

Green in Perspective:

6 Facts to Help New Yorkers Understand the Climate Leadership and Community Protection Act

By David Friedfel

Last week Governor Andrew Cuomo signed the Climate Leadership and Community Protection Act (CLCPA), which establishes a new framework for decreasing greenhouse gas emissions, increasing renewable electricity production, and improving energy efficiency. Maintaining a reliable, affordable, and resilient energy supply while reducing negative environmental impacts is important to the State's future and competitiveness.

These six facts about the State's new law, greenhouse gas emissions, energy consumption, production, regulation, and costs will help New Yorkers understand the CLCPA.



1

The CLCPA sets aggressive goals for emissions reductions, renewable energy production, and energy use reductions.

The CLCPA establishes the following goals:

- Reduce greenhouse gas (GHG) emissions:
 - Reduce GHG emissions to 60 percent of 1990 emissions levels in 2030;
 - Generate zero GHG emissions from electricity production by 2040; and
 - Ensure GHG emissions are less than 15 percent of 1990 emissions levels in 2050, with offsets to reduce net emissions to zero.¹
- Increase renewable electricity:
 - Increase renewable sources to 70 percent by 2030; and
 - Develop or support:
 - » 9 gigawatts (GW) of offshore wind electric generation by 2035;
 - » 6 GW of distributed photovoltaic solar generation by 2025; and
 - » 3 GW of energy storage capacity by 2030.
- Conserve 185 trillion British thermal units (TBTUs) of annual end-use energy use by 2025, of which at least 20 percent should be from energy efficiency improvements in disadvantaged communities.² The CLCPA also requires between 35 percent and 40 percent of spending on clean energy or efficiency programs be in disadvantaged communities and mandates an air monitoring program in at least four such communities.³

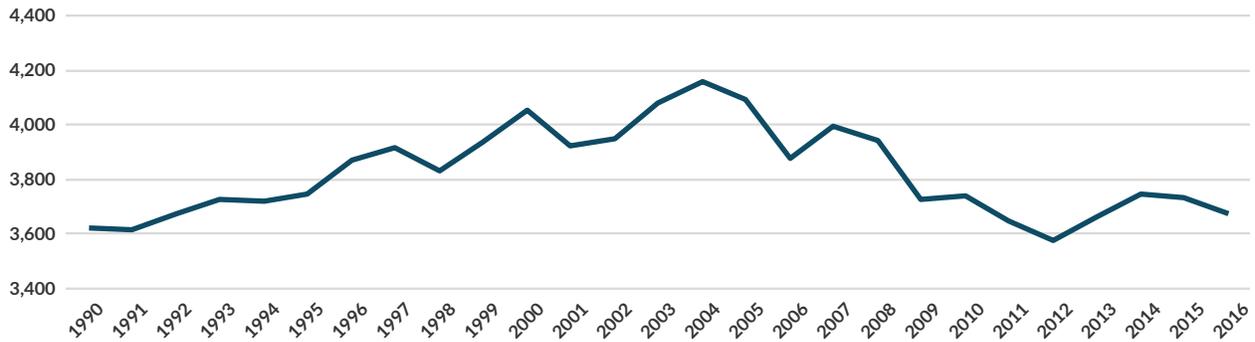
2

New York energy consumption has declined over the last decade but continues to grow in the transportation sector.

New York State's energy consumption in 2016 is close to 1990 levels and down 12 percent from the 2004 peak, as measured by BTUs. (See Figure 1.)

