

# Vermont Climate Action Communities Municipal Resource Guide

A Vermont Municipal Resource  
Guide to Energy Efficiency  
Improvements, Climate Change  
Mitigation Strategies, and Overall  
Sustainability

## Table of Contents

Introduction.....	3
Municipal Resource Guide.....	3-33
• Municipal Energy Use.....	3-18
• Tracking Municipal Energy Use.....	3-5
• Identifying Energy-Saving Opportunities.....	5-6
• Building Energy Efficiency Improvements.....	6-7
• Renewable Energy for Municipalities.....	7-11
• New Building Construction.....	11
• Street Lighting.....	11-13
• Water Treatment Facilities.....	13-14
• Municipal Energy Storage.....	14-15
• Transportation.....	15-17
• Financing Municipal Energy Improvements.....	17-19
• Public Policy, Planning, & Infrastructure.....	19-25
• Getting Started.....	19-21
• Land-Use Planning – Reducing Sprawl and Encouraging Compact Development.....	21-22
• Energy Planning.....	22-23
• Energy Building Codes.....	23
• Transportation.....	23-25
• Residential and Business Outreach and Engagement.....	25-30
• Transportation.....	25-26
• Heating.....	26-28
• Electricity.....	28-29
• Energy Education.....	29
• Financing.....	29-30
• Energy and Climate Resiliency.....	30-33
• Resilient Communities.....	29-30
• Resilient Flood Management.....	30-31
• Incorporating Climate Adaptation into Local Planning.....	31-32
• Encouraging Resilient Buildings.....	31-32
Frequently Asked Questions.....	33
• What is Vermont Climate Action Communities?.....	33
• What is the relationship between VCAC and the Vermont Climate Pledge Coalition?.....	33
• Why should municipalities participate?.....	33
• What are the goals of the Vermont Actions Communities effort...33-34	33-34
• Which are the types of actions that municipalities are encouraged to undertake?.....	34
• How can municipalities participate?.....	34-35
• What kind of assistance is available?.....	35
• Who are the key partners for this effort?.....	35
Contact Information.....	35

## Introduction

The **Vermont Climate Action Communities (VCAC)** program is designed to help Vermont municipal governments achieve significant energy efficiency savings, reduce local emissions, participate in the transition to a clean energy economy, improve resilience in the face of climate change, and provide locally supported renewable energy generation for municipalities and the communities they serve.

Led by the Vermont League of Cities and Towns in partnership with a wide range of support organizations ([www.vtenergydashboard.org/vtclimateaction](http://www.vtenergydashboard.org/vtclimateaction) communities#partners), Vermont Climate Action Communities offers technical assistance, training, and information ([www.vtenergydashboard.org/vtclimateaction](http://www.vtenergydashboard.org/vtclimateaction) communities#discoverdata), to help municipalities reduce greenhouse gas emissions.

Please visit the VCAC website for more information or **to become a member:** [www.vtenergydashboard.org/vtclimateactioncommunities](http://www.vtenergydashboard.org/vtclimateactioncommunities).

## Municipal Resources

### Municipal Energy Use

- **Tracking Municipal Energy Use** ([www.vtenergydashboard.org/vtclimateactioncommunities#inventory](http://www.vtenergydashboard.org/vtclimateactioncommunities#inventory)) - Tracking municipal energy usage is an important first step toward achieving your town's energy goals. This is essential for identifying opportunities to improve efficiency and for evaluating the effectiveness of efficiency projects your town has already implemented. Through municipal energy use tracking, your town can establish energy use benchmarks so it can compare its energy usage with state and national averages. Municipal energy tracking also enables your town to evaluate the cost reductions that result from town-wide efficiency upgrades.
  - **Municipal Energy Inventory** – Municipal energy costs are usually embedded in different departmental budgets, such as road crews, buildings, and street lighting. Thus, a key first step in tackling municipal energy costs is creating a municipal "energy bill" to track total municipal energy costs. This involves compiling electrical, heating, and transportation costs.
  - Resources and Guides
    - **Energy Data Management Webinar Series - Part I: Energy Data Collection**  
(<http://www.energy.gov/node/2053726>) - The U.S. Department of Energy's Office of Energy Efficiency &

Renewable Energy hosts a two-part webinar series to cover energy data management. Part 1 covers the creation of a comprehensive energy end-use inventory, improving utility data access, and identifying other sources of consumption data.

- **Benchmarking** - Benchmarking is the practice of comparing the measured performance of a device, process, facility, or organization to itself, its peers, or established norms, with the goal of informing and motivating performance improvement. When applied to building energy use, benchmarking serves as a mechanism to measure the energy performance of a single building over time, relative to other similar buildings, or modeled simulations of a reference building built to a specific standard (such as an energy code). More information about benchmarking can be found at the Department of Energy website here: <http://www.energy.gov/eere/slsc/building-energy-use-benchmarking>.
  - Resources and Guides
    - Enter data into the **EPA Portfolio Manager** ([www.energystar.gov/buildings](http://www.energystar.gov/buildings)) to see how efficient your municipal-owned facilities are compared to similar facilities.
    - Want to know how you stack up against similar facilities across the nation that look and operate like yours? The answer is the **EPA's 1 - 100 ENERGY STAR score** ([www.energystar.gov/buildings/about-us/how-can-we-help-you/benchmark-energy-use/benchmarking](http://www.energystar.gov/buildings/about-us/how-can-we-help-you/benchmark-energy-use/benchmarking)). It's available for 21 different types of facilities.
    - **Energy Data Management Webinar Series – Part II: Benchmarking Energy Data Analysis** ([www.energy.gov/node/2066114](http://www.energy.gov/node/2066114)) - The U.S. Department of Energy hosted a two-part webinar series to cover energy data management. Part 2 helps personnel from public sector organizations identify problems associated with their building energy data, verify the accuracy of data, and help clean data.
    - The U.S. Department of Energy's **Building Energy Use Benchmarking Resource Center** (<http://www.energy.gov/eere/slsc/building-energy-use-benchmarking>) has information on developing a benchmarking plan for your municipality as well as links to useful benchmarking tools and information on outreach, partner engagement, data collection, and more.
    - To learn more about the benefits of benchmarking, download the Northeast Energy Efficiency Partnership's

## Benchmarking Factsheet

([www.neep.org/capee/download.php?r=3](http://www.neep.org/capee/download.php?r=3)).

- The Institute for Market Research has also developed a useful brief on **Energy Benchmarking and Transparency Benefits** ([www.imt.org/wp-content/uploads/2018/02/IMTBenefitsofBenchmarking\\_Online\\_June2015.pdf](http://www.imt.org/wp-content/uploads/2018/02/IMTBenefitsofBenchmarking_Online_June2015.pdf)).
- The **Energy Star Building Manual** ([www.energystar.gov/sites/default/files/buildings/tools/EPA\\_BUM\\_CH2\\_Benchmarking.pdf](http://www.energystar.gov/sites/default/files/buildings/tools/EPA_BUM_CH2_Benchmarking.pdf)) provides an overview of benchmarking and its benefits as well as the essential components of a successful benchmarking plan for your municipality.
- See the **Municipal Energy Management Report** ([www.dvRPC.org/Products/15020/](http://www.dvRPC.org/Products/15020/)) by the Delaware Valley Regional Planning Commission for even more information on benchmarking and municipal energy management.
- Stories and Case Studies
  - **Hospitals work for a Healthy Planet through Energy Efficiency** - [www.vtenergydashboard.org/stories/hospitals-work-for-healthy-planet-through-energy-efficiency](http://www.vtenergydashboard.org/stories/hospitals-work-for-healthy-planet-through-energy-efficiency)
- **Identifying Energy-Saving Opportunities** (<http://www.vtenergydashboard.org/vtclimateactioncommunities-assessments>) - Before embarking on efficiency upgrades, municipalities should determine where their resources would have the greatest impact. There are a number of different approaches municipalities can take to identify the most profitable energy-saving initiatives.
  - **Comprehensive Energy Assessments** - How can municipalities determine where to get their biggest bang for the buck? Conducting energy assessments or energy audits of all its major properties is an important step in developing a comprehensive list of energy-saving opportunities. These assessments are conducted by certified energy professionals who provide a prioritized list of recommended improvements along with associated costs.
  - Resources and Guides
    - See the Northeast Energy Efficiency Partnerships' **Community Action Planning for Energy Efficiency** tool to identify energy efficiency needs and action steps: <http://www.neep.org/capee/>
    - The US Department of Energy **State and Local Solutions Center** provides resources to advance successful, high-impact energy efficiency and renewable energy policies, programs, and projects. To contact

them, email [stateandlocal@ee.doe.gov](mailto:stateandlocal@ee.doe.gov).  
(<https://www.energy.gov/eere/slsc/state-and-local-solution-center>)

