



# ENERGY CROSSROADS

New York State's  
"Reforming the Energy Vision"

**COMBATING CLIMATE CHANGE  
MODERNIZING THE POWER GRID  
KEEPING RATES AFFORDABLE**

**A GUIDE FOR NEW YORKERS**

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## **Acknowledgements**

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The **New York Public Interest Research Group Fund** (NYPIRG) is a non-partisan, not-for-profit organization whose mission is to effect policy reforms while training New Yorkers to be citizen advocates. NYPIRG's full-time staff works with citizens, produces studies on a wide array of topics, coordinates state campaigns, engages in public education efforts and lobbies public officials.

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## ENERGY CROSSROADS: FOREWORD

2014 was the hottest year in recorded history. The world's experts have stated that global warming is largely due to human activity and they argue that the only way to respond is to dramatically slash the use of fossil fuels, like coal, oil and gas, which when burned release the greenhouse gases warming the planet.

We must move away from fossil fuels, but how will we generate the energy necessary to power the world? As societies scramble to answer that question, events in New York may offer a blueprint for action.

New York is not only contemplating how to respond to the climate change menace, but it is also trying to move its energy system into the digital age. Under the current utility structure, the power sector in New York is on track to spend an estimated \$30 billion to replace and modernize the state's aging energy infrastructure over the next decade. Unless the state makes changes, that \$30 billion investment will increase costs to ratepayers and perpetuate the use of an outdated, inefficient, polluting system.

Fortunately, the need to modernize the state's energy system dovetails with the goal of developing policies that encourage energy use reduction, efficiency measures and the move to reliance on alternative energy sources, such as solar power.

In New York, the proposed solution is the state's *Reforming the Energy Vision* ("REV") plan, under active development before the state's Public Service Commission. REV holds great promise for overhauling the state's rickety energy infrastructure, placing a priority on energy use reduction and efficiency, promoting renewable energy production and building system reliability. REV, initiated at Governor Cuomo's direction, has the potential to fundamentally reshape the production and distribution of electric power throughout the state and significantly reduce the creation of heat-trapping carbon emissions—making New York a national and global leader in climate change reversal, while doing all it can to make sure lower-income consumers are able to afford energy in the new marketplace.

But the REV effort is still evolving. The traditional way of doing business in Albany is for government to convene meetings of "stakeholders"—those with an economic interest in the policies under consideration. The state's Public Service Commission has convened such meetings and to its credit has included representatives of the public and held some public forums. Yet, in order to truly succeed, have the political staying power to outlive the Administration, and to keep environmental concerns at the center of ongoing development of the state's energy needs in the 21<sup>st</sup> Century, the public must be fully engaged.

The goal of this *Guide* is to help accomplish that task. The *Guide* offers in-depth insights into the energy needs of the state, as well as the climate change challenges it faces, and provides information on how consumers can directly participate in the development of REV. The *Guide*

examines the current energy infrastructure, the REV proceedings to date, contains a glossary of commonly-used terms, and links to the more relevant PSC proceedings that impact on REV.

Of course, much more needs to be done to educate the public about REV and the state's energy future. But as New York stands at the energy crossroads it is the hope of the New York Public Interest Research Group that this *Guide* will offer a strong starting point for all energy consumers to contribute to building a sustainable, affordable energy future that helps reverse global warming

REV offers a unique opportunity to allow the state to navigate through the challenges posed by its need to modernize its energy grid while mitigating impacts global warming. If it succeeds, it can offer a model for the nation.

## ENERGY CROSSROADS: EXECUTIVE SUMMARY

### Introduction

New York's Reforming the Energy Vision ("REV") proceedings offer a grand vision for a smarter, more reliable and affordable electric grid in New York. But the lessons from the 1990s era restructuring of the wholesale (energy production) market are a cautionary tale: Without the public engaging, making demands and watchdogging the process, its interests may be drowned out by the utilities, energy companies and large users whose concerns are making profit, not combating climate change and ensuring that electric is affordable.

After reading this *Guide*, here are some points to make to the Public Service Commission ("PSC"), the state agency that oversees utilities and is leading the grid restructuring:

- **Fully Engage the Public in the REV Process.** The PSC must hold public forums and hearings as it moves in to the second REV phase, Track Two, and beyond. In order to fully realize the first two foundational goals of the six REV objectives—(1) “enhanced customer knowledge and tools” to manage energy bills and (2) “market animation” to “leverage customer contributions”—there must be public buy-in. Now is the time to lay the groundwork, solicit feedback and refine the REV proposals to increase the prospects that REV will quickly achieve lift off and realize its promise.

- **Set Clear Metrics for Affordability, Energy Efficiency and Renewable Energy.** A looming concern is that REV's grand ambitions will falter, that market players won't be held accountable and course corrections will lag. These concerns can be addressed by setting clear, objective, enforceable metrics—with respect to environmental/public health goals as well as consumer affordability—to drive New York to achieve REV's public policy aims. New York should be ambitious—the objective standard-based goals need to surpass 2015's baseline achievements and be bold, not timid. New York must establish aggressive but achievable long-term goals for efficiency and renewables, with interim targets and other related metrics.

- 50% renewable energy by 2025;
- 20% of projected demand met by efficiency by 2025; and
- 80% reduction in greenhouse gas emissions by 2050.

- **Produce Annual REV Report Cards.** New Yorkers need a way to measure and understand REV's progress in meeting its key policy goals—which to a significant extent will reflect public (customer) engagement in the new REV marketplace. The PSC should direct that the utilities managing the overhauled grid systems in their territories report their progress in meeting the goals on key metrics in an *Annual REV Report Card*. The *Annual REV Report Card* would break out data for important metrics, such as the amount of renewable energy added, produced and

used in the utilities' service areas; the energy efficiency measures undertaken and the savings yield; and the number of shut-offs and customers in arrears. The PSC would ensure the quality of the data and reporting under the *Annual REV Report Card* and put out a *Statewide REV Report Card* measuring the aggregate information. This would be in addition to any other reporting and public disclosures required.

- **Establish an Independent Utility Consumer Advocate Office.** Consumers struggle to be heard over the well-funded industry players in New York's utility regulatory process. As the PSC moves to a role where it no longer is regulating in a monopoly environment, it will be responsible for fostering a robust marketplace, *i.e.*, one in which businesses make money, but also for ensuring that gas and electric are furnished at "just and fair rates." This creates conflicts that in other contexts, *e.g.*, banking oversight, have proven problematic. An independent consumer protection and advocacy office would help ensure that the Commission can fulfill its role as impartial arbiter of the public's interest. Moreover, under a Performance Based Review regulatory regime, independent assessments will provide an important hedge against agency groupthink. The governor's *Moreland Commission on Utility Storm Preparation and Response* recommended that New York follow most other states by creating a truly independent consumer advocacy office to represent the interests of average ratepayers.

- **Establish an Intervenor Funding Mechanism.** The Commission should use REV to establish an intervenor funding mechanism—as many other states have done—so residential and small business consumers and organizations can apply for funding to provide important perspectives to the Commission as a way to improve the overall process and results. Similar to the independent utility advocacy office, intervenor funding will sharpen the focus of proceedings and ensure that the Commission gets a fuller picture on important issues.

- **Create a Single PSC Website to Comparison Shop for REV Products and Services.** REV is intended to unleash the innovation and power of the marketplace to offer new energy products and services, but consumers will be at the mercy of slick promotional materials and commissioned salespeople without any way to directly compare the offers. The PSC should create its own website as the digital place to compare REV products in a standardized format to facilitate comparison based on financial savings, payback periods, financing options, warranties, *etc.* Creating a single government website that allows standardized comparison will instill consumer confidence, allow efficient "one-stop shopping" and promote informed decision making.

## **How to Participate in REV**

After some prodding, the Commission made an effort to engage the public in understanding and weighing in on the first REV phase, called Track One. Much more needs to be done. There's little reason to believe that the vast majority of New Yorkers—including those who care deeply about climate change, energy use and electric affordability—are aware of the REV proceedings. Moreover, many of the issues are highly technical—there's an alphabet soup of laws and terms, a

lot of market-speak gobbledegook and a dizzying array of technical information to wrap your head around.

That shouldn't and must not deter the public from paying attention and weighing in. The Public Service Commission, its staff, public interest advocates and the private sector must explain these issues in ways that New Yorkers can understand. The state's electric system was paid for by generations of New Yorkers, who paid through their taxes and monthly utility bills. Utilities and their shareholders enjoyed the benefits of monopoly status since the advent of the grid system. The public should expect and demand that its interests—environmental, public health and consumer—are served in deregulating and reforming the system.

NYPIRG is offering this *Guide* as a primer and aid to help get New Yorkers started and to suggest some points to be alert to and comment upon.

For your convenience, a glossary and a REV Proceedings Guide are in the attached appendices to help you understand what's going on and participate.

### **Here's how to get involved**

- Use the REV Proceedings Guide to review the documents in the various proceedings underway and seek party status in any of the proceedings.
- Send your overall comments to the Public Service Commission through their website at [secretary@dps.ny.gov](mailto:secretary@dps.ny.gov)
- Educate your state Senator and Assemblymember on REV-related issues and your concerns. If you're not sure who represents you in the state Legislature, visit this website to find out: [www.elections.ny.gov/district-map/district-map.html](http://www.elections.ny.gov/district-map/district-map.html).
- Share your support, thoughts and concerns on REV with Governor Cuomo. You can contact the Governor's office by phone at 518 474-8390 or on his website at [www.governor.ny.gov/contact](http://www.governor.ny.gov/contact).
- Keep on the lookout for future Public Service Commission public forums on REV issues.
- Check NYPIRG's webpage for updates at [www.nypirg.org](http://www.nypirg.org).

## INTRODUCTION: NEW YORK'S ENERGY CROSSROADS

“A definition of insanity is doing the same thing over and over and expecting a different result.”<sup>1</sup>

### **New York at the Energy Crossroads**

The state can continue to pour money into a 20<sup>th</sup> Century era fossil fuel based system and passively watch as the globe heats up, sea levels rise, air quality degrades and all the attendant dislocations accelerate.

Or it could chart a different path that aggressively addresses climate change by focusing on clean, green and renewable energy sources; prioritizes energy efficiency as the option of first resort; promotes local distributed energy sources; hardens the grid to make it more resilient in the face of extreme weather and cyber risks; gives communities more say in energy choices; and makes electric more affordable and reliable for New Yorkers.

A confluence of recent events and strong forces impel New York to reject its energy past and boldly, but prudently, act at this inflection point. New Yorkers are painfully aware that extreme weather events, which ravaged and besieged virtually every part of the state in the past decade, will be the “new normal” unless we act decisively.

Moreover, a candid assessment of New York’s rickety, aging energy infrastructure forces us to question the wisdom of patching up a system designed and installed in another era. This is particularly true at a time when there are emerging and increasingly affordable sustainable technologies available and embraced by the public. Clearly, the time is now ripe for New York to assume the role of global leader on the path to a sustainable energy economy. *There’s no sane alternative.*

This is more than a good idea that’s being casually kicked around or a nostrum contained in a one-house bill before the Legislature. The REV proceedings before the Public Service Commission *are* moving apace and from all indications will dramatically reshape New York’s energy marketplace.<sup>2</sup> The outcomes will profoundly affect residential and business consumers, utilities and power producers—and create new opportunities for renewable energy companies, energy efficiency contractors and communities for the foreseeable future.

In short, REV is happening, and fundamental change is coming to New York’s energy marketplace; it will affect virtually everyone in the state.

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<sup>1</sup> Author uncertain; variously attributed to Albert Einstein, Ben Franklin, Mark Twain and Narcotics Anonymous.

<sup>2</sup> “Reforming the Energy Vision” or “REV” will be used throughout this *Guide* as the term for the numerous and varied proceedings and actions that in coordination will overhaul the state’s energy marketplace.



REV is a breathtaking development, one that has grabbed the attention of the entire energy world. While it is encouraging that New York is rejecting the idea of continuing to do the same thing and hoping for a different result, questions abound: Will REV live up to its promise of being a giant step forward in the fight against climate change? Will REV result in a quantum leap in affordable local renewable energy? Or will REV yield little additional gains in the fight to reduce greenhouse gases, but simply shift taxpayer funds and drain ratepayer monies into the coffers of old utilities and new lightly regulated energy companies?

The answer to these and other critically important questions likely will largely depend on how much New Yorkers *pay attention and actively engage* in the REV process to make sure that the public's interests come first and foremost. The information in this *Guide* is intended to give New Yorkers a primer on the REV proceedings to help them get involved in deciding New York's energy future. This is a public call to attention and action. The stakes couldn't be higher.

