Oregon
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To: Oregon Energy Facility Siting Council

From: Sarah Esterson, Senior Siting Analyst

Date: June 15, 2018

Subject: Agenda Item I (Action Item):
Golden Hills Wind Project, Request for Amendment 5 –
Certificate Holder Referral to Council of Department's Type A Review
Amendment Process Determination for the June 29, 2018 EFSC Meeting

BACKGROUND

The Oregon Energy Facility Siting Council (Council) issued a site certificate for the Golden Hills Wind Project on May 15, 2009, authorizing construction and operation of a 400 megawatt (MW) wind energy generation facility (facility) to be located in Sherman County. The approved but not yet constructed facility would consist of up to 125 wind turbines and would include as related and supporting facilities: a power collection system, a substation, a 230-kilovolt (kV) transmission line, meteorological towers, supervisory control and data acquisition ("SCADA") system, operations and maintenance facility, access roads, and temporary laydown areas.

The certificate holder is Golden Hills Wind Farm, LLC, (Golden Hills or certificate holder) which is wholly owned by Pacific Wind Development, LLC, a subsidiary of Avangrid Renewables, LLC. On May 4, 2018, the certificate holder submitted preliminary Request for Amendment 5 (pRFA5) and a Type B review amendment determination request (Type B Review ADR) pursuant to OAR 345-027-0057. The facility modifications included in pRFA5, as further described below, include changes in wind turbine and meteorological tower dimension specifications, changes in temporary access road design, and amendment of an existing site certificate condition.

On June 1, 2018, the Department issued its determination that Type A review was appropriate for pRFA5. On June 7, 2018, the certificate holder requested to refer the Department's June 1, 2018 Type A review determination to Council. *(see Attachments 1, 2 and 3)*

PROPOSED FACILITY MODIFICATIONS

The proposed facility modifications in pRFA5 include a differing wind turbine model option that would increase turbine hub height from 311 to 404 feet, increase blade tip height from 521 to 650 feet, and reduce minimum aboveground blade tip clearance from 65 to 46 feet; change temporary access road design (increasing road width from 40 to 100 feet); and increase height of meteorological towers (from 311 to 404 feet). No other facility or site certificate modifications are requested.

ASSESSMENT OF TYPE B REVIEW AMENDMENT DETERMINATION REQUEST

Overview

Site certificate amendment process rules are established in OAR 345-027-0011 to -0100, which includes three review process options ("Type A, B, and C"). Type A review is the default process, and includes a mandatory in-person public hearing on the draft proposed order (DPO), and an opportunity for a person to request a contested case proceeding on the amendment request. The Type A review process also includes longer maximum timelines for certain Department procedural steps (though the Department can complete procedural steps more expeditiously than the maximum time allowed and has already surpassed the maximum time allowed for both Type A and B review for pRFA5). The Type B review process does not include an in-person public hearing on the DPO, and does not have the opportunity for a person to request a contested case proceeding. The Type B review process also has shorter maximum timelines for certain Department procedural steps. The Type C process is only available during facility construction and is not at issue here.

If a certificate holder believes the Type B review is the justifiable amendment review process, it must submit the request pursuant to OAR 345-027-0057(8) and include supporting information to the Department.

Council Scope of Review

Pursuant to OAR 345-027-0057(8), in determining whether a request for amendment justifies review under the Type B Review process described in OAR 345-027-0051(3), the Council may consider factors including but not limited to:

(a) The complexity of the proposed change;
(b) The anticipated level of public interest in the proposed change;
(c) The anticipated level of interest by reviewing agencies;
(d) The likelihood of significant adverse impact; and
(e) The type and amount of mitigation, if any.

Pursuant to OAR 345-027-0057(7), in the review of a certificate holder's request to refer the Department's determination, the Council may concur, modify or reject the Department's Type A review determination.

Summary of Staff Evaluation of Type B Review ADR

Based on consideration of the OAR 345-027-0057(8) factors and the analysis and reasoning presented in the Department's June 1, 2018 Type A review determination, incorporated by reference and provided as Attachment 2 to this staff report, the Department determined that pRFA5 be processed under Type A review. The Department based its determination of Type A review on the following:

- The proposed modifications are considered complex;
- There is an anticipated level of interest from members of the public and reviewing agencies in the proposed modifications;
- The likelihood of potential significant adverse impacts from the proposed modifications is uncertain.

Recommended Council Action

The Department recommends the Council conclude, based on the reasoning and analysis provided in the June 1, 2018 determination that the proposed modifications be considered complex; there is an anticipated level of interest from members of the public and reviewing agencies in the proposed modifications; and, the likelihood of potential significant adverse impacts from the proposed modifications is uncertain. The Department then recommends that Council concur with the Department's Type A review determination.

Attachments:

Attachment 1:	Golden Hills Wind Farm, LLC's Type B Review Amendment Determination Request for Request for Amendment 5 (May 4, 2018)
Attachment 2:	Department's Type B Review ADR Evaluation and Determination (June 1, 2018)
Attachment 3:	Golden Hills Wind Farm, LLC's Referral of Department's June 1, 2018 Type A Review Determination to Council (June 7, 2018)

Attachment 1:

Golden Hills Wind Farm, LLC's Type B Review Amendment Determination Request for Request for Amendment 5 (May 4, 2018)

*Please note: The Type B Review Amendment Determination Request and preliminary Request for Amendment 2 are provided in this attachment. The supporting attachments to pRFA2 have not been included to reduce printed materials, but are available with the pRFA2 documentation provided on the Department's website at: https://www.oregon.gov/energy/facilities-safety/facilities/Pages/GHW.aspx

AVANGRID
RENEWABLES

Matt Hutchinson
Senior Permit Manager - West

May 4, 2018

Todd Cornett
Siting Division Administrator
Oregon Department of Energy
550 Capital Street NE
Salem, Oregon 97301

Re: Golden Hills Wind Project – Amendment Determination Request and Request for Amendment 5

Dear Mr. Cornett:

Golden Hills Wind Facility, LLC (Golden Hills), a wholly-owned subsidiary of Avangrid Renewables, LLC (Avangrid), is seeking a fifth amendment to the Golden Hills Wind Project Site Certificate (RFA 5) to change a site certificate condition on turbine dimensions necessary for project construction. Golden Hills is requesting that the Energy Facility Siting Council ("EFSC") review RFA5 via a Type B review process per OAR 345-027-0051(3). This submittal includes Golden Hills' Amendment Determination Request ("ADR") for Type B review along with Golden Hills' RFA5 package.

In RFA 5, Golden Hills proposes to update turbine dimensions to reflect current turbine technology. Modern turbines are larger, more efficient, and can generate more electricity per turbine than the previous generation of turbines that were approved for use at the Golden Hills Wind Project. This change is similar to the turbine modification Avangrid sought at the Montague Wind Energy Facility in 2017 before beginning construction in September 2017.

Golden Hills is requesting a modification to a single site certificate condition. Specifically, in order to use of modern turbines, Golden Hills requests that site certificate condition PRE-DC-O1 be revised to:

- Increase the turbine hub height limit from 95 meters to 123 meters;
- Increase the maximum blade tip height to from 159 meters to 198 meters;

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- Reduce the minimum blade tip clearance from 19.8 meters to 14 meters; and
- Eliminate the restriction on tower and nacelle weight per turbine.

The turbines will be installed within the previously approved micrositing corridors. Overall, these changes could allow Golden Hills to use fewer turbines and minimize the project's footprint and associated resource impacts.

As mentioned above, Golden Hills submits as a part of RFA 5, an ADR, seeking confirmation that RFA 5 qualifies for Type B review under OAR 345-027-0051(3). Section 2 of RFA 5 demonstrates that the proposed change is of the nature contemplated for Type B review and meets the factors set forth in OAR 345-027-0057(3). Section 2 relies on Section 3 in the RFA 5 to provide additional justification to support a Type B review, which is why Golden Hills opted to submit the ADR concurrent with the RFA 5 package.

Turbine specifications related to RFA 5 are provided under a confidential cover.

Thank you for your consideration.

Sincerely,

Matt Hutchinson

Enclosure

Request for Amendment No. 5 to the Site Certificate for the Golden Hills Wind Project

Prepared for

Oregon Energy Facility Siting Council

May 2018

Prepared and Submitted by

Golden Hills Wind Facility, LLC

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Section 1. Introduction

The Golden Hills Wind Project (Facility) is a wind energy generation facility in Sherman County, Oregon, with an electrical capacity of up to 400 megawatts (MW). On May 15, 2009, the Oregon Energy Facility Siting Council (the Council) issued a site certificate approving the Facility. Golden Hills Wind Farm, LLC (Golden Hills) holds the *Fourth Amended Site Certificate for the Golden Hills Wind Project* (Site Certificate), dated April 28, 2018.[1] The Site Certificate has previously been amended four times, to extend the construction deadlines, update the Facility design , and to account for a change in Golden Hill's parent ownership. As approved in the Site Certificate, the Facility could consist of up to 125 wind turbines, as well as related or supported facilities located within an area encompassing approximately 27,400 acres of privately owned land (Figure 1; Site Boundary). Golden Hills expects to begin Facility construction by June 18, 2020. For this Fifth Amendment Request (RFA 5), Golden Hills proposes to update turbine dimensions to reflect current technology it anticipates using for Facility construction.

Golden Hills plans on using the most technologically advanced turbines at the Facility, selecting designs that are best suited for the wind resource of the site. However, the Site Certificate limits Golden Hill's ability to select the most viable turbine because the dimensions of modern turbines differ from those previously approved by the Council in the Final Order on the Site Certificate[2]. While modern turbines are larger in dimension, fewer turbines are needed to generate the maximum Facility output, and depending on the turbine type selected, Golden Hills could decrease the number of installed turbines. Therefore, Golden Hills is requesting two modifications to the Site Certificate. First, Golden Hills requests that Condition PRE-DC-01 be amended to allow turbines with a higher hub height, taller maximum blade tip height, or shorter minimum blade clearance. Second, Golden Hills also requests to strike Condition PRE-DC-01(e) pertaining to maximum combined weight of metals from the Site Certificate, as this condition no longer holds relevancy with the any aspect of this Facility, including its construction, operation, or decommissioning. If approved, RFA 5 will enable Golden Hills to select the most economically viable turbine for the Facility while also reducing the Facility's footprint.

