PRINCIPLE: ADAPT TO CLIMATE CHANGE

Promote Energy Efficiency and Community Resilience

Recognize the reality of a changing climate and plan for the transformation of energy systems and economic resilience. Anticipate the range of consequences to our Town due to climate change and adopt policies which secure local food sources, manage development pressures, and mitigate risks of flooding, drought, and fire.

INTRODUCTION

In accordance with New Hampshire's enabling legislation RSA 674:2, communities are permitted to adopt an Energy Chapter into their Master Plan. The intent of this Energy & Resilience Chapter is to provide context for energy related issues and to encourage planning policies which reduce energy consumption through conservation and efficiency.

RSA 672:1 and RSA 674:17 specifically mention that building design and zoning regulations shall encourage energy efficient patterns of development and discourage unreasonable limits on renewable energy systems. In addition, zoning shall facilitate proper use of natural resources, encourage agriculture and renewable energy as well as protect access to energy sources.

This chapter includes an analysis of energy and fuel consumption, anticipated needs, costs and opportunities affecting the State and more directly, the Town of Jaffrey.

Background

Resilience planning looks holistically at the shocks and stresses due to environmental and economic conditions that a community faces and works to implement creative solutions that will allow the community to adapt and thrive, even under challenging conditions. Energy and resilience go hand in hand, ensuring energy source diversity and security while potentially reducing greenhouse gas emissions that contribute to extreme climate events which disrupt infrastructure.

THE NEW HAMPSHIRE ENERGY LANDSCAPE

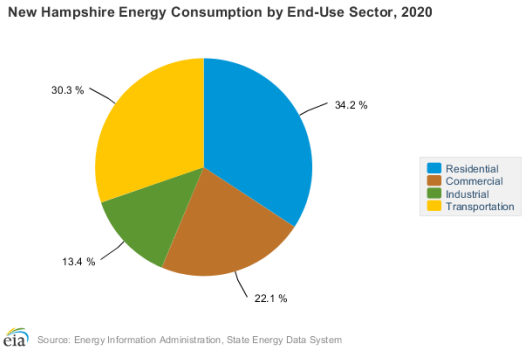
In terms of traditional, non-renewable energy resources, New Hampshire relies 100% on imports. There are no in-state sources of coal, natural gas, oil, or uranium. New Hampshire is better supplied with renewable energy resources including hydroelectric, wind, and solar. While currently supplying only 19% of the state's energy usage, the expansion potential is very good and therefore, New Hampshire's renewable energy resources could (and should) provide an increasing fraction of the state energy supply in the future. Some NH energy facts:

- NH is a net exporter of electricity to New England ISO

- NH is one of only 5 states in which residential energy use is the largest share of total energy consumption, even though 1 in 9 New Hampshire homes are only seasonally or occasionally occupied.

- The transportation sector follows the residential sector closely, and each of those sectors uses nearly one-third of the total energy consumed in the state.

- The commercial sector uses more than one-fifth. Real estate, finance, and insurance are the largest contributors to New Hampshire's gross domestic product (GDP)



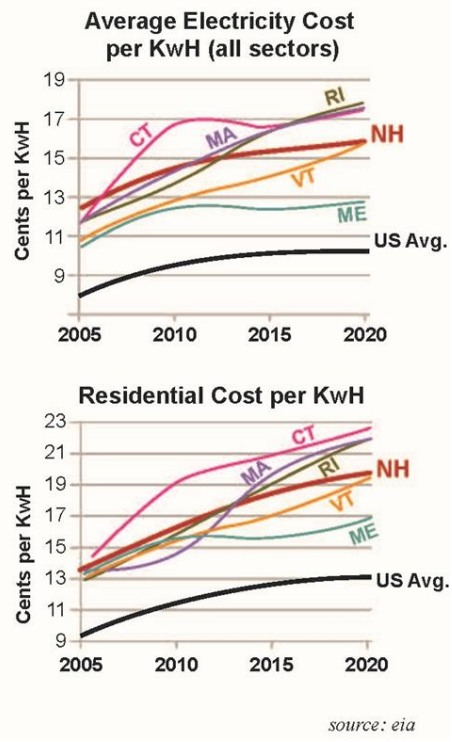
- Computer and electronics manufacturing has replaced New Hampshire's textile and shoe manufacturing industries. These industries use less energy and the industrial sector accounts for only about one-eighth of the energy used in the state.

- New Hampshire's state economy now ranks among the nation's 10 most efficient in terms of energy used per dollar of GDP. However, New Hampshire ranks fifth in the continental US for highest overall cost per KWh of electricity in 2020.[1]

Electricity

Electricity rates in New England are about 60% higher when compared to the average for the United States, (top graph). This is mainly due to the distance from the southern states which supply most natural gas. New Hampshire is about average compared to the other NE states.

A major issue is that electricity rates in New England are rising much faster than in the rest of the US. This is especially true of residential rates, which are higher than commercial and industrial rates, and continuing to rise (bottom graph). For example, in 2022 an average Jaffrey customer paid more than $0.20 per KWh.



- In 2020, the Seabrook nuclear power station provided 59% of New Hampshire's in-state electricity net generation. Seabrook is one of only two nuclear power

[1] https://www.eia.gov/state/seds/

plants in New England and the only nuclear plant in NH. Seabrook also has the largest capacity of any generating plant in NH.

- The Seabrook power plant provides about one-third of New England's nuclear generating capacity.

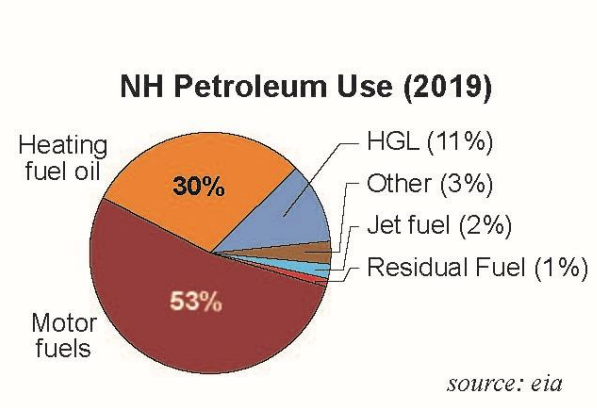
- Two natural gas fired plants provide slightly more than 20% of the New Hampshire's in-state electric generation.

