Wind Permit Toolkit

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Northwest SEED
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INTRODUCTION

ONE SIZE DOESN'T FIT ALL

Size I
100 kW or Less
House or Farm

Our Wind Co-op, Montana

Size II
101 kW – 10 MW
School or City

Cascade Community Wind, Washington

Size III
Over 10 MW
Utility

Puget Sound Energy, Washington

BARRIER: PERMITTING

- It can take more person-hours to obtain a permit to install than it does to manufacture, deliver, and install a small wind turbine.

  - American Wind Energy Association, Small Wind Roadmap, 2002

Goldendale, Washington

BARRIER: PERMITTING

- With over 25,000 jurisdictions in the U.S., addressing each zoning ordinance individually would take more than 1 million person-hours and cost more than $250 million

  - Distributed Wind Energy Association, Distributed Wind Vision, 2015

Photo credit: Ian Woofenden

PERMITTING SOLUTION

- Transparent process
- Consistent, fair, and objective decisions
- Reasonable timeline
- Reasonable permit fees
- Ensures public safety

Wind Energy Permit Toolkit

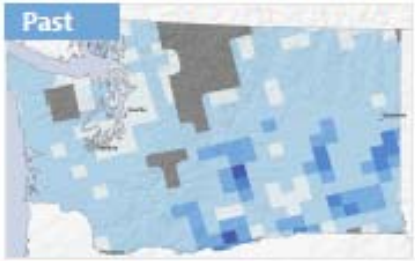
Making Wind Energy Permits Easy

The permitting process for wind energy projects can vary greatly from county to county, and this lack of uniformity often leads to inefficiencies for permitting agencies and their constituents. As interest in wind energy increases, it is beneficial for jurisdictions to be prepared with a fair and transparent permitting process and to gather public input ahead of time on where and in what manner these facilities should be sited. Adopting standard procedures can lead to more consistent, timely, and objective decisions regarding a proposed project.

This toolkit includes information on how jurisdictions can standardize their zoning regulations and permitting processes to ensure safe and cost-effective wind energy development that is appropriate for their community. Strategies are provided for both large-scale wind projects connected to transmission lines and small-scale projects intended for on-site use. Note that some wind energy facilities may be subject to approval by other state or federal agencies, such as the Federal Aviation Administration, U.S. Fish and Wildlife Service, or the local utility. This toolkit focuses on local zoning, planning, and permitting issues at the county or municipality level.

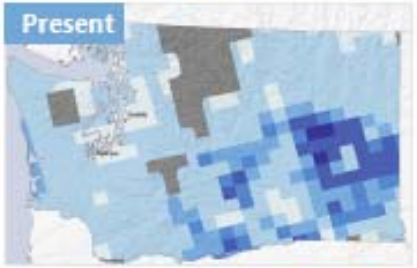
Washington State

Washington is ranked 7th in installed wind power capacity nationwide at over 3,000 MW.



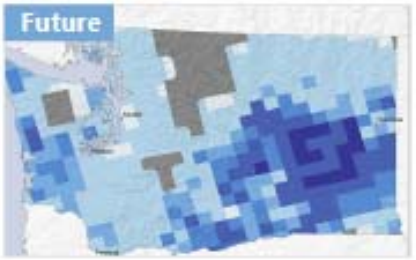
Past Technology
80-meter (260-foot) tower height

Wind turbines were originally designed for the highest wind speed sites, where a tower height of 80 meters was sufficient to generate utility-scale power.



Present Technology
110-meter (360-foot) tower height

Recently, turbine manufacturers have designed taller towers and longer blades, improving energy output, especially at lower wind speed sites.



Future Technology
140-meter (460-foot) tower height

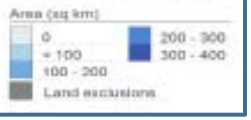
This technology trend is continuing, which will significantly increase potentially viable areas for wind energy development over the next 5-10 years.

In Washington, a wind project developer may choose whether to obtain a siting permit from the local government, usually a county, or the state Energy Facility Site Evaluation Council (EFSEC) regardless of the generating capacity of the project. Small wind projects usually go through local permitting.

