

Electricity OUTLOOK

CALL TO
ACTION

Powering New York City
through 2030



A REPORT BY THE ENERGY COMMITTEE
OF THE NEW YORK BUILDING CONGRESS

INTRODUCTION AND BACKGROUND

Since 2001, the Energy Committee of the New York Building Congress has published three reports that assessed New York City's future electricity needs. The 2006 report, *Electricity Outlook: Powering New York City's Economic Future*, concluded that 6,000 to 7,000 megawatts (MW) of new electricity resources would be needed between 2005 and 2025 to support the city's continued economic growth and increasing population. The report identified a "critical threshold" looming for the years 2010-2015, when available capacity could fall substantially below the statewide criteria established by the New York Independent System Operator (NYISO).

Since 2005, much needed resources, both in generation and transmission capacity, have been added or will soon come on stream to bolster New York City's available supply. At the same time, the significant recession of 2007-2009 has tempered growth in demand. The combination of events, on both the supply and the demand sides, has not only allayed concerns for adequate capacity in the years 2010-2015, but also has led NYISO to conclude, in its new long-term forecast to 2021, that "the adequacy of power resources is not an imminent concern" and that new capacity will not be needed until the years 2019 to 2020.¹

Electricity Outlook: Powering New York City Through 2030

analyzes forecasts of electricity demand and population and employment growth for New York City to 2030. This report also examines the assumptions underlying the NYISO forecast for the years 2011-2021 and the risks outlined in those forecasts. Major assumptions in the forecast are that the Nuclear Regulatory Commission (NRC) operating licenses for Entergy's two Indian Point Energy Center nuclear plants will be renewed in 2013 and then in 2015, and that the sizeable targets set for energy efficiency can be achieved as projected. In addition, there is potential risk in the NYISO forecast's assumption of slow growth in the City's economy as it recovers from a difficult recession.

FINDINGS

The Building Congress concludes that there is sufficient risk in the electricity supply and demand outlook in New York City in 2014-2016 to warrant immediate action. Given the possible retirement of the Indian Point Energy Center, and the resulting implications for higher electricity prices, as well as the long lead time needed to bring new transmission and/or generation capacity online, plans must immediately focus on replacement capacity for the years 2014-2016, significantly earlier than the 2019-2020 period recommended by NYISO.

Based on information in NYISO's 2010 Reliability Needs Assessment (RNA), and after considering projects that are either in construction or have been permitted, the Building Congress believes there is still a need for approximately 1,000 MW of additional electricity capacity in 2016 to meet resource adequacy requirements should Indian Point Units 2 and 3 be retired.

¹ — *Power Trends 2011, Energizing New York's Legacy of Leadership*, NYISO, April 2011, p.12, and NYISO Reliability Needs Assessment, September 2010. In the press release of September 22, 2010, NYISO recognized that a stronger than forecast economy, absent the projected energy efficiency, would result in reliability risks by 2019.

Furthermore, a strong case can be made that New York City's economy is poised for substantial growth in its commercial, infrastructure, and residential sectors in the years ahead.

With these concerns, this is not a situation for complacency but a call to action.

The passage of Article X legislation at the close of the State Legislature's spring 2011 session restores the streamlined process to authorize new investments in electricity supply. But even with this important legislative achievement, the length of time involved in planning, permitting, and constructing new generating facilities dictates that projects need to begin immediately if the needs projected for 2014-2016 are to be met.

In addition, planning must now begin for New York City's intermediate and longer term electricity needs (2020-2030), to assure that sufficient generating and transmission capacity will be available, and that programs to enable significant achievements in energy efficiency and alternate energy sources are effectively implemented.

PLANNING FOR SUMMER 2011

Both Con Edison and NYISO assured customers in New York City that adequate supplies of power were available to handle demand for the 2011 summer peak period. On July 22, 2011, electricity demand reached a record peak of 11,424 MW, above the previous record peak of 11,300 MW set on August 2, 2006. The actual levels recorded on both these days included "demand response resources," as large energy-using customers cut back usage in the hours of peak demand during the high-degree days to provide additional system capacity.

SUPPLY AND DEMAND OF ELECTRICITY CAPACITY 2005-2010

On the supply side, some 1,320 MW of new generation were added to the in-City capacity of New York City between 2005 and 2010, including the New York Power Authority's (NYPA) new 500 MW Combined-Cycle Power Plant in Astoria, commissioned in January 2006, which added net 470 MW; and the Astoria Energy plant, Phase I, with 547 MW, commissioned in April 2006. These two plants, with combined capacity of 1,017 MW, effectively replaced the capacity of the 890 MW Charles Poletti plant at Astoria, which ceased commercial operations as planned in January 2010. The added generating capacity was supplemented by the 300 MW Variable Frequency Transformer line (VFT) between Linden, New Jersey, and Staten Island.

