

*Danville Town Enhanced Energy Plan - September 7, 2023
(Annex to Danville Town Plan)*

Introduction

This Enhanced Energy Plan is an annex to the Danville Town Plan. The purpose of this annex is to:

- 1) Analyze resources, needs, scarcities, costs, and problems within Danville concerning electric, thermal (heating and hot water), and transportation sectors.
- 2) Articulate Danville’s general policies and identify specific tasks concerning the conservation and efficient use of energy, and the development and siting of renewable energy resources.
- 3) Comply with the requirements for municipal plans under ACT 174 of the Energy Development Improvement Act of 2016, in order that Danville be given “substantial deference” in the Public Utility Commission’s Section 248 process (30 V.S.A. Section 248).

The ad hoc Danville Energy Committee created the initial draft of this annex and it has benefitted from considerable support from Northeastern Vermont Development Association (NVDA) throughout the development process.

Definitions

BTU (British Thermal Units) is a unit of energy, used very often in the United States to quantify heating energy. The BTU is used to measure the heating potential of various fuels such as fossil fuels (gasoline, heating oil, propane, natural gas), and wood products. For example, a cord of seasoned hardwood holds approximately 20 million Btu’s. When tallying energy quantities of multiple forms (electric, solar, etc), or which conventionally use different energy units (kWh, MMBtu, etc.), the Btu is often selected as the common unit for representing the total amount of energy. One thousand BTU’s is abbreviated as 1 kBtu, or 1 Mbtu (increasingly outdated). One million BTU’s is abbreviated as 1 MMBtu.

Kilowatt-Hour – A Watt is the metric unit used to measure the rate of converting energy (power). Worldwide, it is used to describe the rate of electricity production and consumption. One Watt-hour is the total energy converted by a one watt device over a one hour period. One thousand Watt-hours is abbreviated as 1 kWh (kilowatt-hour). One million Watt-hours is abbreviated as 1 MWh (megawatt-hour). A typical Vermont home uses about 7 MWh annually (600 kWh/month).

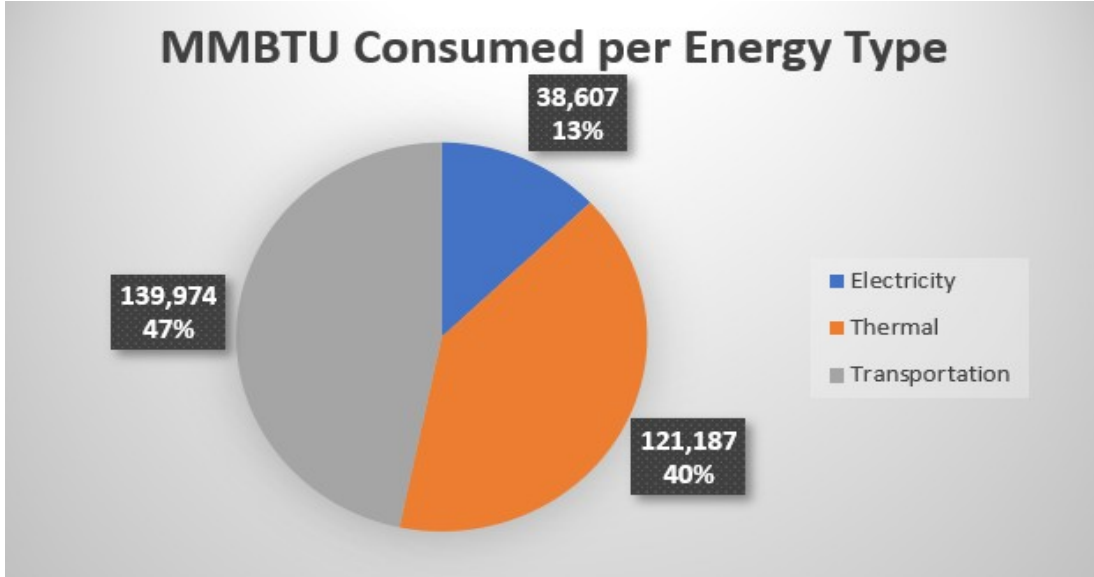
LEAP analysis - LEAP, which stands for Long-range Energy Alternative Planning Systems, is a widely used software tool for energy policy analysis. It provides projections for each of Danville’s transportation, heating and cooling, and electrical utility sectors. Danville’s projections are derived from the statewide figures by using the town’s population as a percentage of the statewide population. These projections help to illustrate the scope and scale of change that must take place if we are to minimize impacts of the climate crisis.

Analysis of Energy - Use, Generation, and Distribution:

This section outlines current energy use by the community in the areas of electricity, heating and cooling, and transportation. Danville’s energy use estimates were developed by [Northeastern Vermont Development Association \(NVDA\)](#) and follow the same data methodologies used for the 2018 amendment to the Regional Plan for the Northeast Kingdom. This information is based on best available data and may change over time as new information is provided. Fuels are measured in different ways – by cord, by gallon, by kilowatt – so this plan converts units of measurement into BTUs.