- **Stories and Case Studies**
  - According to the Orleans County Courthouse, Orleans County reduced energy use by 57% and the Sheriff's Department by 59% with the help of Efficiency Vermont. (<https://www.vtenergydashboard.org/stories/partnership-delivers-energy-saving-results>)
- **Building Energy Efficiency Improvements**  
(<http://www.vtenergydashboard.org/vtclimateactioncommunities - thermalefficiency>) - Reducing the energy used to heat, cool and light buildings is essential to reducing energy use and saving money.
  - **Thermal Efficiency**  
Air sealing and insulation go hand-in-hand and are two of the most cost-effective ways to save on thermal energy. Air sealing creates an air barrier that prevents heated/cooled air from leaving the workplace, while insulation creates a thermal barrier that prevents conductive heat loss.
  - **Hot Water Efficiency**  
Water heating is often the second largest energy consumer. Low-cost measures include installing low-flow water devices and pipe wrap. Depending on your current water heating needs, heat pump hot water heaters can offer enormous savings on your water-heating bill.
  - **Electric Efficiency**  
Electrical savings opportunities are varied for municipalities – from HVAC controls and lighting in the town hall to pumps and aeration in the wastewater treatment facilities. Check with Efficiency Vermont for opportunities to improve electrical efficiency. Visit their website [www.efficiencyvermont.com](http://www.efficiencyvermont.com) for more information.
  - **Retro-Commissioning**  
Retro-commissioning is a process that seeks to improve the efficiency of existing building equipment and systems. By analyzing system performance in areas such as heating and lighting and making adjustments to improve them, large savings could be seen with relatively little upfront cost.
    - **Resources and Guides**
      - The Northeast Energy Efficiency Partnership's **Regional Operations & Maintenance Guide for High-Performance Schools and Public Buildings** ([www.neep.org/sites/default/files/resources/OMG Update FINAL January 18 2017\\_0.pdf](http://www.neep.org/sites/default/files/resources/OMG Update FINAL January 18 2017_0.pdf)) provides a thorough

guide to improving the thermal, water and electric efficiency of your municipality's buildings.

- **Efficiency Vermont's Retro-commissioning Program** ([www.efficiencyvermont.com/services/project-support/retrocommissioning](http://www.efficiencyvermont.com/services/project-support/retrocommissioning)) helps walk businesses through the process of optimizing their existing systems.

- Stories and Case Studies

- Read about the retro-commissioning of the Montpelier Police Station here:  
<http://www.vtenergydashboard.org/stories/retro-commissioning-the-montpelier-police-station>

- **Renewable Energy for Municipalities**

(<http://www.vtenergydashboard.org/vtclimateactioncommunities-municipalsolar>) - Supporting renewable energy can be a great way for municipalities to reduce energy costs, stabilize and predict energy expenses, reduce greenhouse gas emissions, and help support local jobs and the economy. Read about the EPA's recommendations for on-site renewable energy generation for State and Local Governments here:  
<http://www.epa.gov/statelocalenergy/site-renewable-energy-generation>

- **Municipal Solar**

For municipalities looking to install solar power, there are several options available, including the town owning and operating panels outright, leasing the panels, or using retail solar power purchase agreements (PPAs) to produce renewable power.

- Resources and Guides

- View the following website for resources to **help municipalities and schools go solar more easily**, as well as help them identify, modify, and craft a contract that best suits their goals and financial needs:  
<https://vecan.net/school-and-municipal-solar-3/>
- Find a **model contract for municipal solar** here:  
<http://www.vecan.net/Archive/wp-content/uploads/Template-Solar-Group-Net-Metering-Agreements-VT-Munis-and-School-Districts-4-3-15.compressed.pdf>
- Find VECAN's **Community Solar Toolbox** here:  
<https://vecan.net/initiatives/community-solar-toolbox/>
- How a PPA Works to Save Municipalities \$\$ on Electricity ([www.vtenergydashboard.org/90-by-2050/detail/how-a-ppa-works-to-save-municipalities-on-electricity](http://www.vtenergydashboard.org/90-by-2050/detail/how-a-ppa-works-to-save-municipalities-on-electricity)) - Several Vermont municipalities have entered into a **Power Purchase Agreement** (PPA or third-party ownership) to help reduce electricity bills and switch to solar energy with no upfront capital costs.

Since public entities cannot take advantage of federal tax credits, a PPA is a unique public-private partnership that allows for third-party investors to pass on savings to municipalities.

- **Power Purchase Agreement Checklist for State and Local Governments** (<https://financere.nrel.gov/finance/content/power-purchase-agreement-checklist-state-and-local-governments>) - Provides a detailed guide to power purchase agreements for state and local governments including financial and contractual considerations.
  - The **Community Solar Business Case Tool** ([www.vtenergydashboard.org/90-by-2050/detail/community-solar-business-case-tool](http://www.vtenergydashboard.org/90-by-2050/detail/community-solar-business-case-tool)) provides a flexible financial model that projects the costs and benefits to the system developer and subscriber of a single community solar project
  - **South Burlington's Guide to Municipal Solar** (<http://www.vtenergydashboard.org/90-by-2050/detail/implementing-solar-for-your-town-or-school-district-south-burlington-s-guide-to-municipal-solar>) - The South Burlington Energy Committee has been working with the City of South Burlington since 2012 to move their idea for a landfill-based solar project forward.
  - Renewable Energy Vermont provides a **listing of renewable energy businesses** across Vermont: <http://www.revermont.org/vrebl/>
  - Find **Standards and Requirements for Solar Equipment, Installation, and Licensing and Certification: A Guide for States and Municipalities** here: <http://www.cesa.org/resource-library/resource/standards-and-requirements-for-solar-equipment-installation-and-licensing-and-certification-a-guide-for-states-and-municipalities>
  - Find **Publicly Supported Solar Loan Programs: A Guide for States and Municipalities** here: <http://www.cesa.org/resource-library/resource/publicly-supported-solar-loan-programs-a-guide-for-states-and-municipalities>
  - Find **Solar Information for Consumers: A Guide for States** here: <https://www.cesa.org/resource-library/resource/solar-information-for-consumers-a-guide-for-states>
- Stories and Case Studies

- The Town of Hartford commissioned two rooftop solar projects on Town buildings in February 2018 to gauge long-term savings and energy price stability ([www.vtenergydashboard.org/stories/town-of-hartford-completes-two-solar-projects](http://www.vtenergydashboard.org/stories/town-of-hartford-completes-two-solar-projects)).
- The South Burlington Energy Committee has been working with the City of South Burlington since 2012 to move their idea for a landfill-based solar project forward ([www.vtenergydashboard.org/stories/south-burlington-to-build-solar-array-on-local-landfill](http://www.vtenergydashboard.org/stories/south-burlington-to-build-solar-array-on-local-landfill)).
- Acorn Energy Solar One (AESO) is a group net-metering project that is a collaboration between the Acorn Energy Co-op, the Town of Middlebury, and Co-operative Insurance Companies. Learn more here: [www.vtenergydashboard.org/stories/acorn-energy-solar-one-community-project](http://www.vtenergydashboard.org/stories/acorn-energy-solar-one-community-project).
- Read about Alameda County's Renewable Energy Procurement Project here: [www.cesa.org/resource-library/resource/a-model-of-collaborative-solar-purchasing-the-alameda-county-renewable-energy-procurement-project](http://www.cesa.org/resource-library/resource/a-model-of-collaborative-solar-purchasing-the-alameda-county-renewable-energy-procurement-project)
- Read an economic analysis of Green Mountain Power's Microgrid Project in Rutland here: <https://www.cleanegroup.org/ceg-projects/resilient-power-project/featured-installations/stafford-hill/>
- **Municipal Hydro**  
Depending on location and access to water resources, there are opportunities for municipal hydro projects in Vermont, particularly at municipal water supply systems, lake outflows, or through "streaming" hydropower, which allows rivers to run their natural course.
  - Resources and Guides
    - **VT Small Hydropower Assistance Program** - Hydroelectric project proposals meeting certain criteria for limited resource impacts can be permitted more quickly and easily than those with greater impacts. Learn more here: [http://publicservice.vermont.gov/sites/dps/files/documents/Renewable\\_Energy/Resources/Hydro/VTSmall\\_HydropowerAssistanceProgramOverview.pdf](http://publicservice.vermont.gov/sites/dps/files/documents/Renewable_Energy/Resources/Hydro/VTSmall_HydropowerAssistanceProgramOverview.pdf)
    - **Micro-hydro turbines are typically 4-5 times more cost-effective than other renewable technologies.** Learn how here: <http://www.restecsolar.com/micro-hydro-turbines-vermont.php>
  - Stories and Case Studies

