

Wind Energy: The Changing Face of New York State

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Part I: Discussion of Wind Energy

A. Wind Energy in New York

With today's changing climate, scientists and policy makers have been pushing to increase the amount of energy generated from renewable resources.¹ The Federal government has begun to advocate for wind development which makes wind energy one of the most popular alternative energy sources in the United States.² With the federal government backing wind development, many states including New York have adopted policies to promote wind energy.³ In New York, the Department of Conservation (DEC) has pushed to implement wind farms across the state but has been met with resistance.⁴ Although the recent push for development, many individuals continue to advocate against the implementation of wind power. Resistance has come from many individuals including; local community members, local government officials, and municipalities.⁵ The most common arguments formulate around bird killings, NIMBYism, the noise levels with wind mills, and the visualization of large wind farms.⁶ Individuals in those communities have filed lawsuits and used moratoriums to delay development. With the passage of Legislation X or "the N.Y. Power Act" in August 2011, the New York State government will now take control of implementing wind farms across New York State.⁷

¹ Patrick Devine-Wright, *Beyond NIMBYism: Towards an Integrated Framework for Understanding Public Perceptions of Wind Energy*, WILEY INTERSCIENCE, Jan. 1994, at 125.

² *Id.* at 126.

³ *Id.* at 126.

⁴ N.Y. D.E.C., *New York State Review of Wind Energy Generation Projects*, (May 11, 2011), <http://www.dec.ny.gov/energy/66494.html?showprintstyles/> (last visited on Dec. 3, 2011) ("DEC 1").

⁵ *Id.*

⁶ *Id.*

⁷ N.Y. Public Service Commission, *The New York Board on Siting and the Environment*, (2011) <http://www.3.dps.state.ny.us/W/PSCWeb.nsf> (last visited on Dec. 1, 2011) ("PSC").

As a result, local communities will lose some of their power to prevent wind development from occurring.⁸

Due to the new legislation, New Yorkers should not fight to prevent wind energy from occurring. Rather, they should fight to ensure their local communities and economies get the most out of wind development. Wind energy has the power to transform small rural communities, increase local economies, and benefit the local school districts.⁹ Wind energy can be a powerful economic change that New York needs to decrease deficits, and help stimulate job growth. Wind energy will change the face of New York.

B. Current Wind Energy produced by windmills in the United States and New York

The Federal government has adopted a pro-renewable energy resource plan that promotes the use of solar panels, bio-fuel, hybrid vehicles, and the use windmills.¹⁰ Windmills have had a large amount of success and has more advanced technology compared to other alternative sources.¹¹ Therefore, wind development has been heavily pushed across the United States. In June 2011, the United States generates 42,432 megawatts of energy through the use of windmills, across thirty-eight states.¹² The United States Department of Energy predicts that by 2030, twenty percent of the energy generated in the United States will run on windmill turbines alone.¹³ Only fourteen states

⁸ *Id.*

⁹ Steven Green House, *Green Collar Jobs* (June 2008) NEW YORK TIMES at A3.

¹⁰ *Id.* at A2.

¹¹ *Id.* at A3.

¹² U.S. Department of Energy (“DOE”), *20% Wind Energy by 2030: Increasing Wind Energy’s Contribution to the U.S. Electric Supply*, (2008), [www. Energy.gov/science-innovation/energy-sources/renewable-energy/wind](http://www.energy.gov/science-innovation/energy-sources/renewable-energy/wind).(last visited on Nov. 30, 2011).

¹³ *Id.*

in the country produce over 1,000 mega watts of energy from the use of wind power.¹⁴

New York is one of the states utilizing wind energy to generate electricity, and is becoming a leader.¹⁵

In New York State as of June 2011, wind farms have the generation capacity of 1,339.2 megawatts per year.¹⁶ The wind farms do not operate to their full capacity but produce 1,000.1 megawatts of electricity per year.¹⁷ Wind farms produces enough electricity to operate 480,000 homes.¹⁸ Windmills help reduce green house gas emission by 1,500,000 tons a year to help the environment.¹⁹

Windmills require a large amount of property for development.²⁰ Developers to seek large, undeveloped areas of land. In New York, large undeveloped regions of land exist in the upstate regions.²¹ There are sixteen wind farms across nine counties.²² Many of the counties used to develop the wind farms have occurred in Western New York.