- Hydroelectric power and other renewable resources, primarily biomass from wood and wood-derived fuels and wind, supplied almost all of the state's remaining generation.

- New England's last coal-burning power plant, Merrimack Station in Bow, provides less than 1% of New Hampshire's in-state generation, down from about 25% of electricity generated by coal in 2001.

Petroleum

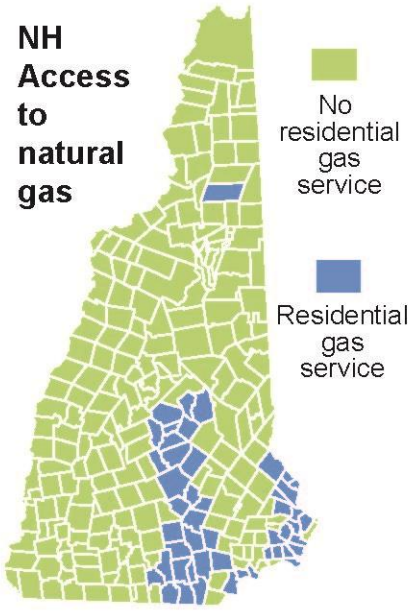
Petroleum accounts for 50% of NH total energy consumption. The state has no in-state petroleum resources or refineries with the exception of one biodiesel plant with a capacity of 4 million gallons per year. Gasoline and refined petroleum products travel to NH through rail, truck, or come by ship through a single port at Portsmouth.



About 2/3 of petroleum imported into NH is used for transportation. New Hampshire also requires state vehicles to use a biodiesel blend unless the blend is unavailable or costs more than conventional diesel fuel.

New Hampshire's residential sector consumes more petroleum on a per capita basis than all but two other states, Vermont and Maine. More than two-fifths of all New Hampshire households use fuel oil as their primary heating fuel. More than one in six homes use hydrocarbon gas liquids (HGLs), mostly propane, for heat, about four times the national average. New Hampshire is particularly vulnerable to distillate fuel oil supply constraints and price spikes during the winter months.

Natural Gas



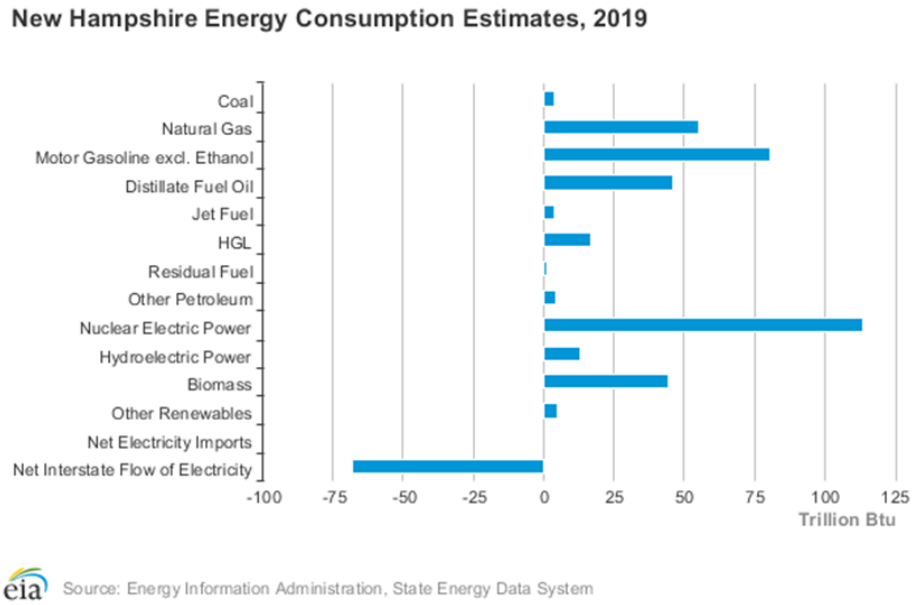
New Hampshire has no natural gas reserves or production and consumes less natural gas than all but three other states and the District of Columbia. This is largely because most of the state has very limited natural gas distribution infrastructure (map at right). Less than one in five of NH households use natural gas for home heating. Only homes within the service area of a gas utility with an underground gas pipe network have access to natural gas.

Electric power generation is the largest natural gas (LNG) consumer in New Hampshire, accounting for more than half of the natural gas used in 2020. The industrial, commercial, and residential sectors share the remaining half. Vehicles use a very small amount.

Natural gas enters the state by interstate pipeline, primarily from Canada and Massachusetts and about four-fifths of the natural gas that enters New Hampshire leaves the state.

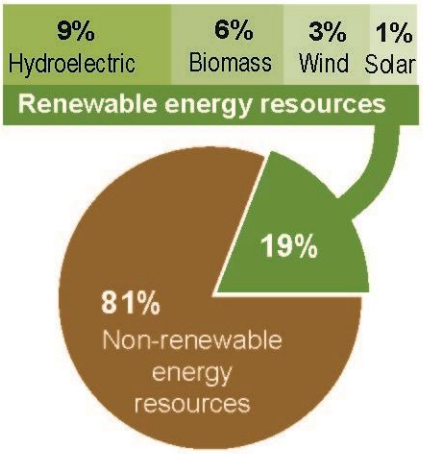
Coal

New Hampshire does not have any coal reserves. As of June 2021, New Hampshire had the only remaining coal-fired power plant still operating in New England. Merrimack Generation Station ("Merrimack Station") is located along the Merrimack River in Bow. Merrimack Station has two coal-fired steam units and two kerosene fueled combustion turbine units for a total of 482 MW (winter capacity). The two coal-fired units serve as seasonal and peak demand resources. Merrimack Station provides grid generation diversity, especially during critical winter months when natural gas becomes constrained.



