

# MARIN COUNTY COMMUNITY DEVELOPMENT AGENCY

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## Wind Energy Conversion Systems (WECS) Requirements Fact Sheet

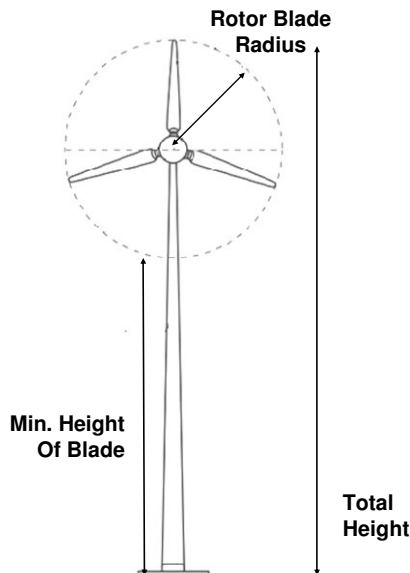
On August 10, 2010, the Marin County Board of Supervisors adopted an Ordinance approving amendments to Section 22.32.180 (Wind Energy Conversion Systems (WECS)) of the Marin County Code. The amendments recognize the rapidly expanding technologies that are making wind turbines increasingly more efficient, quiet, safe, and cost effective. Although the intention of the WECS amendments are to limit obstacles to their construction and use, there are regulatory standards and permit processes that must be adhered to in order for a WECS to be approved for use on residential, agricultural or commercial sites. Please continue reading for more information regarding the development requirements for construction of WECS.

### Definitions

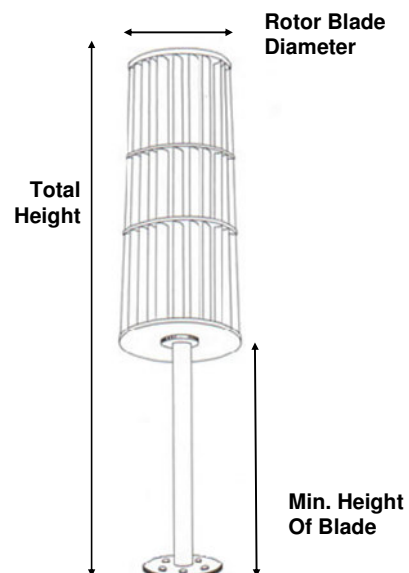
The following definitions will be used to define WECS projects and their applicable permit requirements and development standards pursuant to the requirements outlined in Section 22.32.180 (Wind Energy Conversion Systems (WECS)) of the Marin County Code:

1. **Small WECS.** (A) Any freestanding WECS up to 40 feet in total height above grade; (B) a roof-mounted WECS utilizing a horizontal-axis wind turbine (HAWT) or a vertical-axis wind turbine (VAWT) and not exceeding 10 feet in height above the roof line of the structure; or (C) a non-grid-tied WECS used solely to pump water for agricultural uses and not exceeding 100 feet in total height above grade.
2. **Medium WECS.** Any WECS between 40 feet and 200 feet in total height above grade.
3. **Large WECS.** Any WECS greater than 200 feet in total height above grade.

Horizontal-Axis Wind Turbine (HAWT)



Vertical-Axis Wind Turbine (VAWT)



## Permit Requirements

Permit requirements for WECS are based on the type of system, parcel size, and zoning district:

WECS Size	Small					Medium	Large	
WECS Type	Roof-Mounted		Non-Grid-Tied Agricultural Uses			Freestanding	Freestanding	Freestanding
Parcel Size (Acres)	<1	≥1	<1	≥1 – 10	≥10	Not applicable	Not applicable	≥20
RF (Floating Home Marina) Zoning District	Not Allowed	Not Allowed	Not Allowed	Not Allowed	Not Allowed	Not Allowed	Not Allowed	Not Allowed
A3-A60 Zoning Districts	Ministerial <sup>1</sup>	Ministerial <sup>1</sup>	Ministerial <sup>1</sup>	Ministerial <sup>1</sup>	Ministerial <sup>1</sup>	Ministerial <sup>1</sup>	Design Review <sup>2</sup>	Use Permit/Design Review <sup>4</sup>
APZ Zoning District	Ministerial <sup>1</sup>	Ministerial <sup>1</sup>	Ministerial <sup>1</sup>	Ministerial <sup>1</sup>	Ministerial <sup>1</sup>	Ministerial <sup>1</sup>	Design Review <sup>2</sup>	Master Plan/PDP <sup>3, 4</sup>
ARP Zoning District	Design Review <sup>2</sup>	Ministerial <sup>1</sup>	Use Permit/Design Review <sup>2</sup>	Design Review <sup>2</sup>	Ministerial <sup>1</sup>	Design Review <sup>2</sup>	Design Review <sup>2</sup>	Master Plan/PDP <sup>3, 4</sup>
A2 and all Other Zoning Districts	Design Review <sup>2</sup>	Ministerial <sup>1</sup>	Use Permit/Design Review <sup>2</sup>	Design Review <sup>2</sup>	Ministerial <sup>1</sup>	Design Review <sup>2</sup>	Design Review <sup>2</sup>	Not Allowed

<sup>1</sup> Exceptions to development standards shall be considered through the Design Review Process.