In Western New York there are five large wind farms which are located in Erie and Wyoming Counties.²³ The current wind farms in Western New York include, Steel Winds Wind Farm, Noble Bliss Wind Project, High Sheldon Wind Project, Noble Wethersfield Wind Project, and Wethersfield Wind Project.²⁴ Western New York generates 366.1 megawatts of energy from wind mills.²⁵ Western New York windmills

¹⁴ *Id.*

¹⁵ *Id.*

¹⁶ N.Y. D.E.C., *New York State Review of Wind Energy Generation Projects*, (May 11, 2011), <http://www.dec.ny.gov/energy/66494.html?showprintstyles/> (last visited on Dec. 3, 2011) (“DEC 1”).

¹⁷ *Id.* at 25.

¹⁸ *Id.*

¹⁹ *Id.*

²⁰ *Id.*

²¹ *Id.* at 25.

²² *Id.*

²³ *Id.*

²⁴ *Id.*

²⁵ *Id.*

and windfarms are responsible for generating 27.3% of the total megawatt energy in New York State.²⁶

C. The Negatives of Wind Energy

There are negative aspects of windmills use which include; the placement of windmills, the amount of bird deaths, and the noise level of windmills.²⁷ The opponents of wind farms highlight these negative impacts as major reasons to oppose further wind farm development.²⁸

a. Placement of Windmills

Windmills require wind to operate. Many windmills require the wind to be blowing at a minimum of eight mph to be able to produce any energy.²⁹ Therefore, that limits the number of places that windfarms and windmills can be constructed.³⁰ The best place to develop wind farms are along coastal regions.³¹ The body of water provides the constant flow of wind that is necessary to generate energy.³² Coastal projects are expensive because of the high cost of coastal lands.³³ Coastal land are preferred but are not abundant enough.³⁴

The visual appearance is one of the main arguments opposing wind development along coastal regions. Many individuals perceive windmills to be unattractive and bring

²⁶ *Id.*

²⁷ Yuriko Saito, *Machines in the Ocean: The Aesthetics of Wind Farms*, (2009)
<http://www.contempaesthetics.org/newvolume/pages/article.php> (last visited on Dec. 13, 2011).

²⁸ *Id.*

²⁹ *Id.*

³⁰ *Id.*

³¹ Julia Layton, *Do Wind Turbines Kill Birds?*, How Stuff Works (Aug. 19, 2008),
<http://science.howstuffworks.com/environmental/green-science/wind-turbine-kill-birds2.htm> (last visited on Nov. 28, 2011).

³² *Id.*

³³ *Id.*

³⁴ *Id.*

a negative visual appearance to natural landscapes.³⁵ People choose to live in close proximity to the water. The argument is developed on the premise that the obstructed view of the wind mills would negatively impact the area, reduce the housing prices, which would cause individuals to move.³⁶ The proposed Great Lakes Project is an example of a vehemently opposed project because many people argue that windmills will obstruct their views on Lake Erie and Lake Ontario.³⁷ The individuals in those regions contested the wind development due to decreased housing prices.³⁸ The opponents were successful because the plan was set aside due to the high costs of developing the wind farm in those regions.³⁹

b. Amount of land required

Windmills require extensive acreage with constant wind. Each windmill requires more than one acre of land. For example, a windmill which generates 1.5 megawatts of energy requires at least 17.8 acres of property.⁴⁰ The amount of undeveloped land required for wind development has made upstate New York a dominant place to develop wind farms.⁴¹ Currently, there are not windfarms located in downstate New York.

c. Bird mortalities from windmills

³⁵ Fritz van den Berg, *Visual and Acoustic Impact of Wind Farms on Residents* (June, 23, 2008) <http://swepub.kb.se/bib/swepub:oai:DiVA.org:hh-1781?tab2=abs&language=en> (*last visited* on Dec. 13, 2011).