## ENERGY CROSSROADS: CLIMATE CHANGE AND THE THREAT OF GLOBAL WARMING

“Previous assessments have already shown through multiple lines of evidence that the climate is changing across our planet, largely as a result of human activities.”<sup>3</sup>

There is no longer a credible debate over whether or not human activity, primarily the use of fossil fuels to create energy, is warming the planet:

Human influence on the climate system is clear, and recent anthropogenic [human-caused] emissions of greenhouse gases are the highest in history. Recent climate changes have had widespread impacts on human and natural systems.<sup>4</sup>

Thus, the world’s experts agree that global warming is largely due to human activity—particularly due to reliance on fossil fuels.<sup>5</sup>

A warmer planet means that there is more energy in the environment, which increases the chances that a weather event will intensify. This is evident in the increasing frequency of extreme weather events, most prominently heat waves of hotter temperatures and longer duration and storms that are more powerful. 2014 was the warmest year on record; ten of the warmest years on record have occurred since 1998.<sup>6</sup> Graphic evidence of the warming trend is provided by observing photographs over decades that document the rapid disappearance of mountain glaciers.<sup>7</sup> And due to ice melts and water’s greater volume at higher temperatures, sea levels are rising.

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<sup>3</sup> *Climate Change 2013: The Physical Properties* (Fifth Assessment Report AR5) Chapter 1, p. 121. Intergovernmental Panel on Climate Change. Accessed at [www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5\\_Chapter01\\_FINAL.pdf](http://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5_Chapter01_FINAL.pdf).

<sup>4</sup> IPCC, 2014: *Climate change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the First Assessment Report of the Intergovernmental Panel on Climate Change* at p. 2. Accessed at [www.ipcc.ch/pdf/assessment-report/ar5/syr/SYR\\_AR5\\_FINAL\\_full.pdf](http://www.ipcc.ch/pdf/assessment-report/ar5/syr/SYR_AR5_FINAL_full.pdf).

<sup>5</sup> Intergovernmental Panel on Climate Change, “IPCC, 2013: Summary for Policymakers. In: *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*,” [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. See, [http://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5\\_SPM\\_FINAL.pdf](http://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5_SPM_FINAL.pdf).

<sup>6</sup> *2014 Warmest Year in Modern Record*, National Aeronautics and Space Administration, January 16, 2015. Accessed at <http://climate.nasa.gov/news/2221/>.

<sup>7</sup> See, e.g., United States Geological Survey repeat photos of Grinnell Glacier at Glacier National Park, Montana. Accessed at <http://nrmssc.usgs.gov/repeatphoto/overview.htm>.

## Impacts of Climate Change on New York State

Global climate change resulting from overuse of fossil fuels has already had adverse effects on New York State in the form of extreme weather events that caused billions of dollars in damages. For example, in 2012 “Super Storm Sandy” caused \$19 billion in damages in New York City alone and damaged 305,000 housing units, mostly due to flooding.<sup>8</sup> Hurricane Irene (August, 2011) devastated parts of the state, wiping out areas of the Western Catskills, devastating parts of the Adirondacks, and resulting in ten deaths and in excess of \$1.3 billion in damages.<sup>9</sup> Just one week later, Tropical Storm Lee (September 2011) brought drenching rains that caused more than \$1 billion in damages in Broome and Tioga Counties alone and resulted in record flooding in areas of the Southern Tier.<sup>10</sup>

Almost 400,000 people live in flood-prone areas of New York State. If steps are not taken to reduce climate change, more people will suffer, as what had been 500-year and 100-year events occur with alarming frequency.<sup>11</sup>

Over the last several decades, New York State has experienced significant changes in its climate. Since 1970, the average annual temperature rose by 2°F and the average winter temperature increased by 4°F.<sup>12</sup> Heavy precipitation events have increased in magnitude and frequency. More often, the majority of winter precipitation now falls as rain, not snow. Climate scientists project that these trends will continue.<sup>13</sup>

As seen in the map *below*, summers in New York by the end of this century could be as warm as North Carolina's summers are today. Over the period 2010–2039, New York City is projected to experience an increase in the number of days reaching 90°F or more—from an average of 18 per year between 1971 and 2000—to as many as 33 days per year by the 2020 decade.<sup>14</sup>

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<sup>8</sup> 2014 *New York Hazard Mitigation Plan*, New York State Division of Homeland Security and Emergency Services (January 4, 2014) at 3.12-12. Accessed at [www.dhSES.ny.gov/oem/mitigation/documents/2014-shmp/Section-3-12-Hurricane.pdf](http://www.dhSES.ny.gov/oem/mitigation/documents/2014-shmp/Section-3-12-Hurricane.pdf).

<sup>9</sup> Hurricane Irene One Year Later: Storm cost \$15.8 in Damage from Florida to New York to the Caribbean, *The Associated Press*, August 27, 2012. Accessed at [www.nydailynews.com/new-york/hurricane-irene-year-storm-cost-15-8-damage-florida-new-york-caribbean-article-1.1145302](http://www.nydailynews.com/new-york/hurricane-irene-year-storm-cost-15-8-damage-florida-new-york-caribbean-article-1.1145302).

<sup>10</sup> *Tier Flood Damage \$1 Billion*, Jennifer Micale, *Press-Sun Bulletin*, February 1, 2012. Accessed at [www.pressconnects.com/article/20120201/NEWS01/202010330/Tier-flood-damage-estimate-1-billion](http://www.pressconnects.com/article/20120201/NEWS01/202010330/Tier-flood-damage-estimate-1-billion).

<sup>11</sup> "Hurricane Sandy's Impact, By The Numbers (INFOGRAPHIC)." *Huffingtonpost.com*. The Huffington Post, 29 Oct. 2013. Accessed at [www.huffingtonpost.com/2013/10/29/hurricane-sandy-impact-infographic\\_n\\_4171243.html](http://www.huffingtonpost.com/2013/10/29/hurricane-sandy-impact-infographic_n_4171243.html).

<sup>12</sup> “Climate Change Facts, New York’s Changing Climate,” October 2011, Cornell University College of Agriculture and Life Sciences, Climate Change Facts, see: [http://www.nrcc.cornell.edu/climate\\_change/climate\\_ny.pdf](http://www.nrcc.cornell.edu/climate_change/climate_ny.pdf).

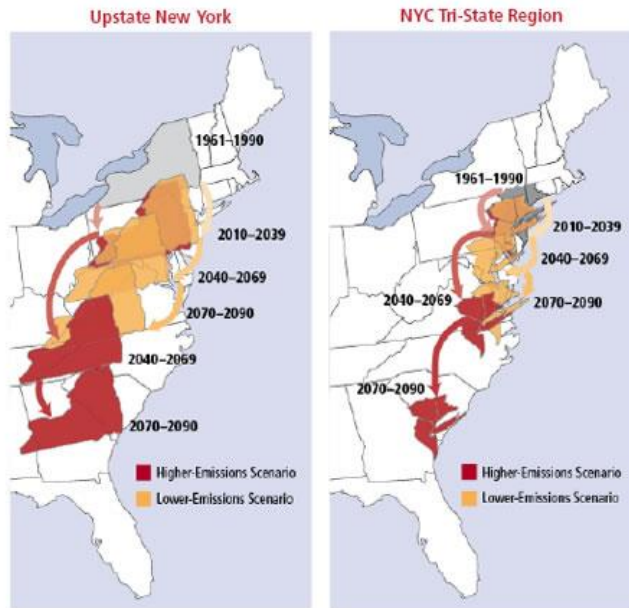
<sup>13</sup> New York State Energy Research and Development Authority, “Climate Change in New York State,” Prepared by Horton, R., Bader, D., Rosenzweig, C, Columbia University; DeGaetano, A., Cornell University; Solecki, W., City University of New York, September 2014, NYSERDA Report 14-26, ISBN: 978-1-936842-08-7. Accessed at [www.nyserda.ny.gov/-/media/Files/Publications/Research/Environmental/ClimAID/2014-ClimAid-Report.pdf](http://www.nyserda.ny.gov/-/media/Files/Publications/Research/Environmental/ClimAID/2014-ClimAid-Report.pdf).

<sup>14</sup> The City of New York, “A Stronger, More Resilient New York: Climate Analysis,” see: [http://www.nyc.gov/html/sirr/downloads/pdf/final\\_report/Ch\\_2\\_ClimateAnalysis\\_FINAL\\_singles.pdf](http://www.nyc.gov/html/sirr/downloads/pdf/final_report/Ch_2_ClimateAnalysis_FINAL_singles.pdf).

## THE POTENTIAL IMPACT OF CLIMATE CHANGE ON NEW YORK STATE<sup>15</sup>

### Migrating State Climates

Changes in average summer heat index—a measure of how hot it actually feels, given temperature and humidity—could strongly affect quality of life in the future for residents of New York. Red arrows track what summers could feel like in the Upstate and Tri-State (the greater NYC metropolitan region, encompassing parts of New Jersey and Connecticut) regions over the course of the century under the higher-emissions scenario. Yellow arrows track what summers in these regions could feel like under the lower-emissions scenario.



## CLIMATE CHANGE IMPACTS ON NEW YORK STATE<sup>16</sup>

Region Baseline 1971-2000	Temperature Increase by the 2020s	Precipitation Change by the 2020s
Region 1 (Rochester)	+1.8°F (low) to +4.0°F (high)	0% (low) to +8% (high)
Region 2 (Port Jervis)	+1.6°F to +3.5°F	-1% to +10%
Region 3 (Elmira)	+1.8°F to +3.8°F	-4% to +9%
Region 4 (New York City)	+1.5°F to +3.2°F	-1% to +10%
Region 5 (Saratoga)	+1.7°F to +3.7°F	-1% to +10%
Region 6 (Watertown)	+1.9°F to +3.9%	0% to +8%
Region 7 (Indian Lake)	+1.8°F to +3.8°F	0% to +9%

<sup>15</sup> University at Albany, “Climate Change and New York State,” see:

<http://www.albany.edu/gogreen/3.climatechangenys.shtml>.

<sup>16</sup> New York State Energy Research and Development Authority, “Climate Change in New York State,” Prepared by Horton, R., Bader, D., Rosenzweig, C, Columbia University; DeGaetano, A., Cornell University; Solecki, W., City University of New York, September 2014, NYSERDA Report 14-26, ISBN: 978-1-936842-08-7. Accessed at [www.nysERDA.ny.gov/-/media/Files/Publications/Research/Environmental/ClimAID/2014-ClimAid-Report.pdf](http://www.nysERDA.ny.gov/-/media/Files/Publications/Research/Environmental/ClimAID/2014-ClimAid-Report.pdf).

The amount of overall precipitation throughout the Northeast is projected to increase. Reductions in snow accumulations will likely increase the number and impact of flooding events.<sup>17</sup> Sea level rise, storm surges, and erosion will contribute to an increase in coastal flooding, including the frequency of "100-year flood" levels (severe flood levels with a one-in-100 likelihood of occurring in any given year). By the middle of the century, New York City could see a significant increase in the likelihood of 100-year flood events, with odds increasing from a 1% chance currently to as much as a 5% chance in 2050.<sup>18</sup> The state includes an ominous longer-range projection in its 2014 climate report update: "Due to sea level rise alone, flooding at the level currently associated with the 100-year flood may occur about 19 times as often by the end of the century."<sup>19</sup> Damages to coastal property and infrastructure could impact the insurance industry. New York State alone has more than \$2.3 trillion in insured coastal property.<sup>20</sup>

### SEA LEVEL RISE PROJECTIONS<sup>21</sup>

Site	Low estimate	High estimate
Baseline (2000-2004)	in 2020s	in 2020s
Montauk Point	+2 inches	+10 inches
New York City	+2 inches	+10 inches
Troy Dam	+1 inch	+9 inches

Extreme heat is the leading cause of weather-related deaths, resulting in the deaths, on average, of 117 people annually between 2003 and 2012.<sup>22</sup> According to a study led by researchers at Columbia University, deaths linked to the warming climate may rise in New York City by as

<sup>17</sup> Intergovernmental Panel on Climate Change, "Climate Change 2007: Working Group I: The Physical Science Basis: Executive Summary," see: [https://www.ipcc.ch/publications\\_and\\_data/ar4/wg1/en/ch11s11-es.html](https://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch11s11-es.html).

<sup>18</sup> The City of New York, "A Stronger, More Resilient New York: Climate Analysis," see: [http://www.nyc.gov/html/sirr/downloads/pdf/final\\_report/Ch\\_2\\_ClimateAnalysis\\_FINAL\\_singles.pdf](http://www.nyc.gov/html/sirr/downloads/pdf/final_report/Ch_2_ClimateAnalysis_FINAL_singles.pdf).

<sup>19</sup> Climate Change in New York, 2014 Update, NYSERDA (September 2014) at p. 14. Accessed at [www.nyserdera.ny.gov/climaid](http://www.nyserdera.ny.gov/climaid).

<sup>20</sup> The White House, "The Threat of Carbon Pollution: New York," see: <https://www.whitehouse.gov/sites/default/files/docs/state-reports/climate/New%20York%20Fact%20Sheet.pdf>.

<sup>21</sup> New York State Energy Research and Development Authority, "Climate Change in New York State," Prepared by Horton, R., Bader, D., Rosenzweig, C, Columbia University; DeGaetano, A., Cornell University; Solecki, W., City University of New York, September 2014, NYSERDA Report 14-26, ISBN: 978-1-936842-08-7. Accessed at [www.nyserdera.ny.gov/-/media/Files/Publications/Research/Environmental/ClimAID/2014-ClimAid-Report.pdf](http://www.nyserdera.ny.gov/-/media/Files/Publications/Research/Environmental/ClimAID/2014-ClimAid-Report.pdf).

