

# RENEWABLE ENERGY IN NEW YORK

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# Governor's 2015 State Energy Plan



50 percent of all electricity used in New York State by 2030 should be generated from renewable energy sources.

# Reforming the Energy Vision

- ⦿ **40% reduction in greenhouse gas emissions from 1990 levels**
- ⦿ **50% of New York's electricity to be generated from renewable sources**
  - 50 by 30
- ⦿ **23% reduction in energy consumption of buildings from 2012 levels**
- ⦿ **Create 2.4 gigawatts of offshore wind**

# NY's Clean Energy Standard

August 2016 PSC approved a new "clean energy standard"

- boosting renewable energy
- cut carbon emissions

# Indian Point Nuclear Power Plant

Gov. Cuomo has announced that the aging Indian Point nuclear power plant is slated to close by April 2021.



<http://www.klove.com/news/2017/01/06/aging-new-york-nuclear-plant-to-close/>

AP/Julie Jacobson

- ◎ This year, residential customers will start paying an extra \$1.50 to \$3 a month as utility companies collect a state-mandated surcharge to keep three Upstate nuclear plants running.
- ◎ The money goes to the Nine Mile Point, FitzPatrick and Ginna nuclear plants in return for producing low-carbon power.
- ◎ \$7 billion in subsidies on nuclear plants over 12-years.

# Environmental Progress, a California Research and Nuclear Policy Group

Indian point produces:

4 times more power than all of New  
York's wind, and

236 times more power than all of  
NY's solar

# Indian Point 2045 MW

## Existing Wind Farms 1,010 MW

Plant	Location	Output (MW)
<u>Altona Wind Farm</u>	<u>Clinton County</u>	97.5
Bliss	<u>Wyoming County</u>	100.5
<u>Chateaugay Wind Farm</u>	<u>Franklin County</u>	109.5
<u>Clinton Wind Farm</u>	<u>Clinton County</u>	100.5
<u>Ellenburg Wind Farm</u>	<u>Franklin County</u>	81
<u>Fenner Wind Farm</u>	<u>Madison County</u>	30
<u>Madison Wind Farm</u>	Madison County	11
<u>Dutch Hill/Cohocton Wind Farm</u>	<u>Steuben County</u>	125
<u>Maple Ridge Wind Farm</u>	<u>Lewis County</u>	320
<u>Steel Winds</u>	<u>Erie County</u>	35



# NYISO – 1000 Miles of New Transmission Lines

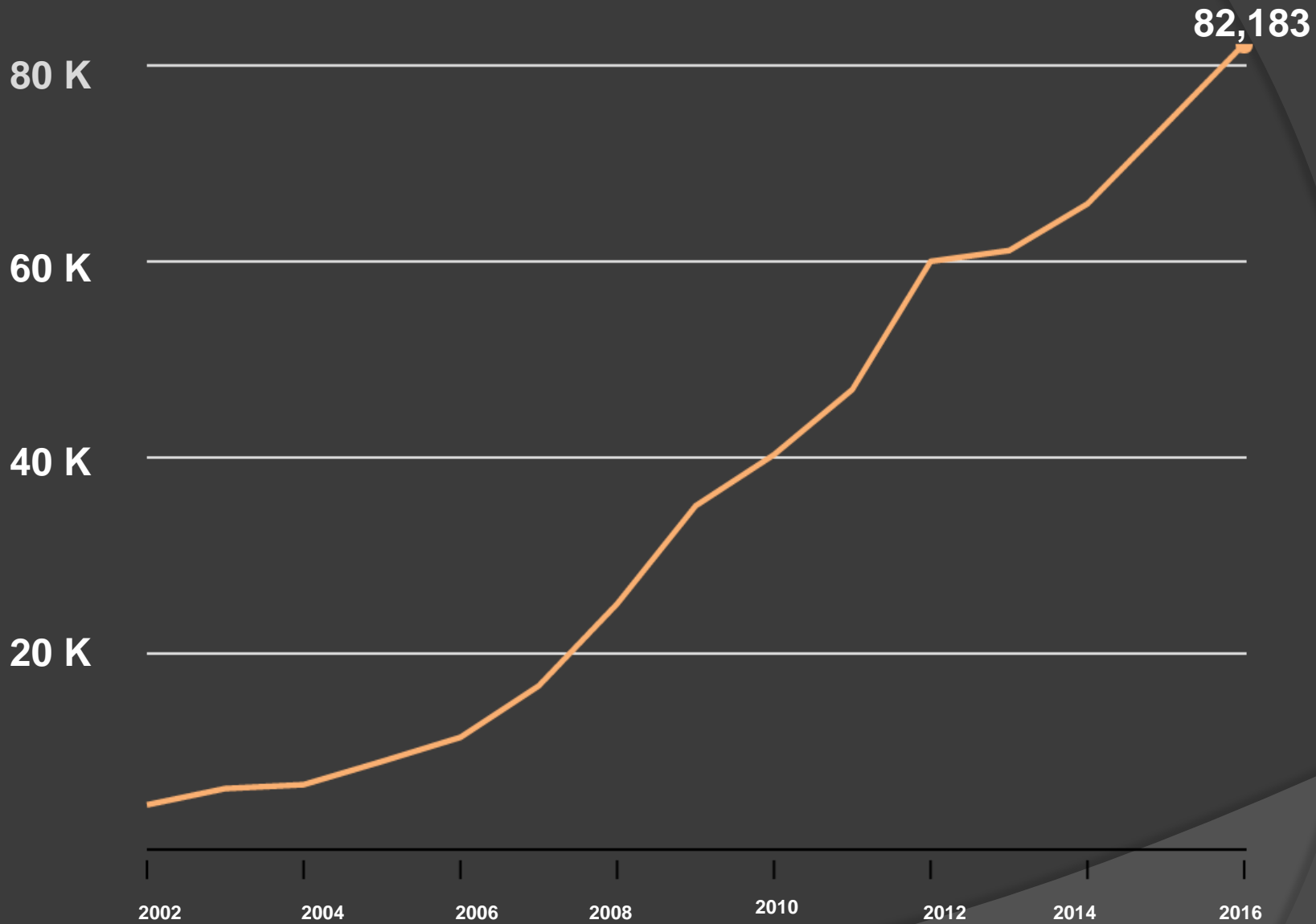
New York Independent System Operator estimates that NY will require nearly 1,000 miles of new bulk power transmission to support the amount of solar panels and wind turbines needed to achieve the goals of the Clean Energy Standard.