³⁶ *Id.*

³⁷ David Robinson, *Wind Farm Project Runs out of Air*, www.buffalonews.com/business/business-columns/david-robinson/article561197. BUFFALO NEWS, Sept. 18, 2001, at A1.

³⁸ *Id.*

³⁹ *Id.*

⁴⁰ Fritz, *supra*, 2

⁴¹ *Id.*

The proposed upland, coastal and offshore site affect the bird habitats for breeding, wintering and migrating.⁴² “The effects of a wind farm on birds are highly variable and depend on a wide range of factors including the specification of the development, the topography of the surrounding land, the habitats affected and the number and species of birds present.”⁴³

The rates of mortality vary from 0.01 to 23 bird collisions annually across the world.⁴⁴ The highest number of bird killings per windmill are recorded from an off-shore wind farm in Belgium.⁴⁵ In the United States the average windmill recorded 5.8 killings per year annually.⁴⁶ The opponents declare that large number of bird mortalities are caused each year due to windmills.⁴⁷ In comparison, the study found that an equal number of birds are killed per year from electrical power lines as windmills.⁴⁸

d. Noise Pollution

A common complaint with individuals living near the windmills is noise. Individuals claim to suffer psychological and physical problems as a result of the noise. Windmills are known to produce a “whooshing” noise when they are in rotation.⁴⁹ The scientific studies have yet to link the actual harm from the noise of the windmills to the health symptoms that have been claimed.⁵⁰ Constant, unfamiliar noises cause people to be annoyed and interfere with sleep.⁵¹ The study noted that individuals receiving an

⁴² Allan L. Drewitt, *Assessing the Impact of Windfarms on Bird*, (March 27, 2006) <http://onlinelibrary.wiley.com/doi/10.1111/j.1474-919X.2006.00516.x/full> (last visited on Dec. 13, 2011).

⁴³ *Id.* at 1.

⁴⁴ *Id.*

⁴⁵ *Id.*

⁴⁶ *Id.*

⁴⁷ *Id.*

⁴⁸ *Id.* at 2.

⁴⁹ Fritz, *supra*, at 2.

⁵⁰ *Id.*

⁵¹ *Id.*

economic benefit from the windmills reported almost no annoyance from the noise.⁵² In contrast, individuals near the windmills and not receiving economic benefits reported the highest level of annoyance.⁵³

These negative perceptions can be achieved with increased and advanced windmill technology. Scientists and environmentalists have changed and altered windmills to decrease noise pollution, and bird mortality rates.⁵⁴ There is one negative aspect of windmills that may not be combatted with better technology; visual appearance.⁵⁵

e. Aesthetic Opponent of Windfarms

Unlike cell phone towers, and satellite dishes which are able to be hidden, windmills cannot be hidden or camouflaged.⁵⁶ Windmills are most commonly considered “eye sores” because they affect the relatively natural landscape where they are developed.⁵⁷ People understand the economic value associated with windmills and yet the negative aesthetic of windmills continues to remain.⁵⁸ Studies in Europe have shown that many opponents of windmills can shift their attitude towards windmills. It is possible that individuals can embrace wind energy.

f. NIMBYism

Many opponents of wind farm development use NIMBYism.⁵⁹ NIMBYism is defined as “not in my backyard,” which illustrates that individuals understand the

⁵² *Id.*

⁵³ *Id.*

⁵⁴ *Id.*

⁵⁵ *Id.*

⁵⁶ *Id.* at 15.

⁵⁷ *Id.*

⁵⁸ *Id.*

⁵⁹ Devine-Wright, *supra*, at 1.

importance of wind energy, but do not want development on their property.⁶⁰ They want to see development take place, but not specifically in their community.⁶¹ Other individuals specifically argue that the wind farms have yet to turnaround the cost of developing them, and in all reality do very little for the community.⁶² The problem is that much of the information is lacking to provide individuals with an accurate perspective on wind farms.