Renewable Energy

In 2020, 19% of New Hampshire's electricity generation came from renewable resources, including small-scale solar installations. Most of the state's renewable generation comes from hydroelectric power, biomass, and wind.



- Hydropower supplied about 9% of the state's total utility-scale net generation in 2020. The region's two largest hydroelectric power plants — Moore Station near Littleton and Comerford Station near Monroe — are located on the border of New Hampshire and Vermont on the Connecticut River.

- Biomass accounted for 6% of the state's total net generation in 2020, powered mostly by wood and wood waste (86%) from within the state. The rest came from landfill gas and municipal solid waste.

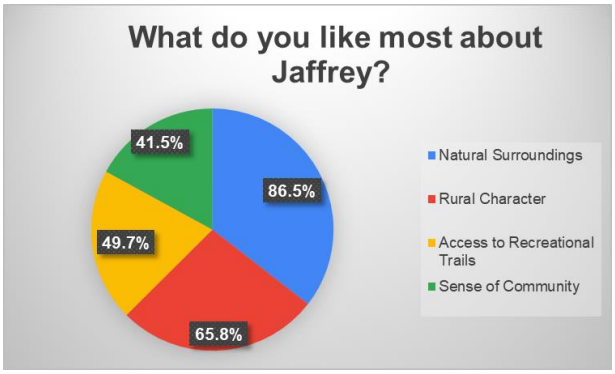
- Three percent of the state's renewable energy generation came from the five wind farms in western New Hampshire. As of May 2021, New Hampshire's five wind farms have a 212-megawatt combined capacity.

- As of September 2021, 153.1 megawatts of solar power have been installed in the state, enough to power 25,510 homes or 1.05% of the state's electricity. (https://www.seia.org/state-solar-policy/new-hampshire-solar)

PLANNING AND ENERGY POLICY

Over successive years of Master Planning Jaffrey citizens have voiced support for preservation of our natural landscape, encouraging tourism and new business, promoting green infrastructure, increasing transportation choice and pedestrian friendly roads, encouraging housing diversity and fostering our educational services. The recommendations of this Chapter are directly informed by a 2022 survey of Jaffrey residents. Two thirds of Jaffrey residents (67%) indicated concern about the impacts of climate change globally and here at home. Nearly as many (65%) supported taking steps to reduce greenhouse gas emissions and transitioning to clean renewable resources and 60% supported taking steps to adapt to a changing climate. A majority of residents are concerned about an increase in power outages, and a large majority (79%) are concerned about higher costs for food, energy and water in the future. The full survey results can be found in the appendices.

What people value most about Jaffrey (top 4 values)



- ✓ Natural surroundings
- ✓ Rural Character
- ✓ Access to Recreational Trails
- ✓ Sense of Community

Connecting Energy & Community Planning

The connection between energy and planning is the nexus of energy with infrastructure, water supply, transportation systems and land use. As we create efficiencies in energy consumption and access to affordable and reliable energy sources we can move toward a sustainable future. RSA 672:1 and RSA 674:17 set forth the declaration of purpose for the Zoning Ordinance including to encourage energy efficient patterns of development, to not unreasonably limit renewable energy systems. In addition, zoning shall assure proper use of natural resources, encourage regenerative agriculture and renewable energy as well as protect access to energy sources. In agreement with these principles, and to address the resident concerns, this chapter focuses on the following.

- Energy efficiency in the building code
- Energy impact of zoning and site use
- Reducing energy waste through more effective transportation planning
- Addressing home heating and residential energy use.

Building Code

A majority of residents surveyed support high energy efficient standards for new construction. The current building code as adopted by the Town is the 2018 International Building Code (IBC) as amended by the State of New Hampshire. The 2018 IBC includes the International Energy Conservation Code. The Town's code aligns with what the State has adopted. All new construction and major renovations must comply with the current IBC.

Many Jaffrey residents would also benefit from educational resources to help them understand how improving the energy efficiency of the existing buildings would also help them save money, increase safety, improve indoor air quality, and improve resilience during power outages.

Home Heating and Energy Use

Jaffrey could greatly increase its energy resilience by encouraging and educating residents about opportunities and methods for decreasing reliance on expensive and non-renewable energy resources which face limited supply in the future.

Out of 196 responses to the survey, 125 homes are heated with oil as a primary heat source and 50 homes have a wood back up system. Nineteen homes have an electric or passive solar system for a primary heat system while 45 homes have either wood pellets or cord wood as the primary heat source. Twenty-two homes have propane as a primary heat source. Town records show only 13 property owners benefitting from the solar energy system exemption. The exemptions that the Town has yet to adopt include wood heating, wind power, electric energy storage or renewable generation facilities (RSA 72:62, 72;70, 72:66 72:85 &72:87).

Most residents had not done an energy audit on their homes and of those that did, few took advantage of the federal tax credit programs. However, most surveyed residents indicated they would take advantage of funding for an energy audit out of personal concern with their home's energy usage.

Land Use Code: Zoning and Site Plan Regulations

The survey made clear that Jaffrey residents value our natural landscape, rural character, and access to recreational opportunities. The Land Use Code reflects these sentiments which have remained consistent over the years of updates to the Master Plan.

- Higher density development is directed toward the downtown where water and sewer infrastructure are available. Recent changes to the code allow for higher density and additional mixed-use designations in the Downtown, as well as higher density residential development in areas close to Downtown which have access to water and sewer. These higher density developments are required to meet the current version of Energy Star Certification. In addition, lot sizes for two-family dwellings may remain at the district's minimum for single family where both water and sewer are available.

- The Mountain Zone remains protected.

- A capital reserve account was established to assist the Conservation Commission in securing conservation easements and acquisition of properties.

- Small wind energy systems up to 100 kW are allowed by right in all districts except the Historic District and Mountain Zone. A Conditional Use permit is required for tower mounted systems to assure visual safety and environmental impacts are minimized.

