

TOWN OF RUTLAND
SOLAR FACILITY SITING STANDARDS

The contribution of solar energy to Rutland Town's total energy supply is growing. More structures are being sited, oriented and designed to incorporate passive solar construction techniques for space heating and natural lighting. Passive solar building design and solar thermal heating systems can significantly increase energy efficiencies and reduce costs. Until recently, the upfront costs of solar photovoltaic (PV) systems were generally too costly for the average homeowner, but emerging technologies and state, federal and utility incentives have made grid connected net-metered PV systems more affordable.

As of September 1, 2013, the Public Service Board had issued certificates of public good for net-metered solar PV installations in the Town of Rutland, ranging in capacity from 10.659 kW to 800 kW, with a total reported generating capacity of 1017.936 kW.

Technological advances, including the incorporation of photovoltaic components in roofing and siding materials, may make solar power an even more viable source of electricity in the near future.

An initial GIS analysis done for the Vermont Renewable Energy Atlas identified approximately 1,500 building sites in the Town of Rutland that are potentially suitable for roof-mounted solar arrays and 403 acres that may be suitable for ground-mount solar (Vermont Renewable Energy Access).

The scale and siting of some proposed and/or existing solar installations in Rutland Town and other Vermont communities, have raised concerns about the impacts that such facilities can have on the town's residential neighborhoods and its scenic, natural, agricultural, and historic resources.

In seeking to support and meet the State of Vermont's renewable energy goals, Rutland Town, through adoption of the preceding Community Standards, desires to contribute its proportional share of this effort, but in any case, not to exceed that percentage contribution of total kW represented by Rutland Town's percent of acreage in relation to the total acreage of Rutland County.

Rutland County -- 930 square miles
Rutland Town -- 19.3 square miles or (2.08%)

As a result, the Planning Commission has developed community siting standards, for consideration by the municipality and the Public Service Board, that are intended to avoid and mitigate potential impacts of solar facility development, while promoting new installations in appropriate locations, and achieving proportionality in Rutland Town's contribution to renewable energy solutions.

SOLAR FACILITY SITING & DEVELOPMENT

Electricity generation and transmission systems powered by solar energy are

regulated by the Public Service Board (PSB) under 30 V.S.A. Section 248 (Section 248 PSB proceedings). These include net metered distributed energy installations, as well more commercial, utility-scale generation, transmission and distribution facilities. The Rutland Town Planning Commission, the Rutland Regional Planning Commission, and the Rutland Town Selectboard will receive notice of a Certificate of Public Good (CPG) application for a proposed solar facility in Rutland Town. In determining whether to provide a proposed solar project with a CPG, the PSB must give due consideration to the recommendations of the municipal and regional planning commissions, the Rutland Town Selectboard, and the land conservation measures contained in the Rutland Town Plan.

See 30 V.S.A. §248(b)(1).

The PSB must also determine whether a proposed solar facility will have an undue adverse effect on aesthetics, historic sites, air and water purity, the natural environment, the use of natural resources, and the public health and safety, with due consideration having been given to the criteria specified in 10 V.S.A. § 1424a(d) (outstanding resource waters) and the Act 250 criteria set forth in 10 V.S.A. §6086(a)(1) through (8) and 9(K).

See 30 V.S.A. §248(b)(5).

To determine whether the proposed solar energy facility would have an adverse impact on the considerations set forth identified in

§248(b) (5) above, PSB Rule 5.108(A) requires the PSB to conduct the so-called "Quechee analysis" to assess whether a proposed solar project would have an adverse impact by virtue of being "out of character with its surroundings," and if so, whether the adverse impact qualifies as "undue." Rule 5.108(A). The PSB therefore must consider "the nature of the project's surroundings, the compatibility of the project's design with those surroundings, the suitability of the project's colors and materials with the immediate environment, the visibility of the project, and the impact of the project on open space." Rule 5.108(A)(1).

