



WOODSTOCK, N.Y.
COLONY OF THE ARTS



Climate Smart
Communities
Certified Bronze

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Application for 16 Points

June 19, 2024

PE2 Action: Government Operations GHG Inventory

16 Points



BRONZE PRIORITY



SILVER PRIORITY

GHG Inventory for 2023 Town of Woodstock Government Operations Local Government Operations Protocol (LGOP)

Beginning with 2011, reports about Woodstock's progress on achieving carbon neutrality have been issued annually. In addition to greenhouse gas (GHG) emissions, the reports included explanations of actions taken related to town government's energy usage. Issues concerning construction, problems encountered, new opportunities, programs and suggestions, etc. were included. The reports reflected the year's accomplishments, problems, and opportunities, and recommended actions for the following year.

Woodstock Energy Costs and Consumption

New York government entities are required to file a yearly financial report with the Office of the State Comptroller. Pursuant to Section 21, Subdivision 10A of Town Law, the Supervisor shall submit to the Town Board, the Town Clerk and the New York State Comptroller within sixty days after the close of the fiscal year a copy of the Annual Report, as required by law, and the Town Clerk shall publish within ten days in the official newspapers the fact that such annual report is available for inspection in the Town Clerk's office.

A table titled, "Energy Costs and Consumption," has been included in the accountant's report since 2008. Below is the table for 2023 showing Woodstock's governmental energy usage and expenditures submitted to the Office of the New York State Comptroller. These exhibits, which are available on April 1 of the following year, form the basis for Woodstock's GHG tracking system. On April 1, 2024, the town released its annual financial report, which contains the table, shown below, detailing the town's energy costs and consumption for the fiscal year 2023.

Carbon Neutral since 2015

TOWN OF WOODSTOCK Energy Costs and Consumption For the Fiscal Year Ending 2023			
Energy Type	Total Expenditures	Total Volume	Units of Measure
Gasoline	\$58,821	20,906	gallons
Diesel Fuel	\$54,089	16,553	gallons
Fuel Oil	\$8,868	2,806	gallons
Natural Gas			cubic feet
Electricity	\$144,953	667,873	kilowatt-hours
Coal			tons
Propane	\$8,010	5,305	gallons

Woodstock Governmental Electric Usage Report – 2023

After several years of delay, Woodstock finally began receiving in 2023 electric power from locally sourced hydroelectric facilities. A combination of technical problems, business problems, and Central Hudson billing issues were finally resolved, and in April 2023, more of Woodstock's governmental facilities began receiving zero-carbon, hydroelectric energy.

Although overall electric usage remained steady, GHG emissions due to electricity dropped from 83 metric tons the year before to 28 metric tons CO₂ in 2023. It's expected that the full value of hydroelectric power with a corresponding drop in emissions will be realized during 2024.

Between 2018 and 2023, electric usage has dropped by about 100,000 kWh. About 60% of this decline was attributed to resolving technical issues at the highway garage, waste water treatment facility, and with the water wells. Another 40% of the decline in usage was due to the complete conversion of municipal street lighting to LEDs. Cutbacks in electrical usage attributed to the pandemic have mostly recovered.

The substantial reductions in GHG emissions during the 2010s were due to the closure of New York's coal fired power plants, which were replaced by lower emission, natural gas generators. No coal fired generators remain in New York, and currently, grid GHG emissions are at low of 233.1 pounds/MWh. Woodstock's emissions from electricity used for governmental operations will further decline as the conversion to carbon-free hydroelectric power is completed.

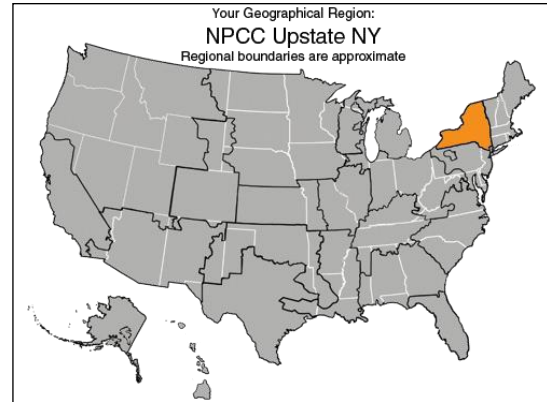
EPA eGRID Emissions Rate Increases 17%

As a consequence of the closure of the Indian Point nuclear power plant and the increased use of natural gas for electricity generation in 2022, GHG emissions attributed to electricity increased by 17% in the Upstate New York subregion.

