



REQUEST FOR ACTION
Long Lake City Council

July 19, 2011 / Agenda Item No. 7

Subject: Amendments to the Long Lake Zoning Ordinance pertaining to Solar and Wind Energy (Green Technology) Provisions in All Zoning Districts

Prepared By: Ann Perry, RSC - Consulting Planner **Staff Initials:** ARP

Recommended City Council Action

Staff recommends the following motion:

Motion to adopt Ordinance No. 2011-06 amending sections of the Long Lake Zoning Ordinance pertaining to solar and wind energy (green technology) provisions in all zoning districts.

Planning Commission Review and Recommendation

The Planning Commission held a public hearing pertaining to the proposed changes to the sections of the Zoning Ordinance to regulate solar and wind energy facilities at their meeting of July 12, 2011 and there were no public comments. After staff review of the press release and other activities to publicize the public hearing, the commission recommended that the City Council adopt the draft ordinance.

Overview / Background

The Planning Commission and City Council discussed various "green technologies" in relationship to the existing Zoning Ordinance standards in 2010. Earlier this year, as part of the annual goal setting retreat, the City Council requested that the Planning Commission work program prioritize a recommendation regarding "green technology" oriented Zoning Ordinance amendments with specific emphasis on solar and wind energy.

The Planning Commission appointed a three member subcommittee (members include Commissioner's Crump, Kelley and Stephenson) to discuss potential ordinance changes and provide a recommendation to the Planning Commission. The subcommittee has met over the past several months (which included a meeting with Innovative Power Systems representatives) to develop recommendations pertaining to the appropriate standards to include in the Zoning Ordinance for solar and wind energy devices.

The draft ordinance provisions were reviewed by the subcommittee and discussed by the Planning Commission at their June 14, 2011 meeting. The commission felt that a provision should be added to allow "solar awnings" on windows and decided to eliminate language regarding freestanding solar collection facilities. Concern was expressed by the commission about the potential aesthetic impacts created by freestanding solar energy devices on adjacent properties given the residential area lot sizes.

The City Council reviewed the draft ordinance provisions at their June 21, 2011 joint work session with the Planning Commission and concurred with the commission's recommendations. Also, the council discussed potential activities to promote the ordinances and other sustainability practices in the community.

A City Council member inquired about the need to regulate electric vehicle charging facilities (public or private) following the June 21 City Council/Planning Commission Work Session. Staff believes that if the charging facilities are private and located either within or connected to a garage, a separate

provision is not required since it is a "standard" garage use. If public charging facilities are proposed within Long Lake in the future, it would be appropriate to review the ordinance in conjunction with the public parking facilities.

Proposed Ordinance Provisions

The following summarizes the major provisions for solar and wind energy systems in the Zoning Ordinance – see attached draft ordinance.

Solar Energy Collection Systems

An additional provision was added to the solar collection draft ordinance language requiring the applicant to obtain all required permits before construction of the panels.

1. Roof mounted, wall mounted and window awning solar collection systems are allowed as an accessory use in all zoning districts and are permitted on principal and accessory structures.
2. Freestanding solar collection systems are not allowed.
3. The standards for the solar collection systems are as follows:
 - a. Wall mounted solar panels must be flush mounted or at an angle from the wall of no more than five percent.
 - b. The height of a roof mounted solar panel cannot exceed 20 feet from the ground or three feet above the roof of the principal building on the property, whichever is greater.
 - c. On flat or shed roofs, the height of a solar panel cannot exceed ten feet from the surface of the roof, or 20 feet from the ground, whichever is greater.
 - d. Solar panels must be mounted to align with the slope of the roof, and shall not deflect more than ten percent from the roof angle.
 - e. The panels shall be set back a minimum of one foot from the roof edge and cannot be located on roof overhangs.
 - f. Window awnings designed to collect solar energy must comply with all setbacks.
 - g. All required permits must be obtained before construction of solar collection systems.

Wind Energy Conversion Systems (WECS)

1. WECS that have a rated capacity of no more than fifteen (15) kilowatts are allowed as an accessory use in all zoning districts provided certain standards are met:
 - a. No more than one WECS is allowed per lot.
 - b. The diameter of the WECS blades and rotor cannot exceed 35 feet.
 - c. The height of the WECS (including the rotor blades) cannot exceed 20 feet or the height of the principal building on the property, whichever is greater.
 - d. The WECS (including the rotor blades) must meet the required lot setbacks, or 50 percent of the height of the WECS, whichever is greater.
 - e. The rotor blades must be at least 12 feet above the ground.
 - f. The WECS must be treated with earth tone colors and textures, and compatible with adjacent buildings.
 - g. All required permits must be obtained before construction of the WECS and certification that the WECS and associated facilities are appropriate for conditions in Long Lake.

