

Background

New York's energy mix is dominated by natural gas (40.9%), followed by nuclear (32.1%) and hydroelectric power (18.7%). Although nuclear energy is a predominant resource in New York, the nuclear reactors at the Indian Point Energy Center are [scheduled to close](#) by 2021. New York's total energy consumption ranks among the [highest](#) in the United States, but its per capita energy consumption is the [lowest](#). The state imports [more than 50%](#) of its energy from Canada and other U.S. states.

Most of the renewable generation in New York comes from hydroelectricity, with the state home to the [fourth-largest hydroelectric power plant](#) in the United States. Contributions from wind, biomass, and solar energy generation are small but increasing.

The [2015 New York State Energy Plan](#), which is part of Governor Andrew M. Cuomo's energy initiative, '[Reforming the Energy Vision \(REV\)](#)', aims to achieve three major energy goals by 2030: 1) reduce greenhouse gas (GHG) emissions by 40% from 1990 levels, 2) generate 50% of electricity from renewable sources, and 3) decrease energy consumption in buildings by 23% from 2012 levels. The REV [combines](#) New York's renewable portfolio standard, energy efficiency portfolio standard, and other clean energy mandates.

New York's utilities are regulated by the [New York State Public Service Commission](#) (PSC). Bipartisan by law, the Commission consists of up to five members, each appointed for a term of six years. The Democrats have a numerical [majority](#) in the New York state Assembly as well as the Senate. However, because of [an alliance](#) between certain Democratic and Republican senators, the [Republicans](#) maintain control over the Senate. The governor, [Andrew M. Cuomo](#), is a Democrat.

Policy Strengths and Opportunities¹

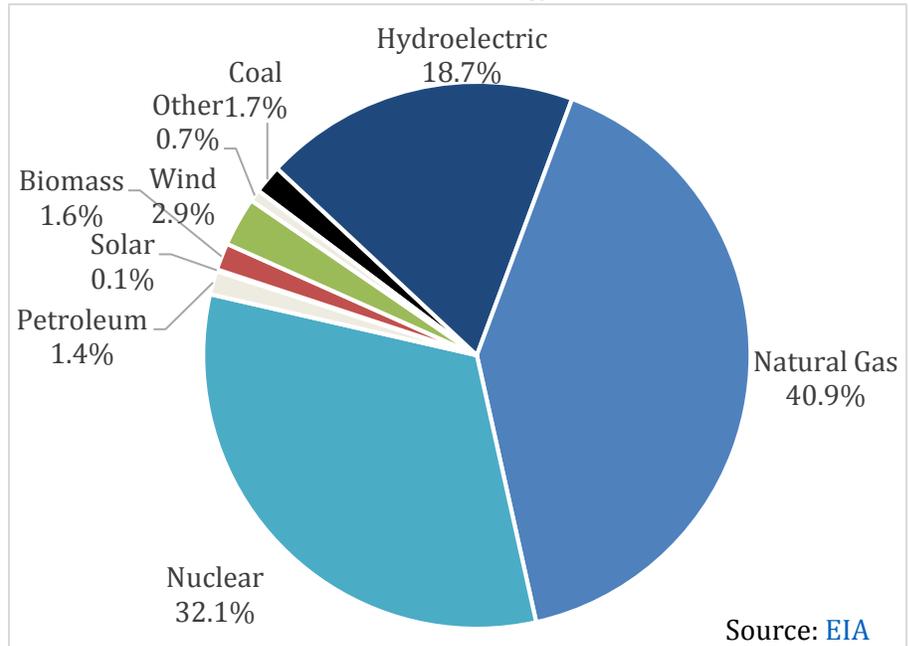
An important framework for policymakers to consider, the notion of "policy stacking"² was developed at the National Renewable Energy Laboratory (NREL). The basic idea behind policy stacking is that there is an interdependency and a sequencing of state policy that, when done effectively, can yield greater market certainty, private sector investment, and likelihood of achieving stated public policy objectives.

