



**WOODSTOCK, N.Y.**  
COLONY OF THE ARTS

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Woodstock Town Board  
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## Subj: Woodstock 2019 Electric Usage Report to the Woodstock Town Board January 14, 2020

Total electric usage for the town in 2019 was a little less than 810,000 kWh, essentially the same as in 2018 (table attached). Except for the Rock City Rd. restrooms, there were no anomalies in the usage. Last year, concerns were raised about changes at three facilities:

- Highway Garage, which had an average annual usage of about 140,000 kWh, increased usage by over 20,000 kWh in 2018. In 2019, usage come down to 150,000 kWh. NYSERDA’s FlexTech program has been considered to review geothermal performance– perhaps it’s time to reconsider.
- Usage at the Town Offices (Comeau) had increased to 30,000 kWh, but since has remained at about 30,000 kWh.
- Usage at the Town Hall (Tinker St.) surged to 100,000 kWh in 2017, but has returned to its expected average.
- 20,000 kWh at the Supervisor’s Cottage seems high. The average single family residence uses 8,000 kWh/year. An energy audit might be appropriate.

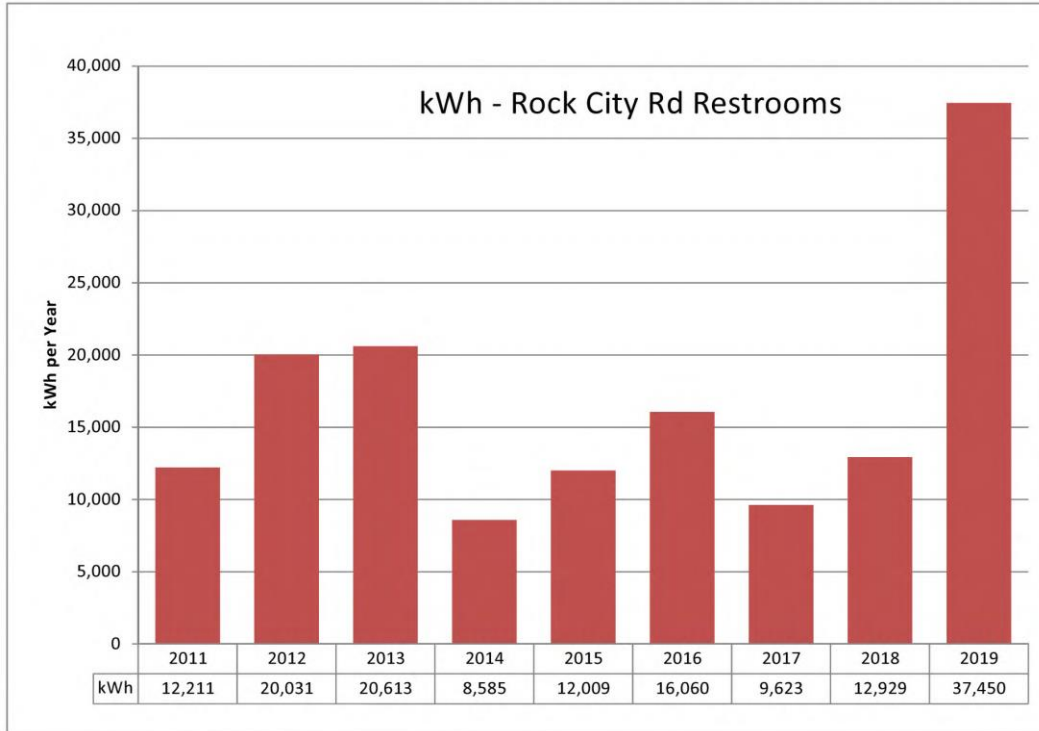
	<b>2017 kWh</b>	<b>2018 kWh</b>	<b>kWh Change</b>	<b>% Change in 2018</b>	<b>2019 kWh</b>
<b>Highway Garage, 3615-0815-00</b>	140,760	161,520	20,760	15%	150,000
<b>Town Offices - Comeau, 3615-0540-00</b>	26,836	31,208	4,372	16%	30,165
<b>Town Hall - Tinker St, 3615-0530-00</b>	100,360	85,520	(14,840)	-15%	87,600

### Rock City Road Restrooms

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

a forecast of 13,000 kWh in 2019 was submitted to the Natural Power Group, the town’s hydroelectric supplier.

But instead of 13,000 kWh, the restrooms used 37,450 kWh, about three times the forecasted amount at an extra cost of about \$4,000. This increased usage can be attributed to the installation of an electric vehicle (EV) charging station.



