

RECEIVED INTO RECORD
June 7, 2011 Bf
DATE BY

BEFORE THE
ENERGY FACILITY SITING COUNCIL
OF THE STATE OF OREGON

IN THE MATTER OF THE APPLICATION FOR A SITE
CERTIFICATE FOR THE SUMMIT RIDGE WIND FARM

DRAFT PROPOSED ORDER

Issued by

Oregon Department of Energy
625 Marion Street NE
Salem OR 97301-3742

January 14, 2011

SUMMIT RIDGE WIND FARM
DRAFT PROPOSED ORDER

DRAFT PROPOSED ORDER TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	PROCEDURAL HISTORY OF THE SUMMIT RIDGE ASC REVIEW	3
II.A.	Notice of Intent	3
II.B.	Application for Site Certificate	3
II.C.	Record of the Public Hearing on the Draft Proposed Order	4
III.	DESCRIPTION OF THE FACILITY	5
III.A.	Location and Site Boundary	5
III.B.	The Energy Facility	5
III.C.	Construction timeline	8
III.D.	Recommended Site Certificate Conditions	8
IV.	ENERGY FACILITY SITING STANDARDS	10
IV.A.	General Standard of Review, OAR 345-022-0000	10
IV.B.	Organizational Expertise [OAR 345-022-0010]	11
IV.B.1	Organizational Expertise: Findings of Fact	11
IV.B.2	Organizational Expertise: Recommended Site Certificate Conditions	12
IV.B.3	Organizational Expertise: Conclusions of Law	13
IV.C.	Soil Protection [OAR 345-022-0022]	14
IV.C.1	Soil Protection: Findings of Fact	14
IV.C.2	Soil Protection: Recommended Site Certificate Conditions	16
IV.C.3	Soil Protection: Conclusions of Law	17
IV.D.	Land Use [OAR 345-022-0030]	18
IV.D.1	Land Use: Findings of Fact	19
IV.D.1.A	Wasco County's Applicable Substantive Criteria	21
IV.D.1.B	State Standards—Oregon Revised Statutes	62
IV.D.1.C	State Standards—Oregon Administrative Rules	63
IV.D.2	Land Use: Recommended Site Certificate Conditions	64
IV.D.3	Land Use: Conclusions of Law	65
IV.E.	Protected Areas [OAR 345-022-0040]	66
IV.E.1	Protected Areas: Findings of Fact	67
IV.E.2	Protected Areas: Recommended Site Certificate Conditions	70
IV.E.3	Protected Areas: Conclusions of Law	70
IV.F.	Retirement and Financial Assurance, OAR 345-022-0050	71
IV.F.1	Retirement and Financial Assurance: Findings of Fact	71
IV.F.1.a.	Restoration of Site Following Cessation of Construction or Operations	71
IV.F.1.b.	Estimated Cost of Site Restoration	72
IV.F.1.c.	Ability of the Applicant to Obtain a Bond or Letter of Credit	74
IV.F.2	Retirement and Financial Assurance: Recommended Conditions	75
IV.F.3	Retirement and Financial Assurance: Conclusions of Law	77
IV.G	Fish and Wildlife Habitat, OAR 345-022-0060	78
IV.G.1	Fish and wildlife Habitat: Findings of Fact	79

1 3. *Setbacks.*

2 a. *A WECS shall be setback from all adjoining property lines as described in (1) and (2)*
3 *below. An easement that complies with ORS 105.900 through .915 may be substituted for*
4 *required setbacks. The setback shall be measured from the center point of the tower or*
5 *pedestal.*

6 1. *A horizontal axis WECS shall be setback at least five rotor diameters.*

7 The rotor diameter of the turbines will be 101 meters (331 feet), which requires a setback of
8 1,655 feet. The Wasco County Planning Director submitted an interpretation of this standard, in a
9 letter dated November 14, 2009. The County has interpreted this standard to apply only to
10 adjoining properties that are not within the proposed facility boundary, not internal property
11 lines.⁶⁵ As proposed, the locations of most of the turbines will be set back at least 1,655 feet from
12 all exterior adjoining property lines that are outside the proposed facility boundary.⁶⁶

13 Although the turbine layout in the ASC is not final, some of the proposed turbine locations
14 may not meet the 1,655 foot setback standard. However, the Council may approve these turbine
15 locations pursuant to ORS 469.504(b)(1)(B), because they comply with the applicable statewide
16 planning goals. Although the provisions of WCLUDO Section 19.030, including the setback
17 criterion, have been acknowledged by LCDC to be in compliance with the statewide planning
18 goals, the setback criterion is not required by any statewide planning goal.

