

Climate Change Action at the Local Level - *What Can We Do?*

Climate Change in the U.S. Northeast, a report released in October 2006 by the Union of Concerned Scientists, concluded that the greatest uncertainty in our future climate is the extent to which society resolves to reduce further emissions of heat-trapping gases. (Greenhouse gases include carbon dioxide, methane, nitrous oxides and a number of gasses that are produced by industrial processes. In Vermont, the most prevalent greenhouse gas is carbon dioxide, produced by the vehicles we rely on for transportation.) According to the report, “*The greater the extent of the emissions reductions we are able to achieve, the greater the ability of ecosystems, human communities, and economic sectors to adapt to the coming climate. Our findings make clear that the emissions choices we make here in the Northeast and globally, now and over the next several years, will have dramatic implications for the climate our children and grandchildren will inherit.*” The need to take action is palpable even on these cold winter days. At the State House this winter, the picture speakers are painting is dire, should humans in industrialized and rapidly industrializing nations continue their current lifestyles unabated. Alan Betts, Director of the Vermont Academy of Science and Engineering, presented research to a packed State House committee hearing that included the following predictions for the next few decades in Vermont and New Hampshire: the climate zone will shift from 4 to 6 (about the climate of Connecticut); the boundary between water and ice will shift north and about 1000 feet up in elevation, which means more wet snow, winter thaws, winter rain and freezing rain; growing seasons will lengthen and winters will generally be warmer; the maple industry may shift even more to Quebec; our traditional forests will experience stress and the mix of trees will change; and the ski industry will suffer.

Act Locally

According to the multitude of speakers who testified at the State House in January, current climate change trends are devastating, and transforming infrastructure to reverse them is an enormous task. On a hopeful note, there was agreement that it is well within our technical capability to make the necessary changes. The larger question is whether we, as world citizens, have the political will to implement those changes. We should not be so daunted by the task that we throw up our hands and do nothing. Ways for Vermonters to reduce greenhouse gas emissions include: use more biodiesel; take advantage of the resurgent availability of electric vehicles; use tax or other incentives to purchase more fuel-efficient vehicles for municipal fleets, including large pieces of equipment such as graders; develop more park and ride lots to expand commuter options; increase public transit options such as buses, bicycle and pedestrian paths, particularly in more rural areas; incorporate energy efficiency upgrades into public buildings and infrastructure; put heat on timers and lighting systems on motion detection or timers; and develop small-scale alternative energy sources such as solar, hydro, wind and methane recovery. Municipalities or cooperative groups could own new energy sources (methane recapture, very small hydro, community-owned wind or solar) if micro-grid legislation or expanded net metering of energy generation is passed by the Vermont Legislature.

What Municipalities Can Do

Vermont Statutes

Many of the shifts in practice discussed at the State House involve local implementation. Local governments do, in fact, have authority to implement several of these measures today. Below is a list of current Vermont statutes that a local legislative body could use to address climate change issues at the local level.

Energy Coordinator. In the 1970s, the Vermont Legislature enacted a statute that enables a select board to appoint an “energy coordinator.” 24 V.S.A. § 11 1 (a). In recent years, the position of energy coordinator has merited scant attention in most towns. Clearly, now is a time when a municipal energy coordinator can perform vital research, suggest needed innovations, and provide information and coordination services.

(Note that a recent amendment to 24 V.S.A. § 11 1 (a) would enable a local legislative body to appoint an energy coordinator for a term of its choosing, rather than the one-year term referred to below.) Here is the enabling statute:

24 V .S .A. § 1131. Energy coordinator; duties

(a) At an annual meeting warned for that purpose, a town may authorize the selectmen to appoint for a one-year term an energy coordinator.

(b) An energy coordinator shall coordinate existing energy resources in the town and cooperate with the municipal planning commission and with those federal, state and regional agencies of government which are responsible for energy matters.

(c) An energy coordinator may study and evaluate sources of energy which are alternatives to those presently available with a view toward the more efficient and economical utilization of existing and potential energy resources.

(d) An energy coordinator shall make periodic reports of his activities to the selectmen as they may require and may perform such other duties, studies or examinations as may be required by the selectmen. (Added 1975, No. 226 (Adj. Sess.), §.)

