

ISSUE PAPER SERIES

The Next Generation of Wind Farms on Tug Hill

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NEW YORK STATE TUG HILL COMMISSION

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The Tug Hill Commission Technical and Issue Paper Series are designed to help local officials and citizens in the Tug Hill region and other rural parts of New York State. The Technical Paper Series provides guidance on procedures based on questions frequently received by the Commission. The Issue Paper Series provides background on key issues facing the region without taking advocacy positions. Other papers in each series are available from the Tug Hill Commission. Please call us or visit our website for more information.



Photo by Mickey Dietrich

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The Next Generation of Wind Farms on Tug Hill

Introduction

Sixteen years have passed since the Maple Ridge Wind Farm in Lewis County began operating in 2006. When large wind farms were originally proposed for Tug Hill, the commission wrote *Harnessing the Wind on Tug Hill* in 2000 and updated it in 2010. The commission wrote a new paper in 2017, [The Next Generation of Wind Farms on Tug Hill](#), which discussed topics that municipalities should consider when making decisions about wind farms being sited in their communities and the permitting process known as Article 10. This 2022 revision of the 2017 paper updates the status of wind farms projects on Tug Hill and discusses an additional permitting process through the newly created [Office of Renewable Energy Siting](#) (ORES).

Wind Farms on Tug Hill

Tug Hill's elevation, relatively low population density, geography and proximity to prevailing lake-effect winds make it an ideal location for the construction of electricity-generating wind facilities. As of March of 2022, there were three wind farms operating in the Tug Hill Region including [Maple Ridge](#), [Roaring Brook](#), and [Copenhagen](#). Two additional projects, [Deer River](#) and [Number Three](#), are permitted with Number Three under construction and Deer River still moving through the latter stages of the Article 10 process (see map on the next page).

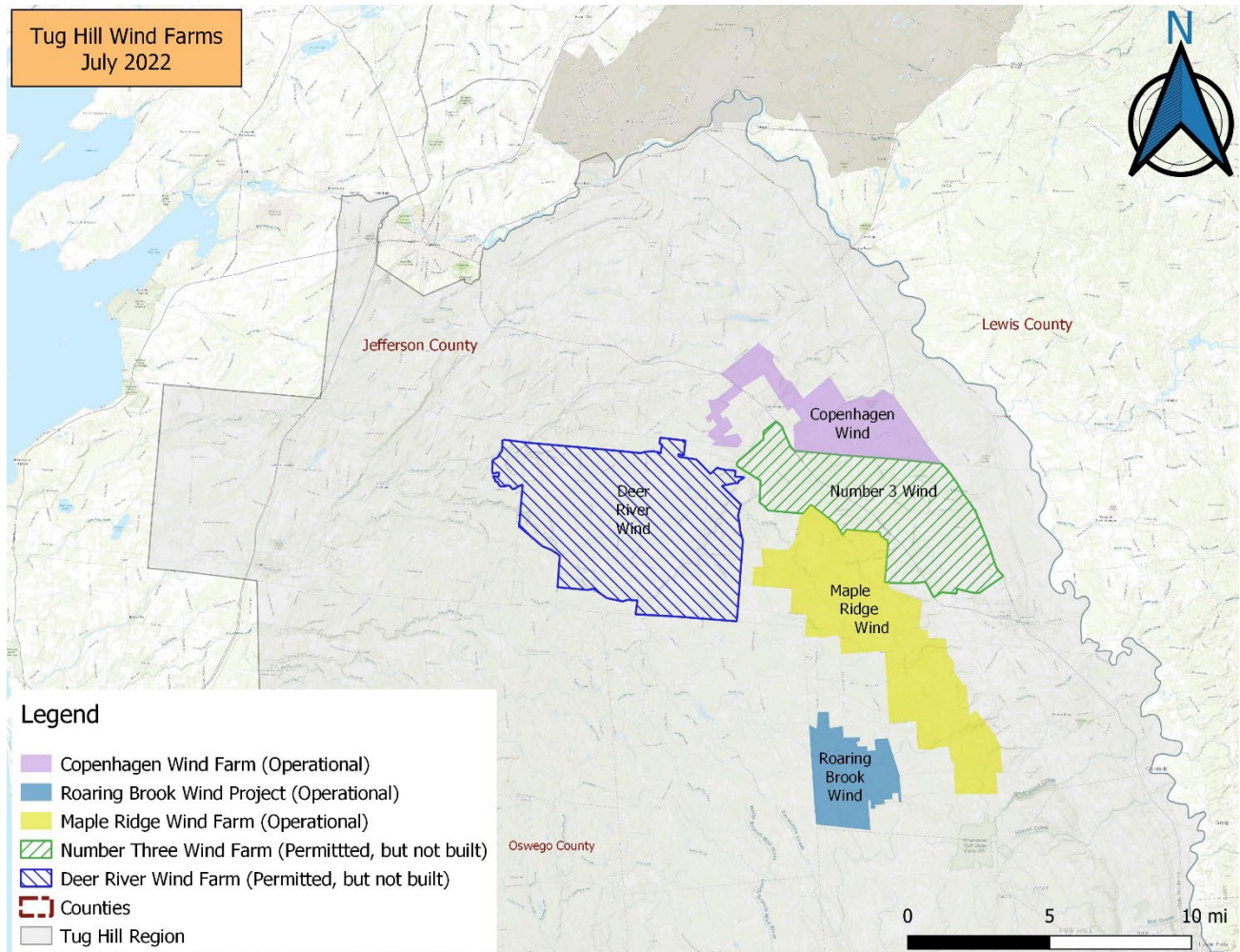
According to developer Avangrid Renewables, the [Deer River](#) project in the towns of Harrisburg, Montague and Pinckney, calls for up to 27 wind turbines and has been permitted through NYS Article 10 Siting Process. Also, a transmission line may be built into the town of Rodman, as part of this project. For all filings on this matter, go to the [Department of Public Service page for this project \(Case Number: 16-F-0267\)](#).