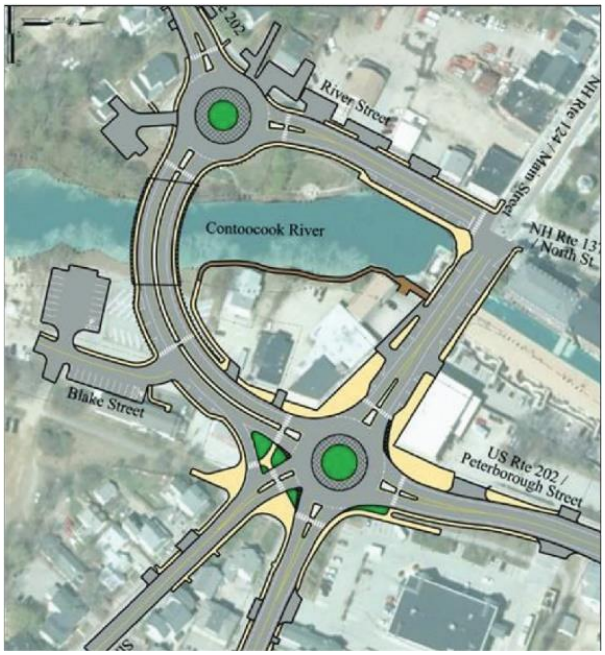
- Residential and commercial solar systems up to 5MW are permitted through the building permit process. Larger, utility scale projects require site plan approval through the planning board.

- The Open Space Development ordinance allows for reduction in lot size and setbacks, increase in density, a reduction in road frontage and resulting impervious areas. As a benefit, common open space is permanently preserved; viewsheds, watersheds and other natural resources are protected. This section of the code is rarely utilized and may need review and update.

- The Site Plan regulation requires stormwater management planning to treat and store the 2-year storm and infiltrate the 1 year-storm, thus providing protection to wetlands, surface and groundwater resources.

- Wellhead Protection areas have been adopted to protect our water supplies.

Transportation Planning



The 2016 update to the Master Plan focused on transportation, the priority issue was the 5-way intersection in the center of downtown (project plan depicted at right). The project addresses concerns over pedestrian safety, limited space for larger vehicles turning. Backups between the lights causes continued fuel waste and increased tailpipe emissions due to idling of vehicles at stop lights. Other concerns included the use of side roads as cut offs and the safety of limited (or narrow) pedestrian sidewalks.

In order to promote safer pedestrian and bicycle movements within and out of town, the Select Board adopted a Complete Streets program. Complete Streets include safe access and mobility, both along and across the street, for all users, including bicyclists, motorists, and pedestrians of all ages and abilities.

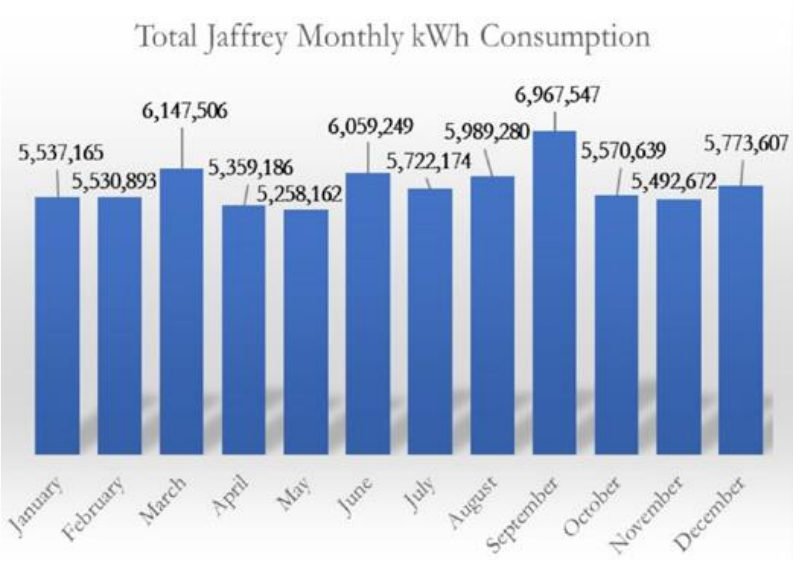
In addition to the recommendations for roadway and sidewalk improvements the transportation chapter highlighted the interest in improving the existing rail trail behind Rite Aid to Webster St with lighting and extending the trail to the Peterborough town line.

Electric charging stations have been proposed for new and redeveloped parking areas in the downtown. It is expected that the use of electric vehicles will increase dramatically over the next decade. This will create a major demand increase on residential electric use, requiring service upgrades in many older homes.

JAFFREY'S ENERGY PROFILE

Jaffrey's energy consumption falls into these three major categories.

- Heating and cooling
- Transportation
- Electricity

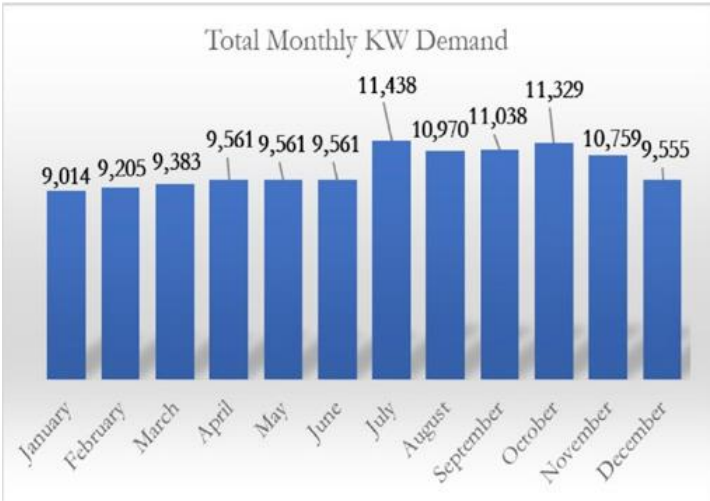


Heating and Cooling

The sources of heating energy in Jaffrey include fossil fuels (oil and propane), biomass (cordwood, pellets, and wood chips). The graph on the right (from Eversource) shows total electrical consumption in kilowatts per hour (KWh) for Jaffrey. The fact that electrical use does not peak in the winter indicates that few Jaffrey residents use electricity for heating.

