



Welcome to Wethersfield Wind repowering community meeting

Contact us!

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Owned and developed by





Wethersfield Wind Project: Preliminary Layout

- Town Boundaries

□

County Parcel Boundaries

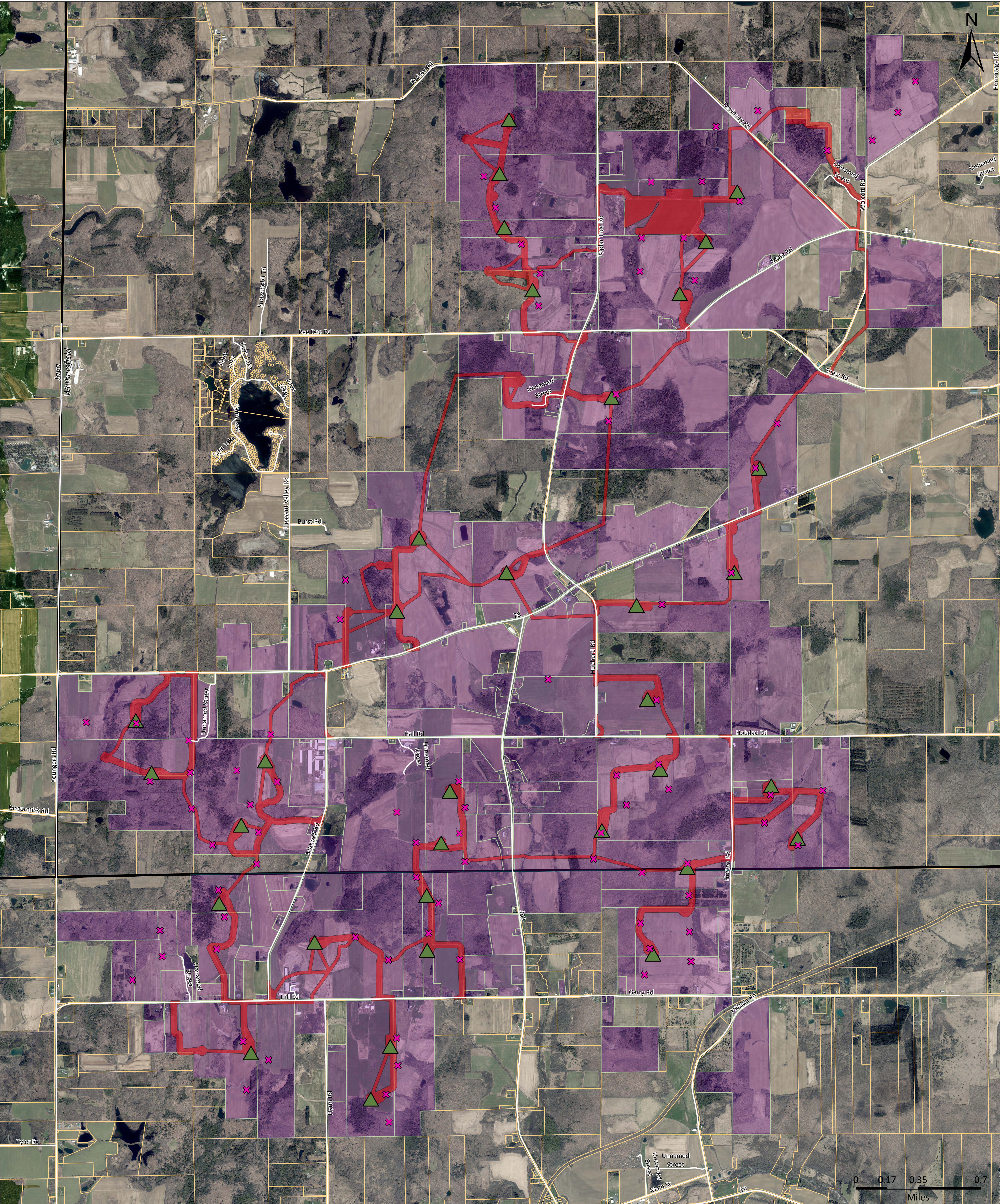
✕

Existing Wethersfield Turbines
- Wethersfield Wind Project
Parcels

▲

Wethersfield Potential Turbine
- Wethersfield Construction
Limits of Disturbance (LOD)

Scale: 1:10,000



Wethersfield Wind project overview

Nameplate capacity

Up to 136 MW



Location

Town of Wethersfield, Wyoming County



Environmental benefits

Enough electricity to power 62,983 number of homes with electricity and reduce carbon emissions by 191,080 metric tons.



