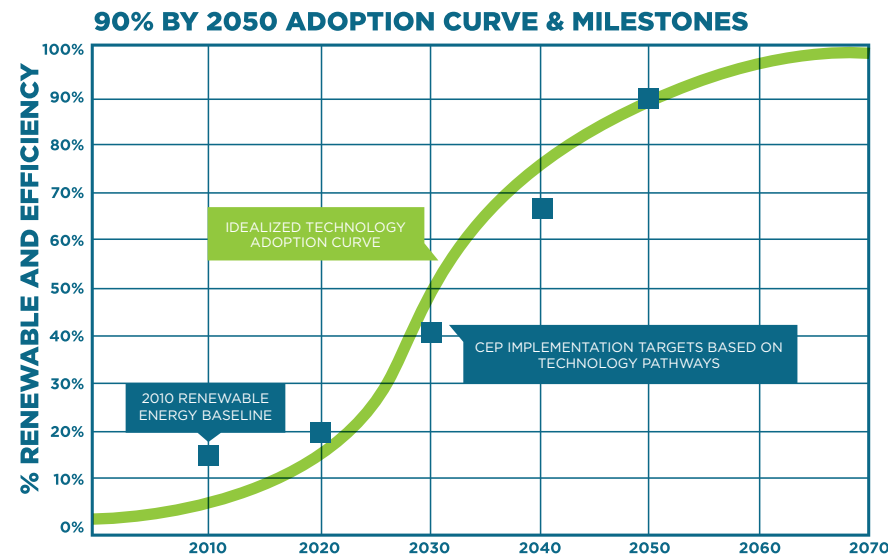


HOW DO WE GET THERE?



Vermont's Comprehensive Energy Plan (CEP) establishes a bold goal: to meet 90% of Vermont's 2050 energy needs from renewable sources and increased efficiency. EAN developed a "Pathways to Clean Energy" analysis to illustrate what Vermont's energy transition might look like in concrete terms.

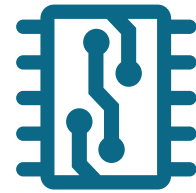
A technology adoption curve was used to help identify decade milestones across three energy sectors: heat, electricity and transportation (see p. 24-25).

THREE KEY FACTORS DRIVE THIS TRANSITION



EFFICIENCY

Thanks to our efficiency utilities, we are well on our way, with Vermonters having already saved over \$60 million through efficiency improvements.



NEW TECHNOLOGIES

Allow us to simultaneously reduce energy use and shift to renewables. Current drivers include: electric & hybrid vehicles, cold climate heat pumps, modern wood heating, electricity storage, and biofuels.



RENEWABLE SOURCES

A mix of hydroelectric, solar, wind, biomass & biofuels replacing imported fossil fuels keep energy dollars and jobs in Vermont.

