

NORA News



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Renewable Electricity Derived From Wind Turbines



Harvesting electricity generated through the use of wind turbines continues to gain in popularity. Large grid-connected arrays of turbines are becoming an increasingly large source of commercial electric power. If you've taken a road trip in recent years, it's hard to miss the fascinating spectacle of a working wind farm.

Wind turbines are used to convert the kinetic energy in the wind into mechanical power. Think of a wind turbine working in the opposite way than a fan does. Rather than using electricity to create wind, the wind is used to create electricity.

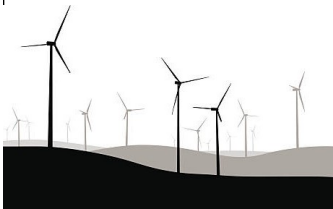
A common wind turbine has three propeller-like blades, similar to a toy pinwheel, ranging in length from 66 to 130 feet or more that are attached to a computerized rotor. This rotor is mounted to a turning shaft. As the wind turns the blades, the rotor spins a shaft. The shaft is connected to a generator which creates the electricity.

The electricity then flows down heavy electric cables inside the tower of the turbine to a transformer. The transformer increases the voltage of the electric power to distribution voltage which is in thousands of volts. The distribution voltage power flows through underground lines to a collection point. Here, the power may be combined with that of other turbines. Depending on how much electricity is produced, it may be used to power nearby farms, communities, or towns. This electricity may also be sent to a substation where the voltage is increased to transmission-voltage power which is in hundreds of thousands of volts. It would then be sent through above ground transmission lines to distant cities and factories. Smaller turbines have also been known to provide power for single homes or schools. Power produced by each turbine varies depending on its rotor size and wind speed.

In order for a wind turbine to operate efficiently, the wind speed must be above twelve to fourteen miles per hour. This minimum speed allows the turbines to turn fast enough to generate electricity.

Maximum efficiency for turbines is usually achieved at around thirty three miles per hour. When the wind speed gets too strong, usually around forty five miles per hour or greater, the turbines have braking safety systems to shut them down to prevent damage.

Generating electricity from the wind is very clean, reliable, and efficient with very little downside effects. It is the fastest growing and least *(Cont. on page 2)*



Save the Dates

NORA Electric Cooperative is pleased to inform members that thanks to the improvement in numbers and conditions of the COVID-19 pandemic, they are planning to move forward with the Chama Valley Open Annual Golf Tournament with a tentative date of Saturday, August 21, 2021, at the Cattails Golf Course in Alamosa, Colorado. At print time, NORA was still waiting on confirmation with the golf course and some other details. Once everything is confirmed with the venue and as long as the public health order permits, NORA will provide full details on how to participate in this year's tournament and how to become a sponsor.

The following month, NORA is also planning on moving forward with the Annual Meeting with a tentative date of Monday, September 27, 2021. Again, as long as the public health order permits, NORA will confirm the status of the Annual Meeting as the date approaches.

For more information on either the Chama Valley Open Golf Tournament or the Annual Meeting for members, please contact the NORA office at 575-756-2181. Please be advised that both events are subject to change.





Job Opening At Northern Rio Arriba Electric Cooperative, Inc.

JOB TITLE: Journeyman Lineman

SUMMARY: Works under the direction of the Director of Operations

MINIMUM REQUIREMENTS: High School Diploma or GED & Certified Journeyman Lineman

APPLICATION DEADLINE: Open until filled

Applications may be picked up in person at the NORA office, via NORA's website noraelectric.org, or call Victoria Gonzales for more information at 575-756-2181 or email:

vgonzales@noraelectric.org



Billing Schedule June 2021

Bill Due Date	22-Jun
Usage From	30-Apr
Usage To	31-May
SEDC Pickup @11:59pm	1-Jun
Bill Sent	1-Jun
Late Notice Sent	23-Jun
Disconnects/Cut Off*	TBD
Contact/Follow Up	7-Jul



(Wind Turbines Continued from page 1)

expensive renewable energy source. In many parts of the U.S., today's wind farms can generate electricity for less than 5 cents per kilowatt hour. This makes it very competitive with plants powered by non-renewable fossil fuels. As wind technology continues to improve, its overall cost will also become more economical making wind energy one of the most attractive and efficient ways to produce electricity for the future.



Energy Safety Tip



Install safety plugs in all unused outlets in your home when small children are present to help prevent electric shock. Plugs also assist with blocking air infiltration in poorly insulated outlets.



Touchstone Energy

Our linemen are on call

24 hrs/day, 7 days a week. Please call 575-756-2181 to report power outages.



Pros & Cons of Wind Energy



There is much debate to be had over the use of wind as a source of electricity. Many feel that wind energy is the way of the future, while others have very strong opinions against it. Before forming your opinion, here are some tangible facts to consider:

Pros

- ◇ **Cost Effective:** Wind itself is free, abundant, & it exists everywhere on the planet.
- ◇ **Non Polluting:** No fossil fuels are consumed in the production of wind energy, nor is pollution generated as a result.
- ◇ **Reduced Cost of Infrastructure:** Advances in technology & increased efficiency has led to a significant decrease in the cost of the installation of wind turbines.
- ◇ **Tax Credits:** Renewable sources of electricity often qualify for tax incentives & rebates.
- ◇ **Permanent:** The wind will exist indefinitely as long as the sun shines.

Cons

- ◇ **Reliability:** Although wind exists everywhere, it is not always available and it does not consistently blow at the same speed.
- ◇ **Wind Speed Minimum:** In order for a wind turbine to operate efficiently, the wind speed must be above twelve to fourteen miles per hour.
- ◇ **Danger to Wildlife:** Birds have often been known to fly into and get hit by turbine blades.
- ◇ **Possible Noise Pollution:** A single turbine produces a low swooshing sound, but commercial turbine farms can be as loud as a jet engine.
- ◇ **Location Limitations:** Numerous factors can limit where a wind turbine can be located. Zoning laws, property taxes, landscape, or simply lack of wind will have a huge impact on site location effectiveness.

