

NYSERDA's Experience with Market Based Energy and Environmental Policies

A photograph of a wind farm with several white wind turbines in a field under a blue sky with clouds. The turbines are arranged in a line, with the largest one in the foreground on the right and others receding into the distance. The sky is bright blue with scattered white clouds. The ground is a flat, grassy field.

**Kevin Hale – NYSERDA
EMEP Conference October 14, 2009**

Outline

- **NY's Renewable Portfolio Standard Program**
 - **Design and Results**
- **Regional Greenhouse Gas Initiative**
 - **Structure and Results**
- **Summary**
- **Look Forward**



Renewable Portfolio Standard

- **Goal: 25% of the power consumed in the state to come from renewable sources by 2013**
 - From the 2003 baseline of ~ 19.3%
- **NY RPS was adopted in 2004 as a policy goal to:**
 - Stimulate economic development
 - Improve the environment
 - Pursue energy independence

Spier Falls Hydro



Unique RPS Design Features

- Public Service Commission is responsible for program policy and regulations
- NYSERDA acts as central administrator of the NY RPS under a two-tiered approach
 - Customer Tier, behind the meter applications such as anaerobic digesters, solar and small wind
 - Main Tier, large generators that sell power to the wholesale grid
- Utilities are not subject to compliance



NY RPS Targets

- Incremental 2013 requirement satisfied as follows:
 - Main Tier (NYSERDA).....(9.8 GWh)
 - Customer-Sited Tier (NYSERDA)..... (.2 GWh)
 - Voluntary Green Retailing(1.8 GWh)
 - State Agency Purchases..... (3 GWh)
 - Total.....(12.1 GWh)



**Enough New Renewable Electricity to
supply almost 2 million homes!**

Feedstock at the Lyonsdale Biomass Plant

RPS Main Tier Features

- **Eligibility:** Projects or new fuel use after Jan. 2003, in-state and out-of-state
 - Wind, biomass and other bio-fuels, hydroelectric upgrades
- **NYSERDA purchases renewable energy attributes (aka RECs)**
 - Energy must be delivered to NYISO
- **Offer fixed-price REC contracts of up to 10 years**
- **Prices are set competitively via Request for Proposals (“RFPs”)**

Maple Ridge Wind Farm



Main Tier Results

Total New capacity (at end 2009) -	approaching 1,400 MW
Total available MWh annually -	more than 3.5 million
Facilities involved ¹ -	30 projects/28 in New York
Resource type ¹ -	15 hydro/4 biomass/11 wind
New capacity under contract -	1,164 MW
RECs under contract annually -	approx. 2.9 million

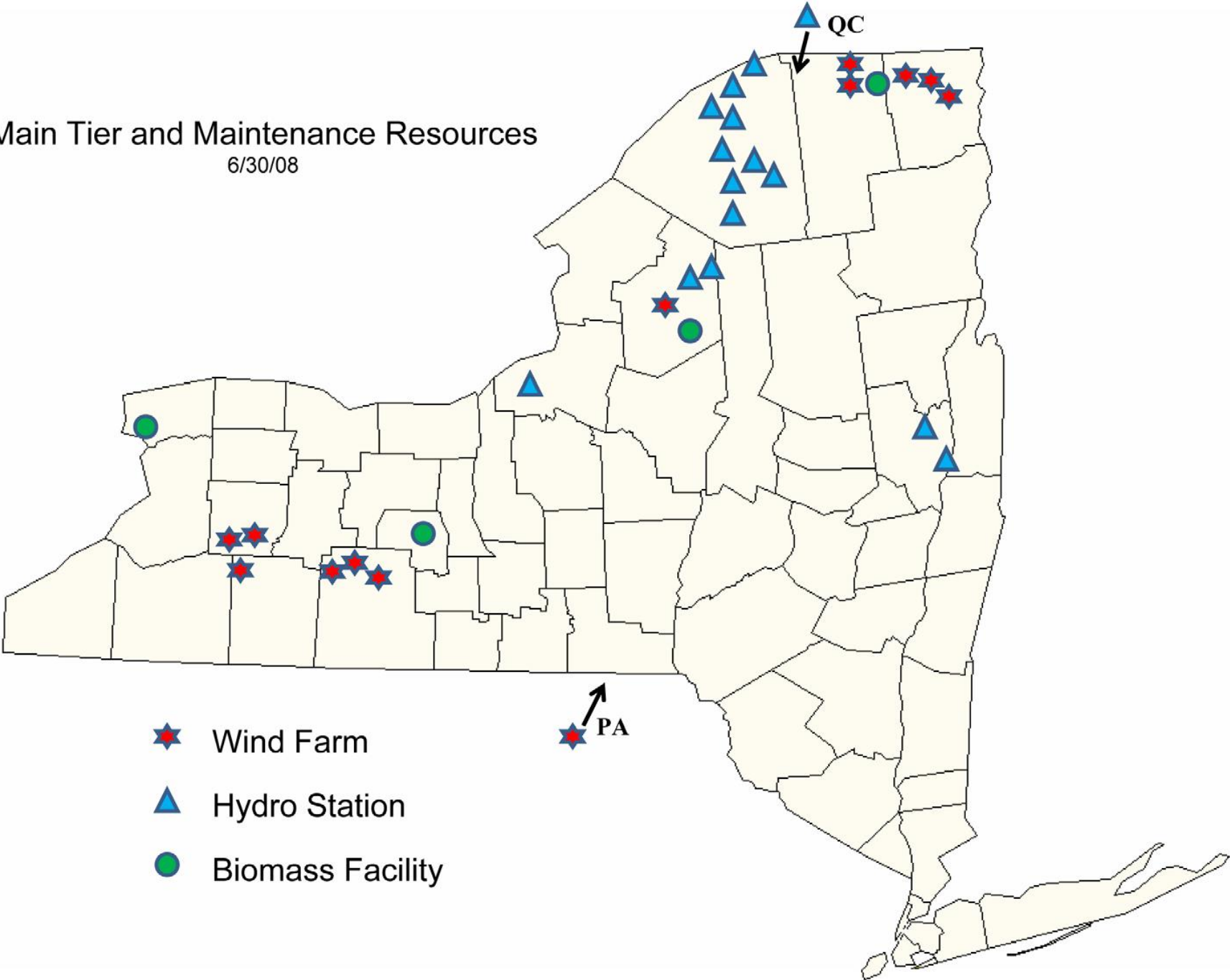
About 1,300 MW of wind installed in New York...over 8,000 MW in pipeline ...