<sup>22</sup> 2014 New York Hazard Mitigation Plan, New York State Division of Homeland Security and Emergency Services (January 4, 2014) at p. 3.4-18.

much as 20% by the 2020s.<sup>23</sup> The additional deaths are projected to occur in late spring and summer—before and after the traditional heat-wave season. Worst-case projections estimate an increase in heat-wave deaths of 90% or more by the 2080s.<sup>24</sup>

Hot summer days also can worsen air pollution, especially in urban areas. In New York City and other areas of the state that currently face problems with smog, inhabitants are likely to experience more poor air quality days. The growing threat posed by more frequent heat waves and lower air quality place at risk the health of the very young, the elderly, outdoor workers and those without access to air conditioning or adequate health care.<sup>25</sup>

According to information contained in a state environmental review, asthma prevalence in New York has been higher than the national average since 2002.<sup>26</sup> In 2008, an estimated 1.3 million adults and 475,000 children in the state were diagnosed with asthma, with asthma prevalence among adults increasing from 6.3% in 1999 to 8.7% in 2008.<sup>27</sup> The analysis notes that asthma emergency department visits and hospitalization rates are higher than the national rates for all age groups.<sup>28</sup>

Ground-level ozone poses significant health problems. Ozone chemically attacks lung tissue and exposure results in acute and chronic respiratory harm, with children, persons over 65 and individuals with respiratory problems particularly at risk.<sup>29</sup> The New York City Department of Health and Mental Hygiene estimates that ozone exposure results in 400 premature deaths in the city, more than 900 hospital admissions and almost 5,000 emergency department visits each year.<sup>30</sup>

More frequent extreme precipitation events would increase the risk of waterborne illnesses caused by sewage overflows and pollutants entering the water supply. Combined with extremely hot days, the increase in heavy rain events is likely to create more favorable conditions for the breeding of mosquitoes that carry West Nile Virus.<sup>31</sup>

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<sup>23</sup> *Heat-Related Deaths in Manhattan Projected to Rise Killing Season May Push Into Spring and Fall, Says Study*, The Earth Institute, Columbia University, May 20, 2013. Accessed at <http://earth.columbia.edu/articles/view/3091>.

<sup>24</sup> *Id.*

<sup>25</sup> The City of New York, “A Stronger, More Resilient New York: Climate Analysis,” see:

[http://www.nyc.gov/html/sirr/downloads/pdf/final\\_report/Ch\\_2\\_ClimateAnalysis\\_FINAL\\_singles.pdf](http://www.nyc.gov/html/sirr/downloads/pdf/final_report/Ch_2_ClimateAnalysis_FINAL_singles.pdf).

<sup>26</sup> Final Generic Environmental Impact Statement in Case 14-M-0101-Reforming the Energy Vision and Case 14-M-0094-Clean Energy Fund, February 6, 2015 (hereinafter the “REV FGEIS”) at pp. 3-33 to 3-34. Accessed at <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={9E35CB6F-9B7D-4220-9CD4-B254C0FB4551}>.

<sup>27</sup> *Id.* at p. 3-33.

<sup>28</sup> *Id.*

<sup>29</sup> *State of the Air 2013*, American Lung Association. Accessed at [www.stateoftheair.org/2013/health-risks/health-risks-ozone.html](http://www.stateoftheair.org/2013/health-risks/health-risks-ozone.html).

<sup>30</sup> *Air Pollution and the Health of New Yorkers: the Impact of Fine Particles and Ozone*, New York City Department of Health. Accessed at [www.nyc.gov/html/doh/downloads/pdf/eode/eode-air-quality-impact.pdf](http://www.nyc.gov/html/doh/downloads/pdf/eode/eode-air-quality-impact.pdf).

<sup>31</sup> The Climate Institute, “Human Health,” see: <http://www.climate.org/topics/health.html>.

## Impacts on Agriculture and Food Supply

Average temperatures in the Northeast are projected to increase and precipitation patterns are projected to continue to change. These changes are likely to affect the types of crops cultivated in the state.<sup>32</sup> The stress on trees from the increasing heat as well as the decreasing soil moisture will likely impair the ability of certain trees to reproduce.<sup>33</sup>

## Impacts on Winter Recreation

Due to climate change, the resulting warmer temperatures could cause many ski resorts to close by the end of the century.<sup>34</sup>

New York State has many winter recreation opportunities, including snow sports (skiing, snowmobiling, snowshoeing and dog sledding) and ice-based activities (ice fishing and skating). These activities contribute significantly to the state's economy, with skiing alone having more than \$1 billion annual impact on the state's economy.<sup>35</sup> Projected increases in temperature could reduce snow cover and shorten winter snow seasons, limiting and altering these types of activities.<sup>36</sup>

The average length of the ski season may decline to less than 100 days, and winter nights are expected to be warmer. Ski resorts may require more artificial snowmaking to produce snowpack. Artificial snowmaking requires additional water and energy, increasing costs to the resorts. The impacts of these changes may decrease the economic viability of operating ski resorts in the Northeast.<sup>37</sup>

## New Yorkers Know Climate Change is Real and Want Action

Registered voters in New York polled after Hurricane Sandy said by an overwhelming margin (69%-24%) that recent severe weather events are proof of climate change, not isolated

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<sup>32</sup> New York State Energy Research and Development Authority, "Chapter 7: Agriculture," David W. Wolfe, Jonathan Comstock, Alan Lakso, Larry Chase, William Fry, Curt Petzoldt, Robin Leichenko, and Peter Vancura, see: <http://www.nyserda.ny.gov/-/media/Files/Publications/Research/Environmental/EMEP/climaid/ClimAID-Agriculture.pdf>.

<sup>33</sup> Natural Resources Defense Council, "End of the Road: The Adverse Ecological Impacts of Roads and Logging," see: <http://www.nrdc.org/land/forests/roads/chap5.asp>.

<sup>34</sup> Fox, P., "The End of Snow?" *The New York Times*, February 7, 2014, see: [http://www.nytimes.com/2014/02/08/opinion/sunday/the-end-of-snow.html?\\_r=0](http://www.nytimes.com/2014/02/08/opinion/sunday/the-end-of-snow.html?_r=0).

<sup>35</sup> *Governor Cuomo Announces "Ski NY Spring Break" Promotion at Second Annual Adirondack Challenge*, March 3, 2015. Accessed at [www.governor.ny.gov/news/governor-cuomo-announces-ski-ny-spring-break-promotion-second-annual-adirondack-winter](http://www.governor.ny.gov/news/governor-cuomo-announces-ski-ny-spring-break-promotion-second-annual-adirondack-winter).

<sup>36</sup> Natural Resources Defense Council and Protect Our Winters.org, "Climate Impacts on the Winter Tourism Economy in the United States," December, 2012, see: [http://protectourwinters.org/climate\\_report/report.pdf](http://protectourwinters.org/climate_report/report.pdf).

<sup>37</sup> *Id.*

meteorological events.<sup>38</sup> The poll showed strong belief in climate change across all regions of the state—NYC (75%-19%), suburbs (56%-37%) and upstate (61%-36%).<sup>39</sup>

A more recent survey-based modeling estimate of public opinion predicts even stronger belief among New Yorkers that climate change is occurring. According to a joint project led by Yale University and George Mason University, the *Climate Change in the American Mind* project (the “Yale-GMU Poll Estimates”), 72% of New Yorkers believe that “global warming is happening,” compared to 11% that disagreed.<sup>40</sup> New York’s figure was higher than the national estimate of 63% for the same question. By 54%-32% the Yale-GMU Poll Estimates predict New Yorkers agree that “global warming is caused mostly by human activities.”<sup>41</sup> By identical margins of 80%-17% the Yale-GMU Poll Estimates point to support in New York for funding research into renewable energy and regulating CO<sub>2</sub> as a pollutant.<sup>42</sup>

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<sup>38</sup> Siena Research Institute poll, released December 3, 2012. Accessed at [www2.siena.edu/uploadedfiles/home/sri/SNY%20December%203%202012%20Poll%20Release%20--%20FINAL.pdf](http://www2.siena.edu/uploadedfiles/home/sri/SNY%20December%203%202012%20Poll%20Release%20--%20FINAL.pdf).

<sup>39</sup> *Id.* at crosstabs question 9.

<sup>40</sup> Project on Climate Change Communication. Accessed at <http://environment.yale.edu/poe/v2014/>. These survey-based extrapolations also contain county-level and congressional district level predictions.

<sup>41</sup> *Id.*

<sup>42</sup> *Id.*



## ENERGY CROSSROADS: THE ROOT CAUSE OF CLIMATE CHANGE: USING FOSSIL FUELS AS AN ENERGY SOURCE

“The primary cause of global warming is human activity, most significantly the burning of fossil fuels to drive cars, generate electricity, and operate our homes and businesses.”<sup>43</sup>

Climate scientists overwhelmingly agree that planetary warming is primarily the result of the release of greenhouse gases,<sup>44</sup> predominantly carbon dioxide,<sup>45</sup> from the life cycle of fossil fuels used to generate the energy that supplies electric for our lights, charges our smart phones, powers our motor vehicles and turns the machinery of 21<sup>st</sup> Century commerce.

New York’s inventory of 2011 greenhouse gas emissions identifies fuel combustion as the prime source of heat trapping gases in the state, contributing 85.7% of the total, with most of it in the form of CO<sub>2</sub>.<sup>46</sup> Of the total greenhouse gas emissions, electricity generation contributed 15.77%; residential sources 14.82%; commercial 11.46%; and industrial 5.45%. Transportation—mobile sources—was the largest contributor at 33.9%.<sup>47</sup>

CO<sub>2</sub> dwarfs other greenhouse gases emitted in New York, accounting for 86.5% of greenhouse gas emissions in 2011.<sup>48</sup> Forty percent of CO<sub>2</sub> emissions in 2011 came from fuel combustion for transportation.<sup>49</sup> In the presence of sunlight, chemicals released by the burning of fossil fuels form ozone (O<sub>3</sub>), a greenhouse gas, and problematically elevate the levels of ozone in the lower atmosphere beyond naturally occurring amounts.<sup>50</sup> The ozone precursors nitric oxide (NO), nitrogen dioxide (NO<sub>2</sub>) and volatile organic compounds (“VOCs”) result from fossil fuel combustion from power plants, manufacturing facilities and motor vehicle emissions.

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<sup>43</sup> *Global Warming 101*, Union of Concerned Scientists. Accessed at [www.ucsusa.org/global\\_warming/global\\_warming\\_101#.VW1Y71JnAIA](http://www.ucsusa.org/global_warming/global_warming_101#.VW1Y71JnAIA).

<sup>44</sup> The U.S. Greenhouse Gas Inventory report covers six types of gases: carbon dioxide (CO<sub>2</sub>); methane (CH<sub>4</sub>); nitrous oxide (N<sub>2</sub>O); hydrofluorocarbons (HFCs); perfluorocarbons (PFCs); and sulfur hexafluoride (SF<sub>6</sub>).

<sup>45</sup> “The great preponderance of New York’s GHG emissions came from fuel combustion, with CO<sub>2</sub> constituting the majority of these emissions.” 2014 Draft New York State Energy Plan, Volume 2, p. 10.

<sup>46</sup> New York State Greenhouse Gas Inventory and Forecast: Inventory 1990-2011 and Forecast 2012-2030, Final Report, April 2014 (NYSERDA). Accessed at [www.nyserd.ny.gov/Cleantech-and-Innovation/EA-Reports-and-Studies/Energy-Statistics](http://www.nyserd.ny.gov/Cleantech-and-Innovation/EA-Reports-and-Studies/Energy-Statistics) A portion of the fuel combustion total (4.3%) is attributed to energy imported from outside the state.

<sup>47</sup> *Id.* at S-2.

<sup>48</sup> *Id.* at S-6.

<sup>49</sup> *Id.* at S-7.

<sup>50</sup> Ozone, a key contributor to smog, chemically attacks lung tissue and exposure results in acute and chronic respiratory harm, with children, persons over 65 and individuals with respiratory problems particularly at risk.

## ENERGY CROSSROADS: NEW YORK'S 20<sup>th</sup> CENTURY ELECTRIC INFRASTRUCTURE

“The status quo is just not tenable anymore.”<sup>51</sup>

New York's system of generating and distributing electric remains largely a relic of the 20<sup>th</sup> Century: Big, centralized power plants, with energy predominantly derived from fossil fuels (31% natural gas; petroleum and other fuels 2%; coal-burners 6%) and nuclear plants (26%).<sup>52</sup>

New York spends some \$22 billion each year on electricity across all sectors—residential, commercial and industrial.<sup>53</sup> Yet despite its diverse generation portfolio, New York is not energy self sufficient: 17% of our electricity is imported. That adds up to almost \$7 billion in spending for energy generated out-of-state, representing about 31% of the state's electricity expenditures.<sup>54</sup> The system also is tremendously inefficient: An estimated 9% of generated energy is lost in transmission alone.<sup>55</sup>

The nature of electricity presents challenges that have helped keep New York from moving into the 21<sup>st</sup> Century. Electricity is a “real time” product, *i.e.*, it needs to be consumed almost as soon as it is generated. Further, the grid must constantly remain in near perfect balance between power placed into the system and the amount of energy used at any given moment. As a result, power sources must constantly be matched with anticipated use. Accordingly, a substantial amount of power is kept at the ready to meet peak demands, typically caused by severe weather, like extended winter cold snaps and summer heat waves. Moreover, effective large scale electric storage capacity has not been developed to help address peak and emergency electric demand.