The Emissions and Generation Resource Integrated Database (eGRID) is a comprehensive inventory of environmental attributes of the electric power system. Released for the first

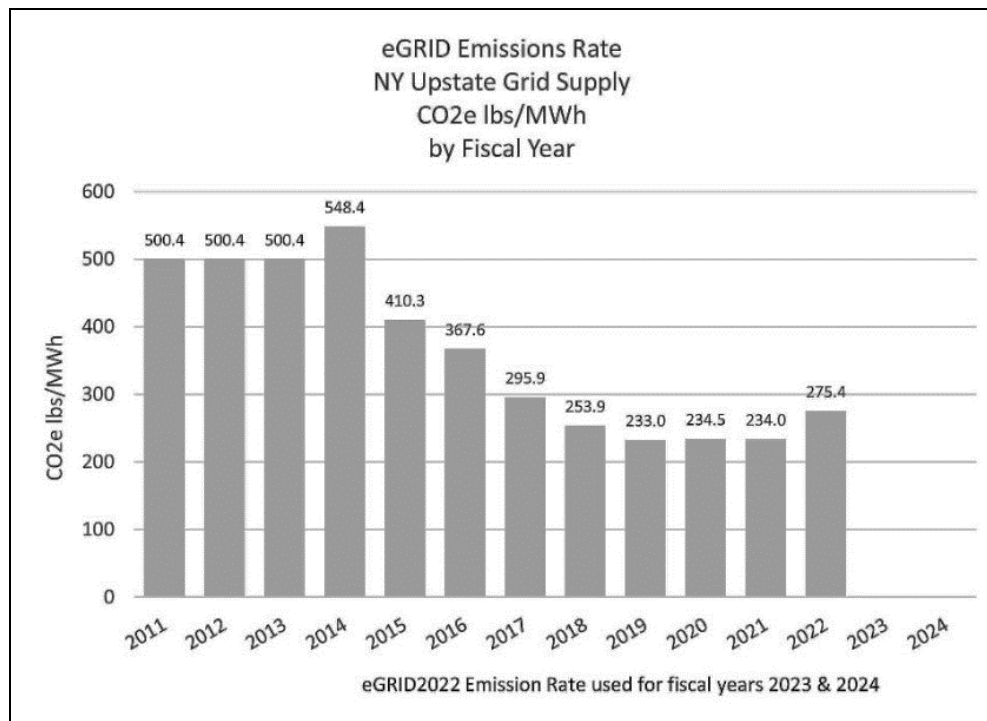
time in 1998 (and about every other year thereafter), eGRID includes data about emissions rates, net generation, resource mix, air emissions for nitrogen oxides, sulfur dioxide, carbon dioxide, methane, nitrous gas, and other properties for electric generating plants in the United States.

Electricity emission factors represent the quantity of GHG emissions per unit of electricity, and is usually reported in units of pounds of GHG per kWh or MWh. Woodstock uses eGRID emission factors for the Upstate New York subregion. Carbon dioxide emissions in upstate NY have been declining for the past several years due to the retirement of coal-fired power plants and because of substantial upstate hydroelectric and nuclear resources.



