

**Weathersfield Planning Commission**  
**Amendment to the Weathersfield Town Plan**

**8. ENERGY**

**8.1 Introduction**

We all use energy in many forms to conduct our daily lives. That energy may come from local sources or be imported from outside the town. Either source may be renewable or non-renewable. Renewable energy comes from sources that are naturally occurring, naturally replenished, or are a byproduct of an ongoing activity and include biomass (wood, corn, grasses, and vegetable oil), the sun (solar), wind, the earth (geothermal), water (hydro), or manure (methane digesters - “cow power”). Non-renewable energy is produced from sources that cannot be renewed by human activity or within the human time scale. These include oil, natural gas, uranium, and coal.

Weathersfield is heavily dependent upon imported, non-renewable sources to meet its energy needs. This chapter provides an analysis of our energy resources and needs, as well as energy scarcity, conservation, costs, and problems in our community.

8.1.1 Community: The primary energy problems in Weathersfield are less efficient older homes and dependence on energy from outside the Town. All new or renovated buildings that are heated or cooled are subject to the Vermont Residential Building Energy Standards or Vermont Commercial Building Energy Standards.

Government: To provide a complete or accurate analysis of Town energy costs, the town government must establish a baseline of energy costs from municipal buildings, vehicles, and operations and diligently maintain the database to determine where energy costs may be stabilized or reduced.

8.1.2 This plan seeks to:

- Help the town identify ways to conserve energy.
- Encourage renewable or lower-emission energy sources for electricity, heat, and transportation.
- Encourage a pattern of development that likely results in the conservation of energy.
- Encourage development of appropriately scaled renewable energy resources.
- Reduce greenhouse gas emissions.
- Reduce transportation energy demand and single-occupant vehicle use.

## **8.2 Non-Renewable Energy Usage in Weathersfield**

- 8.2.1 Weathersfield does not have any local sources of non-renewable energy. The scarcity or abundance of non-renewable sources is entirely dependent on factors beyond the town.
- 8.2.2 Fuel oil and propane for home heating, cooking, and hot water are delivered to Weathersfield residents from commercial sources outside the town. The only reserves for home heating fuel in the town are the storage tanks on municipal and private properties.
- 8.2.3 Transportation is fueled primarily with gasoline or diesel fuel that is likewise imported to the town by various distributors in the area. The only storage facilities in town for any of these energy resources are the storage tanks at the gas stations in town, the storage tanks at the Town Highway Garage, and some at commercial and residential locations.
- 8.2.4 Electricity is brought to the majority of Weathersfield homes and businesses via the “grid.” The electricity traveling in the grid is produced from both renewable and non-renewable sources. The town is crisscrossed by numerous distribution and transmission lines belonging to both Vermont Electric Power Company (VELCO) and Green Mountain Power (GMP). The substation in Ascutney was upgraded to a newer design in 2013 that will be more reliable than the previous design.
- 8.2.5 Weathersfield residents, like many Vermonters, are highly dependent on non-renewable energy, although each year residents and business owners invest in more renewable systems. Many are encouraged to do so with existing incentives through Efficiency Vermont or Green Mountain Power. Additional incentives are needed to encourage more residents to invest in energy efficiency improvements and renewable energy systems, especially for retirees and lower-income residents.

## **8.3 Renewable Energy Usage in Weathersfield**

- 8.3.1 There are several ways that Weathersfield residents and the Town government could reduce their non-renewable, imported energy dependencies through the development and use of locally produced, renewable energy fuels. All development of renewable energy in Weathersfield should be consistent with land use, conservation, and other goals described elsewhere in this plan. Weathersfield has a variety of local sources of renewable energy. The potential of renewable energy at each specific site will depend on site conditions and other environmental factors, such as droughts, which may limit micro-hydro opportunities.

- 8.3.2 Solar: Solar energy may be used to generate electricity or thermal heat. It may be stored on-site using batteries or sent to the grid via net-metering. Solar hot water does not require batteries or net-metering. There are an increasing number of net-metering sites in Weathersfield.
- 8.3.3 Wind: State wind resource data was analyzed, and it shows only limited potential for utility-scale (70 meters or 230 feet tall at the hub) or commercial-scale (50 meters or 164 feet tall) wind power in town. Residential-scale (30 meters or 98 feet tall) wind appears to be the most reasonable option given prevailing wind speeds, land ownership, and proximity to three phase power lines.
- 8.3.4 Hydro: There are three potential sites in Weathersfield for hydroelectric power: Stoughton Pond, Springfield Reservoir, and the Soapstone Dam on the Black River. The Vermont Energy Atlas estimates they have the potential to produce a total of 207 kW of power.