For large projects, the EFSEC siting process is typically more lengthy and costly than local siting due to a higher level of involvement and studies requested from multiple state departments. However, EFSEC may offer the developer a more standard and predictable process than local siting. Approval through EFSEC preempts other local regulation of the facility.

Distributed Wind Technology
20-to 50-meter (65- to 160-foot) tower height

Distributed wind turbines are designed for on-site electric use. They typically displace retail electric rates and can be economically viable at a range of wind speed sites.



Wind Energy in Comprehensive Plans

Guidelines for Energy Aware Communities

Local comprehensive plans serve to establish shared community goals, plan for long-term utilization of community resources, and can be used to provide a framework for implementation of local decisions and regulations. The comprehensive plan is a guiding document for the future of an entire community and is a proactive tool that allows a community to anticipate and prepare for potential future opportunities. It establishes goals and priorities and lays out action steps for meeting those goals.

One of the roles of the comprehensive plan is to identify natural resources that can be managed in ways that will benefit the community as a whole. Planners should consider including an energy element in their comprehensive plan or integrating energy issues throughout existing chapters in the plan. The energy element or policies should clearly define the community's priorities related to renewable energy production in order to provide support for related development regulations.

"The prospects of greater energy efficiency, renewable energy sources, and decentralized energy systems offer local communities opportunities to prepare for change and to shape their own energy futures."

- American Planning Association

Montana

In Montana, the preparation and adoption of a comprehensive plan, or growth policy, is optional. However, if a city or county planning board adopts a growth policy, the policy must meet certain minimum requirements. The Montana Department of Commerce provides resources through their Community Technical Assistance Program (CTAP).

Example: Cascade County, Montana
Goal: To sustain and strengthen the economic well-being of Cascade County's citizens. To protect and maintain Cascade County's rural character and the community's historic relationship with natural resource development. **Policy:** Stimulate the growth of the economy by encouraging the use of alternate methods of energy production, including wind energy. Support the development of natural resources including but not limited to timber, mining, oil and gas production, and renewable energy production.

Washington

Every Washington county and city is required to conduct a periodic update of its comprehensive plan and development regulations. The Washington Department of Commerce Growth Management Services verifies compliance and provides technical assistance to jurisdictions.

Example: Klickitat County, Washington
Goal: To encourage energy development in locations that take advantage of the County's energy resources, existing infrastructure, and also are sited to minimize environmental impacts. **Policy:** Areas particularly suitable for energy development are identified as an "energy overlay zone" which permits preferred energy development outright. Energy development that utilizes wind and solar are preferred and shall be encouraged. These technologies, if sensitively sited, designed, and mitigated can be sited without significant, adverse environmental impacts.

Oregon

In Oregon, the Land Conservation and Development Commission establishes state-wide land use planning goals and maintains a schedule for periodic review of city and county comprehensive plans and land use regulations.

Example: Wasco County, Oregon
Goal: To conserve energy. Land and uses developed on the land shall be managed and controlled so as to maximize the conservation of all forms of energy, based upon sound economic principles. **Policy:** The County will work with appropriate State and Federal agencies to identify and protect, and if feasible, develop potential energy resources, especially renewable energy resources. Use of renewable energy shall be encouraged.

Wind Energy Model Zoning Ordinance

This model ordinance is intended to aid local governments in adopting policies for responsible development of wind energy that ensure public safety, promote good land use practice, and provide a fair and predictable permit process.

ORDINANCE FOR WIND ENERGY FACILITIES IN [county or municipality]

1. PURPOSE

The purpose of the Ordinance is to facilitate the safe, effective, and efficient installation of Wind Energy Facilities in *[county]*, subject to reasonable conditions that will protect the environment and the health, safety, and welfare of the public.

In adopting this ordinance, *[county]* recognizes that:

- it is in the regional public interest to produce electricity in a manner that serves the needs of the community while minimizing potentially negative impacts;
- the *[county]* has a responsibility to implement and promote electricity production practices that protect the natural and built environment;
- the *[county]* has existing wind resources and therefore has the responsibility to include wind power possibilities in its vision of energy sources; and
- responsible wind power construction can result in significant cost savings and or revenue to the *[county]* over the life of the project as well as significant benefits to the future health and well-being of our citizens.

