

January 17, 2014

Vermont Housing and Conservation Board
**INTERIM GUIDELINES for
RENEWABLE ENERGY PRODUCTION ON CONSERVED LAND**

The State of Vermont has adopted numerous legislative measures and provided financial incentives to increase the use and production of renewable energy in Vermont. The most recent energy plan sets a goal of meeting 90% of the State's energy needs from renewable resources by 2050 to reduce the state's reliance on fossil fuels. VHCB recognizes that renewable energy on conserved lands can play a role in reducing greenhouse gas emissions that contribute to climate change. Opportunities for renewable energy generation also present a potentially important component of economic viability for Vermont's farmers. VHCB has made significant investments in Vermont's working landscape over our history, and we understand that economic viability of Vermont farm communities is a critical component of Vermont's future and the success of VHCB's land conservation efforts.

Guiding Principles

The following principles provide a framework for reviewing potential renewable energy installation on conserved lands:

- Climate Change will continue to have significant impacts on Vermont ecosystem and land uses. Utilizing renewable energy is one important tool mitigating such impacts.
- Renewable energy installations must be located to minimize impacts to the natural resources, primary agricultural soils, conservation purposes and each property's unique attributes;
- Recognizing that VHCB's mission includes maintaining the essential characteristics of the Vermont countryside, renewable energy installations shall be located with careful consideration of impacts to the scenic qualities of conserved properties;
- VHCB supports renewable energy installations where the energy is used to support the energy needs of the conserved property or associated properties;
- Renewable energy installations whose production exceeds the energy needs of the conserved property will be reviewed on a case by case basis and may be conditioned or denied based on resource impacts, scale and scenic impacts to the conserved lands;
- Renewable energy installations will not impact mapped natural heritage sites or special treatment areas.
- VHCB recognizes that the renewable energy sector is dynamic and that these guidelines may need to be revised as the technology evolves.

Definitions

- Renewable energy: defined as "energy available for collection or conversion from direct sunlight, wind, running water, organically derived fuels, including wood and agricultural sources, waste heat, and geothermal sources." (24 VSA §4302). Under the state of Vermont's renewable energy programs, renewable energy is further defined as energy

produced using a technology that relies on a resource that is being consumed at a harvest rate at or below its natural regeneration rate (30 VSA §8002).

- Agricultural Activity: Farming as defined by the State of Vermont includes the on-site production of fuel or power from agricultural products or wastes produced on the farm (see 10 V.S.A. § 6001.22). The production of electrical power from methane or creating biofuels from a variety of seed crops is defined as an agricultural activity if at least 50% of the inputs come from the farm operation. As such, these agricultural activities are permitted in farm easements and do not need VHCB approval. If more than 50% of the agricultural inputs are from off the farm, the energy or fuel production is considered a commercial activity, but may be defined as rural enterprises under VHCB farmland conservation easements.
- Rural Enterprises: agricultural, forestry and other commercial uses on conserved farms or working forests operated at a scale that does not detract from the easement purposes and which enables the farm or forest owner to supplement their agricultural or forestry income. Renewable energy installations may be approved as rural enterprises generally following VHCB's Guidelines for Rural Enterprises on Farmland (September 2003)

Conservation Easement Categories and Overview

Renewable energy installations on conserved lands are appropriate when the proposed installation is consistent with the purposes and restrictions of each individual easement. Although each conservation easement is unique to a particular project, VHCB easements may be divided into the following broad categories:

1. Farmland conservation easements that support continued agricultural uses. Renewable energy installations that meet the State definition of agriculture or are scaled to meet the energy needs of the farm operations may be approved as accessory structures. The holders also may also approve the production of more energy than required by the farm as a rural enterprise, provided these activities do not detract from the purposes of the easement.
2. Working forest easements that conserve private timberlands. Forest resources play a key role in Vermont's economy and combating climate change. In forest settings, the primary concerns are fragmentation of interior forest conditions from site clearing, roads and utility corridors. The remote nature of some forest landscapes, and the impact renewable energy facilities can have on interior forest conditions, may preclude approval for systems providing power exceeding the energy needs of the property.
3. Town-owned conserved lands that were conserved for a variety of purposes including natural area protection, public recreation, education and open space. Renewable energy installations may be consistent with these purposes but would need to be supported by the local community and/or provided for in the town plan. Municipal easements generally do not include accessory structures or rural enterprises clauses, but renewable energy

installations may be approved as a utility easement, lease and/or be provided for in the management plan. These requests will be analyzed on a case by case basis with due consideration given to the terms of each particular easement.