<sup>2</sup> Exceptions to development standards shall be considered through the Use Permit Process.

<sup>3</sup> If Master/Precise Development Plan requirement is waived, Use Permit and Design Review will be required.

<sup>4</sup> Exceptions to development standards shall be considered through the permit process.

## Development Standards

All WECS projects are subject to the following development standards:

WECS Size	Small				Medium			Large
WECS Type	Roof-Mounted	Non-Grid-Tied Agricultural Uses		Freestanding	Freestanding			Freestanding
Total Height	≤ 10 feet (above roof line)	≤ 40 feet	> 40 – ≤100 feet	≤ 40 feet	>40 – ≤ 100 feet	>100 – ≤ 150 feet	>150 – ≤ 200 feet	>200 feet
Min. Height of Lowest Position of Blade	Not applicable	15 feet	15 feet	15 feet	15 feet	30 feet	30 feet	30 feet
Max. Rotor Blade Radius (HAWT)/ Max. Rotor Blade Diameter (VAWT)	7.5 feet/5 feet	0.5 x tower height/5 feet	0.5 x tower height/5 feet	0.5 x tower height/5 feet	0.5 x tower height	0.5 x tower height	0.5 x tower height	Project specific
Min. Setback from Tip of Blade to Property Line	0.5 x total height	0.5 x total height	0.5 x total height	0.5 x total height	1 x total height	1.5 x total height	2 x total height	2 x total height
Max. Units/Parcel	1	1	1	1	2	2	2	Project specific
Min. Unit Separation	Not applicable	Not applicable	Not applicable	Not applicable	1 x tower height	1 x tower height	1 x tower height	Project specific
Min. Setback from Habitable Structures	Not applicable	1 x total height	1 x total height	1 x total height	1 x total height	1 x total height	1 x total height	2 x total height
Min. Setback from Prominent Ridgeline	Not applicable	Not applicable	Minimum of 300 feet horizontally or 100 feet vertically	Not applicable	Minimum of 300 feet horizontally or 100 feet vertically	Minimum of 300 feet horizontally or 100 feet vertically	Minimum of 300 feet horizontally or 100 feet vertically	Minimum of 300 feet horizontally or 100 feet vertically

### Ministerial Project Application Submittal Requirements

Small WECS projects that qualify for ministerial permit review are subject to the standards outlined in Section 22.32.180 and will require a building permit application containing the following:

1. Compliance with the development standards outlined in the previous page
2. Noise specifications provided by the system manufacturer.
3. Application submittal requirements:
  - a. Plot (site) plan
  - b. WECS elevations
  - c. Post-installation erosion control, revegetation, and landscaping plan
  - d. Standard drawings and an engineering analysis of the system's tower
  - e. Line drawing of electrical components
  - f. Electric utility service provider notification
  - g. Bird and Bat Study

### Discretionary Project Application Submittal Requirements

Small, Medium, and Large WECS projects requiring Design Review and/or a Use Permit, or a Master Plan and Precise Development Plan, are subject to the standards outlined in Section 22.32.180 and will require a building permit application containing the following:

1. Compliance with the development standards outlined in the previous page
2. Noise specifications provided by the system manufacturer.
3. Application submittal requirements:
  - a. Plot (site) plan
  - b. WECS elevations
  - c. Post-installation erosion control, revegetation, and landscaping plan
  - d. Standard drawings and an engineering analysis of the system's tower
  - e. Line drawing of electrical components
  - f. Electric utility service provider notification
  - g. Wind measurement study (if required)
  - h. Bird and Bat Study
  - i. Visual simulations taken from off-site views as determined by the Community Development Agency
  - j. Project-specific acoustical analysis (if required)
4. Post approval requirements:
  - a. Post-construction avian and bat monitoring program (if required)
  - b. WECS Decommissioning and Reclamation Plan

### Approved Consultants

A list of qualified consultants to be used for the preparation of a Bird and Bat Study or Noise/Acoustical Analysis approved by the Marin County Environmental Coordinator is available upon request from the Community Development Agency.

### Cost Information

System and installation costs vary by system type and size. Ministerial projects are subject to a \$340 planning review fee, and all applicable Building Permit fees. Discretionary projects are subject to all applicable permit, environmental review, and building permit fees.

## Frequently Asked Questions

### **1. What is a “prominent ridgeline”?**

A prominent ridgeline is defined by the Community Development Agency on a case-by-case basis. Several things are taken into consideration including the system’s visibility from any public areas such as, but not limited to parks, roads, and/or highways.

### **2. What if entire property is on a ridgeline?**

A WECS system can be placed on a ridgeline if it can be demonstrated through the submittal of a County accepted Wind Measurement Study that no other suitable locations are available on the site. The Wind Study will be one amongst all other standards that would be evaluated in considering whether and where the WECS should be approved.