The key parts of the state's traditional power system are: the power plants that generate electricity; transformers that step up voltage;<sup>56</sup> heavy duty transmission lines that move high-voltage energy over long distances; transformers that reduce the voltage of electric power to be suitable for consumer use; distribution lines that bring electric to the customer's door; and the meter that measures the amount of energy flowing into the business/institution/residence to meet our immediate needs.

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<sup>51</sup> Public Service Commission Chair Audrey Zibelman, quoted in *Inside the REV: Audrey Zibelman's Bold Plan to Transform New York's Electricity Market*, David Savenije, *Utility Dive*, November 3, 2014. Accessed at [www.utilitydive.com/news/inside-the-rev-audrey-zibelmans-bold-plan-to-transform-new-yorks-electricity/328700/](http://www.utilitydive.com/news/inside-the-rev-audrey-zibelmans-bold-plan-to-transform-new-yorks-electricity/328700/).

<sup>52</sup> *New York State Energy Plan, 2014 Draft*, Volume 2, Impacts and Considerations, p. 31. Accessed at <http://energyplan.ny.gov/Plans/2014.aspx>. Hydroelectric power made up 17% and wind 2% of the state's power mix, with 15% of energy imported. The figures are from 2011 electricity generation data.

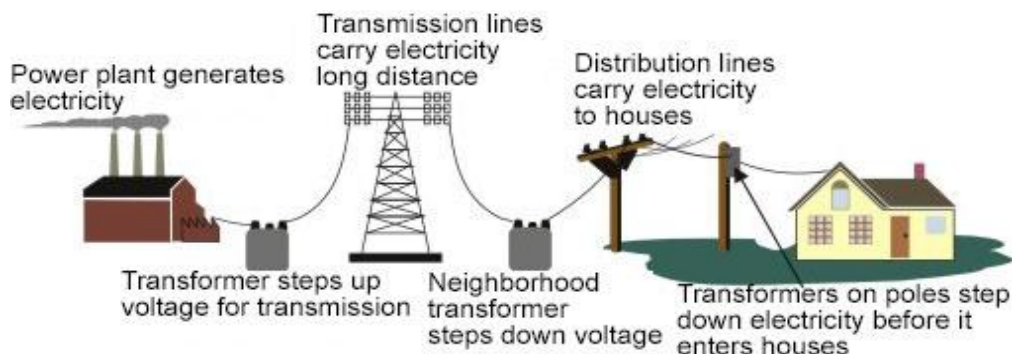
<sup>53</sup> *New York State Energy Plan, 2014 Draft*, Volume 2, End-Use Energy, Table 2, p. 13. Accessed at <http://energyplan.ny.gov/Plans/2014.aspx>.

<sup>54</sup> *Id.*

<sup>55</sup> *New York State Energy Plan, 2014 Draft*, Volume 2, Sources, Figure 13, p. 34. Accessed at <http://energyplan.ny.gov/Plans/2014.aspx>.

<sup>56</sup> Energy is moved at high voltage to help reduce power losses during transmission. In most parts of the state transmission lines are the tall overhead power lines; in New York City underground lines are used.

## ELECTRIC POWER GENERATION, TRANSMISSION AND DISTRIBUTION DIAGRAM<sup>57</sup>



While New York is the nation's eighth largest energy consuming state, New York's per capita energy consumption ranks second lowest among the states, in part because of well-developed mass transportation systems in heavily populated urban areas.<sup>58</sup> New York ranks 12<sup>th</sup> among the states in total net electricity generation at 9,658 MWh.<sup>59</sup> In 2014, capacity to meet peak summer demand stood at 33,666 MW, including reserve sources.<sup>60</sup>

New York set records for peak demand in 2013: An all-time peak of 33,956 MW during the July heat wave; and the winter peak of 25,738 MW during the January "polar vortex."<sup>61</sup>

The state has seen virtually flat annual growth in overall annual electricity demand, increasing at roughly 0.23% over each year of the decade ending in 2014, in part due to savings from efficiency measures.<sup>62</sup> The need for electricity on peak days and peak hours, however, has been growing steadily and is projected to continue.<sup>63</sup>

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<sup>57</sup> *How Electricity is Delivered to Consumers*, U.S. Energy Information Administration. Accessed at [www.eia.gov/energyexplained/index.cfm?page=electricity\\_delivery](http://www.eia.gov/energyexplained/index.cfm?page=electricity_delivery).

<sup>58</sup> New York Quick Facts, U.S. Energy Information Agency (2011 data). Accessed at [www.eia.gov/state/?sid=NY#tabs-4](http://www.eia.gov/state/?sid=NY#tabs-4).

<sup>59</sup> April 2014 data. New York State Profile and Energy Estimates: Rankings: Total Net Electricity Generation April 2014, U.S. Energy Information Agency. MWh is shorthand for megawatt hours, or the equivalent of producing a million watts consistently over the course of one hour.

<sup>60</sup> *Power Trends 2014*, New York Independent System Operator at pp. 13-15. Accessed at [www.nyiso.com/public/webdocs/media\\_room/publications\\_presentations/Power\\_Trends/Power\\_Trends/ptrends\\_2014\\_final\\_jun2014\\_final.pdf](http://www.nyiso.com/public/webdocs/media_room/publications_presentations/Power_Trends/Power_Trends/ptrends_2014_final_jun2014_final.pdf).

<sup>61</sup> REV FGEIS at p. 2-8. Accessed at <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={9E35CB6F-9B7D-4220-9CD4-B254C0FB4551}>.

<sup>62</sup> *Id.* at p. 2-6.

<sup>63</sup> *Power Trends 2014*, New York Independent System Operator at pp. 13-15. Accessed at [www.nyiso.com/public/webdocs/media\\_room/publications\\_presentations/Power\\_Trends/Power\\_Trends/ptrends\\_2014\\_final\\_jun2014\\_final.pdf](http://www.nyiso.com/public/webdocs/media_room/publications_presentations/Power_Trends/Power_Trends/ptrends_2014_final_jun2014_final.pdf)

New York's energy is supplied by some two dozen electric generating companies; about 25% of the state's power needs are met by the New York Power Authority, a state controlled entity that operates 16 generating facilities, including two of the state's hydroelectric sources.<sup>64</sup> Overall, there are some 700 operational electric generating units in the state.<sup>65</sup>

Over the past 15 years, New York has retired coal-burning plants (primarily in New York City) and added generation capacity through gas-fired generators and wind farms. The least expensive energy generation sources, hydroelectric and nuclear, tend to be sited upstate. Some 17% of the state's power needs are generated out of state, with electric coming in from New Jersey, Connecticut, and Ontario and Quebec Canada.<sup>66</sup> According to the New York State Energy Research and Development Authority ("NYSERDA"), in 2012 New Yorkers paid \$6.8 billion for electric generated outside the state.<sup>67</sup>

New York is one of the few states that functions as a single integrated electric marketplace.<sup>68</sup> Yet it is in reality a series of coordinated and connected regional systems run by utilities with power often traveling significant distances from the generation source to the customer. Electricity is transmitted by six investor-owned utilities; the Long Island Power Authority ("LIPA") covering Nassau and Suffolk Counties; and the New York Power Authority.<sup>69</sup>

New York has more than 11,000 miles of overhead and underground electric transmission lines.<sup>70</sup> More than 80% of the state's high voltage transmission lines first went into service before 1980. The age and the need to travel long distances between generation and end use contributes to New York's leakage of as much as 9% of generated power.<sup>71</sup> (See graphic below for a depiction of how energy is lost between generation and use.)

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<sup>64</sup> REV FGEIS at p. 2-13. Accessed at

<http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={9E35CB6F-9B7D-4220-9CD4-B254C0FB4551}>.

<sup>65</sup> *Id.*

<sup>66</sup> NYISO 2014 Load and Capacity report. CITE. Four primary interfaces connect New York to adjacent markets; New York City and Long Island have five direct connections to lines from New England and New Jersey. However, almost 60% of imported electricity during peak period comes from hydropower generated in Quebec. Draft Energy Plan, p. 2-22.

<sup>67</sup> New York State Energy Plan, Volume 2, End-Use Energy, p. 13, Table 2. New York State Energy Planning Board (2014 Draft). Accessed at <http://energyplan.ny.gov/Plans/2014.aspx>.

<sup>68</sup> The U.S. Energy Information Administration has an interactive map where you can check for the locations and type of power generating facilities in your area. Access this information at [www.eia.gov/state/maps.cfm](http://www.eia.gov/state/maps.cfm).

<sup>69</sup> NYISO 2014 Load & Capacity "Gold Book," April 2014, p.77 *et seq.* Accessed at [www.nyiso.com/public/webdocs/markets\\_operations/services/planning/Documents\\_and\\_Resources/Planning\\_Data\\_and\\_Reference\\_Docs/Data\\_and\\_Reference\\_Docs/2014\\_GoldBook\\_Final.pdf](http://www.nyiso.com/public/webdocs/markets_operations/services/planning/Documents_and_Resources/Planning_Data_and_Reference_Docs/Data_and_Reference_Docs/2014_GoldBook_Final.pdf).

<sup>70</sup> NYISO 2014 Load & Capacity "Gold Book," April 2014, p. 113. Accessed at

[www.nyiso.com/public/webdocs/markets\\_operations/services/planning/Documents\\_and\\_Resources/Planning\\_Data\\_and\\_Reference\\_Docs/Data\\_and\\_Reference\\_Docs/2014\\_GoldBook\\_Final.pdf](http://www.nyiso.com/public/webdocs/markets_operations/services/planning/Documents_and_Resources/Planning_Data_and_Reference_Docs/Data_and_Reference_Docs/2014_GoldBook_Final.pdf).

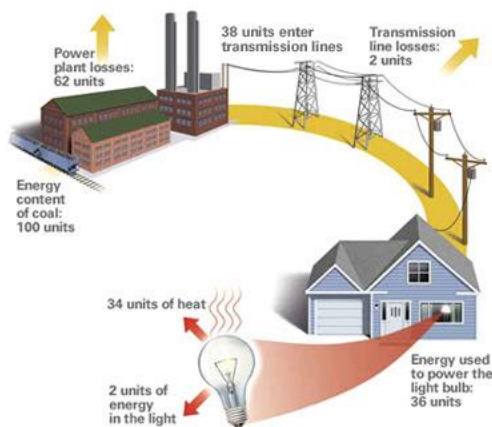
<sup>71</sup> *New York State Energy Plan, 2014 Draft*, Volume 2, Sources, Figure 13, p. 34. Accessed at <http://energyplan.ny.gov/Plans/2014.aspx>.

Many of the state’s power plants similarly have been in service a long time and are in need of substantial overhaul, replacement or mothballing.<sup>72</sup> Nearly 60% of the generating capacity in the state is at least 30 years old, with New York’s hydropower facilities’ average age over 50 years old.<sup>73</sup>

The state’s aging infrastructure has difficulty transferring electricity over physically limited lines—referred to as “congestion”—causing bottlenecks during peak periods and when there are line disruptions.<sup>74</sup> The two key problem areas for the state are from the Mohawk Valley through the Capital District to the lower Hudson Valley; and the connection between Con Edison’s northern service area to Long Island.<sup>75</sup> This creates difficulty in transmitting electric generated at upstate hydroelectric and wind sites to downstate areas.

New York utilities pumped \$17 billion into infrastructure over the past decade.<sup>76</sup> According to the Public Service Commission, New York will need to spend \$30 billion over the next decade to maintain the status quo—not including costs for Long Island and New York Power Authority services areas.<sup>77</sup> At least some of these costs could be avoided or deferred if the benefits of REV are realized.<sup>78</sup>

### ENERGY LOSSES IN 20<sup>th</sup> CENTURY ELECTRIC SYSTEM<sup>79</sup>



<sup>72</sup> REV FGEIS at p. 2-17

<sup>73</sup> *Id.*

<sup>74</sup> When this occurs, more expensive—and often more environmentally damaging—local sources are used to meet power needs. Local distributed energy resources (“DER”) is one way to address this problem without building a new generation of power plants.

<sup>75</sup> *New York State Energy Plan, 2014 Draft*, Volume 2, p. 36. Accessed at <http://energyplan.ny.gov/Plans/2014.aspx>.

<sup>76</sup> *Utilities’ Profit Recipe: Spend More*, Rebecca Smith, *The Wall Street Journal*, April 20, 2015. Accessed at [www.wsj.com/articles/utilities-profit-recipe-spend-more-1429567463](http://www.wsj.com/articles/utilities-profit-recipe-spend-more-1429567463).