However, the energy consumption trend has varied across sectors. Consumption levels by the commercial, residential, industrial, and electricity generation sectors are all even with, or slightly

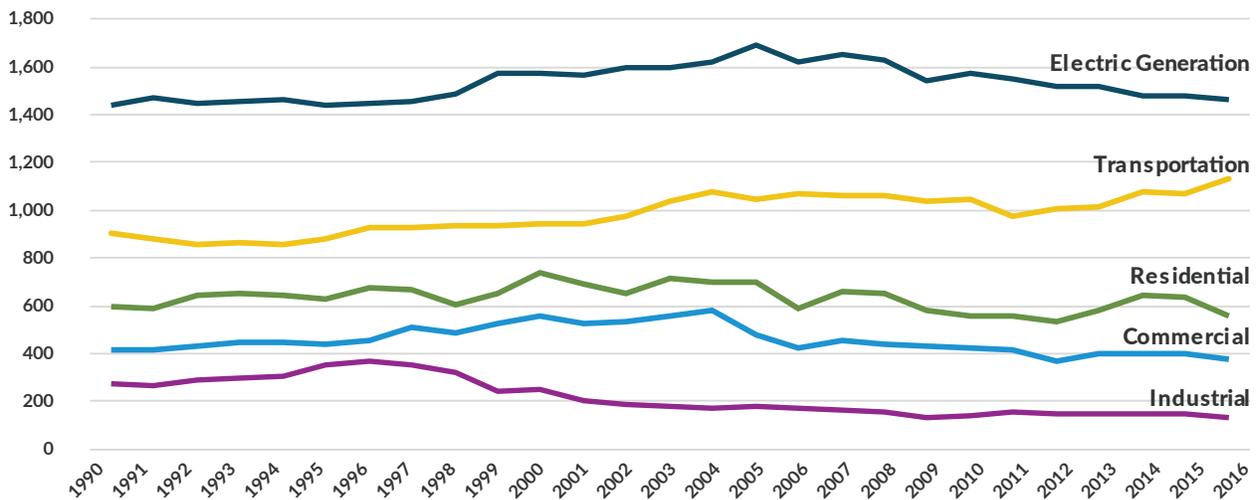
Figure 1: New York State Total Primary Consumption of Energy
(TBTU)



Source: New York State Energy Research and Development Authority, Patterns and Trends New York Energy Profiles: 2002-2016, Final Report (January 2019), p. 28.

lower than 1990 levels. Since 2004, declines have been significant: commercial consumption decreased 35 percent, residential 20 percent, industrial 22 percent, and electricity 10 percent. The declines in consumption can be attributed to efficiency improvements in heating and cooling technologies, expanded use of LED lighting, off-shoring of energy intensive manufacturing, and improved efficiency of the electric generating sector.⁴ The trend in the transportation sector, which is 25 percent above 1990 levels and at the highest level since 1979, will need to be reversed to meet the CLCPA goal of further reducing energy consumption by 185 TBTU by 2025.⁵ (See Figure 2.)

Figure 2: New York State Primary Consumption of Energy by Sector
(TBTU)



Note: End use sectors do not include electrical use.

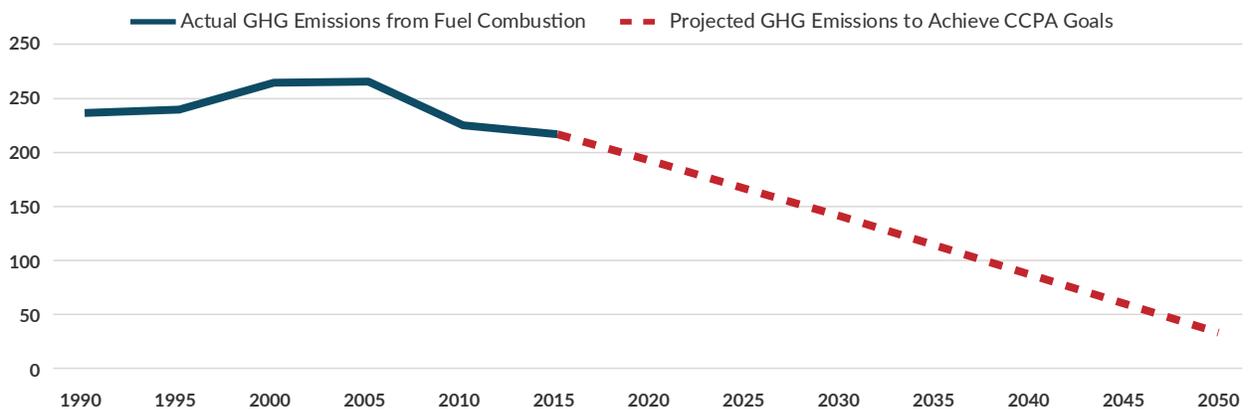
Source: New York State Energy Research and Development Authority, Patterns and Trends New York Energy Profiles: 2002-2016, Final Report (January 2019), p. 28.