A solar project's location, size, and visibility, together with the context of the surrounding land uses, will be relevant in the PSB's consideration of whether the proposed project would have an undue adverse impact. Among other things, the Quechee analysis requires the PSB to consider whether the proposed project would violate a "clear written community standard".

Therefore, the effective participation of the Rutland Town in the PSB's review process requires the development of specific community standards in order to ensure that local conservation and development objectives are considered and weighed by the PSB in its review of a CPG application for a solar energy facility. Toward that end, the Rutland Town Planning Commission has developed the following specific community standards for the siting and development of a solar energy facility in Rutland Town.

RUTLAND TOWN COMMUNITY STANDARDS REGARDING ENERGY FACILITIES

Purpose

The purpose of these community standards is to promote the development of

renewable energy resources and energy facilities in Rutland Town, while limiting the

adverse impacts of such development on public health, safety and welfare, the town's historic and planned pattern of development, environmentally sensitive areas, and our most highly-valued natural, cultural and scenic resources – consistent with related development, resource protection and land conservation policies included elsewhere in this plan. These policies should also be considered in undertaking municipal solar energy projects and programs, in enacting or updating the town's bylaws to address renewable energy development, and in the review of new or upgraded energy facilities and systems by the town and in Section 248 PSB proceedings.

General Standards for Energy Projects

: Rutland Town will consider supporting the following types of energy development, in order of priority:

◆ Increased system capacity through state, utility and municipally-supported energy efficiency and conservation programs.

◆ Individual and group net-metered renewable energy projects, community-based projects, and other small-scale distributed renewable energy systems serving individual users, in appropriate, context-sensitive locations.

◆ In-place upgrades of existing facilities, including existing transmission lines, distribution lines and substations as needed to serve the town and region.

◆ New community-scale energy facilities, including new transmission and distribution lines, substations, hydro dams, wind and solar farms, co-generation facilities and biomass plants that are designed to meet the expected needs of Rutland Town.

To the extent physically and functionally feasible, existing utility systems, including transmission lines, distribution lines and substations, shall be upgraded or expanded on site or within existing utility corridors before new facilities or corridors are considered.

Rutland Town will endorse or permit the development and installation of energy facilities that conform to community energy facility development and siting standards through participation in Section 248 PSB proceedings or, where applicable, through local financing and incentive programs and regulations.

Public Health and Safety Standards and Use Classification

: A small net-metered or off-grid solar energy project, including a solar array, system intended solely to serve only an individual residence or business, should be considered an accessory structure allowed in all land use in which structures are allowed by zoning bylaws.

Setbacks

: Except for transmission and distribution lines and utility connections, all energy facilities including substations, commercial, utility and net-metered generation facilities and

accessory structures – must meet minimum setback requirements for the land use

district(s) in which they are located. In addition:

◆ A building-mounted solar panel must meet a town bylaw's minimum setback requirements for the building on which it is mounted. The installation of a net-metered or similar off-grid energy system on a nonconforming structure will not constitute an increase in the degree or amount of nonconformance under town bylaws.

◆ Renewable energy facility setback distances from property lines, or from occupied structures in existence at the time of application, should be increased as necessary to mitigate identified aesthetics, historic sites, air and water purity, the natural environment, the use of natural resources, and the public health and safety, with due consideration having been given to the criteria specified in 10 V.S.A. § 1424a(d) (outstanding resource waters) and the Act 250 criteria set forth in 10 V.S.A. §6086(a)(1) through (8) and 9(K), and nuisances or adverse impacts upon adjoining property owners.

Access

: New energy generation facilities shall be sited in a manner that avoids or, to the greatest extent physically feasible, minimizes the need for new and extended access roads and utility corridors.

◆ Facility access should be provided from existing access roads where physically feasible, and access roads and utility corridors should be shared to minimize site disturbance, resource fragmentation, the creation of additional edge habitat, and the introduction and spread of invasive exotic species.

◆ Identified impacts to public highways from facility construction, operation and maintenance, including highway improvements required to accommodate the facility, shall be mitigated by the developer.

