



## Summary- [2015 New York State Energy Plan](#) and Energy Efficiency

### 1. The “Future of Energy” by sector:

#### a. Residential:

- i. No-money-down guaranteed savings contracts; Connected devices and time variant pricing; ZNE; Community Solar; Transparent and connected markets for energy services

#### b. Business

- i. CHP, and energy storage; DR and pricing signals; Large scale wind supply contracts as a hedge against fossil fuels

#### c. Communities

- i. Microgrids; Community Choice Aggregation 2.0; leading by example in the public sector; solar plus battery storage

### 2. Turning Challenges into Opportunities

#### a. Affordability

- i. Over the next 10 years, more than \$30 billion will need to be invested to replace New York’s aging electric transmission and distribution infrastructure just to meet currently projected energy demand. This is nearly double the \$17 billion invested in the State’s grid over the past decade. Clean energy solutions such as energy efficiency and local renewable power generation can help offset the cost of these infrastructure investments
- ii. New York State’s system load factors—the ratio of the average load on the system to the system’s peak load—have declined from about 59% of total annual capacity 10 years ago to about 55% today
- iii. DPS estimates that each 1% improvement in system efficiency will yield between \$221 million and \$330 million of annual savings to ratepayers across the State because of less need for supply and delivery investments
- iv. [S]olutions that reduce or shift peak load such as demand management systems, energy efficiency, and energy storage, most often require significantly less capital investment [than traditional T&D investments.]”
- v. REV will unlock these savings by facilitating and encouraging investment (particularly private capital investment) in cost-effective, clean distributed energy resources and other solutions that will reduce peak load and improve system efficiency as a complement to necessary transmission and distribution infrastructure upgrades.

#### b. Environmental Imperatives

- i. 89% of NY’s GHG emissions stem from New York’s energy sector.

#### c. Reliability and Resiliency

- i. “More than 60% of New York’s existing power generating capacity is more than 35 years old.” Discusses move toward renewable energy resources...
- ii. REV will facilitate micro-grid development...[and] develop innovative public-private partnership models that will induce the private sector to invest much of the needed capital, rather than leaving ratepayers to carry the entire burden.

#### d. Updating the Utility Business Model

- i. The REV Regulatory Docket will overhaul New York’s utility regulatory structure to:
  - Enable utilities to earn returns by advancing markets in energy efficiency and distributed energy resources, and in so doing, transition clean energy from the periphery to the core of the utility business model;
  - Deploy price signals that reward investments that improve overall system efficiency; and

- Align the regulatory system to catalyze and leverage innovation, technology advancement, and private investment.

**e. Environmental Justice**

- i. NYSERDA working with LMI communities

**f. Transportation**

- i. Alternative approaches must be explored to resolve the inherent conflict between the transportation system's current revenue sources, which rely on continued levels of petroleum consumption, and environmental goals, which necessitate reduced petroleum consumption.
- ii. The Plan will reduce petroleum use and emissions from the transportation sector through several strategies, including alleviating bottlenecks in the transportation system that cause congestion; investing in more energy efficient ways to move people and freight; and making strategic investments in ZEV, pedestrian, bicycle, and transit infrastructure.

**3. Guiding Principles and Strategic Pillars**

**a. Guiding Principles**

**i. Market Transformation**

- 1. REV, regulatory reforms, initiatives, and programs will focus on market transformation, enabling the entire clean energy supply chain from technology developers to equipment wholesalers to consumers seeking clean energy options, to engage in a new, integrated, and self-sustaining private sector driven clean energy market. In order to accelerate market transformation, REV initiatives will focus on identifying, mitigating, and removing common market barriers to clean energy deployment (e.g., by reducing soft costs, for instance those related to customer acquisition, permitting, and training), enhancing data sharing and transparency efforts, supporting outreach and education, and encouraging demonstration projects

**ii. Community Engagement**

- 1. Building demand for DERs, microgrids, while acknowledging EJ concerns

**iii. Private Sector Investment**

- 1. NYGB removing market obstacles

**iv. Innovation and Technology**

- 1. NYSERDA/NYPA partnering with academia
- 2. **Home automation** explicitly mentioned
- 3. **NYSERDA and NYPA will engage with the clean tech innovation sector outside of New York** to help **import** leading and relevant **solutions** from elsewhere and to help **export** New York State **solutions** to receptive markets outside the State.