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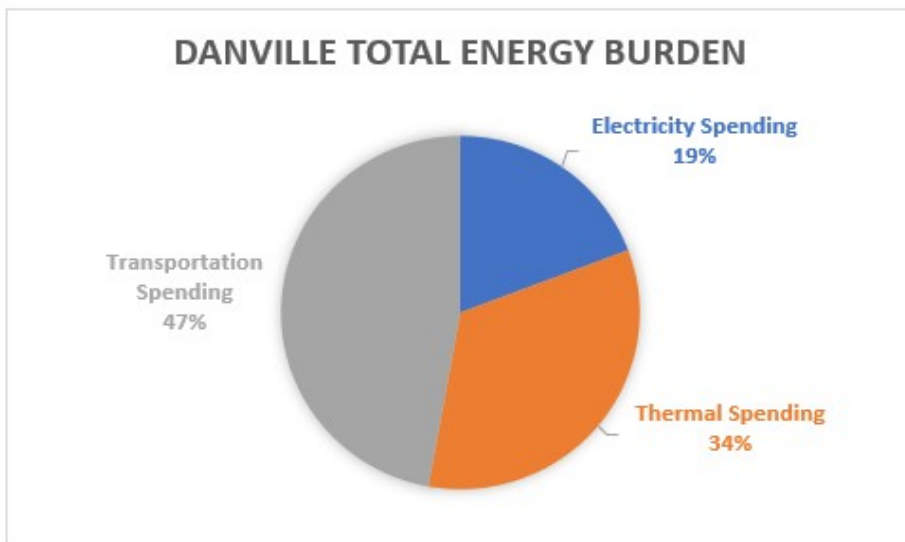
According to NVDA estimates, the town of Danville uses roughly 300 billion BTUs annually to meet its energy needs. The majority of energy use is for transportation (47%), followed by thermal (heating and hot water, 40%) and electricity (13%). According to the [Vermonters Guide to Residential Clean Heating and Cooling](#), Vermont's existing energy use is dominated by fossil fuels.



Millions of BTUs Consumed for All Uses by Energy Type for Town of Danville from most recent ACS-2019 projections and Efficiency Vermont data

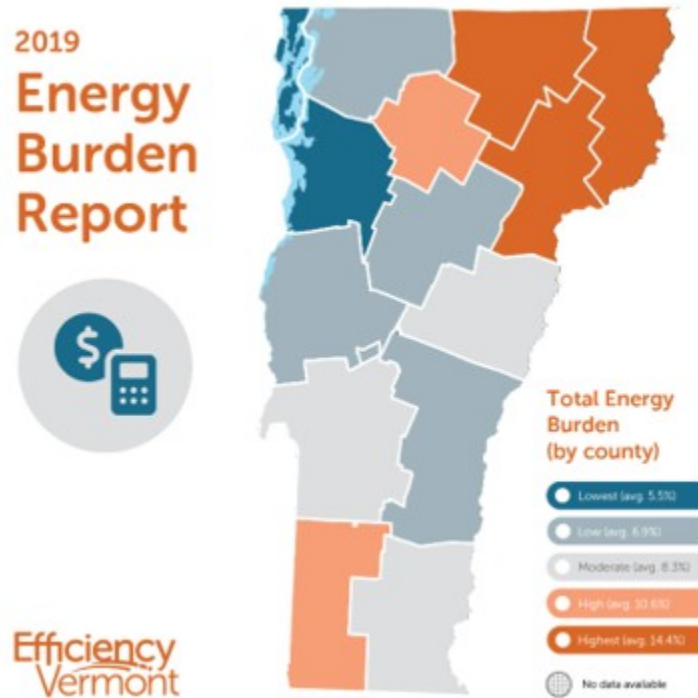
Energy Burden

Energy burden in Vermont, which is defined as a percentage of income on energy spending, is highest in the Northeast Kingdom (NEK). Efficiency Vermont estimates the average energy burden statewide to be about 10% and 14.4% in the NEK; the Town of Danville's energy burden is (9.5%); out of total energy expenses, 47% is spent on transportation needs and 34% on heating. ([Efficiency Vermont, 2019](#))



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Energy burden further complicates meeting statewide long term goals (c.f. 2022 Vermont Comprehensive Energy Plan) because more burdened households are less likely to purchase an electric vehicle, weatherization or fuel switching, because taking action is often cost-prohibitive. Some residents may be able to reduce their costs in one sector, say by burning wood, but not in all three.



Source: <https://www.encyvermont.com/Media/Default/images/white-papers/TotalEnergyBurdenCounty.jpg>

Transportation

Transportation is Danville’s largest source of energy usage and Greenhouse Gas (GHG) emissions (see above). Indeed, the average NEK resident drives 14,000 miles per year (NVDA). Danville will require a robust approach to reaching long term reductions in GHG emissions goals with regards to transportation.

In order to reduce annual emissions, Danville residents will need to drive fewer internal combustion engine vehicle miles, combined with driving lower carbon emission vehicles. Potential strategies include: more walking and biking, switching to electric vehicles, using public transportation, ride sharing/carpooling, and developing micro-transit infrastructure.

There are an estimated 1,862 fossil fuel burning light duty vehicles in Danville. The state average is 22 miles per gallon. It is estimated that the total annual energy consumption of internal combustion engine vehicles is 139,783 million Btu’s. A 2019 estimate has the number of electric vehicles (EVs) in the area at 12 (see Danville EV Registrations table below). This is increasing and expected to continue to increase (see LEAP projections below). The Danville Ad Hoc Energy Committee is promoting EVs by hosting Electric Vehicle fairs to accelerate adoption and educate about the technology.

