



**Item:** Ordinance 3034 to add provisions for Wind-powered Electricity Systems to the Land Development Code

**From:** Bill Walters, Interim Planning Director

**Initiated By:** City Staff

**Presented By:** Bill Walters, Interim Planning Director

**Action Requested:** City Commission accept Ordinance 3034 on first reading and set a public hearing for July 7, 2009.

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**Suggested Motion:**

1. Commissioner moves:

“I move that the City Commission (accept/deny) Ordinance 3034 on first reading and set a public hearing for July 7, 2009.”

2. Mayor calls for a second, discussion, inquiries from the public, and calls the vote.

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**City Zoning Commission Recommendation:** The City Zoning Commission, at the conclusion of a public hearing held March 10, 2009, unanimously passed a motion recommending the City Commission adopt the ordinance (3034) to amend the Land Development Code to permit certain types of wind-powered electricity systems within the City subject to compliance with specified standards and conditions.

**Background:** As interest and inquiries are increasing regarding wind turbines, ranging in size from the one recently approved through the conditional use process for MSU COT to smaller units that can be mounted on residential rooftops, Staff has drafted amendments to the Land Development Code which will permit certain types of wind-powered electricity systems in all zoning districts, subject to compliance with specified standards and conditions.

In preparing the attached material, Staff started with a ‘wind-powered generator’ ordinance that the City adopted in October, 2001, and upgraded it based upon review of recent publications on the subject, codes from other communities and input from local individuals to date.

A significant factor that influences energy production associated with wind-powered electricity systems is the speed and consistency of the wind. Variations in topography and obstructions such as buildings and trees slow the wind and add turbulence near the ground. Therefore, adequate

height is a critical factor in wind-powered electricity system effectiveness. In order to function well, the lowest part of systems with rotor blades must be a minimum of 25 to 35 feet higher than surrounding obstructions.

Ordinance 3034 essentially allows small wind-powered electricity systems (up to 10 kW and 80 feet in height) as accessory uses in all residential zoning districts and systems (up to 100kW and 125 feet in height) in all other zoning districts subject to setback and other standards. The proposed minimum setbacks of 110% of the tower height for systems 80 feet or less in height and 200% of the tower height of systems more than 80 feet in height are reasonable requirements. Structure failure in wind-powered electricity systems is extremely unlikely. Systems are installed on engineered towers and poles and rooftop models must be installed on structures that are engineered to accommodate the additional weight and stress. Even so, such setbacks of 1.1 to 2 times the tower height address a range of potential impacts including safety, noise, and aesthetics, and can give neighbors peace of mind. Based upon the proposed standards, a standalone 60-foot tall wind-powered electricity system would require a minimum 66 foot (110% x 60ft) setback from any property line. With the vast majority of the lots in the City being less than 80 feet in width, they would be precluded from accommodating such a system. A standalone wind-powered electricity system placed on a typical 50-foot wide lot could not be more than 22.7 feet in height.

Opinions vary widely about whether wind-powered electricity systems are attractive, based largely on personal taste. And there are a variety of different wind-powered electricity systems as is evident from reviewing the attached photo collage. Some would be considered rather innocuous and appear more like ornamental art instead of an energy producing system. However, most systems are usually quite visible because they must be placed high enough to access good wind. The community has to decide if the aesthetic impact is serious enough to enforce height standards that would compromise a system's functionality. The appearance of a turbine is an aesthetic issue which staff has attempted to address through the color, signs and lighting provisions in the attached ordinance.

Noise generated by a wind-powered electricity system is often a first concern of neighbors. Small systems that would be used in a residential setting (up to 10kW) can be compared to a flag flapping in the wind. To further illustrate, the noise level measured 50 feet away from a wind-powered electricity system (up to 10kW) on an 80-foot tower is approximately 45 decibels which is under the maximum 50 decibel limitation in residential areas stipulated by the City's noise ordinance. Of course, the greater the distance between the listener and the turbine, the less the noise level. Off-property noise intrusion from a residential turbine system is typically very limited. The slow-spinning blades on large wind-powered electricity systems can cause thumping vibrating acoustical effects. Faster rotating, smaller systems do not cause the same effects.

Following are some comparative figures for energy production associated with wind turbines.

- ◆ Typical residential roof mounted unit will generate about 500W or .5kW.
- ◆ Models used by Cascade County at its new County shop Complex and to be built at MSU COT are rated about 50kW with an approximate height of 120 feet.
- ◆ The six United Materials' turbines west of International Airport are each rated 1.5mW or 1500kW with a height of about 220 feet.
- ◆ 1mW will power 250 – 300 homes.

During the Public Hearing before the Zoning Commission on March 10, 2009, Mr. Ken Thornton, 31 Paradise Lane, spoke as a proponent, Mr. Joe McMahon, 3121 2<sup>nd</sup> Avenue South, spoke as an opponent, and Mr. Ronald Gessaman, 1006 36<sup>th</sup> Avenue NE, spoke under public comment. A copy of the Minutes of the Zoning Commission Public Hearing will be provided to the City Commission prior to the public hearing on May 5, 2009.

**Concurrences:** Other City Departments including Public Works, Community Development, and Administration have been involved in the drafting of Ordinance 3034.

**Fiscal Impact:** Adoption of Ordinance 3034 allowing certain types of wind-powered electricity systems subject to specific standards could eventually result in energy cost savings for the user/owner of the systems.

**Alternatives:** The City Commission could deny acceptance of Ordinance 3034 on first reading and not set the public hearing. However, such action would preclude or delay due process and consideration of a public hearing, a vital and critical step to adopt an ordinance to more easily accommodate wind-powered electricity in the City.

**Attachments/Exhibits:**

Ordinance 3034

Photo Collage of wind-powered electricity systems (3 pages)

Examples of Minimum Setbacks based upon tower height