

“Accessing AgWind Assistance”

*Funded by DOE-OCED and USDA REAP TAGs
for*

Rural Wind Energy Systems

Heather Rhoads, DWEA Executive
Director



*Scan to check
your site's wind!*

- **Explore financial incentives** – up to 70% of equipment and installation costs – for certified small wind turbines for farms, ranches, homes, and businesses
- **AgWind Tool** – Wind Turbine Performance & Economics Evaluation no-cost feasibility report for REAP applications!

Energizing Texas, Oklahoma, Vermont, Maine, and Rural America through AgWind

How to Save Money with Rural Wind Energy Systems

Funded by DOE-OCED HeroX and

USDA via Oklahoma, Vermont, and Maine Rural Energy for America Program (REAP) TAG awards

Findings and conclusions are presenters and do not represent the official views of DOE or USDA

- **eFormative's AgWind Team Intro, Tasks**
- **Savings with Small Wind – AgWind Tool Overview**
- **Rural Energy for America Program TAG Assistance**
- **Q&A, Upcoming Office Hours and REAP Deadlines**

For more background and resources: www.distributedwind.org

www.AgWindEnergy.org

DISTRIBUTED WIND: RIGHT-SIZED OFTEN BEHIND-THE-METER WIND POWER WHERE PEOPLE FARM, LIVE, AND WORK


Past & Upcoming AgWind Tasks

- In-Person Workshop in Sinton, TX
- Videos for HeroX Applications
- Postcard mailings in TX & OK
- GIS filtering in VT, ME & OK
- 2 well-attended webinars, monthly office hours
- Website launch & facelift
- 30+ Case Studies
- Booth at NFU 2025 Annual Convention March 9-11, 2025
- Tool Upgrades & integration with WindWatts

ON-SITE POWER PROVIDING SAVINGS AND RESILIENCY FOR FARMS, RANCHES, HOMES, SMALL BUSINESSES, AND FACILITIES OF ALL TYPES



8,100 GW
MORE TECHNICAL D-WIND POTENTIAL THAN OFFSHORE WIND



RED STATES
THE VAST MAJORITY OF DISTRIBUTED WIND INSTALLATIONS ARE IN RURAL, CONSERVATIVE AREAS




84% OF SMALL FARMS NEED OFF-FARM INCOME TO SURVIVE. ALL FARMS ARE LOOKING FOR SAVINGS IN THESE TOUGH TIMES. DISTRIBUTED WIND TURBINES **CUT OPERATING COSTS** FOR DECADES

>10 MILLION
U.S. FARMS, RANCHES, AND OTHER RURAL PROPERTIES SUITABLE FOR DISTRIBUTED WIND





FARMERS HAD WINDMILLS SO THEY FAVOR WIND TURBINES

DISTRIBUTED WIND IS NOT OFFSHORE, IT IS NOT UTILITY-SCALE, IT IS **LOCAL AND RURAL**



MADE IN THE USA

95% LESS LAND REQUIRED
A WIND TURBINE "FOOTPRINT" IS CONSIDERABLY SMALLER THAN GROUND MOUNT SOLAR, WITH NO LAND TAKEN OUT OF PRODUCTION



90% OF SMALL WIND EQUIPMENT IS MANUFACTURED IN USA, SUPPORTING AMERICAN JOBS

SCALE OF DISTRIBUTED WIND POWER



COMMONLY USED IN WIND FARMS*

Rating: 2,800 kW
Rotor Dia.: 127m
Swept Area: 12,670 m²
Tower: 89m
Total Height: 153m

MID-SIZE FOR INDUSTRIAL/AG



Rating: 300 kW
Rotor Dia.: 39m
Swept Area: 1,200 m²
Tower: 32m
Total Height: 52m

TURBINES FOR SMALL FARMS



Rating: 15 kW
Rotor Dia.: 10m
Swept Area: 78 m²
Tower: 30m
Total Height: 35m



Premium Beef & Grain, LLC

Lone Wolf, OK

Installed by:



- 3 x 15 kW turbines on 100' towers
- Installed 2023, \$139k REAP grant
- Produce ~170 MWh per year
- Saves \$27k/year in electric bill savings
- Produces as much energy as a 105 kW solar system with an 80% smaller footprint



www.AgWindEnergy.org

Getting Started:

- Contact AgWind for a no-cost site screening and feasibility analysis.
- Consult with AgWind experts for technical assistance and detailed site feasibility reviews.
- Utilize AgWind's resources for connecting with certified wind turbine manufacturers and installers

Eligibility Criteria:

- Participants are primarily rural and remote communities.
- Emphasis on underserved and disadvantaged communities.
- Aimed at locations with significant wind energy potential.
- <https://agwindenergy.org/free-wind-evaluation>



Free Wind Evaluation

*Is your location suitable
for a wind turbine?*

Complete the form and we'll evaluate the wind speed at your property to determine if a wind turbine would be a good fit

<https://agwindenergy.org/free-wind-evaluation>



AgWind Site Analysis Sign-Up

Site Address

Address _____
City _____ State _____ Zip _____
Lat/Long
(if known) _____

Contact Information

Name _____
Phone _____
Email _____

Additional Project Information _(please provide company name if commercial)

Circle one: Commercial or Residential

Project Description _____



AgWind



- REAP grants and tax credits are additive
- **USDA is accepting REAP applications for up to 25% grants through March 31st**
- Next application window should open July 1, but uncertain due to the new administration
- Future of “Underutilized Renewable Energy Technologies” set-aside is unclear; Farm Bill is critical!

Example of federal incentives

Federal Incentive	Ag Business	Rural Home
Installed Cost	\$125,000	\$125,000
30% Basic ITC	-\$37,500	-\$37,500
10% Domestic Content Bonus	-\$12,500	\$0
10% Energy Community Bonus	\$0	\$0
5-year Depreciation or 179D	-\$15,000	
After Tax Incentives	\$60,000	\$87,500
USDA REAP Grant (up to 25%)	-\$31,250	\$0
Federal Tax on REAP Grant	\$4,690	\$0
After USDA Grant	\$33,440	\$87,500

New DWEA Desktop Feasibility Tool

Small Wind Turbines for Homes, Farms, and Small Business

AgWind Feasibility Assessment

Wind Turbine Performance & Economics Evaluation Tool

Username:

Password:

Login

For assistance, please contact DWEA@agwindenergy.org



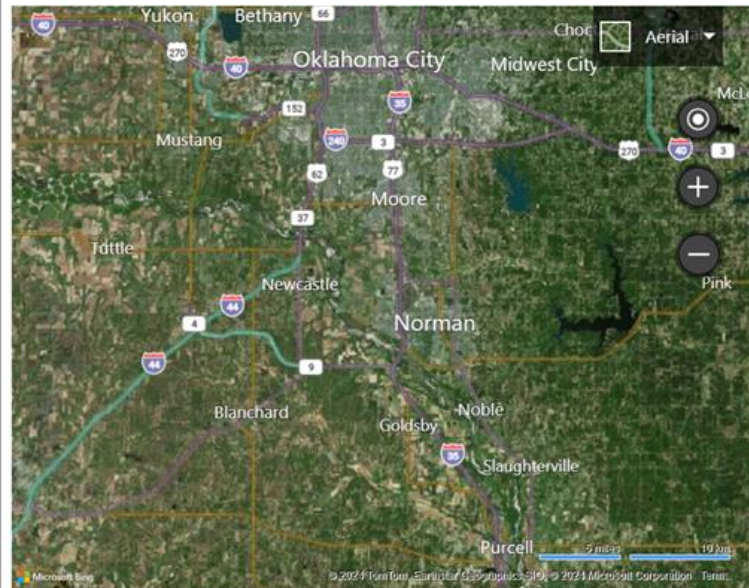
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www.AgWindEnergy.org

AgWind Feasibility Assessment | Distributed Wind Energy Association

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[Turbine Production](#) [Financial Analysis](#) [Saved Sessions](#) [Contact Us](#)



Turbine Selection
Bergey Windpower Excel 11

Street Address

City

State

Zip Code

Tower Height
100 ft

Latitude
 dd

Longitude
 dd

Average wind speed
 mph

[Get Location & Wind Speed](#) ?