Increased electrical usage at the Rock City Restrooms in 2019 is attributed to the electric vehicle (EV) charging station.

The town receives monthly reports for the EV charging stations, and based on our analysis, it appears electricity consumption is significantly underreported. Our calculations show a much higher electric usage, and because of this high usage, Central Hudson reclassified the restrooms as a demand account.

An EV charging station is also installed at the Community Center, but there is no discernable change in electricity consumption at the Community Center.

### Recommendations for Rock City Rd Restrooms

- Relocate the EV charging station to the Town Offices on Comeau as part of the renovation.
- Consider closing the restrooms after the holidays, from the second week of January to April 1.
- Increase forecasted usage for the Rock City Road Restrooms to 40,000 kWh.

## Community Distributed Generation (CDG)

In 2018, the Woodstock Town Board signed contracts with the Natural Power Group (NPG) for power sourced from the Wappingers Falls and Wallkill hydroelectric generating facilities under the terms of Community Distributed Generation (CDG).

The Woodstock Town Board and several Woodstock residents enrolled as subscribers to the project. When NPG injects electricity into Central Hudson’s distribution system, credits that represent Central Hudson’s avoided cost of purchasing electricity are applied to member utility bills. The members then pay the Natural Power Group 90 percent of the credits received, reducing the overall cost of electricity by up to ten percent.

The advantage of this arrangement is that the town obtains zero-carbon, hydroelectric electricity at a cost no higher than grid electricity from Central Hudson. The tables below show the results of membership in the Natural Power Group CDG during 2019 for three residential accounts.

		Panza Residence		Woodstock Youth Center 3342-0100-00		Supervisor's Cottage 3346-2190-00	
		Quantity	Cost	Quantity	Cost	Quantity	Cost
kWh Used		10,499		10,216		19,705	
Basic Service Charge			\$250.30		\$250.20		\$252.20
CH kWh Delivery Charges	Delivery Service Charge						
	MFC Admin Charge						
	Transition Adj						
	Bill Credit						
	SBC/RPS Charge						
	Misc. Charges						
	RDM Charge						
	Sum of Volumetric Delivery Charges $\Sigma$	0.07915	\$830.95	0.07901	\$807.19	0.07859	\$1,548.54
Total CH Delivery Charges			\$1,081.25		\$1,057.39		\$1,800.74
CH kWh Supply Charges	MFC Supply Charge						
	Market Price						
	Market Price Adj.						
	Sum of Supply Charges $\Sigma$	0.05753	\$604.02	0.05861	\$598.72	0.05833	\$1,149.34
Total Volumetric Charges		0.13668	\$1,434.97	0.13762	\$1,405.91	0.13691	\$2,697.88
NYS & Local Taxes			\$23.66		\$0.59		\$0.95
<b>Central Hudson Monthly Charges</b>		<b>0.16277</b>	<b>\$1,708.93</b>	<b>0.16217</b>	<b>\$1,656.70</b>	<b>0.14976</b>	<b>\$2,951.03</b>
CDG Credit		-65%	(\$1,102.32)	-84%	(\$1,398.13)	-73%	(\$2,160.80)
Reduced CH Billing			\$606.61		\$258.57		\$790.23
NPG Billing of CDG Credit			\$992.09		\$1,258.32		\$1,944.72
Total Cost of Electricity			\$1,598.69		\$1,516.89		\$2,734.95
Hydroelectric Premium (Benefit)		8%	(\$110.23)	10%	(\$139.81)	8%	(\$216.08)

2019 Year End, Central Hudson Electric Bills  
Community Distributed Generation

The highlighted line (Central Hudson Monthly Charges) is the total amount that would have been paid to Central Hudson in 2019 without enrolment in the Natural Power Group CDG. The line titled “CDG Credit” is the amount applied to the Central Hudson bill for generation received from the CDG project. This amount, which is calculated using VDER, is the avoided cost by Central Hudson of not having to purchase electricity for CDG members. The

CDG credit reduces the amount owed to Central Hudson by 70 to 80 percent. During some months, nothing is owed to Central Hudson.

CDG subscribers are then billed by the Natural Power Group for 90 percent of the credit received from Central Hudson. The amounts paid to Central Hudson and to the Natural Power Group result in a reduction of between 8 to 10 percent in the total cost of electricity.

The results confirm the value of the CDG program. These residential accounts received zero-carbon, hydroelectric energy at a cost a little less than would have been paid to Central Hudson for grid electricity.