According to developer Invenergy, the [Number Three](#) project in the towns of Denmark, Harrisburg and Lowville, will include 27 wind turbines. This project has been permitted through the NYS Article 10 Siting Process and is currently under construction. For all filings on this matter, go to the [Department of Public Service page for this project \(Case Number: 16-F-0328\)](#).

A sixth wind farm proposed in the town of Worth is in its early stages and is not shown on the map. It is listed in the [NYISO queue](#) under SWEB Development USA, LLC (Worth Wind) with completion dates listed as early as the end of 2025. A meteorological tower was approved by the town's planning board, but no further permitting has been sought as of the time of this paper. Additionally, a seventh project, Mad River Wind, is still listed in the NYISO queue with a last updated date of October 21, 2021 and a potential interconnection date in later 2025.

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Figure 1: Map of Current and Future Wind Farm Projects on Tug Hill



What are the potential economic impacts?

In many communities, wind farms are seen as a way to bring economic development to rural areas and sustain local farms and open space. Wind farms make lease payments to landowners with turbines on their property, as well as neighboring landowners, in some cases. Payments in lieu of taxes (PILOTs) are made to taxing jurisdictions. Many jobs are created during construction, and several permanent jobs are created as the wind project becomes operational.

Payments in Lieu of Taxes: NYS Real Property Tax Law Section 487 generally provides a 15-year exemption from real property taxation for the increase in value resulting from the installation of a qualifying system, such as a wind or solar farm. If the taxing jurisdiction (county, town, village, school district) does not take any action to opt out of the exemption, the

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exemption remains in place, and the taxing jurisdiction can enter into a PILOT agreement with the developer.

A PILOT is meant to provide certainty to the project by setting up guaranteed payments over time, often 15 years, often starting low and increasing over time to improve cash flow for developers. Because of high capital investment and longer financing time frame, PILOTs for wind projects tend to be based on a fee per megawatt of installed generating capacity and include an annual escalator. PILOTs are negotiated by considering the uncertainty over how such facilities should be valued, the availability and reliability of the wind resource and what portions of the wind farm constitute real property, as distinguished from personal property. Ultimately, payment levels reflect an operating cost the project can tolerate, and a revenue stream the taxing jurisdictions can accept.

The original PILOT payments made by the Maple Ridge Wind Farm were very high because of a unique set of circumstances. PILOTs negotiated for the currently proposed projects will be significantly lower. At the time of its construction, the Maple Ridge Wind Farm was located in a NYS Empire Zone, which was a state funded tax incentive program (that currently no longer accepts new businesses). The Empire Zone designation resulted in NYS essentially paying the project's property taxes (which can be established at a level as high as the project's original construction cost and ignoring the application of depreciation) for a period of 15 years. That PILOT expired in 2021 and was renegotiated between the owner and the involved taxing jurisdictions without the Empire Zone designation, resulting in more typical PILOT payments for wind farms in NYS.

How are wind farms permitted?

