

COMMISSION ACTION FORM

SUBJECT: WIND ENERGY SYSTEMS

BACKGROUND:

Over the past year, public interest in installing small scale solar and wind energy systems has been expressed. Until recently, however, City codes did not allow such systems and it still does not allow wind systems. The City Council responded by directing staff to work with the Planning & Zoning Commission to develop code provisions that more fully address wind energy in all zones.

In fall of 2008, staff began researching both small scale solar and wind systems and presented its findings to the Planning and Zoning Commission in February of 2009. The Commission found that one of the primary concerns is visual impact. Because of the visual concerns, staff focused on ways to solicit public sentiment on the aesthetic aspect of alternative energy, and organized public meetings and workshops that used graphical models and displays to illustrate what these systems may look like in different settings. These meetings generated helpful information and feedback, which was used in developing potential code changes pertaining to both solar and wind power.

The City Council reviewed the proposed concepts at a work session on August 18, 2009. The Council determined that provisions for solar power were likely less complex or controversial than wind power, and directed staff to bring forward a solar energy system ordinance in advance of wind energy. Ordinance 4013, establishing regulations for solar energy systems, was passed by Council on November 10, 2009.

Now the Commission will be reviewing options for wind energy systems and preparing a recommendation for the City Council. The Commission last discussed wind energy options at its meeting of August 5, 2009, after visiting a small wind turbine just outside of Ames. This report includes concept summaries of some possible alternatives. The Commission can make a recommendation to Council from one of the concepts. Staff intends to then report to Council the general direction of that concept and gain feedback from Council on that concept before drafting the code language and presenting it to the Planning & Zoning Commission.

These concepts have been further developed since the February 2009 meeting by including a wider variety of policy positions. The alternatives have been named to facilitate discussion about them. These concept outcomes were a direct result of Council comments from the August work session.

Concept One: The “Non-Residential Only” Alternative

*This alternative would **not allow freestanding wind energy systems in residential zones**. After some non-residential installations become more commonplace, the Council could later decide to add residential zones.*

- Allow **only smaller rooftop systems in residential** zones based on mixed public feedback about freestanding tower systems in neighborhoods.
- Allow **rooftop and freestanding systems in non-residential** zones while also keeping in mind sensitive areas such as overlay zones or historic districts.
- Special buffers such as a setback of 150% of height when towers are adjacent to residential or other sensitive areas.
- Special Use Permit (SUP) approval only (to generate public awareness and participation).
- Depending on site locations, the city could determine after one or two years that there has been increased awareness and residential zones need to be added — engage the public again before proceeding.

Concept Two: The “City-Wide Highly-Technical” Alternative

*This alternative would allow wind energy systems in all zones, but with a highly technical criterion applied to residential properties. The key with this alternative is the exhaustive engineering and monitoring that would be required to ensure that compliance is met at the time of application and ALSO maintained during the future operation of the system. The cost burden to the applicant could be significant and also difficult for the city staff to enforce. This alternative allows staff to approve applications that meet base criteria for height, setback, and lot size. If the application is to exceed any of those criteria, approval to a higher limit can be approved by the ZBA. The ZBA can place any additional conditions it deems necessary on the SUP. **Many cities have adopted this type of concept, which has effectively prevented small wind energy development in that city.***

- Sound/vibration limits using dBA, mHz and Frequency standards.
- Glare limits (percentage of time moving blades reflect on adjacent property).
- Shadow-flicker limits (percentage of time moving shadow falls on adjacent property or windows).
- Color and construction-style standards - (monopole preference unless alternative approved through Special Use Permit ('SUP')).
- Height limits - Staff approved up to a given height, or SUP for some increase.
- Setback of 110-150% percent of system height - Staff approved for minimum or SUP for less setback if easement is provided and other impacts are mitigated.
- One or two acre minimum lot size - Staff approve if meets minimum; SUP if smaller.
- Rear yard only.
- “Viewshed Profile” max square footage for rooftop-factor of building footprint AND lot size (takes into account both vertical or horizontal systems).
- Limit on number of systems of one per lot - Staff or SUP for increase, but no more than one per net acre

Concept Three: The “City Wide-Unique Context” Alternative

This alternative would allow wind energy systems in all zones with ZBA approval for every application. Significant emphasis would be placed on the ZBA to weigh site specific neighborhood facts before making a decision: such as topography, vegetation, building scale, and open space. Special SUP conditions to mitigate site-specific impacts can be added by the ZBA.

