



WOODSTOCK, N.Y.
COLONY OF THE ARTS

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Ulster County Climate Smart Committee Town of Woodstock Report for January 27, 2020

In March 2007, the Woodstock town board committed that town governmental operations would be carbon neutral by year-end 2017. The town achieved carbon neutrality in 2015 and was recognized for its accomplishment at the 2017 annual meeting of the New York State Association of Conservation Commissions. Many of actions taken by the town to achieve carbon neutrality qualify for points under the Climate Smart certification process, and the yearly carbon emissions report for 2019 will be formatted for submission to the Certification Portal. A quick review of the action elements suggests Woodstock has completed work required for about 180 points.

Review of 2019 Electrical Usage

Completed review of the town's electric usage during 2019. Total usage was a little less than 810,000 kWh, essentially the same as in 2018. And except for the Rock City Rd. restrooms with the EV charging station, there were no anomalies in the usage.

Natural Power Group

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. Members then pay 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 ^Σ		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 ^Σ	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
Central Hudson Monthly Charges		0.16277	\$1,708.93	0.16217	\$1,656.70	0.14976	\$2,951.03
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.

Woodstock Climate Smart Task Force

The Woodstock Climate Smart Task Force held its second meeting. Documentation for the following action items was submitted to the CSC Portal.

PE1: CSC Coordinator – A certified town board resolution appointing Erin Moran as the Woodstock Climate Smart Task Force coordinator.

PE1: National/Regional Climate Program – Documentation identifying Project Drawdown and the Omega Institute as national/regional climate programs Woodstock has subscribed.

PE1: Partnerships with Other Entities – Documentation identifying the Ulster County Climate Smart Committee as a local partner for Woodstock's climate actions.

Natural Resource Inventory

A Natural Resource Inventory is a major new initiative being launched with the Environmental Commission. Ingrid Haeckel, NYSDEC, Hudson River Estuary Program/Cornell University, presented a proposal to the Environmental Commission and the Task Force about how best to proceed with developing a Natural Resource Inventory.

Community Solar

Town of Kingston

The Cypress Creek Renewables' 2 MW solar array off Hallihans Hill Road in the town of Kingston has gone online despite not having a certificate of occupancy. Cypress Creek applied for a 2-megawatt solar power system on 13 acres of a 49-acre property in the town of Kingston in 2017. The town granted site plan approval, but rescinded it after nearby properties reported drainage problems.¹

¹ William J. Kemble, "Solar array online in town of Kingston despite lacking occupancy certificate," Daily Freeman, December 24, 2019

Town of Red Hook

A 1.73-megawatt solar power array behind the town highway garage became fully operational on Dec. 31, 2019 and will provide electricity to the town and village of Red Hook and the village of Tivoli. It's expected to reduce the municipalities' electric bills by 10 percent. The developer, SunCommon, installed the array of solar panels on about 8.7 acres between South Broadway (U.S. Route 9) and Glen Pond Drive. The solar array will provide enough electricity for the three municipalities and about 250 residences.²

Events

Catskill Conversation with Dr. James Hansen

Columbia University Climatologist and former NASA astronomer Dr. James Hansen will lead a Catskill Conversation, alerting students and community members to the present day climate emergency, and inaugurating the Ashokan Youth Empowerment and Sustainability Summit (YESS!).



7pm talk with Q&A to follow

Thursday, February 6, 2020, 7:00 PM – 9:30 PM EST

Kingston High School, 403 Broadway, Kingston, NY 12401

**** This event is at KINGSTON HIGH SCHOOL (not at the Ashokan Center) ****

\$10 suggested donation for adults, \$5 for children & students

Dr. James Hansen, formerly Director of the NASA Goddard Institute for Space Studies, is Adjunct Professor at Columbia University's Earth Institute, where he directs a program in Climate Science, Awareness and Solutions.

He was trained in physics and astronomy in the space science program of Dr. James Van Allen at the University of Iowa. His early research on the clouds of Venus helped identify their composition as sulfuric acid. Since the late 1970s, he has focused his research on Earth's climate, especially human-made climate change. Dr. Hansen is best known for his testimony on climate change to congressional committees in the 1980s that helped raise broad awareness of the global warming issue.

Dr. Hansen was elected to the National Academy of Sciences in 1995 and was designated by Time Magazine in 2006 as one of the 100 most influential people on Earth. He has received numerous awards including the Carl-Gustaf Rossby and Roger Revelle Research Medals, the Sophie Prize and the Blue Planet Prize.

<https://ashokancenter.org/youth-environmental-sustainability-summit-yess/>

² William J. Kimble, "Solar array powers up in Red Hook, serves town and two villages," Daily Freeman, January 14, 2020

Climate Action Film Festival

Sponsored by SunCommon

The first annual Climate Action Film Festival is a celebration of short films with a focus on solutions to the climate crisis. It is the first festival of its kind to exclusively feature storytelling around solutions rather than simply the impacts of climate change. CAFF 2020 will be a touring, single-night event featuring approximately 90 minutes of short films. The festival will tour the Northeast U.S. in its inaugural year, with additional screenings to be added. Proceeds from screenings will be donated to local climate action groups.



Rhinebeck – Upstate Films, Wednesday, February 12, 2020, 7:30 PM

Woodstock – Upstate Films, Sunday, February 16, 2020, 1:30 PM

<https://suncommon.com/climate-action-film-festival/>

2020 Local Solutions: Eastern Climate Preparedness Conference

Antioch University New England, in partnership with NOAA and the Island Institute, is convening the 2020 Local Solutions Conference:

Eastern Climate Preparedness Conference

May 11-12, 2020, Portland, Maine

Climate Leadership and Community Protection Act

New York enacted the Climate Leadership and Community Protection Act (CLCPA) that includes requirements to:

- Procure 70% of the state's electricity from renewable sources by 2030;
- 9,000 MW of offshore wind by 2040;
- 6,000 MW of photovoltaic solar by 2025;
- 3,000 MW of energy storage by 2030;
- Overall 85% reduction in statewide greenhouse gas emissions by 2050;
- 100% carbon free electricity generation by 2040.

CLCPA Goals Compared to CES

	CES (Aug. 1, 2016)	CLCPA (July 18, 2019)	Change
Renewable Sources	50% by 2030	70% by 2030	20% Increase
Carbon Free Electricity		100% by 2040	
PV Solar	3,000 MW by 2023	6,000 MW by 2025	3,000 MW, 2 years
	934 MW PV Solar Installed as of September 30, 2019		
Reduction in Greenhouse Gas Emissions	40% by 2030	40% by 2030	
	80% by 2050	85% by 2050	5% Difference
Energy Storage		1.5 GW by 2023	
		3.0 GW by 2030	
Upstate Nuclear Power	Maintain Zero-Emission Nuclear Power		

CES – Clean Energy Standard, adopted August 1, 2016



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Ulster County Climate Smart Committee Town of Woodstock Report for February 24, 2020

Summary

- Woodstock Climate Smart Task Force Phase I actions submitted to the CSC portal.
- Held the initial meeting of the joint Olive and Woodstock Natural Resource Inventory (NRI) working group.
- Net Crediting for Community Distributed Generators available January 1, 2021.
- Completed an evaluation of Hudson Valley Community Power.
- Community Solar at Saugerties Landfill.
- Events

Woodstock Climate Smart Task Force

In March 2007, the Woodstock town board committed that town governmental operations would be carbon neutral by year-end 2017. The town achieved carbon neutrality in 2015 and was recognized for its accomplishment at the 2017 annual meeting of the New York State Association of Conservation Commissions.

Many of actions taken by the town to achieve carbon neutrality qualify for points under the CSC certification process. Documentation for the following actions was submitted this month to the CSC Portal.

PE1: Pledge Element 1 Complete

PE4: Renewable Energy Feasibility Studies – Completed

PE4: Geothermal Systems – Completed. Documentation on the town's geothermal systems at the highway garage and town hall submitted.

PE4: Solar Energy Installations – Completed. Documentation about the town's PV solar systems at the highway garage and town hall submitted.

PE8: Farmers Market – Completed. Woodstock Farm Festival in operation since 2008.

Pledge Elements completed as part of NYSERDA's High Impact Action Items program.

PE6: Unified Solar Permit,

PE6: Alternative Fuel Infrastructure,

PE8: Solarize Campaign

Several action items related to the Woodstock governmental GHG emissions will be delayed until the town releases its 2019 energy usage statistics. This data is included in the town's annual report to the Office of the State Comptroller, which is due April 1, 2020.

PE2: Government Operations GHG Inventory

PE10: GHG Tracking System

PE10: Annual Progress Report

PE10: Update to Strategies & Plans

PE6: Natural Resource Inventory

Creating a Natural Resource Inventory is a major new initiative launched with the Environmental Commission. Ingrid Haeckel, NYSDEC, Hudson River Estuary Program/Cornell University, presented a proposal to the Environmental Commission and the Task Force about how best to proceed with developing a Natural Resource Inventory. Woodstock and Olive will be cooperating with NYSDEC, Ulster County Department of the Environment, and the Ashokan Watershed DEP to develop the inventory.

Net Crediting for Community Distributed Generation (CDG)

On December 12, 2019 the Public Service Commission ordered the consolidation of utility bills for Community Distributed Generation (CDG) customers so that CDG customers would no longer receive two separate monthly bills: one from their utility company and another from the solar developer.

Central Hudson has 18 active CDG projects with about 5,600 subscribers. Of the 18 projects, 8 are compensated volumetrically and 10 by Value Stack (VDER). Central Hudson proposes an interim process until Net Crediting is fully implemented in its updated Customer Information System (CIS).

Timeline proposed by Central Hudson:

Process	Timeline
CDG credits reflected for budget billing customers	August 1, 2020
Manual Implementation of Net Crediting	January 1, 2021
Full Automation of Net Crediting	September 30, 2021

Under Net Crediting, credits for distributed generation will appear directly on the subscribers' utility bills. The subscription charges will be automatically deducted from the renewable energy credits by the utility, sent to the CDG sponsor, and the resulting Net Credit would appear as a credit entry on the subscriber's utility bill.

Central Hudson proposes to limit Net Crediting participation to those CDG hosts compensated by VDER until Net Crediting is fully automated in the new CIS.

Community Distributed Generation (CDG) Community Choice Aggregation (CCA)

In 2018, the Woodstock Town Board signed contracts with the Natural Power Group for hydroelectric power under the terms of Community Distributed Generation (CDG) sourced from the Wappingers Falls and Wallkill generating facilities. Several Woodstock residents also enrolled as subscribers to the project.

When electricity is injected into Central Hudson's distribution system, credits that represent Central Hudson's avoided cost of purchasing electricity are applied to member utility bills. Members then pay Natural Power Group 90 percent of the credits received, reducing the overall cost of electricity by up to ten percent. The advantage is that subscribers obtain zero-carbon, hydroelectric electricity at a cost no higher than grid electricity from Central Hudson.

Hudson Valley Community Power

Hudson Valley Community Power (HVCP), a Community Choice Aggregator (CCA), is a partnership with Joule Community Power and six communities that contract for electricity. The participating communities include Beacon, Cold Spring, Fishkill, Marbletown, Philipstown, and Poughkeepsie. The CCA enables the communities to pool local electricity demand and leverage the collective buying power of residents and small businesses to secure favorable energy supply rates and designate renewable generation sources.

Below are the rates that were announced for Marbletown, one of the participating communities.

RATE COMPARISON (\$ per kWh):

Customer Class	Average Central Hudson Supply Rate	HVCP 100% NYS Renewable Fixed Rate (default)	HVCP Standard Fixed Rate
Residential and Small Commercial	\$.0687	\$.0636	\$.0608

Average Central Hudson Supply Rate: The 12-month average of Central Hudson rates per kWh over the period April 2018 to March 2019.

HVCP 100% NYS Renewable Fixed Rate: As of July 1, 2019, the fixed rate, set for 24 months, for 100% renewable energy, sourced from New York State clean energy facilities.

HVCP Standard Fixed Rate: As of July 1, 2019, the fixed rate, set for 24 months, for standard energy supply.

Residential Accounts

The tables below compare the two programs for three residential accounts. The table shows the amount Central Hudson would charge for kWh usage for each account. The following lines show what Natural Power Group and Hudson Valley Community Power charge for the same power compared with Central Hudson.

The Details – Hudson Valley Community Power and Natural Power Group

	Panza Account	Woodstock Youth Center	Supervisor's Cottage
2019 kWh Used	10,449	10,216	19,705
2019 Central Hudson Cost of Electricity	\$1,708.93	\$1,656.70	\$2,951.03
2019 Cost of Electricity with Natural Power Group Hydroelectric	\$1,598.69	\$1,516.89	\$2,734.95
	(\$110.23)	(\$139.81)	(\$216.08)
2019 Cost of Electricity with Hudson Valley Community Power 100% Renewable Fixed Rate	\$1,772.75	\$1,707.82	\$3,055.13
	\$63.82	\$51.12	\$104.10

Central Hudson bills with the HVCP 100% Renewable Fixed Rate be 3 to 4% higher than what Central Hudson charged for the same power. On a cost per kWh, HVCP appears to be charging about 10% more than Central Hudson.

		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 [±]		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 [±]	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
Central Hudson Monthly Charges		0.16277	\$1,708.93	0.16217	\$1,656.70	0.14976	\$2,951.03
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			\$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)
HVCP Fixed Renewable Rate		0.06361	\$667.84	0.06361	\$649.84	0.06361	\$1,253.44
HVCP Total Cost			\$1,772.75		\$1,707.82		\$3,055.13
HVCP Premium (Benefit)		-4%	\$63.82	-3%	\$51.12	-4%	\$104.10

2019 Year End Electric Bills

Central Hudson, Natural Power Group (NPG), Hudson Valley Community Power (HVCP)

The highlighted line (Central Hudson Monthly Charges) is the total amount Central Hudson billed in 2019 for each account. The line titled “CDG Credit” is the credit applied to the Central Hudson bill for power received from the Natural Power Group. This amount, calculated using VDER, is the cost avoided by Central Hudson by 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 Hudson Valley Community Power cost is calculated on Central Hudson’s bills using HVCP’s 100% Renewable Fixed Cost of \$0.06361 /kWh.¹

Saugerties Landfill Solar Array Operational

A 2.8 MW solar array at the Town of Saugerties capped landfill should be online in a month according to East Light Solar, the developers. The array was erected in three months beginning in November.

Jamie Fordyce, managing director of East Light Partners, said “The town had what I’d characterize as a welcoming and fair solar law for projects like this one. We also went through the study process with Central Hudson to study the connection of the project to the grid and that came out favorably as well. Saugerties is doing really great things on the energy and sustainability front and it’s been great working with the town.”



The company signed a 25-year lease with the town; according to Fordyce, the lease agreement costs the company \$30,000 annually and \$15,000 of taxes per year from the project will go toward the county, town and local school system. The Town of Saugerties will purchase 40 percent of the project’s total output. Approximately 800,000 kilowatt hours will power 80 percent of the town’s facilities, and the remainder will be sold to Saugerties homes and businesses.²

¹ Although HVCP started charging its 100% Renewable Fixed Rate on July 1, 2019, these calculations assume the rate was available for the entire year.