The Article 10 Process

Prior to 2011, New York's wind siting process was primarily handled at the local municipal level, including an environmental review through the State Environmental Quality Review Act (SEQRA) process. Chapter 388 of the laws of 2011 enacted Article 10 of the NYS Public Service Law. It "established a process for the siting of electric generating facilities and re-powering projects. As part of the process, a multi-agency siting board was charged with streamlining the permitting process for power plants of 25 MW or greater."¹ Article 10 was meant to provide a more uniform and efficient process for the siting of electric generating facilities such as wind farms in New York. To build a wind farm or other major electric generating facility, a developer must obtain a Certificate of Environmental Compatibility and Public Need ("Certificate" or "Article 10 Certificate") from the siting board.

While Article 10 provided communities opportunities to participate throughout the siting process, it removed permitting authority over the siting of wind projects from local governments and exempted projects from the SEQRA process. It instead placed responsibility for

¹ <http://www3.dps.ny.gov/W/PSCWeb.nsf/All/1392EC6DD904BBC285257F4E005BE810?OpenDocument>

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environmental review and permitting in the hands of the siting board. Local governments, however, still had representation on the siting board (two ad hoc members nominated by local municipalities) and were involved throughout the Article 10 process. In addition, Article 10 provided that locally adopted development standards must be adhered to by the siting board in their review and approval of projects, unless the standards are “unreasonably burdensome in view of the existing technology or the needs of or costs to ratepayers.” More information about Article 10 is included in Appendices A and B.

The 94-C Siting Process

In July of 2019, the [Climate Leadership and Community Protection Act \(CLCPA\)](#) was enacted, setting rigorous greenhouse gas emission goals and renewable energy goals:

- Reducing GHG emissions by 40% by 2030 and 85% by 2050
- Generating energy from 70% renewable sources by 2030 and from 100% emissions free sources by 2040
- 9 GW Offshore wind by 2035, 6 GW PV by 2025, 3 GW storage by 2030

The previous permitting process under Article 10 was created with fossil fuel-sources energy generation in mind. Since new goals stress power from wind and solar energy generation, a new application process was created to implement the renewable energy facilities more efficiently. In April 2020, the [Accelerated Renewable Energy Growth and Community Benefit Act](#) (Act) was enacted. The Act set rigorous goals and laid out a streamlined way for the state to achieve the goals established under the CLCPA. The Act established the Office of Renewable Energy Siting (ORES), housed within the Department of State, consolidating the environmental review of major renewable energy facilities.

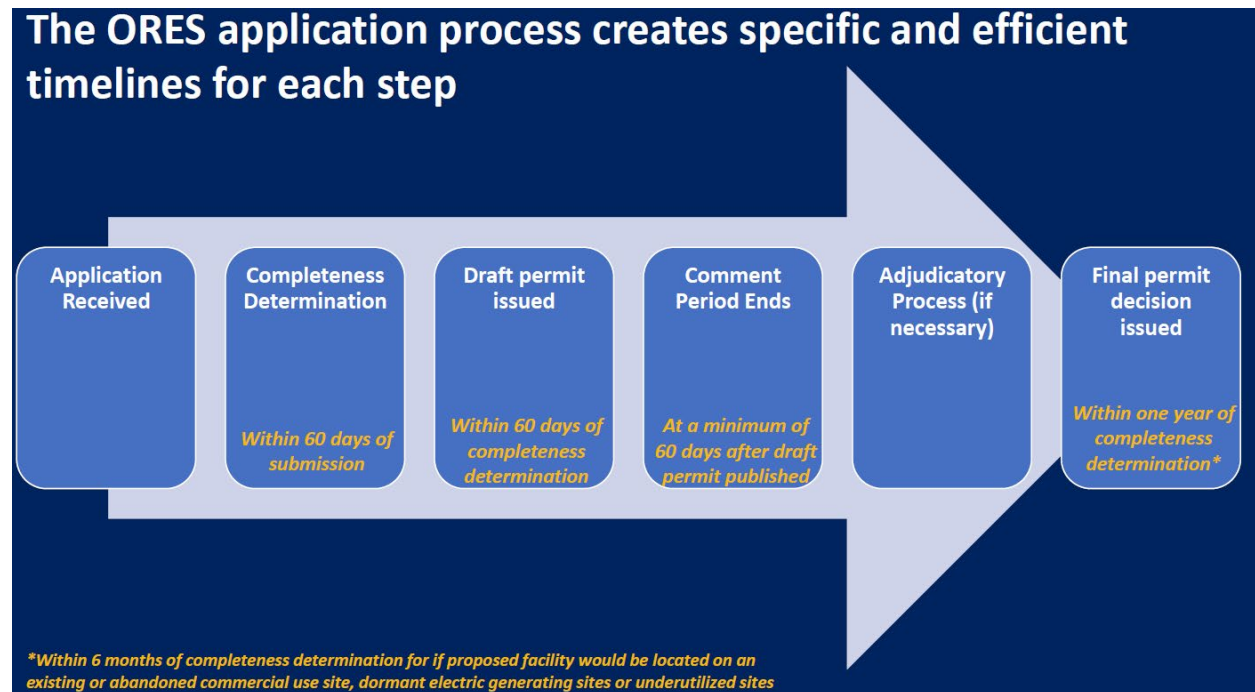
The [Act](#) did not entirely replace the Article 10 permitting process; developers already in the Article 10 queue have the option of moving from the Article 10 process to the 94-c process. ORES has a [list of energy projects](#) currently under review and those that have already been permitted. Also included here is a running list of existing and future permit applications, including those that have transferred from Article 10 to 94-c.