3

New York State GHG emissions have decreased substantially in recent years; accomplishing CLCPA GHG goals will require tackling the transportation sector.

Total GHG emissions in 2015 were 8.5 percent lower than 1990 levels, with a significant decline since their 2005 peak. In order to reach the goal of 40 percent reduction from 1990 levels by 2030, GHG emissions would have to decline another 34.4 percent or 75 million metric tons from 2015 levels—outpacing the dramatic rate of decline achieved in the prior 10 years. (See Figure 3.) However, accelerating the decline in total emissions will be especially challenging because the state has already converted almost all of the “dirtiest” sources of electrical generation.

Figure 3: Actual and Projected GHG Emissions Needed to Achieve CLCPA Goals
(million metric tons)



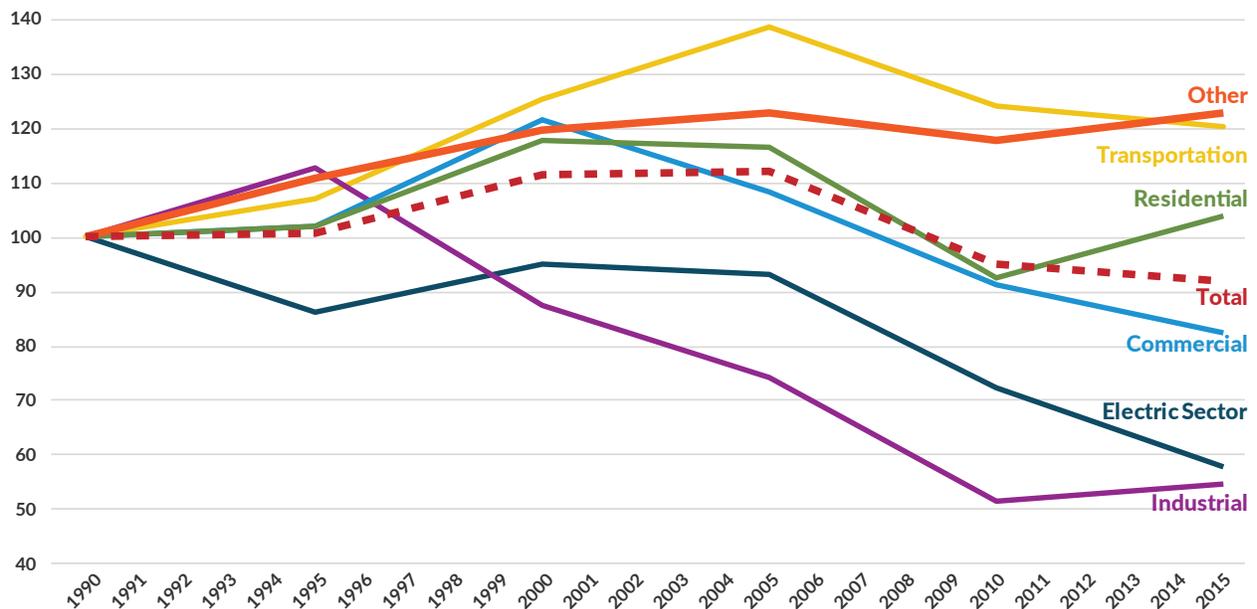
Note: End use sectors do not include electrical use.