<sup>77</sup> REV FGEIS at p. 1-4.

<sup>78</sup> *Id.* at p. 1-20, Exhibit 1-2, Summary of Potential Benefits for the REV Program.

<sup>79</sup> National Academy of Sciences, *Energy Sources and Uses*. Accessed at [www.nap.edu/reports/energy/sources.html](http://www.nap.edu/reports/energy/sources.html).

New York's requirements that there be reliable service and sufficient energy to meet anticipated demand has resulted in a system that for the vast majority of the time is inefficient. The state maintains significantly more capacity available than it uses at any given moment. On average 60% of capacity is in use, with the rest of the energy in reserve to meet peak needs or be at the ready in the event of system problems warranting dispatch to address local demand.<sup>80</sup>

New York's electricity market historically was dominated by monopoly utility companies that controlled both the generation of power and the distribution of energy to businesses, institutional users and residential customers. The utilities' investors profited by receiving a guaranteed rate of return over their investment as set by the state. This created an incentive to invest capital in the system, but did not promote efficiency or demand reduction.

Encouraged by changes at the federal level<sup>81</sup> and using its regulatory authority, in the 1990s the Public Service Commission deregulated the bulk power production marketplace, requiring energy generators to separate from electric delivery. The justification was that spurring competition among power producers and introducing third-party businesses to sell energy-related services would result in lower prices for consumers. Six investor-owned utilities continued to own, operate and be responsible for maintenance for most of the state's electric transmission system.<sup>82</sup>

Under the deregulated marketplace, while there's some evidence this resulted in lower energy prices for large users, residential and small business customers saw their electric bills rise and the new class of energy service companies, or "ESCOs," developed a notorious reputation for being deceptive about potential cost savings and under-delivering on their promises.

A non-profit entity, the New York Independent System Operator ("NYISO"), was created in 1999 to coordinate and supervise the then newly competitively bid \$7.5 billion annual power sales marketplace created after the Public Service Commission deregulated the energy production markets in New York.<sup>83</sup> NYISO also conducts long range energy planning for the system it oversees, monitors reliability of 11,000 miles of high voltage transmission lines and coordinates the dispatch of energy from hundreds of generators.<sup>84</sup>

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<sup>80</sup> *N.Y. Energy Czar Sheds More Light on 'Energy 2.0,'* Colin Sullivan, *E & E*, May 23, 2014. Accessed at [www.eenews.net/stories/1060000105](http://www.eenews.net/stories/1060000105).

<sup>81</sup> In 1996 the Federal Energy Regulatory Commission ("FERC") issued order 888, which promoted competition among power producers by opening access to transmission and distribution lines that were controlled by monopoly utilities and allowing those utilities to be compensated for the use of their capital investments.

<sup>82</sup> The six investor-owned utilities are: Central Hudson Gas & Electric Corporation; Consolidated Edison Company of New York; New York State Electric and Gas Corporation; National Grid; Orange & Rockland Utilities; Rochester Gas and Electric Corporation. The two state-created authorities are: New York Power Authority and Long Island Power Authority.

<sup>83</sup> *About NYISO*, New York Independent System Operator. Accessed at [www.nyiso.com/public/about\\_nyiso/nyisoatag glance/index.jsp](http://www.nyiso.com/public/about_nyiso/nyisoatag glance/index.jsp).

<sup>84</sup> *Id.*

New York's deregulated energy generation marketplace uses a "market-clearing price" mechanism to set the wholesale price of electricity for a local area under a "Locational-Based Marginal Pricing" commodity system.<sup>85</sup> As a result of the state's deregulation of power production, over the past two decades New York has established a series of efficiency, renewable energy programs and smart-grid initiatives that helped lay the groundwork to build upon in moving to a sustainable system.<sup>86</sup>

Clearly, New Yorkers are struggling to pay their utility bills. After a number of groups, including AARP, Consumers Union, Public Utility Law Project and NYPIRG raised concerns over affordability issues, the PSC initiated an industry-wide review of the ability to pay electric and gas bills in the state. In launching the investigation, the PSC noted:

"As of November 30, 2014, over 1.2 million residential electric and gas customers were more than 60 days in arrears, carrying more than \$756 million owed to utilities, nearly 277,000 residential electric and gas customers statewide had service disconnected for non-payment during 2014."<sup>87</sup>

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<sup>85</sup> This pricing system sets the wholesale price uniformly paid to all energy producers in an area based on the price going up high enough to prompt the last needed energy supplier to contribute electric to the grid, with consideration for local and other factors. *See* New York State 2014 Draft Energy Plan, NYSERDA, Vol. 2, Sources, pp. 44-45.

<sup>86</sup> Federal laws also created an impetus for moving towards renewable and distributed energy resources. *See, e.g.*, the Energy Security Act and EPA's Clean Power Plan requirements.

<sup>87</sup> Order Instituting Proceeding, Proceeding on Motion of the Commission to Examine Programs to Address Affordability for Low Income Utility Customers, January 9, 2015 at pp. 2-3. Accessed at <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={B9477FFE-87E4-427F-937A-12E490920EEB}>.

## ENERGY CROSSROADS: NEW YORK'S CURRENT ENERGY EFFICIENCY AND ALTERNATIVE ENERGY PROGRAMS

“Waste is worse than loss. The time is coming when every person who lays claim to ability will keep the question of waste before him constantly. The scope of thrift is limitless.”<sup>88</sup>

New York has developed a number of programs to assist low income utility customers, promote energy efficiency, reduce greenhouse gas emissions and boost renewable energy.<sup>89</sup> Utility customers pay \$925 million each year for these programs, which appear on bills as the System Benefits Charge (“SBC”) and/or Renewable Portfolio Standard (sometimes denoted on the bill as “SBC/RPS”).<sup>90</sup> New York invests \$360 million in energy efficiency programs and measures through utilities and NYSERDA each year.<sup>91</sup> Energy efficiency is not only good for public health and the environment, it’s also a smart investment: Every \$1 spent on energy efficiency generates \$3 in returns—not factoring in the public health benefits.<sup>92</sup>

Here’s a look at New York’s major energy efficiency, pollution prevention and renewable energy programs.

### System Benefits Charge

Since 1998, in recognition that utilities would have little incentive to push efficiency and use reduction in a competitive market and in an effort to protect low-income consumers in a deregulated marketplace, the Public Service Commission established the System Benefits Charge (“SBC”). The SBC monies were to be directed at clean energy programs, including energy efficiency, public outreach and education, as well as to conduct research into promising

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<sup>88</sup> Thomas A. Edison. [www.brainyquote.com/quotes/quotes/t/thomasaed149058.html#TjekEQ4aPi3xBJkM.99](http://www.brainyquote.com/quotes/quotes/t/thomasaed149058.html#TjekEQ4aPi3xBJkM.99).

<sup>89</sup> New York Energy Law section 1-103 defines “renewable energy resources” to include sources “capable of being continuously restored by natural or other means or are so large as to be useable for centuries without significant depletion and include but are not limited to solar, wind, plant and forest products, wastes, tidal, hydro, geothermal, deuterium, and hydrogen.

<sup>90</sup> *PSC Opens Investigation into Affordability of Gas and Electric Bills, New York’s Utility Project*, January 30, 2015. Accessed at <http://utilityproject.org/2015/01/30/psc-opens-investigation-into-affordability-of-gas-and-electric-bills/>.

<sup>91</sup> *REV-ing it up in New York: A Look Under the Hood of the Reforming the Energy Vision Track 1 Order*, Jackson Morris, Natural Resources Defense Council, Switchboard, March 9, 2015. Accessed at <http://switchboard.nrdc.org/blogs/jmorris/rev-ing-it-up-in-new-york-a-lo.html>.

<sup>92</sup> *Performance Metrics 2013, Innovative Solutions for New York State’s Energy Future*, NYSERDA. Accessed at [www.nyserda.ny.gov/-/media/Files/EDPPP/Tracking-Progress/Innovative-Solutions-for-New-York-Energy-Future.pdf](http://www.nyserda.ny.gov/-/media/Files/EDPPP/Tracking-Progress/Innovative-Solutions-for-New-York-Energy-Future.pdf). Of course energy efficiency yields benefits in addition to energy savings, including greater productivity, improved reliability and extended equipment life.



technologies in this area. The SBC is funded by ratepayers and appears as a separate line on most customers' electric bills.<sup>93</sup> The SBC funds activities by the utilities as well as NYSERDA programs.<sup>94</sup>

The Public Service Commission periodically renewed the SBC, with its most recent five-year renewal (2011-2016) annual budget of \$98.8 million.<sup>95</sup> From 1998 to 2016, the SBC will have raised \$2.36 billion for its programs.<sup>96</sup>

The SBC has been a primary funding source for the Technology & Market Development Portfolio for efficiency and renewable programs. The SBC is also used to fund the Energy Efficiency Portfolio Standard, described below.

### **Renewable Portfolio Standard**

In 2004, the Public Service Commission adopted a Renewable Portfolio Standard ("RPS"), initially setting a target of 25% renewable energy consumption in the state by 2013. In 2010, the Public Service Commission increased this target to 30% and extended the RPS program conclusion date until the end of 2015.<sup>97</sup> The RPS has two tiers: The Main Tier is focused on larger utility scale renewable energy; and the Customer-Sited Tier is for renewable options that serve individual customers at their home or business.<sup>98</sup> The RPS program appeared to be significantly behind its target goals, with the combined large-scale utility program and consumer-sited approaches reaching 56% of the final 2015 goal.<sup>99</sup>

### **Regional Greenhouse Gas Initiative**

Since 2005, New York also has participated in the Regional Greenhouse Gas Initiative ("RGGI"), with eight other states in the Northeast and Mid-Atlantic regions. RGGI participants set a CO<sub>2</sub> emissions annual tonnage cap for electric generating sources in their jurisdictions. The program requires energy plants to purchase pollution allowance vouchers through a quarterly public auction or from credit holders equal to the amounts of greenhouse gases they anticipate

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<sup>93</sup> The SBC appears on the bills of customers served by the investor-owned utilities. LIPA and NYPA customers are assessed charges to underwrite similar programs in those service areas.

<sup>94</sup> Program Info, U.S. Department of Energy. Accessed at [www.energy.gov/savings/system-benefits-charge-0](http://www.energy.gov/savings/system-benefits-charge-0).

<sup>95</sup> System Benefits Charge, New York State Department of Public Service. See, <http://www3.dps.ny.gov/W/PSCWeb.nsf/All/58290EDB9AE5A89085257687006F38D1?OpenDocument>

<sup>96</sup> Calculation derived from U.S. DOE aggregate figures.

<sup>97</sup> REV FGEIS p. 1-12.

<sup>98</sup> *New York State Renewable Portfolio Standard 2014 Final Annual Performance Report*, March 2015, p. 1.

Accessed at: [www.nyserda.ny.gov/About/Publications/Program-Planning-Status-and-Evaluation-Reports/Renewable-Portfolio-Standard-Reports](http://www.nyserda.ny.gov/About/Publications/Program-Planning-Status-and-Evaluation-Reports/Renewable-Portfolio-Standard-Reports).

<sup>99</sup> *New York State Renewable Portfolio Standard 2014 Final Annual Performance Report*, March 2015, p. 1.

Accessed at: [www.nyserda.ny.gov/About/Publications/Program-Planning-Status-and-Evaluation-Reports/Renewable-Portfolio-Standard-Reports](http://www.nyserda.ny.gov/About/Publications/Program-Planning-Status-and-Evaluation-Reports/Renewable-Portfolio-Standard-Reports).

emitting. The auction proceeds, some \$681 million since the first auction in 2008, fund energy audits, energy efficiency measures and promotion of cleaner energy sources.<sup>100</sup>

### **Energy Efficiency Portfolio Standard**

In 2008, the Public Service Commission established an energy efficiency portfolio standard (“EEPS”) with the goal of reducing state energy consumption by 15% over levels projected for 2015—equivalent to reducing electric use by 26,999 gigawatt hours (GWh). EEPS is funded by ratepayers through the System Benefits Charge. Under the EEPS program, the six regional investor-owned utilities and larger gas utilities are required to submit energy efficiency proposals to the Commission.<sup>101</sup> In 2011, the PSC extended EEPS for 5 ½ years and split the funding between EEPS and a new Technology and Market Development Portfolio, with the new program focused on building statewide infrastructure to deliver clean energy to support EEPs goals.

Similar to the RPS program, the EEPS program was lagging behind its target at the end of 2013: Electric programs were at 55% and gas programs at 59% of their 2015 goals.<sup>102</sup> In recognition that the transition from the current market to the REV vision will take time, the PSC will require utilities to at least meet their existing EEPS targets.

### **The NY Green Bank**

The NY Green Bank is a division of NYSERDA established to leverage state financial support for promising clean energy and efficiency projects to spur and complement private sector investment. The NY Green Bank was initially funded with \$165 million in untapped ratepayer funds and \$45 million from monies raised from the auction of pollution credits under the Regional Greenhouse Gas Initiative (“RGGI”) program.<sup>103</sup> The aim is for the NY Green Bank to reach \$1 billion from these and similar sources.

