



Landowner's Fact Sheet: Your Guide to the Construction Process

There are many different sizes and designs of wind turbines. There are small turbines designed for residential farm & small businesses, mid-sized machines, perfect for schools, municipalities, or rural communities, and commercial scale machines used to generate electricity for hundreds of consumers. The larger the wind turbine is, then the more extensive the construction phase is.



Wind Turbine Components

Wind turbines consist of four main components. These include the tower, the nacelle and the rotor. In order for the turbine to work most efficient, each piece must be carefully constructed and assembled.



Tower: supports the moving parts of a turbine and can range in height from 50 meters to 100 meters

Nacelle: this is the structure that houses all the generating components, including the generator, gearbox, and drivetrain.

Rotor, Hub and Blades: used for capturing the wind that can be made into electricity.

Foundation: cement support at the base of the wind turbine to secure it in the ground

Wind Project Construction

Construction of wind projects can anywhere from 6 months to a few years depending on the size of the project, terrain of the site, and weather conditions. Wind turbine construction projects are typical of most construction projects in that they used large equipment to make roads, bury cables, and install transformers. One exception, is that large-capacity cranes are used to install the nacelle and rotors of the wind turbine. This handout is aimed to provide landowners and farmers with an understanding of the construction phase and how they will be affected during this process.

Task	Subtask	Duration
Site Preparation	Access Roads	2 - 6 Months
	Foundations	
	Power Collection System	
	Substation/Grid Interconnection	
Turbine Installation	O&M Building	1 - 1.5 Months
	Receive Tower and Turbine Components	
	Set Tower Base Sections	
	Complete Tower Assembly	
Construction Completion	Install Nacelle and Rotor	1 - 2 Months
	Complete Internal Turbine Assembly/Connections	
	Energize Project Site	
Post Construction	Commission and Test Turbine Functions	1 - 3 Months
	Performance Testing to Verify Proper Operation	

Note: Assuming fifteen 1.5 MW wind turbines on 65-m towers

Windustry is a non-profit organization based in Minneapolis, MN. We have more than a decade of experience advocating for community wind energy.

Our mission: Windustry promotes progressive renewable energy solutions and empowers communities to develop wind energy as an environmentally sustainable, community-owned asset. Through member supported outreach, education and advocacy we work to remove the barriers to broad community ownership of wind energy.

Do you have questions about community wind energy? Call our Wind Information Hotline:

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