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Danville EV Registrations			
Vehicle Type	2017	2018	2019
All Electric	0	0	3
Plug In Hybrid	7	9	9
Total	7	9	12
Source: Efficiency Vermont			

Transportation Fuel-Switching Targets for Danville (LEAP Projections)			
	2025	2035	2050
Estimated # electric vehicles (EVs)	219	700	1,506
% EVs	10%	30%	56%
% Vehicles on biofuels	71%	43%	7%
See Definitions section, pg. 1			

Acknowledging which modes of transportation have the lowest impact on carbon emissions (for example, see Vermont Energy Education Program chart on emissions related to getting to school at the end of this section), as appropriate and applicable to their roles, the Town, its Departments, its residents, and the School District will need to do the following:

- consider electric when buying vehicles, including school buses;
- design future infrastructure to make walking, biking, and exercising a high priority;
- modify current infrastructure to encourage safe walking and biking (see suggestions below.);
- encourage additional electric vehicle fairs until technology is largely adopted for single vehicle users (The ad hoc Danville Energy Committee assumes this responsibility and may partner with other towns.);
- explore public transit and ride-share options; and
- promote bike use and e-bike adoption as part of the Town’s identity.

Transportation Education & Equity

Considering the large impact transportation has on Danville’s total energy consumption, it is important to make residents aware of how our use of transportation is contributing to our personal and town energy use.

State and federal energy programs are helping to reduce their cost and make them comparable to combustion engine vehicles. However, new electric vehicles are not manageable for many families. The town should explore ways to help inform those households who are in a position to purchase new vehicles of the life cycle cost benefits of EV’s.

Energy sectors are becoming increasingly intertwined. As forms of transportation move to being electrically powered, residents must consider the electricity is generated. Moving more of our electrical generation to renewable sources of energy will make electric vehicles more sustainable for the environment.

Recommended Actions (Policies, Tasks, Programs)

As appropriate and applicable to their roles, the Town, its departments, its residents, and its School District should encourage community efforts at education and awareness regarding:

- Integrate life cycle cost comparisons of EV’s, and environmental impacts generally, into Driver’s Education classes;
- participation in walk-to-school events;
- participation in programs such as Village2Village, Way2Go, and Safe Routes to School whenever possible; and
- publicize facts about hybrids and electric vehicles, with a goal to dispel myths.

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Additional Transportation Suggestions:

Infrastructure:

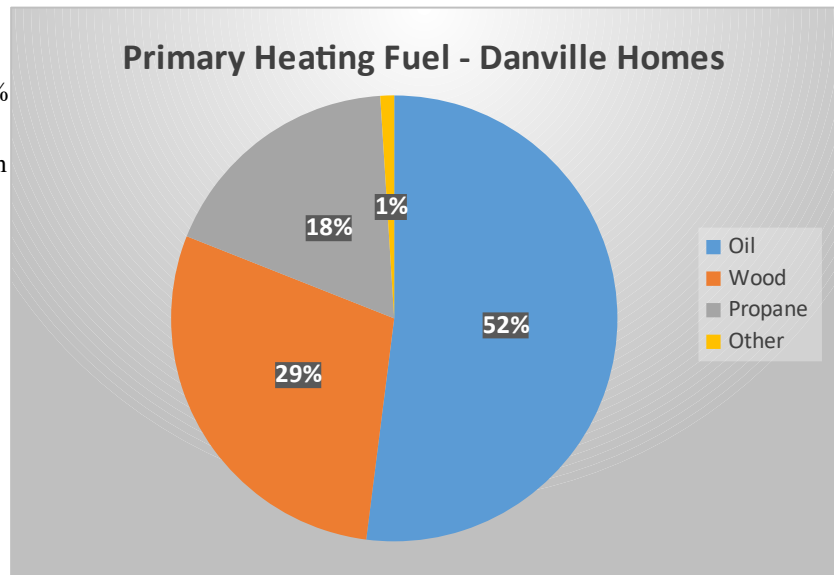
- Coordinate an e-bike rental/loan and infrastructure at the historic Danville train station center.
- Enhance crosswalks to improve visibility - either by raising them or painting them another color.
- Add crosswalks to intersections such as the Route 2 trail crossings, and from Mountain View to Highland, potentially with a button to engage flashing lights for the pedestrian.
- Put trail etiquette signs at bike trail entrances.
- Increase available local amenities, such as a dog park, to encourage residents to stay local and engage in non-vehicle related activities.
- Create a safe, direct connection between the rail trail and the School.

Actions as appropriate and applicable to their roles, by the Town, its departments, its residents, and its School District:

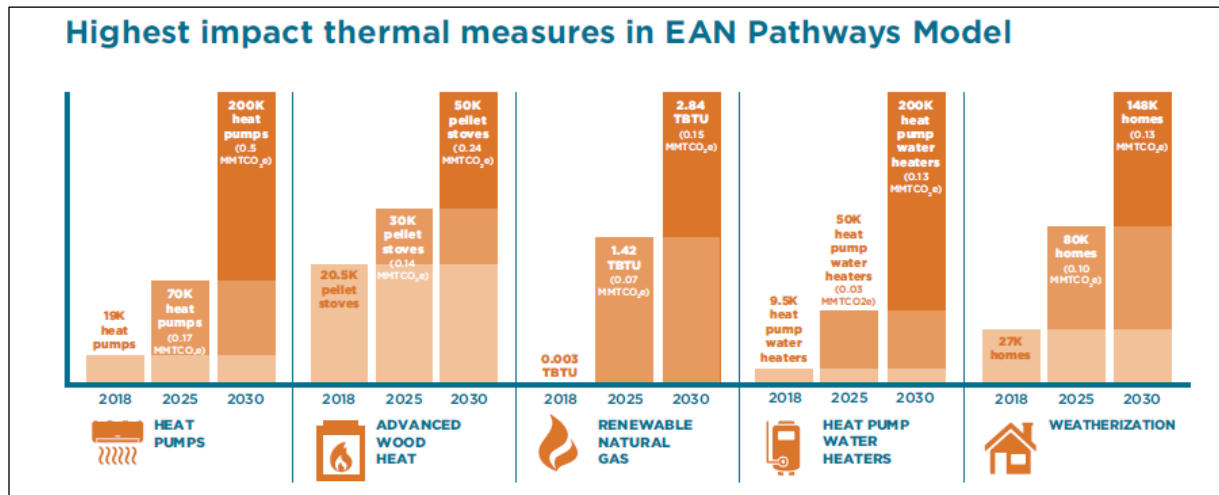
- add solar canopy with a charging station (like at the Fairbanks Museum) at Town parking lots, where appropriate and /in compliance with Zoning By-laws, as well as signage to make it noticeable to Town’s residents and workforce alike;
- promote Town Forest trails as a multi-use transportation option with health and energy benefits;
- encourage carpooling to school, for those not using school buses or walking/biking to school with the goal of reducing car parking spaces;
- explore with the School District school buses’ use for non-school transit during off hours as recommended by the Energy Action Network (EAN); and
- refer to [Smart Growth America](#) and [Complete Streets](#) strategies applicable to Danville.