² Christian Coulter, “New solar array at old Saugerties landfill ready to start generating,” HV1, February 7, 2020, Available at <https://hudsonvalleyone.com/2020/02/07/new-solar-array-at-old-saugerties-landfill-ready-to-start-generating/?fbclid=IwAR1A7rr36-8HbFJ9lFupY8vMpN3hgzirEqGzMSgkx6qJvoEKNM4uo8wNIg0>

2020 Local Solutions: Eastern Climate Preparedness Conference

Antioch University New England, in partnership with NOAA and the Island Institute, is convening the 2020 Local Solutions Conference:

Eastern Climate Preparedness Conference

May 11-12, 2020, Portland, Maine

Bard LLI (Lifelong Learning Institute) SummerFest 2020

Four Hudson River Films and Discussion by Jon Bowermaster

June 5, June 12, June 19, June 26

Climate Leadership and Community Protection Act

- Procure 70% of the state's electricity from renewable sources by 2030;
- 9,000 MW of offshore wind by 2040;
- 6,000 MW of photovoltaic solar by 2025;
- 3,000 MW of energy storage by 2030;
- Overall 85% reduction in statewide greenhouse gas emissions by 2050;
- 100% carbon free electricity generation by 2040.

CLCPA Goals Compared to CES

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Carbon Free Electricity		100% by 2040	
PV Solar	3,000 MW by 2023	6,000 MW by 2025	3,000 MW, 2 Years
	934 MW PV Solar Installed as of September 30, 2019		
Off-Shore Wind	1,700 MW by 2024	9,000 MW by 2035	7,300 MW, 11 Years
Reduction in Greenhouse Gas Emissions	40% by 2030	40% by 2030	
	80% by 2050	85% by 2050	5% Difference
Energy Storage		1.5 GW by 2023	
		3.0 GW by 2030	
Upstate Nuclear Power	Maintain Zero-Emission Nuclear Power		
New York Energy Solution	A 54-Mile, Upgraded Transmission Line through Rensselaer, Columbia, and Dutchess Counties Expected In-Service, Year End 2023		

CES – Clean Energy Standard, adopted August 1, 2016



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Ulster County Climate Smart Committee Town of Woodstock Report for March 30, 2020

Summary

Climate Smart Task Force Submissions

Carbon Dioxide Emissions Attributed to Electric Usage

Natural Resource Inventory

Aquifer Protection Plan

Woodstock Climate Smart Task Force

Climate Smart action items submitted by the Woodstock Climate Smart Task Force in March.

PE2: Governmental GHG Inventory

GHG inventory reports for 2017 and 2018, along with preliminary data for 2019.

PE10: GHG Tracking System

GHG tracking report showing yearly carbon dioxide emissions for Woodstock governmental operations starting with 2011. Preliminary 2019 data provided.

PE10: Annual Progress Report

Woodstock's annual carbon neutrality reports for 2018, 2017, and 2016.

PE3: LED Street Lights

Central Hudson has been replacing failing streetlights with LED fixtures since 2015. The percent of LED municipal streetlights now exceeds 25%, making Woodstock eligible for points under the Climate Smart Program.

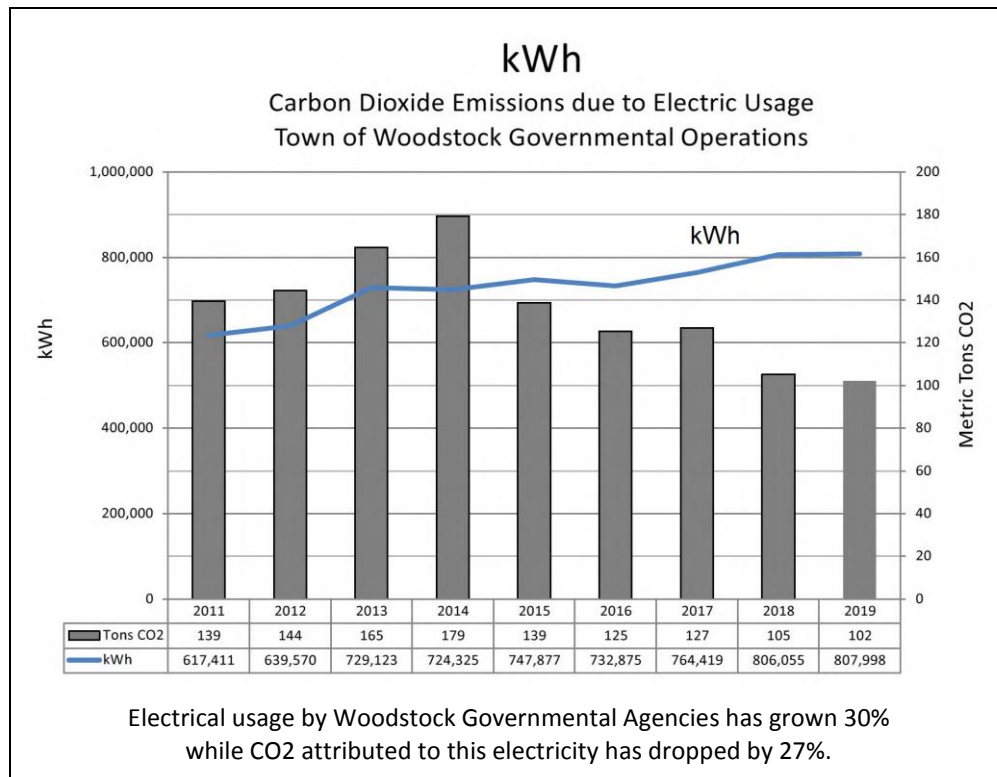
Woodstock's streetlights used 59,759 kWh in 2019, a 10,000 kWh reduction since 2013. Carbon dioxide emissions attributed to streetlights dropped from 16 metric tons in 2013 to 8 metric tons, a 50% reduction. Some of this reduction was due to increased LED efficiency and some because of lower CO2 content in the electricity supply.

Town of Woodstock
LED Streetlights
February 2020

Mercury & Sodium Vapor	7000 Mercury Vapor	6
	5800 Sodium Vapor	48
	16000 Sodium Vapor	41
	27000 Sodium Vapor	2
	Sum of Mercury & Sodium Vapor Fixtures	97
LED Fixtures	2900 LED	14
	3600 LED	9
	6800 LED	2
	7200 LED	7
	Sum of LED Fixtures	32
Utility Owned Fixtures		129
Percent LED		25%
lbs CO2/MWh		
CO2 Emmisions (Metric Tons)		

2019 Electrical Usage

Since 2011, the town's electrical usage for governmental operations has grown by 30%, and is expected to reach 900,000 kWh by 2021. This increased usage is attributed to the conversion to ground-based geothermal and air source heat pumps for heating and cooling in town buildings. Carbon dioxide emissions attributable to electrical usage have dropped by about 27%. The closures of the upstate coal-fired power plants resulted in reduced emissions. With the town's agreement for hydroelectric power, it's expected that electricity related emissions will be less than 5 metric tons by 2021.



PE6: Natural Resources Inventory

Reviewed draft topography and geology maps to be included in the natural resources inventory. Maps reviewed included: topology, steep slopes, bedrock geology, and surficial geology with glacial deposits. A soil survey map will not be provided – the inventory of soil types is provided in the soil survey documentation.

Wetlands & Watercourse Map

An updated Wetlands & Watercourse map is not included in the inventory. Peter Cross, chair of the Woodstock Planning Board, explained the need for a GIS based wetlands and watercourse map. As land use maps and planning documents become available on-line, Woodstock's wetlands and watercourse boundaries are missing from the new sources.

The recommended sources for planning information, the Ulster County Parcel Viewer and Hudson Valley Natural Resource Mapper, fail to identify protected areas in Woodstock. Developers and planners that depend on these sources receive incorrect information. A GIS based wetlands and watercourse map, which could be incorporated into the land use planning tools, would insure developers are receiving accurate information.

Aquifer Protection Plan

The Drinking Water Source Protection Working Group met with Larry Allen, Water Superintendent, and Grant Jiang, NYS Dept. of Health, to review data on nitrate concentrations in Woodstock's water supply. It is important to note that based on the available information, nitrate concentrations in the aquifer are not of and have never been high enough to be of concern.

The working group obtained 100 years of rainfall statistics from the Kingston Water Department and 10 years of pumped water volumes from wellfields 1 & 2. The conclusion, in spite of nearby septic system, is there is minimal presence of nitrates in Woodstock's water supply.

Background

In January 2019, the town board began making assignments and assigning responsibility for many of the actions in the recently adopted Comprehensive Plan. At this time, DOH and DEC announced the Drinking Water Source Protection Program (DWSP2), which was available to support work on the proposed water supply protection law. In June 2019, the Supervisor approved reestablishing the aquifer protection working group and participating in DWSP2 with an objective of proposing a revised aquifer protection law.

In late September 2019, Grant Jiang, the metropolitan area regional Source Water Protection Coordinator for the NYS Department of Health based out of Monticello, was assigned to provide Woodstock with technical assistance for source water protection activities.

Events

Woodstock Land Conservancy Vernal Fling

Vernal Fling 2020
May 23rd, 5-7:30pm
Bearsville Theater

**William R. Ginsberg Stewardship
Honorees**
Mary McNamara & Mike Reynolds
for their Watershed work

**Special Tribute to
Longtime Board Member
David Marell**

Wine, Food and Bubbly
Music by Perry Beekman Trio

**Thanks to Lizzie Vann, her team
and Laurie Ylvisaker for this newly
refurbished venue**

**Mailed Invites to Follow. If not on
our list email ellier.wlc@gmail.com**



Linda Lynton, In the Wilderness: Hidden Falls (2019),
Oil on canvas

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Canceled and rescheduled for 2021

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CES – Clean Energy Standard, adopted August 1, 2016



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Ulster County Climate Smart Committee Town of Woodstock Report for April 27, 2020

Summary

Woodstock's Carbon Footprint

Climate Smart Application

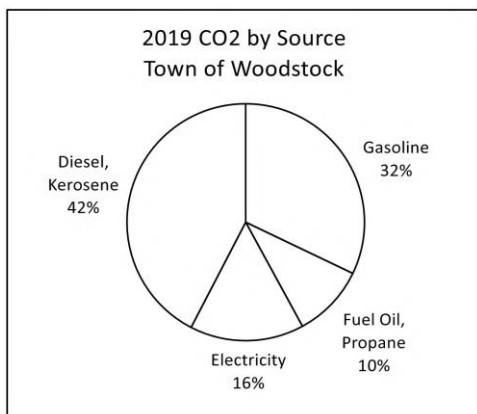
Natural Resource Inventory

Renewable Energy Siting Law

Indian Point Retirement

Danskammer Update

Woodstock's 2019 Carbon Footprint



On April 1, the town filed its annual financial report for fiscal year 2019 with the Office of the New York State Comptroller. Included in this report is the town's energy usage and cost for the year, and it's from this data that carbon dioxide emissions are calculated.

Compared to 2011, carbon emissions from town governmental operations have dropped by 18%, and by 2021, it's expected the town will lower emissions by 30%.

Ground-based geothermal systems and air-sourced heat pumps reduced the town's use fossil fuels needed for heating, and the planned renovation of the town offices on Comeau will further

reduce the need for heating oil and propane. Electricity consumption has increased by 30% since 2011, but carbon dioxide emissions attributed to electricity generation have dropped by 37%. This reduction is the result of the closure of upstate coal-fired power plants and the acquisition of local hydroelectric power.

There's no good alternative for diesel fuel used by the highway department and there are limitations on how much gasoline consumption can be reduced by the police department. Recently available, pursuit rated, hybrid police cars could significantly reduce gasoline use by the department.

In March 2007, the Woodstock town board committed that town governmental operations would be carbon neutral by year-end 2017. The town achieved carbon neutrality in 2015 and was recognized for its accomplishment at the 2017 annual meeting of the New York State Association of Conservation Commissions. But there's a fundamental limit to what can be accomplished with existing technology, and Woodstock has reached that limit.

Climate Smart Task Force

Woodstock's Climate Smart Task Force submitted its application to the DEC's 2nd quarter review cycle for consideration of Bronze Certification.

PE6: Natural Resource Inventory

The Natural Resource Inventory is a joint project with Woodstock and Olive under the direction of the Hudson River Estuary Program with technical assistance from the Ulster County Department of the Environment, the Ulster County Cornell Cooperative Extension, and the Ashokan Watershed Stream Management Program.

This month, the working group reviewed draft versions of the water resource maps that document Woodstock's watersheds, stream conditions, aquifers, and the water district.

PE7: Watershed Assessment

The water resources documentation created for the Natural Resources Inventory appears to meet most of the requirements for the Climate Smart Watershed Assessment action item.

- Create or update a watershed assessment document that identifies areas vulnerable to flooding, erosion and/or water quality or quantity problems that covers 75% or more of the community area.
- Create or update a list of specific priority projects that identifies responsible parties

Renewable Energy Siting Law in Ulster County

The New York State legislature passed sweeping reforms to the siting of large-scale renewable energy projects. The law establishes fast-track siting for renewable projects of 25 MW and above, requiring a final siting decision to be issued within one year of a completed application. It allows projects between 20 and 24 MW to opt into the new process.

There are two large scale solar projects in Ulster County that could conceivably benefit from the new siting law. In March, 2018, Governor Cuomo announced that four large-scale solar farms producing a combined 85 megawatts of capacity could be operating in Ulster and

Orange counties within four years.¹ The projects in the mid-Hudson valley that received awards were:

- Blue Stone Solar, Ulster County: Geronimo Energy will build a 19.99 MW solar facility in the town of Saugerties.
- Daybreak Solar, Ulster County: Geronimo Energy will build a 25 MW solar facility in the town of Shawangunk.
- Magruder Solar, Ulster County: Granada Solar will build a 19.99 MW solar facility in the town of Gardiner.
- Little Pond Solar, Orange County: Cypress Creek Renewables will build a 19.99 MW solar facility in the town of Deerpark.

Of the three Ulster County projects, two were suspended because of local zoning regulations. Shawangunk's zoning law prohibits large-scale solar arrays and the Town of Gardiner imposed a moratorium on solar projects. Blue Stone Solar in Saugerties has successfully moved forward and is awaiting interconnection approval from the NYISO and FERC.

The new law creates an Office of Renewable Siting that has the authority to override local laws that are deemed “unduly burdensome” in light of the CLCPA goals and the environmental benefits of a project, an authority that could be used to restart the delayed Ulster County solar projects.

Indian Point Retirement

New York will retire the 1,028 MW Indian Point Nuclear Plant Unit 2 on April 30, 2020. Indian Point's April retirement follows the March 31 retirement of the 675 MW, coal-fired Somerset Plant, the NYISO's last coal generator.