With the abundance of streams in Weathersfield, micro hydro-power (run-of-river) is another alternative that should be considered. Micro hydro-power generation requires as little as two gallons per minute of stream flow and does not require the usual reservoir associated with standard hydro-power projects. Peak power production is in the winter when electricity demands are high. Installation costs and maintenance fees are relatively small in comparison to other technologies.

- 8.3.5 Biomass: The term “biomass” includes bio-diesel, perennial grasses, methane digesters, waste to energy, firewood, and woody biomass.

8.3.5.1 *Bio-diesel*: Bio-diesel is a type of fuel made from vegetable oils, animal fats, or waste cooking oil. It may be used in its purest form or combined with petroleum diesel. It is biodegradable, nontoxic, far less polluting than fossil fuels and may be used in ordinary diesel engines with little or no modification. Bio-diesel may also be produced from waste cooking oil. There are several restaurants in Weathersfield that could provide small amounts of waste cooking oil for conversion to bio-diesel. Any biodiesel use in Weathersfield is by private users; no figures are readily available.

8.3.5.2 *Vegetable oils*: Vegetable oils are derived from oilseed crops such as mustard, rapeseed, or sunflowers. There are no oilseed crops being produced in Weathersfield nor are there the facilities within a reasonable distance to convert the seeds to bio-diesel.

8.3.5.3 *Woody Biomass*: Wood is used in a variety of forms to provide heat or to generate electricity. In the simplest form, wood from trees is split and used for firewood for wood-burning stoves and furnaces in home heating. The Weathersfield School uses wood chips to heat the school. Wood pellets are also a popular way to provide home heating.

Studies show that burning woody biomass to generate heat is far more efficient than burning it to generate electricity. Additional challenges to using woody biomass for energy production on a large scale are truck traffic (large logging trucks), waste heat (if the biomass is used for electricity production), and carbon dioxide emissions.

8.3.5.4 *Perennial Grasses:* There are problems associated with the burning of perennial grasses that must be taken into consideration when considering this fuel source. No perennial grasses are currently being grown in Weathersfield for energy use.

8.3.5.5 *Methane Digesters: With Cow Power,* according to Green Mountain Power (GMP), “one cow can produce about 30 gallons of manure a day which, in turn, can generate enough electricity to power two 100-watt incandescent light bulbs for 24 hours. The waste from 4-6 cows will generate about 1 kw of electricity” (VT Renewable Energy Atlas). Weathersfield has a number of various types of livestock in town, but no working dairy farms. There are currently no methane digesters in town.

8.3.6 Geothermal: Geothermal, or ground source heating, is the direct use of energy absorbed from the sun at the earth’s surface and supplemented from the earth’s core. Modern geothermal heating and cooling systems rely on the stable temperature of the earth (55 degrees Fahrenheit), or groundwater in a well, along with an electric heat pump.

## **8.4 Energy Concerns**

8.4.1 Problems could arise in the future as a result of energy projects, such as funding for decommissioning of solar projects. The Town should promote future energy projects, but also carefully review the current and potential impacts of energy projects on costs, aesthetics, natural resources, and the environment.

8.4.2 There are specific areas where the Town’s residents would not like to see overhead transmission lines or energy projects (other than roof-mounted solar) that have an undue adverse impact on important scenic resources. They are listed in the Scenic Resources section in the Town Plan.

## 8.5 Energy Goals

8.5.1 To make efficient use of energy the Town seeks to:

- Provide for the development of renewable energy resources.
- Encourage weatherization.
- Reduce emissions of greenhouse gases.
- Prioritize energy efficient forms of transportation.
- Promote land use policies that are likely to result in energy conservation.

## 8.6 Energy Policies

8.6.1 Energy audits should be conducted prior to undertaking major improvements to Town-owned buildings, and the Town should invest in priority energy efficiency upgrades as called for in energy audits.

8.6.2 New Town-owned buildings should be designed and oriented to take advantage of heating from the sun in the cold season and should utilize landscaping techniques to provide shading in the warm season. New Town-owned buildings should utilize the “Energy Star” building performance rating system.

8.6.3 Changes in zoning regulations and the district map should consider reducing vehicular dependence by encouraging new housing, businesses, and other amenities in centralized areas around the villages and improving the walkability of these areas, which may or may not include sidewalks.

8.6.4 The Town should support renewable energy development, including **properly sited**, well-screened solar facilities, rooftop solar, methane digesters and micro-hydro.

