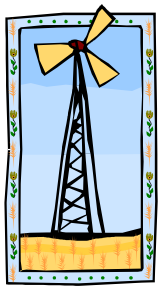
Marion County
OREGON

Wind Power Regulations



Regulations for wind power generation

Marion County Planning Division
5155 Silverton Rd. NE, Salem OR 97305
(503) 588-5038 Fax (503) 589-3284
email: planning@co.marion.or.us

What is wind power generation?
Wind power generation is the conversion of wind into a form of energy, such as using wind turbines to make electricity.

What is a wind turbine?
A turbine is a rotary engine that extracts energy from a fluid source and converts it into another form of energy. The simplest wind turbines have a shaft or drum with two or three blades attached to the top of a tower. As the blades move, they impart energy to the rotor. Early examples of turbines are windmills and water wheels.

How do wind turbines make electricity?
In simplest terms, wind turbines work the opposite of a fan. Wind turns the large blades, spinning the shaft or drum, which is connected to a generator that makes electricity usable in a home's electrical system.

How is this power used?
Wind energy is used for simple residential purposes or commercial utility use. For most residential use, wind power is combined with traditional electricity from your local utility company. Single small turbines below 100 kilowatts are used for homes, usually along with diesel generators, batteries or solar-power systems. These systems can be used along with your electrical system (called grid-connected) or as a stand-alone system that is not connected to the utility grid. The small grid-connected turbines are often used by homeowners for lighting, appliances and electric heat. If the turbine cannot provide sufficient power, the utility makes up the difference. When the turbine produces more electricity than needed, the excess is "given" to the local utility company. The stand-alone wind turbines are often used for homes and farms far from the nearest utility lines.

Utility or commercial turbines range in size from 100 kilowatts to several megawatts. The very large turbines are often grouped together as a wind farm to produce bulk power to the electrical grid. The power is transferred through transmission lines.

What are the benefits of installing small wind turbine?
Using a small wind turbine can help reduce pollution and electrical costs. Deciding to install a wind system is complicated and involves many factors to consider, primarily the length of time before the utility bill savings exceeds the system cost. This often depends on the type of system chosen, wind resource in your area, electric rates, and how you use the system. Generally speaking, wind turbines are most practical for areas with an average wind speed of at least 9-10 miles per hour.

Does the County regulate wind power generating towers and/or facilities?
Yes. The County regulates these as either a private power generating system or a commercial utility facility. Regulations for both are based on location.

Private power generating systems. This includes small single tower wind turbines or windmills. In rural areas of the County, private wind power generating towers are permitted as an accessory use to a farm or residence in any zone, subject to certain standards. These include entering into a "net metering agreement", setbacks from adjacent property lines, color and height restrictions.

These standards are listed in County Code Chapter 17.126, *Permitted Uses, Generally*, and Chapter 17.113, *Lot Area, Yards, and Height Restrictions.*

Specifically, current policy provides that power-generating systems with minimal generating capacity can be sited in conjunction with other uses. A wind turbine system is considered a private energy source as long as the property owner does not return power for sale to the grid or receive any monetary compensation or credit from energy produced by the turbine, including accumulated excess electrical power. This is accomplished through an Electric Net Metering Agreement that requires excess energy to be transferred to the electrical company. In some instances this excess energy is donated to low income families. Wind turbine towers must be the factory default color.

Commercial Systems. Wind turbine systems are considered a commercial utility facility when power is "returned" or sold to the power company in return for monetary compensation. Commercial utility facilities are more heavily restricted and, where allowed, require approval of a Marion County Conditional Use Permit. Utility facilities are subject to very specific criteria whether in the rural or urban areas.

Is it possible to get a variance to these standards?

Yes. You can submit a Variance application requesting to vary certain standards. Wind turbine towers may exceed the maximum height requirements of the zone in which they are located provided the tower:

1. meets the required yard setbacks in the applicable zone, and

2. is setback from all property lines a distance equal to at least the tower height plus the length of one blade at its total extended height.

3. demonstrates that the purpose and design of the structure requires a certain height in order to function efficiently and limiting construction to a certain height would result in a reduction in production capability and create a practical difficulty and hardship. Or, the wind turbine, by its design, creates unusual circumstances that do not apply to other structures in the zone.

Do I need a land use permit for a private power generating system?

Not if you meet the definition of a private power generating system and the requirements outlined above (use of excess energy, color, setbacks, and height restrictions). However, you will need building permits from the Marion County Building Inspection Division.

Other wind energy resources:

For information on building codes and permits, contact the Marion County Building Inspection Division at (503) 588-5147.

Check out the US Dept. of Energy website, *Wind Powering America,* at http://www.windpoweringamerica.gov/wind_maps.asp for wind resource maps, wind source potential charts, and links to other valuable resources.

Energy Trust of Oregon has information regarding tax credits and incentives as well as other information on hot to get started at http://energytrust.org/residential/incentives/small-wind/WindSmallScale1/

The State of Oregon Dept. of Energy at http://www.oregon.gov/ENERGY/CONS/RES/tax/wind.shtml has a link to state rules and statutes, residential tax credits, lists of qualified wind generators, and links to energy loan and savings programs.

For more information on Marion County land use regulations contact:

Marion County Planning at (503) 588-5038; email planning@co.marion.or.us or the website at http://www.co.marion.or.us/PW/Planning/default.htm.

Marion County
OREGON