Several new gas plants built throughout the Northeast have started contributing generation in anticipation of these retirements, according to Genscape, a market intelligence firm. These include the 1,100 MW Cricket Valley Plant on the Iroquois Pipeline, the 680 MW CPV Valley Plant on Millennium Pipeline and the 350 MW Canal Unit 3 on Algonquin Gas Transmission. Older, less efficient gas generators no longer contribute baseload generation, but are capable of assisting with peak demand.²

Environmental advocacy groups launched a website to explain the closure of Indian Point

<http://beyondindianpoint.com/>



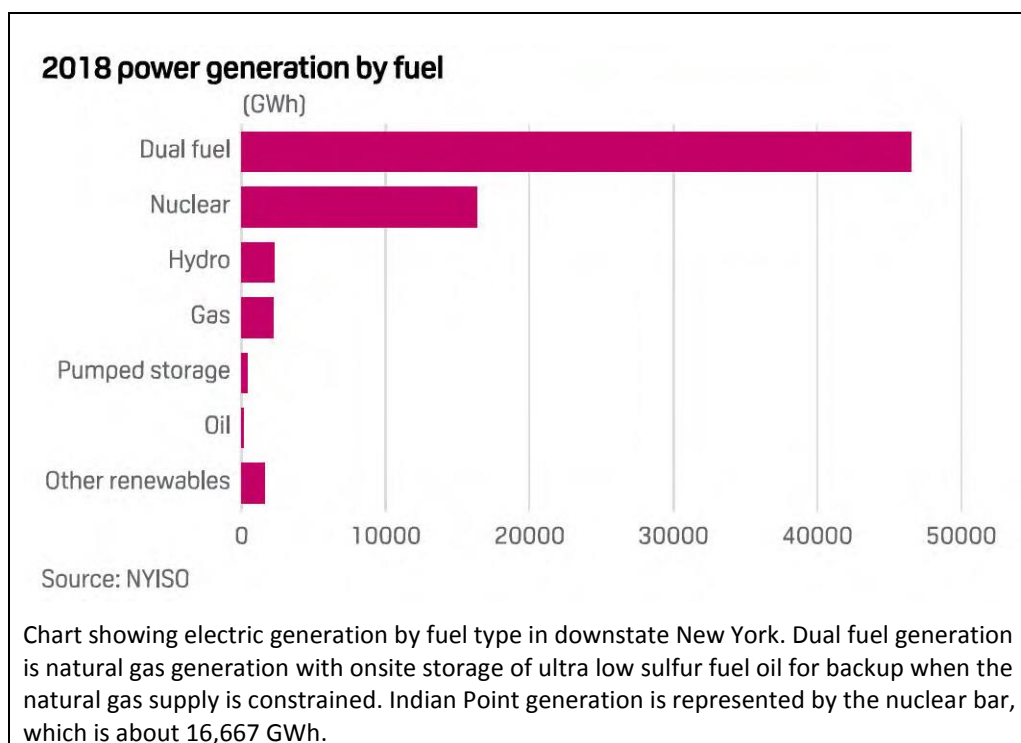
Map Showing Zones F - K

¹Press Release, “Governor Announces \$1.4 Billion in Awards for 26 Large-Scale Renewable Energy Projects, the Largest Single Commitment to Renewable Energy by a State in U.S. History,” March 9, 2018,

²Leticia Gonzales, “Late-Session Rally Boosts Natural Gas Futures as Weather Models Turn Chillier,” NGI, Natural Gas Intelligence, April 3, 2020, available at <https://www.naturalgasintel.com/articles/121569-late-session-rally-boosts-natural-gas-futures-as-weather-models-turn-chillier>

Downstate New York (Zones F-K) Power Generation Fuel Mix

Indian Point contributes about 25% of downstate New York’s electric power requirements. When Indian Point shuts down, its lost generation will be replaced by new natural gas generators: 680 MW CPV Valley, 1,100 MW Cricket Valley, and the 120 MW Bayonne, N.J. plants. On Friday, April 20, Cricket Valley commenced commercial operation. There is no shortage of new generation to replace Indian Point.



Danskammer Power Plant, 1Q2020

Last year, Danskammer Energy filed a petition with the PSC to repower its Danskammer power plant, which is a 50-year old, coal fired generator that had been converted to burn natural gas. From the beginning, the Ulster County Environmental Management Council (EMC) has been a stakeholder and participant in the process. It’s unclear when the EMC will meet again, so I’m using this report to summarize the project’s current status.

So far in 2020, Danskammer filed and amended its application. Funding was approved for interveners participating in the Article 10 process. At the end of March, Danskammer issued its quarterly public participation document. With meetings now shut down by the pandemic, it’s unclear what additional meetings will be held. Some of the Ulster County stakeholders that met with Danskammer since the beginning of the year include: Town of Marlborough, Marlboro Central School District, Marlborough and Milton Fire Departments, Ulster County Executive Chief of Staff Evelyn Wright, and Ulster County Executive Patrick Ryan.

The Siting Board received an amended application from Danskammer in response to its notification of deficiencies, but the Siting Board has not yet announced that Danskammer’s

application is complete. Danskammer's intention was to complete the Article 10 process and begin construction by the end of 2020, but the process is at least six months behind schedule.

Some Article 10 Milestones

Feb. 8, 2019	Danskammer Energy, LLC, (Danskammer Energy) filed a Preliminary Scoping Statement (PSS) with the PSC to repower the Danskammer generating station with a new combined cycle power generation facility.
April 24, 2019	Kick-off of stipulation negotiations with stakeholders and Danskammer.
June 26, 2019	Presentation by William Reid, President and CEO, Danskammer Energy, LLC and Michelle Hook, Danskammer Vice President of Public Affairs, to the Ulster County Environmental Management Council.
Sept. 6, 2019	Proposed stipulations were released, beginning a 30-day, public comment period. Any person, agency, or municipality was able to submit comments concerning the stipulations. The comment period was extended to October 23, 2019.
Dec. 11, 2019	Danskammer Energy filled its application, including stipulations, with the New York Siting Board. Danskammer Energy also announced the availability of \$400,000 in intervenor funding, which will allow stakeholders participating in the Article 10 review to pay for legal and consulting services.
Feb. 10, 2020	The Siting Board notified Danskammer Energy of deficiencies in its application. Danskammer Energy responded to the Siting Board's notice of deficiencies on March 11, 2020, by filing a supplement to its application. A second supplement was filed April 21, 2020.
Feb. 11, 2020	Funding was awarded to stakeholders that requested funds to support their participation in the next stage of the Article 10 proceeding.
March 30, 2020	Danskammer released its tracking report of meetings with government officials and stakeholders. Some of the Ulster County stakeholders that met with Danskammer during the first quarter of 2020 include: Town of Marlborough, Marlboro Central School District, Marlborough and Milton Fire Departments, Ulster County Executive Chief of Staff Evelyn Wright, and Ulster County Executive Patrick Ryan.

Climate Leadership and Community Protection Act

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Ulster County Climate Smart Committee Town of Woodstock Report for May 25, 2020

The Ulster County Climate Smart Committee (CSC) meets once a month to review progress on achieving the County's environmental goals. Each town is asked to report on its activities with New York's Climate Smart Communities program, and the County asked that these reports be submitted in electronic form as a convenience for including them in the minutes of the meetings. A written format is also more effective within the constraints imposed by Zoom video conferencing.

Summary

Climate Smart Task Force

Natural Resource Inventory

NY Power Prices Drop 46%, Usage by 13%

Events

Climate Smart Task Force

DEC will complete its review of Woodstock's application for Bronze status by the end of the month. The June 3, 2020 meeting of the task force will consider the results and next actions. Revisions, updates, and corrections can be submitted, if needed, for the July 3, 2020 DEC review cycle.

PE3 LED Streetlights

The Woodstock Town Board authorized by resolution to finalize the paperwork with Central Hudson to upgrade the remaining sodium vapor and mercury vapor streetlights to LED. The town will remain a Rate "A" customer; Central Hudson will own and maintain the new LED streetlights.

Remaining value of the non-LED cobra head lights is \$15,473, and with a rebate of \$2873, the total cost to the town is \$12,600. Expected annual savings is \$5,800 with payback in approximately 28-30 months. Woodstock has 129 streetlights, of which 32 are already LED.

Central Hudson has been replacing failed streetlights with LED fixtures since 2015. The percent of LED municipal streetlights now exceeds 25%, which made Woodstock eligible for points under the Climate Smart Program. Woodstock was approved for 7 CSC points.

PE6 EV Charging Stations

The Woodstock Town Board voted to impose a \$2/hour parking fee on the use of the EV charging stations. Woodstock installed two, Level-2 EV charging stations, each with two ports, for public use. Woodstock was approved for 8 CSC points.

Natural Resources Inventory

Completed a review of the draft water resources maps. A status report and summary of work will be presented by Ingrid Haeckel, NYSDEC, to the Woodstock Town Board at its June 16, 2020

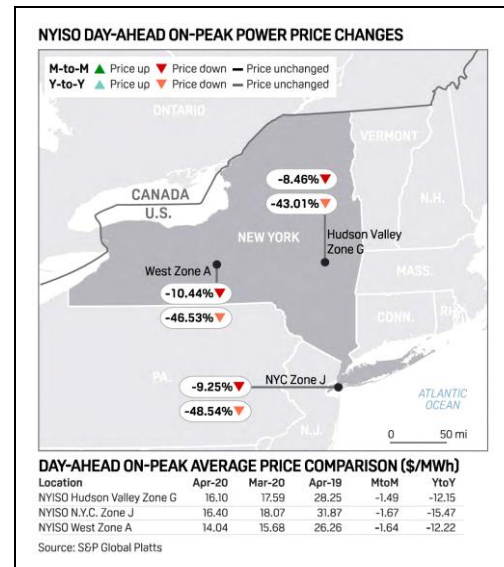
The Natural Resource Inventory is a major new initiative launched by the Environmental Commission. Ingrid Haeckel, NYSDEC, Hudson River Estuary Program/Cornell University, presented a proposal at a joint meeting of the Environmental Commission and Climate Smart Task Force about how best to proceed with a Natural Resource Inventory. Woodstock and Olive will be cooperating with NYSDEC, Ulster County Department of the Environment, and the Ashokan Watershed DEP on the inventory.

NY Power Prices Drop 46%

Pandemic reduced power usage and lower natural gas prices depressed New York Independent System Operator's (NYISO) on-peak wholesale power prices, compared to last year, by 46%.¹

"Nearly all of the price plunge in New York is due to COVID-19, which has brought business and social activity to a halt, an extraordinary development," said Matthew Cordaro, a former Midcontinent Independent System Operator president and CEO now residing in New York.

"Last Thursday's shutdown of the 1,026-MW Indian Point nuclear power plant's Unit 2, NYISO is likely to have some upward pressure," Cordaro said in an email. "However, New York will be dealing with COVID-19 and its after effects for at least the coming months, which will continue to put significant downward pressure on demand and prices."



¹ Mark Watson, "NYISO Tracker: Power prices plunge on pandemic-weakened loads, gas prices," S&P Global Platts, May 4, 2020

Electricity Usage Drops 13 Percent

As a result of business shutdowns and changes brought about by state initiatives to combat the COVID-19 pandemic, New York State has seen its weekday electricity demand tumble nearly 13 percent over the last two months.²

This number was reached by the U.S. Energy Information Administration's (EIA) Hourly Electric Grid Monitor by tracking the New York Independent System Operator (NYISO) and comparing each weekday's electricity demand through May 1. By taking the average demand of all weekdays and the daily average temperature in previous years, it recorded an average temperature-comparable historical demand until the end of February. At that point, demand began to drop. It rapidly picked up speed as COVID-19 mitigation efforts went into effect, with the 13 percent average drop recorded by late March. It has remained there since.

Clean Energy, Rate Relief on Collision Course

POLITICO's Marie J. French: The economic devastation wrought by the coronavirus shutdown has led advocates for businesses, hospitals and universities to request breaks on their utility bills — threatening a key source of revenue for New York's clean energy programs. A large chunk of the state's clean energy programs are funded through surcharges on electric and gas bills.

Big energy users argue those programs are temporarily on hold and there's more than a billion in unspent funds. But clean energy groups say the money will be needed to help support investments as soon as construction can resume — and that other forms of relief should be tapped instead. Environmental justice groups and advocates for renewable energy are pushing for "green" projects to be a major piece of the state's recovery once some parts of the economy start moving again. A key Democratic lawmaker raised concerns about the petitions to return clean energy funds to ratepayers.

Carbon Tax

NY Renews is calling for passage of a bill to tax carbon, methane and other pollutant emissions and use the money to transition off fossil fuels as part of a green recovery following the coronavirus pandemic.

Catskill Environmental Research & Monitoring Conference 2020

Mark your calendar for another Catskill Environmental Research & Monitoring (CERM) conference! The conference is an opportunity for researchers, resource managers, and others working on environmental management in the Catskills to network and collaborate. Because of the rapidly changing COVID-19 situation, the conference may go on as scheduled, be held virtually, or be rescheduled for a later date.

Tues., October 27 - Thur., October 29

Full Moon Resort, Big Indian, NY

<http://cermconference.org/>

² Chris Galford, "New York daily electricity demands fell about 13 percent due to COVID-19 prevention efforts," Daily Energy Insider, May 8, 2020

Confirmed conference sessions include:

- Catskill Recreation Trends & Projections
- Old Growth Catskill Northern Hardwood Forest
- Evolution of Forests in the Catskills
- Climate Change & Water Supply
- Ecosystem Research
- Environmental Management Success Stories
- Education & Outreach Success Stories
- Social Trends, Ecosystem Response, and the Evolution of Environmental Management

Climate Leadership and Community Protection Act

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Woodstock Climate Smart Task Force

Woodstock's April 3, 2020 application for Climate Smart Bronze status was not approved. The task force has updated and revised the documentation for submission in the July 3, 2020 application review cycle.

Woodstock submitted GHG inventory and tracking reports based only on carbon dioxide emissions. The CSC moderator asked that Woodstock include methane, nitrous oxide, and carbon dioxide equivalents in its reports.

Natural Resource Inventory

The NRI working group completed a review of the draft natural inventory maps in preparation for a presentation to the Woodstock Town Board.

Ingrid Haeckel, NYSDEC Hudson River Estuary Program and NRI working group leader, reviewed the NRI maps with the Woodstock Town Board at its June 16, 2020 meeting. The next phase, as Ingrid explained, is to write the NRI document. The intention is to complete the NRI by the end of the year.

The Natural Resource Inventory is a major initiative launched with the Environmental Commission; Ingrid Haeckel, NYSDEC Hudson River Estuary Program/Cornell University; Ashokan Watershed Stream management Program; Ulster County Department of the Environment; NYS Department of Health; and Woodstock's Climate Smart Task Force.

Several important water resources maps were created during this project:

Drinking Water Resources

Created a map showing Woodstock's water district, source drinking water wells, critical wellhead protection area, and aquifer protection areas. This map will be used in the town's ongoing efforts to create an aquifer protection law, and it fulfills requirement number four, Update the Drinking Water Source Protection Map, on the DWSP2 Framework.