February 2009 milestone....1,000 MW of wind operating at system peak load

¹ includes two maintenance resources

Main Tier and Maintenance Resources

6/30/08



RPS Program Economic Benefits

- **Estimated direct investment in New York: \$2 billion**

Total expected direct economic benefits are estimated to exceed \$1.4 billion*:

- **short/long-term jobs**
- **fuel acquisition/control/rights**
- **purchases of local goods/services**
- **host community payments/taxes**

*** Over 20 year project life and do not include roll-over/multiplier effects and energy price suppression benefits**

Maple Ridge Wind Farm



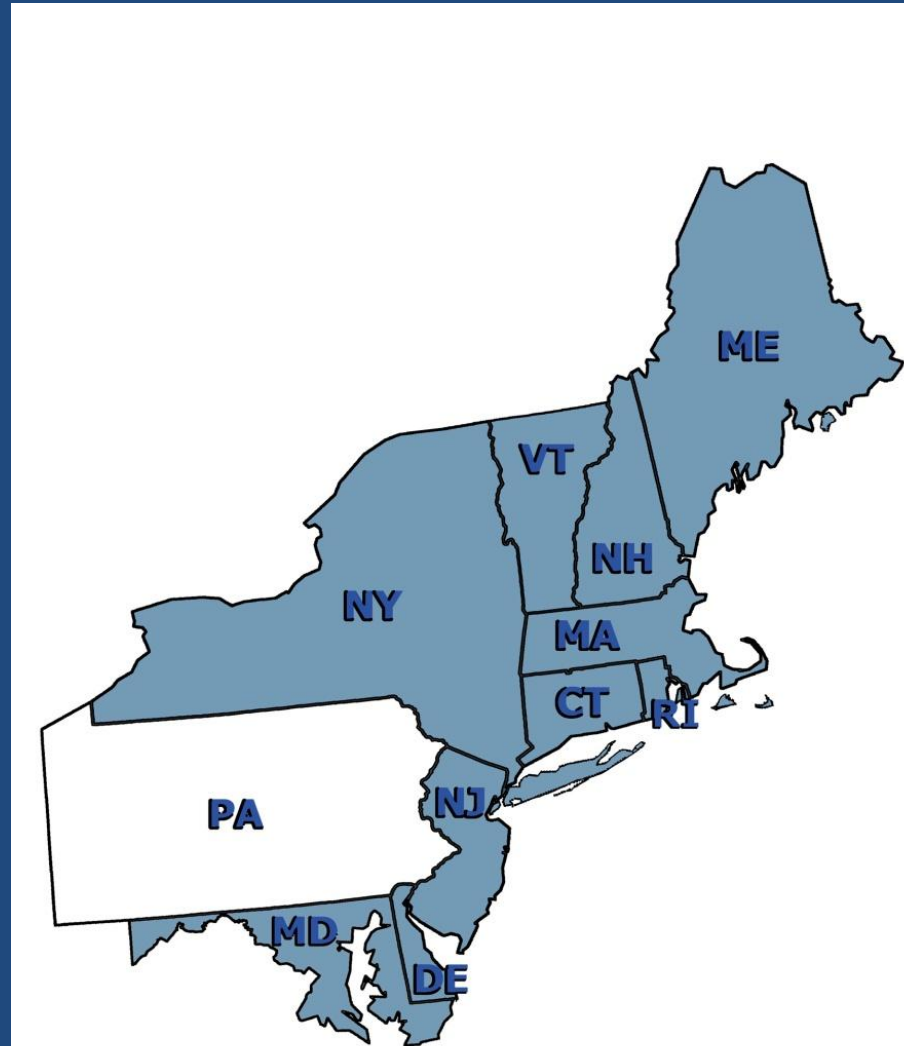
RPS Program Environmental Benefits

- There is some level of fossil fuel displacement but..... actual emissions reductions are difficult to track or quantify
 - Market prices for fuel
- If each MWh in the RPS were to displace NY's system mix on a 1:1 basis, then NY would see estimated annual reductions of:
 - 2,600 tons of nitrogen oxides
 - 5,200 tons of sulfur dioxides
