

# ecos

## A SUSTAINABLE FUTURE FOR CHITTENDEN COUNTY

2018 Plan Update

The Chittenden County Regional Planning Commission (CCRPC) is embarking on the **2018 ECOS Plan**, an update to the **2013 ECOS Plan**. This update will focus mainly on updates to the Metropolitan Transportation Plan and Comprehensive Economic Development Strategy, and will serve as the Regional Enhanced Energy Plan. This document provides an overview of the energy sections and is the first of a three-part series (energy, economy, and transportation). Please note that this overview does not reflect all updates and changes to the energy sections; for a detailed look, view the full draft at <http://www.ecosproject.com/2018-ecos-plan/#plan>.

### Part 1 of 3: ENERGY UPDATE

The update to the energy section identifies actions for reducing energy consumption and reliance on fossil fuels for all sectors of energy (heating, electricity, and transportation). Doing enhanced energy planning for the region will align us with the **State's energy goals** and means the ECOS Plan will have a larger role in the permitting of renewable energy projects at the State level. After the ECOS Plan is approved in June 2018, the CCRPC will be able to review town plans for a determination of energy certification which, if granted, will allow municipalities more influence in the siting of renewable energy projects. Below are a number of energy-related strategies that will enhance the 2018 ECOS Plan.

#### What is the ECOS Plan?

Since 1976, the Chittenden County Regional Planning Commission has been producing a Regional Plan to protect the County's resources and guide its development. The ECOS Plan is the 2013 regional plan for Chittenden County and includes the Metropolitan Transportation Plan and the Comprehensive Economic Development Strategy. Learn more at [ecosproject.com](http://ecosproject.com).

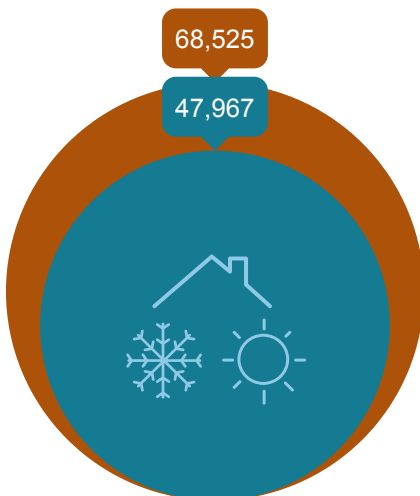
### USE 1/3 LESS ENERGY FOR HEATING, TRAVEL & APPLIANCES

⚡ Collaborate with utilities to reduce energy use through weatherization of homes and businesses, and the installation of more efficient appliances.

70% of Chittenden County homes need to be weatherized by 2050.

⚡ Plan for a majority of new growth to take place in compact areas to reduce travel distances, provide for more energy efficient buildings, and encourage walking, biking, and transit use.

On average, 86% of homes built in Chittenden County since 2012 are in areas planned for growth, exceeding the 80% goal outlined in the ECOS Plan.




 86%  
In areas planned for growth

 14%...  
In rural areas

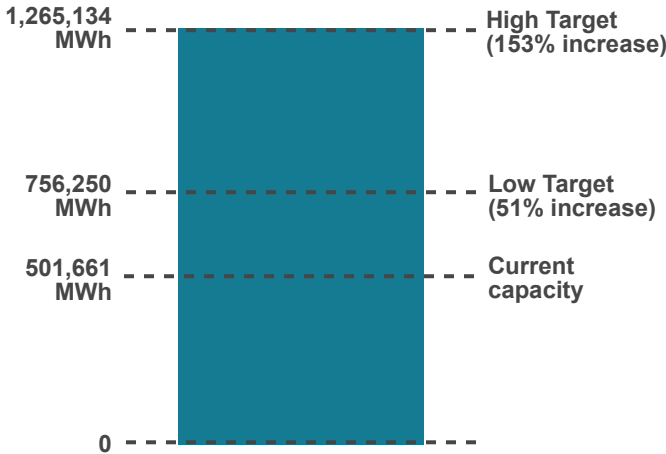
■ Total Homes ■ Homes Needing Weatherization




