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Wind Turbines at North Slope Doyon Drilling Pad

Deadhorse, Prudhoe Bay, AK | NPS 100C-24 | 2 x 95 kW on 95' towers | Northern Power Systems

Photo Credit: Northern Power Systems

Alaska Native-owned oil drilling company Doyon installed turbines at the North Slope drilling pad in Deadhorse, Alaska, at 70.2° latitude. Connected behind the meter at 600 VAC, the two 95 kW turbines provide supplemental power to Doyon's warehouse and offset electricity usage. Designed for extremely cold climates, remote installations, and microgrid applications, the turbines are rated for operation to -40°C (-40°F).

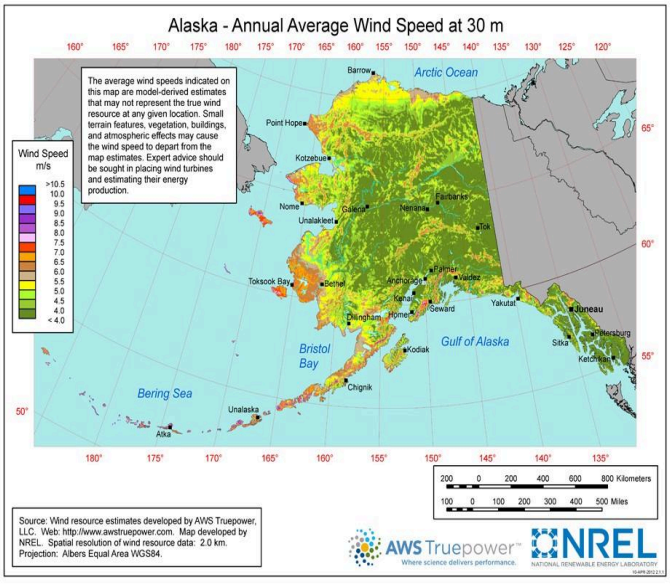
Doyon Drilling President and General Manager Andrea Honea noted: "I'm proud that Doyon Drilling is part of this monumental milestone."

Key Findings

- Generates ~ 500 MWh annually
- Offsets electricity usage resulting in cost savings

Impact

- Showcases energy production integration
- Demonstrates feasibility of wind energy in remote locations



Want further information? Please see: www.AgWindEnergy.org *or* www.DistributedWind.org

Chesbro Rifles Wind Energy Upgrade

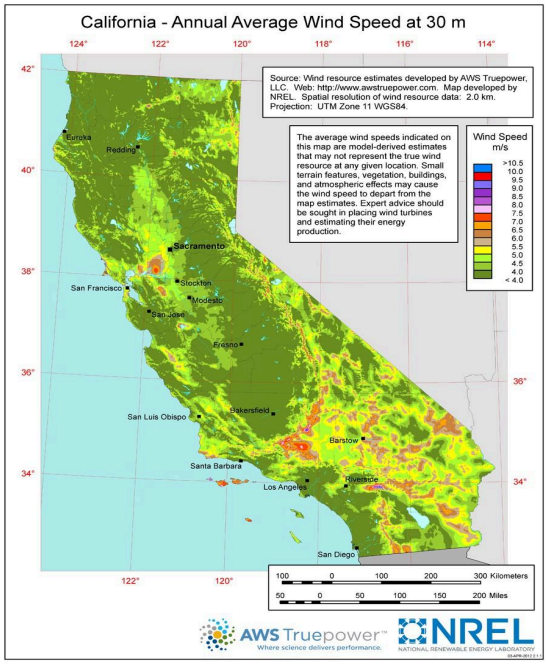
Tehachapi, CA 93561 | Bergey Excel 15 | 15 kW Turbine, 80 foot tower | Installed by Pacific Solar & Wind LLC

Credit: Bruce Hatchett, Pacific Solar & Wind LLC

To meet the growing demand for energy, **Chesbro Rifles** in rural Tehachapi, California, upgraded its energy system replacing a Bergey Excel 10 kW turbine with a Bergey Excel 15 kW turbine on an 80-foot tower. Chesbro Rifles upgraded its turbine to meet the company's growing demand for energy, producing energy more efficiently and cost-effectively.

The Excel 15 produces over double the energy of its predecessor, generating approximately 36,000 kWh annually. With this upgrade, Chesbro Rifles can offset 100% of their electricity usage to achieve energy independence. Additionally, Chesbro Rifles sold its 10 kW turbine, which continues to perform well after 20 years of service. The project benefited from federal incentives, including a 30% tax credit plus 10% for American-made equipment.

"The Excel 15 is much quieter than my old Excel 10. It is a big improvement," noted owner Mark Chesbro.



Key Findings

- Produces ~ 36,000 kW annually
- 100% annual energy offset
- 5-year estimated payback period

Impact

- Secures energy independence
- Demonstrates feasibility of wind energy for rural businesses

More than 230,000 California properties have wind resources suitable for distributed wind with a combined technical potential of 3.8 GW, per NREL

Want further information? Please see: www.AgWindEnergy.org *or* www.DistributedWind.org

Cemex Black Mountain Quarry & Plant Turbines

Victorville, CA 92394 | GE | 2 x GE 1.6 MW + 2 x GE 1.5 MW | Installed by Foundation Windpower

Photo Credit: Foundation Windpower

Cemex Construction Material Pacific, LLC, located near Victorville, CA, seamlessly integrated wind energy into their operations with Foundation Windpower's installation of four GE wind turbines (two 1.6 MW on 262 ft towers and two 1.5 MW units on 213 ft towers). The turbines offset rising energy costs for this large industrial cement producer by providing a cost-effective and sustainable energy solution. Together the wind turbines produce over 6.5 million kWh/yr, helping to offset Cemex's substantial energy load without sacrificing space for mining and operations.

"This project demonstrates Cemex's commitment to find creative ways to save costs in a challenging regulatory environment," noted Matt Wilson, CEO of Foundation Windpower.

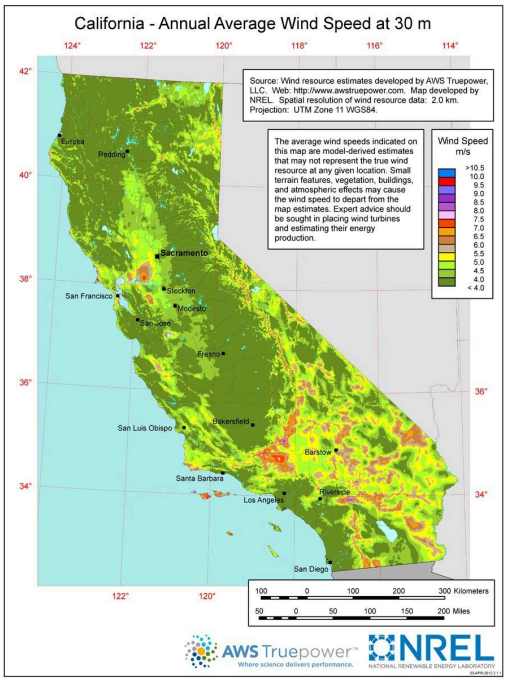
The wind turbines delivered immediate financial benefits through a Power Purchase Agreement locking in savings compared to utility rates. It also leveraged federal and state incentives, including the U.S. Investment Tax Credit and the California Self-Generation Incentive Program, enhancing its economic feasibility. Primary loads powered by the turbines include kiln operations and conveyor systems, with energy costs reduced by at least 25% compared to utility rates.

Key Findings

- Project reduces energy costs by at least 25%
- Produces ~6.5 million kWh annually
- Immediate payback period due to PPA locking in rates

Impact

- Secures long-term energy cost stability
- Demonstrates feasibility of wind energy in heavy industries



More than 230,000 California properties have wind resources suitable for distributed wind with a combined technical potential of 3.8 GW, per NREL

Want further information? Please see: www.AgWindEnergy.org *or* www.DistributedWind.org

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Small Wind Turbine at Lindley Estate

Adelanto, CA 92371 | Bergey Excel 10 | 10 kW turbine, 45 foot tower | Installed by Pacific Solar & Wind LLC

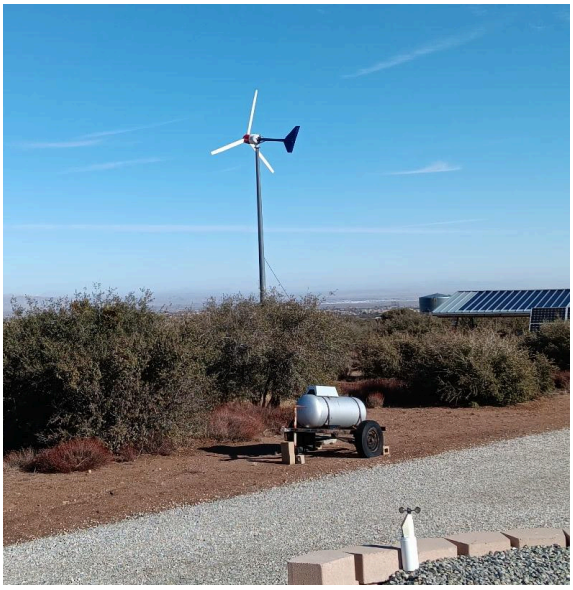


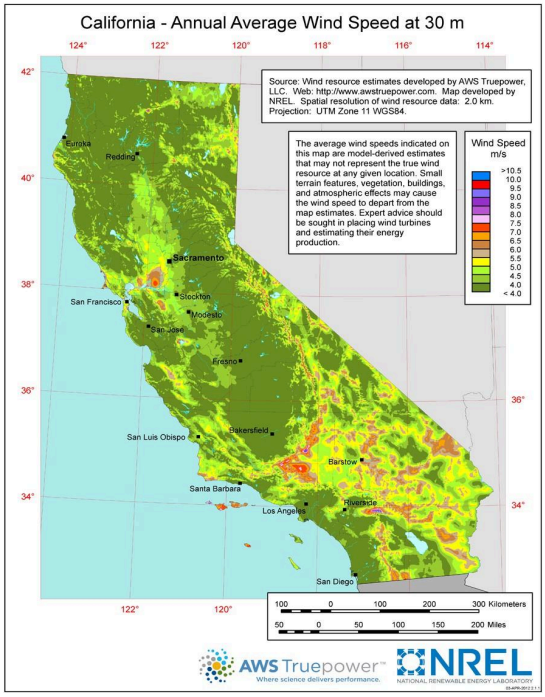
Photo Credit: Chelsea Lindley, Owner

PACIFIC SOLAR & WIND

The **Lindley Estate** in Adelanto, California, has adopted a hybrid energy solution, integrating a Bergey Windpower 10 kW wind turbine together with their solar system in June 2024. The wind turbine generates power during overcast days and windy evenings, increasing energy independence and lowering overall fuel consumption.