◆ Public access to generation and transmission facilities, including substations, must be restricted as necessary to protect public health and safety.

◆ Noise generated by any energy facility, including wind energy systems, shall not exceed the lesser of (a) 45dB(A) as measured at any property line, or

(b) 5 dB(A) above the ambient sound level, except during a short-term event such as a utility outage or a severe wind storm.

Signs

: Energy generation facilities and structures shall not be used for display or advertising purposes. Signs, except for owner and manufacturer identifications and safety warnings that do not exceed one square foot, are prohibited on all structures.

◆ Substation lighting should be the minimum necessary for site monitoring and security,

should be cast downward, and must not result in light trespass or glare on adjoining properties.

Codes

: Energy generation facilities must comply with all manufacturer specifications, state or industry safety and electric codes, and utility connection requirements.

◆ Documentation of code compliance may be required for facilities subject to review under town bylaws and/or ordinances.

Decommissioning and Abandonment

: Generation facility permits or certificates must include provisions for system abandonment, decommissioning and site restoration including, for larger systems > 100 kW, required sureties for facility removal and site restoration.

Solar Energy Facility Siting Standards

Site Designation and Siting Standards :

◆ Sites planned for or intended to accommodate solar energy facility development, including the location of existing and planned commercial and net-metered generation facilities and utility corridors, are to be shown on site development and subdivision plans reviewed by the town.

◆ Solar energy facilities and accessory structures are to be designed and constructed of materials, colors, and textures that blend into the surrounding natural or built environment to the extent feasible.

◆ The solar energy facility should not extend above the background horizon line.

◆ The solar energy facility should be screened from view through the use of existing topography, structures, vegetation or strategically placed tree, shrub and ground cover plantings that do not block distant views.

◆ Onsite mitigation – e.g., through facility clustering, relocation, buffering and permanent conservation easements – is preferred. Off-site mitigation measures should be required where on-site mitigation is not physically feasible.

Setbacks :

◆ Ground-mounted solar energy facilities with a generation capacity from 0 kW to .5kW shall be located at least 50 feet from any property line and at least 50 feet from any public highway.

◆ Ground-mounted solar energy facilities with a generation capacity from .5 kW to 1 kW shall be located at least 100 feet from any property line and at least 100 feet from any

public highway.

◆Ground-mounted solar energy facilities with a generation capacity from 1 kW to 1.5 kW or more shall be located at least 150 feet from any property line and at least 150 feet from any public highway.

◆Ground-mounted solar energy facilities with a generation capacity from 1.5 kW to 2 or greater kW shall be located at least 200 feet from any property line and at least 200 feet from any public highway.

◆ U.S. Route 4 is designated as a State of Vermont byway.

◆All public highway setbacks shall be measured from the edge of the public highway's right of way.

Upland Exclusion Areas

: All ground-mounted solar energy facilities, including transmission and distribution lines, accessory structures and access roads are specifically prohibited in the Conservation District, above 1000 feet elevation due to undue adverse scenic and environmental impacts of development at such elevations. Any energy development over 1000 feet in elevation shall not result in undue adverse impacts to surface waters, ground water and mapped source protection areas, core forest areas, inventoried wildlife habitat and travel corridors, and mapped scenic resources.

Hazard Areas. With the exception of transmission and distribution lines, ground-mounted solar energy facilities that are not attached to existing or permitted structures shall not be located in:

◆ Special Flood Hazard Areas (SFHAs), including floodways and floodway fringes identified on Flood Insurance Rate Maps (FIRMs) for the town. Any allowed facility shall not be located within these areas must meet minimum National Flood Insurance Program (NFIP) requirements, as reviewed and permitted by the municipality or the state.

◆ Shall not be located in fluvial erosion hazard areas identified on Rutland Town FEMA maps.

◆ Shall not be located on steep slopes, with natural (pre-development) grades in excess of 15%.