- Input coordinates directly
- Input wind speed directly

[Run the Model](#) [Reset](#)

Session Handling (optional)

Save this modeling session

Session Description

Client name

Customizing Parameters

Turbulence Factor

 % ?

Weibull K

 ?

Wind Shear Exponent

 ?

Altitude

 ft above sea level ?

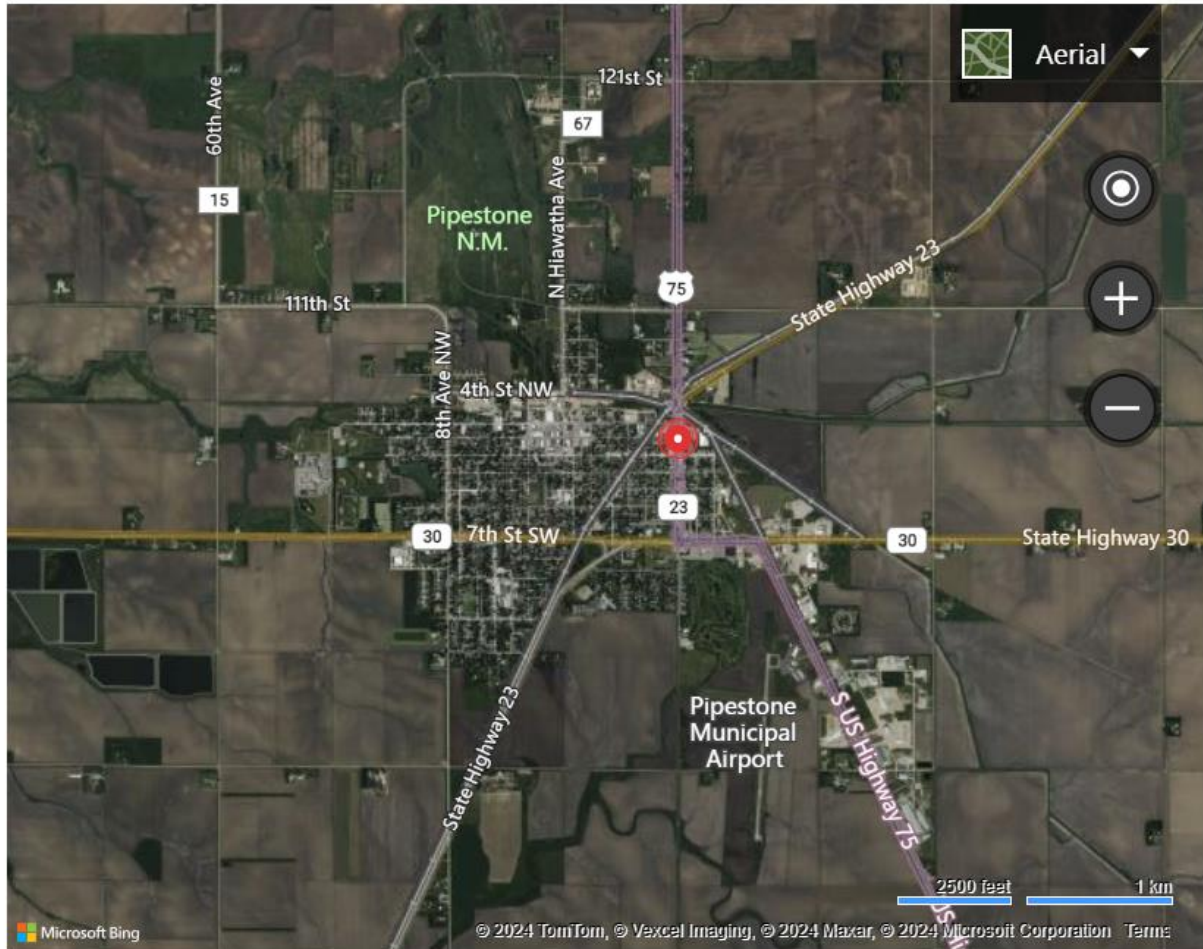
[Run the Model](#)

[Reset](#)

AgWind Feasibility Assessment | Distributed Wind Energy Association

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Turbine Selection

Eocycle EOX S-16

Street Address

City

Pipestone

State

Minnesota

Zip Code

Tower Height

100 ft

Latitude

44.00053406 dd

Longitude

-96.30751801 dd

Average wind speed

13.4 mph

[Get Location & Wind Speed](#) ?

