

Section 2 – Vermont Energy Overview

According to preliminary 2004 data from the US Energy Information Administration (EIA), Vermont energy consumers used a total of 166.1 trillion Btus (British Thermal Units) of primary energy that year, not including the additional upstream energy required to find, produce, process, and transport energy to the state. The following table shows a breakdown of this energy use:

Trillion Btus	Residential	Commercial	Industrial	Transportation	Total
Natural Gas	3.1	2.7	2.8	-	8.6
Petroleum	23.6	8.2	9.6	53.5	94.9
Coal	0.0	0.0	-	-	-
Wood	1.5	0.2	2.0	-	3.7
Subtotal excluding electric and transportation	28.2	11.1	14.4	53.5	107.2
Electricity	6.9	6.4	5.0	-	19.4
Net Energy	35.1	17.5	19.4	53.5	125.5
Electric System Energy Losses	15.2	14.3	11.1	-	43.0
Total Energy	50.3	31.8	30.5	53.5	166.1

Note: A small amount of coal (estimated at around 1,000 tons) is used for heating in Vermont, an amount too small to show up in the EIA data.

The sources of Vermont’s electricity supply are somewhat complicated, since a large amount generated by in-state nuclear and hydro resources is sold outside the state, and Vermont in turn relies on imports power from Hydro Quebec and ISO-NE, as shown in the following table:

Source	VT Generation %	VT Consumption %
Vermont Yankee	70%	36%
Hydroelectric	22%	8%
Other renewables	7%	7%
Oil/natural gas	<1%	<1%
Hydro Quebec		34%
ISO-NE market		15%
Total	100%	100%

Larger amounts of natural gas and oil were used for electric generation earlier in this decade when the market prices of these fuels were low.

Contracts for two-thirds of Vermont’s electricity supply from Vermont Yankee and Hydro Quebec expires between 2012 and 2016, giving Vermont a window of opportunity to build a new sustainable energy infrastructure. Vermont’s summer and winter peak electric demand is between 1,000 and 1,100 MW. Growth in seasonal peak demand has been driven to some extent by increased snowmaking at Vermont ski areas in the winter and greater use of electric air conditioning in the summer.

The most recent ISO-NE Seasonal Claimed Capacity (SCC) report lists 81 generators in the Vermont zone with a total winter capability of 1,106 MW and a summer capability of 934 MW. Another seven wind and hydro generators with a capability of 157 MW are physically located in Vermont but electrically connected to zones to Massachusetts and New Hampshire. ISO-NE

(New England Independent System Operator) data also show that during the peak system load hour (July 27, 2005 @ 2:30 pm), Vermont imported 459 MW from Hydro Quebec, New York, and New Hampshire, while exporting 149 MW from Vermont Yankee to Massachusetts, resulting in net imports of 310 MW.

More than 90% of Vermont's primary energy resources are imported from other states and countries. According to former Vermont Public Service Board chairman Richard Cowart, these imports cost Vermont households and businesses more than \$2 billion annually, an enormous outflow of dollars that inevitably strains the state's economy. High energy prices affect every consumer but cause particular economic distress to low income households and manufacturers. This increases the demand for public funding to pay heating bills, while manufacturers who can often move to areas with lower energy costs, taxes and wages.

Energy, and particularly electricity, is a major issue in the Vermont, but there is little consensus on acceptable and affordable solutions that could potentially eliminate the need to rely on Hydro Quebec or Vermont Yankee to meet Vermont's energy needs. Reduced to the basic essentials, Vermont has a very real opportunity to determine its own energy future for the next century, if it has the collective will to do so.