**v. Customer Value and Choice**

- 1. Real time info encouraging customers to engage markets

**b. Strategic Pillars**

**i. PSC's Reforming the Energy Vision Docket**

- 1. Regulatory reforms to encourage behind the meter DERs
- 2. Establishing Robust retail energy markets
- 3. Utilities as Distributer System Platform (DSP) Providers
  - a. Rather than choosing solutions and deploying them in a top-down approach, utilities will act as a market platform that enables third parties and customers to be active partners
  - b. Utilities will provide data, price signals, and system access to enable third parties to innovate and scale clean energy solutions where they can most benefit the system and customers.
- 4. PV Power Islanding, Vehicle to Grid payments
- 5. Demonstration projects with private industry partners

- ii. **NYSERDA’s Clean Energy Fund** (Including NY Green Bank and NY Sun initiatives)
  - 1. Filling market gaps, \$5 billion in new investment in 10 years
  - 2. Under the CEF framework and in order to achieve scale, **NYSERDA will gradually transition away from one-time project grants and incentives as its primary deployment tool, toward upstream market transformative strategies to achieve greater leverage of public to private sector investment.** NYSERDA will continue to utilize incentives, but only in well-defined circumstances, such as a bridge to a self-sustaining independent market, or for underserved communities which may take longer to be served by market-based solutions
  - 3. **CEF will focus** its resources across four portfolios of activity—NYGB, NY-Sun, market development, and innovation and research and development—to spur demand and enable scale by reducing market barriers; catalyzing markets through “bridge” incentives to help them develop self-sufficiency; **and influencing policy, codes, and regulations.**
- iii. **NYPA’s Leadership through operations and programs**
  - 1. NY Energy Manager and public facilities
  - 2. NYPA will work with its **municipal and other customers** to facilitate clean energy projects and provide “light touch” energy efficiency services, by **demonstrating and proving the projects’ potential energy and cost savings, by providing transparent, reliable information and match-making services to customers and clean energy project developers, and by offering financing for municipal clean energy projects**

#### 4. Initiatives

##### a. Renewable Energy

- i. NYSERDA will support development of market infrastructure for other renewable heating/cooling technologies and fuels (e.g., solar space and water heating, **ground and air source heat pumps**). These efforts could include project specific support, providing training and technical support for service providers looking to expand their capabilities, and developing tools and resources to drive consumer demand.

##### b. Buildings and Energy Efficiency

- i. “The most powerful tool at New York’s disposal to achieve the State’s aggressive GHG reduction goals.”
- ii. BuildSmart NY Goal of 20% improvement in EE by 2020
- iii. **NYSERDA**
  - 1. EE strategies will include **benchmarking and building labeling** to facilitate measurement and clear comparative disclosure of building energy performance, supporting ongoing **workforce training**, expanding access to **innovative financing** tools, serving as a credible **information source**, helping to **demonstrate value** propositions, and driving commercial interest toward **Zero Net Energy** in new construction and renovated buildings. A targeted strategy for **on-site renewable thermal** solutions to reduce fossil heating fuel consumption will also become part of an integrated approach to promote the efficiency of all sources of energy use within buildings
  - 2. Partnered with **behavioral science experts** to inform planning
- iv. **Utility Energy Efficiency Programs**
  - 1. To avoid market disruption and prevent backsliding, **current utility energy efficiency budgets and program performance targets will be maintained.**
  - 2. Utilities will design new energy efficiency programs using **market-based approaches** to drive greater adoption and to provide increased value to customers. Building on the momentum of previous programs, utilities will gradually evolve their strategies to more innovative approaches that align with REV principles to enhance system-wide value by **targeting specific system needs;**

- to coordinate with NYSERDA and a larger market transformation plan; and to deploy technologies, tools, and information to facilitate customer load management. Utilities will engage and leverage the efforts of third-party providers, community organizations, local governments, and employers to increase the reach of their new and existing programs.
3. **Current utility efficiency targets represent the minimum that the utilities are expected to achieve going forward.** The PSC expects that utility programs established under the REV Regulatory Docket, in addition to NYSERDA initiatives implemented under the CEF, will together achieve statewide energy efficiency savings that exceed current levels
- v. **Affordable Housing**
    1. Developing a standardized green physical needs assessment to inform property owners of the energy saving opportunities available to them upon acquisition, refinance, or recapitalization
    2. Facilitating demonstration projects that incorporate deep energy retrofits into the renovation projects that are typically undertaken to preserve affordable housing stock at the point of refinance or recapitalization
  - vi. **Combined Heat and Power**
    1. PSC Investigating **standby tariff** policies
  - vii. **Financing**
    1. Green Bank and PACE
  - viii. **Sustainable and Resilient Communities**
    1. **Overview-** There are 4,720 local governments in New York, including cities, towns, villages, and special districts....REV will simplify and encourage community entry into clean energy and climate programs, by facilitating access to program information and energy data that will help localities make informed energy and smart growth planning decisions and by building peer-to-peer networks that will encourage idea sharing and transfer of best practices...The State will also provide technical guidance and access to financing to enable communities...REV will help localities leverage their DER investments to lead by example and demonstrate the benefits of clean energy projects to local residents and businesses
    2. **NY Prize Community Microgrid Competition**
      - a. \$40 million competition to engage communities in advancing plans for local power and resilience offering awards in three stages: feasibility studies, audit-grade design, and project build.
      - b. NY Prize “Opportunity Zone Map” has made public the approximate geographic areas that have been identified by local electric distribution companies as locations where microgrids and distributed energy resources may reduce utility system constraints and defer expensive infrastructure investment costs.
    3. **Five Cities Energy Plan**
      - a. Albany, Buffalo, Rochester, Syracuse, and Yonkers developed energy master plans to reduce municipal consumption 20% by 2020
      - b. NYPA funds energy manager positions and budgets in each City
    4. **NY State Community Partnership**
      - a. NYSERDA’s Cleaner, Greener Communities Program currently supports sustainability planning and projects throughout New York State, and more than 150 New York communities are participating in DEC’s Climate Smart Communities program. The NYSCP will integrate these and other ongoing community initiatives into a new delivery framework
    5. **REV Campus Challenge**