By addressing the limitations of solar-only systems during low sunlight periods, the wind turbine's 12,000 kWh annual output offsets half of the estate's energy needs. Avoiding a costly utility line extension further enhances the project's economic value.

"Wind and solar working together work better than either one of them alone. I like the way it looks and sounds," noted hybrid system owner Chelsea Lindley.



Key Findings

- Produces ~ 12,000 kWh of electricity annually (50% of the site's energy needs)
- Generates 99% of site's energy needs from wind+solar
- 3-year estimated payback period
- 15-year-old turbine retains value with an expected additional 20+ year lifespan

Impact

- Showcases off-grid energy for remote land development
- Saves 1,000s of dollars in utility line costs with a 100% off-grid system
- Demonstrates innovative energy independence solutions

More than 230,000 California properties have wind resources suitable for distributed wind, with a combined technical potential of 3.8 GW, per NREL

Want further information? Please see: www.AgWindEnergy.org *or* www.DistributedWind.org

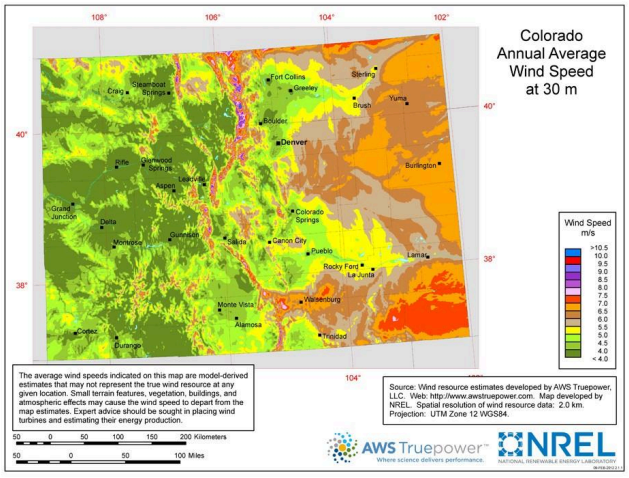
San Isabel Electric Cooperative

Walsenburg, CO 81089 | SANY | 4 x 2 MW Turbines, 80 foot Tower | Installed by SANY

Photo Credit: Google Maps

San Isabel Electric Association (SIEA), serving 24,000 members across southern Colorado, embarked on an innovative distributed wind project in 2013. Still in operation in 2025, the Huerfano River Wind Farm, an 8 MW facility featuring four 2 MW SANY turbines, was developed to meet Colorado's Renewable Portfolio Standard while reducing wholesale power costs. Located in a "special wind region" on the eastern slope of the Rocky Mountains, the project leverages the area's excellent wind resources to generate approximately 4% of SIEA's annual energy needs.

The wind farm's success stems from its strategic location and well-aligned production with the co-op's demand. Connected to SIEA's existing Huerfano Substation, the project distributes clean energy to about one-third of the co-op's members. The wind farm's daily production often coincides with SIEA's peak demand, enhancing its value to the grid. Despite some maintenance challenges, including gearbox replacements, the project has achieved an average capacity factor of 24%, with some years reaching 27%.



Key Findings

- 19,000,000 kWh produced annually
- SEIA entered a 25-year power purchase agreement (PPA) with SANY America
- PPA contributes to localized rate stability

More than 136,000 CO properties have wind resources suitable for distributed wind, with a combined technical potential of 1500 MW, according to NREL

Want further information? Please see: www.AgWindEnergy.org *or* www.DistributedWind.org

Turbine at Pudenz Machinery Repair & Beef Processing

Carroll, IA 51401| Bergey Windpower Excel 15| 15 kW, 100’ tower | Installed by American Windpower

Photo Credit: American Windpower

Seeking to offset annual electricity costs, Dean Pudenz hired American Windpower to install a Bergey 15 kW wind turbine mounted on a lattice 100-foot tower in 2023 at **Pudenz Machine Repair and Beef Processing** facility in rural Iowa.

The Bergey Excel 15 turbine, expected to produce ~ 29,724 kWh per year, is well suited for farming and rural small business operations as well as microgrid applications in areas like central Iowa with sufficient wind resources producing as much energy as a 35 kW solar system, with an 80% smaller footprint.

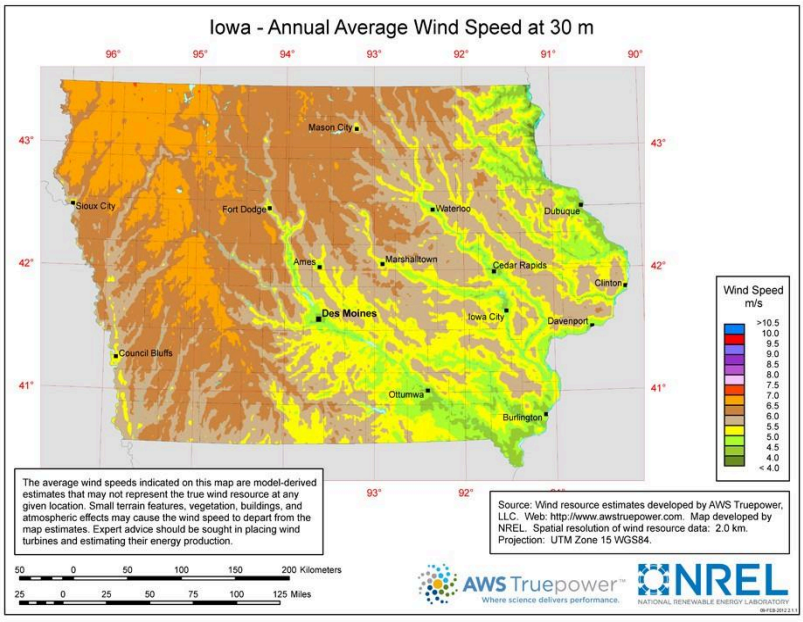
Dean Pudenz: ***“I wanted to take advantage of Iowa’s strong winds and use that energy to reduce my operating costs and secure the financial viability of my companies.”***

Key Findings

- Produces ~ 30,000 kWh annually, enough to power two homes
- Saves owner ~ $3,000 annually in electric bills

Impact

- Demonstrates feasibility of wind energy for rural businesses



More than 95,000 Iowa properties have wind resources suitable for distributed wind with a combined technical potential of 543 MW, per NREL

Want further information? Please see: www.AgWindEnergy.org *or* www.DistributedWind.org

Wind Turbine at Walker Brothers Roofing Company

Sloan, IA 51055| Bergey Windpower | 15 kW on 100 foot tower | Installed by American Windpower

Photo Courtesy of American Windpower

Walker Brothers Roofing Co., in rural western Iowa, features a Bergey 15 kW wind turbine mounted on a 100-foot tower installed by American Windpower to offset the company's annual electricity consumption. The turbine is expected to produce approximately 30,000 kWh per year.

Designed for small installations, including microgrid applications, the Bergey Excel 15 turbine is well suited for farming and rural small business operations in areas like central Iowa with sufficient wind resources producing as much energy as a 35 kW solar system, with an 80% smaller footprint.

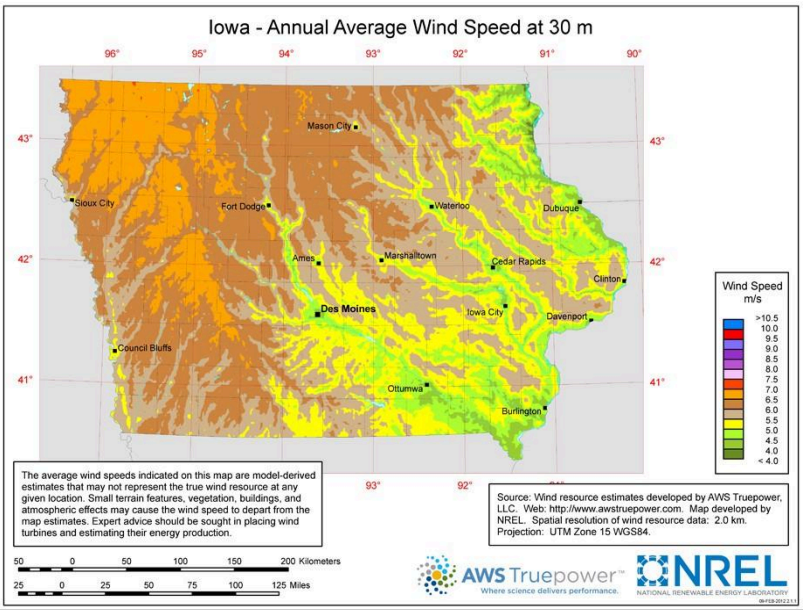
Walker Brothers Roofing, with the support of federal tax credits and USDA REAP incentives, invested in wind power to increase its energy independence and to lower its energy costs providing financial stability.