Special Flood Hazard Areas

A map showing all the FEMA flood zones in Woodstock. Flood maps for single properties are easily accessible, but a map showing all the flood zones is necessary for hazard mitigation planning. The special flood hazard areas in all of Woodstock's watersheds are identified.

Stream Management Units

Ashokan Stream Management Program completed a feature inventory of the Beaver Kill and Little Beaver Kill. This data is presented in two substantive reports that organize the streams' features by management units. Several years ago, Woodstock completed an inventory of the Sawkill and has much of the necessary data to define management units. The Woodstock Comprehensive Plan calls for a stream management study of the Sawkill, and an attempt will be made to organize the existing data by stream management units in preparation for a full study.

NYISO Power Trends 2020

The New York Independent System Operator (NYISO) released *Power Trends 2020: The Vision for a Greener Grid*. The NYISO's annual publication provides information and analysis on how technology, economic forces, and public policies are shaping New York's complex electric system. This year's Power Trends focuses on how the grid is being shaped by the state's Climate Leadership and Community Protection Act (CLCPA).

<https://www.nyiso.com/power-trends>

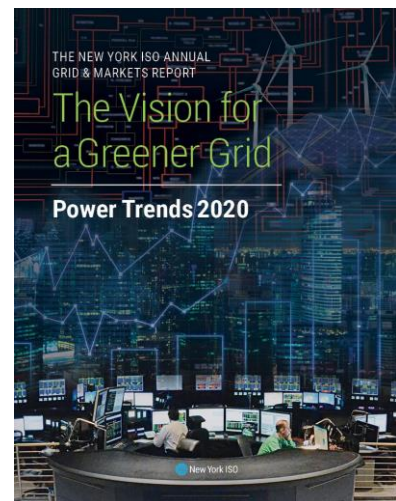
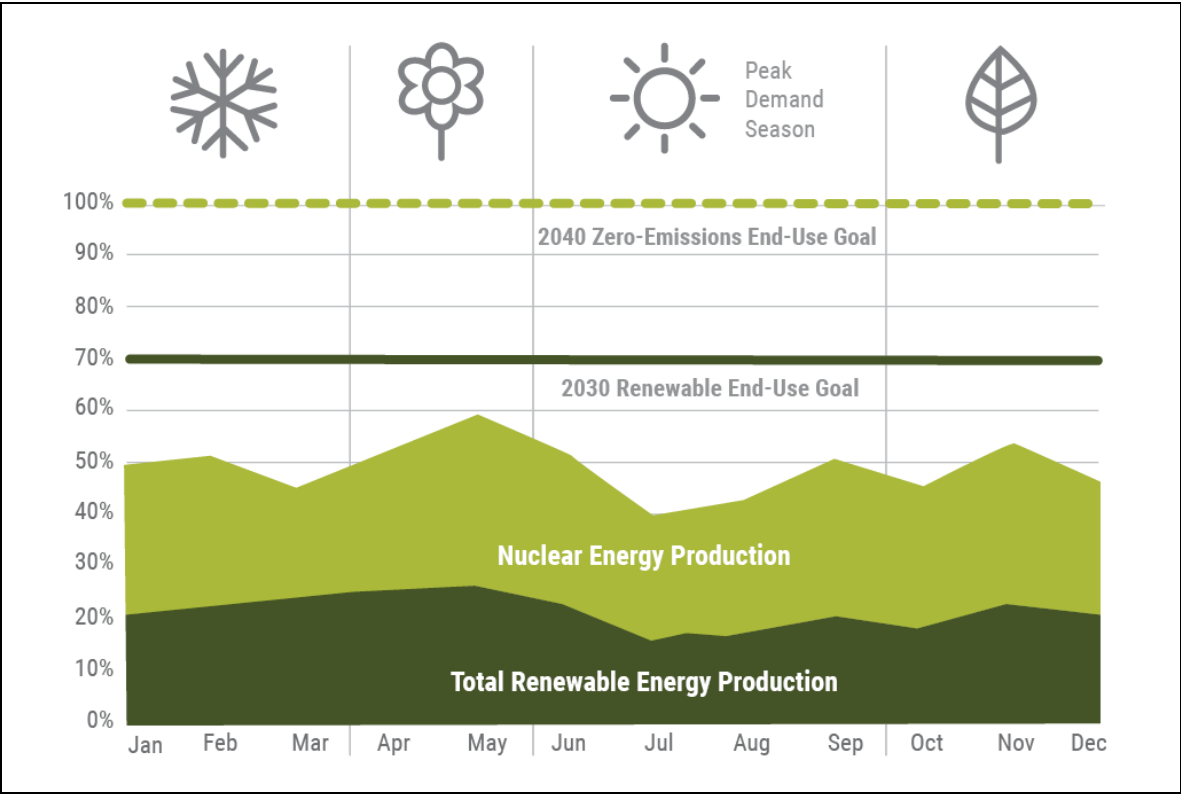


Figure 12: Production of In-State Renewables and Zero-Emission Resources Relative to 2019 Load

Last year's Climate Leadership and Community Protection Act (CLCPA) calls for getting 70 percent of the state's electricity from renewables by 2030, up from 26.8 percent in 2018, and hitting 100 percent zero-carbon emissions by 2040. That leaves a massive gap. More than half of the state's carbon-free emissions come from nuclear power, as shown in the chart below. CLCPA seeks greater gains in renewable energy in the next 10 years than have been realized in the past 20 years.



The chart shows monthly production of in-state renewable and nuclear generation in 2019 and highlights the gap from the state's goals. The chart also shows seasonal variation. The contribution from wind tends to wane in the summer, when load typically increases, and solar production is lower in the winter. The goals for 2030 and 2040 are in terms of end-use energy consumed, which would also include behind the meter solar and community solar.

Nuclear resources contribute significantly to zero-emission generation in New York State. Nuclear resources accounted for roughly 56% of all zero-emission generation in 2019, but this level of contribution will be impacted by the deactivation of the Indian Point nuclear power plant units in 2020 and 2021. The loss of output from Indian Point will create challenges for achieving carbon dioxide emissions reduction goals.¹



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¹ NYISO, Power Trends 2020, Pages 25, 26

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Climate Smart Task Force

Application for Bronze Level

Woodstock submitted its application on July 3, 2020 for consideration of Climate Smart Bronze Level certification in the DEC's 3rd quarter review cycle.

Recycling/Composting/Waste Management

The Woodstock Climate Smart Task Force hosted Mary McNamara, Saugerties Organic Waste Coordinator, and Jo Yanow-Schwartz, Woodstock Organic Waste (WOW), to brief the task force on recycling/composting/waste management programs in Saugerties and Woodstock.

Drinking Water Source Protection Program (DWSP2)

In January 2019, the town board identified work items necessary to implement the new Comprehensive Plan. Also at this time, DOH and DEC announced the Drinking Water Source Protection Program (DWSP2), which is available to assist towns to develop water supply protection plans. In June 2019, the Supervisor reestablished the aquifer protection working group and approved participating in DWSP2 with the objective of proposing a revised aquifer protection law.

In late September 2019, Grant Jiang, the metropolitan area regional Source Water Protection Coordinator for the NYS Department of Health based out of Monticello, was assigned to provide Woodstock with technical assistance for the towns source water protection activities.

Milestones Achieved

Two major milestones have been accomplished by the Aquifer Protection Working Group.. First, a review of possible water supply contamination showed that the town's water wells are not subject to contamination by nearby septic systems, and second, a map developed as part of the Natural Resource Inventory delineates the town's drinking water resources.

These results and follow-on work plans were presented to the Zoning Revision Committee and the Woodstock Town Board.

Danskammer Energy Center – Article 10 Application

- Danskammer submitted its initial Article 10 Application to the siting board on December 11, 2019
- In response to a Notice of Deficiencies from the siting board, Danskammer submitted its first Supplement on March 11, 2020 addressing identified deficiencies in its application.
- The Second Supplement to the Article 10 Application was filed April 21, 2020 responding to issues raised by the Department of Public Service and DEC concerning climate risk (rising sea levels) and the Storm Water Pollution Prevention Plan (SWPPP) issues.
- A Third Supplement to the Article 10 Application filed July 10, 2020 responded to questions about the project's consistency with the Climate Leadership and Community Protection Act (CLCPA).

Comments about CLCPA from the Third Supplement

Although CLCPA provides that all state agencies must consider whether the decision to issue a permit is "inconsistent with or will interfere with the attainment of the statewide greenhouse gas emission limits established in ECL Article 75," Danskammer points out that these limits have not been set.

ECL § 75-0105 sets the procedure for setting greenhouse gas emission limits. "Within two years of the CLCPA's effectiveness date, NYS DEC must issue a report on statewide greenhouse gas emissions (the "Report"). The Report must set forth "an estimate of what the statewide greenhouse gas emissions level was in 1990" based on "best available science and methods of analysis" Prior to issuance, NYSDEC must hold a minimum of two public hearings to "seek public input regarding the methodology and analysis used in the determination of statewide greenhouse gas emissions."

CLCPA requires PSC to implement a program to achieve 70% of statewide electric generation from renewable energy systems by 2030 and zero emissions from the statewide electric system by 2040. CLCPA also requires the PSC to consider the impact of this program on the provision of safe and adequate electric service in the State, and empowers the PSC to temporarily suspend or modify the obligations created by such program if it finds that that the program impedes the provision of safe and adequate electric service. The PSC has not yet established such a program.

Danskammer has submitted a report prepared by its consultant, ICF, showing that the Project is consistent with the CLCPA. The key findings of this report, which are described in detail in Section 2.3, are:

- Since the Project would be among the most efficient electric generating facilities in NYS, it will reduce system-wide GHG emissions in the northeast' by displacing less efficient and higher-emitting generating facilities both inside and outside NYS.
- As demonstrated in the chart below, due to the Project's high efficiency and state-of-the-art emissions controls, overall fuel consumption and associated GHG emissions fall annually on an average by 196,000 tons and 261,000 tons after accounting for upstream emissions between 2025 and 2035. In 2040 and beyond, while GHG emissions in NYS from the electric sector are assumed to be zero, the Project causes emissions outside NYS to be reduced by 20,000 tons annually.

[ICF Danskammer Article 10 Report REDACTED](#)

Climate Leadership and Community Protection Act

- Procure 70% of the state's electricity from renewable sources by 2030;
 - 9,000 MW of offshore wind by 2040;
 - 6,000 MW of photovoltaic solar by 2025;
 - 3,000 MW of energy storage by 2030;
- Overall 85% reduction from 1990 in statewide greenhouse gas emissions by 2050;
- 100% carbon free electricity generation by 2040.

CLCPA White Paper

NYSERDA and DPS released a white paper in June proposing a regulatory framework for achieving goals established by CLCPA.¹ The White Paper is a first step in establishing the mandated program by June 30, 2021 to achieve 70% renewables by 2030 and zero-emissions by 2040. It recommends modifications to the existing CES procurement structure.

Statewide electric load in 2030 is forecasted at 151,678 GWh, of which 70%, 106,174 GWh will come from renewable resources. (2019 electric load was 155,832 GWh)²

- Additional load, electrification of heating: 10,334 GWh by 2030.
- Additional load, electrification of transportation: 9,048 GWh by 2030.
- Load reduction with energy efficiency improvements: 40,865 GWh by 2030.

¹ Case 15-E-0302, *White Paper on Clean Energy Standard Procurements to Implement New York's Climate Leadership and Community Protection Act* (issued June 18, 2020), Available at <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={E6A3B524-6617-4506-A076-62526F8EC4CB}>

² NYISO, *2020 Load & Capacity Data Report* (Gold Book), Table I-2, page 19, released April 2020, Available at <https://www.nyiso.com/documents/20142/2226333/2020-Gold-Book-Final-Public.pdf/9ff426ab-e325-28bc-97cf-106d792593a1?t=1588251915775>

The White Paper considers a 2030 power profile composed of six primary renewable energy sources.

Comments on the White Paper are due August 18, 2020.

CLCPA Goals Compared to CES

	CES (Aug. 1, 2016)	CLCPA (July 18, 2019)	Change from CES
Renewable Sources	50% by 2030	70% by 2030	20% Increase
	Modified CES procurement structure to reach 70% by 2030.		
Energy Efficiency		40,865 GWh by 2030 Load Reduction	
Carbon Free Electricity		100% by 2040	
PV Solar	3,000 MW by 2023	6,000 MW by 2025	3,000 MW, 2 Years
	1,126 MW PV Solar Installed as of December 31, 2019		
Off-Shore Wind	1,700 MW by 2024	9,000 MW by 2035	7,300 MW, 11 Years
Reduction from 1990 in Greenhouse Gas Emissions	40% by 2030	40% by 2030	
	80% by 2050	85% by 2050	5% Increase
Energy Storage		1.5 GW by 2023	
		3.0 GW by 2030	
Upstate Nuclear Power Plants	Maintain Zero-Emission Nuclear Power		
New York Energy Solution	Replace an 80-year old, 115-KV line with a 345-kV, upgraded transmission line through Rensselaer, Columbia, and Dutchess Counties Expected in-service, year-end 2023		

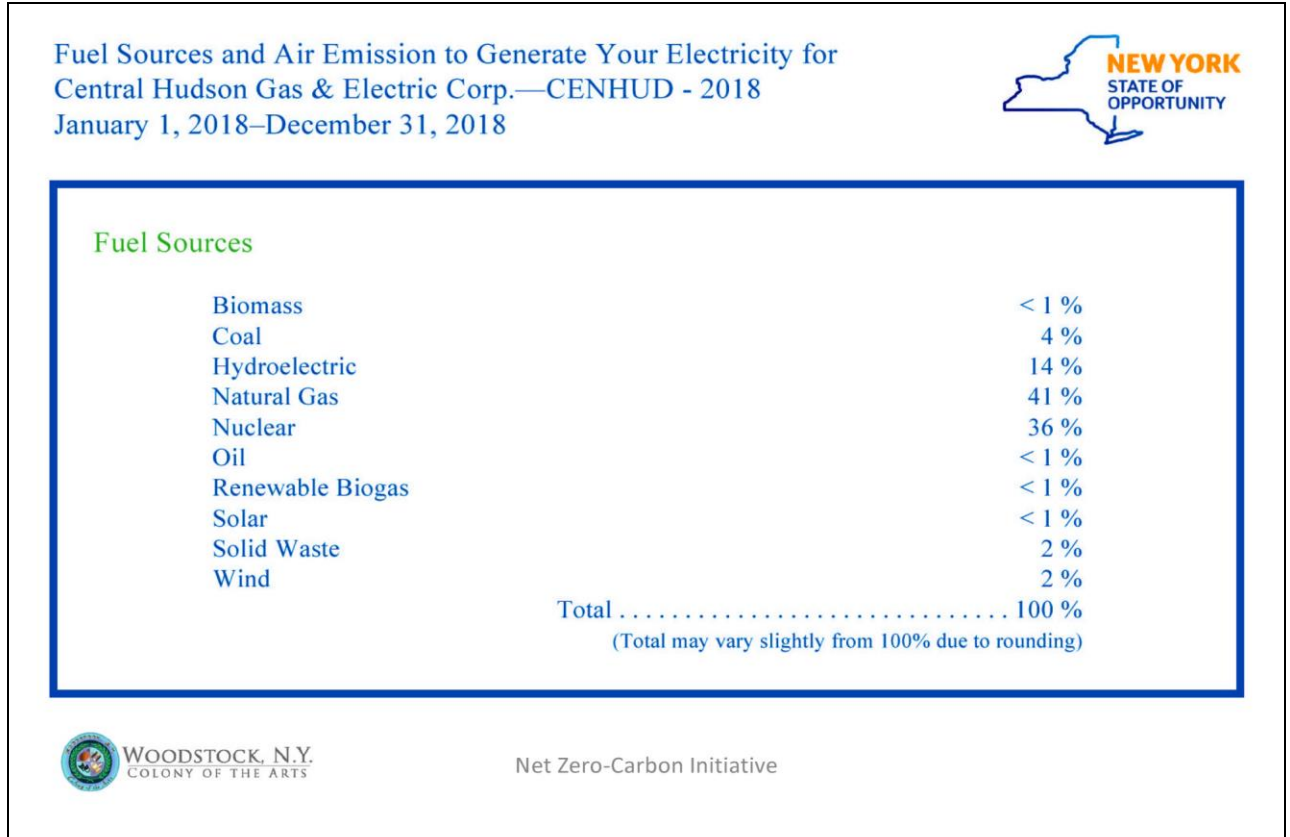
CES – Clean Energy Standard, adopted August 1, 2016

CES Phase 4 Implementation Plan Proposal, April 16, 2020

Central Hudson Environmental Disclosure Label

Every electric utility, energy service company (ESCO), municipal electric utility, and cooperative electric utility that sells electricity is required to provide the Department of Public Service issued Environmental Disclosure Label to their retail customers.