2. DEFINITIONS

A. **"Wind Turbine"** is any piece of electric generating equipment that converts the kinetic energy of the wind into electricity and may include rotor blades, generator, tower, electric conversion equipment, controls, wiring, and other related components.

B. **"Wind Energy Facility"** is an electric-generating facility consisting of one or more Wind Turbines under common ownership or operating control and are connected to the electrical grid under a single interconnection agreement. The facility may include substations, meteorological towers, access roads, control building, electrical interconnection equipment, and other ancillary equipment.

C. **"Wind Energy Facility, Size I"** is a Wind Energy Facility that 1) consists of one or more Wind Turbines, 2) has a Rated Capacity of one hundred kilowatts (100 kW) or less, and 3) is designed to supplement other electricity sources as an accessory use to existing facilities, wherein the power generated is used primarily for on-site consumption.

D. **"Wind Energy Facility, Size II"** is a Wind Energy Facility that 1) consists of one or more Wind Turbines, 2) has a Rated Capacity of more than 100 kW up to and including 10 MW and 3) is designed primarily to serve a local load.

E. **"Wind Energy Facility, Size III"** is a Wind Energy Facility that 1) consists of one or more Wind Turbines and 2) has a total facility Rated Capacity of greater than 10 MW.

Commentary

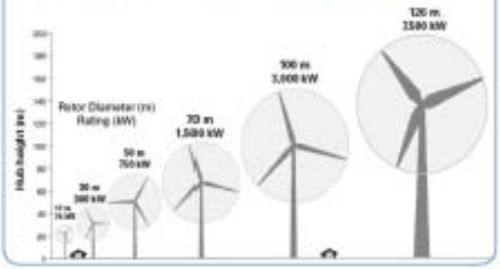
This example ordinance is based on national industry best practices and wind energy ordinances adopted around the country. The commentary section provides an explanation of each provision, policy justifications, and suggestions for tailoring specific provisions to a particular jurisdiction.

Section 1 Purpose: This section states the rationale for establishing a wind ordinance, local benefits of wind energy facilities, and why development should be regulated through the use of an ordinance.

Section 2 Definitions: It is important that the definitions in the wind ordinance do not conflict with those found in other code sections. Technical terms that commonly cause confusion or misunderstanding are explained below.

Wind Energy Facility: Three sizes of Wind Energy Facilities are defined to recognize that different size and applications of wind turbines should have different permitting requirements. Regulations suitable for large utility-scale wind farms are often unnecessarily onerous for small wind turbines designed for residential use only.