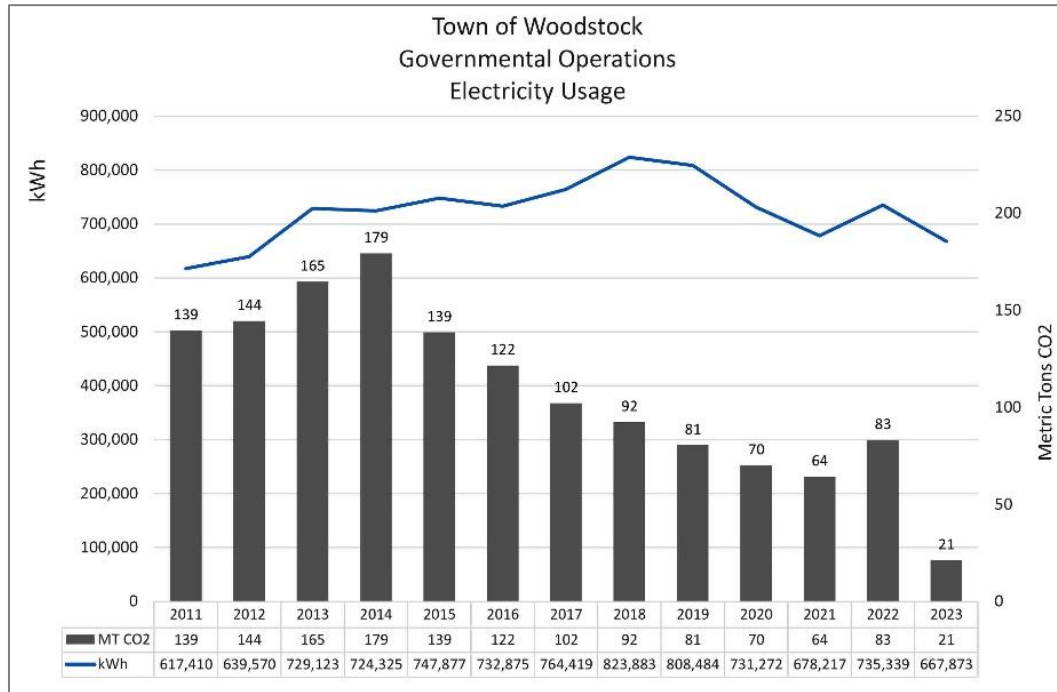
The bar chart below shows eGRID emissions rates by year. Beginning in 2015, due to the retirement of New York state's coal-fired power plants, the emissions rate dropped. From 2018 to 2021, the emissions rate was essentially flat until the closure of Indian Point.

Two new natural gas power plants — Cricket Valley and CPV Valley Energy Center — were built to replace Indian Point, and the emissions resulting from increased natural gas generation are reflected in eGRID2022 emissions rates.



Recalculated Governmental Emissions

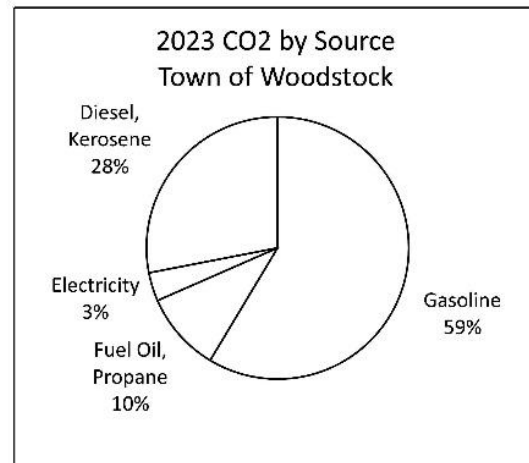
The release of eGRID2022 and the emission rates for 2022 required the recalculation of Woodstock's 2022 and 2023 GHG emissions attributed to electricity. Emissions for 2022, which were originally estimated at 70 metric tons, have been increased to 83 metric tons.



Fiscal Year 2023 Governmental GHG Emissions

Fiscal year 2023, emissions compared with previous years, were lower because of the substantial increase in the use of zero-emission hydroelectric power. Electricity now accounts for only 3% of the town's total governmental emissions, and it is expected to be further reduced in 2024.

An unexpected reduction in the use of Diesel fuel reduced total 2023 emissions. The town budgets for about 20,000 gallons of Diesel each year, but only about 16,500 gallons were used in 2023, reducing the town's carbon footprint by about 40 metric tons.



No action was taken by the town to reduce the use of Diesel fuel, but the lack of snow reduced the need for snow plowing. One consequence of climate change is more rain and less snow, which reduces the need for snow plowing and the use of Diesel fuel. The reduction of 40 metric tons represents almost 10% of the town government emissions.

Next Steps

The highway garage and town hall are expected to receive zero-carbon hydroelectric power in 2024, further reducing GHG emissions attributed to electricity. The renovation of the town offices on Comeau will be completed in 2024, which will cut the town's use of fuel oil for heating by half. A renovation of the youth center is now being planned, which will reduce the town's use of propane. Within a few years, the town will reach the limits of existing technology for reducing emissions from governmental operations.