The second chart reflects total Monthly Peak Demand for power in Jaffrey, measured as kilowatt (KWh) demand. While a KWh is a measure of energy consumption over a period of time (one hour), Kw is a measure of demand for power at a single point in time. "Brown outs" occur when peak demand for power in a region exceeds the ability of the generation and distribution systems to supply that demand.

The Total Monthly KW Demand graph peaks from mid-June through mid-October, most likely due to summer cooling loads.



The recent rate increases approved by the NH PUC will increase the electricity consumption rates by 110%. Residents seeking to shift away from oil or propane, which have also doubled in cost, should educate themselves on the most efficient forms of electric heat, and how onsite solar or wind can help offset electrical costs.

Transportation

Detailed data for transportation energy use for Jaffrey is not available. Energy sources and types for transportation include gasoline, diesel fuel, biodiesel, and increasingly, electricity for electric vehicles (EV).

Nationally, fully electric vehicles were 5.6% of all new vehicles sold in the US. This is the highest fraction ever, and more than double the 2.7% of electric vehicle sales in 2021. It is expected this trend will continue as major manufacturers such as General Motors and higher end manufacturers such as Lexus, Mercedes Benz and Volvo have pledged to completely stop producing gasoline powered vehicles by the mid 2030's. Other manufacturers such as Audi, Chevrolet and Buick have also pledged to switch entirely to EV by the mid 30's. It would be prudent for Jaffrey to consider how to best support and encourage the growth of electric vehicle use.

Electricity

Data collected from Eversource for 2021 showed that the average cost of electricity was $0.17 per KWh. The total cost of electricity purchased from all sectors is an estimated $11,799,373. The recent 110% rate hike approved for Eversource by the NH PUC will increase the average electrical bill by more than 50% (the 110% rate hike does not apply to distribution charges only to generation charges.) At an estimated $51 per ton of CO^2, the carbon cost of Jaffrey's energy consumption would be an additional $47,736.

Table 1 shows Jaffrey electricity us by sector for 2021. Manufacturing represents 59% of electric consumption in KWh and has been about level for the past three years. Residential use is about 26% and has also been relatively level for three years. (Source: Eversource)

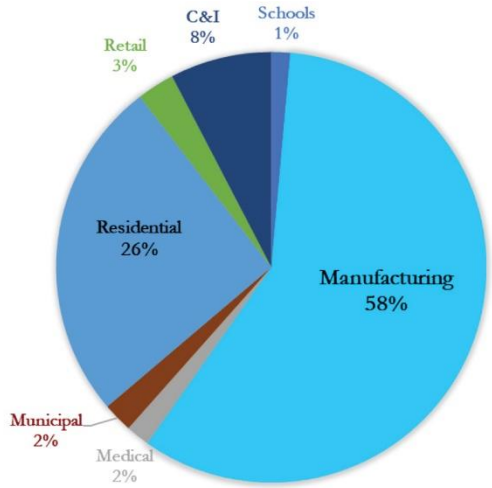


Table 1: Energy Use by Sector

Eversource Customer "Type"	3-year Avg kWh	2021 kWh Totals
Schools	872,086	983,079
Manufacturing	40,689,144	40,502,774
Medical	1,340,922	1,240,257
Municipal	1,627,618	1,558,412
Residential	17,322,571	17,868,730
Retail	2,041,828	1,957,286
C&I	5,260,135	5,297,541
Total Annual kWh	69,154,303	69,408,079

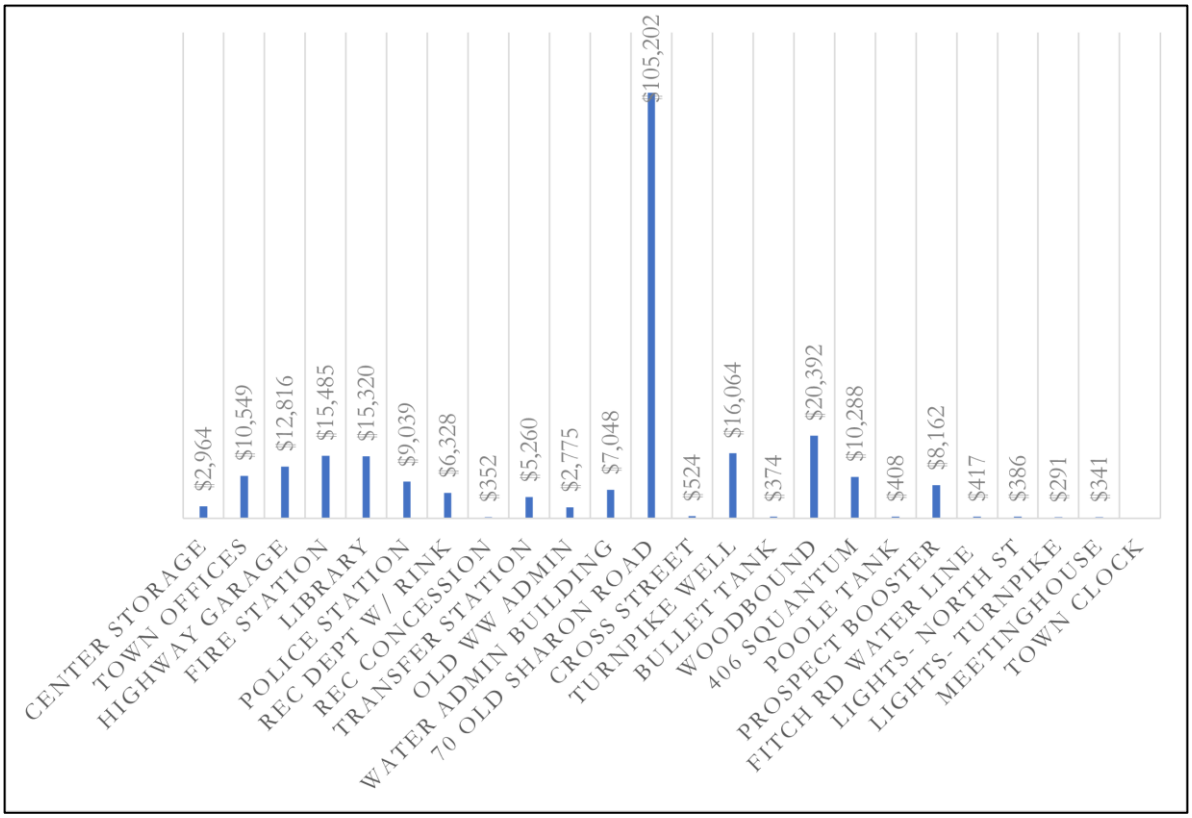
While only representing 2% of the town's total electric energy consumption, reducing energy consumption of town owned buildings by conservation and efficiency measures has a direct savings benefit to taxpayers. Taxpayers are also responsible for all capital improvements and it is the one category where all energy usage data is available.