<http://www.timesunion.com/tuplus-business/article/>

# Natural Gas

Despite the increase in renewables, in 2016 gas-fired electricity generation in New York increased by nearly 8 percent

U.S. Energy Information Administration



Cumulative wind power capacity in the United States, in megawatts

Source: American Wind Energy Association

Wind power surpassed hydroelectric dams as the largest source of renewable energy in 2016 with more than 8,700 megawatts of new capacity online that year.

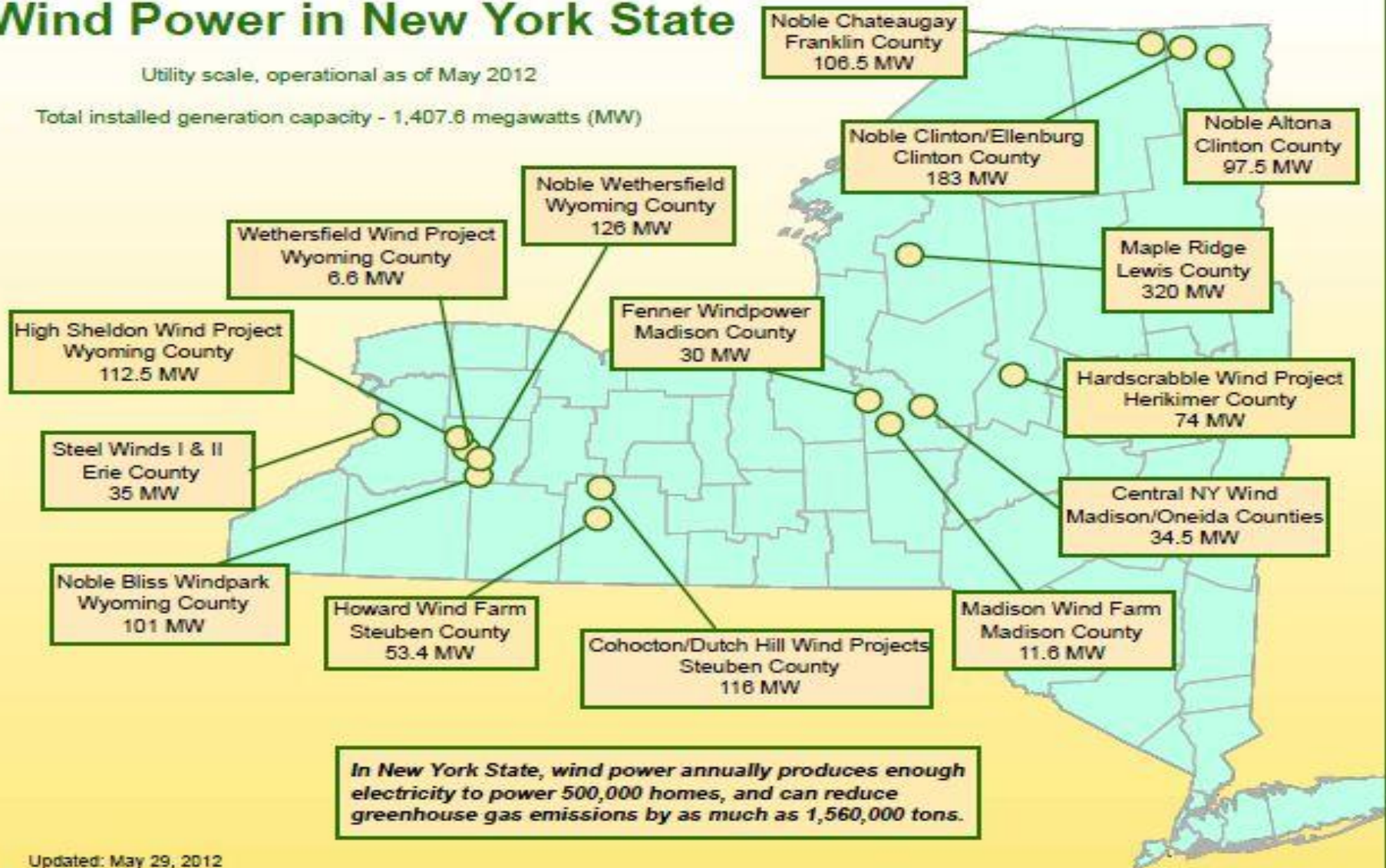
US Energy Information Association

<https://www.eia.gov/todayinenergy/detail.php?id=30212>

# Wind Power in New York State

Utility scale, operational as of May 2012

Total installed generation capacity - 1,407.6 megawatts (MW)



Updated: May 29, 2012

<http://www.associatedrenewable.com/content/wind-energy-new-york>

# Pending Wind Projects

Bluestone Wind	125-MW 40 turbines	Broome County
Cassadaga Wind	126-MW 58 turbines	Chautauqua County
Heritage Wind	200.1-MW	Orleans County
Three Wind	105.8-MW 50 turbines	Lewis County
Ball Hill Wind	100.5-MW 29 turbines	Chautauqua County
Eight Point Wind	32 turbines 102-MW	Steuben County
Arkwright Summit	78.4-MW 36 turbines	Chautauqua County
Mad River Wind	350- MW 125 turbines	Jefferson, Lewis and Oswego counties

# Nation's Largest Offshore Wind Farm Will Be Built Off Long Island



[http://www.realclearenergy.org/2017/01/26/nation039s\\_largest\\_offshore\\_wind\\_farm\\_will\\_be\\_built\\_off\\_long\\_island\\_281312.html](http://www.realclearenergy.org/2017/01/26/nation039s_largest_offshore_wind_farm_will_be_built_off_long_island_281312.html)

- ① 256-square-miles between the eastern tip of Long Island and Martha's Vineyard.
- ① 600 foot turbines connected to a substation in East Hampton by a 50-mile undersea cable
- ① Produce 90 MW

<https://www.nytimes.com/2017/01/25/business/energy-environment/long-island-power-authority-offshore-wind.html?ref=energy-environment>

