

THE CLIMATE CONNECTION

THE VERMONT AGENCY OF NATURAL RESOURCES - CLIMATE CHANGE TEAM NEWSLETTER

Backed by Deb Markowitz, ANR Secretary, the climate change team is working to facilitate enhancements to existing programs in order to promote sustainability, reduce greenhouse gas emissions, improve waste reduction, implement adaptation and mitigation methods, provide education and outreach and advance related economic opportunities.

In
This
Issue...

Update on
Vermont's
Greenhouse Gas
Emission Trend

Vulnerability
Assessment
—
Vermont's Electric
Vehicle Future

Comprehensive
Energy Plan
Forums

VECAN Confer-
ence Summery

 Want to know which other states have Renewable Energy Standards and Goals?

Find out how Vermont is leading the nation by being only one of seven states to established Renewable Energy Goals and one of 36 with Renewable Portfolio Standards with this fun, interactive map:

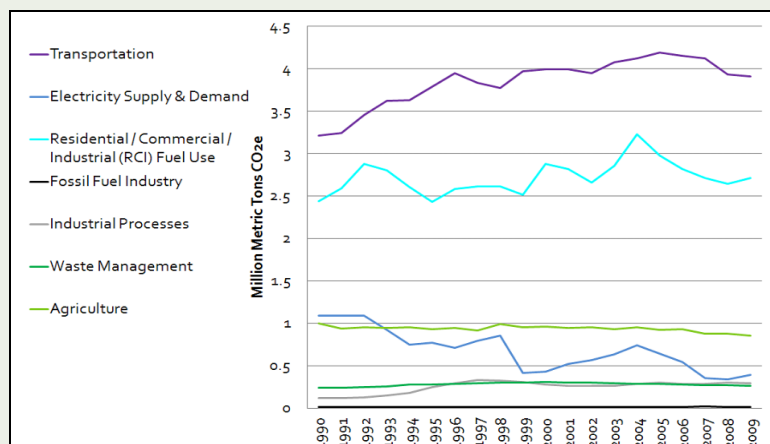
climatecentral.org

Update On Vermont's Greenhouse Gas (GHG) Emissions Trend

A look at the emissions by sector, and progress towards Vermont's emissions reduction goals - Jeff Merrell

New data were recently made available from a wide variety of federal, state, and other sources that enabled the Agency of Natural Resources (ANR) to update estimates of statewide GHG emissions for more recent years. Many sources of data have a fairly long lag time associated with their availability. As a result, while it's now 2013, this update on Vermont's emissions trends is only complete through 2009. Fortunately, the largest sources of emissions (Transportation and Residential / Commercial / Industrial Fuel Combustion) have more recent data available through 2011 that help us better understand what Vermont's 2012 annual emissions are likely to be.

Based on the data we have through 2009, Vermont's GHG emissions were slightly (about 1%) higher than they were for 2008, which ends a steady yearly decline in emissions that we've seen since 2004. This increase in emissions was largely caused by slightly greater fuel use in the Residential / Commercial / Industrial (RCI) sector (due in part to a colder winter), as well as from the purchase of a somewhat larger percentage of higher-emissions electricity from the regional grid.



Vehicle miles traveled (VMT), gasoline, diesel, and heating fuel consumption data recently became available through 2011. Our preliminary estimates show that 2011 GHG emissions from on road transportation (cars, trucks, buses, motorcycles, etc.) and RCI fuel use were comparable to 2009 levels. Transportation and RCI fuel consumption are responsible for more than ¾ of statewide GHG emissions, making it likely that 2011 (and 2012) statewide emissions are not notably different from 2009 levels. As a result, it is apparent that Vermont will not achieve its first GHG reduction goal of 25% below 1990 levels by 2012.

Meeting the next emissions reduction goal (50% below 1990 levels by 2028) will require a multi-pronged approach aimed at continued improvements to energy (electrical and thermal) efficiency & conservation, increased reliance on clean renewable energy, and widespread introduction of lower emissions transportation options such as electric vehicles.

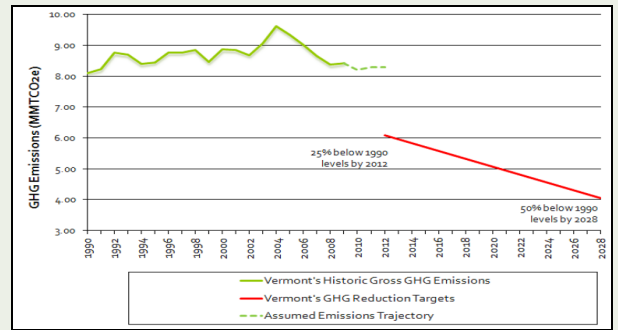
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The emissions reduction tasks at hand won't be easy or free, but they may be far simpler and cheaper than dealing with the more extreme consequences of climate change that we will certainly face if we continue with business as usual. Vermont can't stop climate change alone, but it can be a responsible leader in doing the difficult job that needs to be done.