Source: New York State Energy Research and Development Authority, New York State Greenhouse Gas Inventory: 1990-2015 (September 2018), S-10, <https://www.nysed.gov/~/media/Files/EDPPP/Energy-Prices/Energy-Statistics/greenhouse-gas-inventory.pdf>

In most sectors, emissions declined or remained flat between 1990 and 2015; most notably, electrical sector GHG emissions decreased by more than 40 percent, reflecting a 50 percent reduction in GHG emissions per gigawatt hour (GWh) of electricity produced. Much of the reduction was the result of shifting from coal to cleaner natural gas-fired power plants and increased efficiency, with little or no negative impact on consumers. However, in order to achieve the CLCPA’s GHG goals, emissions from other sectors also will have to decline significantly; entirely eliminating emissions currently produced by the electrical sector would only reduce total GHG emissions by 24 percent from 1990 levels, leaving the state 16 percentage points shy of the 2030 goal.

Since 1990, energy consumption by the industrial and commercial sectors has declined, while residential consumption has been relatively flat leading to lower emissions. In contrast, transportation sector energy consumption has increased, resulting in a 20 percent increase in transportation GHG emissions. As a result of these contrasting trends, transportation sector emissions increased from 25 percent of all emissions in 1990 to 33 percent in 2015. (See Figure 4.) Since the transportation sector is the largest and a growing source of GHG emissions, reducing or eliminating transportation sector emissions will be paramount to the CLCPA's success.

Figure 4: GHG Emissions by Sector, Indexed to 1990



Note: End use sectors do not include electrical use.

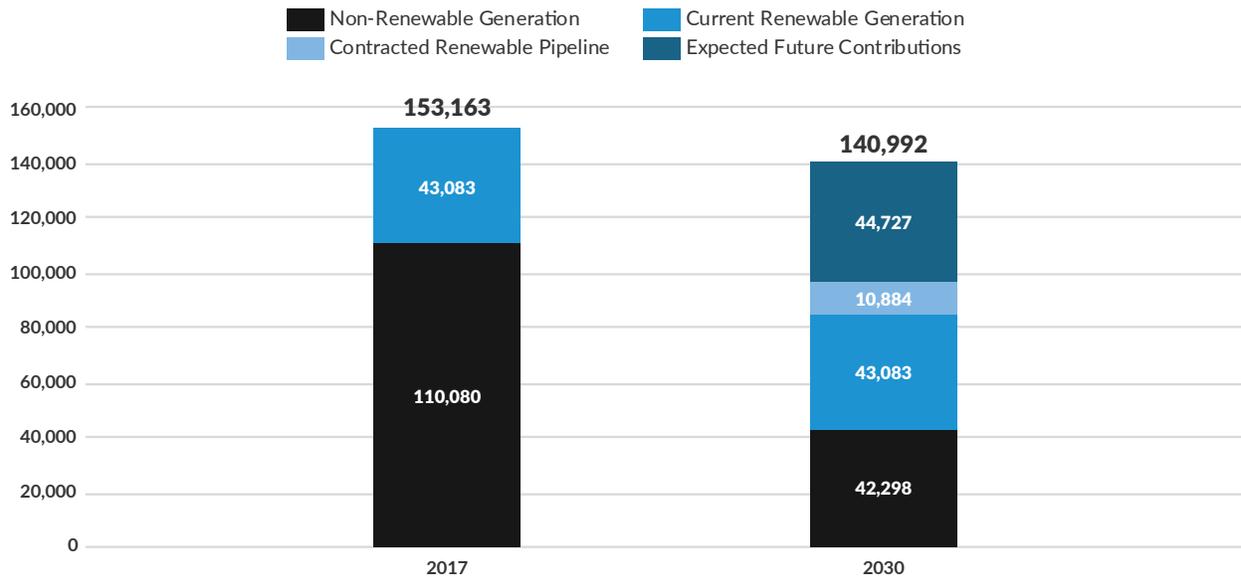
Source: New York State Energy Research and Development Authority, New York State Greenhouse Gas Inventory: 1990-2015 (September 2018), S-10, <https://www.nysed.gov/-/media/Files/EDPPP/Energy-Prices/Energy-Statistics/greenhouse-gas-inventory.pdf>

4

Renewables currently comprise a modest portion of New York's electricity sources; meeting the CLCPA's targets will require a dramatic expansion.