- Hydropower at Historic Pownal Dam - The 500 kW Pownal hydro project will be enrolled in-group net metering and the power will be used by Southern Vermont College and the Southern Vermont Medical Center. Learn more here:  
<http://www.vtenergydashboard.org/stories/hydropower-at-historic-pownal-dam>
- **Modern Wood Heat**  
Automated wood pellet boilers can provide efficient and cleaner burning heat to municipal buildings. Using local wood for heating can help keep heating energy dollars in the local economy, sustain jobs in the forest products industry, and provide more stable fuel prices than fossil fuels.
  - Resources and Guides
    - **Efficiency Vermont: Advanced Wood Heat Resources and Information for Municipal Projects** – Find it here: <http://www.efficiencyvermont.com/products-technologies/renewable-energy/advanced-wood-heating>
    - **Vermont Clean Energy Development Fund Incentives** - The Advanced Wood Heat incentive is available for efficient central wood pellet heating systems. Find more information here: <http://www.rerc-vt.org/advanced-wood-heating-systems>
    - **The Biomass Energy Resource Center (BERC)** works to advance the use of community-scale biomass energy throughout North America and beyond by providing technical consulting services, biomass energy program design and delivery, and education and outreach on best practices. Find this information here: <http://www.biomasscenter.org/>
    - **The Northern Forest Center** provides information about modern wood heat, including a list of frequently asked questions. Find this information here: [https://northernforest.org/index.php?option=com\\_content&view=article&id=15:faqs&catid=10:modern-wood-heat&Itemid=155](https://northernforest.org/index.php?option=com_content&view=article&id=15:faqs&catid=10:modern-wood-heat&Itemid=155)
    - Vital Communities provides even more information on Modern Wood Heat. Find this information here: <http://vitalcommunities.org/energy/modernwoodheat/>
  - Stories and Case Studies
    - More than 20 downtown Montpelier buildings are heated by sustainably harvested wood chips. Learn more about Montpelier's Combined Heat and Power facility here:

<http://www.vtenergydashboard.org/stories/heating-montpelier-s-downtown-with-woodchips>

- Check out what Burlington Electric and the McNeil Generating Station is doing for the city of Burlington here: <http://www.burlingtonelectric.com/mcneil>
- **Distributed Wind**  
Distributed Wind—generally small and medium-scale wind energy systems—offers an opportunity to power a variety of buildings, facilities, and homes with reliable, renewable energy.
  - Resources and Guides
    - **Distributed Wind Energy Zoning and Permitting: A Toolkit for Local Governments** – Find it here: <http://www.cesa.org/resource-library/resource/distributed-wind-energy-zoning-and-permitting-a-toolkit-for-local-governments>
- **New Building Construction**
  - ([http://www.vtenergydashboard.org/vtclimateactioncommunities - netzerobuilding](http://www.vtenergydashboard.org/vtclimateactioncommunities-netzerobuilding)) - New construction provides an opportunity for buildings that will save energy, dramatically cut a lifetime of energy costs, and limit greenhouse gas emissions.
    - **NetZero Buildings**  
NetZero buildings are buildings where the total amount of energy used by the building on an annual basis is roughly equal to the amount of renewable energy supplied to the building. If your municipality is planning on constructing a new building or undertaking a major upgrade to an existing building, Efficiency Vermont is available to provide technical and financial assistance to help achieve net-zero energy.
    - Resources and Guides
      - Check out the LEED (Leadership in Energy & Environmental Design) website for the latest on green building here: <https://new.usgbc.org/leed>
    - Stories and Case Studies
      - Find out more about Vermont's first net-zero affordable housing development to be Built in Waltham here: [www.vtenergydashboard.org/stories/vermont-s-first-net-zero-affordable-housing-development-to-be-built-in-waltham](http://www.vtenergydashboard.org/stories/vermont-s-first-net-zero-affordable-housing-development-to-be-built-in-waltham)
      - McKnight Lane project: The McKnight Lane affordable housing project repurposes a defunct mobile home park with the first examples of resilient, zero-energy, modular housing in a rural community. <https://www.cleanegroup.org/ceg-projects/resilient-power-project/featured-installations/mcknight-lane/>

- Read about how a couple created a comfortable net-zero home with help from Vermod here:  
<http://www.vtenergydashboard.org/stories/couple-creates-comfortable-net-zero-home-with-help-from-vermod>
- **Street Lighting**
- ([http://www.vtenergydashboard.org/vtclimateactioncommunities - streetlighting](http://www.vtenergydashboard.org/vtclimateactioncommunities-streetlighting))- Street lighting is one of a town's more expensive utility bills. Many cities and towns currently use old, inefficient light fixtures with drop-down lens fixtures that spill and waste light to the sides and upward to the sky.
  - **Municipally-leased street lighting**  
 Street lighting is an important part of a municipality's nighttime landscape—lighting can be used to enhance public safety and security while improving the aesthetic appeal of the surrounding properties. By eliminating unnecessary street lighting and converting older lighting technologies to LEDs, municipalities have the opportunity to reduce the cost of outdoor lighting while enhancing the nighttime environment.
  - Resources and Guides
    - Find a **Guide to Improving Efficiency in Municipal Street and Public Space Lighting** created by Efficiency Vermont here -<http://www.vtenergydashboard.org/90-by-2050/detail/town-street-lighting-campaigns>
    - **The Outdoor Lighting Toolkit** is a compilation of the replicable models, tools, and resources to help municipalities with street lighting conversion planning, decision-making, and implementation. Find it here: <http://www.energy.gov/eere/slsc/outdoor-lighting>
  - Stories and Case Studies
    - Read about how Thetford cut street light energy use by 89% here:  
<http://www.vtenergydashboard.org/stories/town-of-thetford-saves-energy-by-switching-to-leds>
- **Municipally-owned street lighting**  
 Many of the streetlights and public space lighting in the downtown areas are owned by the municipality, while those outside of the downtown are often leased from the electrical utility. LED streetlight technology has made rapid improvements and costs for a wide variety of LED streetlights, while utility rates associated with municipally-owned streetlights are lower for LED streetlights.
  - Resources and Guides
    - Know a resource? Inform us by emailing Rob Fish at [http://rfish@eanvt.org!](mailto:rfish@eanvt.org)
  - Stories and Case Studies

- The town of Hartford took on their streetlights as a first step to efficiency - saving around \$64,000 in energy bills each year! Read more here:  
<http://www.vtenergydashboard.org/stories/hartford-streetlight-campaign-saves-money>
- **State-owned street lighting**  
Many towns have bridges or other state-owned infrastructure with outdoor lighting. For assistance converting this lighting to LED, please contact Daniel Edson at the State Energy Office ([Daniel.Edson@vermont.gov](mailto:Daniel.Edson@vermont.gov), 802-505-3386).
- **Water Treatment Facilities**  
([http://www.vtenergydashboard.org/vtclimateactioncommunities - watertreatment](http://www.vtenergydashboard.org/vtclimateactioncommunities-water-treatment)) - Water and wastewater treatment facilities require a significant amount of a municipality's energy resources to operate.
  - **Drinking Water Facilities**  
Drinking water treatment facilities can account for a significant portion of a municipality's electrical bill. Major facility upgrades are an opportune time to ensure efficiency measures are incorporated.
  - **Wastewater Facilities**  
Wastewater treatment facilities (WWTFs) can account for 50% or more of municipal electrical costs. Many municipal WWTFs can reduce their energy use by 20-30% and often have a broad range of opportunities for saving energy. Many WWTFs are 30-40 years old and are due for major facility upgrades. Efficiency Vermont can work with your municipality to help it consider the most cost-effective, long-term solutions.
  - Resources and Guides
    - **Energy Data Management Manual for the Wastewater Treatment Sector** - The purpose of this document is to describe the benefits of energy data management, explain how it can help drive savings when linked to a strong energy management program and provide step-by-step guidelines to inform wastewater treatment plants of how to properly track energy performance. Find the manual here:  
<http://www.energy.gov/node/3123760>
    - **Industrial Assessment Centers: A Resource for Public Wastewater Treatment Facilities** - Public wastewater facilities may be eligible to receive a no-cost assessment provided by DOE Industrial Assessment Centers (IACs). Teams located at 28 universities around the country conduct energy audits to identify opportunities to improve productivity, reduce waste,

and save energy. Find the resource here:

<http://www.energy.gov/node/804821>

- The EPA has an energy resource page for State and Local Governments. Learn about the measures they suggest to improve energy efficiency in water and wastewater facilities by reading here: <http://www.epa.gov/statelocalenergy/energy-efficiency-water-and-wastewater-facilities>
- Stories and Case Studies
  - The City of Montpelier's Wastewater Resource Recovery Facility's energy conservation measures has cut the facility's electricity use by half between 2009 and 2014 and have reduced fuel oil use. Learn more here: <http://www.vtenergydashboard.org/stories/clear-water-less-electricity>
  - Treatment plants are robust sites for energy efficiency upgrades. Learn more here: <http://www.businessvermont.com/treatment-plants-are-robust-sites-for-energy-efficiency-upgrades/>
- **Municipal Energy Storage**  
(<http://www.vtenergydashboard.org/vtclimateactioncommunities-energystorage>) - Solar+Storage projects can provide economic benefits (by reducing demand charges) to a municipality while making it more resilient.
  - Resources and Guides
    - **Solar+Storage for Low- and Moderate-Income (LMI) Communities: A Guide for States and Municipalities** - This Clean Energy Group guide provides state and municipal officials with information on how to develop effective solar and battery storage (solar+storage) policies and programs that benefit LMI communities. It explores a range of policy approaches that have been successfully employed and provides program examples from states that have made LMI access to these technologies a priority. Find the guide here: <https://cesa.org/resource-library/resource/solar-storage-for-low-and-moderate-income-communities-a-guide-for-states-and-municipalities>
    - The **REopt™ Lite web tool** helps commercial building managers evaluate the economic viability of grid-connected PV and battery storage at a site, identify system sizes and battery dispatch strategies to minimize energy costs, and estimate how long a system will sustain critical load during a grid outage. Access the tool here: <https://reopt.nrel.gov/tool>
    - **Energy Storage Procurement Guidance Documents for Municipalities** - Find the documents here: <http://www.cesa.org/resource-library/resource/energy-storage-procurement-guidance-documents-for-municipalities>

- **Stories and Case Studies**
  - Case Study: Sterling Municipal Light Department - A small municipal utility installed a battery storage system to complement an existing solar electric system for cost savings and resilient power. This Clean Energy Group/Clean Energy States Alliance (defined here: <https://cesa.org/>) case study includes technical and financial details, as well as lessons learned over the course of the project. Read more here: <https://cesa.org/resource-library/resource/case-study-sterling-municipal-light-department>
  - The state of California's government updated its building codes that require solar + storage in all new residential construction. Learn more here: [http://www.energy.ca.gov/releases/2018\\_releases/2018-05-09\\_building\\_standards\\_adopted\\_nr.html](http://www.energy.ca.gov/releases/2018_releases/2018-05-09_building_standards_adopted_nr.html)
- **Transportation**  
([www.vtenergydashboard.org/vtclimateactioncommunities#transportation](http://www.vtenergydashboard.org/vtclimateactioncommunities#transportation))
  - For a municipality, transportation costs come from moving goods and people. There are many strategies that a municipality can implement to foster a more energy-conscious culture. Adding electric vehicles (EVs), to your fleet, for example, is an excellent way to be environmentally conscientious and save money.
  - **Vehicles/Fleets - Municipal Vehicle Fleets**  
Vehicle fleet managers can conserve fuel and maximize their efficiency through programs, policies, equipment or technologies, and maintenance strategies.
    - Resources and Guides
      - **The Vermont Clean Cities Coalition** works with fleets throughout the state to reduce their petroleum use through the adoption of alternative fuels and reducing the petroleum use of municipal fleets. Find more information about the Coalition here: <http://vtccc.w3.uvm.edu/fleet-managers-2/>. They even have a **sample Green Fleet Policy**, which you can find here: <http://vtccc.w3.uvm.edu/wp-content/uploads/2014/05/Green-Fleet-Example-Policy.doc>
    - Get more information on EVs for your municipality or business in the **US Department of Energy's Plug-in Vehicle Guidebook for Fleet Managers**, which you can find here: [http://www.afdc.energy.gov/pdfs/pev\\_handbook.pdf](http://www.afdc.energy.gov/pdfs/pev_handbook.pdf)
    - **Electric Vehicles (EVs) and EV Charging Stations**  
Municipalities can—and many are—taking action now to prepare for the transition to electric vehicles.
      - Resources and Guides

- Towns can also obtain **financial support for building out electric vehicle charging infrastructure** through the Volkswagen settlement fund. Learn more here: <http://accd.vermont.gov/community-development/funding-incentives/electric-vehicle-supply-equipment-evse-grant-program>
  - Contact or visit **Drive Electric Vermont** at <http://www.driveelectricvt.com/> to learn more about the benefits of electric vehicles, find a map of all existing charging stations in Vermont, and myriad other resources regarding EV's.
  - **Accelerating Electric Vehicle Readiness: How Cities and Towns Can Prepare for the Electrification of Transportation** - Find the new report and compilation of resources here: <http://www.vermontlaw.edu/academics/centers-and-programs/Institute-for-Energy-and-the-Environment/projects/clean-transportation>
- **No Idling Policies and Technology**  

Reducing idling can save money, improve air quality and health, and slow the advance of climate change. Municipalities can take action to reduce idling of their own vehicle fleets, as well as adopt policies and ordinances to reduce idling from commercial vehicles, commuters, and residents.

  - Resources and Guides
    - Check out **Idle Free Vermont's website** <http://www.idlefreevt.org/> for many resources, including idle free policies and fleet approaches.
    - The **IdleBox Toolkit** on the Vermont Clean Cities Coalition website has information on idle reduction technology available for vehicles ranging from heavy equipment to school buses and passenger cars. Find the toolkit here: <http://vtccc.w3.uvm.edu/idle-reduction/>
- **Employee Incentives**  

Municipalities can encourage drivers to adopt efficient driving behaviors by offering incentives, such as recognition and special privileges

  - Resources and Guides
    - Check out this Vital Communities **resource for working with businesses on transportation efficiency** here: <http://vitalcommunities.org/transportation/employer/>
  - Stories and Case Studies
- **Surveying Town Transportation Needs**
  - Resources and Guides

- Know a resource? Inform us by emailing Rob Fish at [http://rfish@eanvt.org!](mailto:rfish@eanvt.org)
- Stories and Case Studies
  - To best understand the community's transportation needs, a survey was sent to all residents of Hinesburg and a meeting of key stakeholders convened to analyze the needs, options, and possible solutions. View the results here:  
<http://www.vtenergydashboard.org/stories/hinesburg-rides-creative-community-transportation-solutions>
  - Central Vermont Town Energy Committees worked with Green Mountain Transit Authority to start a new commuter route from Montpelier to Marshfield to help save energy and reduce the use of fossil fuels. Read more here:  
<http://www.vtenergydashboard.org/stories/expanding-transit-a-new-rural-commuter-line>
- **EPA's Transportation Control Measures**
  - Resources and Guides
    - The EPA has an energy resource page for State and Local Governments. Learn about the transportation control measures they suggest here: [www.epa.gov/statelocalenergy/transportation-control-measures](http://www.epa.gov/statelocalenergy/transportation-control-measures)
- **Financing Municipal Energy Improvements** - Energy investments are different from other investments because the return on investment is money that is not spent on future energy bills. Municipalities have a variety of funding options at their discretion that can be utilized for energy efficiency improvements, including bonding, annual budgets, tax-exempt lease purchases, and energy saving performance contracting. Learn more here: [www.vtenergydashboard.org/vtclimateactioncommunities#financing](http://www.vtenergydashboard.org/vtclimateactioncommunities#financing)
  - Resources and Guides
    - **Current Practices in Efficiency Financing: An Overview for State and Local Governments** - Provides guidance to state and local governments as they determine which financing programs best suit their community's needs. Find the overview here: [www.energy.gov/sites/prod/files/2017/05/f34/current-practices-efficiency-financing.pdf](http://www.energy.gov/sites/prod/files/2017/05/f34/current-practices-efficiency-financing.pdf)
    - **Current Practices in Efficiency Financing: An Overview for State and Local Governments** - Find Energy Futures Group's November 2016 overview here: <https://emp.lbl.gov/publications/current-practices-efficiency>
    - **Energy Futures Group -- New Clean Energy Finance Report** (coming soon)
  - **Grants** - There are a wide variety of potential grant opportunities to help fund municipal energy projects.

- Resources and Guides
  - The **Community Energy & Efficiency Development Fund (CEED Fund)** is offered by Green Mountain Power to local towns for energy projects. Learn more here: [www.greenmountainpower.com/innovative/ceed\\_fund](http://www.greenmountainpower.com/innovative/ceed_fund)
  - **USDA Community Facilities Program** provides grants and loan guarantees for certain municipal and non-profit projects. Award is based on the median income and size of the community; up to 75% of capital cost. Learn more here: [www.rd.usda.gov/programs-services/community-facilities-direct-loan-grant-program](http://www.rd.usda.gov/programs-services/community-facilities-direct-loan-grant-program)
- **Bonds & Financing**
  - Resources and Guides
    - Clean Energy Finance through the Bond Market: A New Option for Progress <https://www.brookings.edu/wp-content/uploads/2016/06/CleanEnergyFunds.pdf>
    - What Investors Want: How to Scale-Up Demand for US Clean Energy and Green Bonds  
<https://www.cleaneigroup.org/ceg-resources/resource/what-investors-want-how-to-scale-up-demand-for-us-clean-energy-and-green-bonds/>
    - Ramp Up Resilient Power Finance: Bundle Project Loans Through a Warehouse Facility to Achieve Scale  
<https://www.cleaneigroup.org/ceg-resources/resource/ramp-up-resilient-power-finance-bundle-project-loans-through-a-warehouse-facility-to-achieve-scale/>
    - Go to <https://www.cleaneigroup.org/publications-library/> and sort by “Clean Energy Finance” on the righthand side under “Projects” then select “Filter.”
  - Stories and Case Studies
    - Know an example? Inform us by emailing Rob Fish at [rfish@eanvt.org!](mailto:rfish@eanvt.org)
- **Revolving Loan Funds** - One unique approach to financing municipal energy improvements is to establish a revolving loan fund wherein an initial pool of capital is used to fund energy investments, and the energy savings associated with these projects are put back into the fund to fund additional energy improvements.
  - Resources and Guides
    - **Green Revolving Funds: A Guide to Implementation & Management** combines the expertise of energy professionals and college administrators from dozens of institutions to establish best practices for designing and managing green revolving funds (GRFs). The resource is

a co-publication of the Sustainable Endowments Institute (SEI) and the Association for the Advancement of Sustainability in Higher Education (AASHE) and was developed with the consulting firm ICF International.