## 8.7 Vermont Public Utility Commission Review

8.7.1 **30 V.S.A. § 248:** Often referred to as Section 248, 30 V.S.A. § 248 is a Vermont State Law that requires state-level review by the Vermont Public Utility Commission (PUC) for the approval of the preparation and construction of:

- Electric transmission facilities (transmission lines, substations).
- Electric generation facilities (solar or wind power projects, power plants).
- Gas pipeline and associated infrastructure.

Section 248 approval eliminates the need for an Act 250 permit.

8.7.2 **Review Process:** When an application for such a project is submitted to the PUC the municipal and regional planning commissions and municipal legislative bodies receive a 45-day Advanced Notice of the PUC review. Within this 45-day period the Town may hold a hearing, make recommendations on the project, and submit them

to the PUC to be used in their review. Once the 45-day period has passed, the applicant will submit a petition to the PUC to initiate the review process. A series of hearings, site visits and other proceedings will follow in which the Town, the public, and formal parties can participate. Eventually, the PUC will propose a final decision and the various parties will have an opportunity to comment. The PUC will then issue a Final Order denying or approving the project. This Final Order is referred to as a Certificate of Public Good (CPG).

## **8.8 General Standards**

### **8.8.1 Solar Generation Facility Standards**

The Town of Weathersfield is highly supportive of the installation of smaller-scale solar facilities, especially Cases of Limited Size and Scope as allowed under 30 V.S.A. 248(j) and Net-Metering Systems as allowed under 30 V.S.A. 8010. The Town has concerns about larger scale systems and their potential negative impacts on natural, scenic, and historic resources which are a primary draw of new residents and visitors to the Town. As such, all solar and other renewable electricity facilities shall be subject to the following siting standards to minimize the negative impact on the Town.

### **8.8.2 Standards for Wind Generation Facilities**

For the purposes of this Plan, wind generation facilities include the following different classifications:

- Utility-scale wind involves towers typically 70 meters or 230 feet tall at the hub;
- Commercial- or Community-scale wind towers are generally 50 meters or 164 feet tall; and
- Residential-scale towers are usually no taller than 30 meters or 98 feet at the hub.

Weathersfield has limited potential for utility-scale wind energy development, as areas with sufficient access to consistent wind are generally residential in size and more than a mile away from three-phase power lines. The following standards apply to wind generation facilities in Weathersfield:

- a) Development of the identified prime wind sites (e.g. Weathersfield Center, Butterfield Hill, Pikes Peak) is constrained by their proximity to established residences and/or scenic, historic or natural resources identified in the Town Plan and/or Biological Natural Areas of Weathersfield and is prohibited. The secondary wind sites (e.g. Skyline Drive, Hawks Mountain, Little Ascutney, Pierson Peak, Mount Ascutney) are largely in scenic or natural resource areas also specifically identified in the Town Plan and/or Biological Natural Areas of Weathersfield. Development in these areas would have a profoundly negative impact on critical viewsheds throughout the community, as the natural profile of the mountain forms an iconic backdrop from both in-town and rural valley locations. Because there are no other locations in

Weathersfield that have access to sufficient wind resources and necessary transmission infrastructure, and are free from significant environmental constraints, no utility-scale (100 KW capacity or greater) wind energy facilities shall be located in the town.

- b) Projects, including residential-scale turbines (generally less than 10 KW) and commercial- or community-scale turbines (up to 100 KW), installed at farms, residences, or businesses, are allowed as long as noise from the turbines does not adversely affect neighboring residential properties and as long as they are not prominently visible from any town-identified historic districts or scenic resources.
- c) Commercial- or community-scale wind generation facilities are subject to the Renewable Electricity Siting Standards.

## 8.9 Siting Standards

### 8.9.1 Standards for all Electric Generation, Storage and Transmission Facilities

The following standards are to be considered by the Town of Weathersfield and the Public Utility Commission (Section 248 review) when developing any new or upgraded facilities that generate, store, or transmit electricity, and when updating Weathersfield's Zoning Bylaws to address the development of energy facilities that are subject to local regulation.