Municipal Plan and Land Use Regulation

Several areas in Vermont's municipal planning and land use regulation statutes address energy use. Here are the important ones:

24 V .S .A. § 4382 (a) (9) Energy Element of Municipal Plan

(9) An energy plan, including an analysis of energy resources, needs, scarcities, costs and problems within the municipality, a statement of policy on the conservation of energy, including programs, such as thermal integrity standards for buildings, to implement that policy, a statement of policy on the development of renewable energy resources, a statement of policy on patterns and densities of land use likely to result in conservation of energy;

24 .V .S .A. 4433 Advisory commissions and committees (introductory paragraph)

Municipalities may at any time create one or more advisory commissions, which for the purposes of this chapter include committees, or a combination of advisory commissions to assist the legislative body or the planning commission in preparing, adopting, and implementing the municipal plan. Advisory commissions authorized under this section and under chapter 118 of this title may advise appropriate municipal panels, applicants, and interested parties in accordance with the procedures established under section 4464 of this title.

24 V .S .A. 4414 (3), (6) Conditional Uses, Access To Renewable Energy Resources

Conditional uses.

(A) In any district, certain uses may be allowed only by approval of the appropriate municipal panel, if general and specific standards to which each allowed use must conform are prescribed in the appropriate bylaws and if the appropriate municipal panel, under the procedures in subchapter 10 of this chapter, determines that the proposed use will conform to those standards. These general standards shall require that the proposed conditional use shall not result in an undue adverse effect on any of the following:

- (i) The capacity of existing or planned community facilities.
- (ii) The character of the area affected, as defined by the purpose or purposes of the zoning district within which the project is located, and specifically stated policies and standards of the municipal plan.
- (iii) Traffic on roads and highways in the vicinity.
- (iv) Bylaws and ordinances then in effect.
- (v) Utilization of renewable energy resources.

(B) The general standards set forth in subdivision

(A) of this section may be supplemented by more specific criteria, including requirements with respect to any of the following:

- (i) Minimum lot size.
- (ii) Distance from adjacent or nearby uses.

- (iii) Performance standards, as under sub-division (6) of this section.
 - (iv) Criteria adopted relating to site plan review pursuant to section 4416 of this title.
 - (v) Any other standards and factors that the bylaws may include.
- (6) Access to renewable energy resources. Any municipality may adopt zoning and subdivision bylaws to encourage energy conservation and to protect and provide access to, among others, the collection or conversion of direct sunlight, wind, running water, organically derived fuels, including wood and agricultural sources, waste heat, and geothermal sources, including those recommendations contained in the adopted municipal plan, regional plan, or both. The bylaw shall establish a standard of review in conformance with the municipal plan provisions required pursuant to subdivision 4 82(a)(9) of this title. While there is much to do, municipalities have the tools to get the discussion started with their citizens. And there is additional assistance out there for local governments.

What Municipalities Can Do - Other Resources

ICLEI - Local Governments for Sustainability (www.iclei.org). ICLEI is the acronym for the International Council for Local Environmental Initiatives, which boasts 600 local government members worldwide (approximately 200 in the United States.) In Vermont, Brattleboro, Burlington, Chittenden County, Middlebury and Montpelier are members. Cities for Climate Protection (CCP) is ICLEI's flagship campaign, designed to educate and empower local governments worldwide to take action on climate change. Jurisdictions participating in the CCP Campaign adopt a resolution and commit to reduce local emissions that contribute to global warming by working through five milestones:

1. Conduct a baseline emissions inventory and forecast.
2. Adopt an emissions reduction target for the forecast year
3. Develop a local action plan.
4. Implement policies; measure, monitor and verify results.
5. Improve the measures over time.

ICLEI provides cities that participate in the CCP campaign with a range of technical assistance. Some of the assistance is available for free to participating local governments. Other assistance is available for hire from ICLEI.