Please visit the site below to view a detailed copy of the report:

[Vermont GHG Emissions Inventory \(Nov 2012\)](#)



ANR Working on Vulnerability Assessment for Natural Systems

Due to the changing climate in the northeast, habitat and species are at risk for deterioration - Brian Woods VTANR

While a great deal of attention has been focused on the vulnerability of our roads, bridges and communities to a changing climate since last year's flood events, ANR is also looking at what species and ecosystems could be at risk over the next decades from a changing northeast and Vermont climate. ANR is working with environmental consultant TetraTech to prepare a vulnerability assessment report and adaptation strategy for lakes, rivers, wetlands and upland forests. This report will look at these natural communities and the plants and animals that live in them, determine which are at the most risk from the warmer temperatures and the cycles of wet and dry weather that are predicted in the future, and develop a list of potential actions ("adaptation strategies") that could help protect them. For example, stream bank vegetation buffers could be used to provide shade and maintain cool water habitat for fish and other cool water species, in addition to acting as a check on erosion.



Photo courtesy of Brian Woods

The process of developing this report is not limited to ANR. In July 2012 over 60 experts in hydrology, biology and ecosystem protection from government, the private sector and academia gathered in Montpelier to apply their expertise to this project. A follow-up workshop, engaging many of the same participants and focused on developing adaptation strategies, took place in early December. The final report is expected by February 2013.

Vermont's Electric Vehicle (EV) Future is Charging Up

A new look at what will be hitting the roadways in the Green Mountain State— Brian Woods

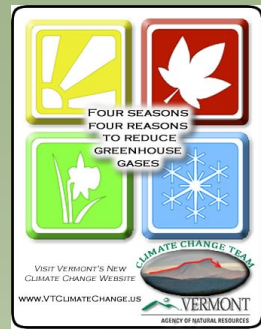


Photo courtesy of Karen Giltman

If you haven't seen one yet you will soon...a Nissan Leaf charging up at a local charging station...a Mitsubishi MiEV running errands around Montpelier...a Chevrolet Volt cruising down the interstate. These and others are the new generation of electric vehicles and they are making their way onto Vermont's roadscapes.

According to the latest [Vermont Greenhouse Gas Inventory](#) report, transportation accounts for nearly half of the greenhouse gasses we generate in Vermont. This is due, in part, to the rural setting of Vermont, but also, because the electricity that we buy is primarily from hydro and nuclear, both of which have extremely low greenhouse gas emissions. These two characteristics of Vermont present a unique opportunity to drastically curb our greenhouse gas emissions in short order. This opportunity can be realized by transitioning from a petroleum vehicle fleet to a battery powered – electric vehicle fleet that is energized by our clean electricity portfolio. At present there are at least 5 electric plug-in vehicles that you can choose from in the market place (Chevy Volt, Ford C-Max, Mitsubishi MiEV, Nissan Leaf, and the Toyota Prius Plug-in).

The following events outline the progress that has been made in helping Vermont transition to an electric vehicle infrastructure:



Want to see what renewable energy opportunities are available in your town?

Check out this fun interactive energy atlas at :

www.vtenergyatlas.com

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Project Get Ready

At the March 28th Climate Cabinet meeting ANR Secretary Deb Markowitz, Public Service Commissioner Elizabeth Miller and Agency of Transportation Secretary Brian Searles signed an agreement to make Vermont a participant in Project Get Ready. This is a nationwide effort founded by the Rocky Mountain Institute to assist cities and states through the early stages of an EV future. The Vermont Energy Investment Corporation (VEIC), the non-profit organization that runs the Efficiency Vermont program, is steering the program. As part of the effort, VEIC established the "DriveElectric Vermont" brand and web site www.driveelectricvt.com.



Photo courtesy of Karen Giltman

Electric Vehicle Showcase and Demonstration: New England Governors, Eastern Canadian Premier Conference (NEG-ECPC) July 27th-29th

During the NEG-ECP 36 Annual Conference the Project Get Ready partners and several EV manufacturers organized an electric vehicle showcase complete with a demonstration for the attendees at Shelburne Farms. In addition to getting to see and drive these vehicles, Governor Shumlin and Quebec Premier Jean Charest came to an agreement on establishing an electric vehicle charging corridor from Vermont to Quebec.