The labels provide information on the types of fuels used to generate electricity, air emissions resulting from generating electricity, and a comparison of those emissions to a statewide average. This information enables consumers to compare electricity suppliers based on environmental quality and resource diversity.





WOODSTOCK, N.Y.
COLONY OF THE ARTS

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Ulster County Climate Smart Committee Town of Woodstock Report for August 24, 2020

The Ulster County Climate Smart Committee (CSC) meets once a month to review progress on achieving the County's environmental goals. Each town is asked to report on its activities with the New York Climate Smart Communities program, and the County asked that these reports be submitted in electronic form as a convenience for including them in the minutes of the meetings. The written format is also more practical within the constraints imposed by Zoom video conferencing.

Climate Smart Task Force

Application for Bronze Level

Woodstock submitted its application on July 3, 2020 for consideration of Climate Smart Bronze Level certification in the DEC's 3rd quarter review cycle, which ends on August 21, 2020.

CSC PE6 Action: Natural Resources Inventory

The Natural Resource Inventory (NRI) is an initiative undertaken by the Woodstock Environmental Commission in partnership with; Ingrid Haeckel, NYSDEC Hudson River Estuary Program/Cornell University; Ashokan Watershed Stream management Program; Ulster County Department of the Environment; NYS Department of Health; and Woodstock's Climate Smart Task Force.

Draft versions of the natural resource maps have been created and reviewed, and preparation of the final NRI report is underway. Labor Day is the assigned target for having first drafts of the NRI narrative available for review.

CSC PE7 Action: Watershed Assessment

Woodstock has three major watersheds. The Sawkill watershed covers most of eastern Woodstock. The other two watersheds are the Beaver Kill and the Little Beaver Kill, are included in the Ashokan watershed.

Stream Management Plans (SMP) have been prepared for the Sawkill and Beaver Kill, and an assessment completed for the Little Beaver Kill. Baseline documentation identifying bridges, road crossing, culverts, dams, log jams, bank erosion, etc. is included in the assessments, and stream management units have been identify the physical attributes and characteristics of each stream section.

The watershed narrative prepared for the NRI could be the initial draft for the CSC watershed assessment action item.

Culvert Assessment

The Ulster County Department of the Environment, in partnership with Cornell Cooperative Extension of Ulster County, will inventory and assess culverts within the lower Esopus watershed to develop town-wide, municipal road-stream crossing management plans for the towns of Woodstock, Kingston, and Saugerties. The management plans will allow municipalities to identify priority culvert replacement projects that will improve flood resiliency, road infrastructure condition, and remove barriers to fish and wildlife passage. The project will produce conceptual designs for three county crossings and shovel-ready designs for up to two additional crossings.

This effort builds on the culvert assessment done two years ago.¹ Tim Koch of Cornell Cooperative Extension of Ulster County and AWSMP developed a Multi-Objective Stream Crossing Assessment Protocol (MOSCAP) that provides a more detailed culvert assessment. MOSCAP extends the existing protocol in four ways: 1) geomorphic compatibility, 2) structural condition, 3) aquatic organism passage, AOP, and 4) flood flow capacity using NOAA rainfall projections. When completed, all county and town road crossings in Olive and Woodstock will have been assessed with MOSCAP.

Access Database

In 2006, the Town of Woodstock, on behalf of the Town of Ulster and the Town of Kingston, received a grant from the NYS Department of Environmental Conservation's Hudson River Estuary Program to fund a Sawkill Watershed Stewardship and Education project. Integrated River Solutions, Inc. (IRS), the consultant hired to conduct the assessment and develop a management plan for the Sawkill, delivered two documents: the *Steam Corridor Assessment*² and the *Sawkill Stewardship Manual*.³

The ongoing culvert assessment provides an opportunity to combine culverts with the existing Sawkill assessment in a relational database that identifies all the stream crossings and tributaries in the Sawkill watershed.

¹ "Assessment Underway of Public Road Crossings Over Streams in Ashokan Watershed," Daily Freeman, June 23, 2018

² Integrated River Solutions, Inc., "Sawkill Creek, Stream Corridor Assessment Report," May 2007

³ Integrated River Solutions, Inc., "Sawkill Stewardship Manual," December 2007

Events

Brad Tito, Program Manager, Communities and Local Government at NYSERDA, has been invited to explain Community Choice Aggregation (CCA) to the EMC.

CCAs, also known as municipal aggregation, are programs that allow local governments to procure power on behalf of their residents, businesses, and municipal accounts from an alternative supplier while still receiving transmission and distribution service from their existing utility provider.

CCAs can be an attractive option for communities that want more local control over their electricity sources, more green power than is offered by the default utility, and/or lower electricity prices. By aggregating demand, communities gain leverage to negotiate better rates with competitive suppliers and choose greener power sources.

CCAs are currently authorized in California, Illinois, Ohio, Massachusetts, New Jersey, New York, and Rhode Island.



Brad Tito works with communities across New York State to save energy and improve the environment. He helped design and together with his team launch NYSERDA's Clean Energy Communities initiative. He specializes in municipal sustainability initiatives including LED street lights and community choice aggregation (CCA).

Prior to joining NYSERDA, Brad served as Director of Sustainability for the City of Yonkers - New York's fourth largest city - where he led a number of high-profile initiatives including an award-winning LED streetlight conversion project and the establishment of mandatory green-building standards. Prior to Yonkers, Brad served as the Director of Environmental Coordination for Nassau

County on Long Island where he developed a broad range of environmental and health initiatives. He has a master's degree in Urban Policy Analysis and Management from the New School University and a bachelor's degree in Sustainable Development from Prescott College in Arizona.

Ulster County Environmental Management Council (EMC) Regular Monthly Meeting of August 26, 2020 6:30 PM via Zoom Video Conferencing

Although meetings of the EMC are open to the public, Zoom invitations are sent only to members of the EMC. If others wish to attend, please notify the secretary or the chair to obtain Zoom login instructions and passwords.

Climate Leadership and Community Protection Act

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 CES Phase 4 Implementation Plan Proposal, April 16, 2020



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The Ulster County Climate Smart Committee (CSC) meets once a month to review progress on achieving the County's environmental goals. Each town is asked to report on its activities with the New York Climate Smart Communities program, and the County asked that these reports be submitted in electronic form as a convenience for including them in the minutes of the meetings. The written format is also more practical within the constraints imposed by Zoom video conferencing.

Ulster County Climate Smart Committee Town of Woodstock Report for September 28, 2020



Woodstock Certified Bronze

On August 21, 2020, Woodstock was notified by DEC that its application met the requirements to be a bronze certified Climate Smart Community. A score of 120 points is required to qualify for bronze certification. Woodstock was approved for 147 points.

In March 2007, the Woodstock town board committed that town governmental operations would be carbon neutral by year-end 2017. The town achieved carbon neutrality in 2015 and was recognized for its accomplishment at the 2017 annual meeting of the New York State Association of Conservation Commissions.

Woodstock established a Climate Smart Community Task Force in October 2019, with the Environmental Commission as its core group. It was apparent that many of actions by the town to achieve carbon neutrality would qualify for points under the Climate Smart certification program. The Task Force held its first meeting in November 2019.

Submitted CSC Action Items

Woodstock Climate Smart Task Force Bronze Level Certification Matrix			
Certification Actions		Status	Completed Approved
PE1.1: Resolution Adopting the CSC Pledge		Approved	4
PE1: Build a Climate Smart Community			
PE1	CSC Task Force Resolution	Approved	20
PE1	CSC Coordinator	Approved	10
PE1	National/Regional Climate Program	Approved	3
PE1	Partnerships with Other Entities	Approved	3
PE1: Build a Climate Smart Community Total			36
PE2: Emissions Inventory, Climate Action Plan			
PE2	Government Operations GHG Inventory	Approved	16
PE2: Emissions Inventory, Climate Action Plan Total			16
PE3: Decrease Energy Use			
PE3	LED Street Lights	Approved	10
PE3: Decrease Energy Use Total			10
PE4: Shift to clean, renewable energy.			
PE4	Renewable Energy Feasibility Studies	Approved	5
PE4	Geothermal Installation	Approved	14
PE4	Solar Energy Installation	Approved	14
PE4: Shift to clean, renewable energy Total			33
PE6: Climate Smart Land Use			
PE6	Comprehensive Plan with Sustainability Elements	Approved	15
PE6	Unified Solar Permit	Approved	5
PE6	Alternative Fuel Infrastructure	Approved	8
PE6: Climate Smart Land Use Total			28
PE8: Support a green innovation economy			
PE8	Farmer's Markets	Approved	3
PE8	Solarize, Clean Heating, etc. Campaign	Approved	5
PE8: Support a green innovation economy Total			8
PE9: Inform and inspire the public			
PE9	Social Media	Approved	3
PE9: Inform and inspire the public Total			3
PE10: Engage in an evolving process of climate action			
PE10	GHG Tracking System	Approved	5
PE10	Annual Progress Report	Approved	4
PE10, P11, P12: Evolving process of climate action Total			9
CSC Certification Portal Submitted Total			147

Local Bronze Certified Communities

Woodstock owes a debt of gratitude to other local Bronze communities for inspiration and guidance. The meetings of the Ulster County Climate Smart Committee supported the sharing of experiences, and the documents available on the CSC website provided guidance for fulfilling the requirements of the CSC action items. The local Bronze level communities Woodstock would like to thank are:

Town of Marbletown

Town of Saugerties

Town and Village of New Paltz

Town of Red Hook

Village of Rhinebeck

Point Summary, Local CSC Bronze Certified Communities

Climate Smart Towns
Pledge Element Points

		Woodstock	Saugerties	Marbletown	New Paltz	Rhinebeck	Red Hook
Approved Action Points	Resolution Adopting Climate Smart Pledge	4	4	4	4	4	4
	1) Build a Climate-Smart Community	36	33	36	36	36	36
	2) Inventory Emissions, Climate Actions Plans	16	48	28	16	0	16
	3) Decrease Energy Use	10	22	21	15	13	11
	4) Shift to Clean, Renewable Energy	33	12	8	13	9	17
	5) Use Climate-Smart Materials Management	0	4	7	0	11	10
	6) Implement Climate-Smart Land Use	28	34	23	25	33	34
	7) Enhance Community Resilience to Climate Change	0	4	0	20	9	13
	8) Support a Green Innovation Economy	8	0	25	23	3	5
	9) Inform and Inspire the Public	3	9	9	6	17	11
	10) Evolving Process of Climate Action	9	0	0	0	0	0
	11) Innovation						
	12) Performance	0	0	0	0	0	0
	Sum of Approved Action Points	147	170	161	158	135	157

Climate Smart Towns
Pledge Element Points

		Woodstock	Saugerties	Marbletown	New Paltz	Rheinbeck	Red Hook
	Resolution Adopting Climate Smart Pledge	4	4	4	4	4	4
PE:1	CSC Task Force Resolution	20	20	20	20	20	20
	CSC Coordinator Appointed	10	10	10	10	10	10
	Join National/Regional Climate Program	3	3	3	3	3	3
	Partnership with Other Entities	3		3	3	3	3
	Sum of PE:1: Build Climate Smart Community ^Σ	36	33	36	36	36	36
PE:2	Government Operations GHG Inventory	16	16	16	16		
	Community GHG Inventory		16				
	Government Operations Climate Action Plan		16	12			
	Community Climate Action Plan						16
	Sum of PE:2 Emissions, Climate Action Plans ^Σ	16	48	28	16	0	16
PE:3	Government Building Energy Audits		8				
	Interior Lighting Upgrades					5	
	Benchmarking Government Buildings			2	2		4
	Fleet Efficiency Policy					4	
	Advanced Vehicles						2
	LED Street Lights	10	6	10	8		
	Outdoor Lighting Reductions		3	4		4	
	Energy Code Enforcement Training		5	5	5		5
	Sum of PE:3 Decrease Energy Use ^Σ	10	22	21	15	13	11
	Green Power Procurement Policy			4	4		
PE:4	Renewable Energy Feasibility Studies	5	3	4			
	Geothermal Installation	14					
	Solar Installation	14	9		9	9	17
	Sum of PE:4 Clean, Renewable Energy ^Σ	33	12	8	13	9	17
	Recycling Bins in Government Buildings			1		3	
PE:5	Resource Recovery Center						6
	Recycling Program for Public Places & Events					2	
	Waste Reduction Education Campaign					2	2
	Compost Bins for Residents						2
	Residential Organic Waste Program		4	6		4	
	Sum of PE:5 Climate Smart Materials Management ^Σ	0	4	7	0	11	10
	Comprehensive Plan with Sustainability Elements	15	9				
PE:6	PE6.2 Incorporate Smart Growth Land Use Principle				8		
	PE6.7 Land Use Policies, Farmer's Markets				1		1
	PE6.18 Forestry Program				5	8	10
	PE6.19 Preserve Natural Areas through Zoning					4	4
	Unified Solar Permit	5	5	5	5	5	5
	Planning & Infrastructure for Bicycling & Walking			8		8	8
	Alternative Fuel Infrastructure	8	10	10	6	8	6
	Natural Resource Inventory		10				
	Sum of PE:6 Climate Smart Land Use ^Σ	28	34	23	25	33	34
	Climate Vulnerability Assessment				16	4	
PE:7	Climate Resiliency Planning						6
	Shade Structures in Public Places		4				
	Watershed Assessment					4	4
	Restoration of Floodplains & Riparian Buffers					1	3
	Conservation of Natural Habitats				4		
	Sum of PE:7 Community Resilience Climate Change ^Σ	0	4	0	20	9	13
	Green Vendor Fairs			2	2		
PE:8	Farmer's Market	3			3	3	
	Community Choice Aggregation			18	18		
	Solarize, Clean Heating Campaign	5		5			5
	Sum of PE:8 Green Economy ^Σ	8	0	25	23	3	5
PE:9	Climate Change Education & Engagement					8	
	Energy Reduction Campaign						5
	Climate Related Public Events		3	3	3	3	
	Local Climate Action Website		3	3			3
	Social Media	3	3	3	3	3	3
	Sum of PE:9 Inform & Inspire Public ^Σ	3	9	9	6	17	11
PE:10	GHG Tracking System	5					
	Annual Progress Report	4					
	Sum of PE:10 Engage in Evolving Process ^Σ	9	0	0	0	0	0



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Climate Smart Task Force

CSC PE6 Action: Natural Resources Inventory

The Natural Resource Inventory (NRI) is an initiative undertaken by the Woodstock Environmental Commission in partnership with; Ingrid Haeckel, NYSDEC Hudson River Estuary Program/Cornell University; Ashokan Watershed Stream management Program; Ulster County Department of the Environment; NYS Department of Health; and Woodstock's Climate Smart Task Force.