The demand pattern during the 2005 to 2010 period demonstrated a juxtaposition of years with rapid growth in the economy and in energy use in 2005 and 2006 (peak summer demand spiked to record levels in the hot summer of 2006), against the declines caused by the significant recession of late 2007 to mid-2009. Job levels

in New York City fell by 100,000 during 2009, a loss of 2.7 percent, and annual energy usage in the City dropped by 1,735 GWh, a loss of 3.2 percent. Job levels began to edge upwards in 2010 with a small gain of 0.4 percent, but the rebound in annual energy usage was much sharper, up 3.8 percent.²

	2008	2009	2010
Total Annual Energy Usage GWh	54,835	53,100	55,114
Percent Change		-3.2%	+3.8%
Total Employment, Percent Change		-2.7%	+0.4%

THE OUTLOOK FOR ADDED ELECTRICITY CAPACITY IN NEW YORK CITY 2011-2015

Generation

Two near-term generation projects are expected to add 1,062 MW in New York City by the summers of 2011 and 2012:

- Phase 2 of the Astoria Energy Project came online in early summer 2011, providing 550 MW of power.
- The Bayonne Energy Center project with 512 MW is expected to be completed in 2012, and will be directly connected to New York City's electric grid.

U.S. PowerGen's 105 MW South Pier Improvement Project is fully permitted, but the company will only begin construction when market price signals become favorable. The company's proposed Luyster Creek plant in Astoria is in the final stages of permitting for a 400 MW combined cycle repowering project, which would result in 200 MW of additional electric capacity.

NRG Energy's proposed Astoria Repowering Project would replace 600 MW of older combustion turbine units with 1,040 MW of new natural gas-fired combined cycle capacity at its Astoria site. If proposal details are finalized soon, construction of the project's two planned phases could be complete by the summer of 2013.

With these enhancements, New York City could gain about 1,100 MW of additional electrical generating capacity within the next year and the potential of another 700 MW of capacity by 2015.

Transmission

While New York City's status as a "load pocket" requires that approximately 80 percent of electricity generation be located in-City, restricted transmission capacity into the City has long been a cause of congestion that prevents the import of lower-priced power from upstate or neighboring utilities. Improved and increased transmission capacity not only offers the potential to lower in-City electricity prices, but can also be preferable to investment in generation capacity.

Since 2005, two new transmission facilities have been completed, directly increasing electricity supply in New York City:

- The 300 MW Variable Frequency Transformer (VFT) between Linden, New Jersey, and Staten Island.
- Con Edison's M29 line, which allows for an additional 350 MW of power from Upstate New York to the City, was placed into service in February 2011.

Another project that will add electricity capacity is the recently approved 660 MW HVDC transmission link being developed by Hudson Transmission Partners. The line, which will run under the Hudson River between Ridgefield, New Jersey, and Con Edison's 49th Street Substation in Manhattan, will be capable of delivering power directly from the PJM³ system to New York City. The project began construction in May 2011, with completion expected by May of 2013.

New York State's transmission owners, together with the New York Power Authority (NYPA) and NYISO, are pursuing longer term planning for transmission needs in New York City and New York State through the State Transmission Assessment and Reliability Study (STARS). In addition, NYISO has proposed a "Broader Regional Market" program to the Federal Energy Regulatory Commission (FERC) to improve efficiency in congestion management and pricing between neighboring grid operators in the Northeast and eastern Canada.

Without doubt, substantial improvements to interconnect the electricity grids serving the greater Northeast area could help increase imports of lower-cost power to New York City.

Alternative Energies

The investments now being made in wind farms in upstate New York offer little likelihood that the wind generation can be delivered to New York City without some upgrade of the transmission system from upstate to the City. Possible breakthroughs in alternative energies, such as locally sited projects for wind, solar power, or for distributed generation, will likely not materialize for several more years. A new solar project based in New Jersey offers the prototype for similar projects in New York City, and several recent proposals for offshore wind farms in New York, New Jersey, and Rhode Island have begun moving through the planning and permitting stage. These could potentially provide significant volumes of electricity in the next decade.

Natural Gas Supply

Supplies of natural gas are vital to New York City's residential and business community for household use, for production of steam, and increasingly, as the primary source for electricity generation. In 2011, natural gas will supply nearly 75 percent of all fuel for in-City power plants.⁴ In addition to the increased need for fuel for power generation, household demand for natural gas is expected to continue increasing over the next 20 years.