The state has a number of other initiatives and programs that support and dovetail with REV’s policy goals, including the NY Sun Initiative to boost the amount of solar energy generated; Green Jobs; and the Technology and Market Development. *See* the REV Proceedings Guide for a description of some of these programs.

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<sup>100</sup> REV FGEIS p. 1-13.

<sup>101</sup> Energy Efficiency Portfolio Standard, New York State Department of Public Service. *See* [www3.dps.ny.gov/W/PSCWeb.nsf/All/06F2FEE55575BD8A852576E4006F9AF7?OpenDocument](http://www3.dps.ny.gov/W/PSCWeb.nsf/All/06F2FEE55575BD8A852576E4006F9AF7?OpenDocument).

<sup>102</sup> REV FGEIS p. 1-13.

<sup>103</sup> *NY Green Bank Frequently Asked Questions*. Accessed at <http://www.governor.ny.gov/sites/governor.ny.gov/files/archive/assets/documents/NY-Green-Bank-FAQ.PDF>. Also see the NY Green Bank website at <http://greenbank.ny.gov/>.

## ENERGY CROSSROADS: REV, A NEW DIRECTION

“The good news about global warming is that it is cheaper to fix than to ignore.”<sup>104</sup>

REV did not come out of the blue: Its roots and formative forces have been mounting and developing for decades.<sup>105</sup> Indeed, the electric industry has seen the trends coming for some time.<sup>106</sup> The disruptive technologies are not new, and other states have begun to move in similar directions. Moreover, federal laws, including the Clean Power Plan, are helping drive the nation towards cleaner, renewable energy and a more resilient, flexible energy system.<sup>107</sup>

That said, what makes REV such a bold step is the *coordinated nature* of the multiple proceedings, the *array* of interlocking programs and the *scope* of the new paradigm it envisions.<sup>108</sup> Upon learning of REV, an industry observer remarked that the net metering, solar and energy storage efforts in other states were “small potatoes compared to the market transformation for electric distribution utilities that New York just announced.”<sup>109</sup>

Without doubt the 20<sup>th</sup> Century centralized power paradigm is crumbling under the cost and weight of its aging system. In addition, pressure for a fundamental restructuring comes from the increasingly affordable localized power options; new “smart grid” communications and management technologies; the rise of energy producer-consumers creating a two-way marketplace; the mounting pressures to systemically address air quality, climate change and the U.S.’s profligate energy use; and the financial opportunities and economic imperatives of a decentralized energy system.

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<sup>104</sup> Amory B. Lovins, *More Profit with Less Carbon*, *Scientific American*, September 2005, p. 81. Accessed at [www.scientificamerican.com/media/pdf/Lovinsforweb.pdf](http://www.scientificamerican.com/media/pdf/Lovinsforweb.pdf).

<sup>105</sup> See, e.g., *Brittle Power*, Amory Lovins and L. Hunter Lovins (1982), described at [www.rmi.org/Knowledge-Center/Library/S82-03\\_BrittlePowerEnergyStrategy](http://www.rmi.org/Knowledge-Center/Library/S82-03_BrittlePowerEnergyStrategy). Noteworthy: the book was originally commissioned as a Pentagon study on energy and national security issues and reissued after the 9/11 attacks.

<sup>106</sup> The research arm of the major U.S. utilities, the Edison Institute, aptly named its 2013 report on industry trends *Disruptive Challenges*. The report recaps the array of forces advancing change in the old energy model. Accessed at [www.eei.org/ourissues/finance/documents/disruptivechallenges.pdf](http://www.eei.org/ourissues/finance/documents/disruptivechallenges.pdf). Also see *Concepts to Enable Advancement of Distributed Energy Resources: An EPRI White Paper on DER*, Electric Power Research Institute, February 2010. Accessed at <http://old.caba.org/documents/IS/IS-2010-04.pdf>.

<sup>107</sup> In addition to the Clean Power Plan creating pressure to reduce carbon emissions, the federal government also provided matching grants to the NYISO and Con Edison for grid improvements through the American Recovery and Reinvestment Act. See <http://energy.gov/sites/prod/files/SGIG%20Awards%20%20By%20State%202011%201%2015.pdf>.

<sup>108</sup> As mentioned, because New York State is a unified, contained marketplace and because the Public Service Commission has previously restructured energy generation through use of its administrative powers—and survived court challenge—New York is extraordinarily well positioned to proceed.

<sup>109</sup> *New York Launches Major Regulatory Reform for Utilities*, Katherine Tweed, *Greentech Media*, April 28, 2014. Accessed at [www.greentechmedia.com/articles/read/new-york-launches-major-regulatory-reform-for-utilities](http://www.greentechmedia.com/articles/read/new-york-launches-major-regulatory-reform-for-utilities).

## **Beginnings of the REV proceedings**

The December 26, 2013 announcement in the EEPS proceeding order directing that the Public Service Commission staff develop a new regulatory model to implement “broad policy based outcomes” that put “economic energy efficiency and clean technologies” at the center of the state’s energy policy signaled the commencement of a reconsideration of the basic assumptions underpinning the state’s energy policies and regulations and foreshadowed upcoming actions.<sup>110</sup>

In the EEPS order the Commission directed the Public Service Commission staff to make a series of recommendations in early 2014 to begin to shape the REV process.<sup>111</sup>

## **REV begins to take shape—formal proceedings begin**

The 85 page April 24, 2014 Department of Public Service Staff Report and Proposal sets out the framework for a fundamental restructuring of the state’s electric energy production, delivery and regulatory system:

“This report proposes a platform to transform New York’s electric industry, both regulated and non-regulated participants, with the objective of creating market based, sustainable products and services that drive an increasingly efficient, clean, reliable, and consumer-oriented industry. One key outcome of this transformation is to address the Commission’s stated objective to make energy efficiency and other distributed resources a primary tool in the planning and operation of an interconnected modernized grid.”<sup>112</sup>

The next day, April 25, 2014, the Public Service Commission issued an order formally initiating the REV proceeding and setting out six objectives:

- Enhanced customer knowledge and tools that will support effective management of the total energy bill;
- Market animation and leverage of customer contributions;
- System wide efficiency;
- Fuel and resource diversity;

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<sup>110</sup> Order Approving EEPS Changes, Public Service Commission, Case 07-M-0548, December 26, 2013.

<sup>111</sup> The Public Service Commission does not have oversight over the Long Island Power Authority or the New York Power Authority. However, “in conjunction with the independent but related actions” of these entities and others, REV’s reforms will be implemented across the state. Track One Order at 3.

<sup>112</sup> Reforming the Energy Vision, NYS Department of Public Service Staff Report and Proposal, Case 14-M-0101, April 24, 2014 at p. 2. Accessed at [www3.dps.ny.gov/W/PSCWeb.nsf/96f0fec0b45a3c6485257688006a701a/26be8a93967e604785257cc40066b91a/\\$FILE/ATTK0J3L.pdf/Reforming%20The%20Energy%20Vision%20%28REV%29%20REPORT%204.25.%2014.pdf](http://www3.dps.ny.gov/W/PSCWeb.nsf/96f0fec0b45a3c6485257688006a701a/26be8a93967e604785257cc40066b91a/$FILE/ATTK0J3L.pdf/Reforming%20The%20Energy%20Vision%20%28REV%29%20REPORT%204.25.%2014.pdf).

- System reliability and resiliency;<sup>113</sup> and
- Reduction of carbon emissions.<sup>114</sup>

This set in motion a public process that began in earnest in May 2015 with the Public Service Commission convening scores of groups and hundreds of participants for a preliminary meeting in Albany.<sup>115</sup>

The participants initially divided into various work groups as part of a “Track One” proceeding. Track One issues were related to developing the framework of what a new energy grid would look like, sketching out the roles that would be played in the new marketplace and identifying the key issues to be addressed to make the new framework functional. The work groups were guided by PSC administrative law judges and staff and tasked with providing information, data and analyses on the various REV issues to inform the PSC staff in making recommendations to the Commission. Armed with the various party submissions, the staff issued a “Straw Proposal” in August 2014 that was the basis for comments from interested parties.<sup>116</sup>

On February 26, 2015, the Commission issued a 132-page order on threshold REV issues (the “Track One Order”), adopting much of the Staff Report in laying out the vision for an overhaul of the state’s electric energy production, delivery and regulatory system and the Commission’s rationale for its decisions and choices.

In issuing this groundbreaking order, the Commission stated:

The Commission and policymakers can no longer afford to think of energy efficiency and distributed clean energy resources as peripheral elements of the electric system that require continuous government support. Rather, the time has come to manage the capabilities of these customer based technologies as a core source of value to electric customers.<sup>117</sup>

In so doing, the Commission announced its intentions to remake the electricity marketplace by aligning the financial interests of utilities, distributed energy resource providers and renewable energy and efficiency innovators with the state’s broad public policy goals on energy issues.

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<sup>113</sup> Throughout the REV discussion, the Public Service Commission and its staff discuss system reliability both in terms of the electricity demands of a digital society and marketplace for a reliable, consistent source of electricity, as well as the resiliency and security (in a physical sense and in terms of cyber threats).

<sup>114</sup> Order Instituting Proceeding, Case 14-m-0101, Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, April 24, 2014.

<sup>115</sup> As discussed, the REV proceeding is properly thought of as a number of related proceedings and activities playing out in parallel and more or less coordinated fashion, including rate cases before the Public Service Commission. See the REV Proceedings Guide appendix for a description of some of the important proceedings.

<sup>116</sup> See: <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={CA26764A-09C8-46BF-9CF6-F5215F63EF62}>.

<sup>117</sup> *Id.* at 2.

## The Track One Order New Paradigm

The Track One Order lays out the basic structure for a re-imagined state energy system; establishes the prospective roles for utilities, energy service companies and consumers; and outlines the issues and tasks to begin to resolve the technical, marketplace and regulatory challenges in Track Two necessary to realize the REV vision.

While many issues were touched upon, here's a summary of how some of the major issues were addressed in the Track One Order:

- **Distributed Energy Resources the Key to REV.** In moving away from the 20<sup>th</sup> Century model, REV places local distributed energy resources (“DER”) at the center of planning, managing and operating the new electric system. DER includes local and customer-based energy sources, like solar, storage technologies, efficiency measures and demand-reduction programs. DER can respond more quickly to local energy needs and help reduce the amount of excess generating capacity needed to meet infrequent peak demand. DER also should help reduce dependence on any particular fuel, *e.g.*, natural gas, which creates vulnerability with regard to availability and price. The dollar value for DER, including efficiency measures and demand reduction (*e.g.*, choosing not to use electric during peak times) will be monetized in this new marketplace.<sup>118</sup> This also includes ways for consumers to reduce or shift their energy uses (like shifting use to off-peak times, automatically cycling off air conditioners and water heaters) by giving them timely information about pricing and also promoting efficiency services and on-site renewables like home solar installations.

- **Utilities to Coordinate and Run the Local “Distributed Energy” Grid.** The six major regional utilities (as the “Distributed System Platform Providers” or “DSPPs”) will play the key role of integrating and coordinating the new electric grid system to incorporate participation by various types of DER.<sup>119</sup> The DSPPs will be regulated by the Public Service Commission to ensure they run a transparent and fair marketplace; establish standards to protect consumers; and ensure system reliability. DSPPs will be responsible for submitting multi-year plans for capital and operating expenditures to the PSC, subject to public comment and approval.<sup>120</sup> The DSPPs will coordinate their activities with the NYISO, which runs the state’s bulk power producer wholesale marketplace.<sup>121</sup>

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<sup>118</sup> Note that DSPPs “will not participate as owners of DER where a market participant can and will provide these services.” Track One Order at p. 52. “As a general rule, utility ownership of DER will not be allowed unless markets have had an opportunity to provide a serve and have failed to do so in a cost-effective basis.” Track One Order at p. 68.

<sup>119</sup> As mentioned, LIPA and NYPA will adopt parallel reforms for consistency across the statewide grid.

<sup>120</sup> Track One Order p. 32.

<sup>121</sup> In key respects, the utilities acting as DSPPs will play the role in the retail electricity distribution marketplace that NYISO plays in the wholesale energy production and transmission marketplace.