In theory, but not always in practice, clean energy policies can be categorized into one of three tiers of the policy stack. Tier 1, Market Preparation Policies, remove technical, legal, regulatory, and infrastructure-related barriers to clean energy technology adoption. Tier 2, Market Creation Policies, create a market and/or signal state support for

¹ For more information on policy opportunities, please visit the [SPOT for Clean Energy](#). For more information on specific policy actions related to these opportunities, please review the [Clean Energy Policy Guide for State Legislatures](#).

² V.A. Krasko and E. Doris, *National Renewable Energy Laboratory*, 2012. Strategic Sequencing for State Distributed PV Policies: A Quantitative Analysis of Policy Impacts and Interactions. <http://www.nrel.gov/docs/fy13osti/56428.pdf>.

New York's Energy Mix



clean energy technologies. Tier 3, Market Expansion Policies, create incentives and other programs in order to expand an existing clean energy market by encouraging or facilitating technology uptake by additional market participants.

A simple example, before financial incentives for combined heat and power (CHP) will be successful, two key considerations for deployment are having clear interconnection standards and favorable stand-by rates for customers who opt to add CHP. In this example, policies to address interconnection and stand-by rates should be adopted before financial incentive programs are implemented.



Grid Modernization

In the last two decades, digital technologies have been developed that enable utilities to better manage the grid and also provide opportunities for consumers to customize their services to fit their priorities. These technologies allow a two-way flow of information between the electric grid and grid operators and between utilities and their customers. Emerging technologies improve system reliability and resiliency by enabling better tracking and management of resources.

These technologies allow grid operators to incorporate central and distributed energy resources, energy storage technologies, electric vehicles, and assist in addressing the challenges associated with planning, congestion, asset utilization, and energy and system efficiency. This can make the operational side of the utility more efficient. On the customer's side of the meter, advanced metering infrastructure, dynamic pricing, and other emerging technologies allow an exchange of information and electricity between a consumer and their electric provider. Grid modernization will be associated with greater consumer choice, allowing customers to meet their energy priorities by producing their own energy or to selecting to receive innovative energy efficient or clean energy services from different providers.

Grid modernization efforts compliment other policies such as demand response policies, customer data management, smart metering infrastructure, electric vehicles, and others. Policy approaches around grid modernization should be seen as an umbrella to put in place a structure that supports and ties together these other individual policy initiatives.

In terms of state efforts to modernize the grid, in the latest [Grid Modernization Index](#), New York moved up seven spots from 2014, earning a rank of 16th overall for state support, customer engagement, and grid operations. While New York demonstrates leadership in this area, and while the REV process will likely contribute to grid modernization, there are supportive policies that could advance in-state modernization efforts.

1. Establish clear state policies governing customer data access and privacy protections. Important aspects of legislation or rules addressing this include the following: clarification of who owns the energy data associated with consumer energy usage; protections for customer privacy; an outline of the process for allowing third parties direct access to data; policy to promote access to the highest resolution of data by third parties. Current participation in the [Green Button Connect](#) program could be expanded. Allowing customers to access their data and authorizing third parties to use their energy data for services opens up a market for IT based energy management companies to expand and offer services directly to customers in New York.
2. Set timeframes and objectives for the modernization effort and establish those in statute. For instance, legislation could set clear deployments goals for advanced metering infrastructure. This legislation could include metrics to verify and track progress in meeting those goals.
3. The New York legislature passed a bill ([A 6571](#)) authorizing the PSC to set an energy storage target for 2030 to improve the state's energy storage policies. If the Governor signs this into law, it will make New York the [fourth state](#) to adopt energy storage target, and will greatly enhance grid modernization efforts. Updating clean energy financing and electric vehicle policies (see below), also improves the chances of successful grid modernization.



Electrification of the Transportation Sector

One of the most important barriers to increased adoption of electric vehicles (EVs) is their higher up-front cost as compared to a similar conventionally-fueled vehicle. In addition, there has been a complicated relationship between increased adoption of EVs and the availability of EV charging stations. Put simply, consumers want to be sure their car will get them where they need to go. The good news is that both supportive policies for developing charging infrastructure and technological advancements have eased “range anxiety.” For instance, the most recent GM Bolt has an estimated range of 240 miles.