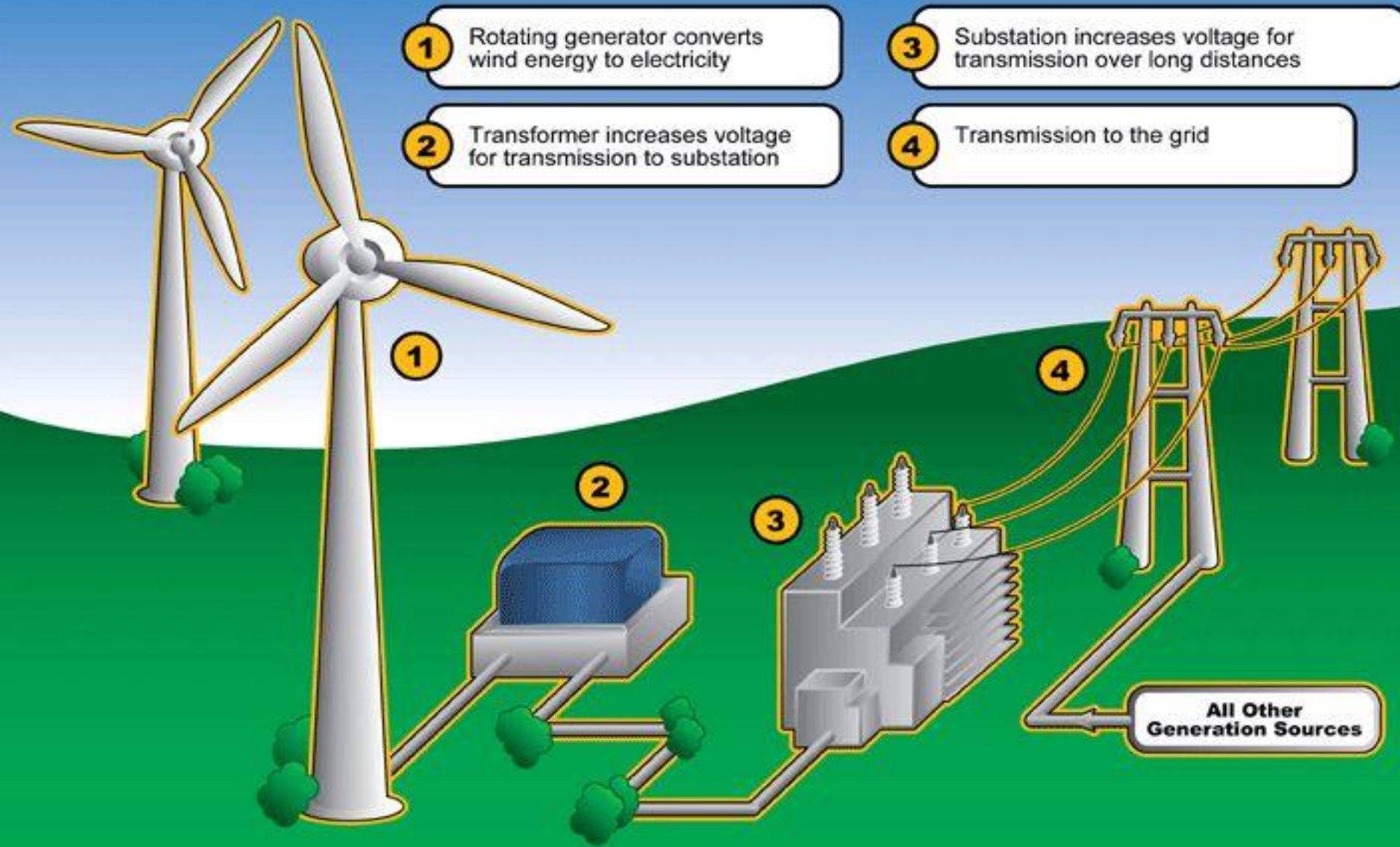


It will have 15 turbines capable of powering 50,000 average homes.

Deepwater has plans for a 256-square-mile parcel, with room for as many as 200 turbines.

NY's Offshore wind goal is 2,400 MW by 2030

# WIND





[http://www.mlive.com/business/west-michigan/index.ssf/2011/12/mason\\_countys\\_lake\\_winds\\_energ.html](http://www.mlive.com/business/west-michigan/index.ssf/2011/12/mason_countys_lake_winds_energ.html)



<https://www.wind-watch.org/documents/tetrachdelaney-construction-photos/>



<https://cleantechnica.com/2015/09/15/siemens-looks-toward-next-generation-10-20-mw-wind-turbines/>

# Howard Wind Farm 2.05 MW



# PSC Article 10

## Projects Over 25 MW

A multi-agency Siting Board is charged with streamlining the permitting process:

Siting

Visual & Noise

Wildlife Impact

Development Stages

County / township zoning

Safety

Synchronization with Power Grid

Property Tax

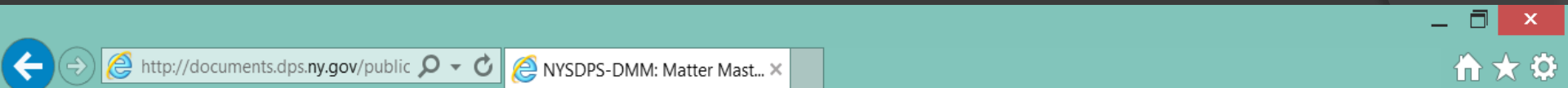
Decommissioning & Financial Security

# Article 10 Participants

- Wind Developer
- State Government
- Local Government
- Federal Agencies
- Community Groups & Activists
- Environmental Organizations & Activists
- Landowners
- General Public



# Generation Siting – DPS Website



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**- Matter Master: 14-02216/14-F-0490**

<b>Matter Number:</b>	14-02216	<b>Case Number:</b>	14-F-0490
<b>Industry Affected:</b>	Facility Gen.	<b>Company/Organization:</b>	Cassadaga Wind LLC
<b>Matter Type:</b>	Petition	<b>Matter Subtype:</b>	Certificate of Environmental Compatibility and Public Need
<b>Title of Matter/Case:</b>	Application of Cassadaga Wind LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 to Construct a Wind Energy Project.		<b>Related Matter/Case No:</b>

[Expand](#)

[Filed Documents \(448\)](#) | 
 [Public Comments \(54\)](#) | 
 [Party List \(26\)](#) | 
 [Calendar \(3\)](#)

Document Type:  [Search Matter Documents](#)