2. WECS that have a rated capacity of no more than 160 kilowatts are allowed by Conditional Use Permit in the I-1 and I-2 Industrial Districts provided the following standards are met:
 - a. The maximum height of the WECS (including the rotor blades) cannot exceed 115 feet.
 - b. The rotor blades must be at least 12 feet above the ground.
 - c. The WECS tower must meet all setback requirements required for the principal building.
 - d. The rotor blades cannot extend into the setbacks required for the principal building.
 - e. The WECS must be treated with earth tone colors and textures, and compatible with adjacent buildings.
 - f. The applicant must submit engineering certification of the WECS including safety and predicted noise levels that the WECS and associated facilities are of adequate design for conditions in Long Lake.
 - g. The City may require greater setbacks for the WECS based upon the review of the engineering certification to ensure safety and to minimize impacts on adjacent properties.
 - h. All required permits must be obtained by the applicant before any grading or building associated with the WECS is started.
 - i. The City may require the WECS to be dismantled if it has not been operated for one year or fails to meet the ordinance conditions.

Supporting Information

- Ordinance No. 2011-06



**City of Long Lake
Hennepin County, Minnesota
ORDINANCE NO. 2011-06**

**AN ORDINANCE AMENDING THE CITY OF LONG LAKE ZONING ORDINANCE
REGARDING SOLAR AND WIND ENERGY PROVISIONS IN ALL ZONING DISTRICTS**

The City Council of the City of Long Lake does hereby ordain as follows:

Section 1. City of Long Lake Zoning Ordinance, Section 2 (Definitions) is amended to add the following definitions:

Subd. 177a. Solar energy facilities, exterior building. A device or structure that is designed for the collection, storage and distribution of solar energy for the purpose of providing energy to the principal or accessory building on the property, that is not considered an integral part of a building such as windows and roof shingles and is exterior to the principal or accessory buildings on the property. Examples of exterior solar energy facilities include solar panels mounted on the exterior of a roof and wall mounted solar panels.

Subd. 206a. Wind Energy Conversion System (WECS). A device, such as a windmill or wind turbine, and accessory facilities including the support structure, energy storage, and necessary operating equipment, that converts wind energy into electricity.

Subd. 206b. Wind Energy Conversion System (WECS) Tower. A wind energy conversion system (WECS) tower consisting of a single pole, constructed without guy wires and anchors.

Section 2. City of Long Lake Zoning Ordinance, Section 7 (R-1 and R-1A Single Family Residential Districts), Subd. 2 is amended to add the following subparts:

H. Solar energy systems, exterior, provided the following standards are met:

1. All solar panels attached to the wall of a principal or accessory building must be flush mounted or at an angle of no more than a five (5) percent deviation from the wall.
2. Roof mounted solar panels shall comply with the following:
 - a. The height of a roof mounted solar panel shall not exceed twenty (20) feet as measured from the ground or three (3) feet above the ridgeline of the roof peak of the principal building on the property, whichever is greater.
 - b. On flat or shed roofs, the height of a solar mounted roof panel shall not exceed ten (10) feet as measured from the surface of the roof, or twenty (20) feet as measured from the ground, whichever is greater.

- c. The solar panels shall be mounted to align with the slope of the roof, and shall not deflect more than ten (10) percent from the roof angle.
- d. Solar roof panels shall be setback from the roof edge a minimum of one (1) foot and shall not be located on any roof overhang.
- 3. Window awnings constructed to allow solar energy collection shall be permitted provided all required building setbacks are met.
- 4. All required permits must be obtained before construction of solar collection systems.