Photo courtesy of Karen Giltman

Vermont Plug In Weekend (September 22-23rd): Recognition of National Plug In Day

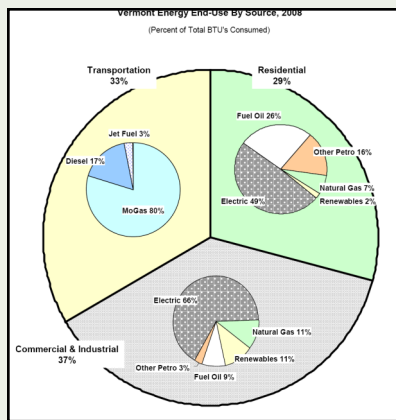
Dealers across the state partnered with the group Drive Electric Vermont to celebrate National Plug in Day by encouraging Vermonters to learn more about electric vehicles. Participating dealerships included Toyota of Berlin, Burlington Mitsubishi and Hand Chevrolet in Manchester. According to Vermont Public Radio there are already electric vehicles in 50 communities across the state.

What's the Difference? Standard Hybrid vs. Plug in?

While both types of vehicles require gasoline as well as electric motors, the plug in has larger rechargeable battery packs. Thinking about buying a hybrid or plug in? Check out this comprehensive guide at :

hybridcars.com/plug-in-hybrid-cars

State Comprehensive Energy Plan Forums - Molly Moran



publicservicedept.vermont.gov

This fall, the state convened a series of four community meetings hosted by the Vermont Natural Resources Council (VNRC). The objective of the meetings was to review goals for Vermont's energy plan as well as the actions needed to meet these goals. The meetings were lead by Johanna Miller (VNRC) with keynote speakers Deb Markowitz (Secretary of the Agency of Natural Resources) and Asa Hopkins (Director of Planning and Energy Resources Division of the Department of Public Service). The updated Comprehensive Energy Plan (CEP), which was released December 2011, states Vermont's commitment to reduce greenhouse gas emissions across all sectors over the next 20 years. The work plan is composed of four parts. First, reduce Vermont's contribution to GHG emissions. This means starting at the grassroots level, promoting programs for energy efficiency as well as providing incentives for clean energy. Second, to prepare for the impacts and challenges presented by our changing climate. This entails investing in resilient infrastructure programs for natural disasters. Third, reduce state government contribution to emissions, and finally implementing policies at the state level.

Vermont's three main contributions to greenhouse gas emissions are transportation, space heating and land use. In order to meet our goal of 90 percent of the state's energy needs coming from renewable sources by mid-century, we need to both increase the amount of renewable energy generation and reduce the total amount of energy we use. These three sectors must be targeted for energy and emissions reductions on both the state and local level. Hopkins identified the four components needed to meet the emissions and renewable goals. The first is through education and outreach, second by funding and finance, third through innovation and expertise and the fourth through regulatory policies and structures.

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Thermal Efficiency Task Force Report

The state's Thermal Efficiency Task Force recently released its report on a comprehensive, statewide, whole-building approach to thermal energy efficiency. The full report and a summary are available.

publicservice.vermont.gov/topics/energy_efficiency/tetf



Find ways to Make your home more Energy Efficient!

Check out this article by Efficiency Vermont for tips on how to save money and improve energy efficiency in your home.

efficiencyvermont.com



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Many programs targeting lower emissions are already implemented and focus on integrated action, such as the Property Assessed Clean Energy (PACE) Program, which is designed to help qualifying homeowners invest in specified energy efficiency and renewable energy improvements. Another example is the statewide Way to Go Commuter Challenge Program, which, every May, presents the challenge to Vermonters to find an alternative means of transportation as a way to promote commuter awareness.

For more information, an overview of the CEP can be found at: <http://publicservicedept.vermont.gov>

VECAN Conference Summary- Molly Moran

ANR representatives Brian Woods and Molly Moran attended the 5th annual Vermont Community Energy and Climate Action Network (VECAN) conference at the Mount Morey Resort in Fairlee, on Saturday December 1st. The workshop and roundtable discussion style forum featured topics of interest such as community scale solar projects, hydropower in Vermont, engaging communities in energy efficient programs and a very popular electric vehicle demonstration. As part of the program, ANR participated in the poster session choosing to preview the upcoming Greenhouse Gasses Emissions Inventory to those in attendance. Keynote speaker Chris Martenson, PhD in economics from Duke University, urged that the way to meet our goal of 90% renewable energy by 2050 is through the three Es: Economy, Energy, and the Environment. This across the scale approach places emphasis on action on the state and local levels, as well as the need for participation among all Vermonters. See <http://www.vecan.net/index.php/resources/annual-conference-2012/> for all the conference presentations.



Keynote speaker Chris Martenson Photo: VECAN