# 90% OF ENERGY NEEDS TO BE FROM RENEWABLE SOURCES BY 2050

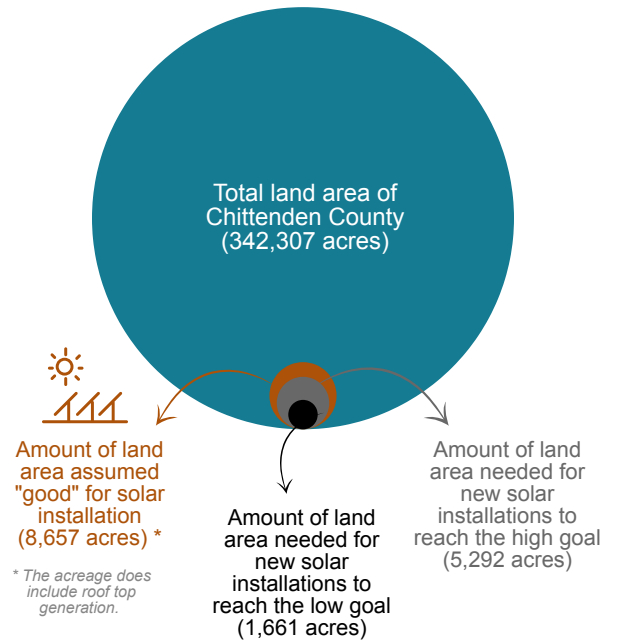
 We've estimated how much additional renewable energy (wind, solar, biomass, and hydro) the region needs to generate.


Chittenden County needs to generate 756,250 MWh (Megawatt hours) of energy to meet the low target, or a 51% increase -- and 1,265,134 MWh to meet the high target, or a 153% increase. The low and high ranges represent two different methodologies toward meeting the State's 90% renewable goal.



 We've estimated how much land area is needed to meet the renewable energy generation target if solar is the only type of technology deployed.


At 100% solar the county has approximately 2x to 5x the amount of land area assumed to be "good" for achieving the high and low-range targets respectively. Other generation types (i.e. wind, hydro, and biomass) are options for meeting the targets. CCRPC is only showing 100% solar as an example to demonstrate a pathway for moving to 90% renewable.



 We've identified land areas with environmental constraints, which may not be appropriate locations for renewable energy generation facilities (solar, wind, biodigesters, etc.).


View a detailed map on the next page. White areas (8,657 acres and described as "good" above) and possible constraint areas (67,371 acres) are potentially appropriate areas for these facilities, while known constraints are not.


## TRANSFORM THE TRANSPORTATION & HEATING SECTORS TO ELECTRICITY POWERED BY RENEWABLE SOURCES

 Because the transportation sector accounts for 38% of the county's energy use, it's important that we transform it through the promotion of electric vehicles and installation of electric vehicle charging stations.

Target: 89% of passenger cars should be electric.


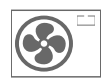
Currently, there are **106,936** total passenger cars in Chittenden County

 **601** are electric/plug-in hybrid (less than 1%)

 Because the heating sector accounts for 44% of the county's energy use, it's important that we collaborate with partners to reduce fossil fuel use in the heating sector through installation of heat pumps.

Cold climate heat pumps are more efficient than oil heating systems. While the cost of natural gas is lower, at \$14.88/MMBTU, transforming the heating sector to electricity reduces fossil fuel use and greenhouse gas emissions and keeps energy dollars in the State.

