

Understanding WIND ENERGY

BLADES

Blades act like an airplane wing. When the wind blows, low-pressure air forms on the downwind side of the blade.

NACELLE

The nacelle is where all the gears are housed, as well as the generator. The rotor is located here, and Muskogee Technology recently manufactured a rotor support ring for a wind farm in North Dakota.

TOWER

Towers come in variable heights and are available in three styles: tilt-ups, guyed lattice and freestanding. The most commonly used towers are tilt-ups because of its added stability.

MUSKOGEE TECH

Muskogee Technology is investing in the wind energy technology. MT recently manufactured transport frames for blades and towers, called an elephant foot. The e-foot is used to mount the blades to the hubs to erect them in the field.



By Jen Peake
CIEDA Marketing Specialist

Power generated from wind is not a new concept. Humans have been harnessing wind power for centuries, and wind energy is a viable option for generating electricity that can be harnessed by businesses and homes.

The National Resource Defense Council asserts that wind power is an affordable, efficient and abundant source of domestic electricity. Because it does not produce pollution, wind power also is beneficial for the environment. The United States Department of Energy says the United States is home to one of the largest and fastest-growing wind markets in the world, and the department has made wind industry a critical part of their plan for clean energy technologies.

What's exciting is Muskogee Technology (MT) is capitalizing on this industry and is involved with General Electric and Siemens to produce parts needed to transport, lift and install wind turbines.

How does wind energy work?

Today's wind power is harnessed through wind turbines instead of smaller windmills. The turbines are mounted 100 feet or more above the ground on towers and can work with the faster, less turbulent winds at this height. The blades on a wind turbine act like an airplane wing. When the wind blows, low-pressure air forms on the downwind side of the blade. This low pressure pocket pulls the blade toward it, causing the rotor to turn, called lift. The force of the lift is actually much stronger than the wind's force against the front side of the blade, which is called drag. As the rotor continues to spin, it also spins a generator to produce electricity. Turbines may be connected to a power grid to power larger areas or be stand-alone units for personal use.

Muskogee Technology recently manufactured transport frames for blades and towers. The elephant feet MT produced is used to mount the blades to the hubs to erect them in the field. Muskogee Technology also is produced a prototype tip rotator stand, which will aid in flipping the blades in the field, as well as manufacturing adapter plates for different styles of blades for transport.

Powering your home

Consumers who want to try wind power can have small wind turbines installed. This enables them to generate their own power and cut energy bills. Depending on where you live and the regulations in place, a wind turbine can be suitable for use on a property of one acre of land or more.

Homeowners should find out if local zoning allows for wind turbine installations.

If installing a wind turbine on your own is not practical, consult with electric energy providers to find out if any programs are in place to offset energy production by working with wind plants. Green programs are in effect all over the country. Wind power can be a clean and renewable way to power your home.