

1. 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 1.0179 Megawatts.

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 other areas that may be suitable for ground-mount solar.

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.

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 as more commercial, utility-scale generation, transmission and distribution facilities. The Rutland Town Planning Commission, the Rutland Regional Planning Commission, and the Rutland Town Select board 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 Select Board, 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 as 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 regulate the development of renewable energy resources and solar energy facilities in Rutland Town. 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.

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 solar panels. Such encouragement should consider, but not be limited to the prevention of:

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

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

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

D. Their use of land with prime agricultural soil.

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

8. The town – in collaboration with the Rutland Regional Planning Commission, neighboring communities and utilities serving the town – will participate in long- range utility. Planning to ensure that adopted plan policies and community standards are identified and considered in future energy planning and development.

9. 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.

10. Energy and fuel efficiency will be primary considerations in municipal construction projects, equipment and vehicle purchases and facility operations.

11. 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.

12. The town may 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.

13. New energy facility development within or that may affect Rutland Town must conform to adopted community standards for energy facility siting and design to receive municipal support or approval.

14. 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.

15. 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.

16. 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.

General Standards for Energy Projects

Rutland Town supports the following appropriately sited types of energy development, “appropriately sited” defined as meeting the general setback and aesthetic standards contained herein:

- ✦ 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 *solar* energy facilities, including new transmission and distribution lines, substations and solar farms 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 an individual residence or business, is allowed in all land use districts

Setbacks

: Except for transmission, distribution lines, substations and utility connections, all energy facilities must meet the following setback requirements. A 60 foot front yard setback measured from the nearer edge of the traveled portion of the public highway, a 60 foot side yard setback and a 60 feet rear yard setback as measured from the from the property line.

In addition:

✦ Renewable energy facility setback distances from property lines may be increased, as necessary to mitigate aesthetic 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.

Signs

: Energy generation facilities and structures shall not be used for display or advertising purposes. Signs, identifying owner and manufacturer shall not exceed one (1) square

foot. Safety warnings shall be as required by State and or national Code.

✦ 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, national 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 submit to the Town a site plan showing the proposed facility.

✦ 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.

✦ Landscaping and Screening:

a. Solar energy facilities shall be screened from adjacent roads and adjoining residential uses. Vegetation used for this purpose may include both conifers for winter screening and deciduous plants to provide summer shade and to create an overhead canopy. Screening may also include features such as berms, low walls or fences, where such features are incorporated into an overall landscape design. Screening may also be achieved by placing smaller buildings between the solar arrays and the road or adjoining residential uses.

b. It is not expected that screening will create an impenetrable visual barriers with respect to vehicular traffic, pedestrian or other travelers on the road or lands adjacent to

the solar array. Rather, for those temporarily traveling through the area, the objectives of screening are:

- I. To create a pleasant streetscape.
 - II. To create a visual edge for the public space along the street, and
 - III. To prevent unobstructed views of the solar array.
- c. It is expected that screening will create a year-round visual barrier screening the solar array from residences within 500 feet of the project. For the objective of screening view of the solar array from such residences, the objectives are:
- I. Screening, including plantings of conifers rather than deciduous trees and shrubs will be used in conjunction with berms and existing and native vegetation.
 - II. No more than 20% of the solar array will be visible from any part of a residence and its immediate surrounding ½ acre, nor shall more than 60% of the solar array be visible from outbuildings or other residential property within 500 feet of the solar array.
- d. At planting, conifers shall be at least five (5) feet tall and deciduous trees shall be at least 2.5 inches in diameter at breast height, and shall be planted no closer than 40 feet from the traveled portion of the adjoining road so as to prevent winter salt kill.
- e. Plantings shall be of sufficient height, density and maturity to achieve the screening standard from the day of planting, and shall be maintained so provide the appropriate screening standard set out above.
- f. The screening standards set out above shall be achieved entirely within the property containing the solar array, and not on “borrowed” lands or lands of any affected property owner. Whenever possible, healthy native vegetation shall be preserved and native plantings shall be used and incorporated into the screening to prevent an artificial look. Clear cutting of the property is specifically discouraged.
- g. Maintenance of landscaping and screening shall be the responsibility of the property owner. Dead, dying or diseased plants shall be promptly removed and replaced as soon as possible, consistent with good landscape planting practice.

Setbacks :

Setbacks for all ground mounted solar energy facilities shall be the same as any other building or facility within the land use district in which they are proposed, special attention shall be given to visual mitigation provisions previously mentioned regarding setbacks.

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

- ✦ Special Flood Hazard Areas (SFHAs), including floodways and floodway fringes identified on Flood Insurance Rate Maps (FIRMs) for the town, only if they meet minimum National Flood Insurance Program (NFIP) requirements, as reviewed and permitted by the municipality or the state.
- ✦ Ground mounted solar facilities shall not be located in fluvial erosion hazard areas as 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:

- ✦ Significant wildlife habitat, including without limitation, deer wintering areas, core habitat areas, or interference with travel corridors for any wildlife species.
- ✦ The setback for a ground-mounted solar energy facility from surface waters and class 1 & 2 wetlands shall be at least 50 feet unless further restricted by the State .

Agricultural Land/Open Space:

Ground-mounted solar energy facilities with a generation capacity of greater than 100 kW facility, transmission and distribution lines, accessory structures and access roads are to be located on non agricultural 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 < 100 Kw 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.

Designated Rutland Town Historic Sites

- ✦ Ground-mounted solar energy facilities ground mounted solar energy facilities <100Kw shall not be located within the Center Rutland Historic District.
- ✦ Ground-mounted solar energy facilities greater than 100 Kw 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 and shall be screened from view of adjoining properties per Section of Landscaping & Screening.
- ✦ Roof or building-mounted systems on a historic building shall not physically damage the structure or alter its character-defining features.
- ✦ Roof-mounted installations shall be placed below and behind existing parapet walls. Panels are to be mounted flush with and at the same existing angle as the existing sloped roof surface. On flat roofs solar panels shall be set back from the edge of the roof to minimize visibility.