The total energy cost for Jaffrey's 13 municipal buildings, pumping stations, and lights in 2021 was $246,717 with an estimated CO^2 emissions of 936 tons annually, based on the New England Grid's emission rates.

Opportunities for Improvement

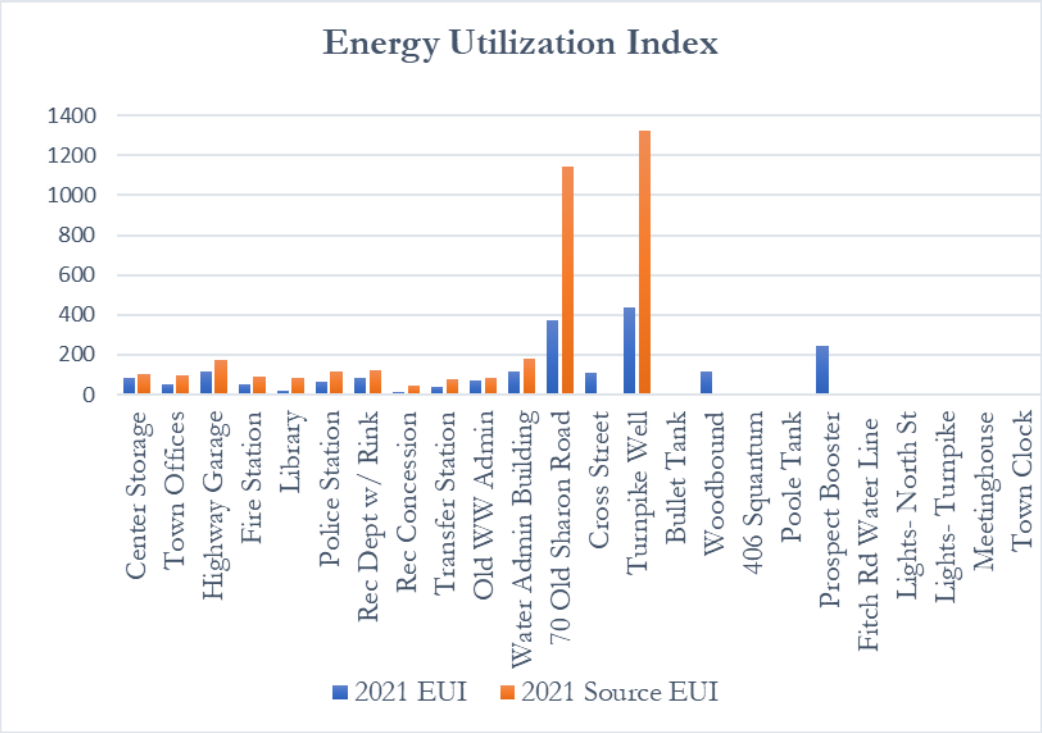
Reducing energy use through conservation efforts or improved efficiency is a worthy goal for both financial and ecological reasons. This graph shows the costs of energy use in municipal buildings, pump houses and lights. The wastewater treatment plant at 70 Old Sharon Road clearly represents the greatest total energy costs.

Breakdown of annual energy costs for Town owned buildings, totaling $250,784 for 2021 Source: Eversource

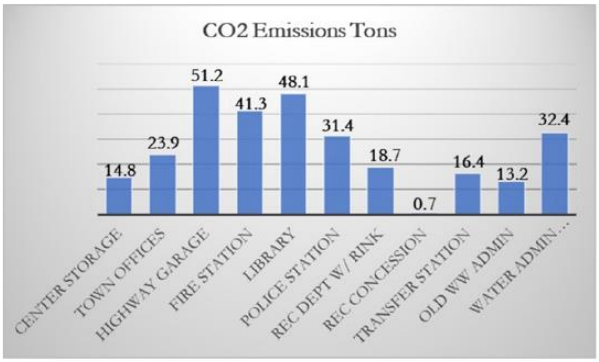


The Energy Utilization Index (EUI) is the total energy consumed in a year divided by the floor area in Btu/sf. Site EUI refers to direct site utility bills and Source EUI includes energy distribution costs which are different for propane, oil and electricity.

The graph shows the highest EUI for the wastewater plant and the well pumping station. The big difference between site and source EUI is due to electrical grid losses and suggests that on-site solar would be a good option to improve efficiency in these two sites.



This graph shows CO2 emissions for all town owned buildings that don't involve water pumping. This data is important to evaluate the impact of anticipated future carbon costs.



Key Takeaways:

- The water treatment plant may be the best opportunity for increased efficiency and cost savings.
- The high EUI at the Turnpike Well is misleading because pumping uses a lot of energy and the pumphouse has a small floor area.
- The Highway Garage has the third highest EUI and is a good candidate for improvements.

- Note that the Library has a low site EUI but large difference between site and source EUI, and the second highest CO2 emissions. This is due to the shift from oil heat to grid-sourced, primary electric heat. The transmission losses in the grid mean that as much as 30% more energy must be generated to supply the actual energy used by a site.

