



WOODSTOCK, N.Y.
COLONY OF THE ARTS

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Woodstock Town Board
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2018 Emissions, Woodstock Governmental Operations

Carbon dioxide emissions from Woodstock’s governmental operations increased by 18 metric tons in 2018 compared with 2017. Although emissions associated with electricity declined, the use of diesel fuel and gasoline increased overall emissions. Compared with 2017, diesel fuel usage in 2018 increased by 2,325 gallons and gasoline use by over 800 gallons. These increases are not inconsistent with prior use, but because of the potency of fossil fuels, any increase has a large effect on emissions. Total carbon dioxide emissions for 2018 were 610 metric tons.

Gallons of Gasoline and Diesel

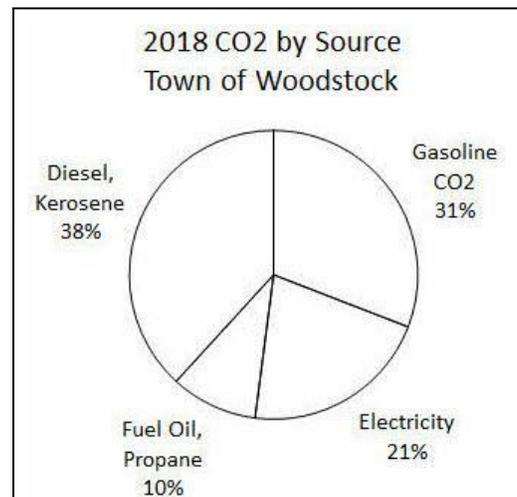
	2017	2018	Diff
Gasoline	19,988	20,800	813
Diesel	22,520	24,845	2,325

Source of Carbon Emissions

Overwhelmingly, Woodstock’s carbon emissions are from diesel and gasoline, accounting for about 70% of total emissions.

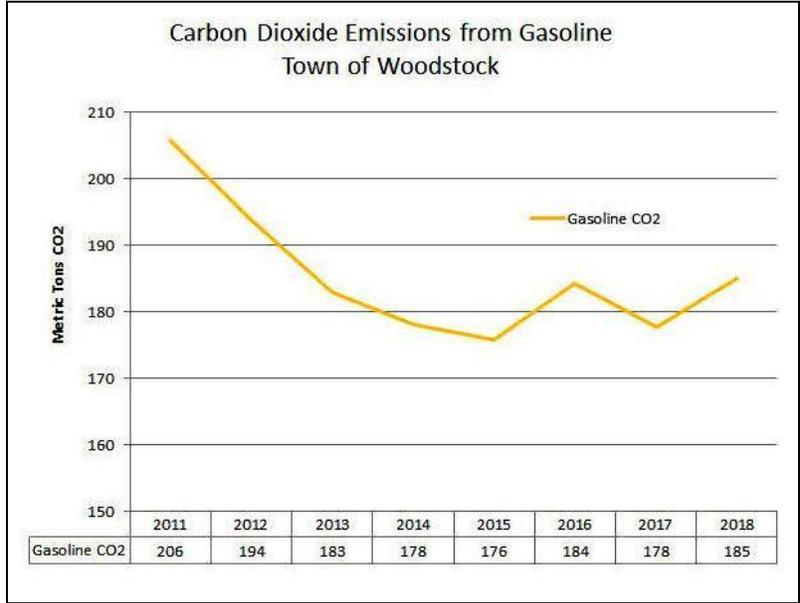
The recent subscription for hydroelectric power from the Natural Power Group will eliminate most of the carbon emissions attributed to electricity, and the renovation of the town offices on Comeau will further reduce the use of fuel oil and propane for heating.

