

Sullivan County Greenhouse Gas Emissions Benchmarking Report 2016

The County chose 2016 as its baseline data year, and elected to benchmark the 19 County owned or leased buildings that are larger than 1,000 square feet and use energy to heat or cool the occupied space. The 2016 baseline data includes 74,163 kWh of electricity generated from small-scale solar arrays at the Transportation Facility in Bethel and the Human Services Complex in Liberty and used on-site.

The 2016 baseline process identified three County-owned buildings as qualifying for an Energy Star rating, which is based on 150 separate metrics such as each building's size, location, the number of occupants, number of computers, and other characteristics. The Sullivan County Transportation Facility in White Lake is an Energy Star rated building and achieved a score of 99 (1 being the worst, 100 being the most efficient). The Sullivan County Courthouse and the Sullivan County Government Center are also Energy Star rated buildings, and currently score at 46 and 40 respectively.

Looking ahead, we anticipate completing the collection of 12 months of data on the County's 2.5MW solar array at the Care Center at Sunset Lake (formerly the Adult Care Center) in Liberty in time to include that on-site renewable energy generation in the 2018 benchmarking report. The County will also have a full year of data relative to the HVAC and lighting retrofit at the Sullivan County Government Center. Compared to the baseline 2016 data, this new information will help us measure our progress in improving energy efficiency, deploying renewable energy resources, reducing GHG emissions, and reducing energy costs in County facilities.

Energy Data Glossary

GHG (as measured in MTCO_{2e}): There are a number of greenhouse gases (GHG), including carbon dioxide, methane, nitrous oxide and ozone. CO₂ equivalent or CO_{2e}, is a unit of measure that allows us to express the impact of each different GHG in terms of the amount of CO₂ that would create the same amount of warming. CO_{2e} allows us to express a carbon footprint consisting of different GHGs as a single, consistent number.

Btu: A British thermal unit (Btu) is a standard unit of energy, defined as the amount of heat needed to raise the temperature of one pound of water by one degree Fahrenheit. In tracking building energy use, the Btu provides a single unit of measure that allows us to analyze the efficiency of systems that use a variety of fuels.

EUI: Energy Use Intensity (EUI) expresses a building's energy use as a function of its size and other characteristics. For most property types in Portfolio Manager, the EUI is expressed as energy per square foot per year. It is calculated by dividing the total energy consumed by the building in one year (measured in thousands of British thermal units or kBtu) by the total gross floor area of the building. In general, a low EUI signifies good energy performance. EUI can be calculated on site energy use or source energy use, as explained in the following glossary entries.

Site Energy Use: Site Energy Use is the annual amount of all the energy a property consumes onsite, as reported on utility bills.

Site EUI: The Site Energy total for one year, as reflected in the building's energy bills, divided by the total square footage of the building, yields a number that represents Site Energy Use Intensity (Site EUI). Site EUI helps building managers understand how the energy use for an individual building changes over time.

Source Energy Use: Source Energy Use represents the total amount of raw fuel that is required to operate the building. It incorporates all production, transmission, delivery, storage, and transport losses for all fuel types. Source Energy Use is the basis for ENERGY STAR's rating system, which converts the consumption of each type of energy into a single common unit (kBtu) and expresses it as a score of 1-100, so that the energy performance of diverse buildings can be compared equitably.

Source EUI: The source energy use total for one year, divided by the total square footage of the building, yields a Source Energy Use Intensity (Source EUI) that provides the most comprehensive measure of a building's energy performance. By taking all energy use into account, the score provides a complete assessment of energy efficiency in a building.