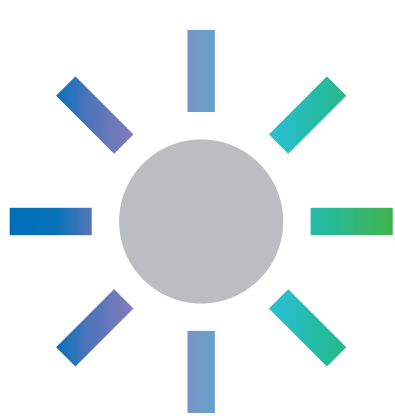
Project footprint

Approximately 375 acres*

*physical footprint once constructed



Commercial operation date of new facility (COD) 2028

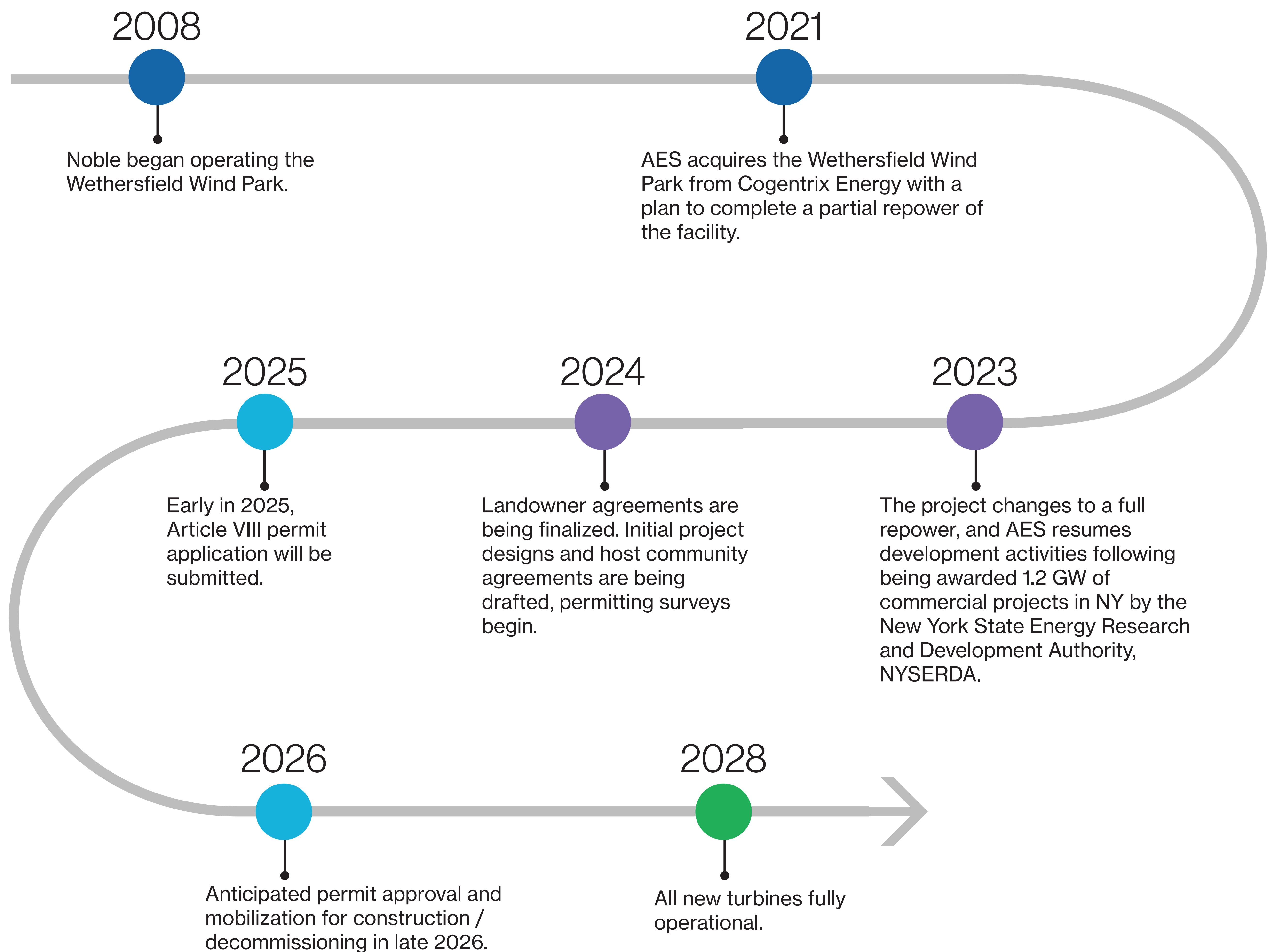


Economic benefits

Wethersfield Wind has and will continue to make a positive economic impact on local taxpayers by adding tax dollars to the local economy with relatively little increase in demand for local services. Wethersfield Wind repowering will create hundreds of high paying construction jobs and provide local operations jobs in New York State. A full repower of Wethersfield Wind will result in an extended life of up to 30 years, with increased energy production and continuation of economic benefits.



Proposed project timeline



Local agency account funding

Article VIII requires that applicants submit a fee to be deposited in a local agency account in an amount equal to \$1,000 for each MW of capacity for a total of \$136,000.