Vehicle Emissions

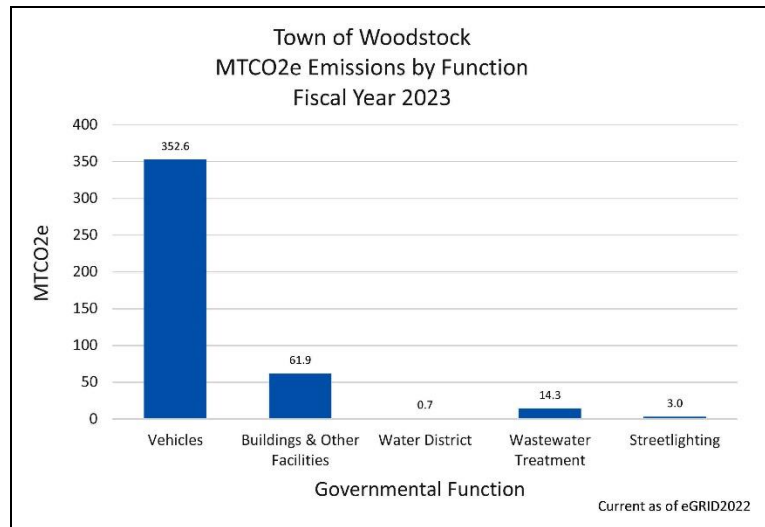
Gasoline is a substantial contributor to the town's GHG emissions, and a conversion of police vehicles to hybrid technology could reduce the use, cost, and emissions from gasoline by about 25%. Efforts to acquire hybrid vehicles faltered during the pandemic because of supply chain issues, and recently, service and reliability problems experienced by the Town of Ulster with hybrid police vehicles suggests caution. It's not clear that existing hybrid vehicle technology is reliable enough for police and public safety vehicles.

Hudson Valley Regional Council CAPI Emissions

The Hudson Valley Regional Council has its own methodology for creating and presenting municipal greenhouse gas inventories. The CAPI recommended bar chart shows fiscal year the 2023 GHG emissions for Woodstock's governmental sectors.

The Climate Action Planning Institute (CAPI) is a facilitated, collaborative working group (cohorts) through which a select group of local governments develop individual government operations greenhouse gas emissions inventories and government operations climate action plans.

Cohort meetings cover the basics of government operations greenhouse gas inventories, including emissions factors, emission scopes, global warming potentials, data sectors, and data collection. The focus is on the Climate Smart Communities (CSC) requirements and guidelines and learning from cohort participants and other municipalities that have done this work.



Local Government Operations Protocol (LGOP)

The California Air Resources Board (ARB) issued a 237-page document defining the Local Government Operations Protocol (LGOP), which is designed to provide a standardized set of guidelines for local governments to quantify and report GHG emissions. The Climate Smart Communities Program requires that local governments report GHG emissions in conformance with LGOP.

The LGO Protocol is a collaboration between ICLEI, the California Air Resources Board, the California Climate Action Registry, and The Climate Registry. The leading organizations in local GHG accounting collaborated on a single protocol, which is now the official standard for all local governments that wish to prepare and report GHG emissions. The LGO Protocol was formally approved by the boards of ICLEI USA, the California Climate Action Registry and the California Air Resources Board.

LGOP Chapter 13 describes a standardized form that mirrors the guidance in the LGO Protocol and provides a common mechanism for reporting emissions quantified under this protocol. The Standard Inventory Report is intended for use by all local governments utilizing this protocol.

Respectfully submitted,
Kenneth S. Panza, Secretary
Woodstock Climate Smart Committee

Attachments: The 2023 GHG emissions report for Woodstock governmental sectors, formatted as prescribed by LGOP Chapter 13.

Town of Woodstock
Governmental GHG Emissions
Local Government Operations Protocol
Fiscal Year:'2023'