Sullivan County Benchmarking Data 2016

Property Name	Property GFA Self-Reported (ft ²)	Number of Buildings	Year Built	Electricity Use - Grid Purchase & Onsite Renewable Systems (kWh)	Electricity Use - Grid Purchase & Onsite Renewable Systems (kBtu)	Electricity Use – from Onsite Renewable Systems and Used Onsite (kWh)	Propane Use (kBtu)	Fuel Oil #2 Use (kBtu)	Site Energy Use (kBtu)	Source Energy Use (kBtu)	Site EUI (kBtu/ft ²)	Source EUI (kBtu/ft ²)	Total GHG Emissions (Metric Tons CO2e)	Direct GHG Emissions (Metric Tons CO2e)	Indirect GHG Emissions (Metric Tons CO2e)	National Median Total GHG Emissions (Metric Tons CO2e)	% Difference from National Median Site EUI	% Difference from National Median Source EUI
Sullivan County Government Center	113178	1	1975	2,283,941.0	7,176,142.6	-	-	4,939,834.2	12,204,734.3	27,801,018.8	107.8	245.6	721.6	366.6	355.0	689.2	4.7	4.7
Emergency Services Training Facility	10515	1	2010	52,061.6	177,634.2	-	339,719.2	-	517,353.4	900,887.8	49.2	85.7	30.5	21.8	8.7	50.4	(39.4)	(39.4)
Transportation Facility	11387	1	2009	32,092.4	109,499.2	11,100.9	506,570.4	-	616,069.6	774,408.3	54.1	68.0	36.0	32.5	3.5	69.0	(47.7)	(47.7)
Sullivan County Courthouse	32454	1	1909	445,739.7	1,520,863.9	-	-	947,756.4	2,468,620.1	5,732,745.9	76.1	176.6	144.7	70.3	74.3	141.8	2.0	2.0
Human Services Complex (Liberty)	174025	10	1916-2002	3,307,965.0	11,286,776.6	63,062.2	1,995,001.6	3,139,481.6	16,421,259.8	40,626,306.7	94.4	233.5	912.8	361.2	551.6	578.9	57.7	57.7
Barryville Maintenance Shops	26624	5	1930-2000	161,672.9	551,627.9	-	280,692.0	1,083,566.2	1,915,886.3	3,110,013.0	72.0	116.8	125.4	98.4	27.0	107.8	16.4	16.4
Callicoon Storm Station - RT. 97	6440	1	1955	20,455.5	69,794.2	-	-	41,855.4	111,649.6	261,427.6	17.3	40.6	6.5	3.1	3.4	19.8	(67.0)	(67.0)
DPW Maplewood Facility	47663	2	1987-2005	376,125.0	1,181,784.8	-	1,154,866.9	-	3,246,617.9	5,905,345.1	68.1	123.9	198.2	137.9	60.3	196.9	0.6	0.6
Livingston Manor Storm Station	2102	1	1960	37,147.9	126,748.6	-	-	142,774.8	269,523.4	542,193.0	128.2	257.9	16.8	10.6	6.2	8.0	109.5	109.5
Sullivan County International	64295	9	1970-2012	465,943.4	1,589,798.9	-	-	745,269.0	2,636,859.5	6,049,499.4	41.0	94.1	152.4	74.7	77.7	137.8	10.6	10.6
Landfill	71729	7	1984-2011	379,926.9	1,296,310.6	-	-	-	3,662,739.7	6,460,508.8	51.1	90.1	215.4	152.0	63.4	294.4	(26.8)	(26.8)
Rockland Transfer Station	1680	1	1985	26,570.9	90,659.8	-	-	-	90,659.8	284,671.8	54.0	169.4	4.4	-	4.4	3.2	37.6	37.6
Ferndale Transfer Station	7225	1	1987	30,805.2	105,107.4	-	-	-	105,107.4	330,037.2	14.5	45.7	5.1	-	5.1	13.8	(62.9)	(62.9)
Highland Transfer Station	3850	1	1990	46,360.3	158,181.4	-	-	-	158,181.4	496,689.5	41.1	129.0	7.7	-	7.7	7.4	4.8	4.8
Mamakating Transfer Station	5050	1	1991	36,777.7	125,485.6	-	-	-	125,485.6	394,024.9	24.8	78.0	6.1	-	6.1	9.7	(36.6)	(36.6)
D&H Linear Park Museum	2560	1	2004	3,718.5	12,687.4	-	-	-	59,786.3	87,408.2	23.4	34.1	3.6	3.0	0.6	9.1	(59.9)	(59.9)
Hurleyville Cultural Center	16200	1	1912	153,217.7	522,778.8	-	-	-	522,778.8	1,641,525.4	32.3	101.3	25.5	-	25.5	21.5	19.1	19.1
Plaza Drive Building (leased)	20000	1	1980	35,075.2	119,676.5	-	526,378.9	-	646,055.4	907,426.8	32.3	45.4	39.7	33.8	5.8	107.6	(63.1)	(63.1)
1909 Jail	58998	1	1909	802,470.0	2,738,027.6	-	-	4,400,240.3	7,138,267.8	13,041,649.1	121.0	221.1	460.4	326.5	133.8	353.8	30.1	30.1
				8,698,066.8	28,959,586.0	74,163.1	4,803,229.0	15,440,777.9	52,917,636.1	115,347,787.3	1,102.7	2,356.8	3,112.8	1,692.4	1,420.1	2,820.1		