Sr.No.	Date Filed	Document Type	Document Title	Filing On Behalf Of	Filing No.	File Name	File Size
1	4/4/2017	Rulings	<a href="#">Confirmation of Oral Ruling April 3, 2017</a>	Public Service Commission	<a href="#">202</a>	14-F-0490 Oral Ruling 4.3.17.pdf	70.43 KB
2	4/4/2017	Correspondence	<a href="#">Update to Exhibits 10, 31, 33</a>	Cassadaga Wind LLC	<a href="#">201</a>	170403 Update to Exhibits 103133.pdf	130.93 KB
3	4/4/2017	Correspondence	<a href="#">Cover Letter</a>	Cassadaga Wind LLC	<a href="#">201</a>	Ltr to Secretary 103133 Update.pdf	43.4 KB
4	4/4/2017	Correspondence	<a href="#">Appendix B Revised Decommissioning Plan - Redacted</a>	Cassadaga Wind LLC	<a href="#">201</a>	Appendix B Revised Decommissioning Plan (Redacted).pdf	81.22 KB
5	4/4/2017	Correspondence	<a href="#">Appendix A Supplemental Simulations</a>	Cassadaga Wind LLC	<a href="#">201</a>	Appendix A Supplemental Simulations.pdf	9.95 MB
6	4/3/2017	Notices	<a href="#">Notice Canceling Technical Conference</a>	New York State Board on Electric Generation Siting and the Environment	<a href="#">200</a>	14-F-0490 Notice Canceling Tech Conf.pdf	43.69 KB
7	4/3/2017	Correspondence	<a href="#">Historic Resources Visual Effects Summary</a>	Cassadaga Wind LLC	<a href="#">199</a>	Cassadaga Wind Project_Historic Resources Visual Effects Summary.pdf	667.66 KB



# Key Phases of Lease

- ⦿ Development Phase
  - Site selection- will I get a turbine?
- ⦿ Construction
- ⦿ Operations
- ⦿ Re-powering
- ⦿ Decommissioning

# Compensation

- ⦿ Signing Bonus
- ⦿ Development Phase – per acre
- ⦿ Turbines
  - Minimum Annual Rent - per turbine or MW
  - % of Gross Revenues – Not really gross
- ⦿ Adjusted by CPI
- ⦿ Easements - one time or annual
  - Roads
  - Collection and Distribution Lines
  - Transmission Lines

# Compensation

- Construction Impact Payments
- Substation
- Met (Meteorological) Tower
- Timber
- Good Neighbor Agreement
- Construction Staging Area
- Audit Rights

# Land Impacted by Turbine & Easements

- **500' turbine radius = 18 acres**
- **Easements**
- **Wide access roads and construction zones**
- **Lay down areas**
- **Set backs 1000 – 2000 feet**

- ⦿ Exclusive Use Zones
- ⦿ Non-Exclusive Uses
- ⦿ **Mutual consent on locations**
- ⦿ Protection of Oil, Gas Mineral Rights & Pipelines
- ⦿ Timber
- ⦿ Bluestone

# Negotiate Terms

- Compensation
- Setbacks
- Easements
- Roads
- Collection and Distribution Lines - underground
- Transmission lines
- Property Taxes & Roll Back Penalties
- Separate Assessment

- Insurance - 5-10 Million?
  - Not covered by homeowners insurance
- Indemnification
- Mortgage Restrictions
- Substation
- Met Towers
- Battery Storage
- ◉ Financial Security – Removal Bonds
- ◉ Decommissioning Plan



# Financial Assurance

The Applicant will post and maintain financial assurance in the amount of the net decommissioning costs. After the first year of operation, an independent and registered engineer, licensed to practice engineering in the state of New York, will estimate both the total cost of decommissioning and the net decommissioning costs. The net decommissioning costs is the total cost of decommissioning less the salvage value of the equipment and/or re-sale value. This per-turbine estimate (the net decommissioning costs divided by the total number of turbines) will be submitted for DPS Staff and for Town review before construction, after one year of Facility operation and every fifth year thereafter. If the total cost of decommissioning exceeds the salvage value of the equipment and/or re-sale value, the Applicant will post and maintain financial assurance in an amount equal to the net decommissioning cost within 2 months. Financial assurance may be in the form of a letter of credit, a bond, escrow account, a parent guarantee or other form as agreed to by the Towns and DPS Staff. When the Applicant posts the financial assurance, it will provide the Towns with clear instructions as to how they can access the financial assurance should the Applicant violate the provisions of this Decommissioning Plan. For example, if the financial assurance was in the form of a letter of credit, the Applicant would make the Towns a beneficiary of the letter of credit and provide instructions as to how they can access the funds in the letter of credit if needed.

# Financial Assurance – Guarantee

## Unacceptable by Itself

Financial assurance may be in the form of a letter of credit, a bond, escrow account, **a parent guarantee** or other form as agreed to by the Towns and DPS Staff. When the Applicant posts the financial assurance, it will provide the Towns with clear instructions as to how they can access the financial assurance should the Applicant violate the provisions of this Decommissioning Plan.