				Expenditures	Volume	CO2e equivalent Metric Tons	CO2 Metric Tons	Methane Kgm	Nitrous Oxide Kgm
Buildings & Other Facilities	Scope 1	Stationary Combustion	Fuel Oil (gals)	\$4,434	1,410	14.5	14.4	2.1149	0.1410
			Propane (gals)	\$7,824	5,180	29.1	29.0	0.7253	0.5180
		Mobile Combustion	Gasoline (gals)						
			Diesel Fuel (gals)						
			Kerosene (gals)						
	Scope 2	Grid Electricity (kWh)			146,091	18.2	18.2	1.0164	0.1355
		Hydro Electricity (kWh)			193,559				
		Sum of Scope 2 (Electricity) Σ		\$69,173	339,650	18.2	18.2	1.0164	0.1355
		Total for Year Σ		\$81,431		61.9	61.5	3.8565	0.7945
Water District	Scope 1	Stationary Combustion	Fuel Oil (gals)			0.0	0.0	0.0000	0.0000
			Propane (gals)	\$185	125	0.7	0.7	0.0174	0.0125
		Mobile Combustion	Gasoline (gals)						
			Diesel Fuel (gals)						
			Kerosene (gals)						
	Scope 2	Grid Electricity (kWh)			0	0.0	0.0	0.0000	0.0000
		Hydro Electricity (kWh)		\$18,403	90,521				
		Sum of Scope 2 (Electricity) Σ		\$18,403	90,521	0.0	0.0	0.0000	0.0000
		Total for Year Σ		\$18,588		0.7	0.7	0.0174	0.0125
Waste Water Treatment Facility	Scope 1	Stationary Combustion	Fuel Oil (gals)	\$4,434	1,396	14.3	14.3	2.0937	0.1396
			Propane (gals)			0.0	0.0	0.0000	0.0000
		Mobile Combustion	Gasoline (gals)						
			Diesel Fuel (gals)						
			Kerosene (gals)						
	Scope 2	Grid Electricity (kWh)			0	0.0	0.0	0.0000	0.0000
		Hydro Electricity (kWh)		\$31,713	213,920				
		Sum of Scope 2 (Electricity) Σ		\$31,713	213,920	0.0	0.0	0.0000	0.0000
		Total for Year Σ		\$36,147	213,920	14.3	14.3	2.0937	0.1396
Lighting Districts	Scope 1	Stationary Combustion	Fuel Oil (gals)				0.0	0.0000	0.0000
			Propane (gals)				0.0	0.0000	0.0000
		Mobile Combustion	Gasoline (gals)						
			Diesel Fuel (gals)						
			Kerosene (gals)						
	Scope 2	Grid Electricity (kWh)		\$25,663	23,782	3.0	3.0	0.1655	0.0221
		Hydro Electricity (kWh)							
		Sum of Scope 2 (Electricity) Σ		\$25,663	23,782	3.0	3.0	0.1655	0.0221
		Total for Year Σ		\$25,663		3.0	3.0	0.1655	0.0221

March 23, 2024

Town of Woodstock
Governmental GHG Emissions
Local Government Operations Protocol
Fiscal Year:'2023'

				Expenditures	Volume	CO2e equivalent Metric Tons	CO2 Metric Tons	Methane Kgm	Nitrous Oxide Kgm
Vehicles	Scope 1	Stationary Combustion	Fuel Oil (gals)				0.0	0.0000	0.0000
			Propane (gals)				0.0	0.0000	0.0000
		Mobile Combustion	Gasoline (gals)	\$58,821	20,906	183.6	183.6		
			Diesel Fuel (gals)	\$54,089	16,553	169.0	169.0		
			Kerosene (gals)			0.0	0.0		
	Scope 2	Grid Electricity (kWh)			0	0.0	0.0	0.0000	0.0000
		Hydro Electricity (kWh)							
		Sum of Scope 2 (Electricity) Σ				0.0	0.0	0.0000	0.0000
		Total for Year Σ		\$112,911		352.6	352.6	0.0000	0.0000
Woodstock Totals	Scope 1	Stationary Combustion	Fuel Oil (gals)	\$8,868	2,806	28.8	28.6	4.2086	0.2806
			Propane (gals)	\$8,010	5,305	29.8	29.7	0.7427	0.5305
		Mobile Combustion	Gasoline (gals)	\$58,821	20,906	183.6	183.6		
			Diesel Fuel (gals)	\$54,089	16,553	169.0	169.0		
			Kerosene (gals)			0.0	0.0		
	Scope 2	Grid Electricity (kWh)			169,873	21.2	21.2	1.1818	0.1576
		Hydro Electricity (kWh)			498,000				
		Sum of Scope 2 (Electricity) Σ		\$144,953	667,873	21.2	21.2	1.1818	0.1576
		Total for Year Σ		\$274,741	667,873	432.4	432.0	6.1330	0.9686

March 23, 2024