Currently, only 28 percent of New York's electricity is from renewable sources, including hydro, wind, and solar power.⁶ To meet the 70 percent renewable by 2030 goal, the state will need considerably more renewable energy capacity. Approximately 11,000 GWh of additional renewable electric production are currently under contract.⁷ This is only one-fifth of what is needed to meet the 70 percent renewable goal.⁸ (See Figure 5.)

Figure 5: Achieving 2030 Renewable Goals Requires Considerable New Resources
(GWh)



Source: New York State Energy Research and Development Authority, Clean Energy Standard Annual Progress Report: 2017 Compliance Year (February 2019), p. 12.

Recent announcements indicate that much of this development will be upstate wind and solar or offshore wind.⁹ Complicated and often contentious legal, regulatory, and political challenges are likely to slow progress, as has been the case with recent projects that have been delayed or canceled.¹⁰ Likewise, there will be technological and bureaucratic hurdles to overcome as New York reorganizes the electrical generating and transmission system. Achieving these renewable electricity goals while maintaining a reliable and resilient grid will be challenging.

5 The CLCPA establishes a Climate Action Council (CAC) to drive implementation, with support from four other Gubernatorial-dominated entities and one independent nonprofit.

The CAC will be the driving force behind implementation of the CLCPA, tasked with crafting a plan to regulate emissions from all sectors of the economy. This council will have 22 members, including the Commissioners of Transportation, Health, Economic Development, Agriculture and Markets, Housing and Community Renewal, Environmental Conservation, and Labor; the Chairperson of the Public Service Commission; the Presidents of the New York State Energy Research and Development Authority, New York Power Authority, and Long Island Power Authority; the Secretary of State; and two non-agency experts appointed by the Governor. Three members will be appointed by the

Assembly Speaker, three by the Senate Majority Leader, and one each by the minority leaders. The council will establish subject-specific panels to advise on issues such as labor and business impact and will make recommendations on regulatory actions to reduce emissions across all sectors of the economy. In addition to having representation on the CAC, the state agencies and authorities are charged with promulgating regulations to achieve the statewide greenhouse gas emissions goals, renewable energy targets, and efficiency improvements specified by the CAC.

The Department of Environmental Conservation (DEC), whose Commissioner is appointed by the Governor, regulates emissions from power plants and approves water permits needed to expand or develop new natural gas pipelines. The DEC will take on a new leadership role in implementing the CLCPA and the Commissioner is an ex officio member of the CAC. Under the CLCPA, the DEC also will have leeway to develop a mechanism to include “greenhouse gas offsets” in calculating emissions, excluding the electrical generation sector. In pursuit of CLCPA goals, the DEC is empowered to establish “legally enforceable emissions limits, performance standards, or measures or other requirements to control emissions from green-house gas emission sources,” affecting electric generation, transportation, commercial, residential, and industrial emissions.¹¹ However, the CLCPA does not specify how DEC or other state entities will require or encourage emissions reductions.

The chief state regulatory authority for all utilities is the Public Service Commission (PSC), comprised of five members appointed by the Governor. The PSC approves rates, ensures service and safety, and approves siting of facilities. It also has the regulatory authority to require utilities to purchase a set share of electricity from renewable sources. The PSC will be represented on the CAC and is charged with ensuring that the state meets the renewable energy goals. The CLCPA empowers the PSC to suspend or modify renewable electricity requirements to ensure safe and adequate electric service.

The New York Power Authority (NYPA) owns major transmission lines, major hydroelectric facilities, and some fossil fuel powered plants. It sells energy directly to governments, businesses, and nonprofits under negotiated contracts, frequently at discounted rates. NYPA also competes in New York Independent System Operator (NYISO) auctions to sell electricity into the grid at market prices. The Governor appoints the seven members of NYPA’s governing board, who appoint NYPA’s President and Chief Executive Officer. NYPA’s President is an ex officio member of the CAC.

The New York State Energy and Research Development Authority (NYSERDA) promotes energy efficiency and expansion of renewable energy sources by providing grants and financing tools. Funded by ratepayer surcharges and GHG emission auctions, it is governed by a 13-person board that includes the Commissioner of the Department of Transportation, the DEC Commissioner, the PSC Chair, and the President and CEO of NYPA, who serve ex officio.¹² The Governor appoints the remaining nine members. The NYSERDA president is on the CAC.