The negative impacts of wind farms can be trumped by the economic and environmental advantages. New York State and the United States in whole needs to adopt other sources of energy and decrease their reliance on oil.⁶³ The energy produced from windmills could help provide that energy source needed and improve the environment.⁶⁴

Part II: Wind Energy in Western New York

A. The Role DEC in Western New York windmill projects

The Department of Environmental Conservation plays a major role in developing wind projects in New York State.⁶⁵ The Renewable Energy Task Force and Plan, and the Renewable Portfolio Standard are plans implemented by the DEC.⁶⁶ The common goal of the plans is to reduce the emission of carbon into the atmosphere through the use of

⁶⁰ Devine-Wright, *supra*, at 1.

⁶¹ *Id.*

⁶² *Id.*

⁶³ N.Y.S. Dep't of Conservation, *Wind Power*, (May 20, 2011), <http://www.dec.ny.gov/energy/40966.html> (last visited on Nov. 28, 2011). ("DEC" 2)

⁶⁴ *Id.*

⁶⁵ *Id.*

⁶⁶ *Id.*

alternative energy resources such as solar, wind, and geothermal.⁶⁷ The plans highlight using wind energy usage because of the previous positive effects that wind energy projects have had on New York State.⁶⁸

The Renewable Energy Task Force Plan provides a comprehensive policy roadmap.⁶⁹ The main goal of the plan is to reduce electricity use by fifteen percent before 2015.⁷⁰ The elements of the plan include: creating new appliance standards, stricter energy-related building codes, investment in renewable energy products throughout the state, and a faster review process for wind energy.⁷¹ These elements will help to reduce the carbon emissions, which will achieve the ultimate goal.

In 2004, New York State implemented the Renewable Portfolio Standard (RPS). The Renewable Portfolio Standard is the cornerstone for renewable energy because it helped New York to seek alternative sources of energy.⁷² The plan promotes the research, development, and alternative energy.⁷³ The main goal of RPS is to have all of New York receiving thirty percent of their energy from renewable energy resources by 2015.⁷⁴ The plan highlights the importance of wind energy to help meet the RPS projected goal because of its known success in reducing carbon emissions.⁷⁵

B. Economic Benefits of Wind Farms in Western New York

There have been many economic benefits brought to Western New York because wind farm development. The wind farms have created jobs, and helped to clean up

⁶⁷ *Id.*

⁶⁸ *Id.*

⁶⁹ *Id.*

⁷⁰ *Id.*

⁷¹ *Id.*

⁷² *Id.*

⁷³ *Id.*

⁷⁴ *Id.*

⁷⁵ *Id.*

industrial sites in Buffalo.⁷⁶ Also, the government has granted individuals tax breaks, and given incentives to communities.⁷⁷

One of the most successful projects in Western New York is the Steel Wind, Wind Project located in Lackawanna, New York.⁷⁸ The Steel Winds project was the first project in the country developed on an old industrial sight. The project is successful because it demonstrates the capacity that Buffalo could have for wind farm development, and transforming the polluted, abandoned industrial sites within the city.

The wind farm has ten wind turbines that generate enough energy to operate 9,000 homes on a yearly basis.⁷⁹ The plan has proposed a second phase of the project which will increase the amount of wind turbines as well as the amount of energy able to be produced from the turbines.⁸⁰

The Town of Allegheny received many economic benefits from the Lackawanna Wind Project. First, the town receives \$1,000 per turbine for allowing the development.⁸¹ Once construction started, the town received another \$500,000.⁸² After the installation of the wind turbines, the town received an additional \$285,000 a year to compensate for the lack of tax payments.⁸³ The Allegheny Library and historical society each received \$5,000 as part of the agreement.⁸⁴ The development company had to improve the road

⁷⁶ *Id.*

⁷⁷ *Id.*

⁷⁸ Maki Baker, *Windmill Power Spins Into Reality; Where Steel Smokestacks Once Billowed, Giant Blades Harness Electricity, Signal Future Full Potential*, BUFFALO NEWS, June 7, 2007, at A1.

⁷⁹ *Id.* at A3.

⁸⁰ *Id.* at A3.