Draft versions of the Natural Resources Inventory were submitted to the DEC/Hudson River Estuary Program for compilation into a final document, which has been distributed for final review. A public presentation of the Natural Resource Inventory will occur on **October 5th**.

CSC PE7 Action: Watershed Assessment

Woodstock has three major watersheds. The Sawkill watershed covers most of eastern Woodstock. The other two watersheds are the Beaver Kill and the Little Beaver Kill, are included in the Ashokan watershed.

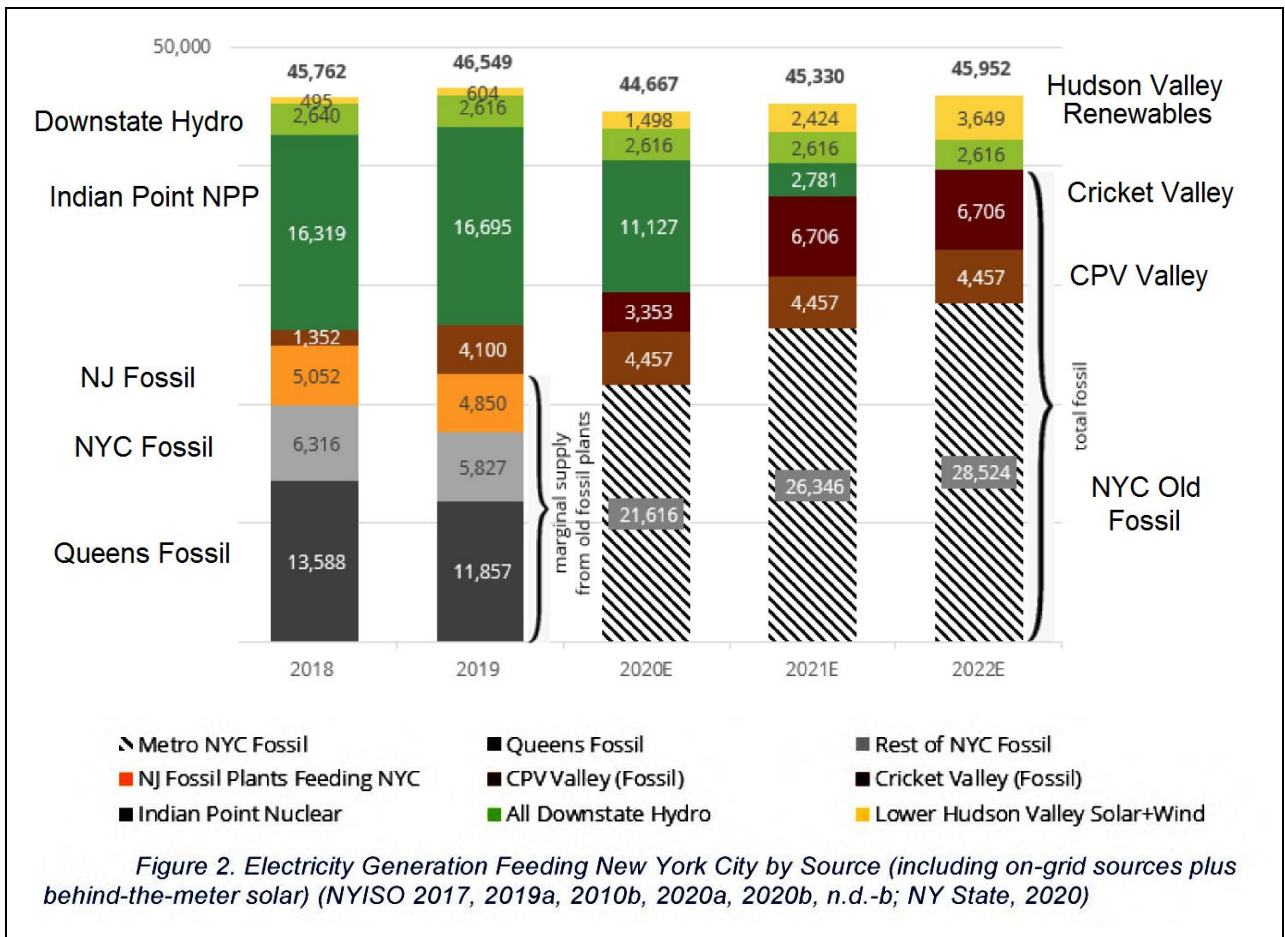
Stream Management Plans (SMP) have been prepared for the Sawkill and Beaver Kill, and an assessment completed for the Little Beaver Kill. Baseline documentation identifying bridges, road crossing, culverts, dams, log jams, bank erosion, etc. is included in the assessments, and stream management units have been identified that describe the physical attributes and characteristics of each stream section.

The watershed narrative prepared for the NRI can become the initial draft for the CSC watershed assessment action item.

CLCPA White Paper Comments on Indian Point

NYSDERDA and DPS released a white paper in June proposing a regulatory framework for achieving the goals established by CLCPA.¹ The White Paper is a first step in establishing the mandated program by June 30, 2021 to achieve 70% renewables by 2030 and zero-emissions by 2040. Comments were due by August 31, 2020. One filing included an analysis of the closure of the Indian Point Nuclear Power Plant impact on Environmental Justice communities.²

The conclusion is that to replace lost nuclear generation, existing fossil fuel plants in the NYC Metro area will need to ramp up generation by 27% between 2019 and 2022, with an increase of GHG emissions of 7 to 8 million metric tons per year.



¹ Case 15-E-0302, *White Paper on Clean Energy Standard Procurements to Implement New York's Climate Leadership and Community Protection Act* (issued June 18, 2020), Available at <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={E6A3B524-6617-4506-A076-62526F8EC4CB}>

² Isuru Seneviratne, Harvard University Extension School, Design of Renewable Energy Projects, "Impacts of Indian Point Nuclear Plant Closure: Human Health, Climate Change, and Ecosystem Damages," May 2020, Revised August 2020, Available at <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={3B2E625D-7B50-4B78-B6A3-ADC7BF564ADB}>

Central Hudson 2020 DSIP Conference Call

Central Hudson hosted a stakeholder conference call to explain its 2020 Distributed Systems Implementation Plan (DSIP). A PSC Order issued on April 20, 2016, described the need to develop a more transactional, distributed electric grid that meets the demands of the modern economy and includes improvements in system efficiency, resilience, and carbon emissions reductions. The utilities were described as Distributed System Platform (DSP) that combine planning and operations with the enabling of markets, a process which is defined by the DSIP.

New York State has aggressive clean energy policies to reduce carbon emissions and address climate change. One of the foundational elements of the State's REV initiative is increasing the amount of distributed energy resources - such as wind, solar, and battery storage - and increasing energy efficiency. Furthermore, in July 2019, New York passed CLCPA, which includes: an 85% reduction of all greenhouse gas emissions by 2050, achieving 70 percent of all electric generation produced by renewable resources by 2030, and a carbon-neutral electric generating sector by 2040.

The updated DSIP recognizes and includes the new requirements imposed by CLCPA.

Lower Peak Demand

As a result of slowdowns in the regional and state economy (not related to COVID-19), energy efficiency (EE) programs, and the integration of primarily small-scale photovoltaic (PV) systems, the electric system peak has shown a steady decline. The actual system peak in 2019 was 1,109 MW (1,092 MW on a normalized basis). Due to the continued forecasted economic weakness in the Hudson Valley, the normalized peak forecast for 2025 is projected at 1,146 MW; when the effects of DER are included the system peak drops to 1,114 MW. For comparison, Central Hudson's all-time electric system peak demand of 1,295 MW was set in 2006.

As a result of the observed and forecasted reduction in system demand growth, the majority of the Company's electric capital expenditures remain focused on replacing existing infrastructure based on condition assessment and Grid Modernization efforts.

Danskammer CLCPA Response

Danskammer has been requested to submit additional information within the meaning of CLCPA about the proposed use of renewable natural gas and/or hydrogen in 2040.

- Danskammer submitted its Article 10 Application to the siting board **on December 11, 2019**. On **February 10, 2020**, a Notice of Deficiency Letter was issued after a preliminary review of Danskammer's Application. The Application, as submitted, was not in compliance with the Public Service Law.
- In response to a Notice of Deficiencies, Danskammer submitted its first Supplement to the Application on **March 11, 2020** addressing identified deficiencies in its application.
- A Second Supplement to the Application was filed **April 21, 2020** responding to issues raised by the Department of Public Service and DEC concerning climate risk (rising sea levels) and the Storm Water Pollution Prevention Plan (SWPPP) issues.

- A Third Supplement to the Application filed **July 10, 2020** responded to questions about the project’s consistency with the Climate Leadership and Community Protection Act (CLCPA). Danskammer purported to address this deficiency by stating the plant may be converted to run on “renewable natural gas” (RNG) and/or hydrogen by 2040.
- On **September 8, 2020**, the Chair of the Siting Board notified Danskammer that Supplements to its Application failed to remedy or otherwise cure the deficiencies identified in the February 10, 2020 Deficiency Letter. Chair Rhodes requested:

“ Please provide additional information to fully detail the Applicant's proposal regarding the use of RNG and/or hydrogen, including: information demonstrating that the use of RNG and/or hydrogen is feasible at the Danskammer Facility; what if any reconfiguration and/or additional infrastructure would be needed to convert the Facility to RNG and/or hydrogen; whether the Applicant intends to commit to the use of RNG and/or hydrogen; and an explanation of how either RNG or hydrogen would qualify as a renewable energy resource and/or a zero emissions carbon resource within the meaning of the CLCPA and PSL §66-p.”

Danskammer Solar Replacement

It’s been discussed that solar PV should be considered as an alternative to Danskammer. It’s expected that at 70% utilization, Danskammer will generate 3,373 GWh. (GigaWatt hours). At a 13% solar capacity factor, 2,962 MW of solar arrays would be needed to generate the same amount of power as Danskammer. Using 6.25 acres/MW, this array would cover an area of about 29 square miles.

Danskammer Size	550 MW
Expected Capacity Factor	70%
Generation	3,373 GWh
Solar Capacity to replace Danskammer 13% Capacity Factor CLCPA calls for 6,000 MW Solar PV in 2025	2,962 MW
Acres at 6.25 Acres/MW	18,510
Square Miles	29

Climate Leadership and Community Protection Act

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 - 6,000 MW of photovoltaic solar by 2025;
 - 3,000 MW of energy storage by 2030;
- Overall 85% reduction from 1990 in statewide greenhouse gas emissions by 2050;
- 100% carbon free electricity generation by 2040.

CLCPA Goals Compared to CES

	CES (Aug. 1, 2016)	CLCPA (July 18, 2019)	Change from CES
Renewable Sources	50% by 2030	70% by 2030	20% Increase
	Modify the CES procurement structure to reach 70% by 2030.		
Carbon Free Electricity		100% by 2040	
PV Solar	3,000 MW by 2023	6,000 MW by 2025	3,000 MW, 2 Years
	1,126 MW PV Solar Installed as of December 31, 2019		
Off-Shore Wind	1,700 MW by 2024	9,000 MW by 2035	7,300 MW, 11 Years
Reduction from 1990 in Greenhouse Gas Emissions	40% by 2030	40% by 2030	
	80% by 2050	85% by 2050	5% Increase
Energy Storage		1.5 GW by 2023	
		3.0 GW by 2030	
Upstate Nuclear Power Plants	Maintain Zero-Emission Nuclear Power		
New York Energy Solution	Replacing a 80-year old, 115-KV line with a 345-kV, upgraded transmission line through Rensselaer, Columbia, and Dutchess Counties Expected in-service, year-end 2023		

CES – Clean Energy Standard, adopted August 1, 2016
 CES Phase 4 Implementation Plan Proposal, April 16, 2020



WOODSTOCK, N.Y.
COLONY OF THE ARTS

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Ulster County Climate Smart Committee Town of Woodstock Report for October 26, 2020



Woodstock Certified Bronze

On August 21, 2020, Woodstock was notified by DEC that its application met the requirements to be a bronze certified Climate Smart Community. A score of 120 points is required to qualify for bronze certification. Woodstock was approved for 147 points.

In March 2007, the Woodstock town board committed that town governmental operations would be carbon neutral by year-end 2017. The town achieved carbon neutrality in 2015 and was recognized for its accomplishment at the 2017 annual meeting of the New York State Association of Conservation Commissions.

Woodstock established a Climate Smart Community Task Force in October 2019, with the Environmental Commission as its core group. It was apparent that many of actions by the town to achieve carbon neutrality would qualify for points under the Climate Smart certification program. The Task Force held its first meeting in November 2019.

