"Tier 3" – Statewide Total Energy Program ("STEP")

A new report from Energy Futures Group provides an overview, analysis and projected impacts for one of Vermont's essential climate protection strategies, Tier 3 of Act 56.

Vermont's Energy Transformation

Many of Vermont's past energy programs have focused on saving electricity – and the fossil fuel that was burned in producing that electricity – as a means of reducing greenhouse gas emissions (GHG). Today, renewable generating sources like hydro, wind, and solar are providing cleaner kilowatts. As a result, policy is shifting in ways that will encourage using this clean electricity to replace our current dependence on fossil fuels for heating and transportation.

75% of Vermont's total greenhouse gases are generated from driving our cars and trucks, as well as heating our water and homes. Without addressing these sectors, the state's goal of "90% renewable energy by 2050" cannot be achieved.

With this in mind, the Vermont Legislature passed Vermont's Renewable Energy Standard (Act 56) in 2015. Act 56 included an "Energy Transformation" section, also known as "Tier 3." This new report refers to "Tier 3/STEP," or the "Statewide Total Energy Program ("STEP") Beyond Fossil Fuels" to help people better understand the potential of this policy. The goal of Tier 3/STEP is to replace fossil fuels with cleaner, renewably-sourced electricity, local wood fuels, biofuels, and efficiency to reduce net carbon emissions.

Tier 3/STEP = Big Savings

The potential impact of Tier 3/STEP is significant. The recent analysis by the Energy Futures Group (EFG) shows that over the next fifteen years Tier 3/STEP can:

- Cut carbon and greenhouse gas emissions;
- Offset the increased costs of adding renewables to the grid;
- Reduce the volatility of energy prices;
- Improve public health;
- Promote local economic development; and
- Potentially save Vermont ratepayers hundreds of millions of dollars in electric costs.

For comparative purposes, it can be useful to relate the impacts of Tier 3/STEP to the long-standing energy efficiency programs of Efficiency Vermont and the other Vermont Energy Efficiency Utilities. While Tier 3/STEP starts out in 2018 at only seven percent (7%) of the Vermont Energy Efficiency Utilities' goals, it grows to more than one-third (34%) of those goals by 2032, providing a meaningful contribution to Vermont's climate savings initiatives.

How It Works

Tier 3/STEP requires Vermont's electric utilities to help their customers reduce fossil fuel consumption by adopting new, affordable and clean energy electrification technologies (such as cold climate heat pumps, heat pump water heaters and electric vehicles). Customers can also use new incentives to lower energy bills by switching to advanced wood heat[1], making efficiency investments, and /or weatherizing their homes. Businesses that currently use fossil fuels are also incentivized to switch to measures that use cleaner electricity. Through these electrification efforts, customers can cut costs, reduce emissions by using cleaner electricity rather than burning fossil fuels, and help to potentially reduce electric rates. By selling more electricity through the Tier 3/STEP efforts, utilities will be able to spread their fixed costs (for poles, wires, trucks, etc.) over additional electricity sales, with the potential impact being reduced electricity costs.

The total savings from Tier 3/STEP over its 15 years will be equivalent to approximately 148 million gallons of oil, or about twice the total amount of fuel oil Vermonters used to heat their homes in 2016.

Energy Futures Group conducted an analysis that estimates up to $7 million in potential savings over the lifetime of the Tier 3/STEP measures being installed in 2018 and over $300 million from those measures put in place over the next fifteen years. These savings could be used to reduce rates, re-invest in electric grid infrastructure, or increase renewable electric supplies.

Vermont's largest electric utilities have targets to save the fossil fuel equivalent of 2% of each utility's annual electric sales starting in 2017, increasing to 12% by 2032. Small municipal utilities have a two-year delay. If they are unable to meet the obligations of the program, utilities can, as a last resort, request flexibility from the Public Utility Commission in a given year or pay an "Alternative Compliance Payment" (or "ACP") to support additional energy transformation measures. Vermont utilities are offering a variety of programs, as evidenced by some of the case studies highlighted below.

Tier 3 is Right for Vermont

Tier 3/STEP comes at an important time for Vermont's renewable energy objectives. The emergence of new, affordable and clean energy electrification technologies (such as cold climate heat pumps, heat pump water heaters and electric vehicles), coupled with the continued greening of Vermont's electric supply, makes Tier 3/STEP an informed and timely element of energy policy for the State. It has the potential to benefit Vermont ratepayers, the economy, the environment, and electric utilities.

The full report provides more background and detail on Tier 3/STEP along with a rate impact analysis and some case studies of some of the early Tier 3/STEP projects.

1 Advanced wood heating systems are those that utilize highly efficient technology, produce low emissions, support healthy forest ecosystems, and consume local wood (from within a 50-mile radius).

