

Vermont

Overview and Goals

Vermont is committed to rapidly reducing the climate pollution emitted within its borders, and to demonstrating leadership in the transition to a new clean energy economy. The state's private and public sector leaders are united in the belief that reducing emissions and investing in new clean and renewable energy sources will lay the foundation for a healthy economy and for thriving Vermont communities long into the future.

In 2009, the Vermont legislature adopted statutory goals for reducing emissions of greenhouse gases to 50% below 1990 levels by 2028, and 75% below 1990 levels by 2050. This year, compelled by the weight of science demonstrating that deeper reductions in carbon pollution are needed by the mid-century to avoid catastrophic impacts from climate change, as well as the belief that a low-carbon economy will benefit Vermonters, Vermont became a founding signatory to the Under2 MOU. The state also joined its neighboring New England states and the eastern Canadian provinces in a regional emissions reduction goal of 35 to 45% below 1990 levels by 2030.

Achieving these new emissions reduction goals in Vermont will require a comprehensive approach to energy transformation built on conservation and deep improvements in energy efficiency, as well as greater production and use of clean renewable energy. Vermont will support broad adoption of new electric technologies which are substantially more efficient than previous technologies (such as heat pumps and electric vehicles), and will also continue to shift the sources of its electricity away from inefficient power plants that lose heat up smokestacks, and toward more efficient wind, solar, clean biomass, and hydroelectric. Vermont's focus on strategic electrification will reinforce a shift toward distributed energy resources that will support our grid, increase resilience, and lower infrastructure costs. It will also create new jobs; the clean energy industry in Vermont is already home to 4.8% of all Vermont employees.

In 2011, Vermont developed a Comprehensive Energy Plan (CEP) with the most ambitious statewide energy goals in the nation: obtaining 90% of the state's energy from renewable sources by 2050. This January, Vermont will release its 2016 Comprehensive Energy Plan. The Plan will: affirm our commitment to total energy transformation as a means of combatting climate change; integrate new near term goals for greenhouse gas reductions, energy conservation and growth the state's use of renewable energy; and lay out a road map for achieving changes in how Vermont uses and produces energy in the electric, transportation, and heating sectors.

In tandem with its energy transformation, Vermont will continue conserving and managing its abundant undeveloped lands, including forests, wetlands and agricultural fields with rich soils, to maximize carbon storage. Vermont is 80% forested, and has over 140,000 acres of farmland protected under conservation agreements. The carbon sequestration in these lands is substantial, and programs managed by the state and its non-profit partners to enhance this ecosystem service in the future are a key arrow in the quiver for net carbon emissions reduction.

Specific Actions

Clean, Low Carbon Electricity

Vermont is developing innovative new policies to incentivize the generation of more renewable energy here in the green mountain state. Landmark legislation passed last spring will build on previous programs by creating a new energy portfolio standard for Vermont utilities. It requires 55% renewable energy in 2017, rising over time to 75% in 2032. It will support a significant increase in distributed new in-state generation of renewable energy – climbing to 10% of electricity by 2032 – as well as utility engagement in a range of energy efficiency improvements to reduce fossil fuel use, from weatherization of older buildings, to installation of efficient appliances, including air source or geothermal heat pumps, to investments needed to grow the electric vehicle market. Vermont is also modernizing its approach to encouraging distributed generation through net metering. The net metering cap was recently raised to 15% of peak capacity, but the pace of distributed generation in the state has far outstripped projections. Vermont will develop new rules that facilitate the integration of distributed energy resources into the grid while also ensuring that utilities remain financially sound and able to maintain electric power infrastructure. Efforts are also underway to establish a siting process for renewable generation that ensures adequate protection of Vermont’s unique natural resources and provides more opportunities for community input in siting decisions. Through these partnerships between state government, utilities, regional planning commissions, municipalities and energy developers Vermont will develop a sustainable approach to siting new energy facilities and fully involving utilities in the energy transformation underway in this state.

Emissions Trading

The Regional Greenhouse Gas Initiative ("RGGI"), a cooperative effort by nine eastern states including Vermont to reduce carbon dioxide emissions from the electric power sector, was the first market-based regulatory program in the United States to reduce greenhouse gas emissions. The cooperative program works by setting limits on carbon dioxide emissions from the power sector and lowering them over time. Power plants that can't meet the cap must purchase credits or "emissions allowances" from others that are able to reduce their emissions below their cap. A recent analysis indicated that RGGI has been responsible for half of the

power sector emissions reductions in our region; those emissions would be 24% higher today if RGGI did not exist.¹ Vermont's participation in RGGI provides the state with much needed revenue to support thermal energy and process fuel efficiency programs. These programs are run by the state's energy efficiency utilities, including our groundbreaking independent efficiency utility, Efficiency Vermont.

De-carbonization of Transportation

According to the state's 2012 greenhouse gas emissions inventory, transportation currently accounts for almost half of Vermont's statewide emissions. Vermont has placed a high priority on electrification of transportation to reduce these emissions, as well as managing transportation demand by offering more efficient public transportation options and by encouraging reductions in the vehicle miles travelled by Vermonters.

Vermont formalized its strong commitment to building a thriving market for electric vehicle market when it joined with seven other states to develop the Multi-State Zero Emissions Vehicles Task Force. Vermont has its own ZEV action plan, focused on fostering market growth through a range of strategies including developing consumer and dealer incentives, supporting the development of both public and private electric charging infrastructure, building the use of EVs in workplace fleets, and promoting broader consumer awareness and interest. A stakeholder coalition whose sole goal is to promote EV adoption – Drive Electric Vermont – will be a key partner for this work.

This effort is complemented by a sustained commitment by state and local transit agencies to expand efficient transportation choices for Vermonters. Bus services are being expanded in many municipalities and investments in new rail infrastructure will drive growth in demand for passenger and freight transport by rail. Vermont is also investing in the development of better infrastructure for walking and biking, promoting commute trip reduction through ride and car share programs, and pursuing transportation demand management strategies. The state has a suite of incentives in place to support compact development of downtown areas that avoids carbon intensive sprawl.

¹ See Murray and Maniloff paper shown at: <http://www.sciencedirect.com/science/article/pii/S0140988315002273>

Increasing Building Efficiency

Vermont is adopting a goal of making 30% of the energy used in the state's building renewable by 2025, using a whole building approach to improving efficiency and transitioning away from fossil fuel-based energy for heat and electricity. Partnerships between heating service companies, building performance contractors, and renewable energy installers will assist customers to develop comprehensive roadmaps for improving their building energy use. Vermont is seeking to increase the availability of affordable private financing for weatherization, energy retrofits and installation of electric heat pumps and modern wood heating systems. Vermont was the first state to adopt building energy codes based on the 2015 International Energy Conservation Code, and is adopting stretch codes that apply to larger developments in the state. A new building labelling system will be adopted in the next few years, and the state is committed to developing a path toward all new construction being net zero by 2030.

Natural Resources and Sustainable Waste Management

Vermont will place a large emphasis on implementing conservation and natural resource management strategies to enhance carbon storage in Vermont's forests, wetlands and floodplains. These actions will build on a long history of land conservation and stewardship in Vermont and will produce multiple benefits including building flood resilience, protecting water quality from the impacts of climate change, reinforcing patterns of compact development in municipal centers and enhancing recreational assets for Vermonters and visitors. Vermont has also adopted phased requirements for the provision of universal recycling services and for mandatory recycling and composting by residences and businesses. These policy changes are expected to significantly reduce carbon and methane emissions associated with the state's waste management systems.