There is no obvious replacement for diesel fuel, but the acquisition of hybrid vehicles would reduce gasoline consumption. The replacement of 8-cylinder police vehicles with 6-cylinder units



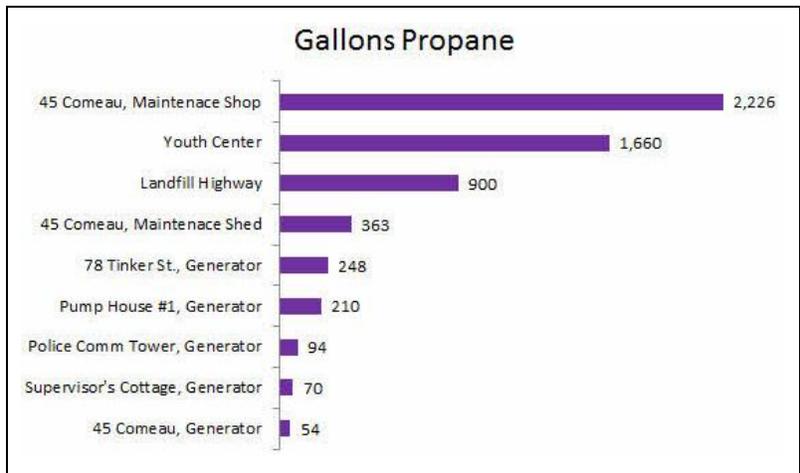
reduced carbon emissions by about 25 metric tons, but since then, gasoline emissions have been steady at about 180 metric tons.

During the last ten years, hybrid vehicle technology has improved significantly, and hybrids should be considered for all new vehicle purchases. The introduction of pursuit rated hybrid police cruisers offer an opportunity to further reduce the town’s gasoline consumption.



Propane Usage

The town uses propane for two purposes: heating and backup generators. In 2018, Woodstock used 5,825 gallons of propane, of which 88%, 5149 gallons, was used for heating. Half of the propane used for heating was used by the maintenance department at Comeau.



Recommendations

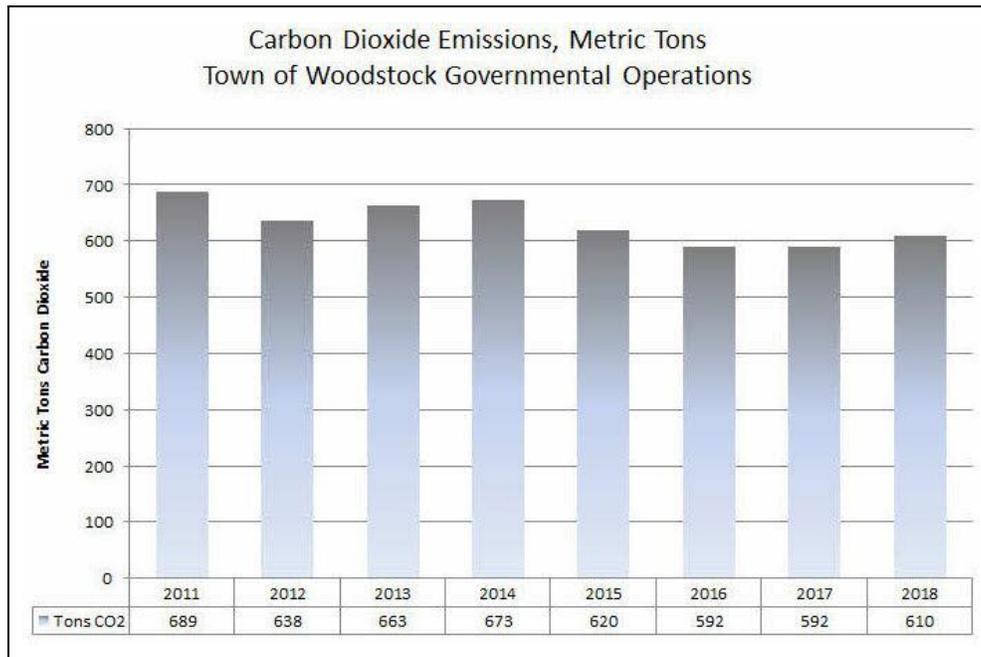
Hybrid Vehicles

Acquisition of hybrid vehicles is the next most effective action to reduce the town’s carbon footprint. Once the town offices are renovated and the electricity supply is carbon free, there’s not much else beyond acquiring hybrid vehicles that can be done to reduce the town’s carbon footprint.