Conservation/Open Space Areas:

Ground-mounted solar energy facilities with a generation capacity of greater than 100 kW are to be sited to avoid, where physically feasible, or to otherwise minimize

encroachment and mitigate, the adverse impacts of facility development on:

◆ Significant wildlife habitat, including without limitation, deer wintering areas, core habitat areas, and travel and migratory corridors, as identified from state inventories and data sets, local inventories, and site investigations associated with facility development.

◆ The setback for a ground-mounted solar energy facility from surface waters and wetlands shall be 75 feet.

Agricultural Land/Open Space:

Ground-mounted solar energy facilities with a generation capacity of greater than 100 kW, transmission and distribution lines, accessory structures and access roads are to be located on nonagricultural land or along field edges to avoid fragmentation of, and to minimize and mitigate adverse impacts to agricultural land and open fields.

◆ Ground-mounted solar energy facilities shall not be located on primary agricultural soils as mapped by the USDA Natural Resource Conservation Service in order to preserve such lands for agricultural use.

Forestland

Ground-mounted solar energy facilities, including transmission and distribution lines, accessory structures and access roads shall not be located along existing tree lines, or on otherwise disturbed forestland, as necessary to avoid the fragmentation of, and to minimize and mitigate adverse impacts to productive timber stands and critical forest habitat.

Designated Scenic Areas

◆ Ground-mounted solar energy facilities sited within or as viewed from scenic areas shall not create a significant physical, visual, audible, or historically incongruous or incompatible intrusion into these areas. New facilities, including generation facilities greater than 100 kW substations and transmission lines, are specifically prohibited within or as viewed from these areas unless significant associated impacts can be avoided, for example through facility siting, screening or line burial.

◆ Designated Rutland Town Historic Districts

: Ground-mounted solar energy facilities shall not be located within the Center Rutland Historic District.

(◆) Ground-mounted solar energy facilities shall not be located within 500 of a building designated as a historic building.

◆ The installation of solar energy facilities on historic buildings or on buildings within the Center Rutland Historic District shall be done in accordance with current Secretary of the

Interior's Standards for Rehabilitation.

◆ The historic character of listed properties and structures shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.

(◆)

Ground installations, to the extent functionally feasible, shall be installed in locations that minimize their visibility, such as a side or rear yard, and be screened from view of public rights-of-way and adjoining properties.

◆ Roof or building-mounted systems may be placed on new construction, non-historic buildings and additions.

◆ Solar panels and other roof- or wall-mounted structures shall not be placed on primary building facades, including street-facing walls or roofs, unless there is no other suitable location on the site or structure.

◆ Roof or building-mounted systems on a historic building shall not physically damage the structure, alter its character-defining features, including existing roof lines or dormers, nor obstruct significant architectural features such as overlaying windows or architectural detailing. Attachment points must be minimized and allow for future system removal.

◆ Roof-mounted installations shall be placed below and behind parapet walls and dormers, on rear-facing roofs, where feasible. Panels are to be mounted flush with and at the same angle as the existing roof surface and, on flat roofs, set back from the roof edge to minimize visibility.

GOALS

1. Promote sustainable development in Rutland Town by reinforcing traditional land use patterns and municipal development policies, maximizing energy conservation through weatherization of existing structures and appropriate siting of new development, encouraging appropriate development and use of renewable energy resources, protecting natural and cultural resources.

2. Ensure the long-term availability of safe, reliable and affordable energy supplies to meet the needs of the town and neighboring communities.

3. Reduce municipal energy consumption and costs, community reliance on fossil fuels and foreign oil supplies, and greenhouse gas emissions that contribute to climate change through increased energy and fuel efficiency, energy conservation, and active transition to alternative fuels and renewable energy sources.

4. Sustainably develop Rutland Town's renewable energy resources and local distributed energy generation capacity – including municipal and community generation and supporting smart grid technology – consistent with adopted plan policies and community energy facility and siting standards.