# SunEdison Files Chapter 11

April 26, 2016



# Other Agreements

- Access agreements
- Bird Study Agreements
- Met Tower Wind Study Agreements
- Lay down areas
- Good Neighbor Agreements

# Risks

- Noise

- Audible - constant, low, "swooshing" noise day and night
- infrasound and low-frequency noise, sound that is lower in frequency than 20 Hz or cycles per second, the "normal" limit of human hearing

- Shadow Flicker – motion sickness

- Ice Throw

- Catastrophic failure

- Bird Kills

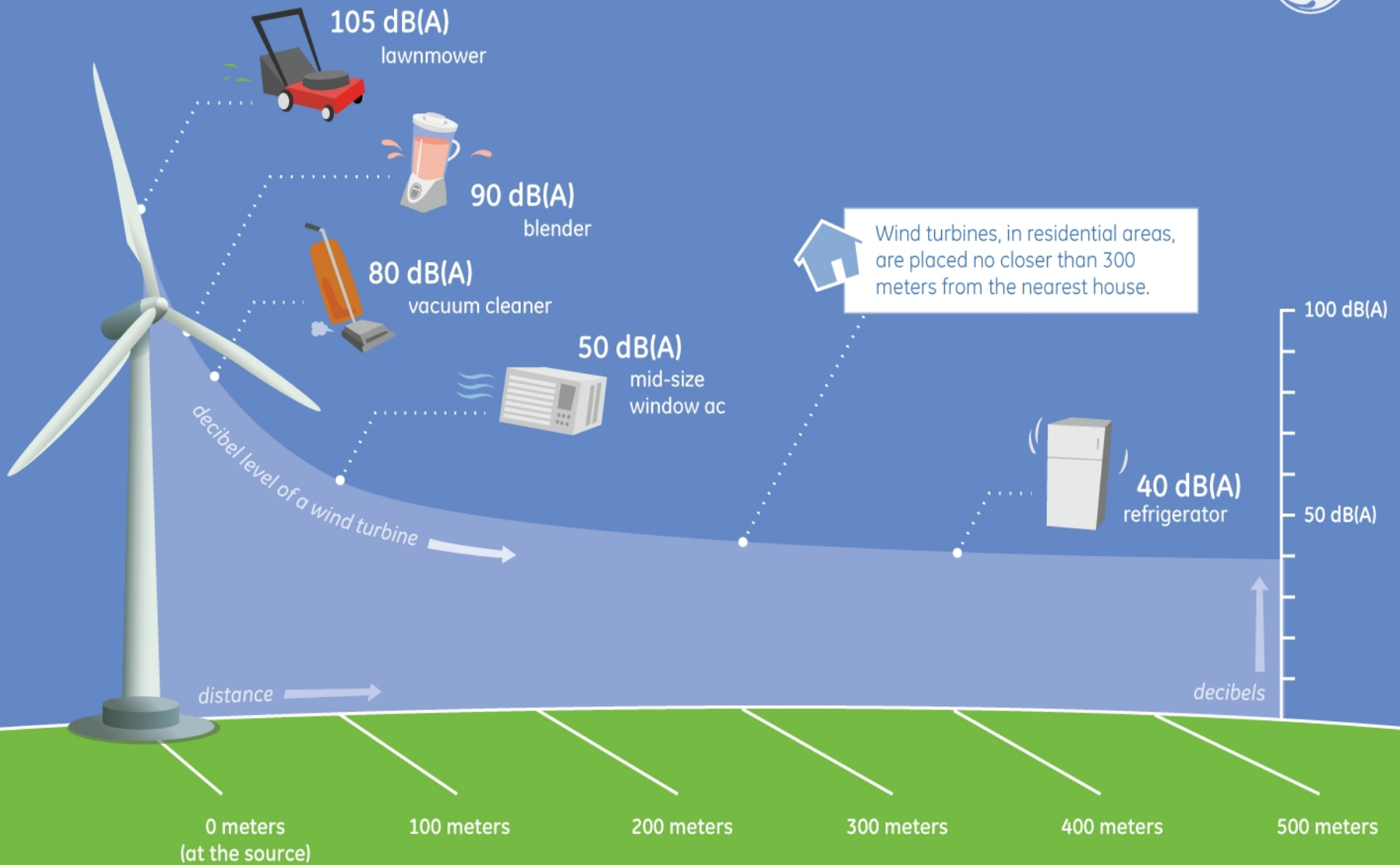
- Property Values

# Federal Rule Permits Thousands of Eagle Deaths



<https://www.usnews.com/news/business/articles/2016-05-04/apnewsbreak-new-rule-would-permit-thousands-of-eagle-deaths>

# How Loud Is A Wind Turbine?



# RPTL § 487-Exemption From Taxation

- ② 2. Real property which includes a solar or wind energy system . . . shall be exempt from taxation to the extent of any increase in the value . . . for a period of fifteen years.
- ② 8. (a) Notwithstanding . . . a county, city, town or village may . . . provide that no exemption under this section shall be applicable within its jurisdiction.