Key Findings

- Saves ~ $4,800/year in electric bills
- Produces ~ 30,000 kWh annually
- 50% USDA REAP grant & 40% federal tax credit saving thousands of dollars

Impact

- Showcases operational benefits of investments in energy independence
- Demonstrates feasibility of wind energy for rural businesses



More than 95,000 Iowa properties have wind resources suitable for distributed wind with a combined technical potential of 543 MW, per NREL

Want further information? Please see: www.AgWindEnergy.org *or* www.DistributedWind.org

Wind Turbine at Idaho National Laboratory

Idaho Falls, ID 83401 | Skystream 3.7 | 2.4 kW on 70 ft tower | Installed by Skystream Wind Turbines

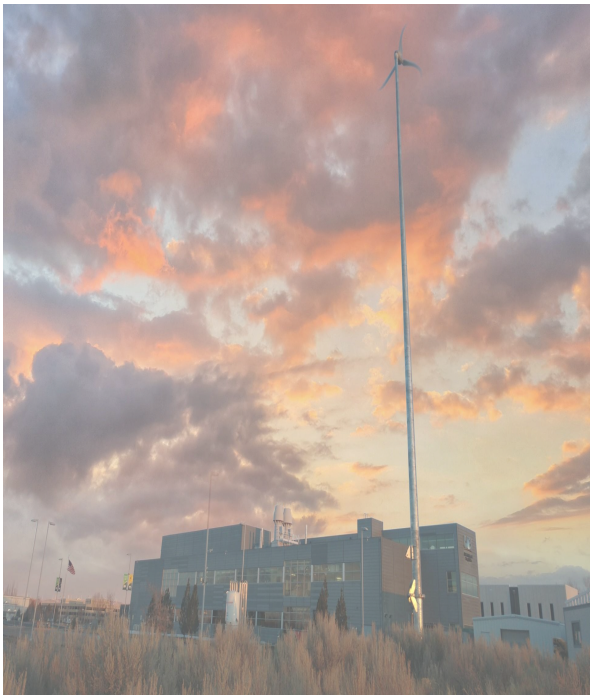
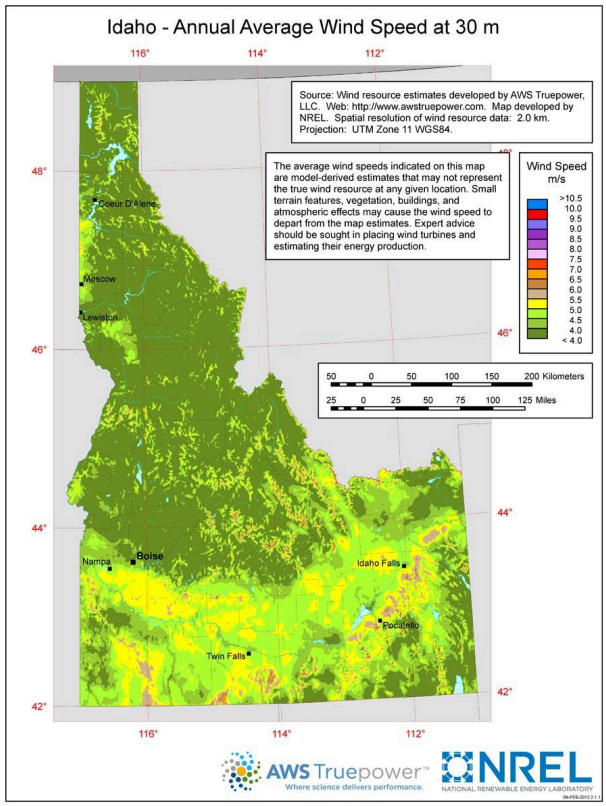


Photo Credit: Jake Gentle, Idaho National Laboratory

The **Idaho National Laboratory**, in conjunction with Idaho State University-INL Research Facility, re-installed its wind turbine in 2020 in Idaho Falls, Idaho. Connected behind the meter at 240 VAC 60 Hz, the 2.4 kW Skystream 3.7 turbine provides energy production in a microgrid configuration for use as a research tool.

Designed for small installations, including microgrid applications, the Skystream 3.7 is a user-friendly and turnkey compact generator – with controls and an inverter built-in – able to quietly provide electricity even in very low winds.



"As wind generation in the U.S. continues to grow, it becomes more of a critical generating asset of our bulk electric system" – INL Infrastructure Security Portfolio Manager Jake Gentle[1]

[1] *https://inl.gov/integrated-energy/idaho-researchers-lead-Doe-effort-to-protect-nations-wind-energy-infrastructure*

Key Findings

- Produces ~ 2100 kWh of energy annually
- Provides data for research

Impact

- Showcases potential of energy independence
- Demonstrates ease of integration of wind energy

More than 104,000 Idaho properties have wind resources suitable for distributed wind with a combined technical potential of 734 MW, per NREL

Want further information? Please see: www.AgWindEnergy.org *or* www.DistributedWind.org

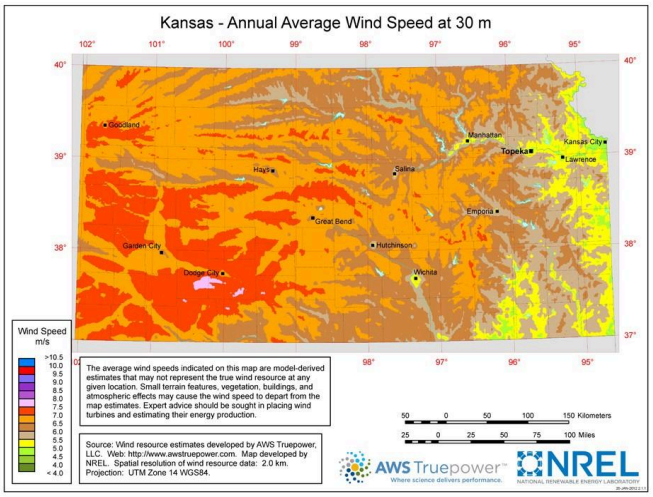
4th Wind Turbine at Sherman County Feedyard

Goodland, KS 67735 | Eocycle | EOX S-16, 25 kW on 80 foot tower | Installed by Eocycle

Photo Credit: Eocycle

Sherman County Feedyard in Goodland, Kansas, has successfully implemented its fourth Eocycle wind turbine, demonstrating a strong commitment to renewable energy and cost reduction. This latest 25 kW Eocycle EOX S-16 turbine, installed on August 5, 2023, stands at 80 feet tall and is part of a broader strategy to lower electricity costs across the feedyard's operations.

The project's primary goal was to reduce energy expenses, building on the success of three previously installed Eocycle turbines. With an estimated annual production of 76,560 kWh, this new turbine is expected to offset 53% of the feedyard's annual electricity usage, resulting in approximately $4,700 in annual cost savings. The project's success is further bolstered by its short estimated payback period of just 5 years, aided by USDA Rural Energy for America Program (REAP), Investment Tax Credit (ITC), and depreciation incentives.



Key Findings

- 5 year estimated payback period
- $4700 annual cost savings
- 76,560 kWh of electricity produced annually

More than 30,710 KS properties have wind resources suitable for distributed wind, with a combined technical potential of 192 MW, according to NREL

Want further information? Please see: www.AgWindEnergy.org *or* www.DistributedWind.org

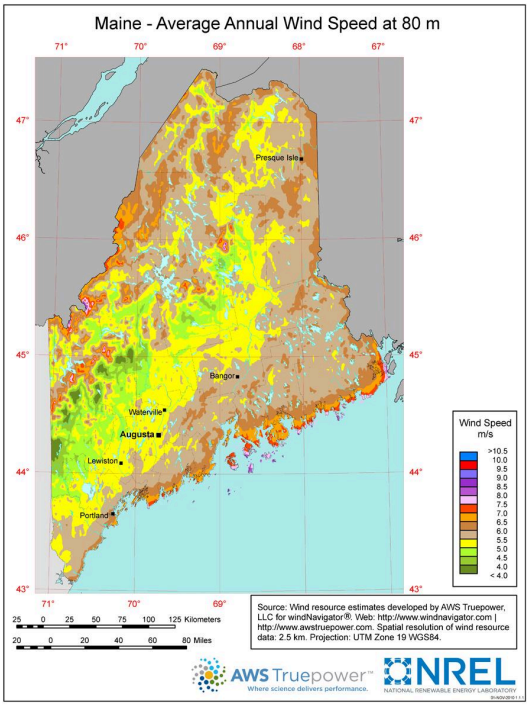
Wind Powers Camden Hills Regional High School

Rockport, Maine 04856 | Northern Power Systems | NPS 100-21, 100 kW, 121 ft Tower | Installed by Power Grid Partners

Photo Credit: Penobscot Bay Pilot[1]

Camden Hills Regional High School installed a 100 kW Northern Power Systems wind turbine to address its high energy needs. Spearheaded by a science teacher and student-led group, the project came together with a years-long community fundraising effort. The school collaborated with the University of Massachusetts Wind Energy Lab to optimize site selection, prioritizing educational visibility over windier off-site locations.

In 10+ years, the turbine has generated 620,000 kWh of electricity. With no ongoing costs after commissioning, the school enjoys free energy valued at $11k/year, shielding the school from rising electricity prices. The community landmark showcases wind energy's viability in residential areas.