4. Historic easements for single purpose historic preservation projects where VHCB funds have been used to purchase or rehabilitate historic buildings. Renewable energy installations may be appropriate when they can be located to minimize impacts to the historic resource, for example, by locating on a non-primary façade, installing in such a manner that doesn't damage historic material, or in a way that can be reversed at a later date without permanent damage to the property. Each project would be reviewed on a case-by-case basis for overall compliance with the easement with the understanding that every project is different both with respect to the requirements of the easement and the historic context and setting of the property.
5. Lands conserved to protect biological diversity, important wildlife habitat and natural areas, and to provide public access for recreation, generally owned by a non-profit conservation organization or the State of Vermont. Renewable energy installations on these properties are generally not appropriate, but may be considered when there are energy needs for facilities located on the protected property.

Criteria for Review and Approval of Renewable Energy Generation

Renewable energy projects will be reviewed under the following criteria:

- All projects should be designed to be neutral or enhance conservation easement purposes and to minimize impacts to conservation values on the property.
- Preference is given to projects inside of established complexes.
- Preference is given to locating these facilities on less productive portions of working lands (but not in sensitive natural areas or wetlands).
- Special Treatment Areas must not be impacted.
- The installations should not be located in mapped river corridors or floodways.
- Installations located within a mapped floodplain, but outside the river corridor and floodway, should be adequately anchored to resist collapse, flotation, or lateral movement during flooding events.¹
- All development should be a minimum of 50' from the top of bank of any surface water.
- All projects may be required to have a decommissioning plan.
- All projects must secure necessary local, state, and federal permits and approvals, including a Certificate of Public Good from the Public Service Board and any permits that may be required by the Vermont Agency of Natural Resources.
- All projects with third party owners/operators must disclose the legal arrangements underpinning the project and any such agreements will be reviewed to determine whether or not they are consistent with the conservation easement restrictions.

¹ Vermont Agency of Natural Resources River Corridor and Floodplain Management Program should be consulted for more detailed analysis of installations proposed for location in floodplains.

- Projects may be required to include an assessment and mitigation of off-site impacts, such as esthetics, noise, increased traffic, and glare.
- Projects must be provided for and consistent with the provisions of a management plan, where applicable.
- Project review may include engaging with community members, funders, and key stakeholders and consider their concerns about the project.
- The project's impact on the future affordability/accessibility of the property will be considered.

Categories of Renewable Energy Installations

Renewable energy projects fall within one of the following categories and must meet the criteria set forth above and within the relevant section below:

- Methane/BioGas/Biofuel Generation: Gas and fuel generation from plant materials and animal waste, and conversion of these materials into electricity, are considered to be agriculture if greater than 50% of the inputs to create the fuel are generated from agricultural activities on the farm or by the farm operation. These activities are evaluated following VHCBA's *Guidelines Defining Agriculture and Agricultural Buildings in Conservation Easements* (May 18, 2007) or *Guidelines for Approving Barns, Sugarhouses or Similar Structures Outside a Designated Complex* (November 30, 1999). Such installations are a permitted use under the farmland conservation easement and do not require any additional approval from VHCBA. Installations that use a majority of inputs from off-farm or non-agricultural sources are not considered agricultural activities but may be considered as rural enterprises generally following VHCBA's *Guidelines for Rural Enterprises on Conserved Farmland* (September 19, 2003). Potential resource impacts, funding and community considerations, and other factors at VHCBA's discretion will be analyzed and given consideration.
- Solar electric/photovoltaic: Solar arrays require significant area for installation, but can be designed to minimize or eliminate any long term impact to important natural resources. Installation of solar panels on existing buildings in a complex should be considered first. When installation on existing structures is not feasible, the scale/aerial extent of the installation in relation to the size of the conserved property is an important consideration. VHCBA uses a guideline of one percent (1%) of property acreage or one acre (whichever is greater) as the typical installation size suitable for conserved land. Installations larger than 1% of the land base may be possible, but this will depend upon the features of the property, the ability to site a larger facility on less productive agricultural land, potential scenic impacts, and funding and community considerations. VHCBA may require a bond to ensure proper decommissioning of these installations.