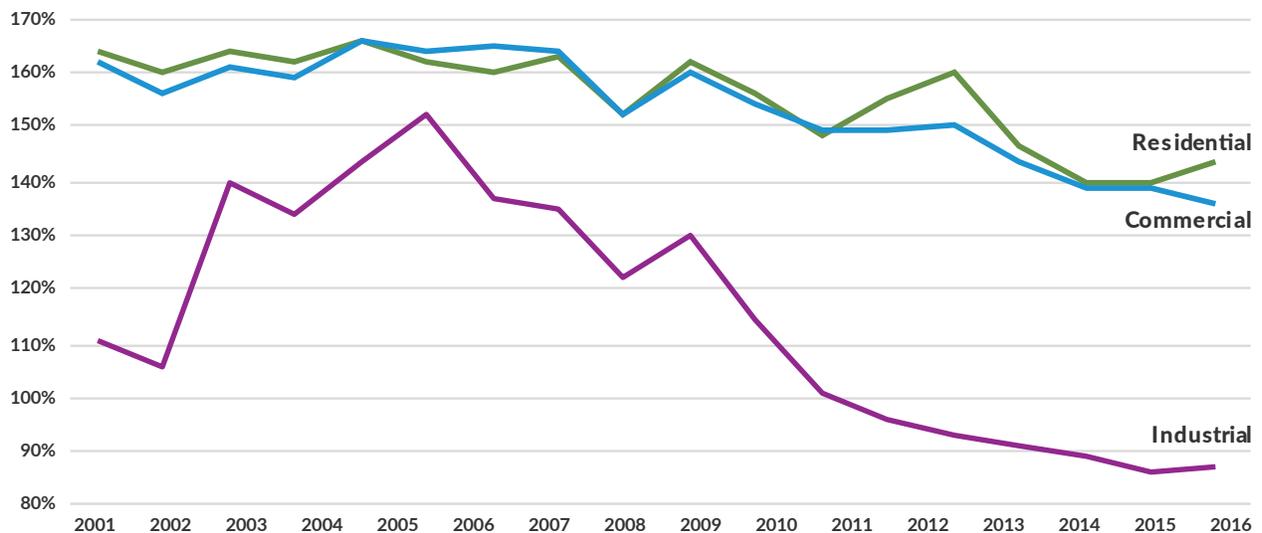
NYISO is the only entity with a significant role in energy policy that is not controlled by the Governor. NYISO is a nonprofit entity that operates and monitors the electrical grid and oversees transmission

planning. In addition, NYISO administers competitive auctions for electricity in order to ensure that it is produced in sufficient quantities and transmitted to meet consumer needs. Subject to PSC and Federal Energy Regulatory Commission (FERC) oversight, NYISO has an independent 10-person board, and is funded through a federally-approved surcharge paid by participants in New York’s wholesale electricity markets. Existing members appoint new board members. While it operates the electrical market, NYISO does not have ex-officio representation on the CAC.

6 The CLCPA will likely increase New York’s already high electricity rates, but the impact across the state and on disadvantaged communities is unclear.

New York’s residential and commercial rates per KWh are approximately 40 percent higher than national averages whereas industrial costs are approximately 15 percent lower than national averages. (See Figure 6.) Despite higher than average per KWh cost, New York residential customers pay a lower average monthly bill—\$103 per month versus a national average of \$112—due to New York households on average consuming 34 percent less electricity than the national average. (See Table 1).

Figure 6: Ratio of State Electricity Costs to US Average per KWh



Source: U.S. Energy Information Agency, "Average Retail Price of Electricity to Ultimate Customers by End-Use , by State" (accessed March 22, 2019, last updated October 22,2018), <https://www.eia.gov/electricity/data.php>.