Any local agency or potential community intervenor can submit a request for initial funding within thirty (30) days of the date of application filing and that such request may be made by mail to the:

Office of Renewable Energy Siting Attention:
Local Agency Account Funding Request
c/o OGS Mailroom Empire State Plaza
240 State Street P-1 South, J Dock
Albany, NY 12242

or by email to
hearings@ores.ny.gov
Subject line "Local Agency Account Funding Request"

Funds can be requested to complete the project record, and for local agencies this includes using the funds to determine if the proposed facility complies with local laws and requirements. Seventy-five (75) percent of the local agency account funds for each project are reserved for potential awards to local agencies (host municipalities).



Community economic benefits

Since the Wethersfield Wind park began operating in 2008, the project has contributed over \$20 million to the local economy through agreements with the town of Wethersfield, Wyoming County Industrial Development Agency, and other local jurisdictions.

Repowering the Wethersfield Wind park will ensure economic contributions to the community continue for up to an additional 30 years. AES is currently in discussions with local municipalities about economic benefits agreements for the repower project. Includes payments to towns, counties and school districts.



- 17.7 million via a Host Community Agreement (HCA)
- HCA to town of Wethersfield is 11.9 million
- HCA to town of Eagle is 5.8 million
- Over 3 million via a Pilot Agreement

Article VIII (formerly 94-c)



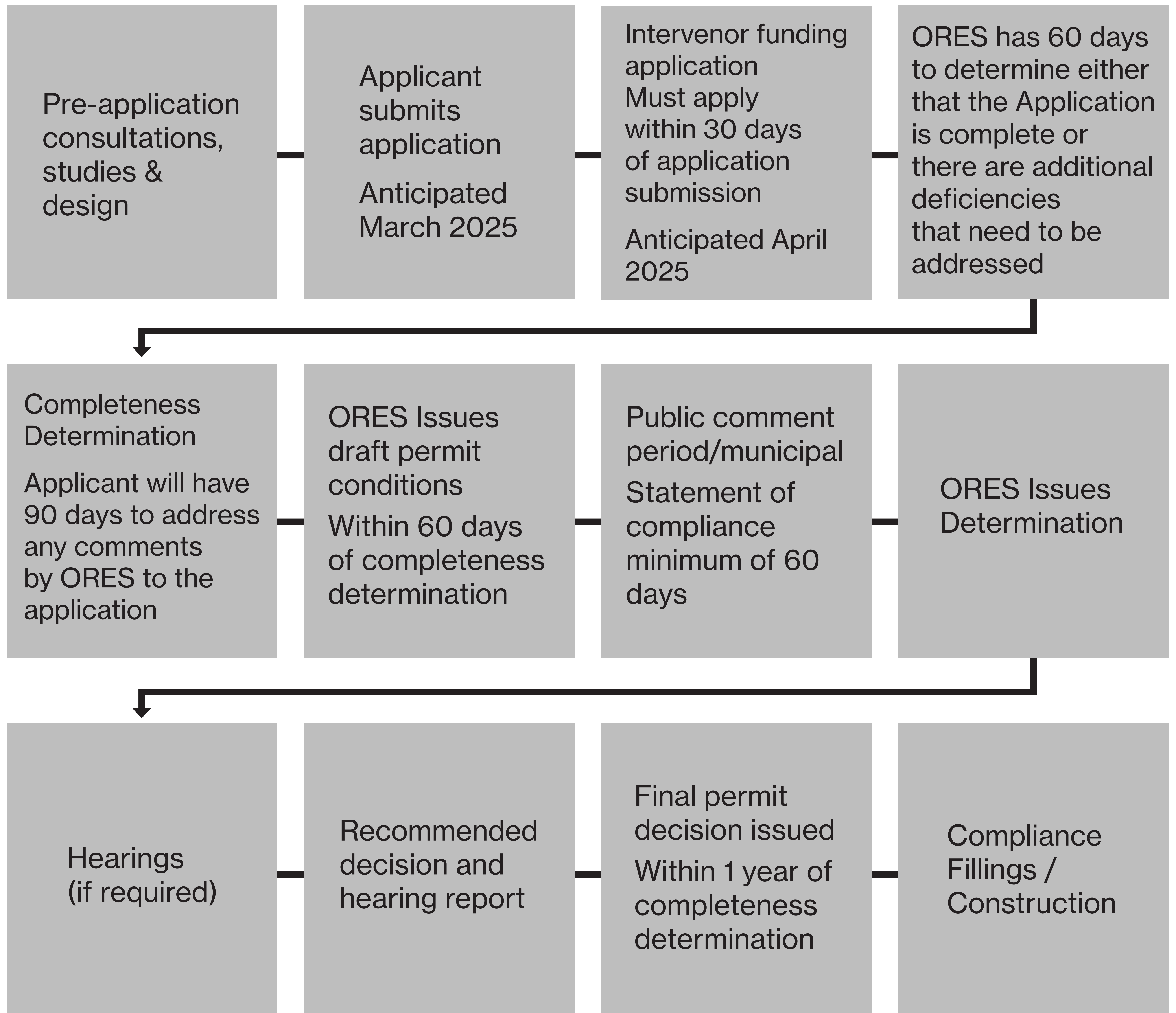
Effective April 20, 2024, the Renewable Action through Project Interconnection and Deployment (RAPID) Act repealed Executive Law § 94-c, repealed the current Public Service Law Article VIII, and enacted a new Public Service Law Article VIII entitled “Siting of Renewable Energy and Electric Transmission” (Article VIII).