Con Edison estimates that, on average, total gas usage will increase at an annual rate of 1.7 percent per year between 2010 and 2030. If there is stronger economic and population growth than contained in their baseline forecast, the annual growth rate could increase by three percent.⁵

2 — This is sometimes referred to as the "slingshot effect"; a similar pattern occurred in 2004 when the City's economy was slowly recovering from recession and the terrorist attacks of September 11, 2001. With job growth of just 0.4 percent, annual energy usage increased by 3.7 percent. Note, however, that the annual energy usage in both examples is not adjusted for weather conditions; 2010 was a hot summer.

3 — PJM is the regional transmission organization coordinating wholesale electricity in all or parts of 13 states and the District of Columbia. For more information, see www.pjm.com.

4 — *Gas Long Range Plan*, Con Edison December 2010, p. 28.

5 — *Op.cit.* Con Ed report, p. 34.

New York City's April 2011 update to its PlaNYC report states, "New York City has a critical need for additional natural gas capacity. Despite decades of population and economic growth, no new major direct transmission pipelines have reached the City in more than 40 years."⁶ The City's plan to "accelerate the phase-out of highly polluting residual heating oil" will also require additional supplies of natural gas.⁷

Pipeline Capacity

The most recent major addition to pipeline capacity into the downstate New York area was the Millennium Pipeline, a 182-mile long project that terminates in Rockland County. This was brought into service in late December 2008.

Three additional pipeline projects are in the construction or proposal stage.

- Transco Williams is constructing six miles of new and replacement pipeline into the Bayonne Energy Center from its main pipeline in Essex County (expected to be completed in the summer of 2011).
- Transco Williams expects to file an application with FERC in late 2011 to build a three-mile lateral from its Lower New York Bay Extension to National Grid in the Rockaways, Queens, New York.⁸
- Spectra Energy Corporation filed a proposal with FERC in December 2010 to build a new 16-mile pipeline plus five miles of replacement pipeline from Linden, New Jersey, underwater to Manhattan. Although some resistance to the planned route remains, particularly in Jersey City, the project is on schedule to be completed by year-end 2013.

Shale Gas

Considerable quantities of gas trapped in shale rock formations are now capable of recovery through advances in drilling technologies, as well as favored by the current price of natural gas from conventional deposits. One of the largest formations in North America is the Marcellus Shale, located in New York State, Pennsylvania, and West Virginia. The Energy Information Administration (EIA) projects that the 2010 level of 4.9 Tcf of shale oil production, which is now 20 percent of total U.S. natural gas production, could reach 10.6 Tcf in 2030. Shale gas would then account for more than 40 percent of U.S. production.⁹

However, further improvements in drilling technologies may be needed to address environmental concerns over the potential side effects of chemicals used in the hydro-fracking process, and potential seismic effects from high-pressure water injections to penetrate the rock formations.

In June 2011, Governor Andrew Cuomo expressed support for shale gas exploration in New York State, but reiterated concerns included in the City of New York's April 2011 PlaNYC report that watershed areas for New York City and Syracuse need protecting. As a result, shale gas exploration in New York, which offers the promise of plentiful supply in future decades, will depend on the industry's ability to demonstrate to State officials that the environment and New York City's watershed can be protected.¹⁰

Smart Grid Technologies

Increased investments in new "smart grid" technologies are expected to improve customer ability to manage time-of-day usage and improve security of vital transmission systems. Con Edison has received \$136 million in federal stimulus funding through the United States Department of Energy for smart grid technologies that are designed to "integrate information and communications technology into electricity generation, delivery and consumption."¹¹ As part of a pilot program in Long Island City, Con Edison is installing approximately 1,500 meters to evaluate benefits for homes and businesses and will review charging profiles for plug-in electric vehicles.

NYISO FORECASTS FOR 2011-2021

In April 2011, NYISO released new and updated forecasts for New York State and its regions including New York City, for annual and summer peak energy consumption through 2021. The release, contained in the "2011 Load & Capacity Data", or Gold Book report, and in Power Trends 2011, stated that:

The immediate outlook for New York (State)'s electric system is positive. As a result of developments that have contributed to a more reliable system over the past decade, as well as planned additions in the near future, the adequacy of power resources is not an imminent concern . . . If demand grows as currently forecasted, it will take at least 10 years for a capacity need to occur, assuming planned additions occur and there are no unplanned retirements.¹²

The NYISO report cites three factors that have contributed to the positive outlook for the 2011- 2021 period:

- 8,600 MW of new generation that has been built in the State since 2000, 80 percent of which has been in the downstate area of New York City, Long Island, and the Hudson Valley.
- New "demand response programs" that encouraged customers to reduce power during periods of peak demand have provided 2,500 MW of capability statewide in 2010. During New York City's heat wave in July 2010, "these demand response programs provided nearly 400 MW to reduce peak demand."
- The development of new interstate transmission connectors that added 1,290 MW to New York City and Long Island.