19 The proposed facility's general compliance with the statewide planning goals is explained
20 below in the response to the goals and policies of the county's acknowledged comprehensive
21 plan, which are identical to the statewide planning goals. However, the statewide planning goals
22 that are potentially applicable to the turbine setbacks are Goal 3 (Agricultural Lands) and Goal 13
23 (Energy Conservation). Goal 3 provides that "agricultural lands shall be preserved and
24 maintained for farm use, consistent with existing and future needs for agricultural products, forest
25 and open space and with the state's agricultural land use policy expressed in ORS 215.243 and
26 215.700." OAR 660-033-0130(37) (effective January, 2009) allows wind power generation
27 facilities on agricultural lands subject to Goal 3 without a goal exception.

28 As addressed above, Wasco County has directly implemented these rules at WCLUDO
29 Section 3.210(J)(17). As demonstrated in to the findings of compliance with WCLUDO Section
30 3.210(J)(17) above, the proposed facility satisfies these criteria and, therefore, is consistent with
31 Goal 3. The 1,665 foot setback requirement is not required in order to satisfy Goal 3, nor does it
32 affect the impact of the proposed facility on agricultural lands. Consequently, locating some
33 turbines closer than 1,665 feet to property lines adjacent to the proposed facility boundary will
34 not increase (or decrease) impacts to agricultural lands. **Therefore, the Department recommends**
35 **that the Council determine that the proposed facility is consistent with Goal 3 notwithstanding**
36 **that the setback criterion provided by the WCLUDO is not met for all proposed turbines in**
37 **compliance with ORS 469.504(1)(b)(B).**

38 Goal 13 provides that "[I]and uses developed on the land shall be managed and controlled so
39 as to maximize the conservation of all forms of energy, based upon sound economic principles."
40 Further, Goal 13 guidelines specifically promote the use of renewable energy resources, including
41 wind power. The 1,665 foot turbine setback requirement does not provide an energy efficiency
42 benefit for properties that are not downwind of the facility; it is possible that the setback could
43 actually reduce energy efficiency by preventing placement of turbines for maximum efficiency.

⁶⁵ In its November 14, 2009 letter, the County indicated that it expects to amend WCLUDO Chapter 19,
including an amendment to the setback requirement.

⁶⁶ Final ASC, Exhibit K, p. 36-37

1 The setback requirement may provide some benefit to downwind property owners by reducing
2 the chances that wind turbines on upwind property will impact the flow of wind to the downwind
3 property.

4 However, this does not necessarily increase energy efficiency or promote wind development.
5 That is particularly true for the subject site; downwind properties that are not within the proposed
6 facility boundary are primarily owned by the Bureau of Land Management and either prohibited
7 or unlikely to be developed with wind turbines. Therefore, setback compliance does not affect
8 the proposed facility's compliance with Goal 13, and the Department recommends that the
9 Council find that the proposed setback notwithstanding that the setback criterion provided by the
10 WCLUDO is not met for all proposed turbines, in compliance with ORS 469.504(1)(b)(B).

11 *b. The furthest horizontal extension of a WECS [Wind Energy Conversion System] or*
12 *wind measurement device (including guy wires) shall not extend into yards required in the*
13 *underlying zones or be closer than twelve feet to any major structure, or right-of-way or*
14 *easement for above-ground telephone, electrical transmission and distribution lines.*

15 Setback requirements for structures located in A-1 zoning district are identified in WCLUDO
16 Section 3.210(F)(1), which requires 200-foot setbacks from property lines for all dwellings and
17 accessory structures within the A-1 zoning district. To comply with this setback requirement, all
18 turbines (measured from the center of the tower) must be at least 350 feet from all dwellings and
19 accessory structures to account for the length of the turbine blade (approximately 150 feet blade
20 radius plus 200-foot property line setback). All turbines are proposed to comply with this
21 requirement. The proposed meteorological towers will not have guy wires⁶⁷ and are not located
22 near any major structure.⁶⁸ Therefore, the Department recommends that the Council find that, as
23 proposed, all elements of the proposed facility, including all turbines, satisfy this setback
24 requirement.

25 *4. Minimum Height. The lowest point in the sweep of a WECS blade shall be a minimum*
26 *height above the tallest current or foreseeable obstruction within a horizontal, 500 foot*
27 *radius of a WECS or a radius of 10 rotor diameters (for horizontal axis) and 5 WECS heights*
28 *(for vertical axis), whichever is greater, as described in (a), (b), and (c) below. The radius*
29 *shall be measured from the center point of the tower.*

30 *b. At least 30 feet above current or foreseeable obstructions within 45 degrees of the*
31 *direction(s) of prevailing wind for a horizontal axis WECS on a site with site-specific wind*
32 *direction data or representative off-site data.*