## Carbon Emissions from Electricity

In June 2019, the penstock directing water to the Wappinger Falls hydroelectric generator ruptured, causing an interruption in the delivery of hydroelectric power. Although Woodstock continued to receive power from the Wallkill facility, the town received no electric power from Wappingers Falls in 2019. For 2020, we're assuming we will receive our full allocation. With these contracts, Woodstock will receive an estimated 90% of its electric power from zero-carbon, hydroelectric sources.

kWh		2018	2019	2020 (est)
Woodstock Usage		806,055	807,988	810,000
Wallkill Hydro	(Note 1)	18,500	44,000	70,000
Wappinger Falls Hydro	(Note 2)			678,000
Total Hydroelectric		18,500	44,000	748,000
Central Hudson (Grid)	(Note 3)	787,555	763,988	62,000
Metric Tons CO2	(Note 4)	105	102	8

**Note 1:** Only six months of the contracted 37,000 kWh was delivered in 2018. Credit for the full 44,000 kWh contracted amount was received in 2019. To cover usage by the EV charging station at the Rock City Rd Restrooms in 2020, the town increased its Wallkill subscription to 70,000 kWh.

**Note 2:** Because of a rupture in the penstock at Wappingers Falls, no power was delivered in 2019.

**Note 3:** Amount of electricity sourced from the grid after deducting hydroelectric power.

**Note 4:** Hydroelectric power has zero carbon dioxide content. Power sourced from the grid has a carbon dioxide content of 294.7 lbs./MWh, based on EPA's upstate New York region eGRID2016.

## Recommendations

### Increase Allocations

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

### Comeau Renovations

Consider relocating the EV charging station to the Town Offices during the renovation.

Consider combing the town office and supervisor's cottage electrical service as one meter.

## SolarTech – From the Archives

In 2012, the Town Board accepted a proposal for a 750 KW solar array, located behind the meter at the Waste Water Treatment Facility (WWTF). The array would function under the tariff for Remote Net Metering, offsetting electricity at WWTF and other town facilities. A PPA established an initial price of 10 cents/kWh with a 2.4% yearly escalator.

Assuming the array was installed in 2013, I calculated its impact on the town’s 2019 electric bill. Woodstock would be paying an estimated \$53,188, or 44%, more for electricity under the terms of the solar PPA.

	2019
Total kWh Used	806,055
Total CH Cost	\$121,828
WWTF kWh Used	236,360
WWTF Volumetric	0.06344
WWTF Avoided Cost	(\$14,995)
750 KW Solar Array	919,800
Solar kWh Exported	683,440
kWh Volumetric Cost	0.0554
CH Monetary Credit	(\$37,863)
Revised CH Bill	\$68,971
Solar PPA kWh Cost	0.1153
Solar PPA Payment	\$106,046
Total Cost Electricity	\$175,017
Solar Premium	\$53,188
Percent Premium	44%

## 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 difficult to track usage based on the paper bills the town receives.

Respectively submitted,



Kenneth S. Panza, Liaison

## Attachments

- Natural Power Group Allocations for 2020
- 2019 Electric Usage Summary by Account

Woodstock Subscriptions  
Natural Power Group  
for Fiscal Year 2020

Wappinger Falls/ Woodstock							
Account	Name	Usage 2017 (kWh)	Usage 2018 (kWh)	2019 Allocation	Usage 2019 (kWh)	2020 Revised Allocation	Change from 2019
3615-0815-00	Woodstock - Highway Garage	140,760	161,520	160,000	150,000	160,000	0
3615-0070-00	Woodstock - Waste Water	236,360	252,040	236,000	236,360	236,000	0
3615-0685-00	Woodstock - Pump House #1	61,369	63,707	61,000	64,389	63,000	2,000
3615-0688-00	Woodstock - Pump House #2	39,714	40,439	40,000	46,077	45,000	5,000
3615-0445-02	Woodstock - New Community Center	52,800	53,160	53,000	55,200	53,000	0
3615-0540-00	Woodstock - Town Offices-Comeau	26,836	31,208	31,000	30,165	31,000	0
3615-0530-00	Woodstock - Town Hall-Tinker	100,360	85,520	100,000	87,600	90,000	(10,000)
<b>Total</b>		<b>658,199</b>	<b>687,594</b>	<b>681,000</b>	<b>669,791</b>	<b>678,000</b>	<b>(3,000)</b>