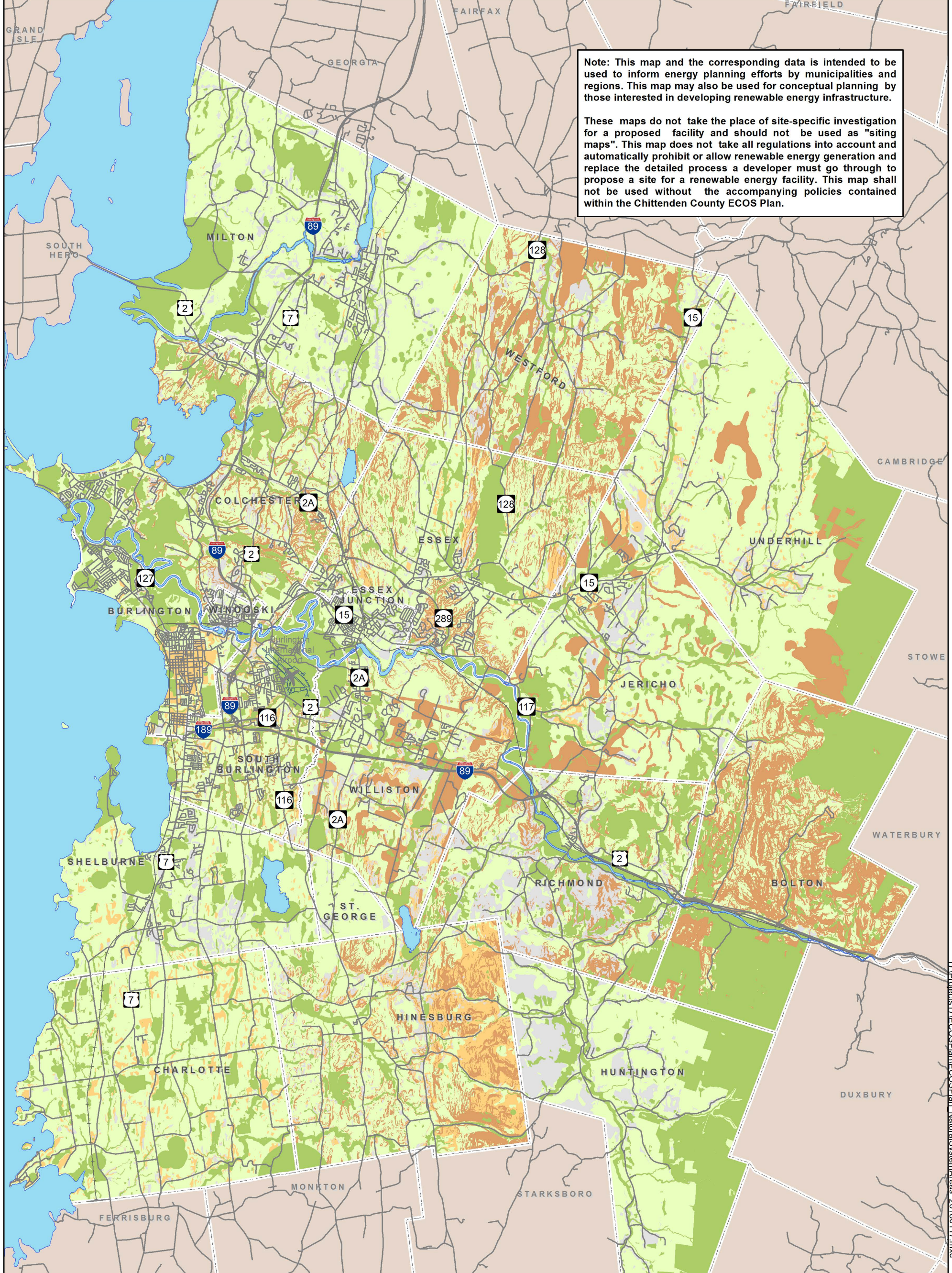
Source: Vermont Fuel Price Report, November 2016

**\$20.14 /MMBTU**  Oil heating system **VS.** **\$18.32 /MMBTU**  Cold climate heat pump

To learn more about the 2018 ECOS Plan and submit your feedback on energy planning, visit [ecosproject.com/2018-ECOS-Plan](http://ecosproject.com/2018-ECOS-Plan).

Note: This map and the corresponding data is intended to be used to inform energy planning efforts by municipalities and regions. This map may also be used for conceptual planning by those interested in developing renewable energy infrastructure.

These maps do not take the place of site-specific investigation for a proposed facility and should not be used as "siting maps". This map does not take all regulations into account and automatically prohibit or allow renewable energy generation and replace the detailed process a developer must go through to propose a site for a renewable energy facility. This map shall not be used without the accompanying policies contained within the Chittenden County ECOS Plan.



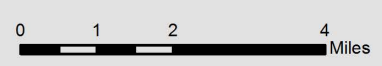
## State and Local Development Constraints

Sources:  
 Major Roads and Railroad - VTrans  
 Town Boundary and Water Body - VCGI

Map produced with ArcGIS.  
 State Plane Coordinate System NAD83.

Disclaimer:  
 The accuracy of information presented is determined by its sources. Errors and omissions may exist. The Chittenden County Regional Planning Commission is not responsible for these. Questions of on-the-ground location can be resolved by site inspections and/or surveys by registered surveyor. This map is not sufficient for delineation of features on-the-ground. This map identifies the presence of features, and may indicate relationships between features, but is not a replacement for surveyed information or engineering studies.

- State Known Constraints
- Local Known Constraints
- State Possible Constraints
- Local Possible Constraints



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