⁸¹ Barbara O'Brien, *Allegheny Board Approves Wind Farm; Town to get \$1,000 For Each of the 29 Turbines*, BUFFALO NEWS, August 31, 2011, at A1.

⁸² *Id.* At A2.

⁸³ *Id.*

⁸⁴ *Id.*

conditions so that the roads could withstand the weight of the trucks.⁸⁵ The construction of the wind farm created 200 temporary jobs and local businesses received increased revenue.⁸⁶ The project created five permanent jobs in Lackawanna.⁸⁷ The Lackawanna School District receives \$35,000 a year for approving the project.⁸⁸ Over a fifteen year period the school district will receive a total of \$525,000.⁸⁹

Noble Environmental Power has been a leading wind energy developer in Western New York with two successful projects.⁹⁰ The Noble Bliss project contains sixty-seven, 1.5 megawatt windmills which produce a total of 100.5 megawatts of energy.⁹¹ That translates into providing enough annual electricity for approximately 33,500 homes.⁹² The project began on May 18, 2008 and was operational in 2009. The other project is Noble Wethersfield Windpark.⁹³ The project produces 126 megawatts from eighty-four windmills.⁹⁴ The construction began in June 17, 2008 and the windpark became operational in the spring of 2009.⁹⁵ The project produces enough clean energy to provide the annual electricity needs to 42,000 homes.⁹⁶ The wind farm helped to create ten permanent employee positions.⁹⁷

⁸⁵ *Id.*

⁸⁶ *Id.*

⁸⁷ *Id.*

⁸⁸ *Id.*

⁸⁹ *Id.*

⁹⁰ Noble Wind, *Noble Bliss Windpark*, (Aug. 20, 2009), <http://www.noblepower.com/our-winparks/bliss.index.html> (*last visited on Nov. 29, 2011*).

⁹¹ *Id.*

⁹² *Id.*

⁹³ Noble Wind, *Noble Wethersfield Windpark*, (Aug. 20, 2009), <http://www.noblepower.com/our-winparks/bliss.index.html> (*last visited on Nov. 29, 2011*).

⁹⁴ *Id.*

⁹⁵ *Id.*

⁹⁶ *Id.*

⁹⁷ *Id.*

The High Sheldon Wind Farm is located in Wyoming County.⁹⁸ The farm has seventy-five wind towers which harness 112.5 megawatts of energy which produces enough energy to run the electricity for 33,600 homes.⁹⁹ The windfarm was placed on farm land which the local farmers leased to the wind development company.¹⁰⁰ As a result, the windfarm pays the local taxes for the Town of Sheldon and continues to have a growing economic impact on the area.¹⁰¹

The wind farms in Western New York have brought millions of dollars of revenue into the area, paid the taxes for local towns and communities, and helps the environment by reducing the pollution and cleaning up contaminated sites. The economic and environmental benefits in Western New York far outweigh the negative aspects of wind energy.

C. The use of Moratoriums

Communities and local activists groups have taken many steps prevent the development of wind projects suspend their development. They have been successful by opposing wind projects through the use of moratoriums and filed lawsuits.

Before a wind project will be approved, there must be town meetings.¹⁰² Many town meetings are held over a length of time due to the complicated nature of the plans.¹⁰³ The plan must include; the site for development, the costs of development, the

⁹⁸ American Avalon, *High Sheldon Wind Farm: Environmental Impact Statement*, (2008), http://www.ace.fl.com/projects_high_sheldon_wind.farm.html (last visited on Nov. 29, 2011).

⁹⁹ *Id.*

¹⁰⁰ *Id.*

¹⁰¹ *Id.*

¹⁰² John R. Nolan, *Wind Power: An Exploration of Regulations and Litigation*, 15 N.Y.L.J. 4, 5, (2008).