- a) **Plan Conformance:** New facilities and proposed system upgrades shall be consistent with the Weathersfield Town Plan, the Mount Ascutney Regional Plan, the Vermont Comprehensive Energy Plan, the Vermont Long-Range Transmission Plan, and utilities Integrated Resource Planning (IRP).
- b) **Benefits:** A demonstrated statewide public need that outweighs adverse impacts to local residents and resources must be documented for municipal support of new facilities located within Weathersfield. Facility development must benefit local and State residents, businesses, and property owners in direct proportion to the adverse impacts of the proposed development on local and state residents, businesses, and property owners.
- c) **Impacts:** New facilities must be evaluated for consistency with community and regional development objectives and shall avoid undue adverse impacts to significant cultural, natural, and scenic resources and aesthetic values identified by the community in the Weathersfield Town Plan. When evaluating the impacts of a proposed facility under the criteria set forth in this Town Plan, the cumulative impact of existing facilities, approved pending facilities, and the proposed facility shall be considered. A proposed facility that, by itself, may not have an adverse impact may be deemed to have an adverse impact when considered in conjunction with existing facilities and previously approved facilities that are awaiting construction.

- d) **Decommissioning:** All PUC issued Certificates of Public Good shall specify conditions for system decommissioning, including required sureties (bonds) for facility removal and site restoration to a safe, useful, and environmentally stable condition. All hazardous materials and all structures, including foundations, pads, and accessory structures must be removed from the site and safely disposed of in accordance with regulations and best practices current at the time of decommissioning.

#### 8.9.2 **Siting Standards for Renewable Electricity Facilities**

The Town of Weathersfield has developed standards for the development of renewable electricity facilities for reference and use by facility developers and local property owners and for consideration in Section 248 proceedings (30 VSA §248). These standards are set forth below.

Weathersfield supports development of renewable electricity generation facilities consistent with the policies and guidelines set forth in this plan. It recognizes that financial considerations require projects to be located in close proximity to electric power lines capable of distributing the load proposed to be generated and to have convenient access from major transportation networks for construction. However, the Town desires to maintain the open landscape and scenic views important to Weathersfield's sense of place, tourism economy, and rural cultural aesthetic. Not all facilities proposed for the generation of electricity can meet this standard. Projects must meet the following criteria in order to be supported by this Town Plan:

- a) **Siting Requirements:** New facilities shall be sited in locations that do not adversely impact the community's traditional and planned patterns of growth of compact village centers surrounded by a rural countryside, including working farms and forest land. Facilities shall, therefore, not be sited in locations that adversely impact scenic views, roads, or other areas identified in the Scenic Resources Section of this Plan, nor shall facilities be sited in locations that adversely impact any of the following scenic attributes identified in the Plan including: views across open fields, especially when those fields form an important foreground; prominent ridgelines or hillsides that can be seen from many public vantage points and thus form a natural backdrop for many landscapes; historic buildings and districts, gateways to historic districts; and, scenes that include important contrasting elements such as water. The impact on prime and statewide agricultural soils shall be minimized during project design.
- b) **Preferred Areas:** The following areas are identified as preferred areas for facilities, provided that they meet the Town's Preferred Siting Checklist as determined by the Planning Commission:



- Roofs
  - Parking lot canopies
  - Areas in close proximity to existing large scale, commercial or industrial buildings.
  - Areas in close proximity to existing hedgerows or other topographical features that naturally screen the entire proposed array.
  - Brownfields
  - Previously disturbed areas, such as gravel pits, closed landfills, or former quarries.
- c) **Prohibited (Exclusion) Areas:** Renewable energy facilities that do not meet the siting requirements set forth above, shall not be supported by the Town, and shall be excluded from (prohibited within), the following locations:
- Floodways shown on Flood Insurance Rate Maps (FIRMs).
  - Class I or II wetlands.
  - Riparian buffers and setbacks as defined in Weathersfield's Zoning Bylaws.
  - Rare, threatened, or endangered species habitats or communities as mapped or identified through site investigation.
  - Core habitat areas, migratory routes and travel corridors.
  - Elevations at or above 1,500 feet.
  - Steep slopes (>25%).
  - Habitat blocks of 500 acres or more.
  - Areas in proximity to, and impacting, a significant viewshed identified in the Scenic Resources sections of the Town Plan (see Section 5.3).
  - Areas containing historical or cultural resources, including state or federally designated historic districts, sites and structures, and locally significant cultural resources identified in the municipal plan.
- Prohibited impacts to historical and cultural resources include:
- Removal or demolition;
  - Physical or structural damage, significant visual intrusion, or interference with the use;
  - Significant intrusion into a historic district or a historically significant landscape;
  - Significant visual intrusion into a hillside that serves as a backdrop to a historic site or structure;
  - Creating a focal point that would disrupt or distract from elements of a historic landscape;
  - Impairing a vista or viewshed from a historic resource where the vista or viewshed is a significant component of the character and use of the historic resource;

- Visually overwhelming a historic setting, such as by being dramatically out of scale;
- Isolating a historic resource from its historic setting, or introducing incongruous or incompatible uses, or new visual, audible, or atmospheric elements.

d) **Mass and Scale:** Except for solar projects located on preferred sites, renewable electricity facilities larger than 5 acres, individually or cumulatively, that cannot be adequately screened or mitigated to blend into the municipality's landscape are, therefore, explicitly prohibited.