Thermal (heating and hot water)

The thermal sector – defined as how we heat, and cool, our homes and buildings, is responsible for about 34% of all Vermont’s greenhouse gas emissions. Greenhouse emissions from burning fossil fuels come in a close second behind transportation in terms of total emissions, making addressing thermal emissions a priority to reduce total emission in Danville and Vermont. More than half the thermal emissions come from residential homes, with commercial buildings accounting for 31% of the thermal emissions.



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EAN Emission Reductions Pathways Model 2021

Addressing thermal emissions means moving away from fossil fuels and changing the ways we heat, and cool, our homes and businesses.

Thermal Energy Analysis

The estimated total annual energy heat consumption for residential and commercial buildings in Danville is currently 121,187 MMBTU.

According to NVDA estimates, Danville’s existing residential thermal use (heating space and water) is about 86,592 MM BTUs annually, with a mean of 88 MM BTUs per residence. The latest American Community Survey (ACS 2019) 5-Year Estimates of primary heating fuels indicate that oil and wood are the popular choices for owner-occupied dwellings, accounting for 52% and 29% of households respectively. The ACS estimates attribute use of propane to account for the majority of remaining owner-occupied dwellings (18%.) According to ACS, electricity is used by a fraction (0.5%) of owner-occupied homes for heating. The same estimates show that Danville has about 220 renter-occupied units, with 39% relying on oil as a primary heating source and 40% relying on propane. Approximately 30% of Danville’s 764 owner-occupied housing units were built before 1940 and 31% of renter-occupied predate 1940. Older homes are likely to have “leaky” building envelopes and be less energy efficient.

There are 319 seasonal units in Danville, and collectively these are estimated to contribute about 1,557 MM BTUs in annual use. There are no published datasets on fuel use in seasonal dwellings, but NVDA estimates assume that seasonal uses in Danville account for only 5% of the average year-round heating load.

Commercial heating estimates are more difficult to calculate. The estimates from the Department of Public Service and the Vermont Department of Labor’s Economic and Labor Market Information assume that total commercial thermal use is about 34,595 MM BTUs annually. The methodology identifies 44 commercial buildings in the Danville area, all with heating loads under 10%, apart from “Professional and Technical Services” (25%), “Accommodation and Food Services” (14%), and “Retail Trade” (11%).

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Current Status

According to the Vermont Community Energy Dashboard for 2020, 21 housing units in Danville were “comprehensively weatherized” – loosely defined as the whole house buttoned up to maximize energy efficiency and personal comfort.

Fuel Type: Space Heating	Households	Total Avg. Use (Annual)	%Use: (All Households)	% of Use: Owner	% of Use: Renter	% of Cost (All Households)
Tank/LP etc. Gas	93	102,097 gallons	10.4%	9.1%	23.8%	17.7%
Electricity	23	664,058 Kwh	2.6%	2.1%	7.5%	6.8%
Fuel Oil	398	294,742 gallons	44.7%	42.9%	62.5%	44.9%
Wood	371	1,970 cords	41.6%	45.1%	6.3%	30.6%
Coal/Coke	0	tons	0%	0.0%	0.0%	0.0%
Other	6		0.7%	.07%	0.0%	0.0%
Source: Danville Energy Profile (NVDA)						

Targets in Vermont

Adapted from [10 V.S.A. § 581 Building efficiency goals](#):

- improve the energy fitness of Danville’s housing stock;
- reduce annual fuel needs and fuel bills in the housing units served;
- reduce total fossil fuel consumption across all buildings;
- reduce fuel costs for Danville families and businesses; and
- increase weatherization services to low-income Danville residents by expanding the number of units weatherized or the scope of services provided.