Reduce Propane Usage at Comeau

The pending renovation of the town offices offers an opportunity to significantly reduce the use of propane. About half of the propane used for heating is used by maintenance on Comeau.

Woodstock’s Carbon Footprint





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Woodstock Town Board
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Subj: Woodstock 2018 Electrical Usage

In 2018, the Town of Woodstock used about **806,000 kWh** of electricity, a **5% increase** over 2017. There were some notable disparities.

Demand Accounts

	2017 kWh	2018 kWh	kWh Change	% Change
Highway Garage, 3615-0815-00	140,760	161,520	20,760	15%
Town Offices - Comeau, 3615-0540-00	26,836	31,208	4,372	16%
Town Hall - Tinker St, 3615-0530-00	100,360	85,520	(14,840)	-15%

Highway Garage

Usage at the highway garage increased by over 20,000 kWh, or about 15%. Historical usage at the garage averaged between 135,000 and 140,000 kWh per year, so a jump of 20,000 kWh is significant. There is no obvious explanation for this increase, and increases appeared during most months.

A suspect cause might be a malfunction of the geothermal system, which now is over 10-years old without a major repair or incident. Another possibility could be a malfunction of the rooftop solar system.

	2017	2018
Jan	26,520	29,760
Feb	23,760	27,360
Mar	22,320	18,360
Apr	14,160	17,880
May	7,440	
Jun	4,080	12,960
Jul	3,360	4,200
Aug	3,840	4,800
Sep	4,320	5,760
Oct	4,320	5,880
Nov	8,520	11,640
Dec	18,120	22,920
Year Totals	140,760	161,520

Highway Garage kWh

Town Offices – Comeau

Town Offices – Comeau kWh

2014	2015	2016	2017	2018
24,264	27,251	26,833	26,836	31,208

Usage at the Town Offices on Comeau increased by over 4,000 kWh, or about 16%. Over the past several years, usage has been fairly uniform, a little less than 27,000 kWh. No explanation for the increase.

Town Hall – Tinker Street

The 15% decrease in electrical usage at the town hall can be attributed to reinstallation of the solar panels after roof repairs.

Town Offices - Comeau

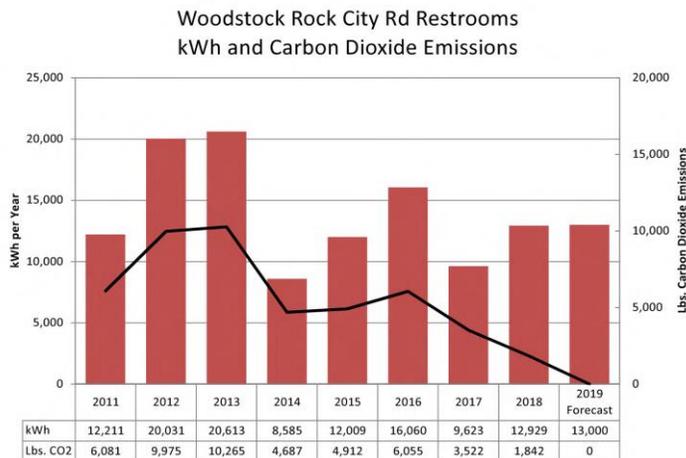
	2017	2018
Jan	2,451	3,296
Feb	2,245	3,223
Mar	2,159	2,336
Apr	2,232	2,414
May	1,960	2,617
Jun	1,903	1,796
Jul	2,237	3,013
Aug	1,862	2,800
Sep	2,163	2,204
Oct	2,550	2,003
Nov	2,205	2,458
Dec	2,869	3,048
Year Totals	26,836	31,208

Other Accounts

	2017 kWh	2018 kWh	kWh Change	% Change
Rock City Rd RR 3344-1300-00	9,623	12,929	3,306	34%
Supervisor's Cottage 3346-2190-00	14,250	20,886	6,636	47%
Landfill Sand & Salt Shed 3866-0270-00	2,487	1,635	(852)	-34%
Landfill Highway Storage, 3866-0280-00	2,016	6,589	4,573	227%

Rock City Rd Restrooms

The winterization of the Rock City Rd restrooms dropped electrical usage significantly, but keeping the restrooms open during the winter months significantly increased electrical consumption in 2018. The bulk of the increased usage occurred during the months January through April, 2018.