- a. identify and publicly recognize colleges and universities that have made the greatest strides along a number of criteria related to on-site sustainability, innovation, and community clean energy engagement.
- 6. **Community Choice Aggregation**
  - a. allows a municipality to aggregate the customers in its territory (on an opt-out basis) and solicit bids from third-party energy retailers competing to provide power to the community
  - b. The State will also actively explore a more advanced form of CCA, often referred to as CCA 2.0, wherein municipalities would take a proactive role, in partnership with their local utility, in planning and designing community-scale deployment of distributed energy resources, as well as implementing collective energy procurement strategies.
- 7. **Smart Growth Initiative**
  - a. **Transit-oriented development (TOD)**, promoting compact, mixed-use design in downtown areas served by robust public transit systems
  - b. An inter-agency TOD Working Group led by DOS will identify and coordinate the development of programs to further support TOD related to areas such as: land-use planning, housing, economic development, tax policy, and connecting TOD developments with parks and nature trails.
- 8. **Access to Flood Plain Data**
  - a. New York State Climate Change Science Clearinghouse, currently under development with NYSERDA, will provide users with immediate, interactive access to the best available FEMA floodplain maps
- c. **Energy Infrastructure and Modernization**
  - i. Energy Highway initiatives half completed
  - ii. Smart Generation and Transmission moves power to congestion points downstate
  - iii. Distribution System Platform Providers
    - 1. Utilities will act as a market platform for third parties and customers to actively engage with in building a clean, resilient, and more affordable energy system
  - iv. Reduce Reliance on Petroleum Heating through regulatory approaches
  - v. Limiting methane emissions by updating regulations and ratemaking processes to require gas utilities to accelerate replacements of leak-prone pipelines, map and publish known leaks online
  - vi. Emissions standards for clean distributed resources- supporting solar power and ground/air source heat pumps
  - vii. Strengthen Cyber Security- Cyber Security Summit in 2015
  - viii. Low-Cost Power for Economic Development (breaks on NYPA rates, et.al.)
- d. **Innovation and R&D**
  - i. NYSERDA's comprehensive innovation/R&D strategy includes: direct investment in both early-stage and more advanced-stage clean energy companies; development of sustainable multi-use assets in the State; and engagement with key stakeholders such as researchers, established corporate entities, and the investment community.
  - ii. REV Demonstration projects forthcoming
  - iii. Energy Storage R& D and Commercialization
    - 1. NY Battery Energy Storage Technology (NY BEST) Consortium was established in 2009 with \$25 million in seed funding through NYSERDA to position New York State as a leader in energy storage solutions. NY-BEST has grown to include over 140 organizations ranging from Fortune 500 companies to startups and universities

- 2. NY-BEST Test and Commercialization Center opened in Rochester **as one of the few locations in the country able to independently validate the performance of new storage technologies in one location.**
- 3. In future will focus on increasing cost-effective energy storage solutions for the electric grid and heavy duty transportation applications (electrified rail, subway, and buses), as well as expanding the NY-BEST Test Center to provide system safety testing
- 4. **\$65 Million Commitment to Brookhaven National Laboratory for Battery design and testing in real time**
- iv. **\$35 Million** Commitment to **Advanced Grid Innovation Laboratory for Energy (AGILE)** to test smart grid applications and products
- v. Clean Energy Business Competition on the Southern Tier

**e. Transportation**

- i. Commitment to **plug in electric vehicles**
- ii. New York State recognizes that **coordinated actions with our neighboring states** offer significant **potential to transform the transportation sector, as it has transformed the electric generation sector through RGGI.** To meet its 2030 GHG reduction targets, New York State will look for opportunities to **join with other states to implement successful regional solutions to the emissions reduction challenges in this sector.**
- iii. **ChargeNY-** goal of 3,000 PEV charging stations to support an expected 40,000 PEVs on the road in New York by 2018
- iv. **Clean Fleets NY-** pilot program will ensure that at least 50% of new administrative-use vehicles in select agencies will be ZEVs and explore leasing (fleet-as-a-service) models
- v. Capturing the **“Clean Transportation Dividend”**- Potential mechanisms to reap this “clean transportation dividend” that could be evaluated include a market-based program like RGGI or a bond issuance that would be repaid out of increased income tax revenues attributable to the clean transportation dividend
- vi. Improved information communication
- vii. NYC Subway energy efficiency opportunity identification
- viii. Expanding transportation demand management programs

**5. Targets**

- a. **40% REDUCTION IN GHG EMISSIONS FROM 1990 LEVELS**
- b. **50% OF ELECTRICITY GENERATION FROM RENEWABLE ENERGY SOURCES**
- c. **600 TRILLION BTU INCREASE IN STATEWIDE ENERGY EFFICIENCY**