Residential and Commercial Thermal Efficiency Improvements Projections			
	2025	2035	2050
Estimated # of households	944	1,001	1,061
% of households to be weatherized	19%	30%	31%
# of households to be weatherized	175	305	326
Estimated # of commercial establishments	47	48	52
% of commercial establishments to be weatherized	5%	9%	15%
# of commercial establishments to be weatherized	2	4	8
Source: Danville Energy Profile (NVDA)			

Thermal Fuel Switching Targets for Residential and Commercial			
	2025	2035	2050
New efficient wood heat systems in residences	448	366	265
% of households with wood heat systems	47%	37%	25%
New efficient wood Heat systems in commercial establishments	7	10	13
% commercial establishments with wood heat systems	16%	19%	25%
New heat pumps in residential units	133	279	355
% households with heat pumps	14%	28%	33%

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Estimated commercial establishments with heat pumps	3	5	8
% commercial establishments with heat pumps	6%	11%	15%
Source: Danville Energy Profile (NVDA)			

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Thermal Fuel-Switching & Weatherization Targets for Danville (LEAP Projections)			
	2025	2035	2050
Total residential structures	1,043	1,106	1,172
Residences weatherized	296	515	551
Residences using heat pumps	230	494	627
Residences using wood heat	777	647	469
See Definitions section, pg. 1			

Thermal Education and Equity

Switching to more efficient heating and hot water technologies can affect air quality positively or negatively, both indoors and outside. Conversion from fossil fuel to electricity-based systems reduces particulate emissions everywhere, due to Vermont’s portfolio of low carbon electricity producers; High efficiency wood burning appliances reduce particulate emission and NOx emissions in and around homes; conversely, weatherization reduces infiltration which tends to raise the concentration of indoor pollutants.

Poor air quality disproportionately impacts people of all ages with chronic respiratory illnesses like asthma and COPD. People with weakened immune systems due to health conditions such as cancer, older adults, children and infants, and pregnant women are also at risk.

Switching to more energy efficient heating systems can be expensive. Low-income households in Vermont depend on fuel oil and inefficient electric heating systems, and often do not have the upfront financial resources to move to better heating options.

Summary

The benefits of efficient building envelopes, and of energy efficient heating and cooling mechanical systems can be summarized as follows:

- Weatherizing a building will lead to more efficient heating and requires using less energy (fossil fuels or renewable sources) and saves utility costs.
- Switching from fuel sources that emit higher levels of greenhouse gases to sources with lower levels of emissions will help reduce effects of climate change.
- New construction owners should be clearly and reliably informed of the benefits of energy efficient building envelopes. Owners of existing homes should be encouraged to weatherize, especially with the help of subsidized programs and incentives.

Recommended Actions (Policies, Tasks, Programs), as appropriate and applicable to their roles, by the Town, its departments, its residents, and its School District:

- provide information about Efficiency Vermont as well as federal incentive programs, and about builders who are certified in delivering efficiency certification programs such as Energy Star, LEED, PHIUS Passive House Certification, and others, as part of permits for new construction;
- Ad Hoc Danville Energy Committee sign up as Button Up Vermont Community Partner to help spread the word about weatherization resources;
- participate in the Window Dressers program;

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- sponsor a cold-climate electric heat pump workshop;
- increase the number of home energy audits by finding funding sources to subsidize the costs of the audit and the recommended actions from the audit;
- promote free NETO weatherization services to income-eligible households. (On average, the program makes about \$10,000 worth of improvements per home, installs about 1,500 square feet of insulation, and reduces drafts by about 40%, see <http://www.vtneto.org/>);
- increase the number of commercial energy audits; and
- add a page on the Town website with home and business weatherization resources to promote action steps and follow up from the home and commercial energy audits.

Electrical

Electrical includes energy derived both from public utilities and privately held resources. Electrical generation systems include those resourcing renewable hydro, solar, wind, biomass, as well as nonrenewable fossil fuels.

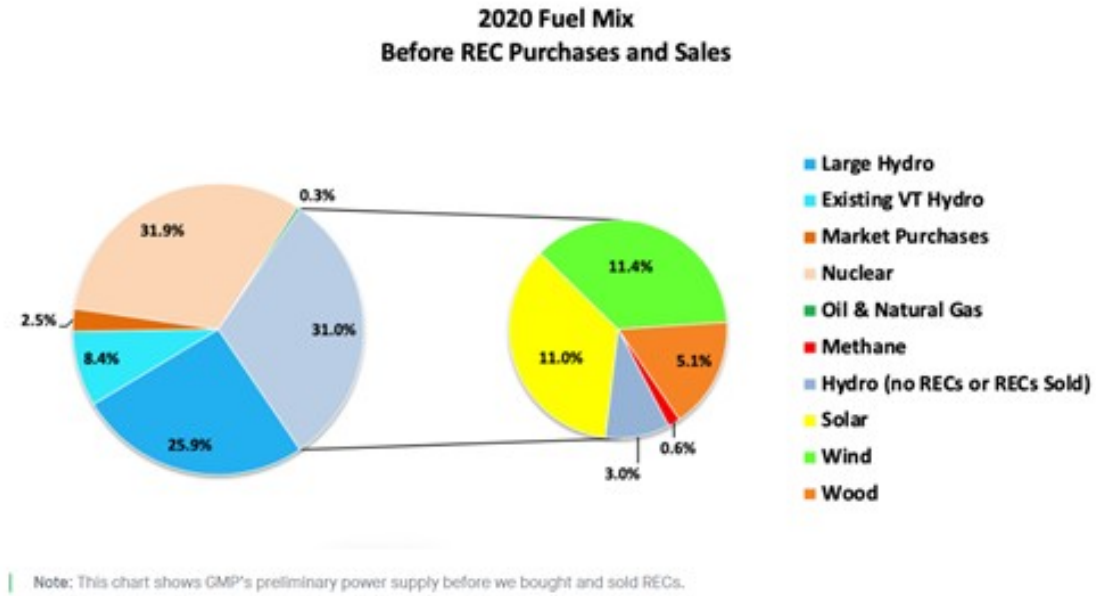
Electricity Energy Analysis

In 2020, Danville’s total annual electricity usage across all sectors (commercial, industrial, and residential) was 11,314,721 KWH, accounting for 13% of the Town’s total energy use.