The [Act](#) states that "all large-scale, renewable energy projects 25 megawatts or larger will be required to obtain a siting permit from the Office of Renewable Energy Siting for new construction or expansion" and that "projects already in the initial phases of the current Article 10 siting process through the State's Siting Board may remain in Article 10 or opt to transfer into the new siting process. New projects sized between 20 and 25 megawatts may also elect to apply for a siting permit. The Office of Renewable Energy Siting has the authority to issue a single permit for the construction of major renewable energy facilities from both a state and local law perspective, but applicants will still be required to obtain any approvals necessary under federal law, including federally-delegated permits."²

² [About the Office of Renewable Energy Siting | Office of Renewable Energy Siting \(ny.gov\)](#)

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The graphic below represents a simplified version of the 94-c application process and is taken from a presentation on the [New Renewable Energy Siting Process](#) found at the bottom of this [page](#).



ORES established Uniform Standards and Conditions (USC) to streamline the permitting process. The USC is designed to consider CLPCA targets and environmental benefits of renewable energy. It is also designed to first avoid, then minimize, then mitigate environmental impacts and to limit the number of site-specific conditions that must be negotiated between the applicant and the Office. The USC is specific to solar and wind and will apply to environmental impacts common to each.

The USC was created in consultation with NYSEDA, DEC, DPS, Ag & Markets. ORES promulgated the [Final Regulations Implementing Section 94-c of Executive Law](#) on March 31, 2021. [Other regulatory documents are also available](#).

How are wind farms assessed?

[Real Property Tax Law 575-B](#) was enacted as part of the 2021-22 NYS Budget. It created a standardized appraisal methodology for assessors to use when assigning values to wind and solar projects. The law has created some controversy at the local government level and is currently being challenged in court with a temporary restraining order put in place. The discounted cash flow approach adopted by the new law reportedly results in much lower assessments, which may

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impact the value of existing PILOT agreements to taxing jurisdictions, as well as those for pending projects.

What are the potential impacts of wind farms?

As with every power generating facility, wind farms have impacts. Impacts on wetlands and streams, historic structures, views and wildlife habitat on potential wind farm sites are evaluated and minimized by careful siting of turbines. Both 94-C and Article 10 require a developer to investigate and analyze many of the same potential environmental impacts traditionally covered under a SEQRA review, such as impacts to wetlands, water and natural resources, wildlife and endangered species, property and people. The application must also include a discussion of measures the developer took to avoid, minimize, or mitigate potential negative environmental impacts from the project, and why the project should be approved. Communities may be interested in studies and analysis on the following impact areas:

Aviation: Tall structures, like wind turbines, are known to cause issues with RADAR, including RADAR for weather forecasting and aviation. Under federal law, a wind farm developer must consult with the Federal Aviation Administration (FAA) and the Department of Defense, as well as nearby operators of airports and heliports, to determine the potential impacts of the project on aviation, radar and communications systems, and to ensure that the project does not pose a significant hazard to those resources. Northern Jefferson County is home to Ft. Drum, which conducts military flight training over portions of Tug Hill. A required part of any wind developer's proposal in the region will be consultations with, and assessment of potential impacts on, Ft. Drum and military operations there. A [Joint Land Use Study](#), completed in 2018 under contract with Development Authority of the North Country, looked closely at various encroachment issues related to Fort Drum, including the siting of energy projects. Since then, technology and operational protocols have generally mitigated the impact of wind towers on Fort Drum's radar systems. The impact on the [Montague RADAR site](#) is still an outstanding issue.

Habitat and Wildlife: The impacts of wind farms on wildlife, particularly birds and bats continue to be assessed at potential and operating wind farm projects throughout the country. The impacts of wind farms on particular species are more well-known than before and post-construction monitoring information furthers the understanding of potential impacts. Because of the information now available as well as the requirements of Article 10, wind farms being proposed currently will have much more stringent requirements when it comes to documenting habitat and wildlife before and after wind farm construction.