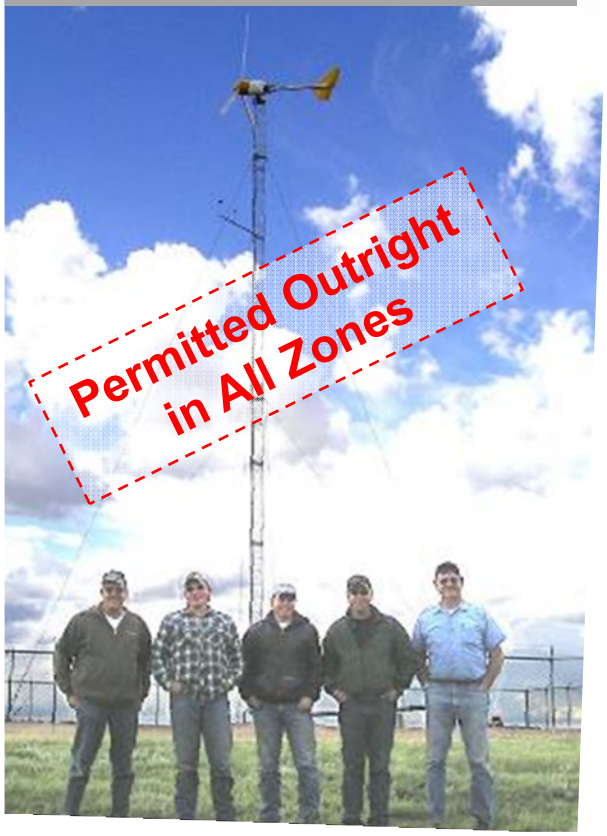
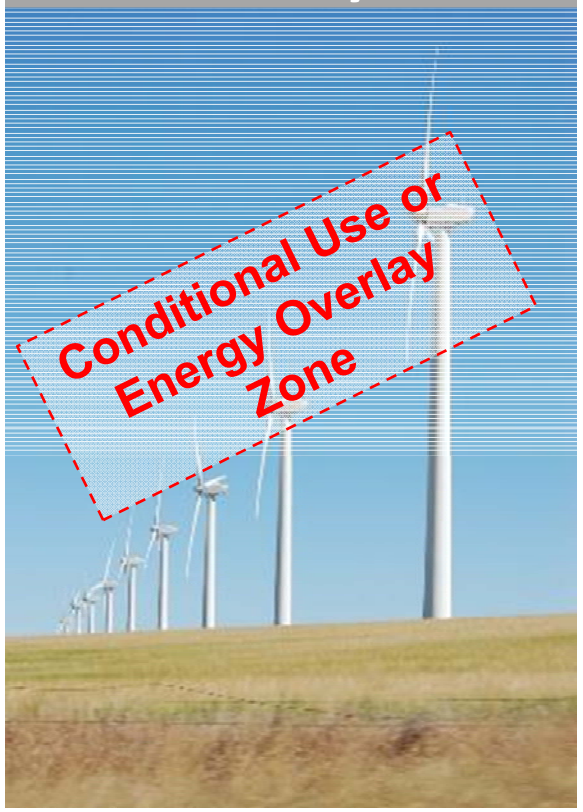
- **Size I Wind Energy Facilities** typically consist of a single wind turbine that produces electricity for on-site consumption or net-metering where excess electricity produced may be credited to the property's utility bill. Some jurisdictions include Size I facilities in their definition of allowed "accessory use" for a home, farm, or business. Jurisdictions may choose to modify the upper limit of this size category to align with utility net metering definitions.
- **Size II Wind Energy Facilities** typically consist of one to several medium- or large-scale wind turbines installed to provide electricity directly to a large business or industrial load. Jurisdictions may choose to modify the upper limit of this size category to align with local PURPA qualifying facility definitions.
- **Size III Wind Energy Facilities** typically consist of large wind farms with hundreds of individual wind turbines designed to export electricity via transmission lines.