Electric Utility Data	KWH Usage by Year			
	Sector	2018	2019	2020
Danville	Commercial & Industrial	3,378,529	3,313,480	3,128,490
	Residential	7,902,643	7,800,614	8,186,230
	Total	11,281,172	11,114,094	11,314,721
	Count of Residential Premises	1,250	1,240	1,255
	Average Residential Usage	6,322	6,291	6,523
Source: Efficiency Vermont				

Electricity is provided to the Town of Danville by Green Mountain Power (GMP) and Washington Electric Coop (WEC). The majority of GMP electrical energy is produced from large hydroelectric stations (25.9%) such as Hydro Quebec, and existing hydro (8.4%) in Vermont. Nuclear energy from Seabrook accounts for 31.9%, until 2034. Renewables comprise 31% of GMP electric energy and include wind, wood, solar, hydro and methane. Market purchases account for 2.5%, much of it generated from fossil fuels. Currently 0.3% of energy generation is through non-renewable oil and natural gas. The breakout of power sources that GMP utilized in 2020 are depicted below.

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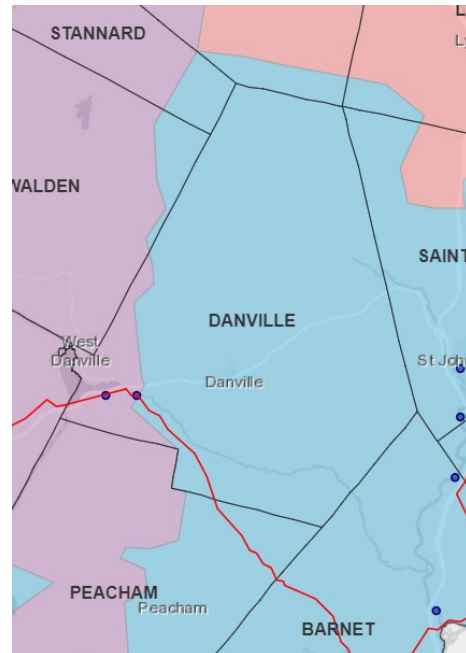


GMP 2020 Fuel Mix before sale of Renewable Energy Credits

GMP’s website states their “energy supply is 94% carbon free and more than 63% renewable. GMP is committed to being 100% carbon free by 2025 and 100% renewable by 2030” (Greenmountainpower.com).

A small portion of Danville receives its electricity from Washington Electric Coop (WEC), as indicated by the purple map area in southwestern corner of Danville. The remainder in blue is serviced by GMP.

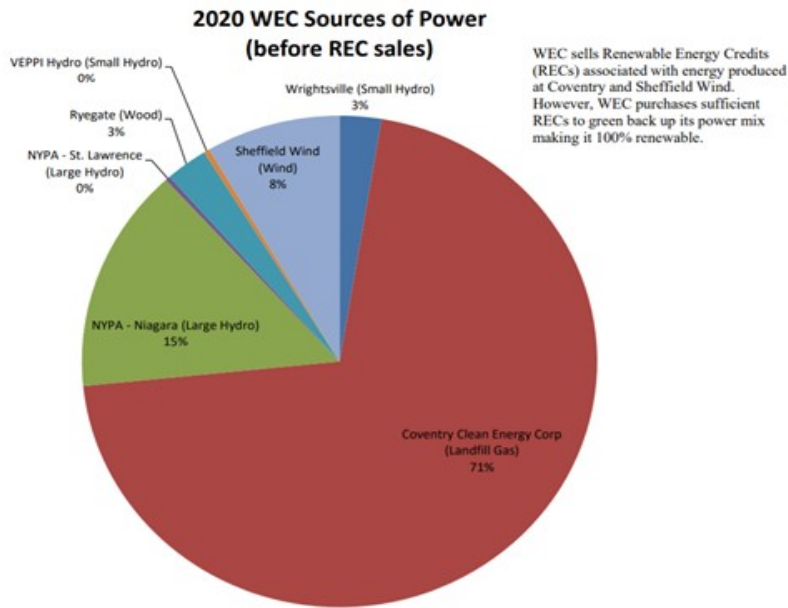
Like GMP claims, a significant portion of the energy produced by WEC is defined as “renewable” with the majority (71%) of power provided by the Coventry Landfill Gas to Energy plant. This report includes a graphic of the breakdown of WEC’s fuel mix for 2020.



Vermont Public Services Department Utility Map – 2022.

Available at <https://vtpsd.maps.arcgis.com/apps/webappviewer/index.html?id=9f9b060d475d4ed49795fdd98aa895fc>

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WEC Sources of Power - 2020. Available at <https://35coti2fdydv27b6wjrhdqx9-wpengine.netdna-ssl.com/wp-content/uploads/2021/02/2020-Load-and-Resource-Summary.pdf>

Renewable Energy Resources:

Mapping Resources: Refer to attached maps to better understand Danville’s potential renewable energy generation sources, also available online - <https://nvda.net/danville.php>.

Solar: In the last decade, solar arrays have become a popular means of producing renewable energy. For policy purposes of this plan, solar energy facilities are grouped into three categories:

- **Small-Scale Solar**, here defined as solar electricity and transmission facilities up to and including 15 kW capacity;
- **Mid-Scale Solar**, here defined as solar electricity generation and transmission facilities greater than 15 kW capacity and less than or equal to 150 kW capacity or up to two acres of developed area including fencing, whichever is greater; and
- **Large-Scale Solar** (also known as ‘utility-scale’), here defined as a solar electricity generation and transmission facility greater than 150 kW in capacity or more than two acres of developed site area, whichever is greater.