Input coordinates directly

Input wind speed directly

[Run the Model](#)

[Reset](#)

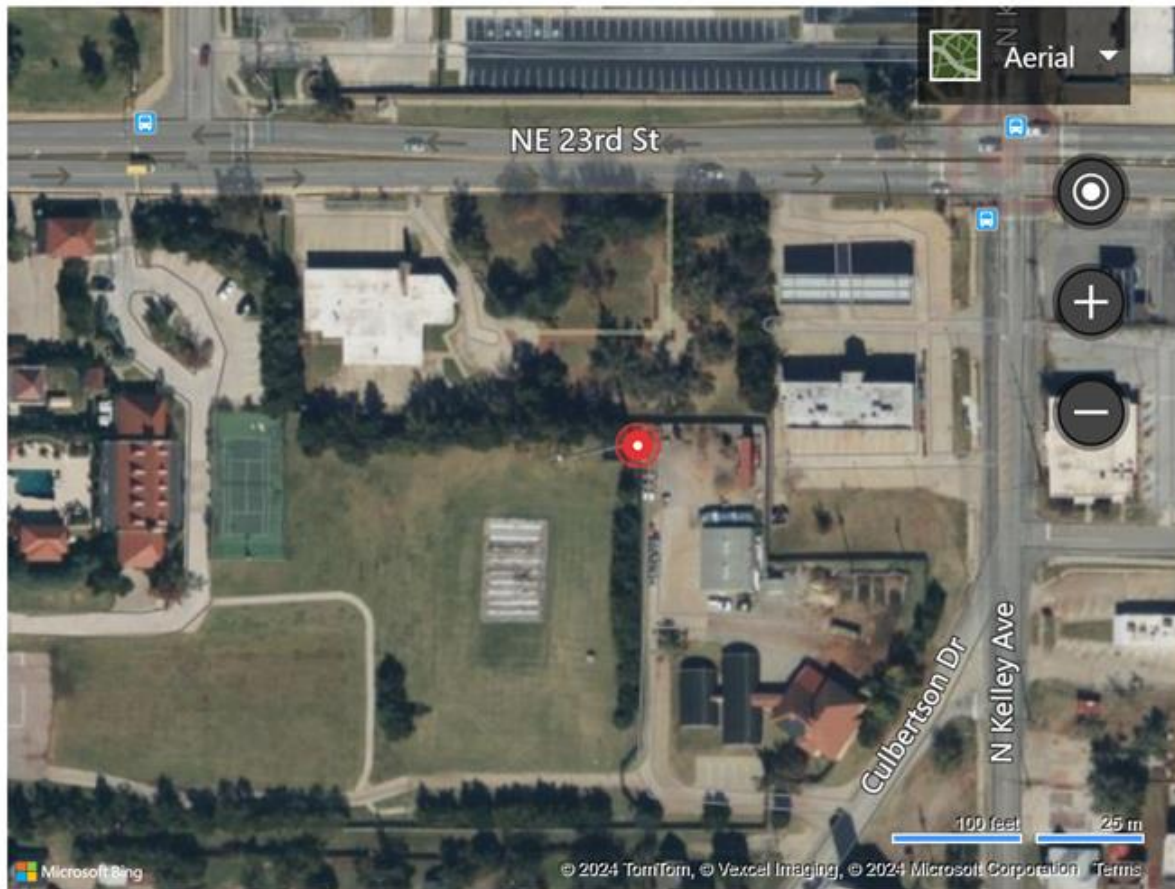
AgWind Feasibility Assessment | Distributed Wind Energy Association

[Turbine Production](#) [Financial Analysis](#) [Saved Sessions](#) [Contact Us](#)

[Print Report](#)

[Logout](#) | [Administration](#)

Turbine Production:



Turbine Selection	Bergey Windpower Excel 15
Nameplate Capacity [kW]	15.6
Rotor Diameter [m]	9.6
Site Location:	
Governor's Mansion	
Oklahoma City, Oklahoma	
35.493° latitude	
-97.495° longitude	
Average Wind Speed [mph]	12.42
Tower Height [ft]	100.0
Altitude [ft]	1,232.0
Weibull K	2.0
Wind Shear	0.18
Turbulence Factor [%]	10.0
Average Output Power [kW]	3.7
Daily Energy Output [kWh]	89.2
Monthly Energy Output [kWh]	2,711.9
Annual Energy Output [kWh]	32,543.3
Hub Average Wind Speed [mph]	12.4
Air Density Coefficient	1.0
Operating Time [%]	99.5



AgWind

www.AgWindEnergy.org

Provided For

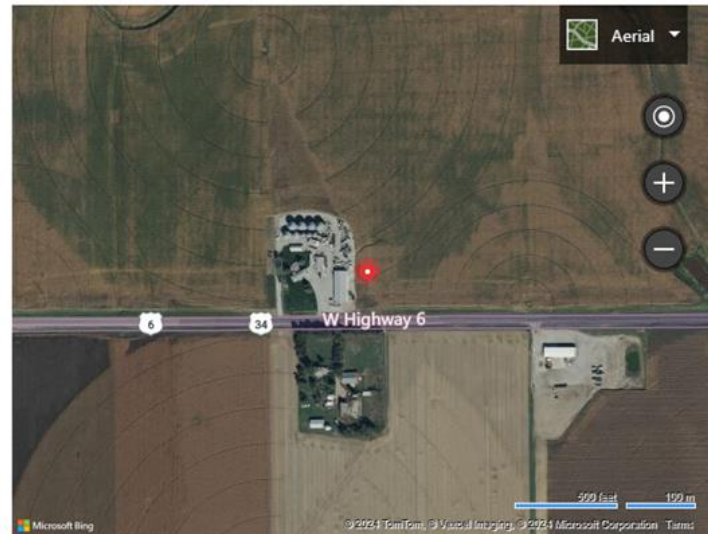
Client Name	FTS Enterprises
Address	10600 W 6th Juniata, Nebraska
Latitude	40.569°
Longitude	-98.529°

Provided By

[Edit Info](#)

Company	Bergey Windpower
Name	Mike Bergey
E-Mail Address	mbergey@bergey.com
Phone	405-364-4212

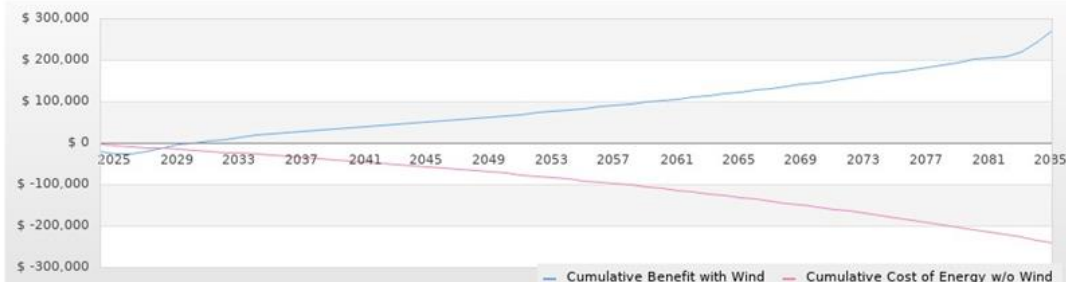
Input Parameters & Turbine Production:



Turbine Selection	Bergey Windpower Excel 15
Nameplate Capacity [kW]	15.6
Rotor Diameter [m]	9.6
Site Location:	
	10600 W 6th Juniata, Nebraska 40.569° latitude -98.529° longitude
Average Wind Speed [mph]	13.94
Tower Height [ft]	100.0
Altitude [ft]	1,998.0
Weibull K	2.0
Wind Shear	0.18
Turbulence Factor [%]	10.0
Average Output Power [kW]	4.6
Daily Energy Output [kWh]	110.7
Monthly Energy Output [kWh]	3,366.7
Annual Energy Output [kWh]	40,400.6
Hub Average Wind Speed [mph]	13.9
Air Density Coefficient	0.9
Operating Time [%]	99.3