- I. Wind energy conversion systems (WECS) that have a rated capacity of no more than fifteen (15) kilowatts, provided the following standards are met:
 - 1. No more than one (1) WECS shall be allowed per lot.
 - 2. The diameter of the circle described by the moving rotor blades shall not exceed thirty-five (35) feet.
 - 3. The height of the WECS (including the rotor blades) shall not exceed twenty (20) feet or the height of the principal building on the property, whichever is greater.
 - 4. The WECS (including the rotor blades) shall meet the required lot setbacks, or fifty (50) percent of the height of the WECS (including the rotor blades), whichever is greater.
 - 5. Rotor blades must maintain a minimum of twelve (12) feet of clearance between the lowest point of the blade and the ground.
 - 6. The WECS (including the rotor blades) shall be designed utilizing earth tone colors and textures that are compatible with the adjacent buildings.
 - 7. Building and electrical permits must be obtained by the applicant following the submission of all information required by the applicable State code and submission of certification by the manufacturer's engineer or other qualified engineer that the WECS and associated facilities are of adequate design for the soil and climate conditions of Long Lake.

Section 3. City of Long Lake Zoning Ordinance, Section 13 (B-1 Limited Business District), Subd. 4 is amended to add the following subparts:

- E. Solar energy systems, exterior, provided the following standards are met:
 - 1. All solar panels attached to the wall of a principal or accessory building must be flush mounted or at an angle of no more than a five (5) percent deviation from the wall.
 - 2. Roof mounted solar panels shall comply with the following:
 - a. The height of a roof mounted solar panel shall not exceed twenty (20) feet as measured from the ground or three (3) feet above the ridgeline of the roof peak of the principal building on the property, whichever is greater.
 - b. On flat or shed roofs, the height of a solar mounted roof panel shall not exceed ten (10) feet as measured from the surface of the roof, or twenty (20) feet as measured from the ground, whichever is greater.

- b. On flat or shed roofs, the height of a solar mounted roof panel shall not exceed ten (10) feet as measured from the surface of the roof, or twenty (20) feet as measured from the ground, whichever is greater.
- c. The solar panels shall be mounted to align with the slope of the roof, and shall not deflect more than ten (10) percent from the roof angle.
- d. Solar roof panels shall be setback from the roof edge a minimum of one (1) foot and shall not be located on any roof overhang.
- 3. Window awnings constructed to allow solar energy collection shall be permitted provided all required building setbacks are met.
- 4. All required permits must be obtained before construction of solar collection systems.
- D. Wind energy conversion systems (WECS) that have a rated capacity of no more than fifteen (15) kilowatts, provided the following standards are met:
 - 1. No more than one (1) WECS shall be allowed per lot.
 - 2. The diameter of the circle described by the moving rotor blades shall not exceed thirty-five (35) feet.
 - 3. The height of the WECS (including the rotor blades) shall not exceed twenty (20) feet or the height of the principal building on the property, whichever is greater.
 - 4. The WECS (including the rotor blades) shall meet the required lot setbacks, or fifty (50) percent of the height of the WECS (including the rotor blades), whichever is greater.
 - 5. Rotor blades must maintain a minimum of twelve (12) feet of clearance between the lowest point of the blade and the ground.
 - 6. The WECS (including the rotor blades) shall be designed utilizing earth tone colors and textures that are compatible with the adjacent buildings.
 - 7. Building and electrical permits must be obtained by the applicant following the submission of all information required by the applicable State code and submission of certification by the manufacturer's engineer or other qualified engineer that the WECS and associated facilities are of adequate design for the soil and climate conditions of Long Lake.

Section 5. City of Long Lake Zoning Ordinance, Section 15 (VC-1 Village Commercial District), Subd. 4 is amended to add the following subparts:

- E. Solar energy systems, exterior, provided the following standards are met:
 - 1. All solar panels attached to the wall of a principal or accessory building must be flush mounted or at an angle of no more than a five (5) percent deviation from the wall.
 - 2. Roof mounted solar panels shall comply with the following:
 - a. The height of a roof mounted solar panel shall not exceed twenty (20) feet as measured from the ground or three (3) feet above the ridgeline of the roof peak of the principal building on the property, whichever is greater.

