacement and residual costs, over a 30-year analysis period. When net LCC savings is positive, the updated code edition is cost-effective for commercial building owners.

Net LCC savings, public buildings, $4,411/ksf | Net LCC savings, private buildings, $3,906/ksf

Adopting the latest model codes in New Hampshire is estimated to reduce greenhouse gas emissions (CO_2e) by 1,437,833 metric tons (MT) (over 30 years).

[2] LCC savings is the present value of energy savings for a building built under an upgraded code compared to an exisiting code, less the incremental construction cost difference, less the present value of the replacement and residual cost difference

[3] Further details available in DOE's Methodology for Evaluating Cost-Effectiveness of Residential Energy Code Changes

[4] Additional details about the residential state level analysis are available at https://www.energycodes.gov/national-and-state-analysis

[5] Further details available in DOE's Methodology for Evaluating Cost-Effectiveness of Commercial Energy Code Changes

The results shown below are weighted averages for prominent commercial building types across all climate zones in New Hampshire. Learn more about how the U.S. Department of Energy assesses the energy and cost impacts of building energy codes at energycodes.gov[5].

Metric	Commercial Buildings[6]	
	Public Buildings	Private Buildings
Annual reduction in energy bills ($/ft^2)	$0.08	$0.08
Added construction cost ($/ft^2)	$(0.95)	$(0.95)
Present value of replacement costs ($/ft2)	$(2.04)	$(1.95)
Net present value of LCC savings ($/ft2)	$4.41	$3.91
Simple payback	Immediate	Immediate

Additional Economic and Environmental Benefits

Adopting the latest model codes in New Hampshire is estimated to reduce statewide greenhouse gas emissions (CO^2e) by 1,437,833 metric tons (MT) (over 30 years). For perspective, this is the equivalent to 0.3 million passenger vehicles, 0.4 coal power plants, or 0.2 million homes.

Greenhouse gas emission equivalencies are calculated based on estimated energy savings. The avoided greenhouse gas emissions and corresponding impacts are presented in the tables below.[7]

Metric	Residential Buildings*	Commercial Buildings**
First year statewide CO_2e reduction	1,459 MT	1,107 MT
Cumulative statewide CO_2e reductions (over 30 years)	662,150 MT	775,683 MT

Metric	Quantity
CO_2	1,425,921 MT
CH_4	190 MT
N_2O	25 MT
TOTAL (CO_2e)	1,437,833 MT

**As compared to the current residential state code*
***As compared to Standard 90.1-2016*

[6] *In some cases, the added construction and replacement costs are negative. This occurs, for example, when there are net decreases in costs either from reductions in HVAC capacity or reductions in installed lighting due to lower LPDs.*
Additional details about the commercial state level analysis are available at https://www.energycodes.gov/national-and-state-analysis

[7] *Emission factor sources are a combination of EPA AVert (https://www.epa.gov/avert) and Egrid (https://www.epa.gov/egrid) tools for electric energy and the EPA AP-42 Report (5th edition) for natural gas and oil combustion on site (https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emission-factors). Factors for converting CH_4 and N_2O to CO_2 equivalents from the IPCC 5th Assessment Report at https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_all_final.pdf.*

In addition, buildings built to the latest codes yield several additional benefits which are not directly assessed in the current analysis. This includes lowering peak demand on the utility grid, and allowing for better energy planning and forecasting for utilities. As buildings are the largest consuming sector of energy in the U.S.—accounting for 40 percent of total energy consumption and over 70% of electricity use[8]—they play an important role in ensuring a reliable and resilient utility grid. Beyond benefits to the grid, the latest building codes also have enhanced ability to maintain safe and comfortable indoor temperatures in the event of a power outage, which can be particularly important during extreme temperature events. Building energy codes represent a dependable and readily available solution for states and local governments to incorporate into their resilience planning, reducing total energy demand and associated greenhouse gas emissions, but also providing constituents with everyday benefits in the form of buildings that are more comfortable, more resilient, and at a lower cost to own and operate.

Impacts on Jobs and the Economy

When a home or building is built to the latest building codes, home or building owners benefit through lower utility bills. Energy-efficient building codes not only put money in consumers' pockets, they help stimulate the economy and create jobs. Lower bills leave American families with more discretionary income, which when returned to local economies drives job creation. Jobs are also created through construction-related activities that result from the incremental costs of building more energy-efficient buildings. State and local economies benefit from increased discretionary spending, as well as the associated construction activity. Energy efficient building codes save energy, save money and create jobs, making them a foundational building block of a resilient, sustainable, clean energy economy.

Value Stream	Number of Jobs (Over 30 Years)
Lower utility bills	4,154
Construction-related activities	2,506
TOTAL	6,660

About the Building Energy Codes Program

The U.S. Department of Energy (DOE) supports the advancement of building energy codes. Modern building codes and standards offer cost-effective solutions, contributing to lower utility bills, and providing everyday benefits to homes and businesses through buildings that are healthier, more comfortable, and more resilient. Building energy codes also help mitigate the impacts of climate change, and are a foundational component in the transition to a clean energy economy.

Learn more at energycodes.gov.

[8] *Energy Information Administration (EIA). Monthly Energy Review April 2021. Washington, DC: U.S. Department of Energy, 2021. Available at: https://www.eia.gov/totalenergy/data/monthly/*

Food Security Work Group (draft)

Coordinating group (will attend all or most sessions)
Focus Groups (invitees attend specific sessions and – if possible - all together meetings)

Proposed focus groups & themes:

- farms/producers
  - retention & renewal of agricultural land
  - climate resilience
- homeowners/residents
  - incentivize conversion of lawns to pollinator/veggie gardens
  - expansion of community gardens
- social services/support
  - enhance food donations to social service agencies such as The Community Kitchen, Hundred Nights, etc.
  - strengthen food security safety net by supplementing federal/state programs with local support

Sessions (proposed themes):

1. All together (go over structure & review proposed themes)
2. Farms/Producers (retention & renewal of agricultural land)
3. Homeowners/Residents (incentivize conversion of lawns to pollinator/veggie gardens)
4. Social Services/Support (enhance food donations to social service agencies)
5. Farms/Producers (climate resilience)
6. Homeowners/Residents (expansion of community gardens)
7. Social Services/Support (strengthen food security safety net)
8. All together (review meetings thus far and plan remaining sessions)
9. Farms/Producers (to be determined)
10. Homeowners/Residents (to be determined)
11. Social Services/Support (to be determined)
12. All together (key takeaways for final report)