	2017	2018
Jan	0	907
Feb	0	2,204
Mar	0	173
Apr	335	1,840
May	261	408
Jun	530	366
Jul	396	327
Aug	182	377
Sep	0	301
Oct	582	476
Nov	3,988	1,562
Dec	3,349	3,988
Year Totals	9,623	12,929

Rock City Rd Restrooms

Supervisor's Cottage

Electrical usage increased by 47%, but not inconsistent with 2016 usage of 16,996 kWh.

Landfill Highway Storage

Electrical usage increased by 227%. No explanation for the increase.

Central Hudson Billing Anomalies

Because of Central Hudson's change from bi-monthly billing based on actual meter readings to monthly billings based on estimated electrical usage, it's harder to keep track of actual usage. This is especially true when the estimated usage is too high, which results in cancelling the estimated bill and reissuing a new bill for the same period. It's very difficult to track usage based on the paper bills the town receives.

Meter reading errors on the larger accounts can cause havoc with the billing. There are four sources of information for usage data: paper bills, ESCO account look-up, Central Hudson's website listing of bills sent, and the town's actual payments. In some cases, these sources will show different values for the same account. With the highway garage, our records showed significantly higher usage than Central Hudson, although Central Hudson showed an increase in usage. Reconciling these differences has become a major burden.

Recommendations

Increase Allocations

Send a letter to the Natural Power Group asking for increased allocations for the town's accounts that show substantial increase in usage.

Account Number	Account Identification	Current Allocation (kWh)	2018 Usage (kWh)	Requested Allocation (kWh)
3615-0815-00	Woodstock - Highway Garage	140000	161520	160000
3615-0540-00	Woodstock - Town Offices-Comeau	27000	31208	31000
3344-1300-00	Woodstock - Rock City Rd Restrooms	10000	12929	13000
3346-2190-00	Woodstock - Supervisors Cottage	16000	20886	20000

Highway Garage

We've previously considered the NYSERDA's FlexTech program to review geothermal performance, but never authorized it. Perhaps it's time to reconsider.

It might be appropriate to ask Solar Generation to perform a performance audit of the solar panels on the highway garage.

Landfill Highway Storage

Why the increased usage?

Usage for All Woodstock Accounts

	2017 kWh	2018 kWh	kWh Change	% Change
Highway Garage, 3615-0815-00	140,760	161,520	20,760	15%
Waste Water Treatment, 3615-0070-00	236,360	252,040	15,680	7%
Pump House #1, 3615-0685-00	61,369	63,707	2,338	4%
Pump House #2, 3615-0688-00	39,714	40,439	725	2%
New Community Center, 3615-0445-02	52,800	53,160	360	1%
Town Offices - Comeau, 3615-0540-00	26,836	31,208	4,372	16%
Town Hall - Tinker St, 3615-0530-00	100,360	85,520	(14,840)	-15%

Landfill Sand & Salt Shed 3866-0270-00	2,487	1,635	(852)	-34%
Landfill Highway Storage, 3866-0280-00	2,016	6,589	4,573	227%
Byrdcliffe Water 3342-0630-00	530	620	90	17%
Old Forge Sewer 3344-1675-00	49	48	(1)	-2%
Rick Voltz Field 3328-0140-00	1,736	868	(868)	-50%
Rock City Rd RR 3344-1300-00	9,623	12,929	3,306	34%
Village Green 3344-1606-00	562	485	(77)	-14%
Police Antenna 3615-0478-00	2,326	2,522	196	8%

Woodstock Youth Center 3342-0100-00	10,916	10,859	(57)	-1%
Supervisor's Cottage 3346-2190-00	14,250	20,886	6,636	47%

General Town Lighting District	18,228	17,748	(480)	-3%
Woodstock Lighting District	42,879	40,679	(2,200)	-5%
Garden Lighting District	3,240	2,593	(647)	-20%

Grand Totals	767,041	806,055	39,014	5%
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Sincerely yours,

Kenneth S. Panza