 - 1.9 million tons of CO₂



Regional Greenhouse Gas Initiative (RGGI)

- 10 states
- Cap and reduce carbon emissions via compliance mechanisms
 - NYS DEC
- Focus on power sector
 - 25% of NYS's GHG emissions
- First mandatory market-based CO₂ reduction program in the US



RGGI Goals

- Reduce CO₂ emissions from the power sector
- Provide consumers with benefits
 - Support a green economy
- Encourage investments in low- or non-carbon emitting technologies
 - Advancing clean energy technologies
- Provide a template for a national program to reduce greenhouse gases

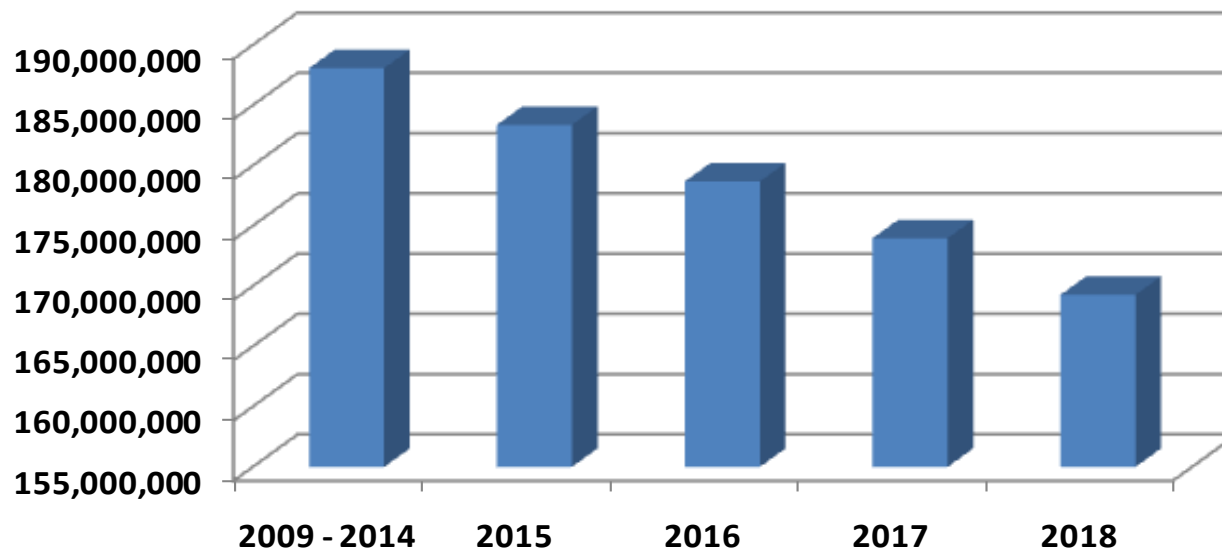


Steel Winds Wind Farm

RGGI Reduction Requirements

- Compliance started in 2009
- Stabilize CO₂ emissions at current levels through 2014
- Total reduction of 10% by 2019 compared with 2009 cap

RGGI Annual Cap 2009 - 2018 (tons)



Structure of RGGI

CO₂ Budget Trading Programs

Are defined by independent state statutes and regulations and based on the Model Rule

Function, in aggregate, as a single regional compliance market



RGGI, Inc.