Access the guide here:

<http://www.vtenergydashboard.org/90-by-2050/detail/montpelier-net-zero-revolving-loan-fund>

- Stories and Case Studies

- **Montpelier Launches Revolving Loan Fund for Energy Saving Projects** - After the successful completion of several major initiatives including bringing a district heating system on-line in downtown Montpelier, installing one Megawatt of municipal solar, and seeing significant savings at the Water Resource Recovery Facility, MEAC wanted to find out if there was a way the City could reinvest savings from these municipal projects into additional energy-related initiatives. Learn more here:  
<http://www.vtenergydashboard.org/stories/montpelier-launches-revolving-loan-fund-for-energy-saving-projects>

## Public Policy, Planning & Infrastructure

- Learn how to get an Energy Committee started here:  
<http://www.vtenergydashboard.org/vtclimateactioncommunities-energycommittee>
- **Town Energy Committees**  
For over a decade, Vermont's all-volunteer town energy committees have been playing an increasingly meaningful role in Vermont's energy landscape – getting town buildings weatherized, solar installed on schools and homes, advancing transportation options and far more. There are now well over 100 Town Energy Committees in Vermont, working with their municipalities, businesses, and residents in their communities to implement energy-saving, clean energy initiatives -- all helping Vermont achieve its total energy and climate commitments
- Resources and Guides
  - Learn more about municipal energy committees via the **Vermont Energy & Climate Action Network** - the network of grassroots groups and the partners who support them. VECAN's mission is to start, support and strengthen town energy committees. VECAN and its project partners are working collaboratively to develop, inform, and strengthen community-based energy and

climate action to help Vermonters plan for, prioritize and implement energy-saving, greenhouse-gas emission reduction strategies at the local level. Contact VECAN for information (or help) starting or strengthening a local energy committee. Learn more here:

<https://vecan.net/>

- **How To Start an Energy Committee: VECAN's Community Energy and Climate Action Guide** - This guide provides communities with information on how to start and maintain an energy committee started and operating, ideas on various energy saving techniques and suggestions for advancing them in their communities. Find the guide here:  
<https://vecan.net/wp-content/uploads/2018/04/Climate-Action-Guide-2017.pdf>
- **Strategic Energy Action Toolkit** – Produced by the New Hampshire Local Energy Workgroup, this toolkit offers step-by-step tools to help groups implement energy projects, identify opportunities and challenges, create action plans, and evaluate success. Find the toolkit here: <http://www.nhenergy.org/strategic-energy-action.html>
- This document from the **Massachusetts Department of Energy Resources** can help your municipality identify potential team members for your municipal energy committee. Access the document here:  
<http://www.mass.gov/files/documents/2016/08/qk/o rganizing-energy-committee.pdf>
- For more background information on municipal energy committees and advice on how to structure your municipality's energy committee, visit **VNRC's page on Town Energy Committees** (<http://vnrc.org/resources/community-planning-toolbox/tools/town-energy-committee>) where you can also read about Waterbury's success with establishing their own municipal energy committee here:  
<http://vnrc.org/resources/community-planning-toolbox/case-studies/waterbury-leap-sustaining-a-strong-community-energy-committee/>
- Energy committees also play an important role in informing and shaping public policy. The Vermont Natural Resources Council (the coordinator of VECAN) helps connect energy committees to policymakers. Reach out to the **energy program at VNRC**, which you can find here: <http://vnrc.org/about-vnrc/staff/>, for

more information about state policy and how it can support your municipal goals.

- **Town Energy Coordinators**

Vermont law enables municipalities to appoint town energy coordinators to advise select boards on energy issues ([www.legislature.vermont.gov/statutes/section/24/033/01131](http://www.legislature.vermont.gov/statutes/section/24/033/01131)). These coordinators often work very closely with town energy committees. In some Vermont towns, the town energy coordinator is a paid municipal position.

- Stories and Case Studies

- In his first seven months on the job, Hartford Energy Coordinator Geoff Martin has already saved the Vermont town enough money to cover the cost of his first year's salary. Read more here:

<http://www.vtenergydashboard.org/stories/hartford-energy-coordinator-saves-town-money-and-energy>

- **Land-Use Planning: Reducing Sprawl and Encouraging Compact Development** - Land-use planning can help create communities that are environmentally sustainable, economically viable, inclusive and resilient. Sprawl is a pattern of land use characterized by dispersed, automobile-dependent development outside of compact urban centers. Sprawl has many negative impacts on quality of life and community health. Learn more here:  
<http://www.vtenergydashboard.org/vtclimateactioncommunities-landuse>

- Resources and Guides

- **Community Planning Toolbox from Vermont Natural Resources Council (VNRC)** - The toolbox provides background information on land use planning in Vermont, an overview of legal issues associated with planning, tools to help address particular planning needs, and case studies. Access the toolbox here: <http://vnrc.org/resources/community-planning-toolbox/>

- **Smart growth** is an approach to development that encourages a mix of building types and uses, diverse housing and transportation options, development within existing neighborhoods, and community engagement. The **Smart Growth Program** offers state and local REALTOR ® Associations to way to engage with government officials, community partners and the general public in planning and designing community's future. Learn more about Smart Growth at the EPA's energy resource page for State and Local Governments, which you can find here<http://www.epa.gov/statelocalenergy/smart-growth>

- The **Better Connections Program** (<http://www.vtenergydashboard.org/90-by-2050/detail/the-better-connections-program>) seeks to align state and local investments to increase transportation options, build resilience, and strengthen economic vitality in Vermont's community centers. The program does this through an annual grant program administered by Vermont Agency of Transportation (VTrans), in partnership with the Vermont Agency of Commerce and Community Development (ACCD). Municipalities annually compete for approximately \$200,000 in projects funds. A 10% local cash match is required. The program supports implementation-focused, municipal planning initiatives that:
  1. Provide safe, multi-modal and resilient transportation systems that support the Vermont economy
  2. Support downtown and village economic development and revitalization efforts Lead directly to project implementation
- **Stories and Case Studies**
  - VNRC's publication **Smart Growth in Vermont** features examples of Vermont projects that embody smart growth principles. Find it here: <http://vnrc.org/resources/smart-growth-resources/smart-growth/>
- **Energy Planning**

Addressing energy in the town plan involves an analysis of energy use, identifying efficiency opportunities, including land use and transportation strategies, and identifying potential renewable energy resources. Learn more here: <http://www.vtenergydashboard.org/vtclimateactioncommunities-energyplanning>

  - **Act 174**

Under Act 174 municipalities have the option to complete enhanced energy plans. If determined to meet standards established by the law, approved plans carry a greater weight in the process of selecting sites for energy generation.