While the proposed changes in RFA 5 will not result in a significant adverse impact that the Council has not previously considered, Golden Hills submits RFA5 under Oregon

[1] The Council issued a Final Order approving the Third Amended Site Certificate on February 24, 2017. The Third Amended Site Certificate was fully executed on February 24, 2017. The Fourth Amended Site Certificate was fully executed on April 27, 2018.

[2] Final Order on Request for Contested Case and Amendment #3 of the Site Certificate, p. 29 (February 24, 2017).

Administrative Rules (OAR) 345-027-0050(4)(c) because the proposed changes require modifications to the text of the Site Certificate conditions.

Section 2. Amendment Determination Request

Golden Hills submits as a part of RFA 5 an amendment determination request under OAR 345-027-0057(3) seeking confirmation that RFA 5 qualifies for Type B review under OAR 345-027-0051(3). Section 3.3 provides the narrative description of the proposed changes, Figures 1 and 2 provides maps and turbine diagrams representing the proposed changes, and this Section 2 provides Golden Hill's evaluation for why RFA 5 qualifies for Type B review under OAR 345-027-0051(3).

OAR 345-027-0057(8) provides factors the Department may consider when considering whether RFA5 justifies review under a Type B process. Specifically, the Department may consider factors, including but not limited to: (a) the complexity of the changes proposed in RFA 5; (b) the level of anticipated public interest in RFA5; (c) the anticipated level of interest reviewing agencies may have in RFA5; (d) the likelihood of significant adverse impacts posed by the changes in RFA 5; and (e) the type and amount of any additional mitigation triggered by RFA 5. The following reasons demonstrate that RFA 5 is eligible for Type B review:

- **Proposed changes are minor –** Golden Hills proposes two modifications to Site Certificate condition language. As described in Section 3.3 below, the proposed changes would modify the turbine dimensions by increasing the maximum turbine hub height by 28 meters, increasing the maximum blade tip height by 40 meters, and decreasing the minimum blade tip clearance by 5.8 meters. The proposed change to turbine dimensions does not change the Council's previous conclusions on applicable standards, including concerns about visual or noise impacts. Golden Hills completed a visual analysis using the taller turbines and concluded that taller turbines will be visible at the same scenic resources as previously considered (see Section 4.10). Modern turbines have a similar noise profile as the turbines that previous considered by the Council (see Section 5).

  The Site Boundary and micrositing corridors will not be changed; therefore, there are no new resources (e.g., unknown cultural sites, different habitat types, or different types of farm use) to consider that were not previously evaluated. Other than the change in turbine dimensions, the Facility will substantially be constructed and operated in the same manner as approved by the Council.

- **Anticipated public interest will likely be low -** The proposed change in turbine dimensions may generate public comments related to wildlife impacts, turbine setbacks, and health and safety standards. The Department may look to the number of comments received on RFA 4 along with the nature of comments received on the Request for

Amendment 3 on the Montague Wind Power Facility (Montague RFA 3) which also involved a similar change in turbine dimensions to account for modern turbine technology. The comments on Golden Hills RFA 4 were minimal (two comments received) and were related to the Department's review of federally listed species[3] and locations of cultural sensitive areas[4]. One public comment was received on Montague RFA 3 raised concerns related turbine setbacks; however the Department's response to this comment did not require changes to Montague's site certificate conditions or additional analysis[5].

In general, there has been numerous opportunities for public comments on the Facility since 2008. Of the substantive public comments received during the prior proceedings[6], the comments related to noise, Sherman County setbacks, visual impacts, and safety concerns could be associated with the proposed changes to turbine dimensions. In response to public concerns about the operational noise from the Facility, the Council concluded that Golden Hills was able to comply with the Oregon Department of Environmental Quality's (ODEQ) noise control regulations (Oregon Revised Statutes [ORS] 340-035-0035), and imposed Condition PRE-CJ-01 to complete a noise analysis based on the final design to demonstrate compliance with noise control regulations. The modern turbines considered under this amendment request have a similar noise profile to the turbines that were previously considered; therefore, the Council's previous findings and site certificate condition to address public comments on noise are adequate (see Section 5 for more information).

In response to public concerns regarding setbacks, the council imposed Condition PRE-CJ-01 requiring the Certificate Holder to satisfy Sherman County's Ordinance #39-2007 setback ordinance which applies to all turbine types, regardless of size. The modern turbines considered under this amendment request will be in compliance with the Ordinance. Therefore, the proposed changes in this amendment request do not change ODOE's response to public comments that Golden Hills is able to construct the Facility consistent with local land use codes.

In response to public concerns about visual impacts, the Council imposed conditions on painting and signs (PRE-SR-01), building types (GEN -SR-01), and lighting (OPR -SR-

[3] Comment by Irene Gilbert.

[4] Comment by Confederated Tribes of the Umatilla Indian Reservation.

[5] Montague Wind Power Facility Final Order on Request for Amendment #3, July 2017, p.10.

[6] EFSC also received public comments on Facility location, public notice procedures, mineral rights, lighting, fish and wildlife habitat, revegetation, health impacts, transmission line, wetlands and waters impacts, and the Oregon Trail. None of these categories are related to turbine dimensions.

01).[7] None of these conditions are related to turbine dimensions, and will be unaffected by the proposed changes. Regarding public comments on potential visual impacts to protected areas, Golden Hills has reanalyzed the visual impact model (Zone of Visual Influence; "ZVI") with the proposed taller turbines to demonstrate that the Council can rely on its previous finding (see Section 4.6).

In response to public concerns about the structural reliability of larger turbines, the Council imposed setbacks from public roadways, residences, and the lease boundary. Golden Hills can conform to these public safety setbacks with the taller turbines described in this amendment request because the setbacks are a function of turbine height; as the turbine height increases so does the setback. The modern turbines described in this amendment request are designed and engineered to the same safety and reliability standards as the turbines that were previously considered by the Council. Therefore, the previous response to public safety concerns is adequate, considering the proposed changes.

- **Anticipated level of input from reviewing agencies is low** - Reviewing agencies have had multiple opportunities to provide input on the Facility and the associated Site Certificate conditions. Golden Hills expects the level of input from reviewing agencies to be similar to comments provided on the *Revised Proposed Order for the Third Amended Site Certificate*, which also changed the turbine dimensions. In that proceeding, ODOE received two agency comments. The Sherman County Planning Department provided a letter stating they had no comments on changes to turbine dimensions, or on other proposed changes. The second letter was from the Oregon Department of State Lands (ODSL) confirming the wetland delineation procedures. None of these agency comments are related to changes in turbine dimensions.

  Regarding potential agency comments on wildlife impacts, ODFW submitted the following comment on Montague RFA 3, "the modification to a larger MW per turbine reduces the overall number of turbines and therefore reduces the footprint of the facility. This further minimizes impacts to wildlife habitat. As stated in the RFA, the reduced blade-to ground distance does have the potential for additional mortality effects on birds and bats. ODFW agrees with the applicant that this is a possibility, but like the applicant, ODFW is not able to find published information that describes the mortality effects of these larger turbines on avian and bat species. Given the lack of available information demonstrating an increased risk to wildlife beyond what has already been assumed in the existing facility design and mitigation plan, ODFW assumes the existing avoidance and mitigation strategies remain adequate. Therefore, ODFW does not have any additional measures or practices beyond those established in the existing Site

[7] Golden Hills Wind Project Final Order, p.86 (May 15, 2009).

Certificate." This statement is relevant to the proposed change at the Facility because it supports the concept that fewer, larger turbines can result in reduced impact, and reiterates that proposed avoidance and minimization measures are effective regardless of turbine size. A detailed analysis of wildlife impacts is provided in Section 4.8

Golden Hills believes that comments from reviewing agencies on RFA 5 will be consistent with past input. In preparation of RFA 5, Golden Hills consulted with the Oregon Department of Aviation and the Navy about the use of taller turbines near Wasco County Airport's airspace and military training routes. See section 4.15 for more information. Golden Hills also consulted with Department of Geology and Mineral Industries regarding use of larger turbines and compliance with structural standards. See section 4.3 for more information.

- **Proposed changes will reduce impact –** RFA 5 does not propose to increase the number of turbines or enlarge the Facility footprint. In fact, if approved, the proposed changes would allow Golden Hills to generate the maximum output of the Facility with fewer turbines. Accordingly, the Facility could be constructed with a significantly smaller footprint, as fewer turbines, roads, and electrical collector lines will be needed. Impacts to wildlife habitat and agricultural areas would also then be reduced. Golden Hills will construct any selected turbine within the approved micrositing corridors.
- **No new mitigation is needed –** Golden Hills will implement its Habitat Mitigation Plan and Wildlife Monitoring and Mitigation Plan based on the final design of the Facility. These plans allow for changes in turbine dimensions and areas of habitat impacts, and Golden Hill's obligation to provide compensatory mitigation for temporary and permanent impacts to Category 3 and 4 habitats does not change in RFA5. With a reduced Facility footprint, there will be less habitat impacts to mitigate, and Golden Hills has secured a mitigation parcel that is large enough to offset impacts of all turbine scenarios.[8] Sections 3 and 4 demonstrate that the proposed changes do not result in new significant impacts that require mitigation.

For these reasons, the Department may find that RFA 5 justifies review under the Type B review process.

[8] The certificate holder has entered into a conservation easement agreement with a private landowner that allows the certificate holder to conduct certain habitat improvements on a 22-acre habitat improvement parcel as well as provides the certificate holder with the option to expand the habitat improvement parcel to an adjacent 29-acre parcel. The total area available to the certificate holder to perform habitat improvements is 51 acres in Sherman County. The total area available to perform habitat improvements through the conservation easement is more than adequate to account for the anticipated compensatory mitigation requirements.