The RAPID Act also transferred the Office of Renewable Energy Siting (ORES) from the Department of State to the Department of Public Service, continuing all existing functions, powers, duties, and obligations of ORES under the former Executive Law § 94-c. In addition, ORES’s existing regulations remain in full force and effect.

Projects, that would have previously proceeded under § 94-c will now proceed under Article VIII.

The RAPID Act further builds upon the existing State permitting regulations, consolidating the environmental review, permitting, and siting of both major renewable energy facilities and major electric transmission facilities under the purview of ORES.

Article VIII Timeline



Article VIII permitting highlights

Prior to submitting an Article VIII permit application, Applicants are required to consult with the local agencies and stakeholders of the community(ies) in which the proposed project will be located.

ORES requires that state agencies (e.g. NYSDEC) are consulted on wetland and stream delineations, threatened and endangered species, and archaeological and cultural resources, if appropriate.

Prior to application submittal, applicants must hold at least one meeting for community members and one Agency consultation with impacted agencies.

From the date of its receipt of a permit application, ORES (Office of Renewable Energy Siting and Electric Transmission) has 60 days to make a completeness determination. After a completeness determination, draft permit conditions will be issued by ORES for public comment. Within the comment period, the host municipalities must submit a statement indicating whether the proposed renewable energy facility complies with applicable local laws. ORES must issue a final decision on the siting permit within one year of the date on which the application is deemed complete.



List of Article VIII application exhibits

- | | | |
|---|---|---|
| 1. General requirements | 10. Geology, seismology, and soils | 18. Socioeconomic effects |
| 2. Overview and public involvement | 11. Terrestrial ecology | 19. Environmental justice |
| 3. Locations of facility and surrounding land use | 12. NYS Threatened or endangered species | 20. Effect on communications |
| 4. Real estate property | 13. Water resources and aquatic ecology | 21. Electrical system effects and interconnection |
| 5. Design drawings | 14. Wetlands | 22. Electric and magnetic fields |
| 6. Public health, safety and security | 15. Agricultural resources | 23. Site restoration and decommissioning |
| 7. Noise and vibration | 16. Effect on transportation | 24. Local laws and ordinances |
| 8. Visual impacts | 17. Consistency with energy planning objectives | 25. Other permits and approval |
| 9. Cultural resources | | |

Decommissioning of the repowered facility

Facility decommissioning will be initiated when the repowered facility reaches the end of its operational life. Valcour Wethersfield NewCo, LLC (the Applicant) will be responsible for the decommissioning of the facility.

The cost of decommissioning will be estimated by a third-party engineer and the estimated net cost amount plus 15%, is placed as security which towns have access to in the event it is needed. Towns will be consulted on the cost estimate for decommissioning.

The Applicant will provide notice by mail to landowners and the town of Wethersfield prior to commencing decommissioning work.

As part of the decommissioning process, the facility will be restored to its pre-construction conditions. It is the industry standard to remove all components up to three feet below ground, however AES will comply with any additional state and local regulations to restore the land back to its original condition.

The Applicant shall consult with NYISO and the local utility to complete the de-energization efforts and ensure there is no disruption to the electrical grid.



Decommissioning of the existing facility

Energetic felling

Energetic felling is the process of grounding existing turbines with a controlled explosive, followed by ground crews removing all material and thoroughly cleaning the area. Engineers can control within degrees where on a property the turbine lands

Oils, greases, and electronics are removed from the wind turbine prior to energetic felling to prevent contaminating the property

After the turbine has been grounded, components are disassembled and removed for disposal or recycling. Foundations and underground collection lines will be removed in accordance with the requirements of the Host Community Agreement

Safety and communication

Landowners and the Town will be notified prior to decommissioning of the facility. AES will coordinate with landowners to ensure the site is safe and accessible

An AES representative will solicit landowner feedback and walk the property after decommissioning to ensure that component removal and site cleanup is satisfactory

Wind Turbine Disposal and Recycling Strategies



Wind energy plays an important role in creating a cleaner, healthier environment. It's a leading climate change solution that decreases smog-creating air pollution and saves billions of gallons of water annually. Studies show a typical wind turbine repays its carbon footprint within six months.¹

Wind turbines are made up of many materials that have substantial salvage value at the end of its operational life and are recyclable. In fact, 80-94% of a wind turbine's mass consists of easily recycled materials, such as steel / iron (approximately 88% of a turbine's mass), aluminum (approximately 0.7%), and copper (approximately 2.7%).^{2,3,4} Other wind turbine components such as blades, nacelle covers and rotor covers are made of up composite materials, mostly fiberglass and carbon fiber, which, while nontoxic and safe, are more difficult to process for other purposes. However, these components make up roughly only 8% of a wind turbine's total mass.⁵ In addition, as described more below, the wind energy industry and other partners are expanding options to recycle and reuse even these historically tougher to process materials.