33 Exhibit X, Figure X-1 identifies the locations of all existing structures within the project
34 area.⁶⁹ These structures meet the height limitation standards described in WCLUDO Section
35 3.210(F)(2), which provides a maximum height of 35 feet for structures within the A-1 zoning
36 district. Section 3.210(C)(4)(b) requires a 30-foot clearance above the tallest allowable structure,
37 requiring a total a distance of 65 feet from grade to the lowest sweep of the WECS rotor.
38 Turbines with an 80-meter (262 feet) hub height and a rotor radius of the approximately 51.5
39 meters (165 feet), will provide approximately 28.5 meters (93 feet) of clearance from grade.⁷⁰
40 This provides the clearance necessary to comply with the standard height requirement for the A-1
41 zone. Accordingly, the Department recommends that the Council find that the lowest point in the
42 sweep of the turbine blades for the Summit Ridge facility satisfy the minimum height standards.

⁶⁷ Final ASC, Exhibit K, p. 38 and Exhibit P, Section P.8.1

⁶⁸ Final ASC, Exhibit K, p. 38

⁶⁹ Final ASC, Exhibit X, Figure X-1

⁷⁰ Final ASC, Exhibit X, Table X-3



Glenrock wind farms could be first in U.S. with radar-controlled lights

By JEREMY FUGLEBERG Casper Star-Tribune | Posted: Wednesday, May 18, 2011 11:45 pm

CASPER, Wyo. — Two adjacent wind farms planned south of Glenrock might be the first in the United States whose lights turn on only when aircraft are near, thanks to a radar-controlled system.

That type of system could dampen objections from neighbors who don't like the idea of blinking lights on the mountain slopes through the night.

While such systems are already in use with other types of obstruction, they have yet to be approved for use in wind farms in the U.S. However, they could receive approval from the Federal Aviation Administration by late summer, an FAA representative said.

Park City, Utah-based Wasatch Wind plans to build both 31-turbine wind farms on property along Mormon Canyon Road south of Glenrock. One of the complaints from those opposed to the development is the light pollution cast from dozens of lights mounted on turbines hundreds of feet in the air.

"The radar system to keep the turbine lights off at night is very important to us because it will resolve the largest concern we've heard among the residents and local governments of Converse and Natrona counties — keeping the night skies dark," said Michelle Stevens, communications director for Wasatch Wind.

The Northern Laramie Range Alliance, which formed to oppose wind farm and high-powered transmission lines in the area, decided not to comment on the systems, pending FAA approval.

But at a Converse County Commission hearing in April, members included "light pollution" concerns in their list of complaints about the development.

Employees of the FAA will conduct measurements and other tests of a radar-controlled system in use at the Talbot Wind Farm in Lake Ontario, Canada, in July, said Jim Patterson, an airport safety specialist with the FAA's technical center in Atlantic City, N.J.

"We are trying to work as fast as we can to get this done," he said.

The systems consist of radar attached to wind turbine towers. The radar detects aircraft and their flight paths as they near the wind farm and turns on the farm's lights if the aircraft are flying toward or close to the turbines. A system designed by Norway- and Florida-based OCAS Inc. also broadcasts an audio warning on radio frequencies used by pilots.

Patterson said the FAA's goal at the Canadian wind farm is to gain an understanding of how the systems work installed in a wind farm, and create rules that will give pilots anywhere in the country a similar experience when dealing with wind farms whose lights are controlled by radar.

"One thing we need to make sure is that we're consistent, that the system would work the same way on the East Coast or the West Coast," he said.

Once the measurements and tests are completed, the FAA will release an advisory circular providing guidance for use of the systems on wind farms, he said.

Similar systems are already approved for use in the U.S. to light some aviation obstructions, such as power lines.

Stevens said Wasatch Wind is in talks with the firms OCAS Inc. and DeTect Inc. about installing their systems, once the FAA gives the go-ahead.

While DeTect didn't return a request for comment Wednesday, McCarthy of OCAS said her firm is just waiting on FAA approval to move forward on a number of projects in the U.S.

"We actually have a couple of contracts right now that are pending the final FAA signoff," she said.

The OCAS radar-controlled light system was invented by Norwegian Royal Air Force pilots in 2000. It has been approved for use in Norway, Sweden and Canada, and is going through the approval process in Germany.

McCarthy said her company would be excited for the Wasatch Wind project to take the lead in using the system in this country.

"It would be a good opportunity to show what can be done, what's possible," she said.

Stevens said that if the technology is approved after the wind farms are constructed, it will still be installed.

"If the radar technology is approved after the Pioneer Wind Park is constructed, we've committed to Converse County, to Wyoming and its residents that we will install the radar system when it's approved," she said.

The Converse County Commission approved a permit for the wind farms on May 10, and the Wyoming Industrial Siting Council, which must grant a permit for wind farms of that size, just wrapped up three days of hearings about the development on Wednesday.