    - **Resources and Guides**
      - Here is a brief **overview of Act 174**:  
[http://publicservice.vermont.gov/sites/dps/files/documents/Pubs\\_Plans\\_Reports/Act\\_174/Standards\\_Overview.pdf](http://publicservice.vermont.gov/sites/dps/files/documents/Pubs_Plans_Reports/Act_174/Standards_Overview.pdf)
      - For a comprehensive guide to developing an energy plan for your municipality, see the U.S. Department of Energy's **Guide to Community Energy Strategic Planning**, which outlines the ten steps to creating a successful energy plan. Access it here:

[http://www.energy.gov/sites/prod/files/2014/05/f15/cesp\\_guide.pdf](http://www.energy.gov/sites/prod/files/2014/05/f15/cesp_guide.pdf)

- VECAN provides an **overview of the Act 174** planning process, implementation guides, and contact information for regional planning commissions, which can provide direct technical assistance. Visit the following URL to access this resource: <https://vecan.net/act-174-and-municipal-energy-planning/>
- The Vermont Department of Public Service website provides official **guidance on Act 174** standards and recommendations for how plans can receive a positive determination of energy compliance, and greater weight before the Vermont Public Utility Commission: <http://publicservice.vermont.gov/content/act-174-recommendations-and-determination-standards>
- Stories and Case Studies
  - Read about the University of Texas at Austin's success developing their own energy plan on pages 10-20 of the Federal Utility Partnership's presentation on Energy Master Planning Perspectives and Best Practices here: [http://www.energy.gov/sites/prod/files/2016/05/f32/fupwg\\_spring2016\\_fox.pdf](http://www.energy.gov/sites/prod/files/2016/05/f32/fupwg_spring2016_fox.pdf)
- **Renewable Energy Siting** - There are many important considerations to keep in mind when selecting sites for renewable energy generation, including opportunities for electricity generation, and possible constraints, such as avoiding or minimizing impacts to ecologically sensitive areas.
  - Resources and Guides
    - **VECAN Community Solar Toolkit** - The toolkit provides information about the many factors to consider when selected a site for a renewable energy project. Find it here: <https://vecan.net/guidelines-good-practices-permits/>
- **Energy Building Codes**

Vermont has energy code requirements that apply to all new residential and commercial construction and certain renovation projects known as Residential Building Energy Standard and Commercial Building Energy Standards, respectively. In addition, Efficiency Vermont offers technical and financial assistance to help builders and homeowners meet and exceed these standards. Municipalities have a critical role to play in making sure that all new buildings are built to, and even exceed energy code. Learn more here: <http://www.vtenergydashboard.org/vtclimateactioncommunities-buildingcodes>

- Resources and Guides
- Find the **Municipal Guide for Vermont Energy Codes and Above-Code Programs October 2016** here: <http://www.vtenergydashboard.org/90-by-2050/detail/municipal-guide-for-vermont-energy-codes-and-above-code-programs-october-2016>
- **Transportation**
  - **Bike Pedestrian Paths**  
Often physically separated from conventional roadways, shared-use bike, and pedestrian paths can increase the share of bikers and walkers in your community. By providing a safe and enjoyable alternative to conventional energy-intensive modes of transportation, shared-use paths can help shrink your community's energy footprint. Learn more here:  
[http://www.vtenergydashboard.org/vtclimateaction\\_communities - bikeped](http://www.vtenergydashboard.org/vtclimateaction_communities - bikeped)
  - Resources and Guides
    - Visit **Local Motion's website** for more information on how to support cycling in your community:  
[http://www.localmotion.org/our\\_work](http://www.localmotion.org/our_work)
  - Stories and Case Studies
    - See Burlington's new **Walk-Bike Plan BTV** here:  
<http://www.planbtvwalkbike.org>
    - The **South Burlington bike path** is the largest pedestrian bike network in the state of Vermont. The South Burlington Bike and Pedestrian Committee are working to fill gaps in the network. Learn more here:  
<http://www.vtenergydashboard.org/stories/get-active-with-the-south-burlington-bike-path>
    - Over the years, the **Thetford Energy Committee** has implemented a number of small transportation projects intended to help reduce driving and its impacts. Now there are several initiatives to support bikers and inform people who'd like to take advantage of public transportation. Learn more here:  
<http://www.vtenergydashboard.org/stories/thetford-offers-transportation-options-for-its-community>
- **Complete Streets**  
Complete Streets is an approach to transportation development that aims to make streets accessible to people of all ages and abilities, placing equal emphasis on all modes of transportation including walking, biking, and driving.
  - Resources and Guides
    - **Local Motion's "technical assistance" program** works with local governments and community groups to make streets and roads safer for walking and biking. Find

information about the program here:

[http://www.localmotion.org/safe\\_complete\\_streets](http://www.localmotion.org/safe_complete_streets)

- The **Community Planning Toolbox** offers more information and resources you can click to explore “Complete Streets.” Access the toolbox here: <http://vnrc.org/resources/community-planning-toolbox/tools/complete-streets/>
- The **Better Connections Program** seeks to align state and local investments to increase transportation options, build resilience, and strengthen economic vitality in Vermont’s community centers. The program does this through an annual grant program administered by Vermont Agency of Transportation (VTrans), in partnership with the Vermont Agency of Commerce and Community Development (ACCD). Municipalities annually compete for approximately \$200,000 in projects funds. A 10% local cash match is required. Learn more here: <http://vtrans.vermont.gov/planning/projects-programs/better-connections>
- Stories and Case Studies
  - Find the **St. Johnsbury Walk-Bike Assessment** here: [http://www.localmotion.org/full\\_st\\_johnsbury\\_assessment](http://www.localmotion.org/full_st_johnsbury_assessment)
  - Find the **Morristown Walk-Bike Assessment** here: [http://www.localmotion.org/full\\_morristown\\_assessment](http://www.localmotion.org/full_morristown_assessment)
- **Public EV Charging Stations**

Developing public EV charging stations is a great way to encourage electric vehicle usage in your municipality. Public EV charging stations can also help attract new residents, improve property values and provide a revenue stream for your municipality.

  - Resources and Guides
    - Visit **Drive Electric Vermont** (at <http://www.driveelectricvt.com/for-businesses>) for more information on installing EV charging stations
    - The **Vermont Economic Development Authority** has information on securing loans for EV charging stations. Learn more here: <http://www.veda.org/financing-options/vermont-commercial-financing/electric-vehicle-charging-station-loan-program/>
  - Stories and Case Studies
    - Read about Morristown’s success with public EV charging stations here: <http://www.vtenergydashboard.org/stories/electric-vehicle-charging-station-is-a-way-to-draw-people-to-town>

## Residential and Business Outreach and Engagement

- **Transportation** - Transportation campaigns are a way to mobilize your community around achieving concrete actions relating to your municipality's transportation goals.
  - **Way to Go!**  
Way To Go! is a two-week long annual transportation campaign for K-12 schools in Vermont. The goal of the campaign is to reduce carbon pollution and raise awareness about energy and transportation issues in Vermont by encouraging students, staff, and teachers to use alternative modes of transportation such as biking, walking or carpooling. Learn more here:  
<http://www.vtenergydashboard.org/vtclimateactioncommunities-waytogo>
  - Resources and Guides
    - See the **Way To Go! informational poster** here:  
[https://d3n8a8pro7vhmx.cloudfront.net/mosaicstg/pages/16294/attachments/original/1524671806/WTG.08.17\\_SCHOOL.ONE.SHEETER.pdf](https://d3n8a8pro7vhmx.cloudfront.net/mosaicstg/pages/16294/attachments/original/1524671806/WTG.08.17_SCHOOL.ONE.SHEETER.pdf)
    - **Additional resources for schools** can be found here:  
[http://www.waytogovt.org/tools\\_for\\_success](http://www.waytogovt.org/tools_for_success)
- **Community Bike Shares**  
Community bike share programs seek to provide an affordable alternative to private vehicles and other motorized forms of transportation for short-distance trips mostly in urban or semi-urban locations. Community bike share programs help to reduce congestion, improve air quality and improve the quality of life for residents and tourists alike.
  - Resources and Guides
    - Find the **USDOT Federal Highway Administration Report** on implementing bike share programs for more information here:  
[http://www.pedbikeinfo.org/pdf/Programs\\_Promote\\_bikeshareintheus.pdf](http://www.pedbikeinfo.org/pdf/Programs_Promote_bikeshareintheus.pdf)
  - Stories and Case Studies
    - Read about Burlington's new bike share program here:  
<http://www.sevendaysvt.com/OffMessage/archives/2018/04/11/bike-share-launches-in-burlington-winooski-and-south-burlington>
    - Read about Morristown's bike share program here:  
<http://digital.vpr.net/post/morristown-town-organized-bike-sharing-program-stream/0>
- **Travel Diaries**

- **Heating** - Heating campaigns are a way for communities to come together to take concrete actions toward achieving their residential heating and efficiency goals. Heating campaigns can be led by individuals within your community or by statewide organizations such as Button Up Vermont.
  - **Button Up**  
Button Up Vermont is an annual community-based, public outreach campaign to promote home energy efficiency improvements – particularly helping people reduce heating and cooling costs. The campaign focuses on all Vermonters and is designed to provide opportunities for all individuals to take actions – from simple weather stripping to comprehensive home energy efficiency improvements.  
Learn more here:  
[http://www.vtenergydashboard.org/vtclimateactioncommunities - buttonup](http://www.vtenergydashboard.org/vtclimateactioncommunities-buttonup) and at <http://buttonupvermont.org/>
    - Resources and Guides
      - Learn how to **initiate a thermal efficiency campaign** by checking out the following resource:  
<http://www.vtenergydashboard.org/become-a-campaign-manager>
    - Stories and Case Studies
      - Glover Sees Drop in Electricity Use During Button Up Day Challenge - Read more here:  
<http://www.vtenergydashboard.org/stories/glover-sees-drop-in-electricity-use-during-button-up-day-challenge>
  - **Weatherize Campaigns**  
“**Weatherize**” is a community-based outreach program designed to help people increase air sealing and insulation in their homes. Under the program, weatherization contractors agree to conduct free-walk home energy assessments in exchange for homeowners completing an online energy survey. Community groups work with resident and contractors to usher the process along. Learn more here:  
<http://vitalcommunities.org/energy/weatherize/>
    - Resources and Guides
      - Visit Vital Communities' **Weatherize Resources Page** to learn how to run a campaign in your community here:  
<http://vitalcommunities.org/energy/weatherize/resources/>
      - Learn more about home weatherizing and available resources at **Efficiency Vermont** here:  
<http://www.efficiencyvermont.com/services/renovation-construction/weatherization>
    - Stories and Case Studies