Wallkill/ Woodstock							
Account	Name	Usage 2017 (kWh)	Usage 2018 (kWh)	2019 Allocation	Usage 2019 (kWh)	2020 Revised Allocation	Change from 2019
3344-1300-00	Woodstock - Rock City Restrooms (SC)	5,635	12,929	13,000	7,229	0	(13,000)
3615-0958-00	Woodstock - Rock City Restrooms (DEM)	0	0	0	30,221	40,000	40,000
3346-2190-00	Woodstock - Supervisors Cottage	13,246	20,886	20,000	19,705	20,000	0
3342-0100-00	Woodstock - Youth Center	10,928	10,859	11,000	10,216	10,000	(1,000)
<b>Total</b>		<b>29,809</b>	<b>44,674</b>	<b>44,000</b>	<b>67,371</b>	<b>70,000</b>	<b>26,000</b>

	<b>Total Woodstock</b>	<b>688,008</b>	<b>732,268</b>	<b>725,000</b>	<b>737,162</b>	<b>748,000</b>	<b>23,000</b>
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Town of Woodstock  
Electric Usage Summary

		2017		2018		2019	
		kWh Used	CH Billed	kWh Used	CH Billed	kWh Used	CH Billed
Central Hudson Accounts	Town Offices, 45 Comeau Dr 3615-0540-00-7	26,836	\$4,078.49	31,208	\$4,752.37	30,165	\$4,507.40
	Supervisor's Cottage, 47 Comeau Dr 3346-2190-00-1	14,250	\$2,126.72	20,886	\$2,993.37	19,705	\$2,951.03
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	Town Hall, 76 Tinker St 3615-0530-00-8	100,360	\$10,371.90	85,520	\$10,392.12	87,600	\$9,620.97
	Area Lighting, Town Hall	344	\$133.52	344	\$133.52	344	\$145.54
	Police Antenna, Calif Quarry 3615-0478-00-0	2,326	\$637.09	2,522	\$688.12	1,967	\$581.21
	Yerry Hill Pump House #1 3615-0685-00-0	61,369	\$8,976.16	63,707	\$10,018.19	64,389	\$9,339.66
	Yerry Hill Pump House #2 3615-0688-00-4	39,714	\$5,976.28	40,439	\$6,624.61	46,077	\$6,714.05
	Area Lighting, Pump House #2	832	\$188.58	832	\$188.58	833	\$197.37
	Byrdcliffe Rd, Water 3342-0630-00-7	530	\$469.75	620	\$478.58	1,250	\$511.00
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	Waste Water Treatment Facility 3615-0070-00-5	236,360	\$22,669.03	252,040	\$26,312.63	236,360	\$22,127.10
	Old Forge Rd, Sewer 3344-1675-00-7	49	\$424.59	48	\$414.47	44	\$389.04
	Youth Center, 60 Rock City Rd 3342-0100-00-1	10,916	\$1,704.12	10,859	\$1,654.75	10,216	\$1,656.70
	New Community Center 3615-0445-02-5	52,800	\$6,583.79	53,160	\$7,216.45	55,200	\$7,739.57
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	Rock City Restrooms (Small Com.) 3344-1300-00-2	9,623	\$1,396.63	12,929	\$1,606.45	7,229	\$561.40
	Rock City Restrooms (Demand) 3615-0958-00-1					30,221	\$4,810.31
	Rick Voltz Field 3328-0140-00-6	1,736	\$591.64	868	\$510.12	988	\$480.19
	Village Green #1 3344-1660-01-7	562	\$473.42	485	\$460.34	523	\$439.41
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	Highway Garage 3615-0815-00-3	140,760	\$16,574.56	161,520	\$19,739.63	150,000	\$17,949.62
	Landfill Highway Storage 3866-0270-00-0	2,016	\$612.32	6,589	\$1,098.23	4,589	\$833.22
Landfill Sand & Salt Shed 3866-0280-00-6	2,487	\$637.39	1,635	\$590.22	529	\$524.73	
General Lighting 3411-3280-00.1	18,228	\$6,877.00	17,748	\$7,262.64	17,088	\$8,934.42	
Woodstock Lighting 3411-3300-00-7	42,879	\$14,624.89	40,679	\$15,069.21	40,162	\$18,920.88	
Garden Lighting 3411-3320-00-5	3,240	\$1,647.30	2,593	\$1,625.88	2,509	\$1,893.58	
Sum of Central Hudson Accounts <sup>±</sup>	768,217	\$107,775.17	807,231	\$119,830.48	807,988	\$121,828.40	