Submitted CSC Action Items

Woodstock Climate Smart Task Force Bronze Level Certification Matrix			
Certification Actions		Status	Completed Approved
PE1.1: Resolution Adopting the CSC Pledge		Approved	4
PE1: Build a Climate Smart Community			
PE1	CSC Task Force Resolution	Approved	20
PE1	CSC Coordinator	Approved	10
PE1	National/Regional Climate Program	Approved	3
PE1	Partnerships with Other Entities	Approved	3
PE1: Build a Climate Smart Community Total			36
PE2: Emissions Inventory, Climate Action Plan			
PE2	Government Operations GHG Inventory	Approved	16
PE2: Emissions Inventory, Climate Action Plan Total			16
PE3: Decrease Energy Use			
PE3	LED Street Lights	Approved	10
PE3: Decrease Energy Use Total			10
PE4: Shift to clean, renewable energy.			
PE4	Renewable Energy Feasibility Studies	Approved	5
PE4	Geothermal Installation	Approved	14
PE4	Solar Energy Installation	Approved	14
PE4: Shift to clean, renewable energy Total			33
PE6: Climate Smart Land Use			
PE6	Comprehensive Plan with Sustainability Elements	Approved	15
PE6	Unified Solar Permit	Approved	5
PE6	Alternative Fuel Infrastructure	Approved	8
PE6: Climate Smart Land Use Total			28
PE8: Support a green innovation economy			
PE8	Farmer's Markets	Approved	3
PE8	Solarize, Clean Heating, etc. Campaign	Approved	5
PE8: Support a green innovation economy Total			8
PE9: Inform and inspire the public			
PE9	Social Media	Approved	3
PE9: Inform and inspire the public Total			3
PE10: Engage in an evolving process of climate action			
PE10	GHG Tracking System	Approved	5
PE10	Annual Progress Report	Approved	4
PE10, P11, P12: Evolving process of climate action Total			9
CSC Certification Portal Submitted Total			147

Local Bronze Certified Communities

Woodstock owes a debt of gratitude to local Bronze certified communities for inspiration and guidance. The meetings of the Ulster County Climate Smart Committee allowed the sharing of experiences, and the documents available on the CSC website provided guidance for meeting the requirements of the CSC action items.

The local, Bronze certified, communities are:

Town of Marbletown

Town of Saugerties

Town and Village of New Paltz

Town of Red Hook

Village of Rhinebeck

Climate Smart Towns
Pledge Element Points

		Woodstock	Saugerties	Marbletown	New Paltz	Rhinebeck	Red Hook
Approved Action Points	Resolution Adopting Climate Smart Pledge	4	4	4	4	4	4
	1) Build a Climate-Smart Community	36	33	36	36	36	36
	2) Inventory Emissions, Climate Actions Plans	16	48	28	16	0	16
	3) Decrease Energy Use	10	22	21	15	13	11
	4) Shift to Clean, Renewable Energy	33	12	8	13	9	17
	5) Use Climate-Smart Materials Management	0	4	7	0	11	10
	6) Implement Climate-Smart Land Use	28	34	23	25	33	34
	7) Enhance Community Resilience to Climate Change	0	4	0	20	9	13
	8) Support a Green Innovation Economy	8	0	25	23	3	5
	9) Inform and Inspire the Public	3	9	9	6	17	11
	10) Evolving Process of Climate Action	9	0	0	0	0	0
	11) Innovation						
	12) Performance	0	0	0	0	0	0
	Sum of Approved Action Points	Σ 147	170	161	158	135	157

Natural Resources Inventory

The Natural Resources Inventory (NRI) is an initiative undertaken by the Woodstock Environmental Commission in partnership with Ingrid Haeckel of the NYSDEC Hudson River Estuary Program/Cornell University; Ashokan Watershed Stream management Program; Ulster County Department of the Environment; NYS Department of Health; and Woodstock's Climate Smart Task Force.

NRI Public Presentation

October 5, 2020 "Taking Stock of Nature: The Woodstock Natural Resources Inventory"

Ingrid Haeckel from the NYSDEC Hudson River Estuary Program provided a 30-minute overview of the habitats and wildlife of Woodstock and explained the effort underway to create a Natural Resources Inventory (NRI) for the Town.

Ingrid Haeckel is a Conservation and Land Use Specialist at the New York State Department of Environmental Conservation's Hudson River Estuary Program in partnership with Cornell University. Ingrid works with Hudson Valley communities to promote conservation of important natural areas and habitat through local land use planning. She holds degrees in Environmental Biology and Geography and worked previously for Hudsonia, where she was the lead biologist for the Woodstock habitat mapping project completed in 2012.

PE7: Woodstock Watersheds

Completed Woodstock's watersheds documents for the Natural Resources Inventory and for CSC Action Item PE7.

The DEC Climate Smart Communities Watershed Assessment Action Item requires "watershed assessment documents that identify areas vulnerable to flooding, erosion and/or water quality or quantity problems that cover 75% or more of the community area." There are three major watersheds in Woodstock. The Beaver Kill and the Little Beaver Kill, located in western Woodstock, are included in the Ashokan reservoir watershed, one of two reservoirs in the New York City Catskill Water Supply System. The Sawkill watershed, which covers most of eastern Woodstock, is outside of the Ashokan watershed and flows into the lower Esopus Creek, which in turn, flows into the Hudson River. Combined, these watersheds cover more than 75% of Woodstock's land area.

Climate Resiliency Planning

Cornell Cooperative Extension (CCE) of Ulster County has been working with municipalities over the past two years on projects that increase climate resiliency as part of the NYS Climate Smart Communities program, with funding from the New York State Department of Environmental Conservation's Hudson River Estuary Program in partnership with the NYS Water Resource Institute and with support from the NYS Environmental Protection fund.

Through the completion of the tool, Cornell Cooperative Extension (CCE) will identify strengths and gaps in climate resiliency in planning and present recommendations to the Town for utilization when developing or updating future plans, and in outreach. Completing the tool is also worth six points in the NYS Climate Smart Communities program.

If the Woodstock Environmental Commission agreed that the project would benefit the Town, and recommend that the Supervisor submit a letter of support.

Tier 4 Hydropower for New York City

The New York Department of Public Service (PSC) voted on October 15, 2020 to expand the state's Clean Energy Standard to recognize that all types of hydropower, including hydropower from Québec, provide clean, renewable energy. The decision created an additional category entitled "Tier 4" that awards Renewable Energy Credits to existing hydropower when it is delivered directly to New York City.

Because of existing transmission constraints, Hydro-Québec can only deliver energy into Upstate New York, which already has a high renewable energy supply. With Tier 4, the environmental and reliability benefits of the Champlain-Hudson Power Express, a proposed

high-voltage direct current under water power cable project linking Québec's hydropower to the New York City, will be possible.

FERC Carbon Pricing Conference

Pricing carbon in federally regulated electricity markets could be more efficient at driving down emissions than clean energy subsidies and mandates. That's a key point emerging from September 30, 2020 carbon pricing conference held by the Federal Energy Regulatory Commission, which regulates the independent system operators (ISOs) and regional transmission organizations (RTOs) that manage transmission networks delivering electricity to about two-thirds of the country.

New York NYISO's carbon-pricing proposal is the most advanced effort yet to bring this concept to reality, although it's still awaiting the core piece of data that will enable it: a social cost of carbon calculation from New York state regulators that will set the price. To align its market operations with New York's aggressive goals to decarbonize its energy sector by 2040, "reflecting a social cost of carbon dioxide emissions, set through a state or regional initiative, is essential," NYISO CEO Rich Dewey said.



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Ulster County Climate Smart Committee Town of Woodstock Report for November 23, 2020

The Year in Review

At the end of the year, it's customary to review accomplishments compared to the objectives established at the beginning of the year. Below are the Climate Smart objectives for 2020 that were published in Woodstock's CSC report of December 23, 2019, along with a short commentary on year-end status. Also provided below are proposed Climate Smart objectives for 2021.

In March 2007, the Woodstock Town Board committed that town governmental operations would be carbon neutral by year-end 2017. The town achieved carbon neutrality in 2015 and was recognized for its accomplishment at the 2017 annual meeting of the New York State Association of Conservation Commissions. The Town has essentially exhausted the available technical options for further reductions in emissions from town governmental operations, and the focus will shift to improving resiliency.

Woodstock Climate Smart Objectives for 2020

Achieve Bronze Level CSC Certification

Document and submit completed Climate Smart Action Elements. Many actions taken by the town to achieve carbon neutrality qualify for points under the CSC certification process. The yearly carbon emissions report for 2019 will be formatted for submission to the CSC Certification Portal. A review of the CSC action elements suggested Woodstock had completed the work required for about 180 CSC points.

Attainment in 2020: On August 21, 2020, Woodstock was notified by DEC that its application met the requirements as a bronze certified Climate Smart Community. A score of 120 points is required to qualify for bronze certification. Woodstock was approved for 147 points. Woodstock established a Climate Smart Community Task Force in October 2019, with the Environmental Commission as its core group. The Task Force held its first meeting in November 2019.

This objective is considered **complete**.

Aquifer Protection Law

In January 2019, the town board began the roll-out of the recently adopted Comprehensive Plan; making assignments and assigning responsibility for many of the action items in the plan. It was at this time that DOH and DEC announced the Drinking Water Source Protection Program (DWSP2), which was available to support work on the water supply protection law. In June 2019, the Supervisor approved reviving the aquifer protection working group and participating in DWSP2 with an objective of proposing a revised aquifer protection law.

In late September 2019, Grant Jiang, the metropolitan area regional Source Water Protection Coordinator for the NYS Department of Health based out of Monticello, was assigned to provide Woodstock with technical assistance for source water protection activities.

Attainment in 2020: Work in process. In 2020, the Water Supply Working Group completed its analysis, with the assistance of DOH, of in-ground septic systems in close proximity to the town's water wells. Also, as part of the Natural Resources Inventory (NRI), new and updated maps of the town's aquifers and drinking water resources were created.

On-going update and revise the aquifer protection zoning law.

Add Resilience to Climate Smart Actions

CSC Pledge Element 7 (PE7) requires communities to develop strategies that enhance local resiliency using a collaborative, transparent, and inclusive decision-making process to build capacity to evolve with changing conditions and adapt to climate change.

Attainment in 2020: A firm foundation was established in 2020 for resilience efforts, and Woodstock has applied for acceptance to Cornell Cooperative Extension's Climate Smart Resiliency Planning Project for 2021.

The town developed a combined watershed map and stream management plan for the three major Woodstock watersheds: the Sawkill, Beaver Kill, and Little Beaver Kill. This work was completed as part of the NRI in cooperation with the Ashokan Watershed Stream

Management Program. Also as part of the NRI, a town wide FEMA flood map showing all 100-year and 500-year flood hazard areas was created.

On-going into 2021.

Add Waste Management and Recycling to Climate Smart Actions

CSC Pledge Element 5 (PE5) requires communities to develop strategies for reducing waste, reusing materials, repairing items, composting food scraps, and recycling. These actions can reduce greenhouse gas (GHG) emissions by preventing waste from ending in landfills and reduce emissions associated with the extraction, processing, and transportation of materials.

Attainment in 2020: In spite of a major focus, the Climate Smart Task Force was unable to identify any systematic or documented plan for recycling/composting/waste management in Woodstock.

No further work is warranted and this **objective is closed**.

Evaluate Hybrid Police Cars

The replacement of 8-cylinder police vehicles by 6-cylinder models reduced the town's gasoline consumption by about 20 percent. Ford announced a pursuit hybrid police car in 2017 that has the possibility of reducing gasoline usage by another 20%.

Attainment in 2020: The Town Board and Police Department has shown some interest in hybrid police cars, but a full evaluation has not been completed that would support adoption of hybrid vehicles for the police department. Three Ulster County police departments, Saugerties, Ulster, and New Paltz, have acquired hybrid vehicles, so it should be possible to complete an evaluation in 2021. The town purchased a Nissan Leaf electric vehicle for use by the building department and assessor.

On-going evaluation of hybrid vehicles will continue in 2021.

Summary of 2020 Climate Smart Objectives

	2020 Status	2021 Status
Climate Smart Bronze Certification	Complete	
Aquifer Protection Law	On-Going, Continue into 2021	
Resilience Planning		New Objectives
Recycling/Composting/Waste Management	Closed	
Hybrid Police Cars	On-Going, Continue into 2021	

Woodstock Climate Smart Objectives for 2021

Add Resilience to Climate Smart Actions

CSC Pledge Element 7 (PE7) requires communities to develop strategies that enhance local resiliency using a collaborative, transparent, and inclusive decision-making process to build capacity to evolve with changing conditions and adapt to climate change. Complete the Cornell Cooperative Extension's Climate Smart Resiliency Planning Project in 2021.

Cornell Cooperative Extension of Ulster County has been working with municipalities over the past two years on projects to increase climate resiliency as part of the NYS Climate Smart Communities program, supported by funding from the New York State Department of Environmental Conservation's Hudson River Estuary Program in partnership with the NYS Water Resource Institute with support from the NYS Environmental Protection fund.

Completion of the Resiliency Planning Tool will allow Cornell Cooperative Extension (CCE) to identify strengths and gaps in the Town's climate resiliency planning and present recommendations for developing or updating plans. Completing the tool is also worth 6 points in the NYS Climate Smart Communities program.

Aquifer Protection Law

The DOH and DEC announced the Drinking Water Source Protection Program (DWSP2) in 2019, which is available to support work on Woodstock's water supply protection law. In June 2019, the Supervisor approved reforming the aquifer protection working group and participating in DWSP2 with the objective of proposing a revised aquifer protection law.

Evaluate Hybrid Police Cars

The replacement of 8-cylinder police vehicles by 6-cylinder models reduced the town's gasoline consumption by about 20 percent. Ford announced a pursuit hybrid police car in 2017 that has the possibility of reducing gasoline usage by another 20%. In 2021, an evaluation of hybrid police cars used by three Ulster County police departments, Saugerties, Ulster, and New Paltz, will be completed.

Update Tracking of Governmental Emissions

The town has tracked carbon dioxide emissions attributed to governmental operations since 2011. The Climate Smart Communities Program requires the town to also track methane and nitrogen oxide emissions, and provide CO2 equivalents. The last ten years of emissions from governmental operations will be reformulated in compliance with the requirements of the Climate Smart Program.

Woodstock Comprehensive Plan

One consequence of the Town's participation in the Climate Smart Communities Program is that significant progress has been made achieving several objectives established by the 2018 Woodstock Comprehensive Plan. A report describing how the town's Climate Smart activities supported the objectives outlined in the 2018 Comprehensive Plan was submitted to the Town Board.

Natural Resources Inventory

The final edit and review of the Natural Resources Inventory (NRI) document is underway. The NRI report will be presented to the Town Board at its scheduled December 15 meeting, including a suggested resolution for the Town Board to formally accept the NRI. The NRI was presented to the Planning Board on October 29, which will consider including the NRI in its update of the Woodstock Comprehensive Plan.

Aquifer Protection Working Group

The Aquifer Protection Working Group is using the Drinking Water Resources Map prepared for the Natural Resources Inventory to establish aquifer protection overlay districts.

Zoning Revision Committee

The Zoning Revision Committee, established by the 2018 Comprehensive Plan, is reviewing changes to the zoning law regarding the scenic overlay districts. The NRI created a map clearly identifying the scenic overlay districts.

Climate Leadership and Community Protection Act

CLCPA created the Climate Action Council, a 22-member committee that will prepare a Scoping Plan to achieve the State's clean energy and climate agenda.

On July 18, 2019, Governor Andrew M. Cuomo signed into law the Climate Leadership and Community Protection Act. New York State's Climate Act is the among the most ambitious climate laws in the world and requires New York to reduce economy-wide greenhouse gas emissions 40 percent by 2030 and no less than 85 percent by 2050 from 1990 levels.