Hydro – Joes Pond’s dam is Danville’s main hydroelectric generation station. There are significant environmental constraints in initiating new hydro projects, thus it is anticipated that future hydrological installations probably will not change markedly from the present.

Wind – Although Danville School recently removed its wind generator due to maintenance and efficiency issues, Danville’s geographic location offers future possibilities for wind generators. However, large blade turbines are incompatible with Danville’s Town Plan to protect its scenic views.

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Biomass – Biomass depends on forestry resources. Although it was a profitable resource earlier this decade, the market has fluctuated to the point where it currently is not a very actively pursued resource for producing electricity. However, it will continue to play a role into the future.

Fossil fuels – Electricity generated locally from fossil fuels consists of back-up generators for businesses and public essential facilities or residential portable generators. It is a very minor sector of electrical production.

Land Use Restrictions for Renewable Energy Generation

The Planning Commission recognizes the importance of renewable energy resources and recommends their development and use within the town, subject to the siting restrictions described in this section. There are many areas in Danville where specific scales of solar and non-utility wind development are appropriate. However, the following siting restrictions shall be strictly enforced in the Town’s site approval deliberations. The Town of Danville maps of potential renewable energy generation sources reflect these constraints.

Known constraints (State regulations) to include:

- Vernal Pools from Vermont Center for Ecostudies (VCE; confirmed layers)
- DEC River Corridors
- FEMA Floodways
- State-significant Natural Communities
- Rare, Threatened, and Endangered Species
- National Wilderness Areas
- Class 1 and Class 2 Wetlands (VSWI and advisory layers)
- Regionally or Locally Identified Critical Resources

Possible constraints (State regulations) including, but not limited to:

- Vernal Pools from VCE (potential and probable layers)
- Agricultural Soils
- FEMA Special Flood Hazard Areas
- Protected Lands (State fee lands and private conservation lands)
- Act 250 Agricultural Soil Mitigation areas
- Deer Wintering Areas
- The following features from ANR’s Vermont Conservation Design:
 - Interior Forest Blocks – Highest Priority
 - Connectivity Blocks – Highest Priority
 - Physical Landscape Blocks – Highest Priority
 - Surface Water and Riparian Areas – Highest Priority
- Hydric Soils
- Regionally or Locally Identified Resources

NVDA Regional Plan Restrictions

Areas with an elevation of 2,000 feet or more and according to NVDA’s regional plan, are a special class of lands that should be protected from any large-scale commercial or industrial development characterized by a constructed

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height of 100' or more, and an acre or more of permanent site disturbance, such as clear-cutting. These areas contain one or more factors that make them unsuitable to such development – contiguous forest cover; sensitive wildlife and plant habitat; conservation lands and recreational assets; managed forestland; and headwaters and ephemeral surface waters, which are highly vulnerable to erosion and man-made disturbance.

Town of Danville Restrictions

“Small-scale solar” (<15 kW)

1. The Town supports these systems for residential and commercial owners, when the project is located on a “Preferred Site” as defined by the Vermont Public Utility Commission Rule 5.103. Most households require 7 kW to meet all of their annual electricity consumption. Installations may be subject to other provisions concerning the erection of structures found elsewhere in state and local ordinances (e.g., the Town of Danville Zoning Bylaws).
2. It is possible that some system designs may interfere with an abutter’s use of their property in a material and measurable way, e.g., obstruction of long views, interference with telecommunications signals, etc. The owner of the system shall address reasonable concerns on the part of the abutters. The Zoning Administrator shall identify these projects as requiring a waiver or conditional use and the Development Review Board (DRB) shall consider and resolve any permitting issues.

Solar generation systems > 15 kW and <150 kW

1. The Town supports residential and commercial owners, when the project is located on a “Preferred Site” as defined by the Vermont Public Utility Commission Rule 5.103, provided that the following permitting process is fully executed. Installations may be subject to other provisions concerning the erection of structures found elsewhere in state and local ordinances (e.g., the Town of Danville Zoning Bylaws).
2. Prior to Town approval and permitting, the developer shall notify all abutters in writing, by mail, of the date of the Planning Commission review meeting, as determined through direct communication with the Planning Commission. Notification letters shall be postmarked no less than two weeks prior to the review meeting. The developer shall provide to all abutters a draft plan for the system configuration showing all significant alterations to land and vegetation, equipment location and type, and a site plan showing equipment location. At the same time, a copy shall be provided to the Planning Commission.
3. The owner of the system shall address reasonable concerns on the part of the abutters. The Planning Commission shall be the sole arbiter in resolving any such dispute.

Solar generation systems >150 kW

1. The Town supports these systems when the project is located on a “Preferred Site” as defined by the Vermont Public Utility Commission Rule 5.103, subject to the following additional restrictions. Installations may be subject to other provisions concerning the erection of structures found elsewhere in state and local ordinances (e.g. The Town of Danville Zoning Bylaws)
2. Scenic view sheds along Route 2: The view sheds from this corridor are deemed vital to the development of Danville as a destination for visitors attracted to our historic features, scenic beauty, and outdoor recreation. They are cherished by permanent residents. In recent years, 4 large solar arrays have been constructed or planned along Route 2 in Danville because of the availability of high capacity 3-phase power. For these reasons, solar development along the Route 2 corridor shall be held to a higher standard going forward. No part of any new solar project within one thousand feet of US Route 2 may be visible from a passenger vehicle travelling on Route 2. All other restrictions herein pertain as well.
3. Sites which are identified in Danville Town Plan’s Section “Historic, Scenic and Cultural Resources” shall not be used.
4. Sites which are not indicated as favorable as mapped on Danville’s solar resources map (attached) shall not be

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used.