Table 1: 2017 Average Residential Electric Monthly Bill in New England and Mid-Atlantic States

	Average Monthly Consumption (kWh)	Average Price (cents/kWh)	Average Monthly Bill (cents/kWh)
Connecticut	690	20.29	\$139.97
Massachusetts	583	20.06	\$116.86
New Hampshire	599	19.20	\$114.95
Rhode Island	577	18.32	\$105.76
New York	572	18.03	\$103.22
Vermont	538	17.68	\$95.02
Maine	546	15.97	\$87.21
New Jersey	654	15.65	\$102.38
Pennsylvania	805	14.23	\$114.48
U.S. TOTAL	867	12.89	\$111.67

Source: U.S. Energy Information Agency, "2017 Average Monthly Bill- Residential" (accessed April 15, 2019, last updated October 22, 2018).

KWh costs vary significantly within the state. In 2016, the average residential price per KWh varied from a maximum of 24.91 cents for Consolidated Edison’s New York City and Hudson Valley customers to 11.50 cents for New York State Electric and Gas Corporation customers in the Southern Tier, Buffalo and parts of the Hudson Valley. As additional renewable resources come online, costs can be expected to increase, at least in the short term, and variability among regions may also increase. The CLCPA requires at least 35 percent of spending on clean energy or efficiency programs be in disadvantaged communities, many of which are located in regions with high electricity rates.¹³ Improving energy efficiency in these communities should decrease total consumption and blunt the impacts of rate increases.

Table 2: 2016 Residential Sector Electricity Prices
(Cents/kWh)

Load Serving Entity Regional Description	Central Hudson Hudson Valley (HV)	Consolidated Edison New York City, parts of HV	Long Island Power Authority Long Island	New York State Electric & Gas Corp. Southern Tier, parts of HV, Buffalo
	16.48	24.91	18.94	11.50
	Niagara Mohawk (National Grid) Albany going northwest	Orange & Rockland Orange & Rockland	Rochester Gas & Electric Rochester	
	12.08	19.40	12.72	

Source: New York State Energy Research and Development Authority, Patterns and Trends New York Energy Profiles: 2002–2016 Final Report (January 2019), p. F-1. <https://www.nysrda.ny.gov/About/Publications/EA-Reports-and-Studies/Patterns-and-Trends>.

ENDNOTES

- [1] GHG offsets means that for every ton emitted into the air one ton is removed via GHG capture of some sort. For example, a company or individual can pay a landowner to leave trees standing that would otherwise be removed or plant additional trees to offset GHG emissions.
- [2] BTUs are a unit of energy that can be used across all sectors of the economy. “It is the quantity of heat required to raise the temperature of one pound of liquid water by 1 degree Fahrenheit.” See U.S. Energy Information Administration, “Energy Units and Calculators Explains: British Thermal Units” (August 8, 2018), www.eia.gov/energyexplained/index.php?page=about_btu.
- [3] Revenues used for this purpose include funds from “the New York State Energy and Research Development Authority at the direction of the Public Service Commission, Regional Greenhouse Gas Initiative revenues and the proceeds of any carbon offset programs implemented under the bill.” See Marie French, “New climate change measure targets 85 percent emissions reduction by 2050” *Politico* (June 17, 2019), <https://subscriber.politicopro.com/states/new-york/albany/story/2019/06/17/new-climate-change-measure-targets-85-percent-emissions-reduction-by-2050-1063640>. Disadvantaged communities are defined as “communities that bear burdens of negative public health effects, environmental pollution, impacts of climate change, and possess certain socioeconomic criteria, or comprise high-concentrations of low- and moderate- income households.” See Climate Leadership and Community Protection Act of 2019, A8429/S6599 (2019), p. 5, https://nyassembly.gov/leg/?default_fld=&leg_video=&bn=A08429&term=2019&Summary=Y&Text=Y.
- [4] Wolf Richter, “Demand for Electricity is Dropping – and That Could Shake the Power Industry to its Core,” *Business Insider* (December 4, 2017), www.businessinsider.com/electricity-demand-dropping-power-industry-negative-impact-2017-12.
- [5] U.S. Energy Information Administration, “Transportation Sector Energy Consumption Estimates, 1960-2016, New York” (accessed May 15, 2019), www.eia.gov/state/seds/data.php?infile=/state/seds/sep_use/tra/use_tra_NY.html&sid=NY.
- [6] New York State Energy Research and Development Authority, *Clean Energy Standard Annual Progress Report: 2017 Compliance Year* (February 2019), www.nyserda.ny.gov/-/media/Files/Publications/Energy-Analysis/RPS/2019-RPS-Performance-Report.pdf.
- [7] This figure reflects the most recent update to the State’s accounting of renewable energy projects that was released in February of 2019. Since then, additional renewable energy projects have been announced, including a 1.7 GW wind power agreement announced at the same time Governor Cuomo signed the CLCPA. However, these contracts are not all finalized and are therefore not included in this analysis. See Danielle Muoio and Marie J. French, “Cuomo administration selects 2 wind firms to build 1.7K MW of offshore wind” (*Politico*, July 18, 2019), <https://subscriber.politicopro.com/states/new-york/albany/story/2019/07/18/cuomo-administration-selects-2-wind-firms-to-build-17k-mw-of-offshore-wind-1108769>, and New York State Energy Research and Development Authority,