INCREASE EFFICIENCY AND RENEWABLES



SOLAR



HYDRO



BIOMASS

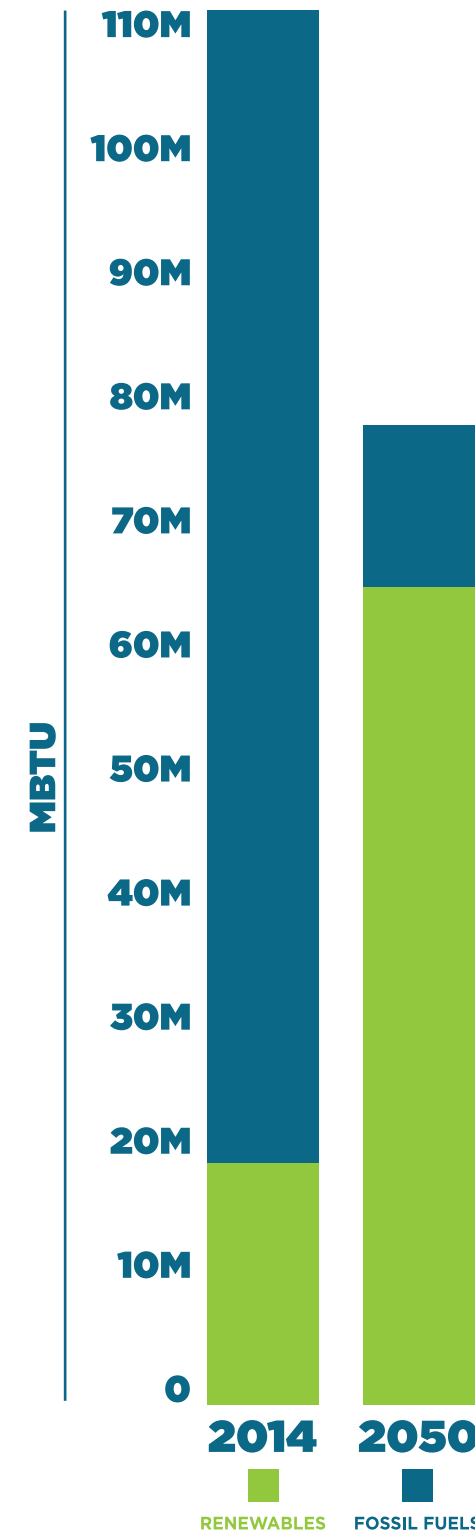


BIOFUEL



WIND

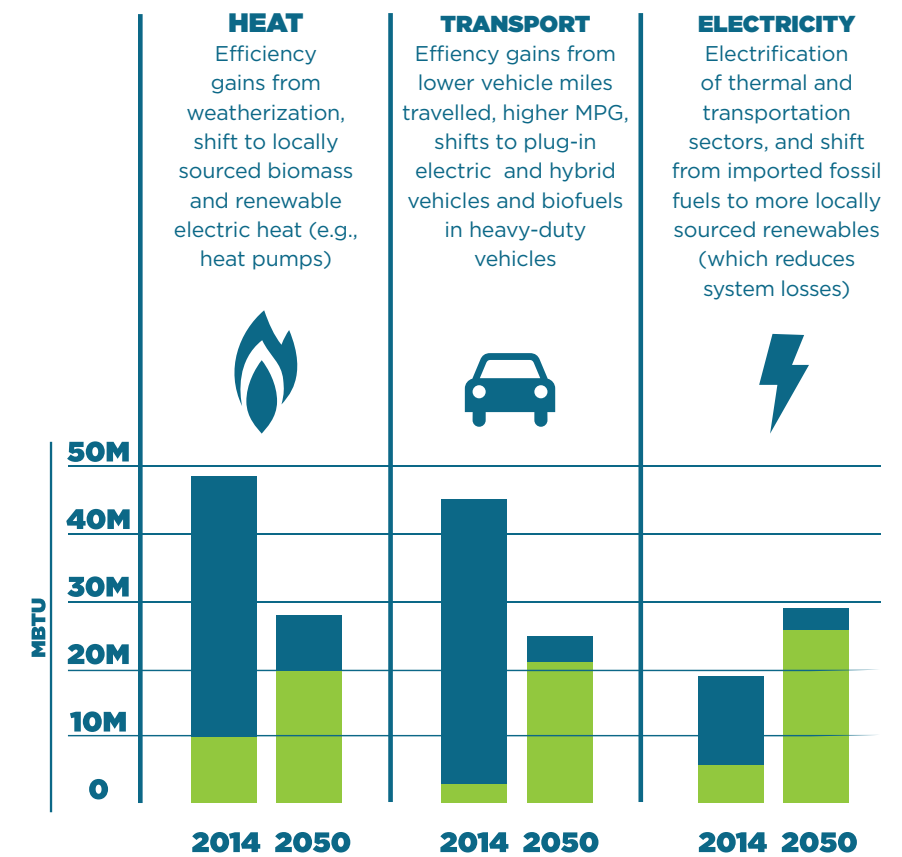
VERMONT'S TOTAL ENERGY USE



WHERE DOES IT GET US?

- ✓ Decrease in total energy use through efficiency saves \$\$
- ✓ Increase in renewably sourced energy brings jobs and stable energy prices
- ✓ Reduction in imported fossil fuels keeps energy dollars local

ENERGY SECTORS - KEY DRIVERS



EAN's analysis is not meant to be a "roadmap," but rather a demonstration of what it would take to reach 90% by 2050 using known technology pathways while supporting the targets of the 2016 CEP. This helps us understand orders of magnitude and generate discussion around needed policies, investments and actions.



SOURCE: Long Range Energy Alternatives Planning (LEAP) Model results. LEAP is a widely-used software tool that allows policy analysts to evaluate different scenarios for reaching energy goals based on local energy requirements, costs and societal benefits. Developed at the Stockholm Environment Institute, it is used by thousands of organizations in more than 190 countries worldwide. EAN is collaborating with the VEIC, Efficiency Vermont, Regional Planning Commissions, and the Public Service Department on a state-wide energy scenarios that are consistent with the state's 90% by 2050 goals. This model also underpins EAN's Community Energy Dashboard progress timelines for all 251 towns in Vermont.