In addition, the NYISO forecast assumes substantial energy savings through a variety of conservation measures, which if successful would lower summer peak demand in New York City by about 1,000 MW by 2021.

6 — A Greener, Greater New York PlaNYC, issued April 2011, p. 116.

7 — Ibid, p. 106.

8 — Williams Partners L.P. presentation, Northeast LDC Gas Forum, Boston, June 7, 2011.

9 — December 2010 update, from EIA website.

10 — The City of New York, in its April 2011 update to A Greener Greater New York PlaNYC, wrote "We will work with state officials to protect New York City's watershed from natural gas exploration." p. 116.

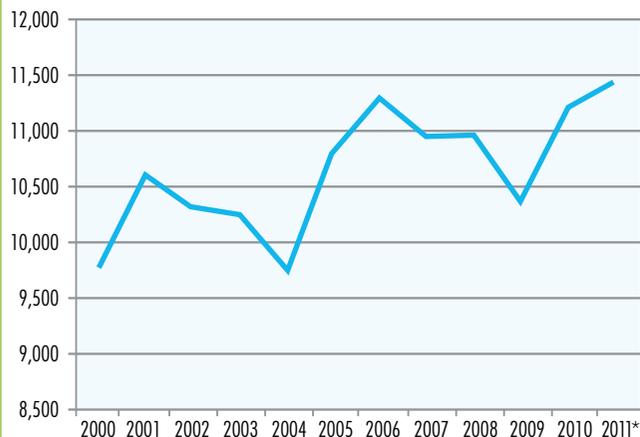
11 — Con Edison Press Release, June 7, 2010.

12 — Power Trends 2011, p. 12.

FORECASTING FOR THE IMPORTANT SUMMER PEAK DEMAND

It is important to note that weather, not just the economic cycle, is a significant indicator of energy demand, as can be seen in the chart of summer peak usage, below. Electricity use increased sharply in the record hot summer of 2006. Peak demand also soared in the hot summer of 2010 and in July of 2011.

Summer Peak Demand MW New York City 2000-2011*



*Actual demand without weather normalization. Source: NYISO Gold Book April 2011, Updated to include Con Edison peak demand set on July 22, 2011.

The electricity supply available for each summer peak period becomes the critical target for any year, particularly during this past decade as the City and country have experienced some of the hottest years on record.

In New York City, summer peak usage reached a record high of 11,424 MW this July, surpassing the previous demand peaks recorded in 2010 and 2006. These hot summers have been compounded by boom years in the City's economy between 2006 and mid-2008, by continued population growth, and, despite the recent recession, by the steady increase in the amount of electricity consumed per household for consumer electronic devices such as air conditioners, computers, cellular phones, and flat-screen televisions.

In the 2011-2021 period, NYISO forecasts that New York City's summer peak demand will grow to 12,758 MW by the summer of 2021. This forecast assumes that just over 900 MW of power will be "saved" through energy efficiency measures put in place by 2021. Before the assumption of energy savings, the forecast growth rate would be 1.7 percent per year. In either forecast, the rate of growth is expected to be stronger in the latter five years of 2016 to 2021.

ASSESSING NEW YORK'S ECONOMY AND NYISO FORECASTS

The new NYISO forecasts for New York City through 2021 need to be considered for the assumptions and risks affecting both supply and demand. On the demand side, the significant assumptions are for slow growth in the City's economy, particularly in the first five years of the forecast period, and that substantial targets to achieve energy efficiency can be met. On the supply side, the significant risk to the forecast

lies with the potential retirement of the two Indian Point Energy Center reactors when their licenses expire in 2013 and 2015. The NYISO forecasts assume that these licenses will be renewed. Furthermore, there is the risk of unplanned retirements of older generating plants as a result of expected new environmental regulations under discussion at both the Federal and State level.