NPV \$ 108,069
IRR 31.84 %
Lifetime Cost of Energy \$ -0.09 /kWh
Payback Period 2.8 years

Costs & Benefits:



Turbine Options in AgWind Wind Report (2 – 2,800 kW)

Company	Size (kW)	Contact	Email	Website	Phone	Product Status
Bergey Windpower Co	10 & 15	Michael Soriano	msoriano@bergey.com	bergey.com	405-364-4212	Available, Certified
Eocycle Technologies	25	Richard Legault	rlegault@eocycle.com	eocycle.com	612-750-2123	Available, Certified
ESPE Srl	100	Matteo Vecchiato	m.vecchiato@espe.it	espegroup.com	(049) 945-5033	Available, Certified
EWT	1,000	Brett Pingree	b.pingree@ewtdirectwind.com	ewtdirectwind.com	207-808-3452	Available, Certified
General Electric	2,800	See Foundation Windpower (foundationwindpower.com) or Hybrid Renewables (e2gspartners.com)				
Northern Power Systems	100	Ken Kotalik	kkotalik@nps100.com	nps100.com	928-607-7034	Available, Certified
Pecos Wind Energy	85	Josh Groleau	josh@pecoswindpower.com	pecoswindpower.com	207-745-2231	Prototype
Ryse Energy	5 & 11	Ketter Ulrich	Ketter@ryse.energy	ryse.energy	281-687-7651	Available, certified
Siva Powers America	250	Padma Kasthurirangan	padma@buffalorenrenewables.green	sivapowersamerica.com	716-303-0199	Available, Certified
Skystream	2	Ryan Loiacono	ryanl@skystreamturbines.com	skystreamturbines.com	816-731-0531	Available, Certified

USDA REAP APPLICATION PROCESS FY25

Getting Started: Before Applying

- Establish project design and cost; Gather quotes for work to be performed
- Contact local Rural Development State Energy Coordinator ([State Energy Coordinators](#))
- Contact local utility for interconnection agreement and PPA, apply for permits
- Obtain UEI (Universal Entity Identifier) at [SAM.gov](#), activate registration

Gather Application Forms and Documents (see file list)

- Obtain REAP Grant Application Forms from: [Rural Development Website](#)
- Assemble required documents as outlined in the [detailed application checklist](#)

Complete Application Forms and Documents

- Fill out application forms ([RD 4280-3x](#), [SF-424](#), [SF -424C](#), [SF -424D](#))

- Compile supporting documents: proof of eligibility, technical requirements, and environmental checklist

Submit Application

- Send your completed application package to your local Rural Development State Energy Coordinator or via [Grants.gov](#)
- Retain copy of application for your records

Await REAP Scoring and Selection

- Applications are scored based on energy savings, project cost, and readiness criteria
- Notification can take several months

Grant Award and Disbursement

- The local Rural Development State Energy Coordinator will notified awardees
- Grants are disbursed after project completion, payment, and verification of proper functioning
- Reimbursement requires detailed invoices and proof of payment for eligible expenses

USDA Rural Energy for America Program (REAP) Grant Application FY25 Submission Checklist

General Submission Requirements

- File Format:** All documents must be in PDF format.
- Submission:** Applications must be submitted to USDA [State Energy Coordinators](#)
- Registration:** Ensure an active UEI number and SAM.gov registration.

1. **Application Form (SF-424):** Standard Application for Federal Assistance. Download fillable PDF at www.grants.gov.
2. **Energy Bills:** Provide 12 months of recent energy bills (or as many as available) to demonstrate baseline energy consumption.
3. **Proof of matching funds:** Provide proof (e.g. bank statements, loan approvals) to verify financial capability to fund the balance of project expenses beyond the grant.
4. **Lease/Deed/Proof of Property Control:** Legal documentation proving property ownership or lease rights to ensure legal access to project site.

5. **Project Narrative:** Detailed but concise description of the project, including objectives, benefits, and timeline.
6. **Technical Report:** Comprehensive, detailed technical feasibility of proposed project, including technical specifications, energy generation, equipment information, and design.
7. **Installer Proposal:** Attach current quote/bid from the selected installer with project scope, costs, and timeline to provide project cost estimates and feasibility assessment.
8. **Energy Generation Report:** Provide estimate of renewable energy system's energy output to establish the energy generation potential of the project – *AgWind Report can be attached for this*



USDA Rural Energy for America Program (REAP) Grant Application FY25 Submission Checklist

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-

9. **Overhead Map:** Show project location and layout to provide visual representation of project site. Recommended to be a single page map.