"Ten years of the turbine in our backyard has shown we can coexist with wind energy as we have learned we have more to gain than to fear from wind energy," noted CHR student Sadie Woodruff.[1]

Key Findings

- Produces ~ 57,000 kWh of energy annually
- Saves ~ $11,000+ in energy costs annually

Impact

- Showcases community support for energy independence using wind
- Secures energy cost savings

More than 29,000 ME properties have wind resources suitable for distributed wind, with a combined technical potential of 190 MW, per NREL

Want further information? Please see: www.AgWindEnergy.org *or* www.DistributedWind.org

[1] https://www.penbaypilot.com/article/camden-hills-regional-high-school-windplanners-celebrate-10-years-energy-production-w/158628

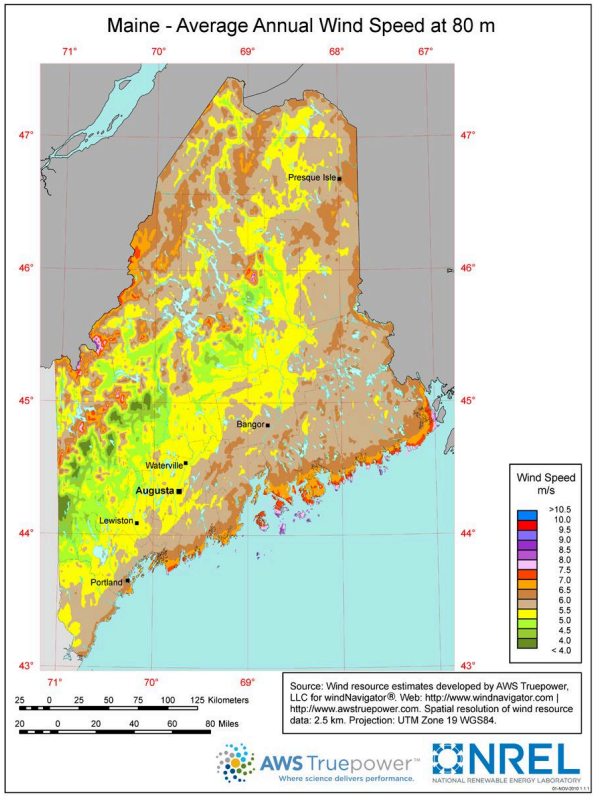
Fox Islands Electric Coop Wind Turbines

Vinalhaven, Maine 04863 | GE | 3x 1.5 MW Turbines, 250 ft towers | Installed by Cianbro

Photo Credit: Cianbro[1]

Fox Islands Electric Cooperative (FIEC), serving the remote Maine islands of Vinalhaven and North Haven, installed three 1.5 MW turbines to reduce high electricity costs and reliance on mainland power in a member-supported and community-owned wind farm. The project, operated by FIEC's subsidiary Fox Islands Wind, LLC, offsets over 65% of the islands' electricity needs providing energy independence and resilience to the islands. To further enhance grid stability, FIEC is actively exploring battery storage solutions.

"Having a resilient and strong energy system is really important to sustain our community," noted Amy Watson Turner, CEO, Fox Islands Electric Cooperative[1]



Key Findings

- Produces over 10,000 MWh annually
- Meets ~ 65% of communities' electrical demand
- Generates ~ 4.5 MW total capacity

Impact

- Secures long-term energy cost stability
- Showcases community-based energy independence

More than 29,000 Maine properties have wind resources suitable for distributed wind with a combined technical potential of 190 MW, per NREL

Want further information? Please see: www.AgWindEnergy.org *or* www.DistributedWind.org

[1] https://www.cooperative.com/programs-services/bts/radwind/Documents/RADWIND-Case-Study-Fox-Islands-July-2021.pdf

Jackman Land Port of Entry

Jackman, Maine 04945 | Northern Power Systems | 2x 100 kW Turbines, 121 ft towers | Installed by Power Grid Partners

Photo Credit: Google Maps

The **General Services Administration** (GSA) installed two 100 kW wind turbines to power the U.S. border station at the Jackman Land Port of Entry in Maine to tackle the challenge of increasing electricity requirements driven by sophisticated electronic equipment essential for border security.

Supplying 50% of the station's annual electricity needs, the turbines significantly increase energy independence and support the border station's operational resilience. This reliable energy supply ensures critical systems, from surveillance to communications, remain functional allowing border personnel to perform duties efficiently.

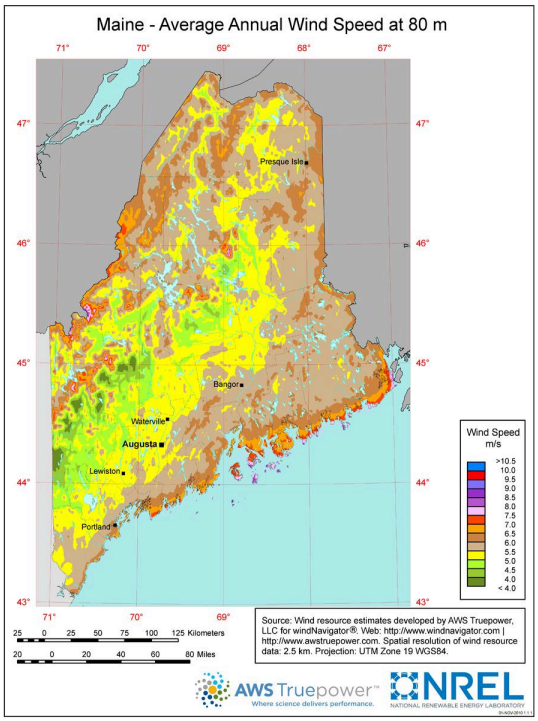
Key Findings

- Wind turbines produce ~ 400,000 kWh annually
- Provide 50% of the power required to operate the U.S. border station
- Save USA ~38,000 gallons of imported fuel annually

Impact

- Project showcases potential of energy independence for federal facilities

PowerGrid Partners



More than 29,000 Maine properties have wind resources suitable for distributed wind with a combined technical potential of 190 MW, per NREL

Want further information? Please see: www.AgWindEnergy.org *or* www.DistributedWind.org

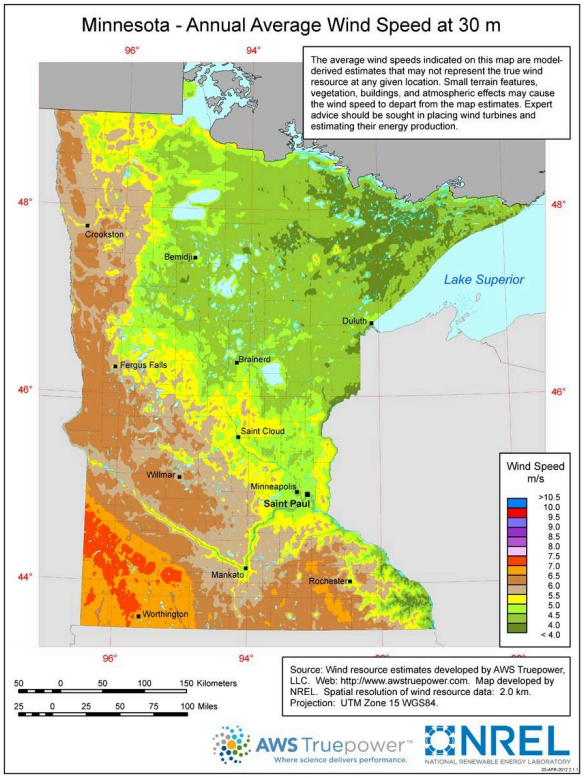
Dual Wind Turbines at Goldberg Family Farm

Stewartville, MN 55976 | Eocycle Wind Energy |2 x 25 kW Turbines, 80 foot towers | Installed by Eocycle

Photo Credit: MN State Senator Carla Nelson (24-R)

In December 2023, **Goldberg Family Farm**, a fifth-generation agricultural enterprise in rural Minnesota, installed two 25 kW wind turbines on 80-foot towers. Facing rising energy expenses, the project aimed to reduce electrical costs and ensure the farm's survival for future generations.

Ecocycle implemented the dual-turbine system to harness the area's wind resources. The resulting system is expected to offset 43% of the farm's annual electricity usage, providing significant cost savings with a projected 5-year payback period.



"It was a joy to stand on this stunning generational farm and learn of the recent energy innovations with the Eocycle EOX S-16," noted Carla Nelson, Minnesota Senator. "EOX S-16 represents cutting-edge wind energy technology, and I'm proud our area is home to such innovation!"

Key Findings

- Produces ~ 140,000 kWh annually (~ 70,000 kWh per turbine)
- Offsets ~ 43% of the farm's annual electricity usage, saving ~ $11,500 in electricity costs

Impact

- Showcases feasibility of wind energy for agricultural applications
- Supports generational stability for family farms

More than 147,000 MN properties have wind resources suitable for distributed wind with a combined technical potential of 590 MW, per NREL

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Wind Turbines at Kas Cattle & Crop Farms

Woodstock, MN 56186 | Eocycle Wind Energy Model S-16 | 2x 25 kW | Installed by Eocycle

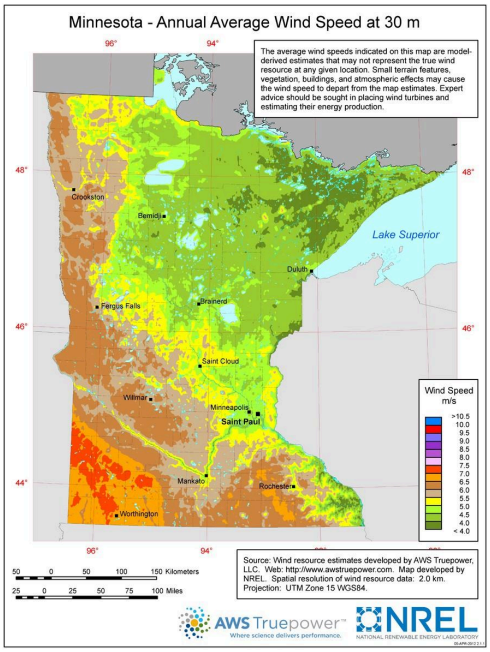
Photo Credit: Eocycle

EOCYCLE

Kas Cattle & Crop Farms, located in rural Woodstock, Minnesota, embraced wind energy by installing two Eocycle 25 kW Model S-16 wind turbines in 2024. The dual turbine system positively impacted Kas Farms' energy independence and financial outlook.

Each turbine is designed to produce approximately 80,000 kWh annually, for a combined output of 160,000 kWh per year offsetting 100% of the farms' annual electricity usage. Kas Farms sells its surplus energy back into the grid, contributing to the local power supply and supporting the farms.

"Encouraged by these results, the owner is already considering installing a third turbine at another property," noted John Mogensen of Eocycle, the project's manufacturer and installer.