### **3. What is the cost of a Bird and Bat study?**

Small WECS projects can expect to pay approximately \$2,500-\$5,000 for a Bird and Bat Study. Medium and Large WECS projects can cost anywhere from \$5,000 to \$25,000.

### **4. What if the Bird and Bat Study determines that there is a potential for impacts?**

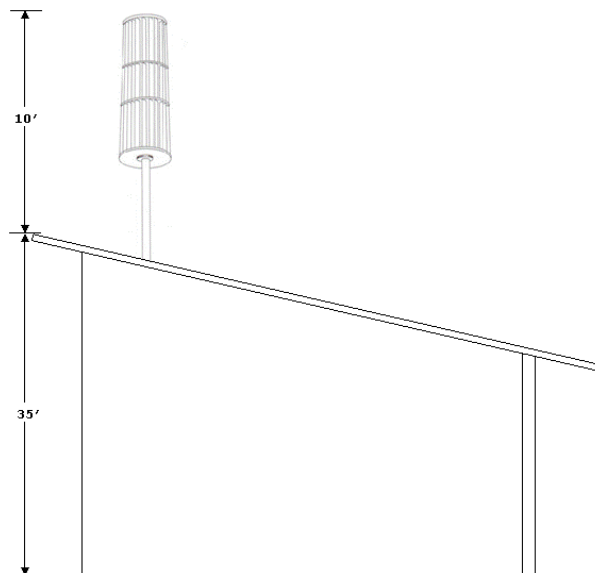
A WECS project, including ministerial projects, will require a Resource Management and Contingency Plan which includes pre-approval and post-construction monitoring and reporting requirements and mitigation measures for reducing bird and bat mortality rates.

### **5. What are “noise specifications”?**

Noise specifications can be provided by the system manufacturer. They provide the measured sound output in A-weighted decibels (dBA) from the base of the tower. If noise specifications are not available from the manufacturer, a noise consultant can provide the required measurements through the submittal of a noise/acoustical analysis.

### **6. My house is 35 feet tall. Can my WECS be on top of it?**

Yes. A WECS can be placed on a rooftop as long as the total system height does not exceed ten feet above the roof line. The figure below illustrates the maximum height requirement above a roof line.

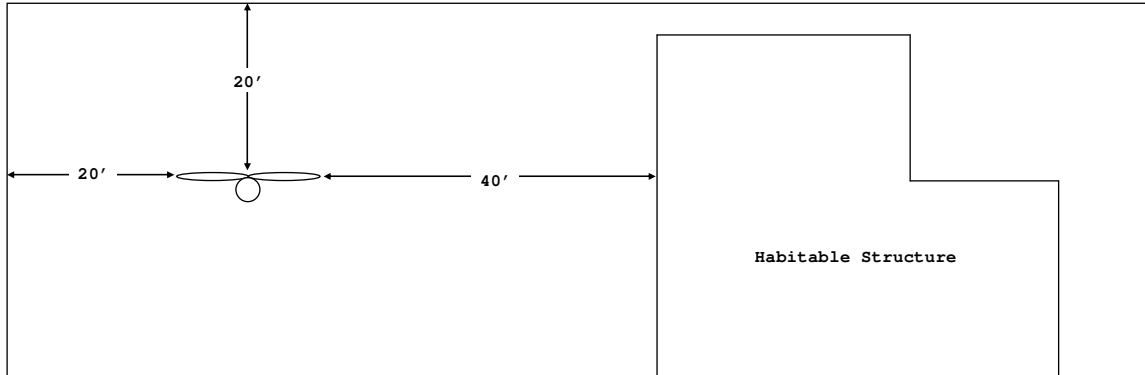


### **7. Is there any instance where I don't need any permits?**

No. Projects subject to either ministerial or discretionary review are required to submit a building permit application which includes planning review for discretionary projects.

**8. How far from my property lines does the WECS need to be?**

The distance a WECS can be placed from the property line is dependent on the total system size. The total system size is measured from the base of the tower to the tip of the rotor blade. The property setback is measured from the tip of the rotor blade to the property line. The figure below illustrates a 40 ft Small WECS with appropriate setbacks from the property line and a habitable structure.



**9. Who prepares the application submittal package?**

The project applicant or renewable energy consultant can prepare the submittal package. Required studies should be prepared by an approved County consultant.

**10. What if the WECS total height or a setback exceeds the outlined development standards?**

An exception is needed for any development standard that is not fully adhered to. An exception to any development standard for a ministerial project will be considered through the Design Review process. Exceptions to development standards for a project subject to a Use Permit and Design Review will be considered through the Use Permit process. Finally, projects subject to a Master Plan and Precise Development Plan approval can have exceptions considered through the permit process.

For more information on the WECS requirements, please refer to the attached materials. Additional assistance can be provided by Omar Peña, Assistant Planner, at 415-507-2797, or via email at [opena@co.marin.ca.us](mailto:opena@co.marin.ca.us).