
Energy

Goal:

- > To encourage the efficient use of energy in Weston and reduce emissions of greenhouse gases.
- > To provide for the development of renewable energy sources.

Energy Use and Sources:

Energy is a scarce resource that should be considered in any comprehensive land use planning process. Homes and businesses use a variety of energy sources for heating: fuel oil, gas, wood, wood pellets, solar, electricity and coal. Data from the 2018-2022 American Community Survey shows that approximately 60% of Weston households use fuel oil for heating, 23% gas, 9% wood, 4% electricity, and 4% solar.

With a heating season that generally lasts seven months, it is evident that home and business energy consumption is a significant issue for everyone in the area. Based on the 2023 Vermont Energy Burden Report, Weston residents spend an average of \$2,312 annually on heating costs, which is slightly less than the State average of \$2,447. In addition, Weston residents spend an average of \$1,436 on electricity and \$3,323 on transportation annually. Energy costs are relatively inelastic compared to non-essential items and households often have less ability to reduce spending on heating fuel, electricity, and transportation when costs increase.

Energy Conservation:

Substantial economic savings can be realized through energy conservation. In addition, a reduction in energy usage also reduces the production of environmental pollutants and greenhouse gases emissions. Energy conservation can be facilitated through effective land use planning, building standards and design, and improved transportation efficiency.

As a rural community, development densities in Weston should be relatively low and new development should be along existing roads, thus limiting the need for costly and energy inefficient scattered development. There is also an opportunity to encourage more compact settlement patterns around the village center. Permitting home occupations and supporting broadband and cellular service improvements also supports the objective of energy conservation by reducing the need for some residents to commute to work.

The siting, design and construction of buildings strongly influences the amount of energy required for heating and cooling, as well as the amount of electricity needed for lighting. Proper subdivision design, building orientation, construction and landscaping provide opportunities for passive solar space and domestic hot water heating, natural lighting and photovoltaic electricity production. Additional energy savings can be realized by retrofitting existing building with insulation, weather-stripping, energy efficient windows, LED lights and efficient appliances. Efficiency Vermont provides residents and businesses with energy assessments that identify cost-effective projects to improve efficiency and offers low-interest loans and rebates to help pay for improvements.

The Town can lead by example by considering energy conservation and efficiency when it makes decisions on capital expenditures for town facilities, roads, and other public infrastructure. The Town's Energy Committee is currently evaluating a heat pump system for the Town Office and assessing options for a community solar project in Weston. These efforts are being supported in part by funding from the State Municipal Energy Resiliency Program. Developing sidewalks and crosswalks in the village center would improve pedestrian safety and reduce the need for driving to access goods and services within the village area.

Energy Resiliency:

In recent years, Weston has experienced a higher frequency of power outages, most often resulting from high winds, ice, or heavy wet snow. The goal of energy resiliency is to create a more reliable and resilient energy system that can withstand these types of severe weather impacts and recover more quickly. Green Mountain Power is taking a number of steps to improve the resiliency of its power grid. One example is the Resiliency Zone program that creates community microgrids with backup battery power to

parts of a town coupled with local renewable power generation. This program will help keep power on for homes and businesses when the electrical grid is impacted by severe weather. Currently, Green Mountain Power has Resilience Zone projects underway in Brattleboro and Grafton. The Town should continue to communicate with Green Mountain Power about the opportunity for a Resilience Zone project in Weston.

Renewable Energy:

The Vermont Community Energy Dashboard shows 28 solar installations in Weston with a total generating capacity of 275 kW. All 28 installations are on residential properties and generally have a capacity of 15kW or less. The Town can help support small-scale renewable energy installations on residential and commercial properties by ensuring zoning bylaws are not overly restrictive while ensuring that siting, and design, and screening standards are required to mitigate potential impacts. Homeowners can also take advantage of incentives to lower the cost of installation and recoup their investment, such as the federal solar tax credit, net metering, and State property tax exemption.

Utility scale renewable facilities have a generating capacity of more than 1 mW and require a large amount of land. On average, 8 acres of land are needed per 1 mW of solar and 3 to 4 acres per 1 mW of wind, but it is recommended at least 25 acres is identified for wind projects. These targets are taken from guidance for municipal planning from the Vermont Department of Public Service. Access to three-phase power is also needed for utility scale renewable projects. Three-phase power is available on the transmission line that runs parallel to Route 100 from the Londonderry town line to the village and along Chester Mountain Road.