While New York offers numerous [incentives](#) related to EVs, there are policy opportunities to further encourage and prepare for increased market penetration of EVs.

1. **Parking Infrastructure Requirements** – Legislation could set requirements for EV parking infrastructure. Some states have adopted permitting standards for parking lots, requiring, for instance, that for every 100 parking spaces, one EV charging spot must be provided. The New York City Council passed such a [law](#), requiring 20% of parking spaces to be “charger-ready” within a few years. State building requirements could also be updated to ensure new parking facilities are built to accommodate EVs.
2. **EV Supply Equipment (EVSE) Financing and Financial Incentives** – The provision of financial incentives and innovative financing options can increase installations of charging stations. In addition to income tax credits, like New York’s [Alternative Fueling Infrastructure Tax Credit](#), states have adopted several other financial incentives including low-interest loans, grants, and rebates. A handful of states qualify EVSE under their property assessed clean energy (PACE) programs.
3. **EV Financing and Financial Incentives** – Governor Cuomo launched a [\\$70 million electric car rebate](#) and outreach program with a goal to encourage EV use in the state. The program is expected to reduce carbon emissions by 115,000 metric tons per year, the equivalent of taking 24,000 cars off the road. In addition to its [rebate](#) program, other financial incentives, such as sales and income tax credits (one of the simplest methods for addressing higher up-front costs), low-interest loans, grants, and vouchers may also be considered. A [study](#) by the Congressional Budget Office suggests that tax credits are important tools for ensuring increased adoption of alternative-fueled vehicles. To increase the value of the incentive, some states offer transferrable tax credits, allowing the savings to be applied by the dealership at the time of sale.



Clean Energy Financing

Distributed generation (DG) provides localized generation that serves a specific part of the grid. It may include generation serving a specific residence or business, a neighborhood, or a region served by a substation. DG has the benefit of reducing stress on large transmission infrastructure by providing distribution level power (as opposed to central generation). Because small-scale renewable energy systems require large upfront investments, overcoming the upfront cost barrier is arguably the biggest challenge to clean energy deployment at the consumer level. Financing is key and many states provide financing and financial incentives to spur adoption of these technologies.

To promote wide-spread deployment of DG, there are a handful of policy opportunities in New York.

1. **Property Assessed Clean Energy (PACE)** – PACE is a financing mechanism used by local governments that allows property owners to finance energy efficiency and renewable energy improvements through their property tax payment. The repayment of qualified energy improvements is done via a voluntary property tax assessment collected by local governments, just as other public infrastructure investments are financed. The financing for PACE projects may be provided by municipal bonds or third-party capital secured by the property assessment payments. Repayment responsibility transfers to the next owner if the property is sold. While PACE programs can be designed for both the residential and the commercial markets, residential PACE takes a much more committed and engaged approach on the part of the state. Commercial PACE programs have been expanding rapidly in recent years with a robust market evolving around these programs. New York has authorized both commercial and residential PACE. The state has a strong [commercial PACE](#) program, but lacks an active residential program.

2. Combined Heat and Power (CHP) - [Incentives](#) of up to \$2.5 million are available for the installation of CHP systems up to 3 MW in New York State. To increase CHP installation, existing DG incentives could be expanded to include CHP.



Energy Storage

Energy storage offers a unique opportunity to dynamically manage supply and demand to maximize the value of grid resources. By deploying storage in strategic locations, utilities can more effectively manage their energy portfolios. First, storage can dispatch power to better integrate intermittent resources like renewable energy. Second, it provides management of intermittent demand – helping to flatten peak demand requirements for the utility. Third, the responsiveness of energy storage can allow the utility with to implement voltage regulation and other ancillary services, useful for improving system efficiency. Finally, energy storage can help the commercial sector avoid costly “[demand charges](#).” As utilities around the country consider [extending demand charges to the residential sector](#), this will become an even more important issue.

Storage provides multiple benefits to both the customer and the utility. State planning and regulatory policies can help maximize these benefits through a combination of 1) establishing a framework for easy integration of energy storage into the grid, and 2) establishing a marketplace that monetizes the benefits of energy storage for cost effective investment.