10. **Site Photos:** Attach clear photographs (up to 5 recommended) of the site to help visualize the project location to provide visual reference for the project feasibility.

11. **Equipment Datasheets:** Concise datasheets for major equipment (e.g. wind turbines) providing specifications to verify equipment compliance.

12. **Proof of \$/kWh Rate:** Provide documentation showing current electricity rate, such as Rate Schedule or Power Purchase Agreement to calculate potential savings and energy offset.

13. **Sample Interconnection Agreement:** Necessary in states with interconnection requirements for grid-connected systems.

14. **3 Years of Tax Returns:** Depending on the project's scope, business or personal tax returns (if available) may be required or recommended to provide financial history of the applicant.

15. **Environmental Review:** Provide sufficient environmental information. If required, environmental impact documentation, recommended with up to 5 photos, per NEPA guidelines. A completed NEPA review is not required at the time of application.

16. **Additional Forms (SF-424A, SF 424B, SF-LLL):** Budget form, assurances, and lobbying disclosures. Completes the federal application process.



SAM/UEI – start several weeks before submission target deadline!

THIS WEEK for 3/31/25 deadline; by mid-May for 7/1/25 anticipated reopening

Note new REAP blackout period April 1-June 30, 2025

Obtain a Unique Entity Identifier (UEI) – Replaces DUNS number

- Requirement:** Register for a UEI through SAM.gov if your organization doesn't already have one.
- Where to Apply:** [Sam.gov](https://sam.gov)

Register in [Sam.gov](https://sam.gov) (System for Award Management)

Registration Requirements:

- **Legal Business Name:** Organization's official name
- **Physical Address:** Physical location of the organization (no P.O. Boxes)
- **TIN (Taxpayer Identification Number):** The EIN (Employer Identification Number) or Social Security Number (SSN) for sole proprietorships
- **Banking Information:** Bank name, routing number, and account number for federal payment deposits
- **Entity Structure:** Organization type (corporation, non-profit, etc.)
- **NAICS Code:** North American Industry Classification System (NAICS) code that describes the organization's primary industry.
- **Business Start Date:** Date organization established
- **CAGE Code:** Commercial and Government Entity (CAGE) code. (SAM.gov will assign this automatically if none input)

System Maintenance Windows: [SAM.gov](https://sam.gov) and [Grants.gov](https://grants.gov) sometimes have maintenance periods. Applicants should check for maintenance schedules to avoid delays.

Technical Support: Both [SAM.gov](https://sam.gov) and [Grants.gov](https://grants.gov) offer support for registration issues. Reach out if any issues arise, especially for first-time registrations.

Speak to your state's [Rural Development Energy Coordinator](#) before attempting to fill out any forms or applications!

Applicants must submit one original, hard copy or electronic, application to the appropriate RD Energy Coordinator for the State where the applicant's proposed project will be located. Future submissions may be accepted via www.grants.gov – currently, personally delivered is usually best; emails with confirmation can work.

To be considered for funds, complete applications must be received by the appropriate USDA RD State Office Energy Coordinator, regardless of postmark, or via www.grants.gov by **4:30 p.m. local time** on the application window submission deadline.

***Upcoming REAP application deadline:
March 31, 2025***

Anticipated to reopen July 1, 2025 with deadline of September 30

Accessing the Tool:

- The online tool will be available through the AgWind website
- Designed for rapid first-pass screening of potential sites