Renewable energy projects are evaluated using the statutory criteria in Section 248, which includes the need for the facility, the economic benefit, reliability impacts, and consistency with the State Energy Plan. The process also considers many of the criteria considered under the State's Act 250 land use and development law. Small-scale and large-scale renewable energy projects connected to the grid require approval by the Public Utilities Commission, although the permitting process for larger projects is significantly more extensive. The 2022 Vermont Comprehensive Energy Plan includes the goal that the State meets 25% of its energy needs from renewable sources by 2025, 45% by 2035, and 90% by 2050.

The Vermont Public Service Department has identified Prime Solar ~~and Wind~~ Energy Resource areas based on lands being generally adequate for solar ~~or wind~~ and not having any “known” or “possible” natural resource constraints. In Weston, Prime Solar Energy Resource Areas are generally located in the West River valley and in the southeast corner of town along Piper Hill, Dale, and Old Tavern Roads. Weston has limited opportunities for large-scale wind generation projects. Many of the ridgelines in town are located on federal or state forestland. Markham Mountain is shown as a Prime Wind Energy Source area based on mapping by the Public Service Department, but this area has significant topography constraints and sensitive natural areas, are located primarily in the area of Markham Mountain.

While the Town is supportive of utility-scale renewable energy facilities, it is also critical that these projects not have a detrimental impact on natural, scenic, cultural, and historical resources, or the rural character of the community. For this reason, these projects are not appropriate in areas designated as Conservation District, Resource District, or Village District. Areas identified as Prime Solar or Wind Energy Resource that do not conflict with the constraints identified in the Town Plan may be suitable locations if proper design, screening, and siting standards are met.

Energy Policies:

1. Ensure that utilities have demonstrated, using all reasonable measures, that they are maximizing efficiencies and assisting customers in energy conservation before constructing additional generation and transmission facilities.
2. Encourage all new development to follow the energy conservation guidelines developed by the Vermont Department of Public Service for Act 250 permits.
3. Ensure that the state monitors the effects of restructuring electric utilities and protects the interests of small rural communities and their residents.
4. Require the use of existing utility line corridors for the expansion of existing electric transmission lines or the construction of new electric transmission lines.

5. Encourage the layout of streets, lots and buildings be oriented to the south where practicable in order to take advantage of natural light and heat. New and rehabilitated buildings shall be designed to maximize solar gain.
6. Encourage that new construction take into consideration shelter from the winter winds and the use of trees shall be encouraged for summer shade.
7. Protect buildings that are using solar energy from interference cast by new structures.
8. Encourage the use of clean and renewable energy sources for heating.
9. Encourage Town residents to use state and local weatherization and energy efficiency programs that identify areas of heat loss in buildings and provide solutions and financing assistance.
10. Require the full cost of energy be considered in any new construction or rehabilitation.
11. Encourage landlords to adequately insulate multi-family dwellings, especially those in which tenants are responsible for their own heating bills.
12. Encourage the Town to make every effort to minimize its own energy consumption by using appropriate energy conservation and efficiency practices and evaluate the potential for renewable energy production at Town properties.
13. Support programs that are designed to increase public awareness of energy issues and to encourage homeowners to conserve energy.
14. Require that all major development proposals fully and effectively address energy conservation and efficiency concerns.
15. Require that all land use planning be consistent with the objective of energy efficiency.
16. Support alternative modes of transportation that require less energy consumption, including walking, biking, and public transit.
17. Protect all renewable energy resources.
18. Support Green Mountain Power's efforts to improve energy resiliency, including completing tree maintenance within utility line corridors, burying utility lines, and implementing local Resiliency Zones.
19. Require that the development of utility-scale renewable energy facilities protect natural, scenic, cultural, and historical resources and maintain the rural character of the town. Utility-scale renewable energy facilities are not appropriate in areas designated as Conservation District, Resource District, or Village District.

Recommendation for Action:

1. Support the Energy Committee's efforts to study renewable energy resources.
2. Incorporate weatherization and energy efficiency projects for municipal facilities when completing capital improvement projects.
- ~~3.~~ Review and update zoning bylaws to ensure small-scale renewable energy resources are not unreasonably constrained on residential and commercial properties and ensure appropriate design standards to mitigate potential impacts on neighboring properties.
- ~~3.4.~~ Update zoning bylaws to include standards for large-scale renewable energy facilities that mitigate potential impacts on neighboring properties and natural, scenic, and historic resources

| and provide for design, screening, and siting standards.