New York has been ahead much of the country when it comes to recognizing the value of storage as a resilient and reliable asset. This past April, The New York State Energy Research and Development Authority (NYSERDA) [announced](#) \$15.5 million in funding for energy storage projects. This funding is part of the REV strategy and part of the state’s long-term investment in the energy storage sector. In addition, the New York legislature passed a bill ([A 6571](#)) authorizing the PSC to set an energy storage target for 2030.

There are additional opportunities for developing supportive state policies:

1. Provide incentives for customers to purchase storage to both manage their electric load and store locally produced renewable energy. Allow utilities that provide incentives to customers to install smart meters that enable dynamic energy management from multiple distributed battery systems.
2. Establish clear state policies governing customer data access and privacy protections. Important aspects of legislation or rules addressing this include the following: clarification of who owns the energy data associated with consumer energy usage; protections for customer privacy; an outline of the process for allowing third parties direct access to data; policy to promote access to the highest resolution of data by third parties. Current participation in the [Green Button Connect](#) program could be expanded. Allowing customers to access their data and authorizing third parties to use their energy data for services opens up a market for IT based energy management companies to expand and offer services directly to customers in New York.
3. Provide an option for utility customers (targeted at commercial users) to pay an additional charge to be included in a “high reliability zone” created through a combination of distributed generation and energy storage – forming a utility integrated “microgrid”.

2017 Energy-Related Legislation Introduced By Attendees

Bill Number	Bill Summary	Bill Status	Sponsor
S 17-3746	Establishes the affordable residential green building program.	Passed both Chambers	Griffo
S 17-1225	Establishes the New York state clean energy tech production program as a self-directed program for industrial, commercial, and large users in order to stimulate the growth and adoption of more efficient use of energy, greater use of advanced energy management	Passed Senate	Griffo

	products, deeper penetration of renewable energy resources, wider deployment of "distributed" energy resources, and storage.		
S 17-5126	Prohibits the NY Power authority from contracting or purchasing energy or environmental attributes when such energy is transmitted over a transmission line that interconnects a location outside of the United States when the transmission does not provide access to electric generating facilities within the state.	Passed Senate	Griffo
S 17-3744	Consumer audio and video products energy efficiency standards.	Introduced	Griffo
S 17- 3747	Establishes the Leakage Prevention Clean Energy Act authorizing electric retail load serving entities to offer to business customers generation supply that is exempt from the electric retail load serving entities obligation of the clean energy standard mandate.	Introduced	Griffo
S 17-4266	Relates to requiring local building and planning regulations to accommodate the use of solar thermal, photovoltaic, wind, hydroelectric, geothermal electric, geothermal ground source heat, tidal energy, wave energy, ocean thermal, and fuel cells.	Introduced	Griffo
S 17-4387	Relates to exempting certain solar energy systems from taxation.	Introduced	Griffo
S 17-4264	Reporting requirements for gas leaks by utility corporations.	Companion Passed Assembly	Griffo
S 17-5289	Relates to limiting the sale of electricity or natural gas by ESCOs to non-residential customers only.	Introduced	Griffo
S 17-5290	Repeals the authority for sales of electricity and gas by entities other than electric or natural gas distribution companies.	Introduced	Griffo
S 17-5291	Repeals tax reduction for certain gas and electric service.	Introduced	Griffo
S 17-3377	New York Power Authority (NYPA) and its employees to submit all unresolvable contract negotiations to binding arbitration.	Passed both Chambers	Griffo
S 17-5445	Authorizes public utility companies to purchase and install small wind turbines and photovoltaic systems on their property.	Introduced	Griffo
S 17-3745	Each investor owned utility must file an electric vehicle charging tariff that allows a customer to purchase electricity solely for the purpose of recharging an electric vehicle; defines terms; makes related provisions.	Companion Passed both Chambers	Griffo
S 17-5541	Relates to the powers and duties of NYPA to finance, design, develop, construct, implement, provide and administer energy-related projects, programs and services.	Introduced	Griffo
S 17-5543	Relates to qualified energy conservation bonds; provides for the reallocation of QECB volume cap abandoned or relinquished by certain local governments.	Introduced	Griffo
S 17-5632	Relates to providing oversight and monitoring of the operations of an independent system operator; authorizes the public service commission to provide oversight and requires annual reports on the independent system operator.	Introduced	Griffo
S 17-5633	Abolishes the use of a market clearing price relating to the buying of electricity at an auction held by the independent systems operator.	Introduced	Griffo
S 17-5119	To encourage homeowners, commercial businesses, and farms to install wind energy equipment by allowing those who lease such equipment or purchase power under a written agreement with a third party to benefit from a solar equipment tax credit.	Introduced	Griffo
S 17-4069	Relates to the exemption from taxation for micro-hydroelectric energy systems, fuel cell electric generating systems, or micro-combined heat and power generating equipment systems.	Companion Passed both Chambers	Griffo