¹⁰³ *Id.*

economic benefit on the community, and impact studies on the region.¹⁰⁴ During the approval process, advocate groups and local individuals propose moratoriums.¹⁰⁵ Moratoriums allow more time for consideration of the proposed projects.¹⁰⁶ For example, it suspends the project until the community has had adequate time to consider, draft, adopt rules or land use policies to deal with the development.¹⁰⁷ The problem with moratoriums is the ability to suspend moratoriums for years which does not allow for development to occur.¹⁰⁸ For example, in 2008 the town of Castile passed a year long moratorium on the proposed wind farm.¹⁰⁹ A moratorium is able to be extended as long as the community believes is necessary.¹¹⁰ The town of Castile extended the moratorium for five years. Within the five year period, the developers dropped the proposed wind farm. The town of Castille used a mortorium to complete stop wind farm development from occurring.¹¹¹ The ability of moratoriums to completely stop wind projects from developing has been a major problem, and has stopped development.

D. Wind Farm litigation

Local community members have taken the local Town Boards to court for violation based on allowing wind development to occur. In the Town of Sheldon, six community members sued the Town Board.¹¹² The community members were seeking to

¹⁰⁴ *Id.*

¹⁰⁵ *Id.*

¹⁰⁶ *Id.*

¹⁰⁷ *Id.*

¹⁰⁸ *Id.*

¹⁰⁹ Save Western New York, *Wind Farm Madness*, (Dec. 26, 2006), <http://www.savewesternny.org/towns.html#attica>. (*last visited on* Nov. 28, 2011).

¹¹⁰ *Id.*

¹¹¹ *Id.*

¹¹² *Friedhaber v. Town Bd. of Town of Sheldon*, (N.Y. Sup. Ct. 2007).

annul the approval of the High Sheldon Wind Farm and obtain a preliminary injunction to prevent further development.¹¹³ The petitioners argued six different causes of action that included; 1) that the town did not have the authority to grant certain variances with local laws, 2) the board exceeded its jurisdictions by granting certain variances, 3) the board violated the local law by authorizing setback variances, 4) the board violated the doctrine of legislative equivalency, 5) the ZBA invaded the board's legislative province by granting the variances, 6) the board failed to make specific disclosures to the municipal law.¹¹⁴ The court reasoned that there was no "clear and obvious" conflict of laws or violations on the part of the Town Board of Sheldon.¹¹⁵ The Supreme Court of New York determined that each of the causes of action by the petitioners was not valid, and the preliminary injunction was denied and the motion was dismissed.¹¹⁶ This case illustrates that the court is not likely to get involved in matters to suspend wind farm development. They have stated that such development is a legislative issue and is not the place of the judicial system to become involved.¹¹⁷

E. The Process made easier for Wind Development

New York State works to decrease the amount of time that wind development takes. They have adopted two approaches to help increase the process. The first approach is to develop wind farms on state and publicly owned property, such as the New York State Thruway project.¹¹⁸ Therefore there does not need to be an approval process

¹¹³ *Id.*

¹¹⁴ *Id.*

¹¹⁵ *Id.*

¹¹⁶ *Id.*

¹¹⁷ *Id.*

¹¹⁸ Tom Precious, *Thruway Eyes Energy Blowing in the Wind*, BUFFALO NEWS, Sept. 15, 2011 at A1.

by the local governments and municipalities.¹¹⁹ The second approach is to decrease the local and municipality involvement all together as in Article X.¹²⁰ Article X helps to speed up the process because the local leaders and communities lose much of their power to implement wind farm development.¹²¹

a. New York State Thruway Project

The New York State Thruway authority recently approved for the development of five turbines along the thruway between Buffalo and the Pennsylvania state line.¹²² The Thruway Authority proposed the project to produce enough energy to run its facilities along the thruway.¹²³ The construction is set to begin in 2012, and it required no approval from any local communities or municipalities.¹²⁴ This was the first project proposed on public lands.¹²⁵ It is possible that other agencies in the state will implement wind energy to help save costs, and implement renewable energy sources to help New York meet its ultimate goal of energy reduction.¹²⁶

b. Article X

Governor Cuomo signed Article X on August 4, 2011 with the primary purpose to provide for the new and modified methods of siting windmills.¹²⁷ Previously, wind developers had to apply for numerous state and local permits individually. With the new legislation the Board of Electric Generation Siting and the Environment created a

¹¹⁹ *Id.*

¹²⁰ Power NY Act of 2011, S. 5844, A. 8510, reg. Sess. (2011), *available at* <http://assembly.state.ny.u/leg>.