Section 3. Details of Proposed Changes

3.1 Contact Information

Name and Address of Certificate Holder:

Golden Hills Wind Facility, LLC
1125 NW Couch Street, Suite 700
Portland, OR 97209

Name, Mailing Address, Email Address, and Phone Number of Individual Responsible for Submitting the Request:

Brian Walsh
Senior Developer
Avangrid Renewables, LLC
1125 NW Couch Street, Suite 700
Portland, OR 97209
(503) 796-6928
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3.2 Redlined Changes to the Site Certificate

Golden Hills seeks Council approval of the following revisions to Condition PRE-DC-01 (also, see Attachment 1):

> *The certificate holder shall construct a facility substantially as described in the site certificate and may select up to 125 turbines, subject to the following restrictions and compliance with other site certificate conditions. Before beginning construction, the certificate holder shall provide to the Department a description of the turbine types selected for the facility demonstrating compliance with this condition.*
>
> *a) The total number of turbines at the facility must not exceed 125 turbines.*
>
> *b) The combined peak generating capacity must not exceed 400 megawatts.*
>
> *c) The turbine hub height must not exceed 123 ~~95~~ meters and the maximum blade tip height must not exceed 198 ~~158~~ meters.*
>
> *d) The minimum blade tip clearance must be 14 ~~19.8~~ meters above ground.*

~~*e) The maximum combined weight of metals in the tower (including ladders and platforms) and nacelle must not exceed 336 U.S. tons per turbine.*~~

3.3 Description of Proposed Changes

The proposed changes to the Facility allow Golden Hills to select a turbine type that requires fewer turbines to generate the maximum output authorized by the Site Certificate. Section III.A.I of the Site Certificate authorizes the use of 125 turbines with a peak electric generating capacity of up to 400 MW, whereas the proposed changes allow Golden Hills to achieve this same output with as few as 95 turbines[9]. Golden Hills has not yet selected a turbine type for the Facility and this amendment request could allow the use of more economical and technologically advanced turbines. However, Golden Hills does not seek to reduce the maximum number of turbines allowed because the total number of turbines that will be used is a function of interconnection capacity and the actual number of turbines used will vary by turbine type. If turbines with larger generation capacity are selected, then fewer turbines will be installed. It would violate the interconnection agreement to install more generation capacity than allowed under the interconnection agreement. For example, it would be infeasible to install 125 4.2 MW turbines as the interconnection agreement would be exceeded.

Golden Hills seeks Council approval to alter the minimum blade tip clearance from 19.8 meters to 14 meters above ground, lengthen the maximum turbine hub height from 95 meters to 123 meters, and lengthen the maximum blade tip height from 158 meters to 198 meters. Overall, these changes are minor compared to the authorized turbine dimensions (Table 1).

Table 1. Turbine Comparison

Turbine Specification	Approved	Proposed
Maximum Hub Height	95 meters	123 meters
Maximum Blade Tip Height	158 meters	198 meters
Minimum Blade Tip Clearance	19.8 meters	14 meters

Also related to turbine types, Golden Hills requests to strike the requirement mandating that that the combined weight of metals in the tower must not exceed 336 U.S. tons per turbine. The underlying basis for this condition, which limited the weight of metals in each tower based on anticipated landfill capacity at the time of Facility retirement, can no longer be justified. The evolution of turbine technology has resulted in more efficient turbines which are larger and

[9] Golden Hills notes that the Facility's interconnect with Bonneville Power Administration's Schoolhouse Substation is limited to 200 MW, but the Site Certificate allows a maximum generation output up to 400 MW. To be consistent with past final orders, this amendment request assumes 125 turbines, each with generation output of 3.2 MW, for a maximum output of 400 MW.

heavier than previous models. The closest landfill to the Facility is the Columbia Ridge Recycling and Landfill Center. This landfill is not projected to reach capacity for approximately 143 years[10]. The landfill has 329 million tons of remaining capacity available, and the proposed changes will not significantly alter Golden Hills' impact on the landfill. Further, Golden Hills plans to recycle all components capable of being salvaged, resulting in a significant reduction in mass to be deposited in the landfill.

For the purpose of evaluating how the proposed changes could affect resources or interests protected by applicable laws and Council standards, RFA 5 considers two differently sized turbines made by Vestas: the V136 and V150 turbine. These turbine models are representative of the types of turbines that will be allowed if the amendment request is approved, but are not necessarily the turbine model or manufacture that will be selected by Golden Hills, as other manufacturers make turbines within this range of turbine dimensions. Figure 2 compares the Vestas V136 and V150 turbines to the turbines currently authorized by the Site Certificate. In support of this request, Golden Hills will provide detailed turbine specifications for the Vestas V136 and V150 under a separate cover.

Because Golden Hills will construct turbines within the approved micrositing corridor, there are no updated locational maps or geospatial data provided in this amendment request. This amendment request compares the proposed changes to analysis presented in the application for site certificate and subsequent amendments (Table 2); therefore, all exhibits and information provided in the previous Golden Hills' applications and amendment requests is hereby incorporated by reference.

Table 2. Comparison of Turbine Types

Description	Approved	Proposed
Number of turbines	125 turbines	No change [1]
Maximum Hub Height	95 meters	123 meters
Maximum blade tip height	158 meters	198 meters (+21%)
Minimum blade clearance	19.8 meters	14 meters (-30%)
Maximum rotor swept area per turbine	12,668 m^2	17,671 m^2
Turbine sound level	106 dBA	104.9 dBA [3]
Temporary impact per turbine	5 acres [2]	No change
Permanent impact per turbine	7,850 square feet	No change
Met Tower Height	95 meters	123 meters

[10] http://www.wmnorthwest.com/landfill/columbiaridge.htm

Table 2. Comparison of Turbine Types

Description	Approved	Proposed
Operational water use	5,000 gallons of water/day	No change
Number of substations	One substation	No change
Number of O&M buildings	One building	No change
Length of transmission line	5 miles	No change
Length of collector line	62 miles	No change [4]
Length of new access roads	41 miles	No change [4]
Permanent access road width	20 feet	No change
Temporary access road width	40 feet	Up to 100 feet [5]
Length of crane paths	11 miles	No change
Crane path width	40 feet	Up to 100 feet [5]
Total bond amount	$14,424,936	No change [6]

1. Use of turbines types described in this request could reduce the number of turbines to as few as 95 turbines; however, Golden Hills is not requesting to change the maximum number of turbines allowed.

2. Sized based on Final Order on the ASC, "turbines – the site would include the area within 150 feet in all directions..."

3. Based on turbines with serrated trailing edges (STE) on the blades which are standard on the Vestas turbine models considered in this amendment request.

4. Use of turbine types described in this request is expected to reduce the length of new access roads and collector lines by 30 to 50 percent.

5. Temporary access road and crane width will vary depending on need for cut and fill slopes and associated work area. However, the width will be constrained, as necessary, to avoid Class 1 and 2 habitat impacts.

6. As described in Section 4.7, the total bonding amounts for scenarios using the Vestas V136 or V150 are less than the approved amount; however, Golden Hills does not request to change the decommissioning estimates at this time, but would rather rely on Condition PRE-RT-01, which requires Golden Hills to obtain a bond prior to construction based on final design.

Section 4 demonstrates how the proposed changes are consistent with Council's previous findings, and consistent with applicable laws and Council standards. Overall, the requested change could allow fewer impacts to wildlife habitat and farm land. The Facility will be constructed and operated in the same manner as approved by the Council, and Golden Hills will still be able to comply with site certificate conditions and still be required to obtain approvals for the FAA and Aviation for taller turbines.

Section 4. Applicable Council Standards

The Council standards relevant to RFA 5 include Division 22 (General Standards for Siting Facilities) and Division 24 (Specific Standards for Siting Facilities). The Facility is a wind power generating facility. Therefore, Division 23, which applies to non-generating facilities, does not

apply. Similarly, inapplicable provisions of Division 24 (e.g., standards applicable to gas plants, gas storage, non-generating facilities) are not discussed. The requirements of each applicable Council standard are outlined in Table 3, along with Golden Hill's responses.

Table 3. Applicable General and Specific Council Standards for Siting Facilities

Council Standard	Division Subpart	Applicability to Proposed Change
Division 22 – General Standards for Siting Facilities		
General Standard of Review	0000	**Applicable.** This standard is applicable regardless of proposed changes and described in Section 4.1.
Organizational Expertise	0010	**Not applicable.** The proposed change will not affect Golden Hills' ability to construct and operate the Facility as described in the Site Certificate. Golden Hills' parent company will remain as Pacific Wind Development LLC, a subsidiary of Avangrid Renewables, LLC. Golden Hills, along with its parent companies, has the necessary expertise to construct and operate the Facility regardless of turbine dimensions.
Structural Standard	0020	**Applicable.** Site certificate conditions that are related to safety and reliability do correspond to turbine dimensions, as setbacks are a function of turbine height. See Section 4.3 for more information on how the turbine types described in this amendment request meet or exceed engineering standards for wind turbines.
Soil Protection	0022	**Not applicable.** This request does not seek to change the total acres of soil impacts previously considered by the Council. Use of the turbines described in this amendment may reduce permanent soil impacts, as fewer turbines are needed. Further, nothing in this request limits Golden Hills' ability to comply with its National Pollutant Discharge Elimination System (NPDES) permit. See Section 4.4 for more information on applicable permits.
Land Use	0030	**Applicable.** The delivery of larger turbine components may require additional improvements to County or State roads. See section 4.5 for more information.
Protected Areas	0040	**Applicable.** The proposed increase in turbine heights affects the Council's previously finding on visual impacts on protected areas. See Section 4.6 for a revised visual analysis.