Key Findings

- Offsets 100% of the farm's electricity usage saving ~ $7,200 annually
- Produces ~ 80,000 kWh of energy annually
- Generates surplus energy income of ~ $9,200 annually

Impact

- Ensures energy independence
- Showcases the potential of wind energy in agricultural applications

More than 147,000 MN properties have wind resources suitable for distributed wind with a combined technical potential of 590 MW, per NREL

Want further information? Please see: www.AgWindEnergy.org *or* www.DistributedWind.org

Steinberger Farm Wind Turbine Upgrade

Fargo, ND | Bergey Windpower | Excel 15 kW, 98 foot Tower | Farmer Self-Installed

Photo Credit: Bergey Windpower

Steinberger Farm in Fargo, North Dakota, upgraded their wind energy system in 2018. Pleased with the many years of performance of their previous Bergey 10 kW turbine and to increase on-site energy generation and reduce dependence on the local grid and utility rates, Steinberger enhanced the farm's energy production by installing a Bergey Excel 15 kW turbine which significantly boosted the farm's energy generation.

The new turbine, chosen for its time-tested performance and warranty, more than doubled the annual energy output compared to the previous installation, generating approximately 45,000 kWh of energy.

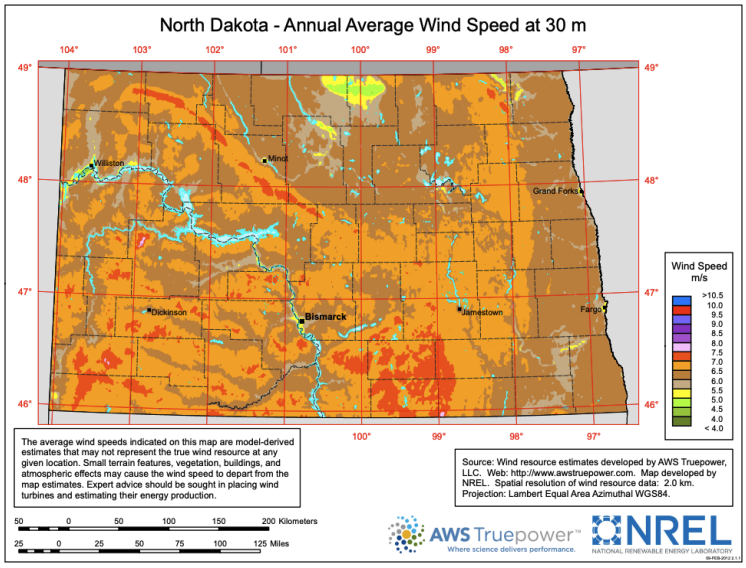
"I looked into the math of the wind and energy, it just made sense." - Steinberger Farm Owner

Key Findings

- Generates ~ 45,000 kWh annually
- Doubles energy generation

Impact

- Showcases the effectiveness of wind energy for agricultural applications
- Increases energy independence



Wind resources on more than 90% of North Dakota land is suitable for distributed wind installations, averaging at least 11 mph at 100 feet above ground

Want further information? Please see: www.AgWindEnergy.org *or* www.DistributedWind.org

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Cuming County Distributed Wind Project

Wisner, Nebraska, 98971 | General Electric | 2.5 MW Turbine, 292 foot tower | Installed by Boyd Jones Const.

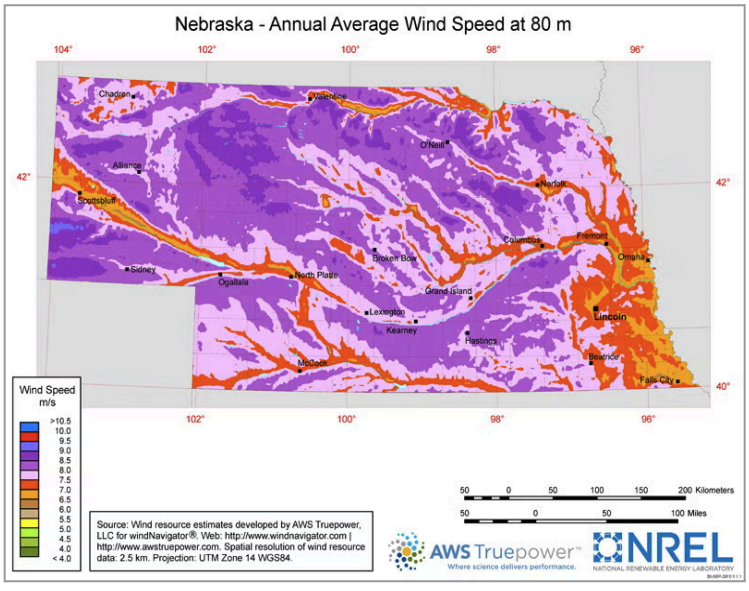
Boyd Jones

Photo Credit: Bluestem Energy Solutions[1]

Cuming County Public Power District (CCPPD) in Nebraska partnered with Bluestem Energy Solutions to install a 2.5 MW wind turbine in 2019. Strategically sized to fit the substation's load to ensure full utilization of generated energy, the turbine generates about 10% of CCPPD's peak energy needs, passing on cost savings to and creating price stability for customers.

The turbine provides annual savings of 3-4% on CCPPD's power costs, while also contributing to the local economy through property taxes, land lease payments, and maintenance-related spending.

"The nice thing about wind is we know exactly what it's going to cost," noted CCPPD General Manager Chet McWhorter. "For the rest of your power, year to year, you learn what it's going to be. But with wind, we know from day one what it costs, and we know from day 900 what it's going to cost. It's helped us hold the line, and we haven't raised rates in three years."[1]



Key Findings

- Produces ~ 10,950 MWh of energy annually, equal to powering 900 homes
- Provides 3-4% annual savings on CCPPD's power costs

Impact

- Showcases rural utility wind energy applications with cost savings and price stability benefiting consumers
- Improves energy independence

More than 25,000 Nebraska properties have wind resources suitable for distributed wind with a combined technical potential of 156 MW, per NREL

Want further information? Please see: www.AgWindEnergy.org *or* www.DistributedWind.org

[1] https://www.cooperative.com/programs-services/bts/radwind/Documents/RADWIND-Case-Study-CCPPD-July-2021.pdf

Wind Turbines at Erickson Farms

Funk, NE 68940 | Bergey Windpower Excel 15 | 15 kW on 100 foot tower | Installed by American Windpower

Photo Credit: American Windpower

Seeking to offset soaring electricity costs and to secure the financial viability of his farming operations, **Erick Erickson** engaged American Windpower to install a Bergey 15 kW wind turbine mounted on a lattice 100-foot tower in 2024 at his farm in rural Funk, Nebraska, taking advantage of the strong winds to move towards energy independence.

The Bergey Excel 15 turbine, expected to produce ~ 30,000 kWh per year, is well suited for farming and rural small business operations as well as microgrid applications in areas like Nebraska with sufficient wind resources producing as much energy as a 35 kW solar system, with an 80% smaller footprint.

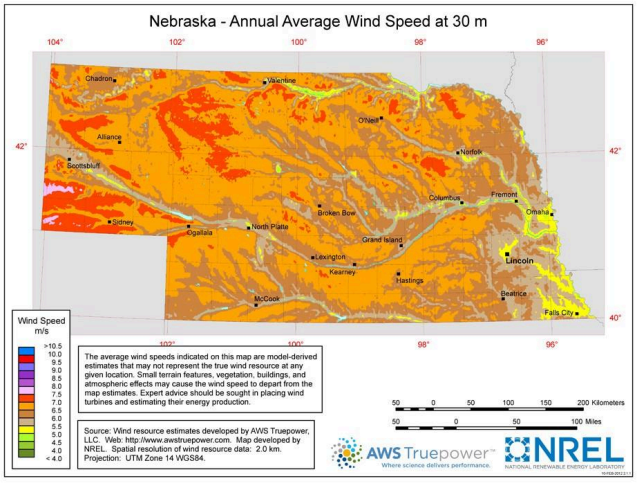
"With the USDA grant and the Tax Credits, investing in the turbine just made a lot of sense," noted farmer Erick Erickson

Key Findings

- Produces ~ 30,000 kWh annually, enough to power two homes
- Saves farmer ~ $6,000 annually in electric bills
- 40% USDA REAP grant & 40% Tax Credit and MACRS depreciation saved thousands of $$

Impact

- Demonstrates feasibility of wind energy for agricultural applications
- Enhances energy independence in face of soaring electricity costs



More than 25,000 Nebraska properties have wind resources suitable for distributed wind with a combined technical potential of 156 MW, per NREL

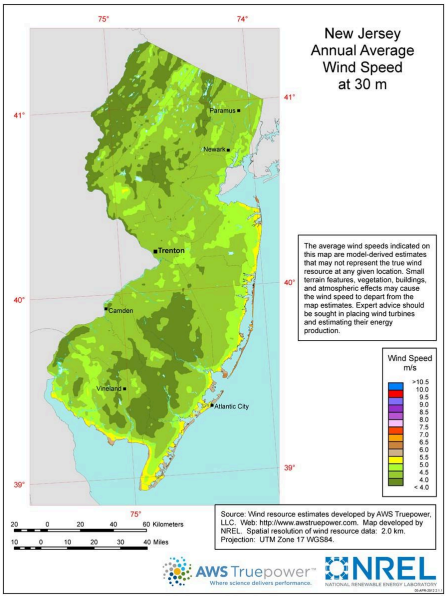
Want further information? Please see: www.AgWindEnergy.org *or* www.DistributedWind.org

Wind Powers Atlantic City Water Treatment

Atlantic City, NJ 08401 | General Electric | 5 x 1.5 MW Turbines, 360 ft Tower Height

Photo Credit: Atlantic County Utilities Commission[1]

The 5-turbine Jersey-Atlantic Wind Farm, located at the Wastewater Treatment Plant in Atlantic City, New Jersey, is a pioneering project that has significantly impacted the region's renewable energy landscape. Opened in December 2005, this wind farm was the first of its kind in the state, featuring five 380-foot turbines with a combined capacity of 7.5 megawatts. The project's unique characteristics as an eastern, urban, coastal, industrial, onshore, multi-turbine wind farm set it apart on a global scale.



The wind farm's primary purpose is to power the wastewater treatment plant, with any excess energy being fed into the main power grid. Working in conjunction with an on-site solar energy project, the wind farm has demonstrated remarkable efficiency and environmental benefits. Since its inception, the project has saved the Atlantic County Utilities Authority (ACUA) over $7.3 million in energy costs and prevented 74,777 metric tons of CO2 from entering the atmosphere, showcasing its significant contribution to both economic savings and environmental protection.