While wind energy projects are expected to operate for 20 to 35 years, individual wind turbine components like rotor blades and covers may need upgrading or replacing sooner because of normal wear from exposure to the elements, or improvements in technology.

Reduce

Reducing the need to replace components by extending the lifetime of existing blades is one of the most economically and environmentally friendly measures wind developers take to limit the number that need to be disposed of through reuse, recycling or landfilling. While the blades are very durable, decades of exposure to the elements can slowly chip away at their efficiency.

Blade repair and monitoring technology is rapidly improving, allowing the industry to use fewer and fewer blades to produce the same amount of clean, zero-carbon electricity. General improvements in turbine technology are also leading to greater electricity generation per turbine, adding to these blade efficiency improvements. Improvements to wind resource assessment and modelling allow manufacturers to better understand the loads on blades, leading to improvements in life and maintenance costs.

Reuse

The U.S. wind power industry, along with multiple stakeholder groups including scientists, researchers, national laboratories, and environmental collaborators, is developing innovative methods to re-purpose turbine blades. Intact blades are being evaluated for reuse at other wind farms to improve performance or reshaped for use as utility poles. For blades that are not suitable for such projects, partial blade reuse may include repurposing as outdoor furniture (e.g., park benches, playground equipment,⁶ storage enclosures,⁷ etc.) and signage. Scientists are also modeling how blades can be used as roofing for homes and buildings.

Companies such as RiverCap Ventures offer sustainable options for end-of-life wind turbine components, including blades.⁸ The U.S. Department of Energy (DOE) is partnering with businesses to research practical ways to repurpose wind turbine blades. Innovative partnerships like Re-Wind⁹, a collaboration between the Georgia Institute of Technology and Queen's University Belfast, are deploying design and logistical concepts in the field, such as prototyping methods to reuse the decommissioned blades in buildings, infrastructure, landscape and public art.¹⁰

Recycle

Today, wind turbine blades are recycled into raw material and fuel for cement production, through a partnership between GE, Veolia North America, and other companies, generating jobs and reducing the emissions of cement production.¹¹ Although in the past, blades and other composite materials from wind turbines have been landfilled because of limited options in recycling technology and infrastructure to process and separate the reusable materials, many original equipment manufacturers (OEMs), research institutes and universities, and the DOE's national laboratories are solving the technological challenges of turbine blade recycling. The National Renewable Energy Laboratory is advancing recycling technologies by developing new materials (e.g., thermoplastic resin) that can be used to manufacture fully recyclable blades by making it easier to separate the layers and recapture the materials.¹² OEMs are also pledging zero waste by deploying recyclable blades within the next decade, creating a circular economy of use.¹³

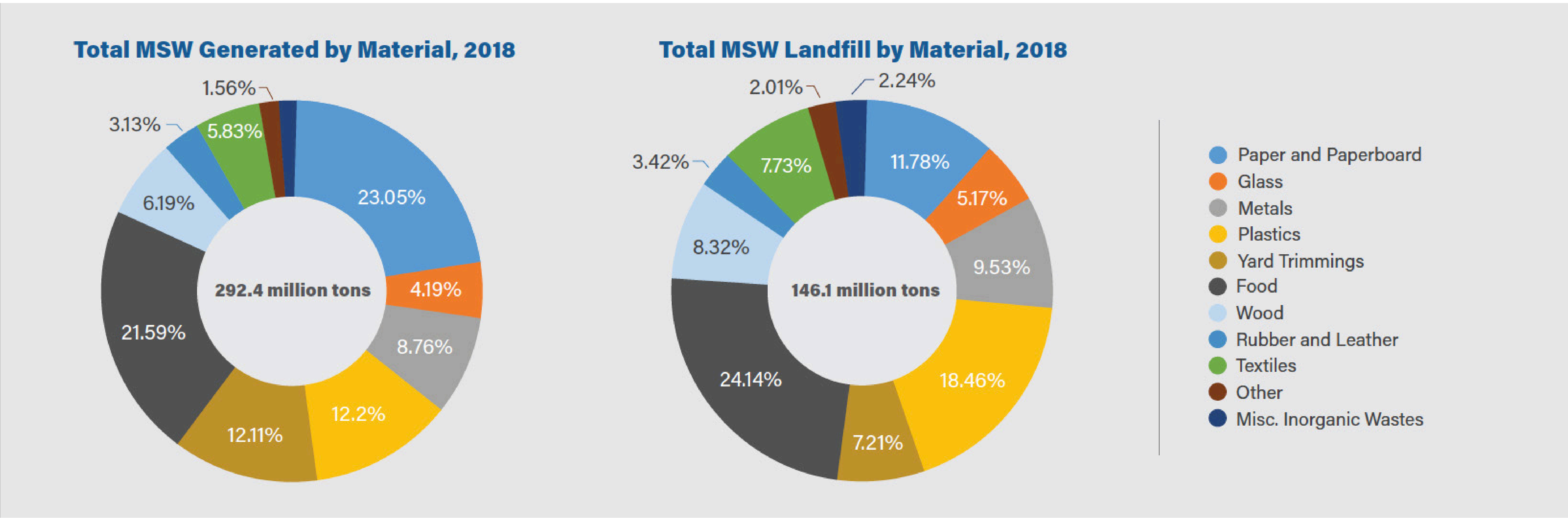
Many OEMs have announced partnerships with companies to recycle blades by turning blade components into raw materials for use in cement manufacturing, other new composite materials, or reclaiming the glass and carbon fibers that can then be reused.^{14,15} Academic institutions like the University of Tennessee, funded with a grant from the DOE, are developing methods to turn blades into recycled composites for vehicles, other renewable energy system components, agricultural products, and performance sports equipment.¹⁶