PERMITTING BEST PRACTICES

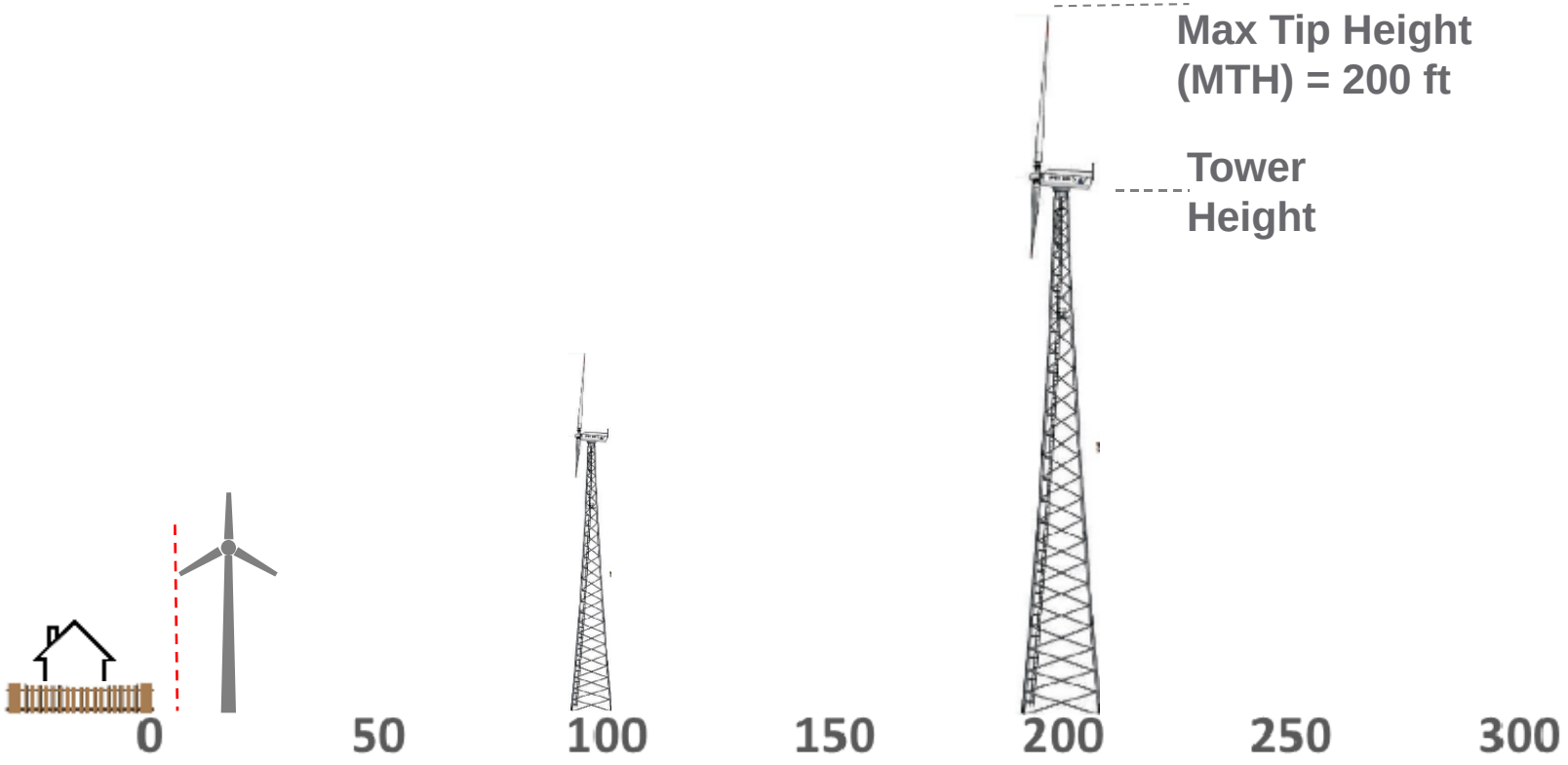
- AWEA Model Small Wind Zoning Ordinance
- DWEA Model Distributed Wind Ordinance
- DOE Wind Energy Ordinances fact sheet
- NACo: Implementing Wind Ordinances in America's Counties
- Permitting Small Wind Turbines: A Handbook
- Model wind ordinances from these states:
  - Georgia
  - Minnesota
  - Oregon
  - Virginia
  - Maryland
  - North Carolina
  - New York
  - California
  - Wisconsin
  - Maine
  - Iowa
  - South Dakota

MODEL ZONING ORDINANCE

Size I 100 kW or Less House or Farm	Size II 101 kW – 10 MW School or City	Size III Over 10 MW Utility
		