• **Energy Efficiency Programs Re-imagined.** Significantly, REV identifies efficiency as a reliable, measurable, verifiable energy *resource*, and it is given a central role in the state’s energy future. The state’s Energy Efficiency Portfolio and Renewable Portfolio Standard (“RPS”)—paid for through the Systems Benefit Charge included on ratepayers’ bills—will soon expire. REV proposes to shift these programs to utilities as DSPPs design plans to achieve their goals and at least meet current targets. The costs would continue to be passed on to ratepayers, but instead of being a “surcharge” they would be part of the rate as an operating expense.<sup>122</sup> The EEPS focus will shift from efficient products to emphasize efficiency measures. The Commission, in a separate Clean Energy Fund (“CEF”) proceeding, ordered that the CEF collect and allocate a total of \$5 billion from 2016-2025.<sup>123</sup>

• **Promoting Microgrids.** Microgrids are interconnected distributed energy resources that can operate either independently of or connected to the larger grid. They’re important for adding renewable energy to the system and for their ability to provide resilience in response to disruptions to main grid service. The PSC’s order lays out some framework principles for microgrid policy, including protecting consumers and providing “reliable power at just and reasonable rates.” The PSC invited further comment on microgrid issues with staff to develop a more detailed proposal for public comment.<sup>124</sup>

• **Large-scale Renewables.** These resources, such as utility-sized solar facilities and wind farms, require more capital and take more planning than on-site facilities. Larger scale renewable projects will be critically important to meeting greenhouse gas emissions reduction goals. Due to the issues and concerns raised about how to approach large-scale renewables, the Track One Order creates a new REV large-scale renewables (“LSR”) track, with PSC staff and NYSDERDA, the state’s energy development authority, to develop an options paper during summer 2015 for public comment.

• **Consumer Choice and Community Aggregation.** By giving customers options and “price signals,” *e.g.*, your electric will cost more during peak times, REV is framed as giving consumers more control over their electric bills. Similarly, Community Choice Aggregation (“CCA”) programs would allow groups of utility customers (likely at the local government level) to bargain collectively for residents’ energy, prioritizing consensus goals for price, energy source, services, *etc.* with interested suppliers. The CCA model has many desirable qualities, including educating and engaging communities in group decisions on energy issues. The Commission, however, identified a number of legal and policy issues related to CCA to be addressed in a separate proceeding.<sup>125</sup>

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<sup>122</sup> Track One Order at p. 73.

<sup>123</sup> Public Service Commission Clean Energy Fund proceeding order, May 8, 2014.

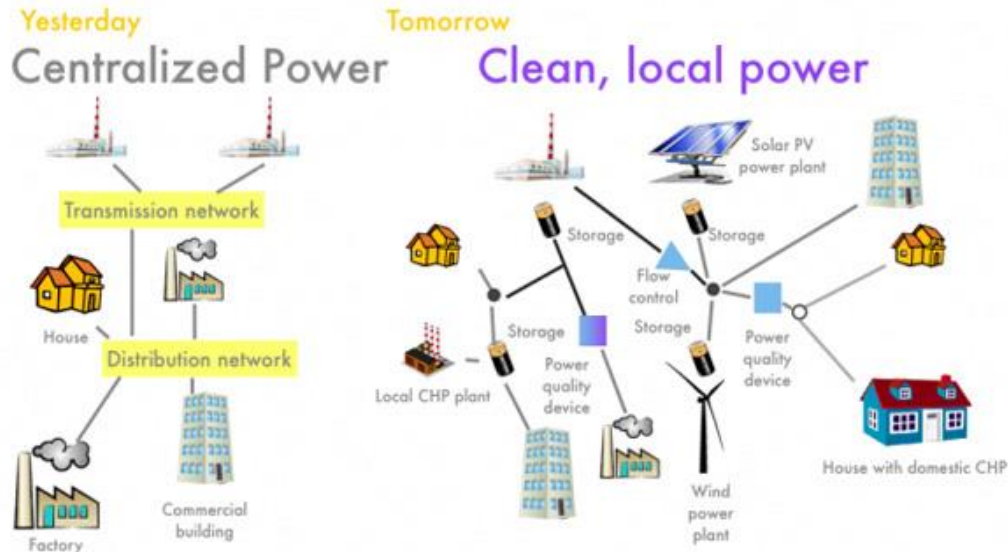
<sup>124</sup> Track One Order at p. 112.

<sup>125</sup> Case 14-M-0224, Proceeding on Motion of the Commission to Enable Community Choice Aggregation Programs.

- **Affordability and Consumer Protections.** REV envisions a marketplace where competition and greater reliance on DER energy reduces greenhouse gases, makes the system more reliable and “reduce[s] costs for all ratepayers.”<sup>126</sup> To ensure “universal access” at fair and affordable rates, the PSC initiated a separate proceeding on affordability for low-income consumers in the context of REV.<sup>127</sup> The Commission also made a number of important decisions, including that DER providers will be subject to consumer protection rules; and microgrid operators will be subject to the consumer protection and shut off rules in the Home Energy Fair Practices Act.<sup>128</sup>

- **Environmental Justice Impacts.** In recognition of the disparate environmental and public health impacts historically borne by low-income communities and communities of color, in 2011 the state required special review of the impacts on these communities as part of proceedings to permit power plants.<sup>129</sup> In the Track One Order, the Commission echoed the siting law in saying it will “require measures to avoid or mitigate potentially harmful emission concentrations from distributed generation or demand response in environmental justice areas.”<sup>130</sup>

### OLD V. NEW ENERGY PARADIGMS<sup>131</sup>



<sup>126</sup> Track One Order at p. 84.

<sup>127</sup> Track One Order at p. 86. See Case 14-M-0565 – Proceeding on Motion of the Commission to Examine Programs to Address Energy Affordability for Low Income Utility Customers, order issued January 9, 2015.

<sup>128</sup> Track One Order at p. 88.

<sup>129</sup> Public Service Law section 163(f). The Legislature mandated “an analysis of “environmental justice issues,” including “an evaluation of significant and adverse disproportionate environmental impacts of the proposed facility, if any” on the community.

<sup>130</sup> Track One Order p. 88.

<sup>131</sup> Institute for Local Self Reliance, *Democratizing the Electricity System* (2011). Accessed at <http://ilsr.org/graphics-from-the-report-democratizing-the-electricity-system/>. Note: “CHP” is combined heat and power facilities.



## REV Track Two Issues

In addition to spinning off several separate proceedings during the REV Track One process, the PSC identified key Track Two issues—this is where the various technology, customer data control and privacy, grid coordination, price and value setting, and accountability, legal and regulatory oversight specifics will get hashed out. In essence, these are the details that must ensure that REV meets the state requirements of providing “safe and adequate service at just and reasonable rates,” while at the same time advancing the state’s environmental, public health and renewable energy goals. These obligations must be met at the same time that REV fosters a robust marketplace that nonetheless places a *priority on energy use reduction* (efficiency) and promotes local clean energy sources.

Clearly, Track Two is where critical decisions will be made that will flesh out the structure laid out in the Track One Order. The Track One Order established the Market Design and Platform Technology (“MDPT”) work groups to play a leading role in the development of the outstanding issues.<sup>132</sup>

Here are six key REV-related Track Two issues to be addressed:

- **Creating “Carrots and “Sticks” to Realize REV.** A key challenge will be creating financial incentives for widespread consumer participation and for utilities to prioritize efficiency programs, right-size demand reduction incentives, and maximize distributed energy resources that in many cases they neither own nor control. In short, consumers will have to see clear benefits, and utilities and other businesses will have to profit without relying on increasing the amount of electric they generate or deliver. Establishing these financial “carrots and sticks” in a marketplace that varies by income, geography, energy needs, housing or business type and technological acumen will be a key thing to watch in Track Two.
- **Eliminating Technology and Regulatory Impediments.** An important set of REV challenges revolves around technology issues. For example, how do you create a platform that encourages robust competition and is open to innovations in the near and longer-range future? The Commission will have to make decisions that allow as many technologies to participate as seems feasible. Similarly, there are regulatory and policy issues that will affect how the new energy system develops, including issues about customer data sharing and privacy; metering issues; and rules for renters organizing to adopt distributed energy. These issues and others will be hashed out in REV Track Two and related proceedings.
- **New Roles for the PSC in the Competitive Marketplace.** With utilities no longer guaranteed a profit and competing for business along with a host of new energy players, the PSC will have to set standards for consumer protection in a new environment and decide how to regulate new

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<sup>132</sup> The MDPT is led by the SmartGrid Consortium, which includes the Public Service Commission, utilities, like Con Ed, technology firms, such as IBM, and the energy think tank the Rocky Mountain Institute, among others. The documents related to REV can be accessed at <http://nyssmartgrid.com/innovation-highlights/rev-proceeding/>.

companies while advancing public policy goals like greenhouse gas emissions reduction, energy efficiency and market transparency. The PSC has signaled it will move to a “performance-based regulation” model, with a greater focus on enforcing prescribed goals. Establishing ambitious goals to reduce carbon emissions and ensuring affordability for low and moderate income consumers will require the Commission to set clear metrics, be nimble enough to adjust if REV isn’t meeting these goals and impose financial sanctions when goals are not achieved. New Yorkers will expect the PSC to be the “sheriff” in this new, uncharted territory.

• **Consolidating the State’s Clean Energy Funding Streams.** As mentioned above, one REV-related initiative is the creation of a Clean Energy Fund.<sup>133</sup> This fund would combine the three current programs for clean energy in New York State—the Energy Efficiency Portfolio, the Systems Benefit Charge, and the Renewable Portfolio Standard—into a single Clean Energy Fund.<sup>134</sup> The Clean Energy Fund would be a ten-year project with approximately \$5 billion in funding. These programs would work to meet the state’s goals to cut carbon emissions over 1990 levels 40% by 2030 and 80% by 2050.<sup>135</sup> The plan is that the CEF would periodically step down its funding and end after 2025. The state’s energy agency NYSERDA has proposed that the Clean Energy Fund focus on clean energy market development, technology and business innovation and support for the NY Green Bank and NY Sun, which seeks to spur solar development in New York.<sup>136</sup> NYSERDA is scheduled to release a revised CEF proposal on June 25, 2015.

• **Transportation and Natural Gas: Two Elephants In the Room.** With its focus on the electric grid, REV only deals tangentially with transportation, the single largest contributor to greenhouse gases. Much more needs to be done to reduce greenhouse gases from trucks and cars. And both REV and the state’s Draft 2014 Energy Plan give natural gas (mostly methane) a central role for the foreseeable future. As the Environmental Protection Agency (“EPA”) notes, “Pound for pound, the comparative impact of CH<sub>4</sub> [methane] on climate change is 25 times greater than CO<sub>2</sub> over a 100-year period”<sup>137</sup> New York must phase out natural gas as a primary energy source to break the natural gas habit and truly lead on climate change.

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<sup>133</sup> Case 14-M-0094, Proceeding on the Motion of the Commission to Consider a Clean Energy Fund.

<sup>134</sup> *New York State Steps Up On Clean Energy--10 years, \$5 billion*, Jackson Morris, NRDC, September 24, 2014. Accessed at [http://switchboard.nrdc.org/blogs/jmorris/new\\_york\\_state\\_steps\\_up\\_on\\_cle.html](http://switchboard.nrdc.org/blogs/jmorris/new_york_state_steps_up_on_cle.html).

<sup>135</sup> *Id.*

<sup>136</sup> See description in REV Final Generic Environmental Impact Statement, p. 1-16.

<sup>137</sup> Overview of Greenhouse Gases, U.S. EPA. Accessed at <http://epa.gov/climatechange/ghgemissions/gases/ch4.html>.

## **ENERGY CROSSROADS: A Call to Action to New Yorkers to Reverse Global Warming and Bring Affordable Energy to Communities Across the State**

The REV proceedings offer a grand vision for a smarter, more reliable and affordable electric grid in New York. But the lessons from the 1990s era restructuring of the wholesale (energy production) market are a cautionary tale: Without the public engaging, making demands and watchdogging the process, its interest may be drowned out by the utilities, energy companies and large users whose interests are in making profit, not in combating climate change and ensuring that electric is affordable.

After reading this *Guide*, set out below are some points to make to the Public Service Commission ("PSC"):

- **Fully Engage the Public in the REV Process.** The Public Service Commission must hold public forums and hearings as it moves in to Track Two and beyond. In order to fully realize the first two foundational goals of the six REV objectives—(1) “enhanced customer knowledge and tools” to manage energy bills and (2) “market animation” to “leverage customer contributions”—there must be public buy-in. Now is the time to lay the groundwork, solicit feedback and refine the REV proposals to increase the prospects that REV will quickly achieve lift off and realize its promise.

- **Set Clear Metrics for Affordability, Energy Efficiency and Renewable Energy.** A looming concern is that REV’s grand ambitions will falter, that market players won’t be held accountable and course corrections will lag. These concerns can be addressed by setting clear, objective, enforceable metrics—with respect to environmental/public health goals as well as consumer affordability—to drive New York to achieve REV’s public policy aims. New York should be ambitious—the objective standard-based goals need to surpass 2015’s baseline achievements and be bold, not timid. New York must establish aggressive but achievable long-term goals for efficiency and renewables, with interim targets and other related metrics.

- 50% renewable energy by 2025;
- 20% of projected demand met by efficiency by 2025; and
- 80% reduction in greenhouse gas emissions by 2050.