S 17-5190	Establishes the energy storage deployment program to encourage the installation of qualified energy storage systems.	Companion Passed both Chambers	Griffo
S 17-5549	Relates to maintaining the continued viability of the state's existing large-scale, renewable energy resources.	Passed Senate	Griffo
S 17-6335	Requires combination gas and electric corporations to provide an annual transparency statement to customers detailing certain charges on a gross basis which are included in each customer's delivery service portion of their utility bill.	Introduced	Griffo
S 17-6762	Relates to the exemption from taxation for micro-hydroelectric energy systems, fuel cell electric generating systems, combined heat and power generating equipment systems or electric energy storage equipment and electric energy storage systems.	Passed Senate	Griffo
S 17-5990	Permits private funding of the sustainable energy loan program and authorizes the municipal corporation to impose requirements on disbursements therefrom.	Passed both Chambers	Griffo
S 17-6336	Directs the state energy planning board to conduct a study of natural gas reliability and to prepare a report on the study's findings and legislative recommendations.	Passed Senate	Griffo
A 17 - 6454	Authorizes the use of innovative techniques to enhance public participation in the rule making process...	Introduced	Kavanagh
A 17-592	Relates to the rates paid for net-metering; makes the rates paid by micro-combined heat and power or fuel cell customer-generators the same as other customer-generators.	Introduced	Kavanagh
A 17-5985	Establishes a moratorium on an order of the public service commission enacting a zero-emission credit requirement in relation to certain upstate nuclear generating facilities.	Introduced	Kavanagh
A 17-5941	Enacts the New York Sun Act of 2017; establishes a solar energy incentive and financing program.	Introduced	Kavanagh
A 17-8083	Relates to creating a solar array pollinator benefit program; provides owners of solar sites may make a public claim that a particular site provides benefits to pollinators if such owner creates an approved vegetation management plan.	Introduced	Kavanagh
A 17-1773	The Petroleum Storage Surety bill will ensure that any bulk petroleum storage facility, vessel, and railroad has the necessary financial security to balance the risk of any accident occurring that is directly related to storing crude oil.	Passed Assembly	Kavanagh
A 17-8246	Prohibits certain charges to residential consumers in connection with the purchase of zero emissions credits from the New York State Research and Energy Development Authority and attributed to the continued operation of a nuclear powered generating facility.	Introduced	Kavanagh
A 17-2518	The natural gas exploration and extraction liability act.	Introduced	Kavanagh
A 17-482	Establishes the green schools New York act.	Introduced	Kavanagh
A 17-8191	Prohibits charges for any costs related to the zero emissions credit requirement from being charged to ratepayers who purchase all of their electricity from renewable energy resources.	Introduced	Kavanagh
A 17-8270	Enacts the New York state climate and community protection act; relates to climate change; renewable energy program; labor and job standards and worker protection.	Passed Assembly	Kavanagh
A 17-6954	Relates to bio-heating fuel requirements and bio-heating fuel tax credits; requires all heating oil sold for use in any building in Nassau, Suffolk and Westchester counties on and after July 1, 2018 be bio-heating fuel that contains at least 5% biodiesel.	Companion Passed both Chambers	Kavanagh