Blade Landfill Disposal

Even if landfilled, wind turbine components are made from safe, non-toxic inert materials that do not represent a threat to the surrounding soil or groundwater. Further, turbine blades represent a vanishingly small portion of the waste going into U.S. landfills and are among the least environmentally harmful materials entering them. Turbine blade waste through 2050 is expected to represent only approximately 0.05 to 1.6% of all the municipal solid waste going to landfills every year.¹⁷ The Electric Power Research Institute estimates there will be 2.1 - 4 million tons of cumulative blade waste between 2020 and 2050.¹⁸ While landfill disposal has been the most common strategy for turbine blade disposal, there is growing research and technology innovations to recycle and repurpose blade waste. However, if landfill disposal is the only option at the time a turbine is decommissioned, like many other industries, the U.S. wind industry pays a fee to dispose some material in landfills.

Other U.S. Waste Landfill Disposal

The Electric Power Research Institute estimates there will be 2.1 – 4 million tons of cumulative blades put in landfills between 2020 and 2050. In comparison, 292.4 million tons of municipal solid waste is generated every year on average and 146.1 million tons is landfilled.¹⁹



Sustainability

The range of turbine end-of-life technologies will continue to expand, given the continued focus on solutions from the industry, along with public and private organizations. The U.S. wind industry remains committed to protecting the environment by delivering carbon-free power through responsible development and sustainable solutions.

1 Global Wind Energy Council. 2012. Wind Power and Climate Factsheet. Wind-climate-fact-sheet-low-res.pdf (gwec.net). Accessed 14 June 2022.

2 Tota-Maharaj, K., McMahon, A. 2021. Resource and waste quantification scenarios for wind turbine decommissioning in the United Kingdom. Waste Dispos. Sustain. Energy 3, 117–144 (2021). <https://doi.org/10.1007/s42768-020-00057-6>. Accessed 14 June 2022.

3 Guezuraga, Begoña & Zauner, Rudolf & Pölz, Werner, 2012. "Life cycle assessment of two different 2 MW class wind turbines," Renewable Energy, Elsevier, vol. 37(1), pages 37-44.

4 Schleisner, L. 2000. Life cycle assessment of a wind farm and related externalities. Renew Energy, 20, pp. 279-288.

5 Tota-Maharaj and McMahon, A. (2021).

6 Superuse. 2022. Blade Made playgrounds. <https://www.superuse-studios.com/projectplus/blade-made/>, Accessed 14 June 2022.

7 Designboom Magazine. Denmark is repurposing discarded wind turbine blades as bike shelters. <https://www.designboom.com/design/denmark-repurposing-wind-turbine-bladesbike-garages-09-27-2021/>, Accessed 14 June 2022.

8 RiverCap | Wind Farm End-of-Life Solutions (rivercapllc.com), Accessed 28 June 2022.

9 Re-Wind Network. Blade Repurposing Solutions. The Re-Wind Network. Accessed 14 June 2022.

10 Rotterdam. <https://en.rotterdam.info/locations/rewind-en-2/>, Accessed 14 June 2022.

11 NPR. How to recycle a 150-foot wind turbine blade? Haul it to Louisiana, MO. <https://news.stlpublicradio.org/health-science-environment/2022-05-27/how-to-recycle-a-150-foot-windturbine-blade-haul-it-to-louisiana-mo>. Accessed 14 June 2022.

12 NREL. Advanced Thermoplastic Resins for Manufacturing Wind Turbine Blades | Advanced Manufacturing Research | NREL. Accessed 14 June 2022.

13 Siemens Gamesa: Siemens Gamesa pioneers wind circularity. Accessed 14 June 2022. Vestas: / Zero-Waste (vestas.com) / GE: Towards circular wind turbines: LM Wind Power to produce zero waste blades by 2030 | GE News.