The following additional criteria will be used to evaluate the proposed location of solar installations:

1. Installations should not require permanent concrete or paved areas, but should use posts inserted into the ground without concrete or set on top of the surface with floating ballasts to avoid long-term impact to soils.

2. Installations that allow certain agricultural practices to occur within and underneath the solar arrays (such as animal grazing, bee yards, or growing crops) are encouraged.
 3. Solar projects should be designed to minimize impacts on scenic resources including open spaces, distant views, distinct natural features, and cultural resources (e.g. historic structures) by using natural screening, setting installations back from the roadside or other vantage points when not near existing structures, and placing them on less scenically important lands.
 4. Solar arrays should be sited close to existing structures or with a backdrop of vegetation if possible.
 5. Any associated project infrastructure (e.g. inverter and monitoring equipment) should be located and organized to be as unobtrusive as possible.
 6. Roof-mounted panels should recognize and reflect the architectural lines and features of historic structures.
- Wind: Impacts of wind turbine installations are primarily dependent upon the level of site work necessary to prepare a site for installation. The actual footprint of the turbine tends to be small but its resource impact is more substantial within the footprint area, and wind turbines are likely to have scenic or esthetic impacts. Scale and landscape context are important considerations in siting wind installations on conserved lands. Wind installations that produce about as much energy as required for use on the conserved property will generally follow the approval process of most agricultural, forestry, or appurtenant residential structures. For generation beyond or not connected to on-property need, VHCB considers one (1) turbine located in such a way to minimize resource and visual impacts, to be of a conservation scale and appropriate on most conserved working lands. Installations of more than one turbine or of a turbine greater than 200 feet in height may be considered, but potential scenic impacts, funding and community considerations, and other factors at VHCB's discretion will be analyzed and given consideration.

The following additional criteria will be used to evaluate potential wind installations:

1. Glare and noise will be considered in locations that are adjacent to residential or recreational properties. Lower gloss paint or darker color blades may be required where reflective characteristics could present an annoyance.
 2. Wind turbines are likely to be most appropriate within agricultural, commercial or industrial contexts and should be sited, where practical, near other structures.
 3. In landscapes valued for natural or scenic features, siting will be evaluated for potential visual impacts on scenic views and the experience of a natural landscape.
- Biomass: Woodchip or pellet systems sized for on-site space heating are considered accessory structures to a residence or farm structure and for farmland easements are a permitted use. Large scale forest biomass facilities are typically at a scale beyond what is consistent with conservation lands. The volume of inputs necessary for electrical energy generation with forest biomass is generally far beyond the potential growth and yield from a particular forest parcel. If future technology allows for the use of small scale

forest biomass energy conversion, VHCB will develop specific guidelines for these installations.

- Geothermal: Generally, geothermal technology in Vermont has thus far been used to supplement existing heating and cooling systems for structures on a given property. The natural resource impacts for such installations tend to be minimal, generally requiring small-diameter wells and pipes laid below agricultural depths. Installations such as these that supplement the heating and cooling of approved structures on conserved lands will generally follow the approval process of most agricultural, forestry, or appurtenant residential structures.
- Hydro: Large-scale hydro installations sometimes displace extensive acreages of land and negatively impact riparian systems; they are therefore typically inconsistent with conservation easement purposes and restrictions. Micro-hydro installations are beginning to be explored in Vermont. VHCB does not currently have enough knowledge or understanding of the benefits and impacts of micro-hydro facilities to develop specific criteria for their installation on conserved lands. Any proposals for such installations will follow the general guidelines described elsewhere in this document. As the micro-hydro industry grows in Vermont, VHCB will develop specific policies for these installations.

Implementation Process

Requests for approving renewable energy installations on conserved lands for co-held easements will follow the approval process as outlined in the Stewardship MOUs with each of our conservation partners. Requests for approvals should be directed to the stewardship staff of the partner organization.

For VHCB sole-held easements, requests for approval for renewable energy installations should be directed to the VHCB Conservation Stewardship Coordinator