

Municipal Breakout Guide - Energy Data

The following is an explanation of the information displayed in the Municipal Breakout provided to you by CVRPC.

The intent of the Municipal Template is to provide the municipality with data that can be used to ensure compliance with the requirements of Act 174 and “Enhanced Energy Planning” (24 V.S.A. 4352). The Municipal breakout document provided to your municipality contains data that estimates current energy use and provides targets for future energy use across all sectors (transportation, heating, and electricity). It also sets targets for renewable energy generation within the municipality.

This data is meant to be a starting point for the municipality to begin planning its energy future and to talk about the changes that may need to occur within the municipality to ensure that local, regional and state energy goals are met. This includes the goal that 90% of all energy demand be met by renewable sources by 2050.

Estimates of current energy use consist primarily of data available from the American Community Survey (ACS), the Vermont Agency of Transportation (VTrans), the Vermont Department of Labor (DOL), and the Vermont Department of Public Service (DPS). Targets for future energy use are reliant upon the Long-range Energy Alternatives Planning (LEAP) analysis for the region completed the Vermont Energy Investment Corporation (VEIC). Targets for future energy generation have come from the regional planning commission and DPS. For more information on LEAP, see [CVRPC’s website](#). Targets for both future energy use and energy generation have been generally developed using a “top down” method of disaggregating regional data to the municipal level. This should be kept in mind when reviewing the template. It is certainly possible to develop “bottom up” data. For those municipalities interested in that approach, please see the Department of Public Service’s Analysis and Targets Guidance.

There are some shortcomings and limitations associated the data used in the Municipal Template. For instance, assumptions used to create the LEAP analysis are slightly different than assumptions used to calculate current municipal energy use. Regardless, the targets established here show the direction in which change needs to occur to meet local, regional and state energy goals. It is important to remember that the targets established by LEAP represents only on way to achieve energy goals. There may several other similar pathways that a municipality may choose to take in order to meet the 90x50 goal.

Figure 1 - Data Sources

ACS – American Community Survey:

DOL –Vermont Department of Labor

DPS – Vermont Department of Public Service

EIA – Energy Information Administration

EVT – Efficiency Vermont

LEAP – Long-range Energy Alternatives Planning

VEIC – Vermont Energy Investment Corporation

VTrans – Vermont Agency of Transportation

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Below is a worksheet by worksheet explanation of the Municipal Breakout summary:

1. Municipal Summary

The Municipal Summary worksheet summarizes all data that is required to be in the Municipal Plan if the plan is to meet the “determination” standards established by the Vermont Department of Public Service.

Table 1A: Current Municipal Transportation Energy Use

This table uses data from the American Community Survey (ACS) and Vermont Agency of Transportation (VTTrans) to calculate current transportation energy use and energy costs.

Table 1B: Current Municipal Residential Heating Energy Use

This table displays data from the ACS that estimates current municipal residential heating energy use.

Table 1C: Current Municipal Commercial Energy Use

The table uses data available from the Vermont Department of Labor (VT DOL) and the Vermont Department of Public Service (DPS) to estimate current municipal commercial establishment energy use in the municipality.

Table 1D: Current Electricity Use

This table displays current electricity use within the municipality. Due to limitations in municipal level electricity data, CVRPC has developed an equation to apportion out regional electricity usage to towns. When updated data is provided to CVRPC from Efficiency Vermont (EVT), that data will be distributed to the towns. Electricity usage was provided in a regional total number of kwh, and CVRPC used municipal shares of households (ACS) and commercial establishments (DOL) to determine electricity use at the municipal level.

Table 1E: Residential Thermal Efficiency Targets

This table displays targets for thermal efficiency for residential structures based on a methodology developed by DPS using data available from the regional Long-range Energy Alternatives Planning (LEAP) analysis and ACS. The data in this table represents the percentage of municipal households that will need to be weatherized in the target years.

Table 1F: Commercial Thermal Efficiency Target

This table shows the same information as Table 1E, but sets a target for commercial thermal efficiency. Information from the VT DOL is required to complete this target.

Figure 2 - Energy Acronyms

BTU: British Thermal Unit

EIA: Energy Information Administration

kWH: Kilowatt Hour

LPG: Liquid Propane Gas

MW: Megawatt Hour

MWh: Megawatt Hours

Figure 3 - LEAP Units

Millions Millions = Trillions

Billions = Billions

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Table 1G: Thermal Fuel Switching (Residential and Commercial) – Wood Systems

This table provides a target for new wood heating systems for residential and commercial structures in the municipality for each target year. This target was calculated using data from LEAP and ACS.

Table 1H: Thermal Fuel Switching (Residential and Commercial) – Heat Pumps

This table provides a target for new heat pump systems for residential and commercial structures in the municipality for each target year. This target was calculated using data from LEAP and ACS.

Table 1I: Electricity Efficiency Targets

Data in this table displays a target for increased electricity efficiency and conservation during the target years. These targets were developed using regional LEAP analysis.

Table 1J: Use of Renewables – Transportation

This data displays targets for the percentage of transportation energy use coming from renewable sources during each target year. This data was developed using the LEAP analysis.

Table 1K: Use of Renewables – Heating

This data displays targets for the percentage of heating energy use coming from renewable sources during each target year. This data was developed using information from the LEAP analysis.

Table 1L: Use of Renewables – Electricity

This data displays targets for the percentage MWh of electricity generation coming from renewable sources within the municipality during each target year. This data was developed using information from the regional planning commission and DPS. This data is the same as the data in Table 1Q.

Table 1M: Transportation Fuel Switching Targets – Electric Vehicles

This table displays a target for switching from fossil fuel based vehicles (gasoline and diesel) to electric vehicles. This target is calculated by using LEAP and ACS data.

Table 1N: Transportation Fuel Switching Targets – Biodiesel

This tables displays a target for switching from fossil fuel based vehicles to biodiesel-powered vehicles. This target is calculated by using LEAP and ACS data.

Table 1O: Existing Renewable Generation

Table 1O shows existing renewable generation in the municipality, in MW and MWh, based on information available from the Vermont Department of Public Service.

Table 1P: Renewable Generation Potential

Renewable generation potential is based on mapping completed by the regional planning commission that is based on the Municipal Determination Standards and associated guidance documents developed by DPS. The renewable generation potential is expressed in MW and MWh by the type of renewable resource (solar, wind, hydro, etc.). The potential land area for solar and wind resource includes that area covered by possible constraints.

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Table 1Q: Renewable Generation Targets

Renewable generation targets for municipalities were developed by the regional planning commission. CVRPC used the share of each municipality's population to determine that municipality's share of the Region's total target. CVRPC regional target is 418,530 MWh by 2050.

Table 1R: Sufficient Land?

This table shows whether or not there is sufficient land in the municipality to meet the renewable generation targets based on the renewable generation potential in the municipality. Renewable generation potential includes areas covered by possible constraints.

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