# RPTL § 487

9. (a) A county, city, town, village or school district, . . . that has not acted to remove the exemption . . . may require the owner of a property which includes a solar or wind energy system . . . to enter into a contract for payments in lieu of taxes. . . . If . . . written notification to a taxing jurisdiction of its intent to construct such a system, then in order to require the owner or developer of such system to enter into a contract for payments in lieu of taxes, such taxing jurisdiction must notify such owner or developer of its intent to require a contract for payments in lieu of taxes within **sixty days** of receiving the written notification.

# RPTL § 487

(b) The payment in lieu of a tax agreement shall not operate for a period of more than fifteen years . . . .

# Town Laws

- **A LOCAL LAW OF THE TOWN OF SANFORD AMENDING LOCAL LAW #1-1992 ENTITLED “RENEWABLE ENERGY SYSTEMS”**

# Town of Sanford Law

## RENEWABLE ENERGY SYSTEMS

- Completed State Environmental Quality Review Act (SEQRA) Full Environmental Assessment Form (EAF) and Broome County GML 239 referral form.
- Setbacks: All WECS shall be set back from adjacent Non-Participant property lines, right of ways, easements, public ways, power lines, and any pre-existing structures by a distance at least equal to its fall zone plus 25% of its fall zone.

# Town Law

- ① The level of noise during operation shall not exceed 50 (dBA) measured from the nearest Non-Participant residence.
- ① Decommissioning plan & bond of 110% of the costs reviewed by Town every 5 years

# Town Law - Solar

- ① 100 feet from non-participant residence
- ① Buffer for visual screening
- ① Decommissioning plan & bond of 110% of the costs reviewed by Town every 5 years

- ◎ **Solar Guidebook for Local Governments**

<https://www.nyserda.ny.gov/All-Programs/Programs/NY-Sun/Communities/Local-Government-Training-and-Resources/Solar-Guidebook-for-Local-Governments>

- ◎ **NY Model Solar Energy Law – (No Removal Bond)**

I  NY

Solar is a good idea!



# NY-Sun

- Launched by Governor Cuomo in 2012
- Helps promote and finance solar projects
- Part of NYSERDA
- Governor made a commitment of \$1 billion to stimulate solar in NY in 2012
- Goal to add more than 3 gigawatts (3000 megawatts) of installed solar capacity by 2023 - enough solar energy to power 400,000 homes.

<https://www.nyserda.ny.gov/All-Programs/Programs/NY-Sun/About>

# 2 Megawatt Farms

- 10- 20 acres
- Net metering allowed – sell excess energy back to the utility

# Solar City 2-5 MW - 20 Acres















# Community-Shared Solar

- Trumansburg was NY's first
- Renovous Solar
- Allows residents to purchase solar panels in an off-site array and receive credit for the power the array produces on their electric bills.
- Trumansburg is approximately a half a megawatt system

# Trumansburg, NY



<https://www.dcesolar.com/case-studies/community-solar-farms/>

# Utility Scale Solar

- Long Island Solar farm 164,000 solar panels over 60 acres, 32 megawatts
- Over 20 projects pending with 20 or more megawatts
- Many are 100 + acres



<http://www.renewableenergyworld.com/articles/2015/09/virginia-regulators-approve-80-mw-amazon-solar-farm.html>