- The Recreation Department and rink is slightly misleading as the one meter for 31 Howard includes the lights at Humiston Field.

Energy Assessments and Audits

Energy audits measure and analyze energy usage of a site with the goal of identifying energy saving measures (ESM), also known as energy conserving measures (ECM). Audits can be specific for energy used for lighting, thermal (for heating), electrical (motors and pumps), and mechanical (HVAC equipment), or any combination of the above depending on the type of building and energy consumption patterns.

Audits can be performed by engineering firms or independent energy consultants who provide a written report describing the building, energy assessment, recommendations, and a financial analysis. This type of audit is for information purposes to help facility managers, municipalities, or homeowners make informed decisions around short- and long-term improvements. Town municipal buildings were audited some years ago and recommended capital improvements are included in the Capital Improvement Plan.

Residential audits often focus on opportunities to conserve heat through envelope upgrades, i.e. air sealing and insulation, or improving the efficiency of heating and cooling equipment. A Whole Home Assessment is a more comprehensive type of energy audit, which can address issues such as moisture problems and comfort. The cost for these audits can range from $500-$1000.

Commercial, municipal, or industrial audits may focus on the largest energy users from the list above. The American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) describe three levels for these non-residential audits, based on the level and details included in the analysis. A Level I audit is also known as a Walk-Through-Audit. Level II audits are often required for grants or bank loans. A Level III audit is similar to a Level II, but includes HVAC engineered designs and installed costs. The fees range from $700 to $7000, depending on the level and building.

Insulation and mechanical contractors can also perform energy audits as marketing tools to sell their products or services. These audits may be offered at low, or no cost to the building owner.

The NH Saves program is administered by the three electric utilities and offers a range of different incentive programs for commercial and municipal buildings, and residential homeowners. Incentives come in the form of rebates on appliances, technical assistance for commercial and municipal buildings, or financial incentives for lighting upgrades or building weatherization.

A NH Saves Home Energy Audit is performed by an insulation contractor who have qualified to be on the 'preferred vendor list'. The audit report is a weatherization proposal based on the products and services offered by the contractor and the program guidelines of the utility and usually comes with a cost sharing incentive for implemented improvements. These audits have required a small fee which is deducted from the final cost when a proposal is accepted.

Electrification of Buildings

The pathway to more affordable and low carbon buildings involves the transition to electrification for heating and cooling. This can happen on the local level through connecting the energy audit process to reducing heating and cooling loads for a more practical (affordable) transition off oil and propane to modern electric heat pumps.

Traditional, resistance-based electric heat is typically the least expensive to install but by far the most expensive to use for space heating. For example, at 20 cents per KWh, electric resistance costs almost $59 per million Btus of heat as compared to $32 per million Btu for oil, at $3.75 per gallon.

Electric heat pumps are far more efficient because they use a refrigerant to transfer (pump) heat from one place to another instead of creating heat. This means that they can move two to four watts of heat content for every one watt input, reflecting efficiencies of 170-400%. This means that at the same price for electricity, the cost of heating from heat pumps could average $25 per million Btu. The shift to heating with electricity will be based on the growing variety of modern heat pump technologies. There are two main types of heat pump: those that use the earth as a source (aka ground source heat pumps, GSHP, or geothermal) and those that use the ambient air as a source (air source heat pumps, ASHP).

GSHP are the most efficient because of the relatively stable and constant temperature of the ground. But they are also far more expensive to design and install. ASHP have lower installed costs and becoming increasingly effective and efficient at extracting heat at lower outdoor air temperatures, though the efficiency and heating capacity decreases at lower air temperatures. This means that a secondary back up source of heating is often needed for all but very well insulated, or 'high performing' buildings.

Combining the electrification of a building with onsite generation from solar PV can reduce the total annual cost for heating and cooling.

Community Power

Community Power (CP) is a way for electric customers use a broker to aggregate their electric energy consumption in order to negotiate a lower rate for supplying electricity. For Jaffrey, Eversource would still continue billing customers as usual, and charge for transmission and distribution, but the charge for supplied electricity (ie each generated KWh) would come from a provider selected by the broker, having negotiated a lower price. In other words, everything would work the same way in terms of monthly billing, but at a slightly lower cost for the energy one now buys.

In addition to negotiating a lower price, a community power plan can include other options, such as

- The plan can specify to only purchase electricity generated from renewable sources.
- The plan can include a reserve fund to help offset a volatile pricing market and/or be set up to invest in local energy efficiency projects or other related energy improvements.
- Some combination of the above.

IMPLEMENTATION

"…climate change isn't an issue to add to the list of things to worry about…It is a civilizational wake up call. A powerful message- spoken in the language of fires, floods, droughts, and extinctions – telling us we need an entirely new economic model and a new way of sharing this planet. Telling us we need to evolve." Naomi Klein, 2014
This Changes Everything

To plan prudently for our future, Jaffrey must address the range of consequences from a changing climate by developing resilience within policies around energy, site and building design, land use, transportation, water and waste management. This action plan was informed through public input and survey responses (Survey available in the appendices)

Energy Chapter Action Plan Worksheet

Goal A: Anticipate that electric energy costs will continue to rise

#	Action	Timeframe	Lead	Status/Notes
A.1	Re-instate the Jaffrey Energy Committee to promote the vision and implementation of this Chapter	1-2	Select Board	
A.2	Implement Community Power which can lower the cost of electricity for homes and small businesses	1-2	Aggregation Committee/Select Board	Aggregation Committee work concluded Pending Town Meeting Vote
A.3	Facilitate and encourage municipal and residential energy efficiency and conservation	1-10	Energy Committee	
A.4	Support the transition to clean, renewable electricity sources	1-7	Energy Committee Select Board	Warrant Article 39 Town Meeting 2020
A.5	Use Community Power to establish a fund reserve to support efficiency measures and affordable solar installations	3-5	Select Board	
A.6	Explore solar array installations on municipal buildings and other appropriate town owned land.	1-3	DPW Facilities Town Manager Energy Committee	