Table 3. Applicable General and Specific Council Standards for Siting Facilities

Council Standard	Division Subpart	Applicability to Proposed Change
Retirement and Financial Assurance	0050	**Applicable.** The proposed changes to turbine size and number affects the decommissioning estimate that was previously approved by the Council. See Section 4.7 for a revised decommissioning estimate; however, Golden Hill is not requesting to change the estimate at this time, and instead will rely on Condition PRE-RT-01 to post a bond amount based on final design prior to construction.
Fish and Wildlife Habitat	0060	**Applicable.** The size and number of turbines affects the amount of compensatory mitigation needed, as outlined in the Habitat Mitigation Plan and post construction monitoring efforts described in the Wildlife Monitoring and Mitigation Plan. These plans, along with an assessment of collision risk, are discussed in Section 4.8.
Threatened and Endangered Species	0070	**Not applicable.** The proposed changes to turbine size does not limit Golden Hills' ability to comply with Site Certificate conditions for bald eagle and peregrine falcon nest reporting (PRE-TE-01), for implementation of mitigation measures during construction (PRE-TE-02), or for pre-construction surveys (PRE-FW-05). Turbines will be constructed within approved micrositing corridors, so there are no new species occurrences or habitat types to consider. There have been no changes to the list of state threatened and endangered species known or expected to occur within the analysis area since the last Final Order in 2017.
Scenic Resources	0080	**Applicable.** See response about Protected Resources, and Section 4.10 for a revised visual analysis.
Historic, Cultural and Archaeological Resources	0090	**Not applicable.** This request does not change the micrositing corridors or Site Boundary.
Recreation	0100	**Applicable.** See response about Protected Resources, and Section 4.12 for a revised visual analysis.
Public Services	0110	**Applicable.** See response about Land Use, and Section 4.13 for more information.
Waste Minimization	0120	**Not applicable.** The proposed changes will not increase the amount of solid waste and wastewater generated by the Facility, and will not modify the procedures and practices used for handling these materials. Golden Hills will continue to comply with Site Certification conditions related to waste management, as is described in Section 4.14.
Division 24 – Specific Standards for Siting Facilities		

Table 3. Applicable General and Specific Council Standards for Siting Facilities

Council Standard	Division Subpart	Applicability to Proposed Change
Public Health and Safety	0010	**Applicable.** Taller turbines will encroach into higher elevations of airspace than previously considered. According to Aviation's standards of determining obstructions (OAR 738-070-0110(1)(a)), any turbine over 500 feet above ground level is considered an obstruction to air navigation. The Council has already approved turbines over 500 feet for the Facility, and imposed a condition to consult with Aviation. Golden Hills will conduct an aeronautical study in consultation with Aviation to determine effects on navigable airspace, if any. See Section 4.15 for more information.
Cumulative Effects	0015	**Applicable.** The proposed change in turbine dimensions could have a beneficial cumulative effect, as fewer turbines will be needed to generate electricity from the Council-approved Facility.

4.1 General Standard of Review

Because this amendment triggers the modification of Site Certificate Conditions PRE-DC-01 (c)(d) and (e), this amendment is subject to the Council's review pursuant to the General Standard of Review. When reviewing this amendment, the Council shall ensure that Golden Hills continues to comply with the requirements of the Oregon Energy Facilities Siting statutes, ORS 469.300 to 469.570 and ORS 469.590 to 469.619, as well as the standards adopted by the Council pursuant to ORS 469.501. The Council shall also ensure that Golden Hills continues to provide an overall public benefit that outweighs any adverse effects on a particular resource or interest protected by the applicable standards.

When reviewing this amendment request, the Council can apply a preponderance of the evidence standard. If necessary, the Council may consult with agencies that hold special subject matter expertise in order to provide clarification on statutes, rules, and ordinances normally administered by those agencies. The following sections provide the analysis required for the Council to determine that the proposed amendment does not affect Golden Hills' compliance with the standards and requirements set forth under the General Standard of Review.

4.2 Organizational Expertise

The Council previously found that Golden Hills "continues to have the ability to construct, operate, and retire the facility, as amended, in compliance with Council standards and all

existing site certificate conditions, as required by the Organizational Expertise standard."[11] Golden Hills is wholly owned by Pacific Wind Development, LLC, a subsidiary of Avangrid Renewables, LLC, and its organizational expertise was described in RFA 4. There have been no changes to Golden Hills' organizational expertise that would impact prior findings. Therefore, the Council may rely on its previous conclusion that the Facility complies with the Council's Organizational Expertise standard.

The Council has previously found that third parties must either have any necessary permits or have a reasonable likelihood of obtaining any necessary permits. The proposed amendment request does not affect this prior finding[12].

4.3 Structural Standard

OAR 345-022-0020 authorizes the Council to issue a site certificate without making findings with respect to the Structural Standard, but the rules also authorize the Council to impose site certificate conditions based on the requirements of OAR 345-022-0020. The Council adopted site certificate conditions to address the potential for seismic and non-seismic geologic hazards at the Facility, and has found that "the conditions currently imposed in the site certificate to address the Structural standard ensure issues related to that standard are fully addressed."[13] Golden Hills' ability to design, engineer, and construct the Facility to avoid dangers to human safety is not affected by the proposed changes in turbine dimensions. Golden Hills will use experts in the fields of engineering and geology to complete site-specific geotechnical investigations prior to construction to verify soil conditions are suitable at proposed each turbine location. Additionally, the conditions listed in the Structural Standard section of the Site Certificate provide further assurance that the proposed changes will not affect Golden Hills' coordination with the Oregon Department of Geology & Mineral Industries, or the requirements of Oregon's Building Code Division.

Golden Hills seeks approval to use turbines with longer blades than previously considered for the Facility. Turbine blades, regardless of size, are designed to meet high safety and structural standards. Specifically, turbine blades are designed to meet International Electrotechnical Commission (IEC) 61400 standards. The IEC 61400 standards specify the minimum design requirements for wind turbines, and outline full-scale structural testing protocols of blades before new types of blades become commercially available. These tests include extreme loading and fatigue testing to simulate a range of field conditions through the design lifetime of the blades. For example, Vestas blades undergo robust laboratory testing consistent with IEC 61400

[11] Final Order on Request on Amendment #4 and Request for Transfer of the Site Certificate, p. 25(April 27, 2018).

[12] Final Order on Request for Contested Case and Amendment #3 of the Site Certificate, p. 29 (February 24, 2017).

[13] Final Order on Request for Contested Case and Amendment #3 of the Site Certificate, p. 31 (February 24, 2017).

at the Vestas R&D facility in the U.K., and are deployed on prototype turbines at full production conditions before becoming commercially available. Based on industry design standards and advancements in material testing, the probability of catastrophic blade failure from modern wind turbines is remote.

There is a rare possibility that blade failure may occur due to lightning damage, human error, stresses that exceed the design parameters of the blade or its connection to the hub, or manufacturing defects. Lightning damage and human error are unrelated to blade length. Manufacturing defects are no more likely with the longer blade than they are with the previously approved blade length, and the longer blade is designed and tested to withstand the same stresses (caused by wind pressure and operation of the turbine) that the previously approved blade was designed to withstand. Turbine manufacturers and wind farm developers undertake significant measures to ensure blade safety to minimize risk and liability. During operations, blades are inspected to identify and address potential blade defects, and minimize the potential for blade failure.

Risks from ice shedding or ice throw depend on several variables, including the number of icing events per year, wind speed, turbine size, and the number of passersby who could potentially be struck by ice. None of these variables are related to the proposed changes except for turbine size. The turbine size variable used in calculating ice throw risk is the hub height plus the blade length, which is equal to the maximum blade tip height. Setbacks from residences and public roads are increased with increased maximum blade tip height thereby minimizing the number of passersby who could potentially be struck by ice.

New changes to the Structural Standard became effective on October 18, 2017. Golden Hills address the new structural standards in response to ODOE's Request for Additional Information (RAI) for RFA 4 (RAI-4). In Attachment A of RAI-4, Golden Hills explained that disaster resiliency is integrated into the design of the facility, and an assessment of future climate conditions was considered in consultation with the Department of Geology and Mineral Industries (DOGAMI). The change in turbine dimensions does not change the information provided in RAI-4. In addition, Golden Hills coordinated with DOGAMI regarding the proposed changes to turbines and DOGAMI stated that they do not have any additional review comments or concerns at this stage of the project (see Attachment 2).

Turbines will be located within the previously approved micrositing corridor where potential geological and soil hazards have already been evaluated and approved by the Council. The Council has responded to previous concerns raised by the public by incorporating Conditions PRE-SS-01 to PRE-SS-03 and GEN-SS-01 into the Site Certificate, and these conditions continue to ensure that Golden Hills meets the requirements of the Structural Standard. Therefore, the proposed change to hub height, maximum blade tip height, and minimum blade tip clearance does not change the Facility's compliance with OAR 345-022-0020, or any related conditions in the Site Certificate.

4.4 Soil Protection

The Council previously found that the Facility complies with the Soil Protection Standard.[14] RFA 5 makes no changes that alter the basis for the Council's earlier findings. For this amendment request, Golden Hills does not present a revised turbine layout or modified permanent and temporary impacts acreage tables because Golden Hills has not yet selected a turbine type, and wants to retain the flexibility to select a turbine that could impact the same acreage (or less) than previously reviewed by the Council. The Council has previously considered both 1,522 acres of temporary impacts[15] and 141 acres of permanent impacts[16] in the Final Order on the Application and 1,069 acres of temporary impacts and 132 acres of permanent impacts[17] in the Final Order on Amendment 3. Golden Hills is requesting a wider temporary impact area for access roads and crane walks (from 40 feet to up to 100 feet). However, because there may be less turbines and therefore less access roads and crane walks (potentially 30 to 50 percent less), temporary impacts acreages are anticipated to be less than previously reviewed in the Final Order on the Application (1,522 acres) and permanent impacts are anticipated to be the same or less than reviewed in the Final Order on Amendment 3 (132 acres). The Council has recognized the need for wind energy developers to have flexibility to "microsite" the final location of wind turbines and related infrastructure after issuance of a site certificate, and turbine size is a factor considered during micrositing and final design. Golden Hills will construct turbines, regardless of size, within the approved micrositing corridors. In addition, Condition PRE-DC-02 requires temporary and permanent facility maps and temporary and permanent acreage impacts be calculated by habitat type prior to construction.

Site Certificate conditions (Conditions GEN-SP-01, CON-SP-01, PRE-SP-01, CON-SP-02, OPR-SP-01, OPR -SP-02) require Golden Hills to construct the Facility in compliance with an erosion and sediment control plan satisfactory to ODEQ, as per the requirements of a National Pollutant Discharge Elimination System (NPDES) permit; to salvage topsoil from areas of temporary impacts and stockpile this topsoil for redistribution; to implement a weed control plan to reduce the spread of noxious weeds; and to eliminate concrete wash water runoff. Nothing in this amendment request impairs Golden Hills' ability to implement erosion control measures summarized in the Final Order[18] or required by the Facility's NPDES permit. Therefore, the Council may rely on its prior findings and conclude that the modifications described in RFA 5 also complies with OAR 345-022-002.

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14 Final Order on Request for Contested Case and Amendment #3 of the Site Certificate, p. 33 (February 24, 2017).