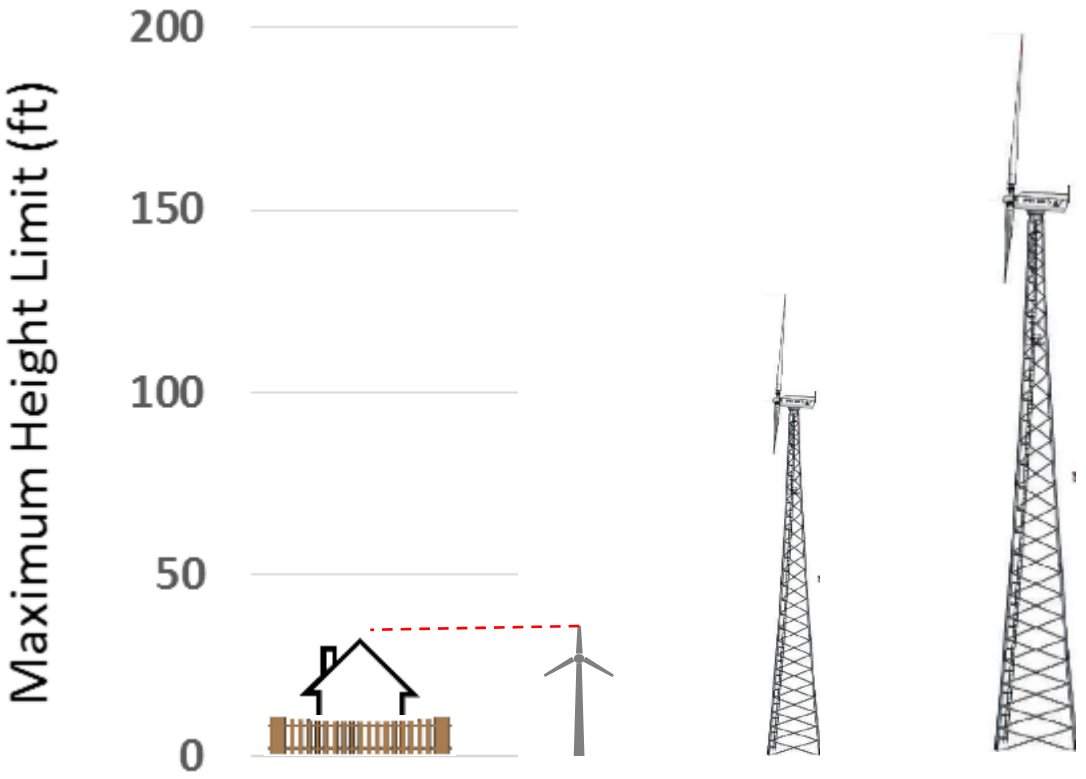
SETBACK REQUIREMENTS

- Minimum setback = 1 x MTH



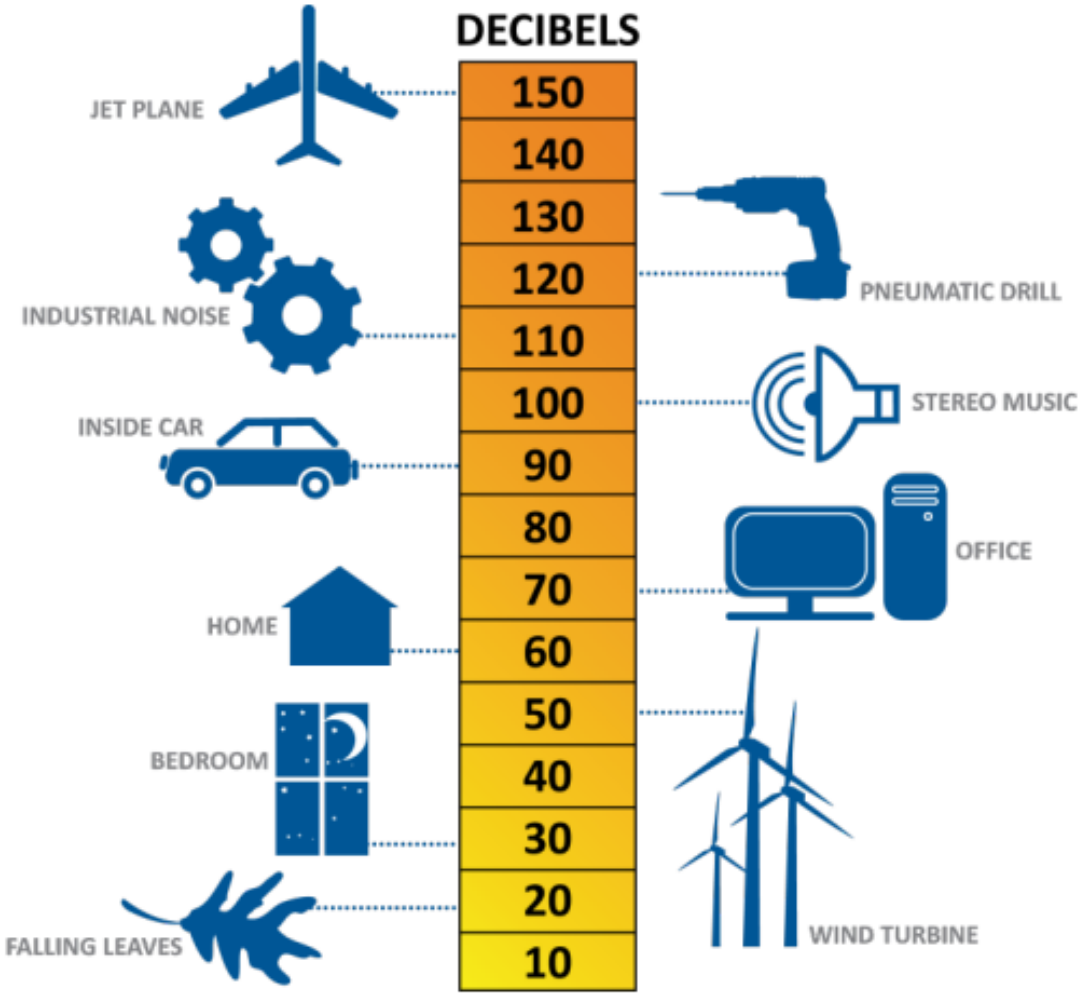
HEIGHT RESTRICTIONS

- No height limit except as imposed by FAA or local airport protection zones



SOUND

- Must satisfy sound limits of the zoning district where it is located.
- May exceed sound level during short-term events such as utility outages and storms.



VISUAL IMPACT

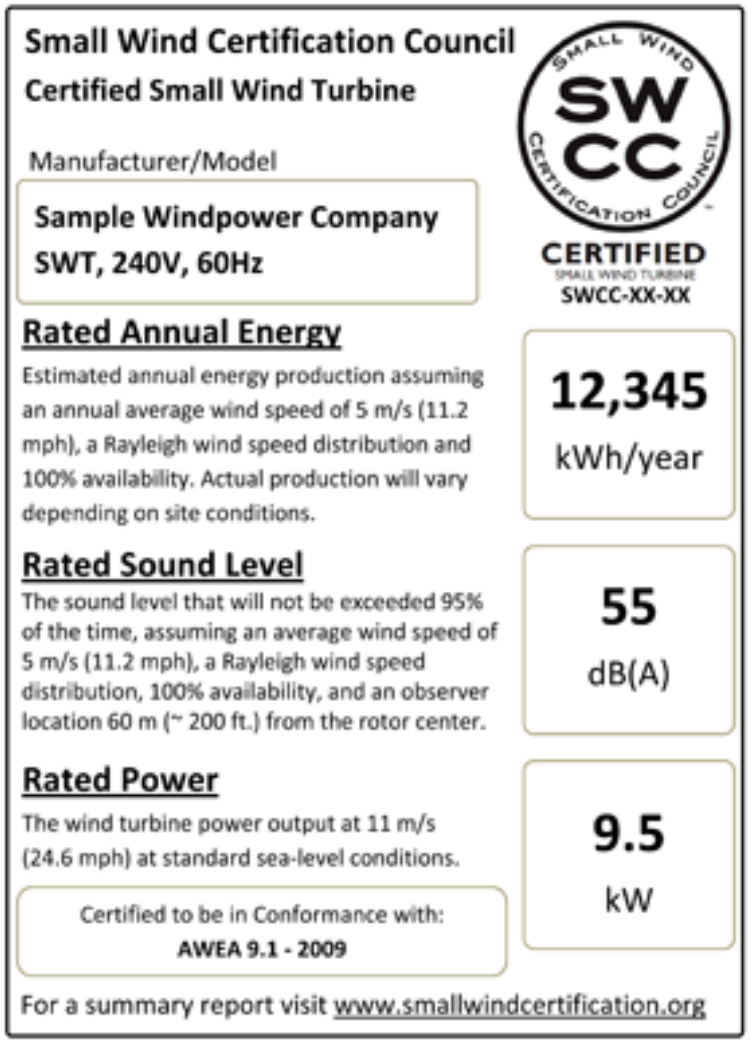
- Non-reflective finish, neutral or default color, unless as required by FAA
- No lighting except as required by FAA
- No advertising, except name of turbine manufacturer/owner/operator
- If scenic vista is a concern, use federal aesthetics criteria or USDOT guidelines

Source: Portland Business Journal

PROVISIONS NOT INCLUDED

Best practices that are not required provisions in model ordinance:

- Wind turbine must be 30 feet above any obstructions within 500 feet.
- Tower must be at least 60 feet tall.
- Turbine must be certified.