5. Avoid or minimize the adverse impacts of energy development on public health, safety and welfare, the town's historic and planned pattern of development, environmentally sensitive areas, and Rutland Town's most highly valued natural, cultural and scenic resources, consistent with adopted plan policies and community standards for energy development, resource protection and land conservation.

POLICIES

1. Encourage energy efficiency and conservation as primary considerations in new municipal construction projects, equipment purchases and operations. Life cycle costing shall be used by the town in evaluating capital expenditures as appropriate.

2. Encourage, to the extent practical, the use of energy efficient municipal vehicles (e.g., hybrid, bio-diesel).

3. Development should be directed toward designated growth centers and limited in the least accessible areas of the community to minimize the need for new road infrastructure and reliance on the private automobile.

4. Support land use and conservation policies that encourage ongoing forest management to maintain a local source of fuel-wood.

5. Support land use and conservation policies that encourage agricultural uses on prime agricultural soils to increase the supply of and access to locally produced food and reduce the total food transport miles required to sustain Rutland Town families.

6. Encourage small scale and appropriately sited development of renewable energy generation, including, but not necessarily limited to, solar panels, wind turbines and micro-hydro. Guidelines for the development of such resources should minimize:

A. Undue adverse visual impacts on adjacent properties, scenic corridors and Rutland Town viewsheds;

B. Forest fragmentation, environmental degradation, and habitat disruption;

C. Impacts to sediment transport and aquatic organisms' passage in streams; and

D. Their use of land with prime agricultural soil.

7. Prohibit free-standing solar generation structures on forest land above 1000 feet elevation.

8. Facilitate walking and cycling, as alternatives to automobile travel for local trips, by providing adequate path, sidewalk and bike lane infrastructure connecting major commercial and residential developments.

9. The town – in collaboration with the Rutland Regional Planning Commission, neighboring communities and utilities serving the town – will participate in long-

10. planning to ensure that adopted plan policies and community standards are identified and considered in future energy planning and development.
11. Existing and proposed municipal policies, programs and regulations will be evaluated for their effect on municipal energy use, and revised as needed to promote reduced energy consumption, increased energy efficiency, and the sustainable development and use of local renewable energy resources.
12. Energy and fuel efficiency will be primary considerations in municipal construction projects, equipment and vehicle purchases and facility operations.
13. The town will collaborate with the NeighborWorks of Western Vermont, area utilities and service providers to promote community energy literacy, and to provide information about available energy assistance and incentive programs, state energy codes and energy system permitting.
14. The town will participate before the PSB in Section 248 review of new and upgraded energy generation and transmission facilities as necessary to ensure that adopted community standards are given due consideration in proposed energy facility development.
15. New energy facility development within or that may affect Rutland Town must conform to adopted community standards for energy facility siting and design (attached) to receive municipal support or approval.
16. New development shall not exceed the capacity of existing and planned generation, transmission and distribution systems. Development with high energy demand must maximize energy efficiency, incorporate on-site generation, or undergo project phasing in relation to planned system upgrades as necessary to mitigate anticipated service or facility impacts.
17. New development must be designed and constructed to at minimum meet state energy standards, through site and building design, material selection and the use of energy-efficient lighting, heating, venting and air conditioning systems.
18. New development shall be located and designed to reduce transportation energy demand, vehicle miles traveled, fossil fuel consumption and greenhouse gas emissions.
19. The town will work in cooperation with local agencies, emergency service providers, and regional suppliers to develop emergency contingency plans that ensure access to critical energy supplies and measures to reduce nonessential energy consumption in the event of an abrupt energy shortage.
20. The town will consider zoning bylaws and subdivision amendments to include standards for small on-site renewable energy systems that do not require a CPG from the PSB; to promote more energy efficient types and patterns of development;

to protect access to renewable energy (e.g., solar, wind); to provide for the incorporation of net-metered renewable energy systems in subdivision and site plan design, and to provide incentives for energy efficient construction that exceeds minimum

state standards, that maximizes access to renewable energy resources (e.g., solar orientation), or that incorporates individual or group net-metered renewable energy systems in subdivision design.