15 Final Order, Golden Hills Wind Project, p. 79 (May 15, 2009).

16 Final Order, Golden Hills Wind Project, p. 125 (May 15, 2009).

17 Final Order on Request for Contested Case and Amendment #3 of the Site Certificate, p. 32 (February 24, 2017).

18 Final Order on Application for Site Certificate, p.78 (May 15, 2009).

4.5 Land Use

The Council previously concluded that the Facility complied with the Land Use Standard[19]. In its evaluation of the Facility under the Land Use Standard (OAR 345-022-0030), the Council considered the applicable substantive criteria of Sherman County's comprehensive plan and land use ordinances. There have been no modifications to the Sherman County Zoning Ordinance (adopted 1994 and amended in 2003) that would impact the Council's prior findings under the Land Use Standard. Similarly, the proposed change to turbine dimensions will not affect the Council's previous conclusions regarding the Land Use Goals of the Sherman County Comprehensive Plan (adopted in 1994 and updated in 2007); see Table 4.

Table 4. Sherman County Comprehensive Plan Land Use Goals

Land Use Goal	Effect of Proposed Change to Turbine Dimensions
Goal I: Qualify of the Physical Environment	**No change.** The proposed changes to turbine dimensions do not affect Golden Hills' ability to comply with its NPDES permit or other erosion control measures.
Goal II: Natural Hazards	**No change.** Golden Hills will avoid placing turbines in Natural Hazards Combining Zones. Turbine dimensions will not affect this commitment.
Goal VI: Landscape	**No change.** Golden Hills will install turbines within the approved micrositing corridor, and will not impact rock outcroppings, trees, the John Day River Canyon, or the Deschutes River Canyon. The proposed change does not affect this conclusion.
Goal VII: Fish and Wildlife	**No change.** The proposed change does not affect Golden Hills' ability to avoid sensitive habitat (i.e., Category 1 habitat), and may actually result in less habitat impact, as fewer turbines could be constructed. See Section 4.8 for more information on wildlife impacts.
Goal XIII: Plant and Animal Diversity	**No change.** Golden Hills is not expected to significantly affect any listed endangered or threatened species, or adversely affect fish and wildlife species or habitat. Due to the lack of habitat for listed species in the Site Boundary, this conclusion is the same regardless of turbine size.
SCCP Section XII: Social Characteristics	**No change.** There are 10 issues related to social services under this section. The Facility will be consistent with this goal, as described in Section 4.13. Overall, the change in turbine dimension does not affect the Council's previous finding.
SCCP Section XIV: Economic Base and Viability of Agricultural	**No change.** The Facility will support the local economy by diversifying income sources while maintaining agricultural as the primary use. The proposed change could reduce the number turbines, which would benefit farming use while still injecting money into the local economy though wind lease payments.

[19] Final Order on Application for Site Certificate, p.78 (May 15, 2009).

Table 4. Sherman County Comprehensive Plan Land Use Goals

Land Use Goal	Effect of Proposed Change to Turbine Dimensions
SCCP Section XV: Energy Resources	**No change.** Regardless of whether the proposed change in turbine size and number occurs, the Facility supports the development of renewable energy in the county.
SCCP Section XVI: Land Use	**No change.** Golden Hills does not propose to change the location of the Facility. It is entirely located on Exclusive Farm Use zoned land.

The Council previously found that the Facility would be consistent with the general criteria of Sherman County's zoning ordinance.[20] Golden Hills will follow Condition PRE-LU-03, which limit placement of aboveground facilities within 50 feet from any property line, or within 50 feet from the right-of-way of any arterial or major collector road. These are intended to satisfy Sherman County's setbacks for land zoned as Exclusive Farm Use. In practice, turbines will be placed much further than 50 feet from property boundaries, because turbines cannot be placed in locations where the blades could cross property boundaries for siting and leasing reasons. Also, Condition GEN -PH-01 requires a setback that is 110 percent of the maximum blade tip height from public road rights-of-way, which is significantly larger than the 50-foot setback required by Sherman County. Additionally, Condition PRE-LU-14 requires that prior to construction, the Certificate Holder shall demonstrate that the final location of turbines within the micrositing corridors approved by the Council will satisfy setback requirements prescribed by Section 4 of the Sherman County Wind Setback Ordinance (Ordinance No. 39-2007). Where two setback distances could apply according to the Conditions in the Site Certificate, the more stringent, or the greater setback distance, will take precedent.

Golden Hills will not place turbines on lands designated by Sherman County as within a Natural Hazards (NH) Combining Zone. Turbines will be limited to the approved micrositing corridors, which do not cross this overlay.[21] According to Sherman County, this overlay generally follows the canyons associated with Deschutes and John Day Rivers and their major drainages including the Grass Valley Canyon in the Site Boundary.[22] Golden Hills will complete a site-specific geological study prior to construction (see Section 4.3), avoid the mapped hazard areas for turbine placement consistent with Sherman County's zoning ordinance, and comply with conditions GEN -LU-02 and PRE-LU-04 to PRE-LU-07 as they relate to the NH zone

[20] Final Order on the Golden Hills Wind Project, p. 40 (May 15, 2009).

[21] See Figure K-1 of ASC, Exhibit K (July 2007).

[22] Person communication with Sherman County Planner (April 2, 2018).

In its previous amendment request, Golden Hills increased the width of temporary access roads from 36 to 40 feet in order to account for the delivery of larger turbine components.[23] Golden Hills confirms that turbines considered in this amendment request could be delivered on temporary access roads with a 40-foot wide drivable surface. However, the actual disturbance limits for temporary roads will be as wide as 100 feet, depending on the need for cut and fill slopes. Golden Hills may need to temporarily enlarge turning radii on County roads to accommodate the delivery of longer turbine blades. Prior to construction, Golden Hills will designate haul routes for turbine delivery, and consult with the Sherman County Road Department on needed intersection improvements. Golden Hill remains committed to repairing damage to County roads caused by construction in a manner consist with Conditions PRE-LU-12 and PRE-LU-13. For these reasons, the Council may rely on its prior findings and conclude that this amendment request complies with the Land Use Standard and Sherman County's zoning and comprehensive plan.

4.6 Protected Areas

The Council previously found that the Facility is not located in any protected area listed in OAR 345-022-0040, and that "the facility, as amended, is not likely to result in significant adverse impacts to any protected area, and complies with the Protected Areas Standard."[24] Golden Hills has confirmed there are no new protected areas within the 20-mile study area since the last final order in 2017. The nearest protected area within the analysis area is the Columbia Basin Agricultural Research Center, located 0.4 miles southwest of the Site Boundary (Figure 3). The Columbia Basin Agricultural Research Center is an agricultural experiment station used for field research related to the production of wheat and rotational crops. Golden Hills previously estimated the maximum noise level from turbine operation at this protected area to be 33 A-weighted decibels (dBA), which would be audible at low levels.[25] The proposed larger turbines could result in differing noise levels at the Columbia Basin Agricultural Research Center compared to the previous estimate, but any change in noise levels would not affect the operations of the protected area. The Council has previously found that "any potential increase in operational noise from the facility, as amended, would not be expected to result in a significant adverse impact to the agricultural field research conducted at the Center, as the Center's purpose and function does not represent a human population or natural resource that could be affected by facility-related noise levels."[26] The next closest protected area is the Lower Deschutes Wildlife Area, located about 1.8 miles southwest of the Site Boundary. This area is

[23] Final Order on the Third Amended Site Certificate, p.1 (February 24, 2017).

[24] Final Order on Request for Contested Case and Amendment #3 of the Site Certificate, p. 35 (February 24, 2017).

[25] Addendum to Exhibit L of the Site Certificate Golden Hills (September 4, 2008).

[26] Final Order on Request for Contested Case and Amendment #3 of the Site Certificate, p. 63-64 (February 24, 2017).

managed by the Oregon Department of Fish and Wildlife (ODFW) for wildlife habitat and public recreational opportunities. The Council concluded that the Facility would not be audible at the wildlife area due to both the distance and topographic screening.[27]

Pursuant to Condition PRE-CJ-01, Golden Hills will complete a new noise analysis prior to construction.[28] This analysis will be provided to ODOE, and the analysis will demonstrate that the maximum noise level at noise-sensitive properties will not exceed ODEQ's 50-dBA noise limit for new industrial sources. Noise-sensitive properties, as defined in OAR 345-035-0015(38), do not include properties used in agricultural activities such as the Columbia Basin Agricultural Research Center. This request does not seek to enlarge the Site Boundary or site turbines outside of approved micrositing corridors. Allowing for the proposed changes in turbine specifications will potentially reduce the number of turbines, likely resulting in less noise impacts in the areas surrounding the Facility.

The Council found in the Final Order on the ASC, facility-related road use during construction and operation would not result in a significant adverse impact to protected areas. The Council made a similar finding for RFA 3 which proposed fewer, larger turbines that would result in a net decrease in truck traffic during construction of approximately 30 percent below the previous estimate. Truck traffic for the changes proposed under RFA 5 would be similar to that reviewed under RFA 3. RFA 5 does not change the estimate of construction or operations traffic from what was described in RFA 4.[29]

Golden Hills completed a revised "zone of visual influence" (ZVI) analysis to evaluate whether the taller turbines could be visible at different protected resources, or if the change would result in significant visual impacts at areas previously considered (See Figure 3). For the ZVI analysis, Golden Hills conservatively assumed that all 125 turbine locations are 650 feet tall. This assumption greatly overestimates the number of turbines that would be used if the larger turbines are selected, but it also depicts the worst-case scenario from all points within the 20-mile analysis area overlooking the micrositing corridors. As shown on Figure 3, the taller turbines slightly extend the distance from the facility from which turbines may be seen in some locations compared to the approved Facility. However, because the new areas from which turbines may be seen are small areas adjacent to areas from which Facility turbines already will be visible, the Council can find the Facility as modified by the proposed changes will not result in significant adverse visual impacts to protected areas. The revision to Condition PRE-DC-01 makes no changes that alter the basis for the Council's earlier findings. Therefore, the Council may find that this amendment request also complies with OAR 345-022-0040.

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[27] Final Order on Request for Contested Case and Amendment #3 of the Site Certificate, p. 64 (February 24, 2017).

[28] Final Order on Request for Contested Case and Amendment #3 of the Site Certificate, p. 63 (February 24, 2017).