Key Findings

- 7.5 MW Total Capacity, powers ~2,500 homes
- Over $7.3 million in annual cost savings

[1] https://www.acua.com/Projects/Jersey-Atlantic-Wind-Farm.aspx

More than 28,000 NJ properties have wind resources suitable for distributed wind, with a combined technical potential of 715 MW, according to NREL

Want further information? Please see: www.AgWindEnergy.org *or* www.DistributedWind.org

Rose Hill Vineyard Wind Turbine Project

Mattituck, NY 11952 | Bergey Excel 15 | 15 kW Turbine, 120 foot tower | Installed by Skylands Renewable Energy

Photo Credit: Google Maps

Family-owned **Rose Hill Vineyard**, located in the heart of North Fork on Long Island, is one of the first Eastern U.S. wineries to be powered solely by wind and solar which produces 100% of the energy used for the winery, cellar, vineyard, and the Rose Hill Farmhouse Inn.

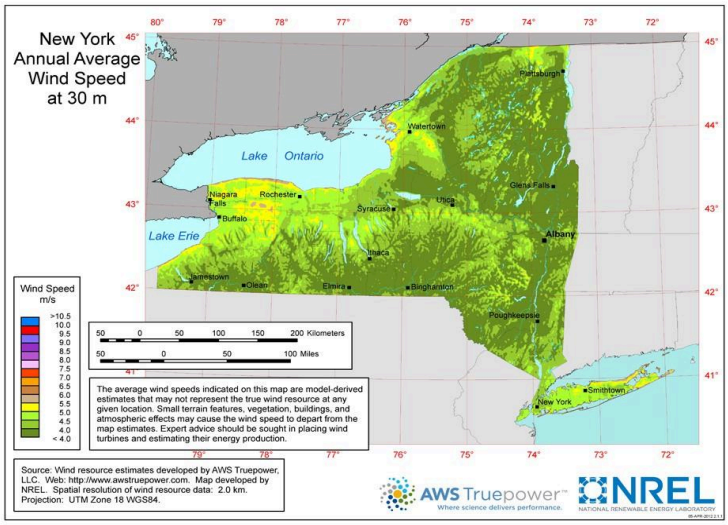
The Bergey Excel 15 turbine Rose Hill installed produces ~45,000 kWh annually. The 15 kW turbine is well suited for farming operations in areas with sufficient wind resources.

Key Findings

- Produces ~ 45,000 kWh of energy annually
- Offsets 100% of electric energy annually with wind + solar system

Impact

- Secures energy independence
- Demonstrates feasibility of wind energy in agricultural and hospitality sectors



More than 41,000 New York properties have wind resources suitable for distributed wind with a combined technical potential of 543 MW, per NREL

Want further information? Please see: www.AgWindEnergy.org *or* www.DistributedWind.org

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Wind Turbine at Niagara Aquaculture

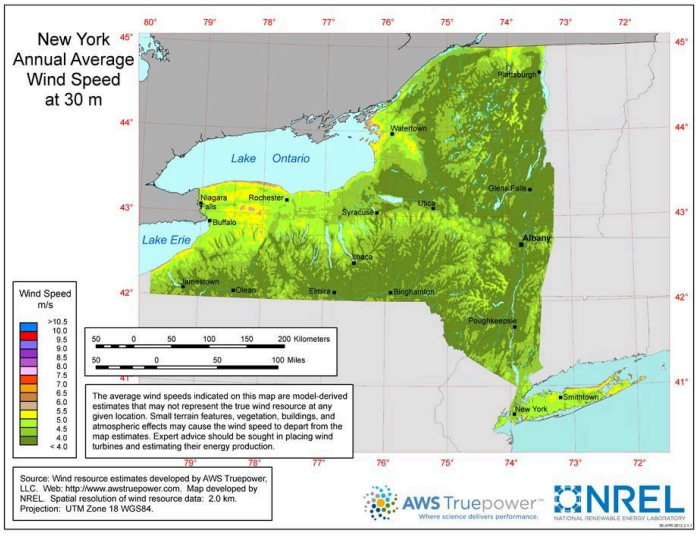
Ransomville, NY 14131 | NPS 100B-24 |100 kW| Installed by Buffalo Renewables, Inc.

Photo Credit:Thomas Fleckenstein, owner

BUFFALO RENEWABLES INC.

Farmer **Thomas Fleckenstein** installed a 100 kW wind turbine and a 12 kW tracker-mounted solar system to power his aquaponic facility with a closed loop fish growing facility and greenhouse located on-site in December 2018. The hybrid wind and solar system offsets 100% of the farm's energy needs making the farm profitable given its high energy costs. Excess electricity generated is then remote net-metered to five other offsite meters.

"I am extremely happy with the Northern 100," noted farmer Thom Fleckenstein. "It has been performing flawlessly for years. It is very easy to maintain with access to the nacelle from inside the tower."



Key Findings

- Produces ~ 103,529 kWh of energy annually
- Meets 100% of energy needs
- 5-year payback period for solar & wind system

Impact

- Ensures energy independence
- Demonstrates feasibility of wind energy for agricultural applications

More than 41,000 New York properties have wind resources suitable for distributed wind with a combined technical potential of 543 MW, per NREL

Want further information? Please see: www.AgWindEnergy.org *or* www.DistributedWind.org

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Turbines at Ball and Whirlpool Facilities

Findlay, Ohio 45840 | Goldwind | 2 x 1.5 MW Turbines, 278 foot towers | Installed by One Energy

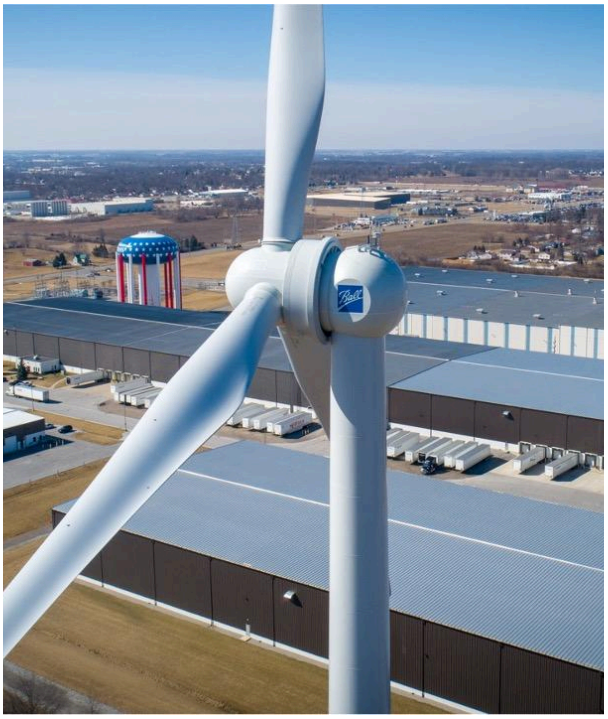
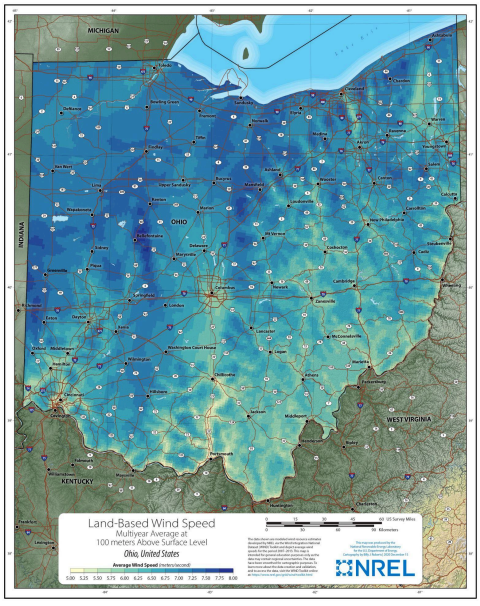


Photo Credit: Hank Doster, One Energy Enterprise LLC

ONE ENERGY
AN INDUSTRIAL POWER COMPANY

Whirlpool Corporation and **Ball Corporation** have undertaken an innovative energy project at their manufacturing facilities in Findlay, Ohio. The initiative involved the installation of two 1.5-MW Goldwind wind turbines as part of a larger wind farm project. This collaboration with One Energy, an Ohio-based wind energy contractor, aimed to reduce electricity costs and enhance energy independence for both companies.

The project utilized a power purchase agreement (PPA) structure, where One Energy owns and operates the turbines, selling the generated electricity directly to Whirlpool and Ball which allows the companies to benefit from energy generation without the upfront costs and maintenance responsibilities.



Key Findings

- 2 wind turbines generate equivalent of powering 600-800 homes
- Offsets ~ 20% of power demand for each facility
- Provides long-term cost savings on electrical bills
- Creates $5,000 annually for STEM scholarships

Impact

- Showcases feasibility of wind energy in industrial applications
- Enhances energy independence

More than 215,000 Ohio properties have wind resources suitable for distributed wind, with a combined technical potential of 2.25 MW, per NREL

Want further information? Please see: www.AgWindEnergy.org *or* www.DistributedWind.org

Baldwin Wallace University Wind Turbine

Berea, Ohio 44017| Skystream 3.7 | 2.4 kW on 60 foot tower | Installed by Dovetail Solar & Wind

Photo Credit: Carver Ulrich

Baldwin Wallace University, located in Berea, Ohio, installed its still-operating wind turbine on campus in 2009 – the first turbine at an Ohio college. Connected to the grid, the 2.4 kW Skystream 3.7 wind turbine produces enough energy to power a home. The University uses to power the athletic field facilities at its point of installation. It also serves as a symbol of B-W's commitment to independent energy innovation. The student body funded over 65% of the cost of the turbine and installation, with the university covering the remaining costs.

Designed for small installations, including microgrid applications, the Skystream 3.7 is a user-friendly and turnkey compact generator – with controls and an inverter built in – able to quietly provide electricity even in very low winds. The Skystream 3.7 operates with winds blow between eight and 60 mph and is constructed to survive wind speeds of up to 140 mph.