Risk # 1: NYISO Foresees Moderate Economic Recovery in 2011-2016

In the latest NYISO forecast report, annual growth rates for New York City total energy usage, including the assumptions for energy efficiency, are expected to increase only 0.5 percent per year to 2021. This forecast has been lowered from the 0.83 percent rate carried in the 10-year forecast presented in 2010. NYISO reports that its outlook to 2021 has been dampened by the effects of the significant recession of 2007-2009 and by the slow recovery underway.¹³

This forecast of low growth in electricity demand for the next 10 years is for less than half the annual rate of growth in the past decade. Between 2000-2010, annual electricity usage grew at a rate of 1.2 percent per year. The pattern was uneven as the New York City economy was buffeted by two severe recessions, beginning first with the recession of 2000-2001, followed by the long downturn after the terrorist attacks of September 11, 2001. Job levels in the City fell by five percent between 2000 and 2004, and it was not until mid-2007 that job levels surpassed the 2000 peak. Growth in total annual energy usage in New York City weakened in those years, but did not decline from 2000 levels. Usage bounced back in 2004 increasing 2.4 percent over the previous year, and again in 2005, increasing by 3.7 percent. With the onset of the "Great Recession" in late 2007, total annual usage again dropped off, falling 3.2 percent between 2008 and 2009.

However, despite the severe impact throughout the U.S. economy, New York's economy has fared better during this most recent recession than during the one experienced in the early years of the decade. Job levels in 2009 fell by 2.7 percent, but recovered with a slight 0.4 percent growth in 2010. Total energy usage in the City grew by 3.8 percent between 2009 and 2010.

Total Employment in New York City 2001 – June 2011



Source: U. S. Bureau of Labor Statistics.

Based on the recovery patterns of New York City's economy this past decade, as well as the two previous decades, the City's economy has consistently recovered at a stronger pace than anticipated and reached new heights in employment, output, income and population levels. With the notable upturn evident since early 2010, and with major new construction projects underway at the World Trade Center and Atlantic Yards sites, there are ample reasons to expect that this recovery also will be more robust than previously expected.

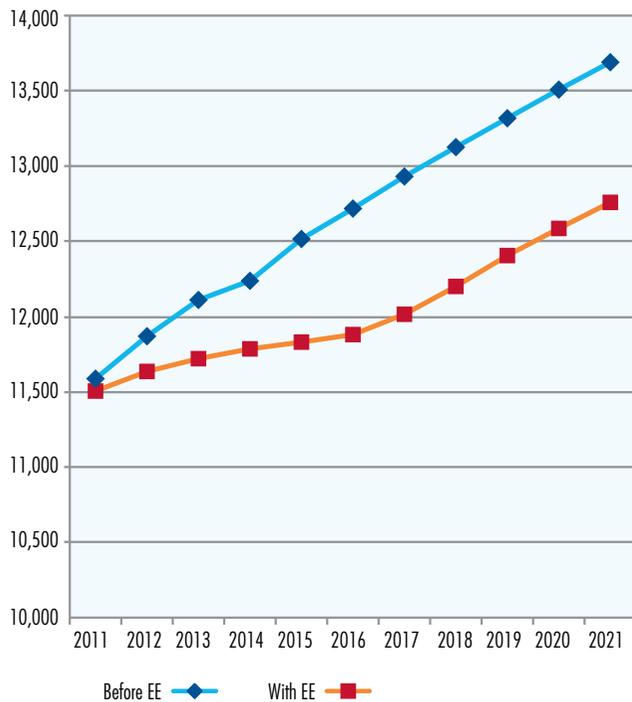
13 — Load & Capacity Data Report, The Gold Book, New York ISO, April 2011, p. 5.

Risk # 2: The Importance of Energy Efficiency in the NYISO Forecast

The NYISO unconstrained forecast for the 2011-2021 period suggests that annual energy usage in New York City would increase by 6,203 GWh over the actual level in 2010, a growth rate of 2.1 percent per year.

With the assumption of energy efficiency savings (a major effort spurred by New York State¹⁴ to encourage utilities, businesses, and residential users to adopt more energy-efficient appliances and energy-efficient building codes), annual usage in New York City is forecast to increase by 1,929 GWh, an increase of 0.3 percent per year over the actual level in 2010.

NYISO Forecast of Summer Peak Demand in New York City 2011-2021: Before and Including Estimates of Energy Efficiency (EE)



Source: NYISO Gold Book, April 2011.

With new “smart grid” technologies, energy-saving appliances, and attention to energy efficiency in building construction and retrofits, it is now possible to achieve far greater energy conservation than in years past.

However, the volume of energy efficiency assumed in the NYISO forecast is a pivotal assumption and potential risk, underlying the NYISO statement that “no new capacity is needed” before 2019 or 2020.