- No noise regulations in addition to existing city-wide nuisance noise code.
- No glare, shadow or color regulations.
- Site specific Special Use Permit criteria similar to Solar Energy Systems code.
- Staff-approved or additional ZBA-approved dimensional limits for some basic standards such as height, setback and lot size, as in Concept #2.
- This alternative responds to the public comments that there is such a wide variety of lot and site conditions, that technical, rigid criterion should not be the baseline. The specific characteristics of a lot should be the baseline and the equipment should be allowed according to the scale and topography of that immediate area—not the “one-size fits all” approach.

Concept Four: The “City-Wide Rigid Technical” Alternative

This alternative is an adaptation of #3 above in that systems would be allowed in all zones, but the ZBA would not have the authority within the SUP process to exceed the base criteria.

- This alternative differs from #3 above in that public comments may be the only new information left for the ZBA to include in making their decision.
- Dimensional or other measurable criteria are not flexible, although ZBA still has final say and can make different findings than staff, depending on the outcome of a public hearing.
- ZBA’s burden is reduced with this alternative because their authority would be to approve or deny the application, but not to approve a reduced setback, higher tower, or noisier generator.
- Examples of rigid criteria: minimum lot size, minimum setback, maximum noise, maximum height

Public Engagement. The input that staff has received from the public was diverse. Some believe that small wind systems are attractive based on principle because of their environmental purpose and should be allowed with little or no restrictions. Others believe that small wind systems are unsightly, disruptive and unsafe, and will lead to declining adjacent property values. There are very few examples of small wind systems in urban environments with which to base either of these two extremes across the range of opinions. By beginning to allow freestanding towers only in non-residential areas (Concept #1), the public could begin to gain confidence and understanding of small wind systems. Therefore, a cautious approach to their development could foster a community wide process of beginning to accept a **balance between potential impacts and the environmental benefits** of new green energy technologies. However, if there are no interested non-residential property owners, this option may be less successful. The city may then wish to explore other options to facilitate small wind development within a shorter time frame.

These concepts can be further developed or have various attributes changed. For example, Concept #1 (non-residential) could be administered with some of the contextual standards of Concept #3. A matrix of the attribute details can also be created to compare the four Concepts on a deeper technical level. Staff can prepare this matrix once a general policy direction is chosen.

Land Use Policy Plan. Goal 3 of “Goals for a New Vision,” regarding “Environmental-Friendliness” is supportive of Concept #1, because it promotes awareness of small wind energy and could eventually lead to property owners city wide having the option to conserve traditional energy sources by installing small wind equipment on their property.

Goal 4 of “Goals for a New Vision,” regarding a “greater sense of place and connectivity” and “assuring a more healthy, safe and attractive environment” is supportive of Concept #1, because it seeks to build consensus among various types of property owners before opening small wind opportunities city wide. The concept proposes to allow small wind energy equipment in a way that is sensitive to the character of the surrounding built environment.

ALTERNATIVES:

1. The Planning & Zoning Commission can recommend that the City Council direct staff to prepare text amendments for Concept #1, the “Non-Residential Only” Alternative, as a way to facilitate small wind energy systems on an active, yet cautious basis.
2. The Planning & Zoning Commission can recommend that the City Council direct staff to prepare text amendments from another concept or revision of a concept in this report.
3. The Planning & Zoning Commission can recommend that the City Council make no changes regarding wind energy in the zoning code, therefore maintaining the status quo and not allowing small scale wind energy production.

RECOMMENDED ACTION:

Staff recommends that the Planning & Zoning Commission act in accordance with Alternative #1, which is to recommend that the City Council direct staff to prepare text amendments for Concept #1, the “Non-Residential Only” Alternative, as a way to facilitate small wind energy systems on an active, yet cautious basis.