- b. On flat or shed roofs, the height of a solar mounted roof panel shall not exceed ten (10) feet as measured from the surface of the roof, or twenty (20) feet as measured from the ground, whichever is greater.
 - c. The solar panels shall be mounted to align with the slope of the roof, and shall not deflect more than ten (10) percent from the roof angle.
 - d. Solar roof panels shall be setback from the roof edge a minimum of one (1) foot and shall not be located on any roof overhang.
 - 3. Window awnings constructed to allow solar energy collection shall be permitted provided all required building setbacks are met.
 - 4. All required permits must be obtained before construction of solar collection systems.
- F. Wind energy conversion systems (WECS) that have a rated capacity of no more than fifteen (15) kilowatts, provided the following standards are met:
- 1. No more than one (1) WECS shall be allowed per lot.
 - 2. The diameter of the circle described by the moving rotor blades shall not exceed thirty-five (35) feet.
 - 3. The height of the WECS (including the rotor blades) shall not exceed twenty (20) feet or the height of the principal building on the property, whichever is greater.
 - 4. The WECS (including the rotor blades) shall meet the required lot setbacks, or fifty (50) percent of the height of the WECS (including the rotor blades), whichever is greater.
 - 5. Rotor blades must maintain a minimum of twelve (12) feet of clearance between the lowest point of the blade and the ground.
 - 6. The WECS (including the rotor blades) shall be designed utilizing earth tone colors and textures that are compatible with the adjacent buildings.
 - 7. Building and electrical permits must be obtained by the applicant following the submission of all information required by the applicable State code and submission of certification by the manufacturer's engineer or other qualified engineer that the WECS and associated facilities are of adequate design for the soil and climate conditions of Long Lake.

Section 6. City of Long Lake Zoning Ordinance, Section 16 (I-1 Industrial District), Subd. 3 is amended to add the following subparts as follows:

- C. Solar energy systems, exterior, provided the following standards are met:
- 1. All solar panels attached to the wall of a principal or accessory building must be flush mounted or at an angle of no more than a five (5) percent deviation from the wall.
 - 2. Roof mounted solar panels shall comply with the following:
 - a. The height of a roof mounted solar panel shall not exceed twenty (20) feet as measured from the ground or three (3) feet above the ridgeline of the roof peak of the principal building on the property, whichever is greater.

- b. On flat or shed roofs, the height of a solar mounted roof panel shall not exceed ten (10) feet as measured from the surface of the roof, or twenty (20) feet as measured from the ground, whichever is greater.
 - c. The solar panels shall be mounted to align with the slope of the roof, and shall not deflect more than ten (10) percent from the roof angle.
 - d. Solar roof panels shall be setback from the roof edge a minimum of one (1) foot and shall not be located on any roof overhang.
 - 3. Window awnings constructed to allow solar energy collection shall be permitted provided all required building setbacks are met.
 - 4. All required permits must be obtained before construction of solar collection systems.
- D. Wind energy conversion systems (WECS) that have a rated capacity of no more than fifteen (15) kilowatts, provided the following standards are met:
- 1. No more than one (1) WECS shall be allowed per lot.
 - 2. The diameter of the circle described by the moving rotor blades shall not exceed thirty-five (35) feet.
 - 3. The height of the WECS (including the rotor blades) shall not exceed twenty (20) feet or the height of the principal building on the property, whichever is greater.
 - 4. The WECS (including the rotor blades) shall meet the required lot setbacks, or fifty (50) percent of the height of the WECS (including the rotor blades), whichever is greater.
 - 5. Rotor blades must maintain a minimum of twelve (12) feet of clearance between the lowest point of the blade and the ground.
 - 6. The WECS (including the rotor blades) shall be designed utilizing earth tone colors and textures that are compatible with the adjacent buildings.
 - 7. Building and electrical permits must be obtained by the applicant following the submission of all information required by the applicable State code and submission of certification by the manufacturer's engineer or other qualified engineer that the WECS and associated facilities are of adequate design for the soil and climate conditions of Long Lake.

Section 7. City of Long Lake Zoning Ordinance, Section 16 (I-1 Industrial District), Subd. 4 is amended to add the following subpart as follows:

- J. Wind Energy Conversion Systems (WECS) that have a rated capacity of no more one-hundred and sixty (160) kilowatts, provided the following standards are met:
- 1. The maximum height of the WECS (including the rotor blades) shall not exceed one-hundred and fifteen (115) feet.
 - 2. Rotor blades must maintain a minimum of twelve (12) feet of clearance between the lowest point of the blade and the ground.

3. The base of the WECS tower shall meet all setback requirements required for the principal building of the zoning district.
4. The rotor blades shall not extend into the required setbacks required for the principal building on the property.
5. The WECS (including the rotor blades) shall be designed utilizing earth tone colors and textures that are compatible with the adjacent buildings.
6. The applicant shall submit engineering certification by a qualified engineer of the turbine, rotor blades, foundation, safety, predicted noise levels and tower design that the WECS and associated facilities are of adequate design for the soil and climate conditions of Long Lake.
7. Greater setbacks for the WECS monopole and rotor blades may be required by the City based upon the review of the engineering certification required in 6. above, to ensure safety and to minimize impacts on adjacent properties.
8. Building and electrical permits must be obtained by the applicant in compliance with the applicable State code prior to commencement of any grading or building associated with the WECS.
9. If the WECS has not been operated for a period of one year or fails to meet the conditions of this ordinance, the City may order it be dismantled and the site restored to its original condition.