¹²¹ *Id.*

¹²² Precious, Thruway Eyes Energy Blowing in the Wind, *supra*, 11.

¹²³ *Id.*

¹²⁴ *Id.*

¹²⁵ *Id.*

¹²⁶ *Id.*

¹²⁷ Power Act, *supra*, at 12.

singular process for applying to permits.¹²⁸ The legislation creates a board of individuals responsible for the implementation projects in regions in New York State.¹²⁹ The board consists of two adhoc members within the municipality where the project is sited to be placed, but there are a total of 7 members.¹³⁰ Five members on the board, have no direct involvement or personal stake in the community. Therefore the local communities and governments not longer have the direct involvement in the wind development process.

The local communities will not be involved in approving projects if the energy facilitate generates more than twenty-five megawatts of electricity.¹³¹ This law may have a dramatic effect on smaller wind energy projects, because local communities and municipalities may not have the ability to prevent wind development projects from coming to their community.¹³² Importantly, New York State is pushing the development of renewable energy projects under Governor Cuomo, and with his efforts wind development will continue to occur at a growing rate.¹³³ Local individuals should embrace wind energy because then the individuals in the communities would have a better chance of reaping the possible benefits that wind development could provide.

There are proposed plans in Western New York that have yet been constructed and remain in the review process.¹³⁴ The wind projects under review are the projects that have received controversy.¹³⁵ Many of the projecets are meant with much resistance

¹²⁸ N.Y. Public Service Commission, *The New York Board on Siting and the Environment*, (2011) <http://www.3.dps.state.ny.us/W/PSCWeb.nsf/All/64C8A03C408086EB85257687006F3ABE?OpenDocument> (last visited on Nov. 28, 2011) (“PSC”).

¹²⁹ *Id.*

¹³⁰ *Id.*

¹³¹ *Id.*

¹³² *Id.*

¹³³ *Id.*

¹³⁴ DEC 1, *supra*, at 13.

¹³⁵ *Id.*

from the community members. Based on the new legislation many projects that were opposed will be much closer to development.

Part III: Advanced Wind Technology

a. Windmill v. Wind Turbine

Often times many individuals use windmill and wind turbine interchangeably. In fact wind turbines and windmills are not one in the same because there are many differences.¹³⁶ The differences include; the speed the blade rotates, visual appearance, utilization of wind, and ability to generate electricity.¹³⁷ Wind turbines have more advanced technology than windmills and have shown to be more productive.¹³⁸

One of the major differences is the speed the blades rotate.¹³⁹ In traditional windmills the blades rotate at a very slow pace which required a powerful turning force to exert energy.¹⁴⁰ Therefore the traditional windmills are not able to produce electricity to their full capacity.¹⁴¹ The slow rotation of the blades is also a factor in how the windmill does not fully utilize the wind.¹⁴² For example many windmills require the wind to be blowing at least eight mph, for the blades to rotate.¹⁴³ If the blades are not rotating, then the windmills will not produce electricity. When compared to a wind turbine which is able to better utilize the wind to turn it into electricity, and it will operate

¹³⁶ John Tabek, *Wind and Water*, Facts on File, Inc., (Apr. 1, 2009), at 3.

¹³⁷ *Id.*

¹³⁸ *Id.* at 10

¹³⁹ *Id.*

¹⁴⁰ *Id.* at 12.

¹⁴¹ *Id.*

¹⁴² *Id.* at 13.

¹⁴³ *Id.*

with wind speeds below eight miles per hour.¹⁴⁴ The advanced technology of wind turbines, will help to maximize the electricity production from the wind.¹⁴⁵

b. Kean Wind Turbine

The Kean Wind Turbine Company is a benefit corporation in Buffalo.¹⁴⁶ That in turn means that fifty percent to the revenue raised from the sale of the wind turbines will directly benefit the western New York region.¹⁴⁷ The company is completely based in Buffalo from engineering, to the production of wind mills. The production of the windturbines could help stimulate and create jobs.¹⁴⁸ Also, all of the shareholders of the company are located in Western New York which will help keep the interests local.