A 17-7757	Enacts the "solar panel collection act" to require manufacturers of solar panels to collect such panels when they are taken out of use; requires educational outreach relating thereto; establishes collection goals; requires reporting of collection efforts.	Companion Passed Senate	Kavanagh
A 17-8301	Allows public utility lines and bicycle paths on certain state lands in the forest preserve and establishes a forest preserve health and safety land account.	Companion Passed both Chambers	Kavanagh
A 17-6700	Provides for the net energy metering of solar, wind, fuel cell and farm waste electric generating systems for both residential and business customers; increases the rated capacity of eligible solar electric generating equipment to 2,000 kilowatts; provides for the metering and fees for such equipment.	Introduced	Kavanagh
A 17-3216	Enacts the healthy, safe and energy efficient outdoor lighting act to reduce harmful outdoor lighting; sets standards for outdoor lighting; provides for the designation of dark-sky preserves; provides for distribution to customers by electric corporations or municipalities providing electric service of an informational pamphlet relating to outdoor lighting.	Introduced	Kavanagh

Other 2017 Energy-Related Legislation

Only bills that have passed both chambers are set out below. For all 2017 energy-related legislation, visit aeltracker.org.

Bill Number	Bill Summary	Bill Status
A 17-1260	Establishes the New York state innovation voucher program; provides small businesses with access to research and development by colleges and universities, government laboratories and public research institutes in order to assist such businesses in the creation of innovative products or services.	Passed both Chambers
A 17-6571	Establishes the energy storage deployment program to encourage the installation of qualified energy storage systems.	Passed both Chambers
A 17-6825	To strengthen the state's ability to issue guidance to the federal government regarding where and how any petroleum vessel anchorage grounds should be sited; the bill updates the factors used to determine the conditions under which tanker avoidance zones may be established on navigable waters of the Hudson River.	Passed both Chambers
A 17-7051	Relates to the general powers of the Long Island office of the department of public service to review the rates and charges of the Long Island Power Authority.	Passed both Chambers
A 17-7082	Extends the moratorium on the issuance of certificates of environmental safety for the siting of facilities and certification of routes for the transportation of liquefied natural or petroleum gas.	Enacted
S 17-688	Includes geothermal energy systems within the meaning of the term "qualified energy efficiency services" for purposes of on-bill financing under the power NY act of 2011.	Passed both Chambers
A 17-7285	Relates to reporting requirements for resource sharing between the power authority of the state of New York, the department of transportation and the canal corporation.	Passed both Chambers
S 17-5892	Relates to establishing an energy-related public utility mass real property central assessment pilot program.	Passed both Chambers
S 17-6326	To allow any hybrid electric vehicle or electric vehicle to be used as a taxicab in New York City.	Passed both Chambers

News

- September 5th, 2017: [Grand Opening Held for Kodak's New York Energy Storage Advancement Centre.](#)
- September 5th, 2017: [Tesla Begins Production of Solar Cells at Buffalo Gigafactory.](#)
- September 5th, 2017: [Los Angeles, New York, and Chicago are the Smartest Cities in North America.](#)
- September 1st, 2017: [Questions Shaping the Future of Energy Storage in New York.](#)
- August 15th, 2017: [NY Clean Energy Commitment Spurs Procurement.](#)
- August 14th, 2017: [Duke Energy Renewables Purchases First New York Solar Project.](#)
- August 8th, 2017: [New York a Leader in Wind Energy, Feds Say.](#)
- June 27th, 2017: [New York Expected to Set High Bar for Energy Storage After Target Bill Passage.](#)

Other Resources

- The New York City Carbon Challenge: <http://www.nyc.gov/html/gbee/html/challenge/nyc-carbon-challenge.shtml>
- The American Council for an Energy-Efficient Economy State and Local Policy Database: <http://database.aceee.org/state/new-york>
- The Database of State Incentives for Renewables and Efficiency, New York: <http://programs.dsireusa.org/system/program?fromSir=0&state=NY>
- U.S. Energy Information Administration, New York: <https://www.eia.gov/state/?sid=NY>
- SPOT for Clean Energy, New York: <https://spotforcleanenergy.org/state/new-york/>