14 — New York State introduced a plan “45 x 15” in 2008, to achieve long-term efficiency and renewable deployment in electricity consumption. The plan hopes to decrease electricity usage by 15% and meet 30% of the State’s electricity demand through renewables by 2015. Source: New York State Energy Planning Board, “2009 State Energy Plan”, December 2009.

Risk # 3: The Outlook for Continuing Supply from the Indian Point Energy Center

Similarly, the outlook for the supply and demand of electricity in the decade ahead as outlined in the NYISO forecast is dependent on the relicensing of the two Indian Point nuclear reactors. Indian Point’s 2,060 MW of baseload power provides 30 percent of New York City’s annual energy supply.

The NRC operating license for Indian Point 2 expires in September 2013, and the license for Indian Point 3 expires in December 2015. The New York State Department of Environmental Conservation has denied a water quality certificate to both units, which is a requirement for the plants’ relicensing, on the basis of the long-term adverse impact of the plants’ cooling system on aquatic life in the Hudson River. The Energy Center’s operator, Entergy, has applied for a 20-year extension from the Nuclear Regulatory Commission.

In its October 2010 Comprehensive Reliability Plan, NYISO notes that if Indian Point is not relicensed, the forecast of adequate reliability and available power supply would be adversely affected. It further notes that the “voltage performance on the bulk power system without the Indian Point plants would be degraded.”¹⁵

In its *Power Trends 2011* report issued in April 2011, NYISO notes that “Increasing public concern about nuclear safety in light of the crisis at a Japanese nuclear facility [following the massive earthquake and tsunami of March 11, 2011] will intensify the debate over the future of nuclear power.”¹⁶ NYISO points out that “adequate replacement generation” would be needed for downstate New York and New York City should the Indian Point system be shut down if the licenses to continue operating are not renewed.

Governor Andrew M. Cuomo, as reported in *The New York Times* on June 29, 2011, indicated that he is determined to close the Indian Point Energy Center.

Consequently, there is considerable risk in the outlook for adequate electricity capacity for the New York City area from 2014-2016 due to the uncertainty of continued operation of the Indian Point plants. This raises the need for immediate contingency planning for replacement generating and/or transmission capacity, in addition to the concern of probable pressure on electricity prices.

Risk # 4: Potential Impact of Plant Retirements

Left unstated in either the NYISO or Con Edison outlook is the potential number of plant retirements that could occur in New York City in the next two decades. NYISO’s 2011 Gold Book recognizes only the proposed retirement of part of NRG’s Astoria plant by 2015, which would reduce interim capability by almost 107 MW for the New York City market in the forecast, unless the proposed new plant is readied by the same period.¹⁷

In addition, NYISO recognizes that pending environmental legislation at both the state and federal levels to limit emissions of nitrogen oxides and other hazardous air pollutants, together with a requirement for closed cycle cooling systems, “are

15 — NYISO 2010 Comprehensive Reliability Plan, Draft 3.2, October 27, 2010, p.19.

16 — *Power Trends 2011*, NYISO, April 2011, p. 15.

17 — Certainly, aging plants must be a consideration in this forecast period. The New York Building Congress 2006 *Electricity Outlook* report noted that generating plants in New York City producing the equivalent of 3,500 MW will be 60 years old or more by 2025.

estimated to impact more than half the installed generating capacity in New York State . . . ” and “ . . . could result in unplanned plant retirements.”¹⁸

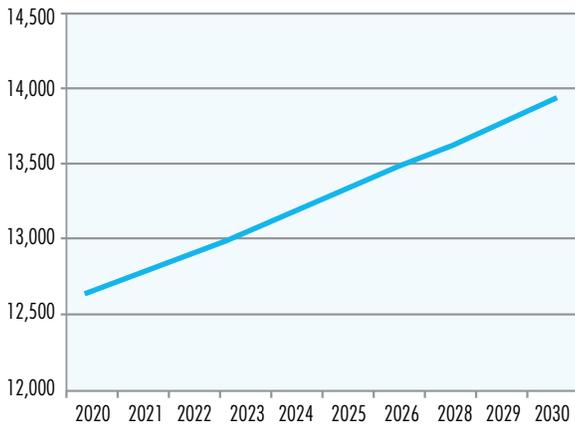
As decisions are made on the various legislative measures pending adoption, more scrutiny is needed to assess potential plant retirements in New York City, particularly before the critical 2014-2016 threshold.