14 Veolia. Wind turbine blades are now recyclable | Up To Us (veolia.com). Accessed 14 June 2022.

15 Vestas. Vestas looking to scale up blade recycling partnership solution offering. Accessed 14 June 2022.

16 University of Tennessee. Making Recycling a Breeze | Materials Science and Engineering (utk.edu). Accessed 14 June 2022.

17 Liu, Pu & Barlow, Claire. (2017). Wind turbine blade waste in 2050. Waste Management. 62.10.1016/j.wasman.2017.02.007. Accessed 14 June 2022.

18 EPRI. 2018. End-of-Life Disposal and Recycling Options for Wind Turbine Blades. Accessed 14 June 2022.

19 EPA. National Overview: Facts and Figures on Materials, Wastes and Recycling | US EPA. Accessed 14 June 2022.



Environmental studies



Wetlands and streams

Biologists have conducted surveys on-site over several years to document the extents and characteristics of wetlands and streams. The Project will avoid and minimize impacts to wetlands and streams to the maximum extent practicable.

AES is coordinating with ORES (Office of Renewable Energy Siting and Electric Transmission) regarding jurisdiction, permitting, and potential mitigation.



Listed species and habitat

Biologists conduct surveys to identify protected plant and wildlife and their habitats. Avian surveys were conducted on-site for wintering raptors, grassland breeding birds, and forest raptors.

AES will continue to coordinate with ORES and NYSDEC regarding habitat occupied by listed species. AES is designing the Project to avoid and minimize impacts; if unavoidable, AES will implement mitigation in the form of a Net Conservation Benefit Plan.



Cultural resources

AES is conducting thorough evaluations (both desktop and field studies) to identify the presence of culturally significant resources on-site and will implement avoidance measures as necessary.

AES is coordinating with NYS Historic Preservation Office (SHPO).

Environmental studies



Visual resources

- The Application will include a viewshed analysis showing potential visibility of the Project.
- Photo simulations, including existing and proposed conditions, will be developed for the Application and will include any proposed landscaping.
- AES will work with the Towns to select viewpoints for the visual simulations to be submitted in the application.
- Methodology and results of the visual analysis will be included as part of a formal Visual Impact Assessment (VIA).



Noise analysis

- A Noise Impact Assessment (NIA) will be prepared to compare proposed sound conditions to ORES requirements at the Facility Site and surrounding properties.
- Noise modelling is completed to ensure noise levels comply with ORES requirements.

Environmental studies



Transportation

- A traffic assessment is being conducted to identify proposed routes for construction traffic and oversize equipment such as turbine blades and nacelles.
- The assessment considers the location and conditions of local roads and bridges.



Public Health and Safety

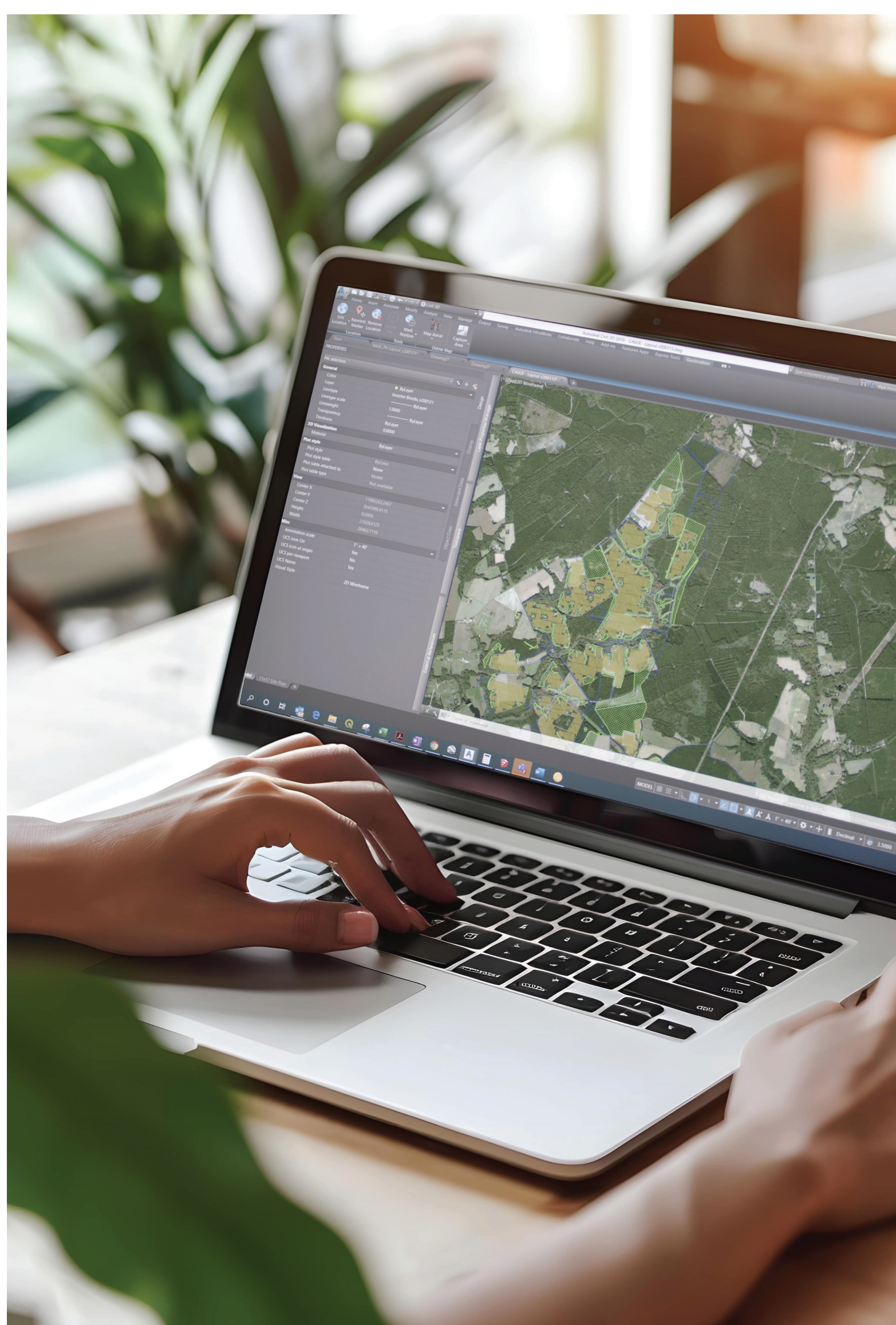
- A Site Security Plan and Safety Response Plan are being prepared with feedback from the first responder community.
- AES will conduct training of Local First Responders prior to installation and annually thereafter.