The Kean Company has developed an advanced model of a wind turbine.¹⁴⁹ The wind turbine eliminates many of the negative aspects of windmills.¹⁵⁰ They have created a wind turbine opposed to a wind mill which has a more effective design.¹⁵¹ (See Exhibit A). Compared to windmills, the wind turbine is able “to convert forty percent of the kinetic energy from the wind to useful energy”, which far surpasses any other model.¹⁵² The efficiency of the Kean Wind Turbine would substantially benefit wind energy technology.¹⁵³

¹⁴⁴ Kean Wind Turbine, *Our Mission*, <http://www.keanwindturbines.com/hme.html> (last visited on Dec. 13, 2011).

¹⁴⁵ *Id.*

¹⁴⁶ *Id.*

¹⁴⁷ *Id.*

¹⁴⁸ *Id.*

¹⁴⁹ Kean Wind Turbine, *Efficiency*, <http://www.keanwindturbines.com/hme.html> (last visited on Dec. 13, 2011).

¹⁵⁰ *Id.*

¹⁵¹ *Id.*

¹⁵² *Id.*

¹⁵³ *Id.*

The most beneficial aspect of the wind turbine is that wind turbines are much smaller in size compared to the large windmills.¹⁵⁴ That allows wind turbines to be placed much closer together, which would reduce the amount of property required for wind development.¹⁵⁵ The wind turbines can be placed on top of commercial buildings, in urban communities, and places where traditional windmills could not be placed.¹⁵⁶ This would greatly appeal to individuals who are against wind energy because it would not need to be near the coastlines, and would not take up many acres of property.¹⁵⁷

Many of the negative effects individuals associate with windmills have been eliminated by the Kean Wind Turbine. Studies have shown that there is no noise pollution, the wind turbines are able to operate at high speeds, decrease bird mortality, and make them more visibly appealing.¹⁵⁸ The wind turbine is designed to prevent bird mortalities because there are no opening for the birds to be caught.¹⁵⁹ There will almost still be opponents to wind turbines, but at minimum the wind turbines help to eliminate many of the negatives to help appease more individuals.

Other advanced technology in the future could help to increase the amount of electricity that windmills would be able to generate. The Kean Wind Turbine is a step in the right direction for Western New York to help create jobs and promote renewable energy sources.¹⁶⁰ In the future, there will most likely be more advances that will change wind energy.

¹⁵⁴ *Id.*

¹⁵⁵ *Id.*

¹⁵⁶ *Id.*

¹⁵⁷ *Id.*

¹⁵⁸ *Id.*

¹⁵⁹ *Id.*

¹⁶⁰ *Id.*

New York State has promoted and pushed for the greater usage of renewable energy resources in the current years.¹⁶¹ Due to the push, wind energy has been a strong part of New York's strategy to increase electricity production from renewable energy resources.¹⁶² Wind energy has seen to have some faults and things that can be approved with the better advanced technology.

No matter what types of developments occur, there will always be people that are opposed to change. Windmills and wind turbines in the United States are a more recent development, and it will take people longer to embrace the idea of wind energy. With the passage of Article X, it is likely that it will change how wind development occurs.¹⁶³ Wind development could occur much faster, and alleviate much of the the local community involvement. In the future years it will be interesting to see whether wind development really does increase, and the reaction that local communities and municipalities will have to wind development.

There are many positive economic benefits that wind energy production would be able to provide to communities across New York State.¹⁶⁴ It would be in the best interest of people to embrace wind energy to help reduce pollution and gain the most economic benefits as possible. Wind development will continue to occur across the state, and it is something that is not going to disappear any time in the near future. Due to the increasing use of wind energy, development in technology, and New York State's push it is likely that windmills and wind turbines will play a large role in the development of New York State in the future.

¹⁶¹ DEC 1, *supra*, at 15.

¹⁶² *Id.*

¹⁶³ *Id.*

¹⁶⁴ *Id.*