## 8.10 Energy Recommendations

8.10.1 Broadly, cost savings may be realized from and the Town should consider:

- Weatherization of buildings
- Energy efficient lighting
- Heating and air conditioning changes to more efficient mechanisms, such as air-source cold climate heat pumps.
- Reduction in use of heating and cooling
- Fuel-efficient vehicles
- Analysis of town vehicle operations

8.10.2 Consider adopting a freestanding solar screening bylaw under 24 V.S.A. §4414 (15).

8.10.3 The Town of Weathersfield may participate in the Public Utility Commission's review of new and expanded generation facilities to ensure that local energy, resource conservation, and development objectives are identified and considered in proposed utility development. This may include joint participation and collaboration with other affected municipalities and the Mount Ascutney Regional Commission for projects that may have significant regional impact. It is acknowledged that the PUC's primary focus is on administering state public policy and regulating actions that are directed at ensuring that utility services promote the general good of the state.

8.10.4 The Planning Commission, in consultation with the Select Board, should develop guidelines to direct local participation in Section 248 proceedings related to solar facilities located in Weathersfield or in neighboring communities which may affect the town. The guidelines should reflect levels of participation or formal intervention in relation to the type, location, scale, operation, and magnitude of a proposed project, and its potential benefits, detriments to, and impacts on the community.

8.10.5 Inform residents about Efficiency Excellence Network (EEN) contractors by providing links to EEN information through a municipal website or through other means.

- 8.10.6 Improve walkability of the villages and participate in the Safe Routes to School program to help reduce reliance on vehicle transport.
- 8.10.7 Inform residents and business owners about existing energy efficiency programs and incentives, especially weatherization services and financing options for low-to-moderate income household.
- 8.10.8 Appoint an Energy Coordinator or establish an Energy Committee to help implement recommendations in this Chapter.
- 8.10.9 Hold an information forum such as Button Up, and invite residents to speak about the energy improvements that they have made to their homes. Provide data that demonstrates why these improvements make sense for residents.
- 8.10.10 Assess the life cycle costs of potential energy improvements during design and construction planning. For example, investment in a new, efficient heating system may be more expensive up front, but more economical to operate over time.
- 8.10.11 Promote the use of cold climate heat pumps (aka air-source heat pumps, mini-splits or ductless heat pumps) as a highly efficient source of heat and air conditioning with education/presentations in coordination with the EEU's/electric utilities. These systems are a good option to retrofit existing houses, and can be used to supplement the existing heating system. They also provide air conditioning during the warmer months. Ground source (geothermal) heat pumps may also be suitable option. Heat pump water heaters are also an energy efficient option.
- 8.10.12 Promote the Go Vermont webpage, which provides rideshare, vanpool, public transit and park-and-ride options.
- 8.10.13 Seek grants and partnerships to fund the installation of electric vehicle charging infrastructure at the park and ride lot, school, or other town-owned properties.
- 8.10.14 Coordinate with MARC and Local Motion to promote the planned electric-bicycle lending library to help promote e-bikes as a viable form of travel.
- 8.10.15 Continue to financially support The Moover public transportation services, such as the commuter bus that serves the I-91 Exit 8 park and ride lot, to provide access to jobs for residents and encourage less single-occupant vehicle use.
- 8.10.16 The Town should work with electric and utility contractors to assist homeowners with switching to alternative heating systems such as wood pellet stove and air source heat pumps. Woody biomass can be sourced locally.

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- 8.10.17 If renewable energy systems are not practicable, encourage homeowners to replace old furnaces or boilers with a high-efficiency model.
- 8.10.18 Promote wood stove change-out programs that take older non-EPA certified stoves out of service and replace them with more efficient and lower emitting cordwood or pellet stove.

WEATHERSFIELD TOWN PLAN

Dated at Weathersfield, Windsor County, Vermont this 11th day of December, 2023.

\_\_\_\_\_  
Joseph Bublat, Chairperson

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Brian Bosenberg, Vice-Chairperson

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Howard Beach, Board Clerk

\_\_\_\_\_  
Mike Todd, Board Member

\_\_\_\_\_  
David (Hank) Ainley, Board Member

ATTEST:

Received at the Town of Weathersfield  
this \_\_\_\_ day of March, 2023.

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Flora Ann Dango, Town Clerk