- Norwich Celebrates Energy Efficiency With Yarn Bomb!
  - Read the full story here:  
<http://www.vtenergydashboard.org/stories/norwich-celebrates-energy-efficiency-with-yarn-bomb>
- **Educational Workshops**  
 Efficiency Vermont offers free educational workshops for community groups and businesses to help Vermonters make energy improvements.
  - Resources and Guides
    - Efficiency Vermont offers **free educational workshops** for community groups and businesses to help Vermonters make energy improvements. Each workshop addresses how a particular technology works, associated economics, and available technical and financial resources. We provide an energy expert to deliver the presentation, guidance on how to effectively organize a workshop, and educational and public outreach materials. Find more information here:  
<http://www.efficiencyvermont.com/services/education-events/workshops-consumer-education>
- **NWWVT Heat Squad**  
**HEAT Squad** is a service of NeighborWorks of Western Vermont that provides low-cost energy audits for homes and businesses. Audits are provided in Rutland, Addison, Bennington, Windham, and Windsor counties and to the neighboring communities. Heat Squad is in the process of expanding into the Northeast Kingdom. Learn more here:  
<https://heatsquad.org/about-heatsquad/>
- **Community Action Agencies**
- **Electricity**
  - **Community Solar**  
 Community solar is a way of providing solar power to organizations that lack adequate access to the sun on their rooftops or land.  
 'Community solar' can refer to both community-owned projects as well as projects owned by a third party whose electricity is shared by a community. Learn more here:  
<http://www.vtenergydashboard.org/vtclimateactioncommunities - solarize>
    - Resources and Guides
      - Here is the **Clean Energy State Alliance's guide to community solar**:  
<https://www.cesa.org/resource-library/resource/consumer-protection-for-community-solar-a-guide-for-states>
  - **Solarize Efforts**  
 Solarize is a program where communities partner with solar installers

on outreach to make solar energy more accessible to residents. The program also includes a tiered pricing-structure that brings the cost of solar down as more residents sign contracts with their partner installers.

- Resources and Guides
  - **Solarize Toolkit** - Solarize is a proven model for motivating your neighbors to go solar. Most towns engaging in the program more than double the number of existing solar homes in less than a year. Find the toolkit here:  
<http://vitalcommunities.org/energy/solarizetoolkit/>
- Stories and Case Studies
  - Thetford collaborated with Vital Communities and Strafford on a Solarize project that almost tripled the amount of residential on-site solar in our towns in 5 months! Learn more here:  
<http://www.vtenergydashboard.org/stories/solarize-thetford>
- **Energy Education** - Schools can help students (and parents) increase their knowledge of energy and environmental issues, learn from experience, and take action to reduce their school's energy use. Learn more here:  
<http://www.vtenergydashboard.org/vtclimateactioncommunities - veep>
  - **VEEP**  
The **Vermont Energy Education Program** (VEEP) strives to help students gain a deep understanding of what energy is and how to use it efficiently. VEEP offers hands-on, "minds-on" science, technology, engineering, and math (STEM) education for Vermont K-12 students and teachers statewide. Learn more here: <http://veep.org/>
  - **Energy Fairs**  
Energy fairs provide an opportunity for exhibitors to showcase their organizations and projects to the public, and also offer break out sessions, demonstrations, and information and products and programs that can help individuals save money and energy.
  - Stories and Case Studies
    - Waterbury LEAP Energy Fair - Waterbury LEAP hosts an annual energy fair which features 75 + exhibitors and breakout sessions on topics from going solar to heat pumps. Learn more here: <http://www.waterburyleap.org/projects/leap-energy-fair/>
- **Financing** - There are plenty of funding opportunities that make energy projects affordable to install. Learn more here:  
<http://www.vtenergydashboard.org/vtclimateactioncommunities - grants>
  - Resources and Guides

- A Homeowner's Guide to Solar Financing: Leases, Loans and PPAs <https://www.cesa.org/resource-library/resource/a-homeowners-guide-to-solar-financing-leases-loans-and-ppas>
- **Heat Saver Loans**  
The Heat Saver Loan is a fast, easy, and flexible way to finance home weatherization and heating improvements. Learn more here: <http://www.efficiencyvermont.com/services/financing/homes/heat-saver-loan>
- **Home Performance Energy Projects**  
Home Performance with ENERGY STAR is an incentive-based program to improve insulation, air sealing, and heating and ventilation systems, to ensure safety and health. Learn more here: <http://www.efficiencyvermont.com/rebates/list/home-performance-with-energy-star>
- **Advanced Wood Heat Wood Stove Change Out**  
Wood Stove Change-Out programs offer homeowners rebates to fund the removal of their old stoves and the purchase and installation of new, advanced wood heat stoves--usually a pellet boiler. Rebates are scaled based on household size and income, giving those with limited income the most assistance. Learn more here: <http://www.rerc-vt.org/advanced-wood-heating-systems>
- **Northeast Energy Efficiency Partnership**  
Review the Northeast Energy Efficiency Partnerships' Innovative Opportunities for Financing Energy Efficiency Upgrades presentation on funding renewable energy and efficiency projects here: [http://www.neep.org/sites/default/files/resources/BBBD2016\\_FinancingPanel.pdf](http://www.neep.org/sites/default/files/resources/BBBD2016_FinancingPanel.pdf)
- **Community Energy & Efficiency Development Fund (CEED)**  
Through Green Mountain Power, this fund is open to proposals from municipalities seeking to take on electric efficiency projects, renewable/clean energy programs, and new technologies in their communities. Learn more here: <https://greenmountainpower.com/2013/01/13/community-energy-efficiency-development-fund-ceed/>

## Energy and Climate Resiliency

- **Resilient Communities** - A resilient community has the ability to withstand, respond, and adapt to challenges, which can include anything from natural disasters to economic, social, and political upheaval. A resilient community thinks long term and is able to reorganize and renew itself, ideally in ways that put it in a stronger position than it was in before the shock. In the event of a power outage, cities should have a resilient power plan for critical public and private facilities in order to protect their most vulnerable citizens. Learn more here: <http://www.vtenergydashboard.org/vtclimateactioncommunities - resilient>

- Resources and Guides
  - Is your community resilient? Use this **community assessment tool** to find out: <http://vnrc.org/wp-content/uploads/2013/04/Whole-Scorecard-FINAL-full-color-REDUCED-SIZE.pdf>
  - What Cities Should Do: **A Guide to Resilient Power Planning**  
– Find it here: <http://www.cleangroup.org/ceg-resources/resource/what-cities-should-do-a-guide-to-resilient-power-planning/>
- **Resilient Flood Management** - As extreme weather events become more frequent, municipalities may wish to adopt new flood management strategies. These may include establishing disaster preparedness plans, implementing infrastructure improvements, and crafting new land-use policies that take into account higher flood risk levels for certain areas. Learn more here:  
<http://www.vtenergydashboard.org/vtclimateactioncommunities - flood>
  - Resources and Guides
    - Use the **Vermont Transportation Flood Resilience Planning Tool** to help your town plan for flooding events:  
<http://vtrans.stone-env.net/-/map>
    - See the **State of Vermont's Guide** for flooding preparedness for more information: <http://floodready.vermont.gov/>
    - Visit the **Vermont Floodplain Management Blog** for guidance on flood insurance and land-use policy for flood-prone areas:  
<https://vtfpm.blogspot.com/>
    - See the Preservation Trust of Vermont's **Vermont Flood Guide: Preparation, Response & Recovery** for more information on flood preparedness and recovery:  
<https://ptvermont.org/vermont-flood-guide-preparation-response-recovery/>
  - Stories and Case Studies
    - Read about how Jeffersonville is working to build a more flood resilient community here:  
<http://floodtraining.vermont.gov/case-studies/jeffersonville>
    - Read about Guilford's River Corridor Protection plan here:  
<http://floodtraining.vermont.gov/case-studies/guilford>
    - Read about how Montgomery is using mapping to increase their flood preparedness here:  
<http://floodtraining.vermont.gov/case-studies/montgomery>
- **Incorporating Climate Adaptation into Local Planning** - Climate change will impact all communities differently. There are a number of different approaches municipalities can take to identify the needs of their specific community and incorporate their findings into local planning documents. Learn more here:

<http://www.vtenergydashboard.org/vtclimateactioncommunities-adaptation>

- Resources and Guides
  - See **Vermont's Roadmap to Resilience** by the Institute for Sustainable Communities for steps your community can take to increase your community's resilience in the face of climate change. Find it here:  
<https://resilientvt.files.wordpress.com/2013/12/vermonts-roadmap-to-resilience-web.pdf>
  - Information on the **Resilient Communities Scorecard** by VNRC can be found here:  
<http://vnrc.org/resources/community-planning-toolbox/tools/vermont-smart-growth-score-card/>
  - Learn about **Community Resilience Organizations** here:  
<http://www.gocros.org/-cros>
  - The **US Climate Resilience Toolkit** can help municipalities with climate adaptation planning. Find the toolkit here:  
<https://toolkit.climate.gov/steps-to-resilience/explore-hazards>
  - See the EPA's **Community-Based Adaptation to a Changing Climate** document for help with municipal planning for climate change:  
[http://www.epa.gov/sites/production/files/2016-09/documents/community-based-adaptation\\_handout.pdf](http://www.epa.gov/sites/production/files/2016-09/documents/community-based-adaptation_handout.pdf)
  - The EPA's **Climate Change Adaptation Resource Center** has many resources to help with planning, strategy development as well as links to tools, training guides, and case studies. Find it here: <http://www.epa.gov/arc-x/strategies-climate-change-adaptation>
- Stories and Case Studies
  - Read about Hartford's Community Resilience Organization and their work making Hartford a more resilient community here: <https://www.hartford-vt.org/2325/Community-Resilience-Organization>
  - **Encouraging Resilient Buildings** - Encouraging the development of resilient buildings can be an important part of increasing your municipality's energy and climate resiliency. Resilient buildings are those that are designed to adapt to our changing climate. Learn more here:  
<http://www.vtenergydashboard.org/vtclimateactioncommunities-resilientbuildings>
- Resources and Guides
  - The Clean Energy Group **Resilient Power Project Toolkit**:  
<https://www.cleaneigroup.org/ceg-projects/resilient-power-project/toolkit/>
  - Find the **Resilient Building Lab** here:  
<https://resilientbuildings.org/>

- Read about **The State of Resilience in Vermont** here: <https://resilientvt.org/2015/12/29/the-state-of-resilience-in-vermont/>
- Find the **Roadmap to Resilience in Vermont: A Road Map** here: <https://resilientvt.org/project-documents/>
- Learn more about **Incentives for Resilient Buildings** by reading here: <http://www.naiop.org/en/Magazine/2015/Fall-2015/Development-Ownership/Incentives-for-Resilient-Buildings>
- **Stories and Case Studies**
  - Read about Adapting Buildings for a Changing Climate in New York State here: <https://resilientbuildings.org/research/>
  - Read about the fact that Cleveland sees clean energy as tool for climate change resiliency here: <https://resilientbuildings.org/2018/02/13/cleveland-sees-clean-energy-as-tool-for-climate-change-resiliency/>
  - Hurricane Sandy and adaptation pathways in New York: Lessons from a first-responder city – Find the story here: <http://www.sciencedirect.com/science/article/pii/S0959378014000910>

## Frequently Asked Questions

### What is Vermont Climate Action Communities?

Vermont Climate Action Communities (VCAC) initiative is designed to help Vermont municipalities achieve deep energy efficiency savings, reduce local emissions and participate in the transition to a clean energy economy, improve resilience in the face of climate change, and provide locally supported renewable energy generation for municipalities and the communities they serve. Led by VLCT in partnership with a wide range of support organizations, Vermont Climate Action Communities offers technical assistance, training and information to help municipalities plan and take actions to reduce greenhouse gas emissions. . Learn more about the VCPC here: <http://vermontclimatepledge.org/>

### What is the relationship between VCAC and the Vermont Climate Pledge Coalition?

VCAC is the municipal component of the Vermont Climate Pledge Coalition - a group of Vermont municipalities, non-profits, colleges and universities, businesses, farms, and other community organizations which are committed to reducing their carbon emissions and help Vermont meet the U.S. pledge to reduce 2005 greenhouse gas emissions levels by 26-28% by 2025. The VLCT Board of Directors voted to join the Vermont Climate Pledge Coalition at its board meeting on June 19, 2017. Learn more about the VCPC here: <http://vermontclimatepledge.org/>

### Why should municipalities participate?

Municipalities are in a unique position to drive efficiency, resiliency, and renewable energy improvements – not only for their own energy use, but also through their influence on future development and their on-going relationships with the residents and businesses within their community. Municipalities consume energy for buildings, treatment facilities, street lighting, and vehicles. Municipalities influence new development and re-development through both municipal planning and the permitting process. Finally, they have on-going relationships with every resident and business within their jurisdiction through the provision of a wide-range of municipal services.

### **What are the goals of Vermont Climate Action Communities?**

The goals of this initiative are to:

- Encourage municipalities to undertake actions that reduce climate impacts through efficiency and renewable energy and are in line with both state and national goals;
- Provide a range of support services to help municipal officials, staff, and volunteers develop local action plans that establish goals and implementation priorities, and identify concrete steps for achieving these goals;
- Track and evaluate community progress toward achieving municipally stated goals; and
- Encourage development of an energy plan consistent with Act 174 requirements.

### **What are the types of actions that municipalities are encouraged to undertake?**

Under VCAC, municipalities are encouraged to make a pledge to reduce greenhouse gas emissions and then track their actions on the Community Energy Dashboard.

Municipalities are encouraged to undertake actions in four broad categories:

- Municipal energy use
- Public policy, planning, and infrastructure
- Residential and business outreach and engagement
- Energy and climate change resiliency

Program success will be based upon achieving measurable improvements through increased efficiency and renewable energy generation.

### **How can municipalities participate?**

Below are the steps for participating in Vermont Climate Action Communities:

- 1) **Approve Participation:** It is critical for your Selectboard or City Council to approve your municipality's participation in the Vermont Climate Action Communities Program. This can be done simply through a vote of your legislative body, reflected in minutes of the meeting where action was taken, or a vote to adopt a resolution supporting its participation in the program. A sample resolution is available [here](#):

<http://www.vtenergydashboard.org/uploads/slideshow/MunicipalResolution-ClimateActionCommunities.docx>

- 2) **Register your municipality and make your pledge:** Go to the Vermont Climate Pledge Coalition campaign page on the Community Energy Dashboard and click on “Participate in this Campaign.” Then, complete the registration information for a new participant. By registering your municipality, you are pledging to reduce your municipality’s 2005 greenhouse gas emissions levels by 26-28% by 2025.
- 3) **Develop an action plan:** the plan should establish measurable goals and identify priority actions. This plan can build upon or be incorporated in energy plans being developed under the Act 174 energy planning process. The plan should address all energy sectors, including electrical, thermal, transportation energy use, and climate action resiliency. Here are some resources to help you get started:  
<http://www.vtenergydashboard.org/vtclimateactioncommunities>
- 4) **Pledge to take specific actions:** Based upon the priorities identified in the energy action plan, pledge to take specific actions by going to the Community Energy Dashboard and identifying actions your municipality pledges to undertake. Find the Dashboard here: <http://www.vtenergydashboard.org/campaigns/the-vermont-climate-pledge-coalition-tracker>
- 5) **Implement and record your actions:** Select from a range of actions addressing each of the four buckets of: municipal energy use, policy development, energy and climate change resiliency planning and action, and residential/business engagement. Once you have completed the actions, log back in to the Community Energy Dashboard. Navigate to My Account/Actions and mark your pledges complete

### What kind of assistance is available?

VLCT, along with its partners, will assist municipalities in a number of ways, including:

- Guidance: a menu of efficiency, renewable energy and climate resiliency options, a catalogue of available technical and financial resources, and related case studies.
- Technical assistance: Partners will provide one-on-one assistance on specific technologies, policies, and options;
- Training and workshops: Regional educational workshops that will get into the nitty-gritty of designing and implementing specific programs; and,
- Recognition: provide recognition to municipalities that meet their goals.

### Who are the key partners? Key partners for this initiative include:

- Efficiency Vermont
- Vermont Energy and Climate Action Network
- Energy Action Network
- Vermont Council on Rural Development
- Vermont Association of Planning and Development Agencies

## Contact Information

Please don't hesitate to contact the organizations coordinating this effort:

- Karen Horn, VLCT ([khorn@vlct.org](mailto:khorn@vlct.org))
- Paul Markowitz, Efficiency Vermont ([http://pmarkowitz@veic.org](mailto:pmarkowitz@veic.org), 802-540-7608)
- Rob Fish, Energy Action Network ([http://rfish@eanvt.org](mailto:rfish@eanvt.org), 802-383-8527)
- Arielle Cheifetz, Vermont Climate Pledge Coalition Intern  
([acheifetz@burlingtonelectric.com](mailto:acheifetz@burlingtonelectric.com))

We're happy to answer any questions or address any concerns you may have!

*Thank you for your commitment to a more sustainable Vermont!*