Environmental studies



Geotechnical Investigation

- AES will conduct geotechnical surveys in the spring of 2025 to fully understand soil and subsurface characteristics. Tree clearing will be completed this winter to complete these surveys.

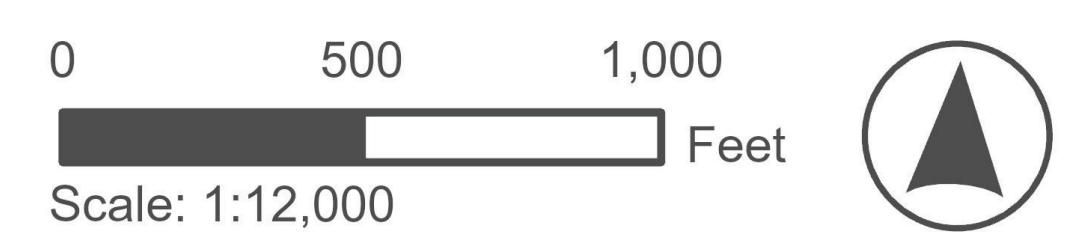


Turbine Layout and Limits of Disturbance

- Preliminary layouts are in the process of being studied by environmental and engineering experts. The layout is not yet final and is subject to review by state and federal agencies.
- Civil and electrical infrastructure will be designed based on the locations of turbines.

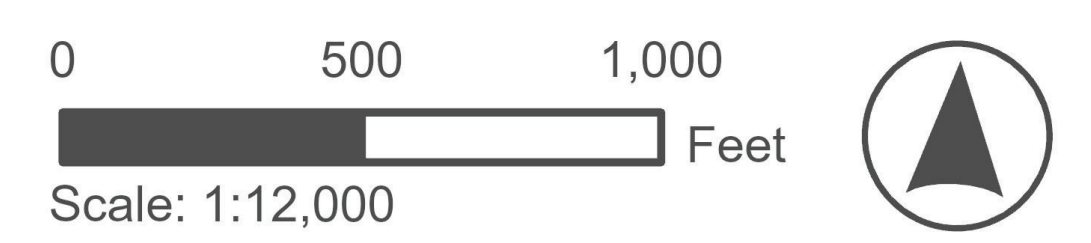


- Simulation Location
- Proposed Turbine





- Simulation Location
- Proposed Turbine







Before



After

AES' social impact program

Program Mission

The AES Social Impact Program partners with communities to strengthen positive impact through socioeconomic and environmental partnerships that improve lives today and in the future.

Partnering With Communities

AES people live and work in the communities we serve to fulfill our commitments in New York and around the world every day.

Partnerships in Western New York

- Friends of Letchworth State Park
- Autism Nature Trail
- Village of Arcade
- Eagle Free Library
- Peers Together of Wyoming County
- North Java Fire Department
- Genesee Community College
- Western New York DECA
- Rochester Ecology Partners
- Chances and Changes
- Barre Betterment Committee



Social Impact Pillars

Our 4 focus pillars are the initial framework for providing donations to positively impact host communities and regions.



Partnering for access to safe, efficient, and affordable energy and basic services.



Partnering for inclusive economic growth and education.



Partnering for the environment.



Partnering for community resilience.