[29] Final Order on Amendment #4 (April 27, 2018)

4.7 Retirement and Financial Assurance

The Council previously found that Golden Hills would meet the Retirement and Financial Assurance Standard. As explained under OAR 345-027-0070(10)(d), the number of turbines is a notable factor in determining the decommissioning and restoration cost of the Facility, and the Council previously concluded that Golden Hills was capable of posting a bond or letter of credit for up to 125 turbines.[30] However, the Council is currently reevaluating Golden Hills' financial backing as part of RFA 4 because its parent company has changed from Orion Renewable Energy Group to Pacific Wind Development, LLC. This amendment request assumes that the Council will approve the transfer request. The proposed change in turbine dimensions will allow Golden Hills to construct the Facility with fewer turbines. Because the number of turbines is a notable factor in determining the cost of decommissioning and restoration, the financial assurance for retirement could be less for the amended Facility (Table 5). However, Golden Hills is not requesting to change the bonding amount at this time because the actual turbine type has not been selected. Golden Hills will rely on Condition PRE-RT-01 to post a bond prior to construction in an amount based on the final design. The proposed amendment makes no changes that alter the basis for the Council's earlier findings; therefore, the Council may find that OAR 345-022-0050 is met.

Table 5. Decommissioning and Restoration Estimates (Approved and Potential with Approval of RFA 5)

Facility	Approved (RFA 3)	Potential
Turbines	$5,058,175	$3,844,213
Transmission Line	$144,402	$144,402
Related and Supporting Facilities	$6,463,780	$6,463,780
General Costs	$451,365	$451,365
Subtotal	$12,117,722	$10,903,760

4.8 Fish and Wildlife Habitat

The Council previously found that the Facility complies with the Fish and Wildlife Habitat Standard. The proposed changes in turbine dimensions will not affect the Council's prior findings regarding the Facility's consistency with the Fish and Wildlife Habitat Standard because the proposed changes will be within the previously approved micrositing corridors and will not result in different habitat types being affected. The implementation of the Habitat

[30] Final Order on Request for Contested Case and Amendment #3 of the Site Certificate, p. 69 (February 24, 2017).

Mitigation and Revegetation Plan will adequately offset habitat impacts following ODFW's habitat mitigation policy.

4.8.1 Habitat Impacts

Golden Hills mapped the habitat types within the Exhibit P analysis area in the ASC[31], which identify about 93 percent of the area as Category 6 agricultural or developed land. This habitat type is consistent with the large scale agricultural use that occupies most of the land within the Site Boundary. There are small areas of remnant grassland habitat (i.e., Category 2 or 3 habitat) in ravines that are not used for agricultural purposes, or on land held in the Conservation Reserve Program. In 2015, ODFW confirmed that the habitat categories mapped in 2006 as part of the ASC were still valid.[32] Golden Hills also confirmed that there has not been a significant change in habitat types by comparing the habitat types mapped in 2006 with recent aerial imagery.

In RFA 3, Golden Hills described temporary impacts to 1,069 acres and permanent impacts to 132 acres; 93 percent of permanent impacts would be to Category 6 habitat.[33] The proposed change to turbine dimensions would allow the Facility to utilize fewer turbines, which would have a corresponding reduction in permanent habitat impacts. For this amendment request, Golden Hills does not present a revised turbine layout or modified acreage tables because Golden Hills has not yet selected a turbine type, and wants to retain the option to select a turbine that could impact the same acreage (or less) than the previously disclosed amount. Golden Hills would construct turbines, regardless of size, within the approved micrositing corridors, and is committed to following Conditions PRE-FW-02, PRE-FW-03, and PRE-FW-04 to avoid Category 1 habitat, Category 2 habitat[34], and Category 3 upland tree habitat. When a turbine type is selected, Golden Hills will provide updated acreage tables and habitat maps to ODOE, ODFW, and Sherman County based on the final design of the Facility, per Condition PRE-FW-01.

Golden Hills has developed a Habitat Mitigation and Revegetation Plan in consultation with ODFW that outlines measures to mitigate for the permanent and temporary impacts to habitat in a manner that meets the ODFW goals of no net loss of habitat for Categories 2, 3 and 4, and a net benefit in habitat quantity or quality for impacts to habitat in Categories 2 and 5. Section 4.1

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[31] See Figures P-5 through P-10 of the Application for Site Certificate (July 2007).

[32] Email correspondence between Joel Thompson, Wildlife Biologist and Project Manager/WEST, and Jeremy Thompson, District Wildlife Biologist/ODFW (November 18, 2015).

[33] Final Order on the Request for Contested Case and Amendment No. 3 of the Site Certificate, Table 1, p.72 (February 2017).

[34] Condition IV.M.9 allows the 2.9 acres of temporary disturbance and 0.0017 acres of permanent disturbance to Category 2 habitat.

of the Habitat Mitigation and Revegetation Plan describe how Golden Hills must hire a qualified biologist to perform a preconstruction inventory of habitat types that will be impacted by construction, which will form the basis for compensatory mitigation. As such, the Habitat Mitigation and Revegetation Plan provides flexibility for a range of turbine types, including those proposed in this amendment request, because mitigation amounts are based on actual impacts. Golden Hills has an executed conservation agreement for a 51-acre mitigation site where impacts associated with the Facility will be compensated. The total area available to perform habitat improvements through the conservation easement is more than adequate to account for the anticipated compensatory mitigation requirements, regardless of turbine type.

4.8.2 State Sensitive Species

Golden Hills has reviewed the updated ODFW State Sensitive Species list and prepared an update to Table P-11 in Exhibit P of the ASC (Table 6). Golden Hills reviewed existing databases and performed surveys in 2016 to update known occurrences of State Sensitive Species in the vicinity of the Facility.

Burrowing owl, common nighthawk, ferruginous hawk, grasshopper sparrow, loggerhead shrike, long-billed curlew, and Swainson's hawks have been observed during surveys performed for the Facility. Impacts to State Sensitive Species were disclosed in the ASC and are applicable to the updated list of State Sensitive Species.

Table 6. List of ODFW Sensitive Species within the Columbia Plateau Ecoregion of Oregon and Potential Occurrence within the Analysis Area

Common Name	Scientific Name	2007 ODFW Status[1]	2017 ODFW Status[2]	Occurrence within the Analysis Area
Fish				
Bull trout	*Salvelinus confluentus*	Not Listed	SC	Habitat absent from the Analysis Area; nearest habitat occurs in the Columbia and Deschutes rivers (StreamNet 2012).
Chinook salmon – fall & spring (Mid-Columbia River SMU)	*Oncorhynchus tshawytscha*	Not Listed	S	Habitat absent from the Analysis Area; nearest habitat occurs in the Columbia, John Day, and Deschutes rivers (StreamNet 2012).
Inland/Interior Redband Trout	*Oncorhynchus mykiss gairdneri*	SV	Not Listed	Delisted. Not considered.
Pacific lamprey	*Entosphenus tridentata*	SV	S	Habitat absent from the Analysis Area; nearest habitat occurs in the Columbia and John Day rivers (StreamNet 2012).

Table 6. List of ODFW Sensitive Species within the Columbia Plateau Ecoregion of Oregon and Potential Occurrence within the Analysis Area

Common Name	Scientific Name	2007 ODFW Status[1]	2017 ODFW Status[2]	Occurrence within the Analysis Area
Steelhead – summer (Mid-Columbia River SMU)	*Oncorhynchus mykiss*	SV	SC	Habitat present within the Analysis Area (ORBIC 2017); no impacts to fish bearing streams are anticipated.
Western brook lamprey	*Lampetra richardsoni*	Not Listed	S	Habitat absent from the Analysis Area; nearest habitat occurs in the middle reaches of the John Day River (StreamNet 2012).
Western river lamprey	*Lampetra ayresii*	Not Listed	S	Habitat absent from the Analysis Area; habitat occurs in the Columbia River
Westslope cutthroat trout	*Oncorhynchus clarki lewisi*	Not Listed in Columbia Basin	SC	Habitat absent from the Analysis Area; nearest habitat occurs in the upper reaches of the John Day River (StreamNet 2012).
Amphibians				
Northern leopard frog	*Rana pipiens*	SC	Not Listed	Delisted. Not considered.
Western toad	*Bufo boreas*	SV	Not Listed in Columbia Plateau	Not considered.
Reptiles				
California mountain kingsnake	*Lampropeltis zonata*	Not Listed in Columbia Basin	S	No ORBIC (2017) occurrences within the Analysis Area or within five miles. Habitat is pine forests, oak woodlands, and chaparral; rare along the Columbia River (ODFW 2017). Typical habitat is absent from the Analysis Area.
Northern sagebrush lizard	*Sceloporus graciosus graciosus*	SV	S	No ORBIC (2017) occurrences within the Analysis Area or within five miles. Habitat is sagebrush and xeric habitats (ODFW 2017), which are present within the Analysis Area.
Sharptail snake	*Contia tenuis*	Included as SV in ASC; however, no state status (ORHNIC 2004, 2007).	Not Listed	Not Considered.

Table 6. List of ODFW Sensitive Species within the Columbia Plateau Ecoregion of Oregon and Potential Occurrence within the Analysis Area

Common Name	Scientific Name	2007 ODFW Status[1]	2017 ODFW Status[2]	Occurrence within the Analysis Area
Western painted turtle	*Chrysemys picta bellii*	SC	SC	No ORBIC (2017) occurrences within the Analysis Area or within five miles. Painted turtles use ponds and other slow moving water with muddy bottoms and aquatic vegetation; in the Columbia Plateau Ecoregion they live only along the Columbia River (ODFW 2017). Unlikely to be present within any habitats within the Analysis Area.
Western rattlesnake	*Crotalus viridis*	SV	Not Listed in Columbia Plateau	Not Considered.
Birds				
Bank swallow	*Riparia riparia*	SU	Not Listed	Not Considered.
Brewer's sparrow	*Spizella breweri breweri*	Not Listed	S	No ORBIC (2017) occurrences within the Analysis Area or within five miles. This species prefers sagebrush habitat (ODFW 2017); habitat is present within the Analysis Area.
Burrowing owl (western)	*Athene cunicularia hypugaea*	SC	SC	Nests in earthen burrows in open shrub-steppe and grassland habitat (ODFW 2017). Habitat is present within the Analysis Area and two observations were recorded in 2006 east of the Analysis Area; historical county records also exist.
Columbian sharp-tailed grouse	*Tympanuchus phasianellus columbianus*	Included in ASC; however, no state status (ORHNIC 2004, 2007).	Not Listed in Columbia Plateau.	Not Considered.
Common nighthawk	*Chordeiles minor*	SC	S	Nests in open landscapes in sagebrush and rocky scablands and rimrock habitat (ODFW 2017). Habitat is present within the Analysis Area and this species was observed in 2007 east of the Analysis Area.