- Procure 70% of the state's electricity from renewable sources by 2030;
 - 9,000 MW of offshore wind by 2040;
 - 6,000 MW of photovoltaic solar by 2025;
 - 3,000 MW of energy storage by 2030;
- Overall 85% reduction from 1990 in statewide greenhouse gas emissions by 2050;
- 100% carbon free electricity generation by 2040.

Climate Action Council NYISO Presentation

At the October 8, 2020 meeting of the Climate Action Council, NYISO President and CEO, Rich Dewey presented these charts to the Council.¹

The NYISO is the New York Independent System Operator — the organization responsible for managing New York's electric grid and its competitive wholesale electric marketplace. It does not generate power or own transmission lines, but instead works with power producers,

¹ <https://climate.ny.gov/-/media/CLCPA/Files/planning-grid-in-transition-presentation.pptx>

utility companies, and stakeholders to provide electricity on a daily, hourly, and minute-to-minute basis.

The NYISO is charged with reliably operating New York’s power grid, meeting the most stringent standards in the nation, under strict regulatory oversight. The NYISO plans the power system over one, five and ten-years to maintain long term reliability, reduce congestion on the transmission system, and meet public policy need.

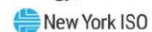
Current System Reliability Needs

- Deficiencies in reliable system performance are currently projected during the 2023 - 2030 time period.
- These deficiencies (primarily in the New York City area) are primarily driven by expected reductions in available generation capacity to comply with NOx emission regulations.
- The magnitude and nature of the deficiencies are driven by the ten-year load forecast in combination with insufficient transmission or generation to serve the forecasted load.
- The deficiencies can potentially be addressed by combinations of solutions including generation, transmission, and load reduction measures (energy efficiency, demand response, etc.)
- The NYISO continues to reassess the load forecast in light of COVID-19 and the associated evolving impacts to the economy and demand on the electric grid.



Key Takeaways

- The intermittency associated with wind and solar resources presents a fundamental challenge to relying on those resources to exclusively meet electricity demand.
- Transmission investment, at both bulk and local levels, will be necessary to efficiently deliver renewable power to New York consumers.
- The current system is heavily dependent on existing fossil-fueled resources to maintain reliability. Eliminating these resources will require investment in new and replacement infrastructure, and/or the emergence of a zero-carbon fuel source for thermal generating resources.
 - Market solutions to drive investment
 - Development of innovative new technologies
- The dispatchable and emissions-free resources needed to balance the system must be significant in capacity, able to ramp quickly, and be flexible enough to meet rapid, steep ramping needs.
- Battery storage resources help address variability from renewable resources, but based on current technology, periods of reduced renewable generation rapidly deplete battery storage resource capabilities.



CLCPA White Paper

NYSERDA and DPS released a white paper in June proposing a regulatory framework for achieving goals established by CLCPA.² The White Paper is a first step in establishing the mandated program by June 30, 2021 to achieve 70% renewables by 2030 and zero-emissions by 2040. It recommends modifications to the existing CES procurement structure.

Statewide electric load in 2030 is forecasted at 151,678 GWh, of which 70%, 106,174 GWh will come from renewable resources. (2019 electric load was 155,832 GWh)³

- Additional load, electrification of heating: 10,334 GWh by 2030.
- Additional load, electrification of transportation: 9,048 GWh by 2030.
- Load reduction with energy efficiency improvements: 40,865 GWh by 2030.

The White Paper considers a 2030 power profile composed of six primary renewable energy sources

CLCPA Goals Compared to CES

	CES (Aug. 1, 2016)	CLCPA (July 18, 2019)	Change from CES
Renewable Sources	50% by 2030	70% by 2030	20% Increase
	Modify the CES procurement structure to reach 70% by 2030.		
Carbon Free Electricity		100% by 2040	
PV Solar	3,000 MW by 2023	6,000 MW by 2025	+3,000 MW, 2 Years
	1,129 MW PV Solar Installed as of December 31, 2019 ⁴		
Off-Shore Wind	1,700 MW by 2024	9,000 MW by 2035	+7,300 MW, 11 Years
Reduction from 1990 in Greenhouse Gas Emissions	40% by 2030	40% by 2030	
	80% by 2050	85% by 2050	5% Increase
Energy Storage		1.5 GW by 2023	
		3.0 GW by 2030	

² Case 15-E-0302, *White Paper on Clean Energy Standard Procurements to Implement New York's Climate Leadership and Community Protection Act* (issued June 18, 2020), Available at <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={E6A3B524-6617-4506-A076-62526F8EC4CB}>

³ NYISO, *2020 Load & Capacity Data Report* (Gold Book), Table I-2, page 19, released April 2020, Available at <https://www.nyiso.com/documents/20142/2226333/2020-Gold-Book-Final-Public.pdf/9ff426ab-e325-28bc-97cf-106d792593a1?t=1588251915775>

⁴ NYSERDA, "2019 NY-Sun Performance Report Through December 31, 2019," Table 3, March 2020, Available at <https://www.nyserda.ny.gov/-/media/Files/Programs/NYSun/2019-Annual-Report.pdf>

	CES (Aug. 1, 2016)	CLCPA (July 18, 2019)	Change from CES
Upstate Nuclear Power Plants	Maintain Zero-Emission Nuclear Power		
New York Energy Solution	Replacing a 80-year old, 115-KV line with a 345-kV, upgraded transmission line through Rensselaer, Columbia, and Dutchess Counties Expected in-service, year-end 2023		

CES – Clean Energy Standard, adopted August 1, 2016

CES Phase 4 Implementation Plan Proposal, April 16, 2020



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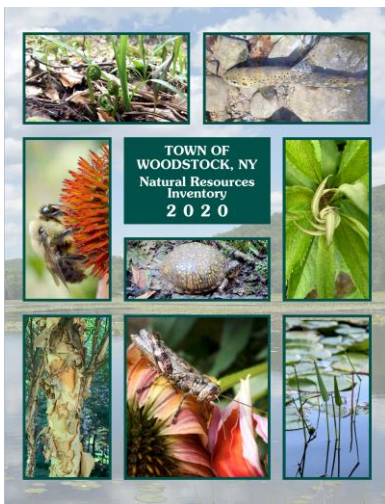
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Ulster County Climate Smart Committee Town of Woodstock Report for December 28, 2020

Natural Resources Inventory Completed



from designer Naomi Schmidt

The Natural Resources Inventory (NRI) was presented to the Town Board at its regularly scheduled December 8, 2020 meeting and a resolution accepting the NRI was adopted at its December 15th meeting.

The NRI was a terrific team effort. Woodstock was lucky to have the support of DEC's Hudson River Estuary Program, Cornell Cooperative Extension of Ulster County, and the Ulster County Department of the Environment.

Ingrid Haeckel from the Hudson River Estuary Program managed the overall project and kept us focused and on schedule. Much of the success of the NRI effort was due to her efforts and contributions. Ingrid was a major contributor to the Woodstock habitat study completed several years ago by Hudsonia.

Tim Koch of Cornell Cooperative Extension and Ashokan Watershed Stream Management Program created the Woodstock watershed maps and was an essential contributor to the new Woodstock Water District map showing water wells and the recommendations of the aquifer working group. Ben Ganon of the Ulster County Dept. of the Environment was responsible for many of the new Woodstock topographic maps, and Nate

Nardi-Cyrus of the Hudson River Estuary Program also contributed to creating new maps for Woodstock. A list of all local participants is included in the NRI.

PE6 Action: Natural Resources Inventory is worth 10 CSC points.

Community Solar Proposed

Jayne Lino of Solstice Community Solar proposed a partnership with Woodstock to promote subscriptions to a solar array located in Westerlo, a town in southern Albany County. The program operates under the terms of Community Distributed Generation (CDG) where subscribers receive a credit on their Central Hudson bill based on the avoided cost of acquiring natural gas generated electricity. The subscriber is then billed by Solstice for 90% of this credit and keeps 10%. It's estimated, based on electric usage, a subscriber might save up to a \$100 a year.

There are several points that summarize the Woodstock meetings. First, the Solstice Solar proposal is a legitimate and credible offering (not something that can always be said about solar offerings). The contract offers a clear explanation of benefits, and a no-charge cancellation option reduces any risk. It's hard to find anything wrong with the proposal, but it's necessary to understand exactly what is being offered.

A Woodstock subscriber is NOT getting renewable energy and is NOT getting solar energy. Solstice is not selling energy – Central Hudson receives the benefits (RECs) and generation (MWh) from the solar farm. Instead, Solstice is offering about a \$10 a month reduction to a subscriber's utility bill through the use of billing credits. In essence, the subscriber is shifting the \$100/month that Central Hudson would use to buy natural gas generated electricity to Solstice in support of the solar farm. The subscriber keeps about \$10 for their effort. This action slightly reduces the need for natural gas generation while increasing the use of solar energy by Central Hudson.

Although this action does not directly improve Woodstock's environment, it is consistent with state environmental goals recently established by CLCPA. Specifically, the Solstice solar farm contributes to the requirement imposed on Central Hudson that its electricity supply come from 70% renewable sources by 2030. While this is clearly an important environmental goal, the environmental commission has never discussed CLCPA and it's unclear if promoting CLCPA should be added to its agenda.

Woodstock was fortunate to have Tom Konrad, Chair of the Marbletown Environmental Conservation Commission, offer his advice and insights. Tom has worked with CDG since its inception, and Marbletown is a leader in adopting these programs. It would be hard to find someone better informed about these offerings.

Solstice is offering \$100 per subscriber the partnership acquires, which could be used to fund a WEC project or a charitable cause. The Town of Marbletown did something similar last year, raising \$6000 for a rail trail expansion and \$3000 for the Rondout Valley Food Bank.

What's New from the NYISO

The NYISO is the New York Independent System Operator — the organization responsible for managing New York's electric grid and its competitive wholesale electric marketplace.

NYISO does not generate power or own transmission lines, but works with power producers, utility companies, and stakeholders to provide power to meet New York electricity needs.

VIDEO SERIES: Rich Dewey's Vision for the Grid of the Future

Rich Dewey, CEO of the New York ISO has a clear vision for a power grid of the future. In a new video series, Dewey explains the changes coming to New York's grid to eliminate carbon emissions. "For about 100 years, not much changed and now," he says, "the whole thing is going to change and it's going to happen very, very rapidly."



Episode 1: Planning the Path to the Grid of the Future

New York State mandates a 70% clean energy grid by 2030 and a zero-emission grid by 2040. But how exactly do we move from a grid that relies on fossil fuels to one free of carbon emissions in only 20 years? In the first of a series of videos on how we are planning for these dramatic changes, our President and CEO Rich Dewey explains how we are taking the steps necessary to help meet these first-in-the-nation goals, and how New York's competitive, wholesale energy markets will play a critical part.



Episode 2: The Role of Electricity Markets on the Path to 2040

New York State's competitive, wholesale electricity markets have existed for more than 20 years, and have helped keep electricity prices down while reducing emissions. These markets allow competition and "price signals" to attract innovation and investment while encouraging the lowest-cost solutions to meet reliability. These markets provide the best tools to help New York meet its clean energy mandates by driving investments in clean energy and other new technologies, says Dewey. "We believe the markets are the most cost-effective way to get that investment," he says. "We just need to design the products appropriately and properly."

The NYISO Responds to Daily News Op-Ed about Indian Point

Rensselaer, N.Y.: A recent [NY Daily News] op-ed ("For the environment, keep Indian Point open," Nov. 30)¹ regarding the closure of the Indian Point nuclear plant contained misstatements attributed to publications released by The New York Independent System Operator (NYISO). As the entity responsible for operating New York's power grid while meeting the most stringent reliability standards in the nation under strict regulatory oversight, we are obligated to correct the record on this important subject.

The op-ed stated that our 2020 Power Trends report concluded, "Transmission upgrades and battery storage are simply incapable of alleviating downstate reliability problems." Power Trends made no such conclusion.

The NYISO has strict processes in place to identify and seek solutions for potential future reliability gaps. Our report does include a section (page 22) that discusses the closure of

¹ Mary Lou Dunzik-Gougar, Craig Piercy, "For the environment, keep Indian Point open," New York Daily News Op-Ed, November 30, 2020, Available at <https://www.nydailynews.com/opinion/ny-oped-for-the-environment-keep-indian-point-open-20201130-mrj5n7tbezgcviijd42lbnkaqa-story.html>

Indian Point, stating that New York State has enough additional capacity to make up for the loss of the facility without leading to immediate reliability concerns.

In addition, our report does not warn of blackouts in New York City and the surrounding suburbs, as the op-ed asserts. Power Trends highlights future “resource gaps” that the NYISO has identified. Those gaps will be addressed through the NYISO reliability planning processes and could be fulfilled by a number of solutions, such as transmission, generation of various types, including storage, and demand-side measures.

We encourage all readers to visit our “2040 Grid” page to learn more about the NYISO’s detailed planning and study work to meet the needs of our future grid. *Kevin Lanahan, vice president of external affairs and corporate communications, NYISO*

NYISO Increased Reserve Margin Next Year

The IRM margins are intended to ensure the lights stay on when there are generation or transmission outages. The margins drive capacity revenues for older fossil fuel peaking plants and costs for customers. IRM is a key input for the New York Independent System Operator (NYISO) to determine the locational minimum installed capacity requirements for New York City, Long Island and the rest of the state.

The New York State Reliability Council finalized the installed reserve margin (IRM) — the amount of capacity needed above peak load to meet the loss of load criteria. The goal is to limit the loss of load expectation to less than 0.1 days per year. The council’s executive committee approved an IRM of 20.7 percent, an increase from last year’s level of 18.9 percent.

Including limited resources, like storage, apparently resulted in a big increase in the number of days the model expects emergency measures to be required from voltage reductions to voluntary calls for conservation. The increase, according to the report for the council, is driven in large part because of load forecast uncertainty, the retirement of Indian Point, and modeling duration limited resources. — Marie J. French, *POLITICO Weekly New York and New Jersey Energy Newsletter*

November the Hottest on Record

European scientists reported that November’s global temperatures were the highest ever, surpassing the previous record, set in 2016 and 2019.²

Last month was the hottest November on record, European researchers said Monday, as the relentlessly warming climate proved too much even for any possible effects of cooler ocean temperatures in the tropical Pacific Ocean. Scientists with the Copernicus Climate Change Service said that global temperatures in November were 0.1 degree Celsius (about 0.2 degree Fahrenheit) above the previous record-holders, in 2016 and 2019. November 2020 was 0.8 degree Celsius (or 1.5 degrees Fahrenheit) higher than the average from 1981 to 2010.

² Henry Fountain, “Another Month on a Warming Planet: Record-Hot November,” The New York Times, December 7, 2020, Available at <https://www.nytimes.com/2020/12/07/climate/climate-change-hottest-november.html?action=click&module=Well&pgtype=Homepage§ion=Climate%20and%20Environment>