Three studies have been conducted and published about the impact of the Maple Ridge Wind Farm on birds and bats. These reports were prepared by Aaftab Jain, Paul Kerlinger, Richard Curry, Linda Slobodnik of Curry and Kerlinger, LLC, 174 Fayette Blvd., Syracuse, NY 13224. These reports are titled *Annual Report for the Maple Ridge Wind Power Project Post-Construction Bird and Bat Fatality Study* and were conducted and published in 2006 (June 25, 2007), 2007 (May 2, 2008) and 2008 (May 14, 2009). These studies state, in general, that the Maple Ridge Wind Farm's impact on wildlife were comparable to other wind farms of similar

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size in the northeast. There is much to be learned yet about the impacts of wind farms on wildlife, namely birds and bats.

Sound: Wind towers and large-scale wind farms will produce sound, but it is very difficult to predict how “noisy” a wind farm might be due to a whole host of circumstances. Several factors, including how a person might perceive the noise, how far they are away from the noise, the time of day and other ambient sounds present, can affect how much noise might be perceived from a large wind farm. For more information, this report, by the New York State Energy Research and Development Authority titled [Wind Turbine-Related Noise and Community Response](#) presents a summary on sound research, community response and the results of a study that gauged community reactions to a wind farm.

Weather Forecasting: According to the [Ft. Drum Joint Land Use Study](#), “existing wind turbines in the line-of-sight of the 18th Weather Squadron Doppler radar have some impact on the functionality of the equipment. Future wind development close to the radar could further impact the Weather Squadron’s mission.”³ [The Montague Doppler Radar, An Overview](#), written by the Tug Hill Commission in 2018, further explains the effect of wind turbines on radar technology.

Recreation: Recreational activities can drive the local economies of Tug Hill communities. Any disruption to such things as snowmobile trails and hunting and fishing areas could have an impact on the local economy.

Ice Shed: The wind turbines at Maple Ridge automatically detect changes in weight on the blades, causing them to shut down, preventing any throwing of ice. There is also 24-hour monitoring of turbine data, allowing for manual shut down during icing conditions by operators, who are aware of which turbines are located near trails. However, safety reminders should be and are published in snowmobiling literature as a precaution.

What should communities keep in mind when approached by a wind farm developer?

Communities where wind farms are proposed have many things to consider. The town of Pinckney’s attorney, James Burrows made the following take-away points in 2016:

Infrastructure: If a wind farm is to be built in a community, wear and tear to the town’s infrastructure needs to be considered, most importantly on the municipally owned roads. Agreements for road maintenance and repair should be worked out with the wind farm developer ahead of time so that any damage or wear will be fixed after the wind farm is built.

Decommissioning Plan: A decommissioning plan should also be negotiated with the wind farm developer ahead of time. Wind towers have a useful life expectancy, after which the wind tower

³ [Fort Drum Joint Land Use Study Report - February 2018 \(evogov.s3.amazonaws.com\)](#)

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will either become obsolete or too expensive to operate. The wind towers and infrastructure should then be removed at the expense of the developer. To ensure this happens, the town should consider requiring a bond to be posted up front by the developer, as a way of providing an “insurance policy” that the cost of removing the wind tower will be covered. An engineer should be consulted by the municipality (a possible use for intervenor funds) to develop accurate and adequate costs for removing the wind tower and a multiplier should be applied to ensure that the bond will cover the cost out to a 20–50-year time frame. If the town will be taking down the wind towers, they need to consider prevailing wages in their cost estimates, which will increase the cost to take them down.

Lease Agreements: Landowners being approached with lease agreements from the wind developer should always consult an attorney before signing them. In particular, the landowner should pay attention to the fact that if the wind tower is abandoned on their property by the developer that the landowner would be responsible for the full taxes on the wind tower they host on their property.

Land Use Plans: The community should carefully consider the impacts of wind projects in its development plans, as some impacts may foreclose other development options in and around the project area. A wind tower may require a development setback or a radius around it to ensure its operation is compatible with other permitted land uses in the community.

Lease and Neighbor Payments: Wind farm developers may offer, in addition to lease payments to the landowners hosting a wind farm, a “neighbor payment” to those landowners close enough to the wind tower to be affected by visual impacts or aesthetics.

Property Values: It is difficult to determine if wind farms influence property values. In some instances, for example near popular vacation destinations, there may be a negative impact on property values. In other more rural areas, property values may not be negatively affected. There are several studies in different geographical contexts that can be consulted for more information.