LOOKING AHEAD TO 2030

Con Edison’s outlook for the 2011-2021 decade is similar to the NYISO forecast, with the exception of a somewhat lower threshold of energy efficiency being accomplished in the City by the year 2021.

In its December 2010 report looking ahead to the year 2030, Con Edison presented two forecast scenarios for electricity demand in New York City. The baseline, or “Plan” scenario, as seen in the chart below, assumes an annual growth rate of 0.8 percent between 2020 and 2030, based on a moderate growth rate in the City’s economy. The second scenario assumes a higher growth rate of 1.7 percent per year from 2020 to 2030, based on a stronger New York City economy.

Baseline Forecast of Summer Peak Demand in New York City 2020-2030 (MW)



Source: Con Edison Electric Long-Range Forecast, July 2011.

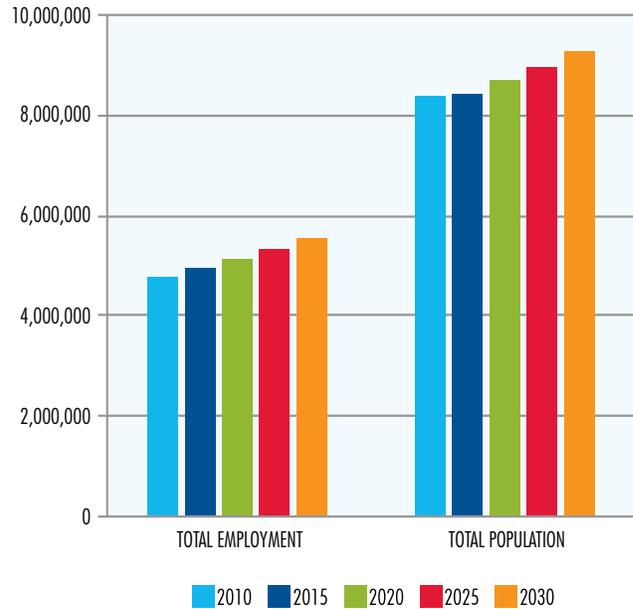
Using the baseline forecast, summer peak demand in New York City would reach 13,935 MW in 2030, up from the 11,424 MW level in 2011. This forecast includes some 650 MW of power saved by energy efficiency over the two decades.

Using the higher growth scenario, summer peak demand in New York City would reach closer to 16,780 MW by 2030.

Much depends, of course, on the outlook for both population and economic growth over the next two decades. The City of New York’s expectation is that population will reach nine million by 2030, a gain of approximately 600,000 above the level estimated in 2010. The population forecast prepared by the New York Metropolitan Transportation Council (NYMTC) in 2009 is similar, with levels of approximately nine

million expected. NYMTC’s long-term economic outlook for the City also suggests that total employment levels could reach as high as 5.5 million by 2030.

Long-Term Outlook for New York City Employment and Population Growth



Source: New York Metropolitan Transportation Council, forecasts as of 2009.

Note: Total Employment in this forecast includes estimates for self-employed and proprietors as well as estimates of non-agricultural employment.

CONCLUSION

Based on official forecasts for electricity demand and supply for New York City from 2011-2021, the Building Congress concludes that two alternative outlooks must be considered:

Scenario A: As long as the relicensing of the Indian Point Energy Center remains uncertain, and in the event that its NRC operating licenses are not renewed, analysis of the electricity capacity needed in New York City suggests that new supply is needed by 2014-2016, not 2019-2020 as forecast by NYISO.

Scenario B: Should Indian Point be relicensed and continue to operate, the outlook for the City’s electricity demand could increase if a stronger New York City economy fosters greater demand growth than NYISO predicts; and/or if lesser than projected energy efficiency is achieved.

The circumstances posed in either Alternatives A or B suggest there is little room for complacency if vital electricity supply is to be available for New York City’s residents, businesses, and cultural, educational, and medical establishments by mid-decade. Considering the time needed for planning, approval, and construction, every effort needs to be made now to deliver the generating and transmission capacity needed for the 2014-2016 period.

18 — Power Trends 2011, NYISO, April 2011, p. 40-41.

Electricity Outlook; Powering New York City Through 2030, the fourth in a continuing series, was prepared with the assistance of Rosemary Scanlon, consultant in urban and regional economics, for the Energy Committee of the New York Building Congress. The Building Congress acknowledges the assistance of and/or information from Con Edison, the New York Power Authority (NYPA) and the New York Independent System Operator (NYISO).