RGGI, Inc. is a private, non-profit corporation which provides technical and administrative services to implement each state's CO₂ Budget Trading Program

Program Specifics

- ✓ MOU: States commit to auction minimum of 25%, dedicate proceeds to consumer benefits
- ✓ In Practice: Most states auction close to 100%, dedicate vast majority of proceeds to energy efficiency, renewable energy
- ✓ Compliance: Emitters must possess enough allowances to cover their emissions within each three-year compliance period
- ✓ Allowance Banking: Unused allowances can be carried over from one compliance period to the next
- ✓ Offsets: Compliance entities can use verified offset allowances to meet 3.3 percent of their compliance obligation

Returning the Value of Allowances to Consumers

State investments in consumer benefit programs:

- **Help consumers control energy costs**
- **Drive further reductions in GHGs**
- **Reduce and manage energy demand**
- **Stimulate clean energy economy and create green jobs**
- **Complement NY's long-term energy and environmental goals**
 - **RPS and Energy Efficiency Portfolio Standard**

About RGGI Auctions

Goal of the RGGI Auction Program: Ensure that all parties have access to allowances under fair & uniform terms

- **The RGGI auctions:**
 - Are regional, uniform and include all ten states
 - Are held quarterly
 - Offer allowances from current and future control period vintages
 - Use a reserve price of \$1.86 per ton
 - Are open to all who apply and qualify
 - Include a Notice and Qualification process that facilitates efficient administration and ensures market oversight

RGGI Auction Results

Auction:	Auction 1	Auction 2	Auction 3	Auction 4	Auction 5
2009v Price	\$3.07	\$3.38	\$3.51	\$3.23	\$2.19
2012v Price	—	—	\$3.05	\$2.06	\$1.87
Potential Bidders	82	84	63	67	58
Total Proceeds (Millions)	\$38.6	\$106.5	\$117.2	\$104.2	\$66.3
NY Proceeds (Millions)	—	\$42.0	\$46.0	\$40.0	\$27.4

CO2 Allowance Auction Program

21 NYCRR Part 507

NYSERDA's rule (Part 507.4(d)) states that proceeds from the sale of allowances will be used to:

“ . . . promote and implement programs for energy efficiency, renewable or non-carbon emitting technologies, and innovative carbon emissions abatement technologies with significant carbon reduction potential.”

Program Funding Target Areas

- Residential, Commercial, Industrial (On-site Energy Use)
- Power Supply and Delivery
- Transportation
- Agriculture, Forestry and Waste Management
- Multidisciplinary Initiatives
 - Climate change research and analysis

Browns Falls Hydro



Summary

The RPS and RGGI have resulted in:

- Approximately \$2 billion in clean energy investments for 1,400 MW of new renewable capacity
 - 11 wind, 15 hydro upgrades, and 4 biomass applications
- Five successful RGGI auctions which:
 - Have raised over \$155 million for NY
 - Attracted over 100 different bidders – including electric utilities, manufacturers, financial institutions, environmental groups, and individuals
 - Created a vibrant and active secondary market for CO₂ allowances

Pending Federal Energy and Environmental Initiatives

Example: American Clean Energy and Security Act 2009

- Increase renewable energy content from 6% of retail electric sales in 2012 to 25% in 2025
- Establishes cap and trade program -reduce greenhouse gas emissions beginning in 2012 (83% of 2005 emissions by 2050). EPA to administer auction of allowances.
- State cap and trade programs are preempted beginning in 2012. RGGI allowances issued before 2012 can be exchanged for federal allowances.

What does all this policy action mean?

It depends on one's perspective...

- If you are concerned with economic development in New York.... It's likely less in-state renewables will be installed here under a federal RPS program
- If you are concerned with ratepayer costs, then a federal program might lower NY RPS obligations
- If you are concerned with climate change, you might be indifferent to location of renewable resources...if you are interested more in local environmental benefits, then a federal RPS might not be as desirable
- If you were counting on carbon allowance proceeds to drive additional investment in renewables in New York, you would need to concern yourself on how EPA distributes federal cap & trade program revenues and what qualifies for support

Policy Outlook: Promising But is it Sufficient ?

Increased deployment of clean energy technologies
faces further challenges...not insurmountable ...but
real nonetheless.

Technology
Infrastructure
Market
Political

Clinton Wind Farm



For More Information

Contact Information:

Kevin Hale

New York State Energy Research
and Development Authority

Email: kch@nyserda.org

USA phone: 518-862-1090 ext. 3266

Informational Websites:

www.rggi.org

www.nyserda.org

www.dec.ny.gov