The council will hear rebuttal testimony, closing statements, and will deliberate on its decision June 13.



Federal Aviation Administration

Memorandum

Date: JUN 15 2009

To: Obstruction Evaluation Services Personnel

From: Kevin Haggerty
Manager, Obstruction Evaluation Services

Subject: Changes to Federal Aviation Administration (FAA) Advisory Circular (AC) 70/7460-1K, Obstruction Marking and Lighting

We are preparing changes to FAA AC 70/7460-1K, Obstruction Marking and Lighting. The changes will incorporate Audio Visual Warning Systems (AVWS) as an acceptable form of marking and lighting that will meet established technical standards to identify an obstruction to air navigation.

AVWS is an all-weather, day and night, low-voltage, Radar-based obstacle avoidance system that utilizes current obstruction lighting products and does not require additional equipment in an aircraft.

AVWS activates obstruction lighting and audio signals to alert pilots of potential collisions with obstacles such as power lines, wind turbines, bridges, and towers. The obstruction lights and audio warnings are inactive when there is no air traffic in the area of the obstruction.

The FAA has analyzed and reviewed the Obstruction Collision Avoidance System (OCASTM) and has determined that OCASTM provides an equivalent level of safety and is a suitable alternative to the marking and lighting requirements of obstacles as recommended in FAA AC 70/7460-1K.

OCASTM is the first AVWS to be installed, tested, and approved in the National Airspace System (NAS).

The OES will accept, analyze, and approve an AVWS as an alternative to conventional lighting systems on a case-by-case basis.

OES personnel shall:

1. Review each FAA Form 7460-1, Notice of Proposed Construction or Alteration, for requests to use an AVWS.

2. If an AVWS is indicated, select "AVWS" as the requested Marking and Lighting.
3. Ensure that Technical Operations and Spectrum Engineering are selected to provide comment on the aeronautical study.
4. Business rules will be incorporated into the Obstruction Evaluation/Airport Airspace Analysis (OE/AAA) System based on AVWS as the Requested Marking/Lighting to override current auto screens and ensure proper coordination. If AVWS is not selected as the Requested Marking/Lighting, ensure that the case is manually unlocked for review from AF and FM.
5. Before the issuance of the Determination, ensure that comments from Technical Operations and Spectrum Engineering are reviewed and specifically acknowledge that the AVWS was reviewed, approved, or conditionally approved (e.g., No Audio).
6. Adjudicate all AVWS concerns and indicate in the Additional Information section that AVWS is approved for the specific study with or without conditions or limitations prior to the issuance of a Determination of No Hazard to Air Navigation.
7. If AVWS is approved with conditions or limitations or if AVWS is not approved: provide your supervisor with the Aeronautical Study Number and wait for approval to issue the Determination of No Hazard to Air Navigation.
8. Ensure that the 7460-2, Notice of Actual Construction or Alteration, indicates that AVWS is installed.

The OES will incorporate an AVWS section to the external OE/AAA Web site to inform the public about AVWS and its benefits in the NAS.

Please direct any questions or comments to the Manager, OES.



Federal Aviation Administration
Air Traffic Airspace Branch, ASW-520
2601 Meacham Blvd.
Fort Worth, TX 76137-0520

Aeronautical Study No.
2010-WTE-1248-OE

Issued Date: 04/29/2010

Travis Bullard
Eolian Renewable Energy
155 Fleet Street
Portsmouth, NH 03801

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine Turbine 5
Location: Bangor, ME
Latitude: 44-39-05.34N NAD 83
Longitude: 68-38-39.27W
Heights: 410 feet above ground level (AGL)
1187 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is marked and/or lighted with AVWS and White Paint.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be completed and returned to this office any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part I)
 Within 5 days after the construction reaches its greatest height (7460-2, Part II)

See attachment for additional condition(s) or information.

Your request for consideration to utilize an Audio Visual Warning System to operate the is approved. See attached for additional information.

This determination expires on 04/29/2012 unless:

- (a) extended, revised or terminated by the issuing office.
- (b) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE POSTMARKED OR DELIVERED TO THIS OFFICE AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. This determination is based, in part, on the foregoing description which includes specific coordinates and heights . Any changes in coordinates will void this determination. Any future construction or alteration requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (404) 305-7081. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2010-WTE-1248-OE.

Signature Control No: 682686-125309177

Michael Blaich
Specialist

(DNE -WT)

Attachment(s)
Additional Information

Additional information for ASN 2010-WTE-1248-OE

Use of an Audio Visual Warning System is approved. Audio Visual Warning Systems use a combination of both audio (through VHF radio based communications to an aircraft) and visual lighting warnings systems.

