

Town of Clinton Benchmarking Project Report: 2018 - 2020

TO: Michael Whitton, Town Supervisor; Clinton Town Board

CC: Carol Mackin, Town Clerk; Todd Martin, Highway Superintendent;

FROM: Clinton Conservation Advisory Council; Climate Smart Community Task Force

DATE: June 7, 2022

Overview

On July 10, 2018, the Clinton Town Board (hereinafter "Town Board") authorized the Clinton Conservation Advisory Council (hereinafter "CAC") to track the energy used by the town's municipal buildings on an annual basis, with the intent of tracking the impact of operational and capital investment decisions designed to increase energy efficiency in the future.

The Town of Clinton Benchmarking Project is part of a larger effort by the CAC and the Climate Smart Community Task Force to qualify the town as a Clean Energy Community under the New York State Energy Research and Development Authority (hereinafter "NYSERDA") and as a Climate Smart Community, jointly managed by NYSERDA and a number of other New York State agencies and authorities.

Municipalities can qualify for grants from each of these programs once enough energy saving actions are completed and documented. The Benchmarking Project is one of many actions the town has undertaken to achieve enough credits to apply for Bronze Status under the Climate Smart Community Program.

With the help of the Town Clerk's Office and Town Highway Department, we have been recording energy use data (otherwise referred to as benchmarking) on the Energy Star Portfolio Manager website since November of 2017. Records are currently incomplete for 2021, due to billing and recording issues with Central Hudson, but three years of complete energy use data now exist for all municipal buildings with a gross floor area of more than 1,000 square feet. The following buildings meet this criterion:

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- Town Hall/Town Court/Library
- Town Garage
- Old Town Garage
- Pole Barn
- Large Salt Shed
- Old Schoolhouse
- Masonic Hall

The accompanying graphs and charts illustrate the town's annual use of fuel oil, electricity and propane, by month. Energy use data can only be tracked for the town campus as one unit, since the town's buildings are not individually metered. Lack of individual metering precludes qualifying for Energy Star Certification, but does count toward qualifying as a Clean Energy Community and Climate Smart Community.

These data will be posted on the Town of Clinton’s website, for public access, as directed in Schedule A of the Town of Clinton’s “Resolution Establishing Energy Benchmarking Requirements for Certain Municipal Buildings”, passed in 2018. Data will continue to be published annually in subsequent years.

Observations on 2018 – 2020 Data

It seems logical that annual energy use on the town campus would be directly affected by the extent of heat and cold in a given year. Annual Heating Degree Days (hereinafter “HDD”) and Cooling Degree Days (hereinafter “CDD”) were obtained from the Energy Star Portfolio Manager website for zip code 12514. To match our energy reporting “years” (driven by Central Hudson billing cycles and an attempt to avoid breaking up natural seasonal cycles), are as follows:

Year	Heating Degree Days	Cooling Degree Days
Nov. 1, 2017 - Oct. 31, 2018	6,089°Fahrenheit	924°Fahrenheit
Nov. 1, 2018 - Oct. 31, 2019	5,708°Fahrenheit	780°Fahrenheit
Nov. 1, 2019 - Oct. 31, 2020	5,658°Fahrenheit	988°Fahrenheit

Surprisingly, there does not seem to be a direct correlation between HDD/CDD and fuel oil/propane or electricity use, with highest fuel oil/propane use in the year of lowest HDD and highest electricity use in the year of lowest CDD. This indicates that other factors must be involved and deserves additional scrutiny. In the future, we will keep a closer record of the town’s energy-saving actions related to the town campus in an effort to better understand our energy use patterns.

On an encouraging note, however, since the town joined the Community Choice Aggregation Program in 2020, all of our electricity is being sourced from renewable energy generated in New York State, and is responsible for no Greenhouse Gas (hereinafter GHG) emissions. Since about half of our energy use is electricity, this represents a general reduction in our GHG emissions.

Glossary of Terms

kBtu: 1000 British thermal units

Btu: 1 British thermal unit, or the amount of energy required to heat 1 pound of water 1 degree Fahrenheit (that is, approximately the heat generated by burning 1 wooden match stick).

HDD (Heating Degree Days): the equivalent number of days you would have to heat your building by 1 degree to accommodate the heating requirement relative to a base of 65°F. For example, if you have a day on which the temperature is 55°F degrees, that day is worth 10 Heating Degree Days because it is 10 degrees below 65°F. HDD is calculated in this way for each day of the year and summed up to get the total annual HDD.

CDD (Cooling Degree Days): the equivalent number of days you would have to cool your building by 1 degree to accommodate the cooling requirement relative to a base of 65°F. For

example, if you have a day on which the temperature is 80°F degrees, that day is worth 15 Cooling Degree Days because it is 15 degrees above 65°F. CDD is calculated in this way for each day of the year and summed up to get the total annual CDD.