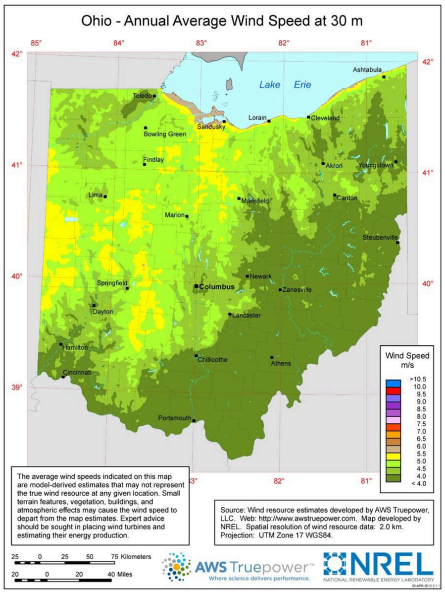
"It's an absolutely beautiful sight," noted Dr. David Krueger, Baldwin Wallace Professor. "It's spinning nicely with the wind."

Key Findings

- Produces up to ~ 4,800 kW annually, enough to power a small business or home
- Powers university facilities

Impact

- Showcases university's support for energy independence through wind
- Serves as a research tool for the university
- Demonstrates suitability of wind energy in educational applications



More than 215,000 Ohio properties have wind resources suitable for distributed wind, with a combined technical potential of 2.25 MW, per NREL

Want further information? Please see: www.AgWindEnergy.org *or* www.DistributedWind.org

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Wind Turbines Powering Premium Beef & Grain

Lone Wolf, OK 73655 | Bergey WindPower | 3 x 15 kW on 100' tower | Installer: American Windpower

Photo Credit: American Windpower

Located in Lone Wolf, OK, family-owned **Premium Beef and Grain, LLC**, one of the only vertically integrated beef companies in the USA, installed three Bergey Excel 15 kW wind turbines in 2023 to power its operations with funding from a USDA Rural Energy for America Program (REAP) grant. With behind-the-meter connections, the three wind turbines provide enough energy production a year to power the equivalent of 15 homes and will save the owner, C.R. Freeman, ~$27,000 in electrical costs annually. The investment in wind power increases the operation's energy independence and lowers energy costs.

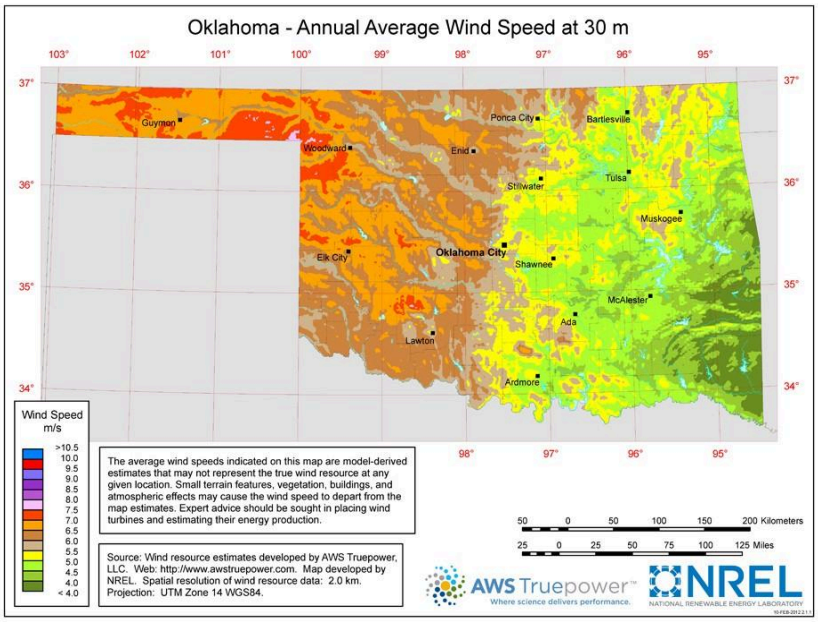
Designed for small installations, the Bergey Excel 15 turbine is well suited for farming and agricultural operations in rural areas like Lone Wolf, OK, with sufficient wind resources, each producing as much energy as a 35 kW solar system with an 80% smaller footprint.

Key Findings

- 3 wind turbines produce ~ 170,360 kWh annually
- Saves ~ $27,000 in electricity costs annually
- $139,400 USDA REAP grant to offset costs

Impact

- Enhances and substantially increases energy independence
- Demonstrates feasibility of wind energy in the agricultural sector



More than 87,500 OK properties have wind resources suitable for distributed wind, with a combined technical potential of 435 MW, per NREL

Want further information? Please see: www.AgWindEnergy.org *or* www.DistributedWind.org

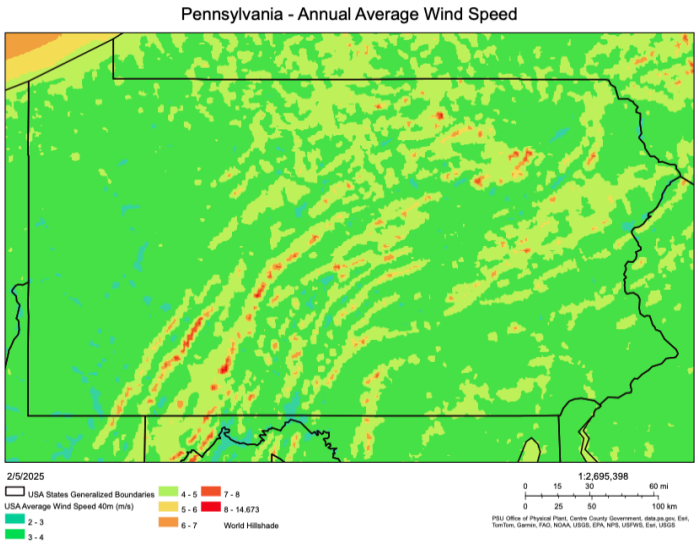
Wind Turbine for Net-Zero Home

York, PA 17406 | Ecocycle | 25 kW Turbine, 140 foot tower| Installed by Skyland Renewables

A York, Pennsylvania, homeowner with high energy demands partnered with Skyland Renewables to achieve energy independence. The project combined a 25 kW Eocycle wind turbine mounted on a 140-foot tower with a 30 kW solar array to address seasonal energy variability. Motivated by personal energy goals and rising utility costs from Met-Ed/FirstEnergy, the homeowner sought independence from the grid.

The turbine's elevated placement above treetops ensures consistent wind access, while the solar array maximizes summer generation. This hybrid system offsets 100% of the home's electricity needs – even during winter when solar output declines. The project highlights how distributed wind and solar complement to achieve year-round energy resilience for high-consumption households.

"We balanced all of the necessary aspects for this project to help the host achieve a net zero electric bill," noted Roger Dixon of Skyland Renewables



Key Findings

- Produces up to ~ 55 kW of energy annually
- Offsets 100% of energy needs with wind+solar

Impact

- Ensures energy independence
- Showcases rural residential wind + solar energy applications

*More than 200,000 PA properties have wind **resources suitable for distributed wind with a combined technical potential of 2.7 GW, per NREL***

Want further information? Please see: www.AgWindEnergy.org *or* www.DistributedWind.org

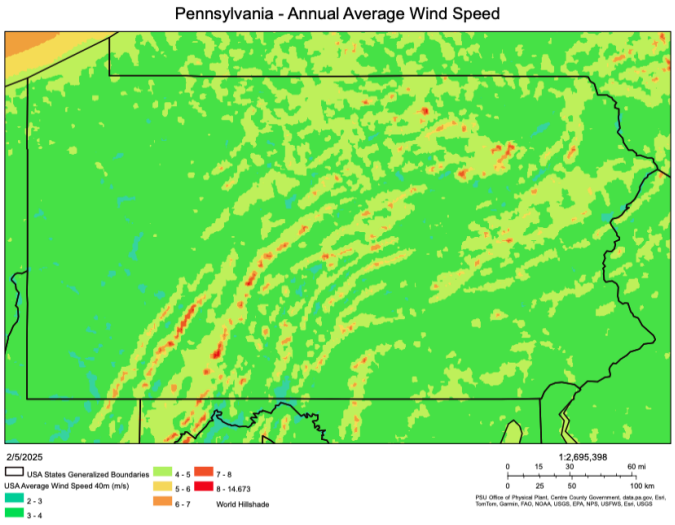
“Gentle Giants” Frey Farm Landfill Wind Project

Conestoga, PA 17516 | 1.6 MW GE Wind Turbines | 2 x 1.6 MW on 262 foot towers| Energy Power Partners

Photo credit: PPL Renewable Energy

Turkey Hill Dairy, a maker of high-quality ice cream and other products, partnered with Lancaster County Solid Waste Management Authority and NextEra to install two 1.6 MW GE wind turbines on a non-operational portion of the Frey Farm Landfill. Connected behind the meter, the wind turbines produce 6 million kWh of electricity a year – enough to power making 5-6 million gallons of ice cream per year.

In combination with other energy systems, Turkey Hill’s rural Lancaster County dairy is 100% energy independent with the wind turbines generating about 21% to 25% of Turkey Hill’s electricity needs annually.



Key Findings

- Produces ~ 6 million kWh of energy annually
- Offsets ~ 21-25% of annual energy needs

Impact

- Showcases feasibility of wind energy in rural food processing & manufacturing facilities
- Ensures energy independence

More than 200,000 PA properties have wind resources suitable for distributed wind with a combined technical potential of 2.7 GW, per NREL

Want further information? Please see: www.AgWindEnergy.org *or* www.DistributedWind.org

Micro Wind at Mt. Nittany Elementary School

State College, PA 16801 | Skystream 3.7 | 2.1 kW on 55 foot tower

Photo Credit: Susan Stewart, PSU

Under the DOE-funded Wind for Schools program, with community support, Pennsylvania State University (PSU) installed a grid-connected Skystream 3.7 wind turbine at Mt. Nittany Elementary School in State College, PA. The American made and engineered turbine supplies electricity to the school and the Penn State grid, as well as serving as a research resource for PSU.