Section 8. City of Long Lake Zoning Ordinance, Section 16A (I-2 Industrial District), Subd. 3 and Section 16B (INST- Institutional District), Subd. 3 is amended to add the following subparts as follows:

- D. Solar energy systems, exterior, provided the following standards are met:
 1. All solar panels attached to the wall of a principal or accessory building must be flush mounted or at an angle of no more than a five (5) percent deviation from the wall.
 2. Roof mounted solar panels shall comply with the following:
 - a. The height of a roof mounted solar panel shall not exceed twenty (20) feet as measured from the ground or three (3) feet above the ridgeline of the roof peak of the principal building on the property, whichever is greater.
 - b. On flat or shed roofs, the height of a solar mounted roof panel shall not exceed ten (10) feet as measured from the surface of the roof, or twenty (20) feet as measured from the ground, whichever is greater.
 - c. The solar panels shall be mounted to align with the slope of the roof, and shall not deflect more than ten (10) percent from the roof angle.
 - d. Solar roof panels shall be setback from the roof edge a minimum of one (1) foot and shall not be located on any roof overhang.
 3. Window awnings constructed to allow solar energy collection shall be permitted provided all required building setbacks are met.

4. All required permits must be obtained before construction of solar collection systems.

E. Wind energy conversion systems (WECS) that have a rated capacity of no more than fifteen (15) kilowatts, provided the following standards are met:

1. No more than one (1) WECS shall be allowed per lot.

2. The diameter of the circle described by the moving rotor blades shall not exceed thirty-five (35) feet.

3. The height of the WECS (including the rotor blades) shall not exceed twenty (20) feet or the height of the principal building on the property, whichever is greater.

4. The WECS (including the rotor blades) shall meet the required lot setbacks, or fifty (50) percent of the height of the WECS (including the rotor blades), whichever is greater.

5. Rotor blades must maintain a minimum of twelve (12) feet of clearance between the lowest point of the blade and the ground.

6. The WECS (including the rotor blades) shall be designed utilizing earth tone colors and textures that are compatible with the adjacent buildings.

7. Building and electrical permits must be obtained by the applicant following the submission of all information required by the applicable State code and submission of certification by the manufacturer's engineer or other qualified engineer that the WECS and associated facilities are of adequate design for the soil and climate conditions of Long Lake.

Section 9. City of Long Lake Zoning Ordinance, Section 16A (I-2 Industrial District), Subd. 4 is amended to add the following subpart as follows:

G. Wind Energy Conversion Systems (WECS) that have a rated capacity of no more one-hundred and sixty (160) kilowatts, provided the following standards are met:

1. The maximum height of the WECS (including the rotor blades) shall not exceed one-hundred and fifteen (115) feet.

2. Rotor blades must maintain a minimum of twelve (12) feet of clearance between the lowest point of the blade and the ground.

3. The base of the WECS tower shall meet all setback requirements required for the principal building of the zoning district.

4. The rotor blades shall not extend into the required setbacks required for the principal building on the property.

5. The WECS (including the rotor blades) shall be designed utilizing earth tone colors and textures that are compatible with the adjacent buildings.

6. The applicant shall submit engineering certification by a qualified engineer of the turbine, rotor blades, foundation, safety, predicted noise levels and

tower design that the WECS and associated facilities are of adequate design for the soil and climate conditions of Long Lake.

7. Greater setbacks for the WECS monopole and rotor blades may be required by the City based upon the review of the engineering certification required in 6. above, to ensure safety and to minimize impacts on adjacent properties.
8. Building and electrical permits must be obtained by the applicant in compliance with the applicable State code prior to commencement of any grading or building associated with the WECS.
9. If the WECS has not been operated for a period of one year or fails to meet the conditions of this ordinance, the City may order it be dismantled and the site restored to its original condition.

Note: The ~~stricken language~~ is deleted; the underlined language is inserted.

Date of Adoption: July 19, 2011

Date of Publication: July 30, 2011

Effective Date: July 19, 2011

BY:

Tim Hultmann, Mayor

ATTEST:

Jeanette Moeller, City Clerk