Table 6. List of ODFW Sensitive Species within the Columbia Plateau Ecoregion of Oregon and Potential Occurrence within the Analysis Area

Common Name	Scientific Name	2007 ODFW Status[1]	2017 ODFW Status[2]	Occurrence within the Analysis Area
Willow Flycatcher (Eastern Oregon)	*Empidonax traillii (adastus)*	SU	Not Listed in Columbia Plateau.	Not Considered.
Ferruginous hawk	*Buteo regalis*	SC	SC	Occurs in open landscapes east of the Cascade Mountains (ODFW 2017). Habitat is present within the Analysis Area and three observations were recorded within the Analysis Area.
Grasshopper sparrow	*Ammodramus savannarum perpallidus*	SV	S	Habitat is present within the Analysis Area in open grasslands. Commonly observed within the Analysis Area.
Lewis's woodpecker	*Melanerpes lewis*	SC	SC	Breeds in low numbers in open habitat along eastern Oregon river and stream valleys (ODFW 2017). No ORBIC (2017) occurrences within the Analysis Area or within 5 miles. Probably migrant through Analysis Area.
Loggerhead shrike	*Lanius ludovicianus*	SV	S	Breeds in open habitat east of the Cascades (ODFW 2017). Several observations recorded and three known nesting sites documented within the Analysis Area.
Long-billed curlew	*Numenius americanus*	SV	SC	Commonly breeds in open grassland areas east of the Cascades (ODFW 2017). Habitat is present within the Analysis Area. Observations recorded east of the Analysis Area and ORBIC (2017) occurrences within 5 miles.
Mountain quail	*Oreortyx pictus*	SU	Not Listed in Columbia Plateau.	Not Considered.

Table 6. List of ODFW Sensitive Species within the Columbia Plateau Ecoregion of Oregon and Potential Occurrence within the Analysis Area

Common Name	Scientific Name	2007 ODFW Status[1]	2017 ODFW Status[2]	Occurrence within the Analysis Area
Sagebrush sparrow	*Artemisiospiza nevadensis*	Absent from ASC due to not being listed for Sherman County; however, status of SC for Columbia Basin (ORHNIC 2004, 2007).	SC	Found throughout the arid expanses of the Great Basin and usually associated with big sage (ODFW 2017). No ORBIC (2017) occurrences within the Analysis Area or within five miles. Habitat is present within the Analysis Area.
Swainson's hawk	*Buteo swainsoni*	SV	S	Breeds in bunchgrass prairies east of the Cascades; prefers open country (ODFW 2017). Nesting documented within two miles of the Analysis Area; infrequent use of the Analysis Area.
Golden eagle	*Aquila chrysaetos*	Included in ASC; however, no state status (ORHNIC 2004, 2007).	Not listed.	Not an ODFW Sensitive Species; however, golden eagle nests have been monitored during project surveys and seven occupied nests were observed in 2016 within 10 miles of the project.
Western bluebird	*Sialia Mexicana*	SV	Not Listed in Columbia Plateau.	Not Considered.
Western greater sage-grouse	*Centrocercus urophasianus*	SV	Not Listed in Columbia Plateau.	Not Considered.
Western meadowlark	*Sturnella neglecta*	SC	Not Listed in Columbia Plateau.	Not Considered.
Yellow-breasted chat	*Icteria virens*	SC	Not Listed in Columbia Plateau.	Not Considered.

Table 6. List of ODFW Sensitive Species within the Columbia Plateau Ecoregion of Oregon and Potential Occurrence within the Analysis Area

Common Name	Scientific Name	2007 ODFW Status[1]	2017 ODFW Status[2]	Occurrence within the Analysis Area
Mammals				
Hoary bat	*Lasiurus cinereus*	Included in ASC; however, no state status (ORHNIC 2004, 2007).	S	Probably migrant through Analysis Area. No ORBIC (2017) occurrences within the Analysis Area or within five miles.
Long-eared myotis	*Myotis evotis*	SU	Not Listed	Not Considered.
Long-legged myotis	*Myotis volans*	SU	Not Listed in Columbia Plateau.	Not Considered.
Pallid bat	*Antrozous pallidus*	SV	S	Unknown. No ORBIC (2017) occurrences within the Analysis Area or within five miles.
Silver-haired bat	*Lasionycteris noctivagans*	SU	S	Probably migrant through Analysis Area. No ORBIC (2017) occurrences within the Analysis Area or within five miles.
Spotted bat	*Euderma maculatum*	Not Listed.	S	Probably migrant through Analysis Area. No ORBIC (2017) occurrences within the Analysis Area or within five miles.
Townsend's big-eared bat	*Corynorhinus townsendii*	SC	SC	Probably migrant through Analysis Area. No ORBIC (2017) occurrences within the Analysis Area or within five miles.
Western small-footed myotis	*Myotis ciliolabrum*	SU	Not Listed	Not Considered.

Table 6. List of ODFW Sensitive Species within the Columbia Plateau Ecoregion of Oregon and Potential Occurrence within the Analysis Area

Common Name	Scientific Name	2007 ODFW Status[1]	2017 ODFW Status[2]	Occurrence within the Analysis Area
This table is updated from Table P-11 of the Application for Site Certificate (July 2007).				
1. 2007 ODFW Status: SC = Sensitive Critical, SV = Sensitive Vulnerable, SU = Sensitive Unknown status.				
2. 2017 ODFW Status: SC = Sensitive Critical, S = Sensitive.				
Sources:				
ORBIC (Oregon Biodiversity Information Center). 2017. GIS data for rare, threatened and endangered plants and animals within the vicinity of the Golden Hills Wind Project. December, 2017.				
ODFW (Oregon Department of Fish and Wildlife). 2016. Oregon Department of Fish and Wildlife Sensitive Species List. Available online at: http://www.dfw.state.or.us/wildlife/diversity/species/docs/2017_Sensitive_Species_List.pdf				
ODFW. 2017. Wildlife Viewing website. Accessed December 22, 2017; available at: https://myodfw.com/wildlife-viewing				
ORNHIC (Oregon Natural Heritage Information Center). 2004. Rare, Threatened and Endangered Species of Oregon. Oregon State University, Portland, Oregon. March, 2004.				
ORNHIC. 2007. Rare, Threatened and Endangered Species of Oregon. Oregon State University, Portland, Oregon. March, 2007.				
StreamNet. 2012. Fish distribution data for All Fish Species. Accessed September 2017. Seattle, Washington. Available online at: http://www.streamnet.org/data/interactive-maps-and-gis-data/				

4.8.3 Avian and Bat Collision Risk

Turbines with longer blades and taller hub heights than previous models may pose increased collision risk to birds and bats. Turbines with longer blades have a corresponding larger rotor-swept area, and the requested change to lengthen the maximum blade tip height from 158 meters to 198 meters will increase the overall swept area, or collision risk area, by about 40 percent per turbine. Similarly, the requested change for a taller maximum blade tip height may cause the rotor-swept area to overlap with flight heights of migrating birds that were previously above shorter turbine models, leading to increased collision risk. Decreased blade clearance may lead to greater collision risk of low-flying avian species that would have passed below the blade clearance of previous turbine models. Barclay et al. (2007)[35] compared avian fatality data at wind farms using a range of turbine nameplate capacities from 0.04 to 1.8 MW, tower heights ranging from 24 to 94 meters, and rotor diameters ranging from 15 to 80 meters. Barclay et al. (2007) concluded that avian fatality rates were not affected by variation in any of these turbine dimensions, stating "it might be expected that as rotor-swept area increased, more animals would be killed per turbine, but our analyses indicate that this is not the case." This study did

[35] Barclay, R. M. R., et al. (2007). "Variation in bat and bird fatalities at wind energy facilities: assessing the effects of rotor size and tower height." Canadian Journal of Zoology 85(3): 381-387.

not consider the new generation turbines that are much larger; but their conclusion is relevant to the Facility as it suggests that avian impacts predicted in the original assessment may not differ substantially with increased rotor-swept area. More recent meta-analyses have produced contrasting results, with a review by Loss et al. (2013)[36] revealing increased avian mortalities with hub height, whereas Erickson et al. (2014)[37] found no linear correlation between hub height and estimated avian fatality rates. Therefore, there remains uncertainty as to whether or not the proposed turbine model changes may result in increased avian collision risk. To help address this uncertainty, Golden Hills will complete post-construction fatality monitoring using search plots scaled to the turbine size, and will implement additional mitigation if fatality rates exceed the thresholds of concern for a species group, as outlined in the original analysis (see Attachment A of the Final Order on Site Certificate, Wildlife Monitoring and Mitigation Plan).

The same changes to turbines specifications that may increase collision risk to birds are likely true for bats. The analysis by Barclay et al. (2007) found that bat fatalities increased exponentially with increased tower height. In contrast, a recent meta-analysis by Zimmerling et al. (2016)[38] found no relationship between bat mortality rates and height of wind turbines, with the caveat that there was relatively little variation in the maximum blade tip height of wind turbines within the available data (range of 117 m to 136 m). Flight altitudes of migratory bats are poorly known, especially for the migratory, tree-roosting bats that appear more prone to collisions with wind turbines (Reynolds 2006[39]). Hoary bats and silver-haired bats, known to occur in the vicinity of the Facility, are both species of long-range migrants that have been killed at wind power projects during their migratory periods, suggesting that at least some bats migrate below 150 meters above ground level. Bat use between 14 meters and 20 meters in the vicinity of the Facility is not known. However, migratory bats have been documented at heights ranging from 46 to 2,448 meters above ground level (Allen 1939[40], Altringham 1996[41], Peurach 2003[42]), which is within and above the rotor-swept area originally evaluated and approved for

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[36] Loss, S. R., et al. (2013). "Estimates of bird collision mortality at wind facilities in the contiguous United States." Biological Conservation 168: 201-209.

[37] Erickson, W. P., et al. (2014). "A comprehensive analysis of small-passerine fatalities from collision with turbines at wind energy facilities." PLoS ONE 9(9): e107491.

[38] Zimmerling, J. R. and C. M. Francis (2016). "Bat mortality due to wind turbines in Canada." Journal of Wildlife Management 80(8): 1360-1369.

