



The City of Bismarck allows construction and use of Small Wind Energy Systems (SWES) under certain conditions. The purpose of this guide is to outline these rules to help homeowners and businesses determine whether the installation of a wind turbine is feasible for their own situation.

Most of the requirements for a SWES may be found in Section 14-03-08(4)(v) of the Bismarck Code of Ordinances.

Definition of Small Wind Energy System (SWES)

A Small Wind Energy System is defined as:

“A wind turbine of less than 25 kilowatts maximum output capacity and all appurtenant structures and equipment.”

A turbine manufacturer will rate the electric output of their product in terms of Kilowatts (Kw). Most turbines marketed for residential or light commercial use will be rated 25 Kw or less.

Special Use Permit and Building Permit

An SWES is allowed anywhere in Bismarck or it's extraterritorial area as an accessory use with a special use permit. The energy should be generated specifically for on-site usage, although it is permissible to sell excess power back to the utility supplier through the grid.

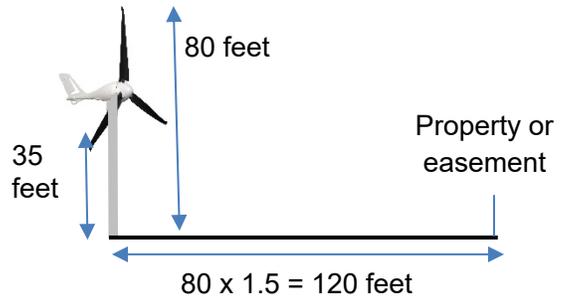
A special use permit is a one-time permit granted by the Bismarck Planning and Zoning Commission. If a special use permit is granted, the applicant may apply

for a building permit to install the SWES. More information on these procedures is provided on the next page.

Setback and Clearance Requirements

Every SWES must be setback from the nearest property line, overhead power line easement, or oil pipeline easement at least 1.5 times the height of the turbine structure.

Additionally, the bottom sweep of the blade must be 35 feet above the ground, and cannot be above a parking area, driveway, or sidewalk.



Sound Limitations

The sound produced by a wind turbine should not exceed certain limits, depending on where it is located:

Zoning District	Day	Night
Residential	55 dB(A)	45 dB(A)
Commercial	60	50
Industrial	65	60

Sound is measured from the nearest property line. The turbine retailer or manufacturer should be able to provide you with sound emission specifications.

Additional Requirements

- The SWES must be equipped with breaking control to prevent uncontrolled rotation and

keep the speed of rotation within the design parameters.

- The SWES owner must carry liability insurance.
- The SWES must not create “shadow flicker” for nearby properties. In some cases, the rotating blades can cast shadows through constrained openings, such as widows of a neighboring house, and cause a nuisance for the owners.
- The SWES must not interfere with signal receptions or transmissions beyond the property lines.
- Within the city limits, SWESs must be mounted on monopoles without guy wires. This requirement does not apply to the city’s extraterritorial area.
- Roof-mounted SWESs are not allowed.
- The color must minimize visibility. Use a neutral palate.
- Any lighting beyond what is required by the Federal Aviation Administration is not allowed.
- No signs are allowed.
- No climbing apparatus may be located within 12 feet of the ground.
- Any SWES not operational for one year must be removed.
- Special conditions apply near the Bismarck airport.

Interconnection with Power Grid

If the SWES is intended to be connected to the power grid, contact your utility supplier and inquire about an interconnection agreement. The utility supplier may require additional standards beyond what is required by the City of Bismarck. A SWES may be used off-grid as well.

How to Apply

Special Use Permit Required

Any SWES requires a special use permit issued by the Bismarck Planning and Zoning Commission prior to construction. Multiple turbines may be allowed on a single site under one special use permit, as long as the total output does not exceed 25 Kw. Planning Division staff and Planning and Zoning

Commissioners will evaluate the application for compliance with all ordinance requirements. Special conditions may be added to your permit, on a case-by-case basis.

A public hearing will be held and neighbors within the vicinity of the proposal will be notified. We encourage the applicant to communicate with neighbors in advance of the hearing and attend the hearing to answer questions. Allow up to 45 days for the process to be completed. Standard application fees apply.

Documents Needed

Along with a signed application, the following materials are required:

- A site plan drawn to scale showing the location and height of the SWES in relation to other site features. Detailed information needed can be found in the ordinance.
- Design specifications from the turbine manufacturer to show compliance with noise, interference, and shadow flicker requirements.

Building Permit Required

After a special use permit is obtained, the owner may apply for a building permit from the Building Inspections Division to construct the SWES. An electrical permit is also required and work must be performed by a master electrician in accordance with National Electrical Code. Evidence must also be supplied that the SWES is able to meet structural load requirements for 90 mph sustained wind.

For additional information, contact the City of Bismarck Planning Division at 355-1840 or the Building Inspections Division at 355-1465 or visit the City-County Office Building 221 N. 5th Street during standard office hours.