Is Wind Energy Right for You?

A Consumer's Guide Checklist for Small Wind Electric Systems

Before investing in a wind turbine for your home, farm, or business, make sure that you can confidently answer "yes" to each of the following questions. For more information see http://en.openei.org/wiki/Small_Wind_Guidebook.

1. Do you have enough wind? Yes ☐ No ☐

Wind is the fuel for your wind electric system and has a huge effect on energy output. Your site should have at least a 10 mph annual average wind speed at the top of your tower. Ask for a written wind resource and performance estimate based on Department of Energy wind maps or a trusted wind resource consultancy.

2. Do you have enough space? Yes ☐ No ☐

Wind turbines are typically best suited for rural properties of at least 1 acre or more in size, depending on the topography and size of wind turbine. Industry best practices recommend that a small wind turbine be placed at least one tower height away from property lines or neighboring homes.

3. Is your tower tall enough? Yes ☐ No ☐

Putting a wind turbine on too short a tower is akin to putting a solar panel in the shade. Wind turbine rotors must be placed above the turbulent flow of wind caused by obstructions, typically on towers 80 to 140 feet tall.

4. Is your energy estimate realistic? Yes ☐ No ☐

Wind turbine performance can be difficult to predict. As a general guideline, a small wind turbine will generate 1300 to 2200 kWh annually per rated kW at a site with average annual hub height wind speeds of 12 to 14 mph. Be conservative and compare estimates against the manufacturer's certified energy performance tests.

5. Is your wind turbine model certified? Yes ☐ No ☐

It is important to choose a wind turbine design that offers a proven history in safety, performance, and functionality, and a sufficient warranty to meet your needs. Your turbine model should be certified to national standards (American Wind Energy Association standard AWEA9.1-2009). Some incentive programs require this certification.

6. Do you have a maintenance plan? Yes ☐ No ☐

A well-designed turbine can last 20 years or more; however, like your car, it requires occasional inspection and maintenance to run smoothly. Check the owner's manual for recommended routine maintenance and set aside a maintenance and repair budget. Identify a local maintenance contractor.

7. Have you explored all financing and incentives available? Yes ☐ No ☐

State, federal, or utility incentives may be available in your area. Consult the Database of State Incentives for Renewables and Efficiency (dsireusa.org) for the latest. In addition, a growing number of lenders offer low-interest loans for renewable energy projects.

8. Does your project satisfy local requirements? Yes ☐ No ☐

Your city or county's permitting process will legally determine whether or not you will be able to build your proposed wind electric system, while the zoning ordinances will determine how it will be built (maximum height, required setbacks from property lines, etc). In addition, utilities have requirements for connecting a wind electric system to the grid. Check your local requirements, which may impact the project cost and development timeline.

9. Are your neighbors supportive of the project? Yes ☐ No ☐

Conditional Use Permits may require public comment before your proposed project is given the legal go-ahead. Even if not required, it is helpful to include your neighbors and address any concerns early on in the process.

10. Do you have an experienced installation contractor? Yes ☐ No ☐

The turbine manufacturer may have a list of recommended installers in your area. A credible installer will be able to complete all permitting and interconnection approvals and will offer a workmanship warranty. Check the Better Business Bureau for complaints, and ask for customer references and a list of similar projects completed.

NORTHWEST S.E.E.D. Sustainable Energy for Economic Development

Northwest Wind Resource & Action Center

WINDExchange U.S. Department of Energy

HTTP://NWWINDCENTER.ORG/CONTENT/PERMITTING-ZONING-RESOURCES

Northwest Wind
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Permitting & Zoning Resources

State-Specific Wind Energy Permitting Toolkits:

- Idaho
- Montana
- Oregon
- Washington
- Wyoming

Send feedback to:
mia@nwseed.org

Interested in adapting the Wind Permitting Toolkit to your own state? Simplified templates for the Permitting Toolkit are available for download for free in both Adobe InDesign and MS Word formats.
Download Template Files (zip archive)