5. All ground-mounted solar facilities >150 kW shall be sited and screened so that visual impacts are mitigated when viewed from public streets, scenic viewpoints, and/or adjacent properties. Screening shall be year-round. The approved landscaping plan shall be installed prior to operation of the facility, and full mitigating effects shall occur within five (5) years assuming normal tree growth rates. If topography alone does not provide sufficient screening, a combination of materials (such as trees and shrubs) shall be used to create a naturalized screen rather than a large expanse of uninterrupted, uniform material. Plantings that die or become diseased shall be replaced within six months. The Danville Planning Commission shall have complete authority in approving plans for screening.
6. Prior to Town approval and permitting, the developer shall notify all abutters in writing, by mail, of the date of the Planning Commission review meeting, as determined through direct communication with the Commission. Notification letters shall be postmarked no less than two weeks prior to the review meeting. The developer shall provide to all abutters a draft plan for the system configuration showing all significant alterations to land and vegetation, equipment location and type, and a site plan showing equipment location. At the same time, a copy shall be provided to the Commission.
7. The owner of the system shall address reasonable concerns on the part of the abutters. The Planning Commission shall be the sole arbiter in resolving any such dispute.
8. Solar facilities >150 kW shall not be sited in locations that adversely impact any of the following scenic attributes: views from public roadways across open fields when those fields are deemed to form an important foreground; ridgelines or hillsides that can be seen from public vantage points and thus form a natural backdrop for multiple landscapes; and scenes that include important contrasting elements such as water.
9. Decommissioning – At the end of its useful life, the original developer, or subsequent assignee of installation’s proprietorship, shall decommission entire solar facility installation. The decommissioning process shall remove all structures associated with the solar array installation, not storing materials on the property; dispose of panels and other materials in an environmentally sound manner; and return the land to its original state.

Exceptions

Exceptions to the Danville siting restrictions for solar generation systems >150 kW may potentially be made at the discretion of the Planning Commission to support the siting of commercial energy development on working farms. The Town supports integration of on-farm solar generation into active agricultural uses that can help farms reduce expense, generate extra income, and remain viable. The Town supports siting solar on existing farms in a manner that does not degrade soil or water quality.

Recommended Actions (Policies, Tasks, Programs), as appropriate and applicable to their roles, by the Town, its departments, its residents, and its School District:

- in the upcoming revision of the Zoning Laws, adopt a permitting requirement for construction of all PV systems, including Site Review.
- develop a proposal for a new solar facility intended to be operated using Vermont’s Group Net Metering program; Community solar can make inexpensive green electricity available to populations historically less likely to partake, such as renters, landlords, and shorter-term homeowners because the benefits can follow the account holder from one dwelling to another, so long as they continue to reside within the utility’s service area.
- explore feasible ways to make electricity affordable to lower income residents.
- provide information about Efficiency Vermont as well as federal incentive programs, and about builders who are certified in delivering efficiency certification programs such as Energy Star, LEED, PHIUS Passive House Certification, and others, as part of permits for new construction.
- provide information to residents about ridesharing; and

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- establish public charging EV stations in the village. These are available through the Electric Vehicle Supply Equipment Grants (available to designated Village Centers.)

Preferred Site (Vermont PUC Rule 5.103)

“Preferred Site” means one of the following:

1. A new or existing structure whose primary use is not the generation of electricity or providing support for the placement of equipment that generates electricity;
2. A parking lot canopy over a paved parking lot, provided that the location remains in use as a parking lot;
3. A tract previously developed for a use other than siting a plant on which a structure or impervious surface was lawfully in existence and use prior to July 1 of the year preceding the year in which an application for a certificate of public good under this Rule is filed. To qualify under this subdivision (3), the limits of disturbance of a proposed net-metering system must include either the existing structure or impervious surface and may not include any headwaters, streams, shorelines, floodways, rare and irreplaceable natural areas, necessary wildlife habitat, wetlands, endangered species, productive forestlands, or primary agricultural soils, all of which are as defined in 10 V.S.A. chapter 151;
4. Land certified by the Secretary of Natural Resources to be a brownfield site as defined under 10 V.S.A. § 6642;
5. A sanitary landfill as defined in 10 V.S.A. § 6602, provided that the Secretary of Natural Resources certifies that the land constitutes such a landfill and is suitable for the development of the plant;
6. The disturbed portion of a lawful gravel pit, quarry, or similar site for the extraction of a mineral resource, provided that all activities pertaining to site reclamation required by applicable law or permit condition are completed prior to the installation of the plant;
7. A specific location designated in a duly adopted municipal plan under 24 V.S.A. chapter 117 for the siting of a renewable energy plant or specific type or size of renewable energy plant, provided that the plant meets the siting criteria recommended in the plan for the location; or a specific location that is identified in a joint letter of support from the municipal legislative body and municipal and regional planning commissions in the community where the net-metering system will be located.
8. A site listed on the National Priorities List (NPL) established under the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. chapter 103, if the U.S. Environmental Protection Agency or the Agency of Natural Resources confirms that the site is listed on the NPL, and further provided that the Applicant demonstrates as part of its CPG application that:
 - (a) development of the plant on the site will not compromise or interfere with remedial action on the site; and
 - (b) the site is suitable for development of the plant.
9. On the same parcel as, or directly adjacent to, a customer that has been allocated more than 50 percent of the net-metering system’s electrical output. The allocation to the host customer may not be less than 50 percent during each of the first 10 years of the net-metering system’s operation.