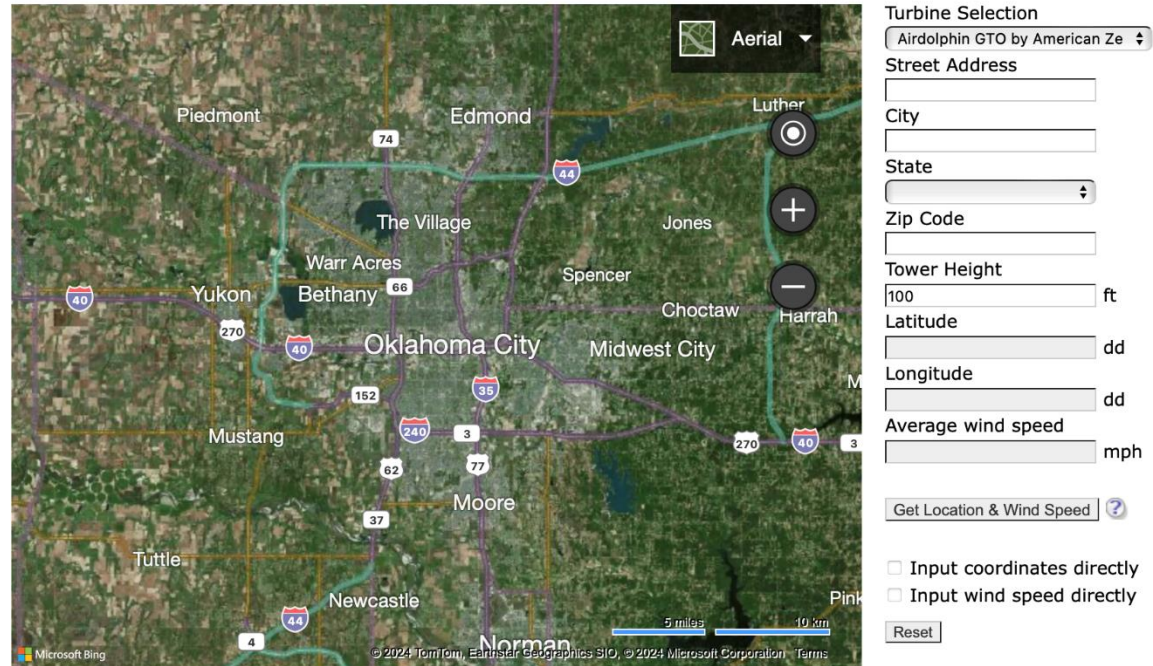
Using the Tool:

- Input location data to receive wind resource and geospatial information
- The tool integrates financial evaluation algorithms to assess the viability of wind energy projects
- Results include recommendations for turbine models and project scale, considering local permitting and interconnection constraints

WindReport

Turbine Production [Financial Analysis](#) Saved Sessions Contact Us

Logout



The screenshot shows the AgWind Report Tool interface. On the left is a satellite map of Oklahoma with a green circle indicating a selected location near Oklahoma City. On the right is a form titled "Turbine Selection". The form includes a dropdown menu for "Turbine Selection" (currently set to "Airdolphin GTO by American Ze"), a "Street Address" field, "City", "State", and "Zip Code" fields, a "Tower Height" field (set to 100 ft), "Latitude" and "Longitude" fields (both set to dd), and an "Average wind speed" field (set to mph). Below the form are two checkboxes: "Input coordinates directly" and "Input wind speed directly", and a "Reset" button. At the bottom of the map, there is a scale bar showing 5 miles and 10 km.

Session Handling (optional)

Save this modeling session

Session Description

Client name

Model Time Span

1 years, beginning in 20:



Q&A

Upcoming AgWind Team
Office Hours:

3rd Friday of each month 1-2 pm CT

Register for Upcoming Zooms here: <https://tinyurl.com/AgWind>



*Scan to check
your site's wind!*



AgWind Collaborators



OUR WIND OUR POWER OUR FUTURE

Thanks to you, USDA, HeroX, Pecos and other current & future partners





OUR **WIND** OUR **POWER** OUR **FUTURE**

Slides for Q&A

What is Distributed Wind?

- The use of one or a few wind turbines at homes, farms, businesses, or public facilities to off-set on-site energy consumption (behind-the-meter) lowering operating costs
- Wind energy produced first serves local loads, any excess is sold to the utility
- No back-up power during utility outages (w/o storage & special electronics)



Benefits of Distributed Wind



Least-cost renewable technology in areas with good wind resources

Leverages America's technology and manufacturing strengths

Provides power at night and more power in the Winter

Much smaller footprint compared to solar