<http://www.greenmatech.com/index.php/renewable-energy-group/solar-energy>

# Cayuga Power Plant in Lansing

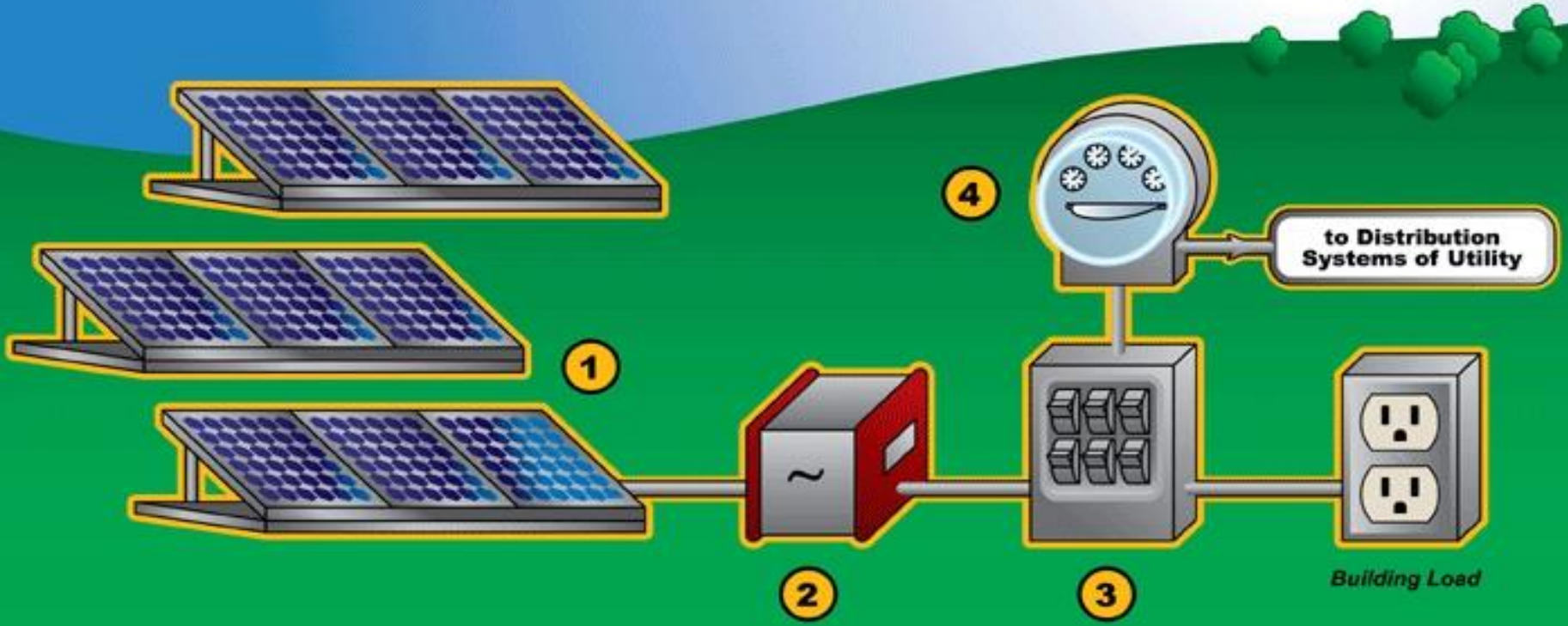
- Riesling Power, owner of the 300-megawatt Cayuga coal plant in the town of Lansing, announced plans to build a \$25 million solar power facility on site.
- The solar farm would produce up to 18 megawatts on 75 acres.
- [http://www.syracuse.com/news/index.ssf/2017/05/cny\\_coal\\_plant\\_owner\\_to\\_build\\_one\\_of\\_new\\_yorks\\_largest\\_solar\\_farms.html](http://www.syracuse.com/news/index.ssf/2017/05/cny_coal_plant_owner_to_build_one_of_new_yorks_largest_solar_farms.html)

1 Photovoltaic Array converts solar energy to direct current electricity

2 Inverter converts direct current to alternating current

3 Breaker box provides an interconnection point to the consumer or grid

4 Meter measures the energy from the solar array and the building load



# Inverter Box - Direct Current (DC) of a Photovoltaic (PV) Solar Panel to Alternating Current (AC)





# Panels to Substation Collection Units and AC Delivered to Grid





# Solar Lease Issues

- ⦿ Long term commitment - often 40 years.
- ⦿ Affects property value, ability to sell in the future and ability to obtain a mortgage.
- ⦿ Exposure for removal costs?
- ⦿ A solar farm is a commercial activity and can affect some real property tax programs and exemptions.
- ⦿ Not covered by homeowners insurance

# Current Property Uses

Consider any of the following on the property:

- Any special uses, farming, tax abatement programs or government subsidy programs governed by the State of New York or the Federal government, to include by way of example and not limitation, the CRP, EQIP, AG Easement, CREP or 480-a forest tax program.
- Any structures, timber, crops or bluestone in the proposed solar array.

# Compensation

- Signing Bonus
- Due Diligence Payments
- Rent – typically fixed land rental
- Timber Payments

# Understand the Leased Area



# Lease Boundary Lines

Will change after useable area  
determined.

# Phases of Lease

- Due Diligence
- Construction Commencement
- Rent Commencement
- End of Term
- Decommissioning



# Negotiate

- ⦿ Compensation
- ⦿ Easements – mutual consent
- ⦿ Underground transmission lines
- ⦿ Property Taxes & Roll Back Penalties
- ⦿ Insurance – 1 million
- ⦿ Indemnification
- ⦿ Timber

- ⦿ Vegetation Control – no chemicals
- ⦿ Preservation of Oil, Gas & Minerals
- ⦿ Decommissioning - remove everything above and below grade
- ⦿ Real Property Taxes
- ⦿ Separate Tax Assessment
- ⦿ Eliminate ROFR

THANK YOU