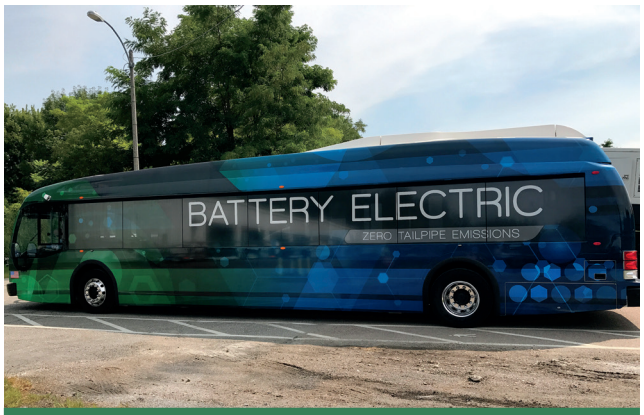
Case Studies

Sometimes stories are helpful to provide some examples to help make a policy real. These five case studies of Tier 3/STEP initiatives show some of the efforts that the Vermont utilities have undertaken to transition their customers away from fossil fuels.

A. Johnson Co. — Lumber Mill Electrification

The A. Johnson Co., LLC is a family-owned and operated forest products business producing high quality hardwood lumber for both the wholesale and retail markets. Based in Bristol, Vermont the company is committed to being responsible to its community.

Green Mountain Power used Tier 3/STEP to lower the cost of bringing 3-phase electrical service to a portion of the mill that had previously operated on a diesel generator. The change made the workplace quieter and healthier, and reduced GHG's by offsetting 32,000 gallons of fossil fuel each year with power that's 60% from renewables.



Electric Busses for Burlington

Transportation represents the largest slice of Vermont's energy and GHG emissions pie. The Burlington Electric Department (BED) is using Tier 3/STEP to offer incentives for electric vehicle off-peak charging, new electric charging stations, and 16 electric bikes in the city's bikeshare program. BED is also helping Green Mountain Transit acquire up to four electric busses.

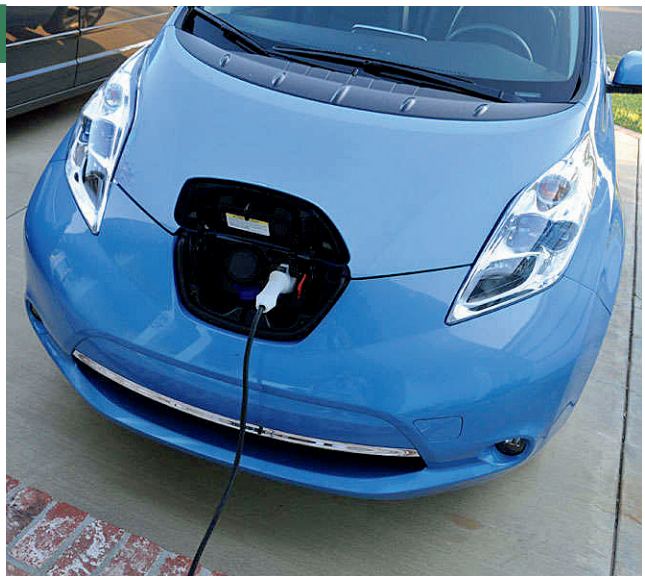
100% of BEDs power comes from renewables, so these shifts greatly reduce GHG emissions.

Homeowner Improvements

Most Vermont homeowners use fossil fuels to heat their homes and water, and to power their cars. Bekah Mandell and Patrick Wood received incentives from Washington Electric Coop (WEC) to finance heating improvements in their 184-year-old home.

Several utilities are using Tier 3/STEP to help residential customers lower their use of fossil fuels by providing rebates for measures such as heat pumps, pellet stoves, energy storage and controls, and weatherization. If the utility's power comes from renewables (WEC is 100% renewable), these measures lower GHG pollution.

Electric Vehicles



Electric vehicles (EV) can cost half as much to operate per mile traveled compared to standard gasoline cars. When charged with renewably-sourced electricity, they can be significantly cleaner, as well.

In 2017, Green Mountain Power (GMP) and Freedom Nissan South Burlington offered a $10,000 discount on the purchase of a new 2017 Nissan LEAF. Over 150 LEAFs sold in four months. GMP customers have also received free Level 2 smart EV home chargers, helping GMP reduce costs for all customers by optimizing when the EV charges.

Maple Sugaring with Clean Electricity

Everybody loves maple syrup, right? Well, syrup produced with clean energy is even sweeter!

At Little Charlie's Sugarbush in Jay, Vermont, Vermont Electric Coop (VEC) used Tier 3/STEP to provide incentives to extend electric service about a half mile to the sugarhouse. This transition to electric energy will displace almost 8,000 gallons of propane each year and reduces GHGs since 80% of VEC's power comes from renewables.

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For a copy of the white paper: energyfuturesgroup.com/wp-content/uploads/2018/10/Tier-3-White-Paper.pdf