Clean Energy Standard Annual Progress Report: 2017 Compliance Year (February 2019), p. 12, www.nyserderda.ny.gov/-/media/Files/Publications/Energy-Analysis/RPS/2019-Clean-Energy-Standard-Annual-Progress-Report.pdf.

- [8] New York State Energy Research and Development Authority, *Clean Energy Standard Annual Progress Report: 2017 Compliance Year* (February 2019), p. 12, www.nyserderda.ny.gov/-/media/.../Energy.../2019-RPS-Performance-Report.pdf.
- [9] New York State Energy Research Development Authority, “NYSERDA Announces Details for \$1.5 Billion for 20 Large-Scale Renewable Energy Projects to Combat Climate Change and Grow New York’s Clean Energy Economy,” (press release, January 18, 2019), www.nyserderda.ny.gov/About/Newsroom/2019-Announcements/2019-01-18-NYSERDA-Announces-Details-for-20-Large-Scale-Renewable-Energy-Projects, and “Governor Cuomo Releases First-in-the-Nation Offshore Wind Master Plan to Guide New York’s Development of Renewable Energy” (press release, January 29, 2019), www.nyserderda.ny.gov/About/Newsroom/2018-Announcements/2018-01-29-Governor-Cuomo-Releases-First-in-the-Nation-Offshore-Wind-Master-Plan.
- [10] Keith McShea, “Environmental groups demand clean energy action from NYS: ‘We can’t afford to wait,’” *The Buffalo News* (April 22, 2019), <https://buffalonews.com/2019/04/22/environmental-groups-demand-clean-energy-action-from-nys-we-cant-afford-to-wait/>.
- [11] Climate Leadership and Community Protection Act of 2019, A8429/S6599 (2019), p. 12, https://nyassembly.gov/leg/?default_fld=&leg_video=&bn=A08429&term=2019&Summary=Y&Text=Y.
- [12] NYSEDA administers New York’s participation in the Regional Greenhouse Gas Initiative (RGGI), a multi-state market-based program that limits and auctions GHG allowances to the electrical sector.
- [13] Compliance revenues include funds from “the New York State Energy and Research Development Authority at the direction of the Public Service Commission, Regional Greenhouse Gas Initiative revenues and the proceeds of any carbon offset programs implemented under the bill.” See Marie French, “New climate change measure targets 85 percent emissions reduction by 2050” *Politico* (June 17, 2019), <https://subscriber.politicopro.com/states/new-york/albany/story/2019/06/17/new-climate-change-measure-targets-85-percent-emissions-reduction-by-2050-1063640>.

Green in Perspective

6 Facts to Help New Yorkers Understand the
Climate Leadership and Community Protection Act

www.cbcny.org

@cbcny

Policy Brief ■ July 2019

540 Broadway
Fifth Floor
Albany, NY 12207
518-429-2959

Two Penn Plaza
Fifth Floor
New York, NY 10121
212-279-2605