Clean Cities. Vermont is one of two "Clean Cities" states, along with approximately eighty cities around the country. Established in 199 at the federal Department of Energy (DOE), the Clean Cities Program represents a strategy to implement the DOE mission: *"Avoiding dependence on imports ... is the heart of our national energy policy. The Clean Cities Program's mission is 'to advance the economic, environmental and energy security of the U.S. by supporting local decisions to adopt practices that contribute to reduced petroleum consumption in the transportation sector.'"* Administration of the program has been newly given to the federally-funded University of Vermont Transportation Center, and VLCT has expressed interest in working with it to provide municipalities with information on reducing emissions through the use of innovative transportation alternatives. At UVM, the program is in the process of being reactivated and redesigned to address greenhouse gas emissions in Vermont. Its e-mail address is cleancities@snellingcenter.org.

Municipal Energy Assistance. Many municipalities are implementing efficiencies in their buildings with the assistance of a new position at Vermont Energy Investment Corp (VEIC) that is funded through a federal DOE grant. Upon request, that person conducts assessments of a municipality's public buildings and proposes energy saving measures. (See sidebar.) Alison Donovan Hollingsworth is the Municipal Energy Specialist who can help municipalities with inventories of energy usage in local facilities.

Growth Centers. Local governments have long worked to curb sprawl development (projects that are built outside of downtown areas on previously undeveloped land that is far from services or public infrastructure) and to encourage development in our traditional downtowns and villages that is pedestrian friendly, mixed use and reduces the need to drive everywhere. Growth centers legislation, passed in 2006 and supported by local officials from municipalities of all sizes, provides incentives for municipalities that meet its requirements. For the first time, the legislation defined growth centers in statute. Likewise, the Downtown Designation Program provides incentives to revitalize downtowns and village centers through

infill development and redevelopment. Through revisions to zoning and attention to infrastructure such as, street layout and sidewalks, pedestrian wastewater management, water supply paths and bike lanes, many towns are re-energizing efforts to provide a regulatory and planning framework which results in a more compact, traditional Vermont village settlement pattern.

Very Small Hydro. Several municipalities around Vermont are considering the option of reactivating small hydro facilities to power part of their municipal infrastructure or schools. The Vermont Small Hydro Association is spearheading efforts to simplify the permitting process for small hydro facilities. Its Web site is www.communityhydro.biz.

Energy Saving Strategies Workshop. On April 12, 2007, VLCT will host a Municipal Energy Saving Strategies workshop. Appoint your town's energy coordinator and send him or her to the seminar! Local officials should plan on attending in order to find out more that can be accomplished at the local level to reduce energy costs, greenhouse gas emissions and energy usage generally. If your town has done something innovative, this is a time to share those activities as well.

- Karen Horn, Director, VLCT Advocacy and Public Policy Services

Energy Savings Checklist

Vermont municipalities are making libraries, town halls, traffic lights, and wastewater treatment plants more efficient, saving taxpayer dollars. Here's a list of efficiency measures to consider:

Lighting

Replace older T12 (one and a half-inch diameter bulb) linear fluorescent lighting with high efficiency "Super T8" fluorescent bulb and ballast combinations (one-inch diameter bulb) to save forty percent of energy use. Replacing incandescent lighting with compact fluorescent lights (CFLs) is a simple way to reduce energy consumption by up to sixty-five percent.

Heating

Annual furnace and boiler tune-ups can save money on fuel, increase the life of equipment, and prevent system failure during the heating season. Replacing manual thermostats with programmable thermostats can save on heating costs. As a general rule, for every degree the temperature is set back over an eight-hour period, one percent of the annual heating bill is saved.

Weatherizing

Save fuel and improve occupant comfort by weatherizing buildings. Full weatherization can save up to thirty percent on a building's annual fuel bill.

New Office Equipment

When replacing office equipment, be sure to specify ENERGY STAR®. This equipment can save forty to eighty-five percent of the electricity used compared with non-ENERGY STAR models.

Traffic Signals

LED (light-emitting diode) traffic signals use eighty to ninety percent less energy than traditional incandescent traffic signals, and they last twelve times longer – 100,000 hours compared to 8,000 hours.

Water and Wastewater Facilities

Variable frequency drives on aeration motors and pumps can save fifteen to sixty percent on electric use; properly sized motors and pumps will operate at optimal efficiency, saving energy compared to oversized systems. Careful evaluation and selection of dewatering methods can reduce both electricity and sludge disposal costs.