Funding for this report was provided by: ATCO Properties, Con Edison, Deepwater Wind, Durr Mechanical, Entergy, E-J Electric, Navillus Energy, New York Affordable Reliable Electricity Alliance (NY AREA), New York Energy Consumers Council, New York Power Authority (NYPA), Posillico Civil, Rudin Management, SH Group, Skanska USA, Spectra Energy, and STV.

NEW YORK BUILDING CONGRESS ENERGY COMMITTEE

John J. Gilbert III	Rudin Management Company, Inc. (Chairman)	Arthur Jerry Kremer	New York Affordable Reliable Electricity Alliance (NY AREA)
Richard T. Anderson	New York Building Congress	Joel B. Landes, P.E.	Langan Engineering & Environmental Services, P.C.
Richard Aquino	Skanska USA Civil	Michael J. Lembo	Skanska USA Civil
Liam Baker	U.S. Power Generating Company	Jorge J. Lopez	ConEdison Solutions
David Bomke	New York Energy Consumers Council, Inc.	Sergej Mahnovski	New York City Department of Environmental Protection
James V. Brunetti	Hardesty & Hanover	Edward J. Malloy	NYS Building & Construction Trades Council
Kevin Burke	Consolidated Edison, Inc.	J. Robert Mann Jr.	E-J Electric Installation Co.
Jeffery Capazzi	The Jobin Organization	Peter A. Marchetto	Tishman Construction Corporation
Salvatore Caputo	Forest Electric Corporation	Frank Murray	New York State Energy Research and Development Authority
John A. Cavanagh	John A. Cavanagh Consulting Services, Inc.	Mark O'Luck	Spectrum Personal Communications Corporation
Cathleen B. Colella	Hazardous Elimination Corporation	Steve Pitaniello	Navigant Consulting, Inc.
Tim Daniels	Deepwater Wind, LLC	Salvatore R. Presanto, P.E.	Parsons Brinckerhoff, Inc.
Peter Davidson	Empire State Development	Gil C. Quiniones	New York Power Authority
Michael K. De Chiara	Zetlin & De Chiara, LLP	Marcy Reed	National Grid
Thomas DeJesu	New York Power Authority	Frances A. Resheske	Consolidated Edison, Inc.
Peter L. DiCapua	ATCO Properties & Management, Inc.	Denise Richardson	The General Contractors Association of New York, Inc.
Gavin J. Donohue	Independent Power Producers of New York, Inc.	Jack Rudin	Rudin Management Company, Inc.
Kenneth A. Durr	Durr Mechanical Construction, Inc.	Michael F. Russo	Fresh Meadow Mechanical Corporation
Joanne Fernandez	Entergy	Pat Sapinsley	Good Energies, Inc.
Donald Fusco	Skanska USA Civil	Anthony R. Saporito	Mechanical Contractors Association of New York, Inc.
James T. Gallagher	New York Independent System Operator	John Sheridan	Spectra Energy
Victor J. Gallo	Carter Ledyard & Milburn, LLP	Thomas R. Spatafora	Posillico, Inc.
Ashok Gupta	Natural Resources Defense Council	Kenneth Theobalds	Entergy
John F. Hennessy III, P.E.	Turnstone Energy Solutions, Inc.	Robert Vecchio	Lucius Pitkin, Inc.
Caswell F. Holloway	Office of the Mayor	Josh Zweback	Syska Hennessy Group, Inc.
Phyllis J. Kessler	Duane Morris, LLP		
Alfred Klein, P.E.	STV Group, Inc.		

NEW YORK BUILDING CONGRESS OFFICERS

Chairman	Peter A. Marchetto	Tishman Construction Corporation	President	Richard T. Anderson	New York Building Congress
Vice Chairmen	Victoria J. Cerami	Cerami & Associates, Inc.	Treasurer	Jorge J. Lopez	ConEdison Solutions, Inc.
	Louis J. Coletti	Building Trades Employers' Association	Secretary	Milo E. Rivero	STV Group, Inc.
	Michael S. Della Rocca	AECOM	General Counsel	Michael S. Zetlin	Zetlin & De Chiara, LLP
	Carl Galioto	HOK	Past Chairman	Stuart E. Graham	Skanska USA, Inc.
	Michael F. McNally	Skanska USA, Inc.			
	Cherrie Nanninga	CB Richard Ellis, Inc.			
	George J. Pierson	Parsons Brinckerhoff, Inc.			
	Robert E. Selsam	Boston Properties, Inc.			

For additional copies of this publication contact:

NEW YORK BUILDING CONGRESS

44 West 28th Street, 12th Floor, New York, NY 10001

Tel: 212.481.9230, Fax: 212.481.9290

www.buildingcongress.com