Created for smaller applications, the Skystream 3.7 is a compact, turnkey wind turbine designed to provide energy quietly and even in low wind areas.

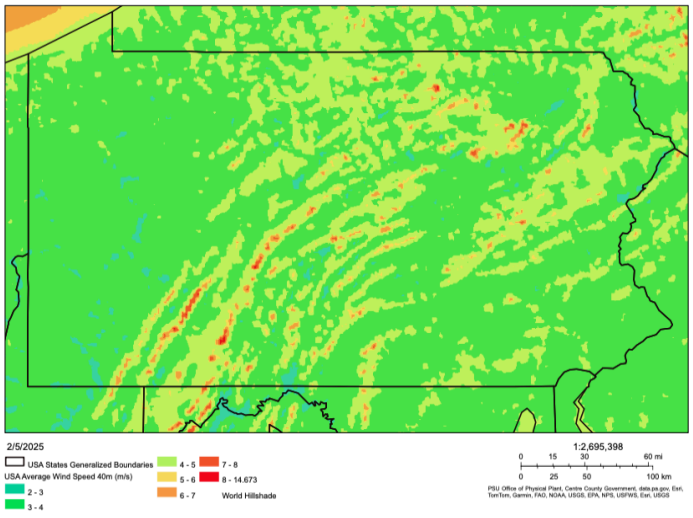
Key Findings

- Produces ~ 1,000 kWh annually
- Provides ~ $200 annual electricity cost savings
- Installed as part of the PA Wind for Schools program

Impact

- Showcases community support for wind energy
- Demonstrates suitability of wind energy in rural educational applications

Pennsylvania - Annual Average Wind Speed



More than 200,000 PA properties have wind resources suitable for distributed wind, with a combined technical potential of 2.7 GW, per NREL

Want further information? Please see: www.AgWindEnergy.org *or* www.DistributedWind.org

Wind Turbine at Rex Bye Farm

Gayville, SD 57031| Bergey Windpower | 15 kW on 100 foot tower | American Windpower

Photo Credit: American Windpower

Rex Bye long dreamed of taking advantage of the strong South Dakota winds to reduce the energy costs on his farm and to help secure the financial viability of his businesses. Leveraging federal tax credits and USDA REAP incentives, Bye installed a Bergey Excel 15 on his farm resulting in energy bill savings of approximately $4,800 annually, moving his farm towards energy independence in the face of soaring energy rates.

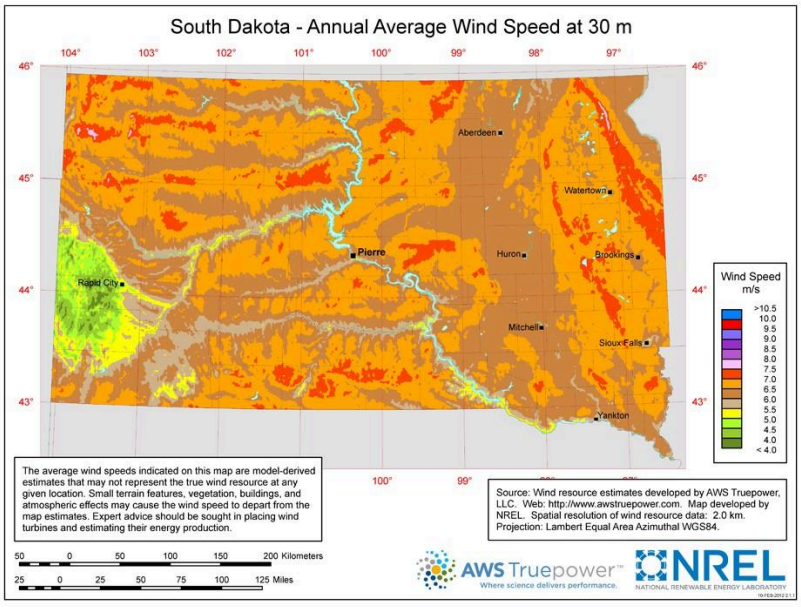
Designed for small installations, including microgrid applications, the Bergey Excel 15 turbine is well suited for farming and rural small business operations in areas with sufficient wind resources, producing as much energy as a 35 kW solar system with an 80% smaller footprint.

Key Findings

- Provides ~ $4,800 in electric bill savings annually
- 50% USDA REAP grant paid $57,250
- 40% Tax Credit & MACRS Depreciation saved over $70,000 in taxes

Impact

- Demonstrates feasibility of wind energy for farms & other rural businesses
- Shields farmers from financial impacts of soaring electricity rates



Wind resources on more than 91% of South Dakota land are suitable for distributed wind installations, averaging at least 11 mph at 100 feet above ground

Want further information? Please see: www.AgWindEnergy.org *or* www.DistributedWind.org

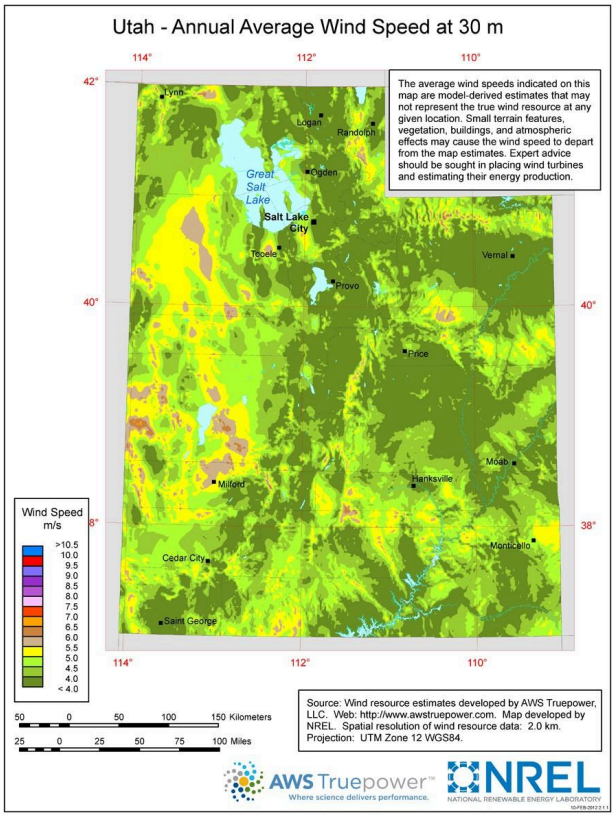
Wind Powered Drones at Utah Valley University

Orem, Utah, 84058 | Ryse Energy | 5 kW E-5 + 160 W AIR Breeze | Installed by Ryse Energy

Photo Credit: Ryse Energy

Utah Valley University (UVU) partnered with Ryse Energy to implement a mobile hybrid energy system to power its drone program's operations. UVU needed a mobile power solution able to support both campus-based activities and remote field operations. The innovative solution combines an E-5 wind turbine (5 kW), an AIR Breeze wind turbine (160 W), four 340 W solar panels, battery storage, and an inverter mounted on a portable trailer.

This mobile system enables UVU to charge drones and power field equipment entirely through independent energy, whether stationed on campus or deployed to remote locations while involving students in utilizing and demonstrating energy independence principles.



Key Findings

- Generates ~ 6.52 kW combined capacity
- Provides continuous power supply through battery storage for field missions

Impact

- Demonstrates power of wind+solar hybrid systems
- Showcases innovative energy independent solutions

More than 77,000 Utah properties have wind resources suitable for distributed wind with a combined technical potential of 732 MW, per NREL

Want further information? Please see: www.AgWindEnergy.org *or* www.DistributedWind.org

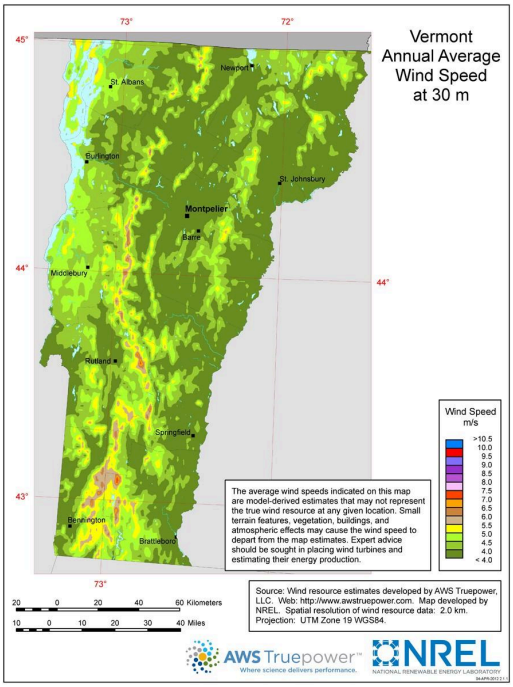
Missisquoi National Wildlife Refuge

Swanton, VT 05488 | Bergey Windpower | 10 kW Turbine on 98 foot Tower

Photo Credit: Bergey Windpower

The **Missisquoi National Wildlife Refuge** in Vermont embarked on an innovative energy generation project, installing a Bergey Excel 10 kW wind turbine as part of a hybrid energy system. The initiative aims to increase the refuge's energy independence, reduce its reliance on conventional power sources and create an educational opportunity for visitors.

The solution involved integrating the Bergey wind turbine with a 15 kW solar PV array, creating a complementary energy independent system. This hybrid approach provided approximately 30% of the refuge's energy needs, with the wind turbine particularly effective during winter months when solar production is lower. The system is connected to the local utility grid for net-metering.



Key Findings

- Produces ~ 30% of refuge's energy needs with wind + solar hybrid system
- Complements solar energy production seasonally

Impact

- Demonstrates viability of small-scale wind energy in federal facilities
- Increases energy independence

More than 12,000 VT properties have wind resources suitable for distributed wind, with a combined technical potential of 60 MW, per NREL

Want further information? Please see: www.AgWindEnergy.org *or* www.DistributedWind.org