

Construction Timeline for a Commercial Scale Wind Project

Site Preparation



Pouring Concrete Foundations

Typically, wind turbine foundations are 4 ft. deep and 50-80 ft diameter. The majority of the foundation will be backfilled with native soil and you will see a 16-20 ft diameter foundation



Building the O & M facilities

Wind farms often build O & M building on-site for the project. Typically the O & M building is located on purchased land and doesn't interfere with the landowners property or lease.

Road Construction

Three main phases are involved with the road construction

- 1) Grading-prepare the land for construction
- 2) Drainage- install culverts at drainage areas
- 3) Install Base Materials- includes geo-fabric and gravel. Road profile is slightly above natural grade to promote drainage. Shoulders have a maximum 2% side slope for crane travel (land will be reclaimed after construction).



Substation/Grid Interconnection

Typically, the substation is built on land purchased by the developer, so it will not affect the majority of landowners. But it is included here because its development happens concurrently with the wind farm construction.



Turbine Installation



Rotor and Nacelle Installation

Once the tower is complete, the nacelle (all generating components) is raised up and bolted to top of the tower. Last, the rotor (blades and hub) is carefully attached to the front of the nacelle. Generally, the blades and hub are assembled on the ground and raised into the air with the help of large cranes.



Tower Erection & Assembly-

An 80-meter tower is composed of four cylindrical steel sections. Each tower section can weigh between 35 and 50 tons. Special cranes, over 300 feet tall are needed to lift the tower sections up and stack them on top of one another.

Collector Cable System

System of buried cables that connect wind turbines to one another and the transmission lines. During this phase of construction, a ditch will be dug (about 48 inches deep) to place the lines in. Once completed, native backfill will be used and the land will be returned to original condition.



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TION SYSTEM.

Project Commissioning

Energize the project site and commission the turbine. At this point your wind turbines are generating clean, renewable energy.