- **Produce Annual REV Report Cards.** New Yorkers need a way to measure and understand REV’s progress in meeting its key policy goals—which to a significant extent will reflect public (customer) engagement in the new REV marketplace.<sup>138</sup> The PSC should direct that all the

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<sup>138</sup> The governor has already called for utility scorecards to measure utility performance in storm preparation and response. See *Governor Cuomo Unveils ‘Scorecard’ to Measure Utilities’ Performance*, April 18, 2013. Accessed at [www.governor.ny.gov/news/governor-cuomo-unveils-scorecard-measure-utilities-performance](http://www.governor.ny.gov/news/governor-cuomo-unveils-scorecard-measure-utilities-performance).

players acting as DSPPs report their progress in meeting the goals on key metrics in an *Annual REV Report Card*. The *Annual REV Report Card* would break out data for important metrics, such as the amount of renewable energy added, produced and used in the DSP service area; the energy efficiency measures undertaken and the savings yield; and the number of shut-offs and customers in arrears. The PSC would ensure the quality of the data and reporting under the *Annual REV Report Card* and put out a *Statewide REV Report Card* measuring the aggregate information. This would be in addition to any other reporting and public disclosures required.

- **Establish an Independent Utility Consumer Advocate Office.** Consumers struggle to be heard over the well-funded industry players in New York’s utility regulatory process. As the PSC moves to a role where it no longer is regulating in a monopoly environment, it will be responsible for fostering a robust marketplace, *i.e.*, one in which businesses make money, but also for ensuring that gas and electric are furnished at “just and fair rates.” This creates conflicts that in other contexts, *e.g.*, banking oversight, have proven problematic.<sup>139</sup> An independent consumer protection and advocacy offices would help ensure that the Commission can fulfill its role as impartial arbiter of the public’s interest. Moreover, under a Performance Based Review regulatory regime, independent assessments will provide an important hedge against agency groupthink. The governor’s *Moreland Commission on Utility Storm Preparation and Response* recommended that New York follow most other states by creating a truly independent consumer advocacy office to represent the interests of average ratepayers.<sup>140</sup>

- **Establish an Intervenor Funding Mechanism.** The Commission should use REV to establish an intervenor funding mechanism—as many other states have done—so residential and small business consumers and organizations can apply for funding to provide important perspectives to the Commission as a way to improve the overall process and results. Similar to the independent utility advocacy office, intervenor funding will sharpen the focus of proceedings and ensure that the Commission gets a fuller picture on important issues.

- **Create a Single PSC Website to Comparison Shop for REV Products and Services.** REV is intended to unleash the innovation and power of the marketplace to offer new energy products and services, but consumers will be at the mercy of slick promotional materials and commissioned salespeople without any way to directly compare the offers. The PSC should create its own website as the digital place to compare products available in the REV marketplace in a standardized format to facilitate comparison based on money savings, payback periods, financing options, warranties, *etc.* Creating a single government website that allows

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<sup>139</sup> Confronted with a similar longstanding regulatory conflict, as part of the response to the national economic meltdown, Congress created a stand-alone agency—the Consumer Finance Protection Bureau—to both protect financial services consumers *and* safeguard the overall marketplace and thereby the national economy.

<sup>140</sup> *Moreland Commission on Utility Storm Preparation and Response*, June 22, 2013, pp. 46-47. Accessed at <http://utilitystormmanagement.moreland.ny.gov/sites/default/files/MACfinalreportjune22.pdf>. The Moreland Commission cited the problem of regulators trying to protect the public and keep industry profitable as justification for the utility consumer advocate office (page 44).

standardized comparison will instill consumer confidence, allow efficient “one-stop shopping” and promote informed decision making.<sup>141</sup>

## **How to Participate in REV**

After some prodding, the Commission made an effort to engage the public in understanding and weighing in on Track One, including holding public forums across the state. The hundreds of public comments helped inform the development of the Track One Order.

Much more needs to be done. There’s little reason to believe that the vast majority of New Yorkers—including those who care deeply about climate change, energy use and electric affordability—are aware of the REV proceedings. Moreover, many of the issues are highly technical—there’s an alphabet soup of laws and terms, a lot of economics gobbledygook speak about animating markets and such, and a dizzying array of technical information to wrap your head around.

That should not and must not deter the public from paying attention and weighing in. The Public Service Commission, its staff, public interest advocates and even the private sector must explain these issues in ways that New Yorkers can understand. The state’s utility infrastructure has been paid for through the tax dollars and monthly bills shelled out by generations of New Yorkers. Utilities and their shareholders enjoyed the benefits of monopoly status since the advent of the grid system. The public should expect that its interests—environmental, public health and consumer—are served in the process of deregulating and reforming the system it paid for.

NYPIRG is offering this *Guide* as a primer and aid to help get New Yorkers started and to suggest some points to be alert to and comment upon.

For your convenience a glossary and a REV Proceedings Guide are in the attached appendices to help your understand what’s going on and participate.

## **Here’s how to get involved**

- Use the REV Proceedings Guide to review the various proceedings underway and the PSC website to seek party status in any of the proceedings. You can review the various documents filed in the proceeding by going to the links provided in the REV Proceedings Guide. The Department of Public Service also has a listing of some of the proceedings on its homepage. You can check it out at the “What’s Trending” button on the website at: <http://www.dps.ny.gov/>.

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<sup>141</sup> New York’s successful state-run website for the healthcare exchange demonstrates the power of this approach—particularly in a newly formed marketplace. See <https://nystateofhealth.ny.gov/individual>.

- Share your overall comments with the Public Service Commission:
  - Phone by calling 1-800-335-2120. Be sure to be specific and reference the particular proceeding. Or leave general comments—you're paying for the agency and your voice should be heard.
  - Use email to send comments outside of a specific proceeding comment period or general comments you think REV should take by emailing [secretary@dps.ny.gov](mailto:secretary@dps.ny.gov).
- Educate your state Senator and Assembly Member on REV-related issues and your concerns. If you're not sure who represents you in the state Legislature, visit this website to find out: [www.elections.ny.gov/district-map/district-map.html](http://www.elections.ny.gov/district-map/district-map.html).
- Share your support, thoughts and concerns on REV with Governor Cuomo. You can contact the Governor's office by phone at 518 474-8390 or on his website at [www.governor.ny.gov/contact](http://www.governor.ny.gov/contact).
- Keep on the lookout for future Public Service Commission public forums on REV issues.
- Check NYPIRG's webpage for updates at [www.nypirg.org](http://www.nypirg.org).

## ENERGY CROSSROADS: GLOSSARY OF REV-RELATED WORDS AND TERMS

**“Advanced Metering”** (Advanced Metering Infrastructure and Advanced Metering Functionality) is the ability of utility information to flow both ways—to and from customers and their distributed service provider (DSP)—so that data can be collected on a customer’s energy use patterns and offer options/allow that customer to control their energy demand and costs.

**“Behind the meter”** refers to products and services located on site at the customer’s home, business or factory that allows them to control their energy use.

**“Combined Heat and Power”** also called co-generation, is using a single fuel source to generate both electricity recovering the heat that would otherwise be lost and using it for other purposes, such as in industrial processes, making the overall system more efficient.

**“Community Choice Aggregation”** is a model for spurring REV participation that would allow municipalities to determine their energy needs based on a variety of factors, including cost, energy source and usage options, and negotiated with energy suppliers. Through a local process municipal government leaders would negotiate the agreements with the ability of residents to opt out.

**“Demand-Side Management”** refers to methods to reduce demand for electricity during anticipated or actual peak times or when there are service disruptions.

**“Distributed Energy Resources (DER)”** is the array of energy options located near the user that reduces the need for centralized electricity from big power plants, and offers options such as local solar power, fuel cells, energy storage and efficiency measures.

**“Distributed System Platform”** is the electric grid proposed to be coordinated by the local utility and incorporating the participation of distributed energy resource providers and ESCO’s. The DSP will incorporate smart grid technology.

**“Distributed System Platform Provider”** is the name the utilities will assume in their new roles as planner for and manager of the grid in their service territory, which will incorporate distributed local energy resources and be responsible for achieving goals they set out in their approved “distributed system implementation plans” submitted to the Public Service Commission.

**“Energy Efficiency”** is the range of technologies or actions that result in using less energy to provide the same level of service. Energy efficiency measures can be site for end-use, i.e., at the customer’s location, or be system-level, offering efficiency savings across the board to a large number of users.

**“ESCOs”** (Energy Service Companies) are businesses other than the utilities that sell energy and related services to users, including things like energy audits, efficiency programs, renewable energy options and energy management tools.

**“Greenhouse Gases”** (“GHG”) refers to the gases in the lower atmosphere (troposphere) that prevent reflected energy from leaving the earth’s atmosphere or trap the sun’s heat producing a greenhouse or warming effect.

**“Hydroelectric Power”** or hydro power for short, is electricity generated by turbines turned by fast moving water.

**“Large-Scale Renewables”** are renewable energy sources that have the capacity to act as a significant source of energy, such as wind farms and solar arrays.

**“Microgrid”** is a self contained local grid that can connect to and disconnect from the larger Distributed System Platform. Microgrids can serve communities or a smaller group of residential or business users and add resiliency to the overall grid system.

**“Net Metering”** is the ability for utility customers’ meters to register both the amount of energy they receive and the energy they send back to the grid, which reduces the net amount of energy they use by the amount produced and offsets their energy bill.

**“NYISO”** is the New York Independent System Operator, a non-profit entity designated by the Public Service Commission in 1999 to run the wholesale energy marketplace for bulk power covering New York State.

**“Peak Periods”** are the times when energy use is highest and costs to provide energy are highest, for electricity typically during the hottest hours during the hottest days of summer.

**“PV” or “Solar PV”** is a technology that directly converts sunlight into electricity through the use of solar panels. (“Solar thermal or “passive solar” uses sunlight to heat water or create steam, which then can be used to create energy or used for heating purposes.)

**“Reliability”** is the ability to consistently provide electric service with limited interruptions, as well as the ability to respond to demand stresses without significant consequences.

**“Renewable Energy”** refers to those sources of energy capable of being continuously restored by natural or other means, such as solar, wind, tidal, hydro and geothermal energy sources.

**“Resiliency”** is the ability of the energy system to withstand, or reduce the impact and duration of disruptive events, like extreme weather occurrences.

**“Smart Grid”** refers to the use of 21<sup>st</sup> Century technology, such as computer systems, sophisticated sensors and automation, in conjunction with the electricity system to allow the



identification and location of outages and the ability for customers to adjust their energy use behavior based on pricing information.

**“State Energy Plan”** is the ten-year plan the state is required to create that lays out the state’s projected energy needs and anticipated resources for the upcoming decade and describes how the state will meet its related environmental and public health goals, such as greenhouse gas emissions and efficiency measures, established through concrete metrics .

**“Systems Benefit Charge” or “SBC”** are charges added to utility bills that are used to fund energy efficiency programs, including subsidizing efficient products, energy technology and market development programs.

**“Time of Use” or “TOU”** is the ability of utility customers to shift a portion of their energy use needs to an off-peak time they deem convenient that will yield financial savings.

**“Transmission”** refers to the high-voltage lines that carry electricity over long distances from a central power plant to a transformer, where the voltage is reduced for distribution to end users.

**ENERGY CROSSROADS:  
REV AND RELATED PROCEEDINGS<sup>1</sup>**

Case No.	Proceeding Name	Key Issues	PSC Link to Proceeding
15-E-0082	Community Net Metering	Rental options to build/own net meter projects.	<a href="http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=15-e-0082">http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=15-e-0082</a>
14-M-0565	Affordability for Low Income Utility Customers	Ensuring affordable energy costs for lower income New Yorkers.	<a href="http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=14-m-0565&amp;submit=Search+by+Case+Number">http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=14-m-0565&amp;submit=Search+by+Case+Number</a>
14-M-0101	Reforming the Energy Vision (REV)	Overhaul the grid to promote distributed energy, change use patterns and spur renewable use.	<a href="http://www3.dps.ny.gov/W/PSCWeb.nsf/All/26BE8A93967E604785257CC40066B91A?OpenDocument">http://www3.dps.ny.gov/W/PSCWeb.nsf/All/26BE8A93967E604785257CC40066B91A?OpenDocument</a>
14-M-0094	Clean Energy Fund		<a href="http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=14-m-0094&amp;submit=Search+by+Case+Number">http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=14-m-0094&amp;submit=Search+by+Case+Number</a>
14-M-0224	Community Choice Aggregation	Legal and policy issues related to	<a href="http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=14-M-0224&amp;submit=Search+by+Case+Number">http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=14-M-0224&amp;submit=Search+by+Case+Number</a>
15-E-0302	Large scale renewables (LSR) track	Options paper directed in Track One Order (p. 83)	<a href="http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={67050F4C-F82B-4EB0-B426-737E66CD41A7}">http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={67050F4C-F82B-4EB0-B426-737E66CD41A7}</a>

<sup>1</sup> This is a listing of some of the prominent REV-related proceedings. As mentioned, REV is properly viewed as a constellation of related proceedings, both initiated by the Public Service Commission to remake the state’s electric grid as well as others that include utility rate proceedings. To view the active proceedings, visit the Public Service Commission website and look under “what’s trending” at <http://www.dps.ny.gov/>. To review the state’s Energy Plan, visit the NYSERDA website at: <http://www.nyserda.ny.gov/About/New-York-State-Energy-Plan>.