Goal B: Anticipate that specific energy resources, such as oil and gas, may become less available and more costly in the future

#	Action	Timeframe	Lead	Status/Notes
B.1	Plan for reducing and/or replacing oil and gas for transportation, building heating and cooling	1-10	Town Manager Department Heads	
B.2	Educate residents to help make informed decisions around cleaner and renewable energy options and efficient energy technologies e.g. heat pumps	1-10	Energy Committee	

Goal C: Anticipate a greater proportion of electric vehicles

#	Action	Timeframe	Lead	Status/Notes
C.1	Increasingly travelers and residents are using electric vehicles. Seek opportunities to install EV Charging stations	1-3	DPW Facilities Planning & Economic Development	Downtown Revitalization Design Concepts presented for Town Meeting 2023
C.2	Install solar arrays over existing and proposed parking areas to supply these EV stations	1-3	DPW Facilities Planning & Economic Development	Downtown Revitalization Design Concepts presented for Town Meeting 2023

Goal D: Plan for a higher incidence of extreme weather events

#	Action	Timeframe	Lead	Status/Notes
D.1	Adopt measures from the Town of Jaffrey Hazard Mitigation Plan which secures our electric grid	1-10	Town Manager Department Heads	Items added to the Capital Improvements Plan
D.2	Provide energy storage facilities	5-10	Town Manager DPW Facilities	
D.3	Educate Jaffrey residents on mitigation and climate adaptation strategies	1-10	Emergency Management Director Energy Committee	

Goal E: Focus on sustainable land use and local food growing systems

#	Action	Timeframe	Lead	Status/Notes
E.1	Protect and manage forests for carbon sequestration	1-10	Conservation Commission Planning Board Town Forester	
E.2	Protect agricultural soils	1-10	Conservation Commission Planning Board	
E.3	Allow higher density development where water and sewer services are provided	1-3	Planning Board	Changes are under review by the Planning Board

E.4	Promote best practices for soil and water conservation for all site plans during construction	1-10	Planning Board Code Enforcement Conservation Commission	Review Current Land Use Code for improvements

Goal F: Encourage efficiencies in Building Energy usage

#	Action	Timeframe	Lead	Status/Notes
F.1	Participate in Eversource's Municipal Technical Assistance Program to improve the efficiency of existing municipal buildings	1-3	Town Manager DPW Facilities	Pending review of weatherization proposals for DPW and Water
F.2	Use municipal buildings, existing and new, to set the example for high performance, low energy building strategies through retrofits and new construction	1-10	Town Manager DPW Facilities	Energy Committee can support through information dissemination and research
F.3	Educate and encourage homeowners and businesses to participate in NHSaves Program and other incentive programs	1-3	Energy Committee	
F.4	Encourage the adoption of the 2021 IECC (part of the building code) for all new construction	1-3	Energy Committee	
F.5	Educate consumers regarding material choices and construction strategies with lower energy impacts	1-10	Energy Committee	

Goal G: Improve Waste Management Practices

#	Action	Timeframe	Lead	Status/Notes
G.1	Educate the public about reducing waste, reusing building materials and recycling materials as an economic opportunity	1-10	Energy Committee	Engage additional partners
G.2	Explore opportunities for expanding composting	1-10	Conservation Commission Energy Committee	Engage additional partners

STATUTORY REFERENCES

RSA 674, Local Land Use Planning and Regulatory Powers, Section 674:2 address the purpose and description of the Master Plan. Subsection III lists optional sections of the Master Plan that a municipality may adopt, including:
(n) an energy section, which includes an analysis of energy and fuel resources, needs, scarcities, costs, and problems affecting the municipality and a statement of policy on the conservation of energy.

RSA 672:1 III-a. Proper regulations encourage energy efficient patterns of development, the use of solar energy, including adequate access to direct sunlight for solar energy uses, and the use of other renewable forms of energy, and energy conservation. Therefore, the installation of solar, wind, or other renewable energy systems or the building of structures that facilitate the collection of renewable energy shall not be unreasonably limited by use of municipal zoning powers or by the unreasonable interpretation of such powers except where necessary to protect the public health, safety, and welfare [NH Rev Stat § 672:1 (2016)]

RSA 72:62 Exemption for Solar Energy Systems. – Each city and town may adopt under RSA

RSA 72:27-a an exemption from the assessed value, for property tax purposes, for persons owning real property which is equipped with a solar energy system as defined in RSA 72:61.

RSA 72:66 Exemption for Wind-Powered Energy Systems. – Each city and town may adopt under RSA 72:27-a an exemption from the assessed value, for property tax purposes, for persons owning real property which is equipped with a wind-powered energy system.

RSA 72:70 Exemption for Woodheating Energy Systems. – Each city and town may adopt under RSA 72:27-a an exemption from the assessed value, for property tax purposes, for persons owning real property which is equipped with a woodheating energy system.

RSA 72:87 Exemption for Renewable Generation Facilities and Electric Energy Storage Systems. – Each municipality may adopt under RSA 72:27-a an exemption from the assessed value, for property tax purposes, of a renewable generation facility, as defined in RSA 72:73, and of an electric energy storage system, as defined in RSA 72:84.

NH HB 315 of 2021 amends RSA53-E:2 to allow the net-metering cap for municipal-owned solar to be raised from 1 megawatt to 5 megawatts. A megawatt can power between 700 and 1,000 homes.

RSA 53-E:1 Statement of Purpose. – Community Power Aggregation. The general court finds it to be in the public interest to allow municipalities and counties to aggregate retail electric customers, as necessary, to provide such customers access to competitive markets for supplies of electricity and related energy services. The general court finds that aggregation may provide small customers with similar opportunities to those available to larger customers in obtaining lower electric costs, reliable service, and secure energy supplies. The purpose of aggregation shall be to encourage voluntary, cost effective and innovative solutions to local needs with careful consideration of local conditions and opportunities.