[39] Reynolds, D.S. 2006. "Monitoring the Potential Impact of a Wind Development Site on Bats in the Northeast." Journal of Wildlife Management. No. 70. pp. 1219-1227. We saved this conversation. You'll see it soon in the Conversations tab in Skype for Business and in the Conversation History folder in Outlook.

[40] Allen, G.M. 1939. Bats. Dover Publications, New York, NY. 358 pp.

[41] Altringham, J.D. 1996. Bats: Biology and Behavior. Oxford University Press, Inc., New York, NY 262 pp.

[42] Peurach, S.C. 2003. "High-Altitude Collision between an Airplane and a Hoary Bat, Lasiurus Cinereus." Bat Research News. No. 44. pp. 2–3.

Golden Hills' turbines. If bats are present, they may be at increased risk of collision with wind turbines that have larger rotor-swept areas; however, any change to potential impacts is difficult to estimate because so little is known about the flight heights of these species. Plus, it is anticipated there will be fewer turbines to collide with, which may reduce exposure. ODFW suggested in its comments on Amendment 3 that Golden Hills consider operating the turbines with modified cut-in speeds to reduce collision risks for bats. However, Golden Hills concluded that the amended Facility is unlikely to significantly impact bats for multiple reasons, including the lack of riparian areas or other water sources the Facility that could attract bats. Therefore, implementation of modified cut-in speeds is unneeded, plus the Wildlife Monitoring and Mitigation Plan (WMMP) includes provisions for monitoring bat fatalities, and if established thresholds are exceeded, then considerations for additional mitigation are triggered. Any additional measures will be developed in consultation with ODFW.

4.9 Threatened and Endangered Species

The Council previously determined that Golden Hills could design, construct, and operate the Facility is a manner that was not likely to cause a significant reduction in the likelihood of survival or recovery of a fish, wildlife, or plant species listed as threatened or endangered by the Oregon Fish and Wildlife Commission or Oregon Department of Agriculture (ODA).[43] The Final Order on the Application described 10 species that are listed as state or federal threatened or endangered, or federal candidates for listing, that could occur near the Facility.[44] Of these listed species, two bird species, the bald eagle and the peregrine falcon, were observed within the analysis area and were subsequently considered for analysis. The other species were excluded from analysis due to lack of suitable habitat or their restricted range.[45]

Both bald eagles and peregrine falcons have been delisted since the Final Order on the Application. Regardless, Golden Hills conducted aerial nest surveys with 10 miles of the micrositing corridors in 2016, and detected one active bald eagle nest in a tree on an island in the Columbia River, near its confluence with the Deschutes River. This observation is consistent with past surveys that found bald eagles using areas along the Columbia River.[46] Golden Hills also reviewed the ORBIC (2017) database for the most recent observations of species within 5 miles of the Site Boundary. In accordance with Condition PRE-TE-01, the 2016 aerial raptor nest survey and review of ORBIC (2017) data confirm that no bald eagle or peregrine falcons are nesting within 2 miles of the Facility.

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[43] Final Order on Request for Contested Case and Amendment #3 of the Site Certificate, p. 83 (February 24, 2017).

[44] Final Order on the Application, Table IV.L.1, p.109 (May 15, 2009).

[45] Final Order on the Application, p.110 (May 15, 2009).

[46] Final Order on the Application, p.110 (May 15, 2009).

Golden Hills completed a rare plant survey in 2007, and did not observe any listed plant species. Another survey was performed in 2016 associated with changes to the site boundary described in RFA 3. No listed plant species were observed and habitat could not support listed plants. Habitat conditions in the micrositing corridors have not significantly changed since 2016 (see Section 4.8); therefore, it remains unlikely that listed plant species occur in the construction footprint. To verify absence, Golden Hills will complete a pre-construction rare plant survey, as required by Condition PRE-TE-03.

Golden Hills understands that a February 24, 2017 rule change amended OAR 345-021-0010(1)(q) to remove the requirement for an applicant (certificate holder) to identify federally listed threatened and endangered species in Exhibit Q of a site certificate application (request for amendment). As such, Golden Hills is only required to address state-listed threatened and endangered species in this amendment. However, to track threatened and endangered species status changes since the ASC, Golden Hills has updated Table Q-1 of the ASC and retained federal threatened and endangered species along with the required state threatened and endangered species (Table 7).

In preparation of Table 7, Golden Hills reviewed updated databases of species occurrence and distribution as well as included results of recent surveys of the Facility. Golden Hills reviewed updated ORBIC data (December 21, 2017), the U.S. Fish and Wildlife Service Information for Planning and Consultation (IPaC) species list (USFWS 2017), the National Marine Fisheries Service list of anadromous fish species within the Interior Columbia Recovery Domain (NMFS 2016), the ODA listed plant species for Sherman County (ODA 2017), and the ODFW list of threatened, endangered, and candidate fish and wildlife species in Oregon (ODFW 2017). State-listed species that have the potential to occur within the 5-mile Analysis Area include the North American wolverine, Washington ground squirrel, Snake River chinook salmon, northern wormwood, and Laurence's milkvetch (Table 7). None of these species will be affected by the Facility. The wolverine is very unlikely to utilize habitat within the Analysis Area, other than during a brief, temporary presence during rare dispersal events by transient individuals. Washington ground squirrels' range has retracted over time and are thought to no longer occur west of the John Day River. Snake River chinook salmon are present within the Analysis Area, but the Facility will not affect any riparian habitat, nor will it have any effect on water quality in the Columbia River. Northern wormwood is believed to be extinct in Oregon, and Laurence's milkvetch was not observed during rare plant surveys, and no ORBIC records exist within the analysis area.

Table 7. State and Federal Threatened, Endangered, and Proposed Species with the Potential to Occur Within the Analysis Area

Species	2007		2017		Notes on Listing Status and Occurrence
	Federal Status	State Status	Federal Status	State Status	
Birds					
Bald eagle (*Haliaeetus leucocephalus*)	--	LT	--	--	**Species delisted**. Nest observed during 2016 aerial surveys at the confluence of the Deschutes and Columbia Rivers approximately 5 mi NW of the GHWP.
Yellow-billed cuckoo (*Coccyzus americanus*)	C	--	LT	--	**Species listed as Federal Threatened**. Absent from ORBIC data, no known occurrences in the Exhibit Q Analysis Area. Believed extirpated from Oregon (ASC, Exhibit Q, Page 3).
American peregrine falcon (*Falco peregrinus anatum*)	--	LE	--	--	**Species delisted**. 2017 ORBIC review indicates occurrences along the Columbia River, within the Exhibit Q Analysis Area.
Mammals					
Gray wolf (*Canis lupus*)	--	--	LE	--	**Species listed as Federal Endangered**. Absent from ORBIC data, no known occurrences in the Exhibit Q Analysis Area. Unlikely to occur within the Analysis Area.
North American Wolverine (*Gulo gulo luscus*)	--	--	PT	LT	**Species listed as State Threatened and Federal Proposed Threatened**. Absent from ORBIC data, no known occurrences in the Exhibit Q Analysis Area. Unlikely to occur within the Analysis Area.
Washington ground squirrel (*Spermophilus washingtoni*)	C	LE	--	LE	**State status unchanged**. **Found to be not warranted for federal listing in September of 2016.** One historical occurrence in 2017 ORBIC data from 1979; however their range has been dramatically reduced since then and their range is limited to areas east of the John Day River (ASC, Exhibit Q, Page 3).

Table 7. State and Federal Threatened, Endangered, and Proposed Species with the Potential to Occur Within the Analysis Area

Species	2007		2017		Notes on Listing Status and Occurrence
	Federal Status	State Status	Federal Status	State Status	
Fish					
Bull trout (*Salvelinus confluentus*)	LT	--	LT	--	**Not included in previous application documents, listed as Federal Threatened in 1998.** 2017 ORBIC review indicates occurrence within the Analysis Area in the Deschutes River. Critical habitat designated in 2010 includes the Columbia River and Deschutes River within the Analysis Area.
Steelhead – Mid Columbia River ESU, summer run (*Oncorhynchus mykiss*)	LT	--	LT	--	**No change.** 2017 ORBIC review indicates occurrences within the Grass Valley Creek which bisects the GHWP.
Steelhead- Snake River Basin ESU	LT	--	LT	--	**No change.** Migrates through the Exhibit Q Analysis Area in the Columbia River.
Steelhead – Upper Columbia River ESU	LE	--	LT	--	**Down-listed to Federal Threatened in 2009.** Migrates through the Exhibit Q Analysis Area in the Columbia River.
Sockeye Salmon – Salmon River Tributary to the Snake River (*Oncorhynchus nerka*)	LE	--	LE	--	**No change.** Migrates through the Exhibit Q Analysis Area in the Columbia River.
Chinook Salmon – Snake River ESU, spring/summer/fall runs (*Oncorhynchus tshawytscha*)	LT	LT	LT	LT	**No change.** Migrates through the Exhibit Q Analysis Area in the Columbia River.
Chinook Salmon – Upper Columbia River ESU	LE	--	LE	--	**No change.** Migrates through the Exhibit Q Analysis Area in the Columbia River.
Plants					
Northern wormwood (*Artemisia campestris var. wormskioldii*)	C	LE	--	LE	**State status unchanged**. **Found to be not warranted for federal listing in September of 2016.** 2017 ORBIC review includes occurrences within the Analysis Area near the Columbia River; however, those occurrences are historical (1941) and this species is presumed extirpated or extinct in Oregon.

Table 7. State and Federal Threatened, Endangered, and Proposed Species with the Potential to Occur Within the Analysis Area

Species	2007		2017		Notes on Listing Status and Occurrence
	Federal Status	State Status	Federal Status	State Status	
Laurence's milkvetch (*Astragalus collinus var. laurentii*)	--	LT	--	LT	**No change.** Absent from ORBIC data, no known occurrences in the Exhibit Q Analysis Area.
Liverwort monkeyflower (*Mimulus jungermannioides*)	--	LT	--	--	**Species delisted.** Absent from ORBIC data, no known occurrences in the Exhibit Q Analysis Area.

Listing Status: LT = Listed Threatened, PT = Proposed Threatened, LE = Listed Endangered, C = Candidate

This table updated from Table Q-1 of the Application for Site Certificate (July 2017).

Sources:

National Marine Fisheries Service. 2016. Status of ESA Listings & Critical Habitat Designations for West Coast Salmon and Steelhead. Available online at: http://www.westcoast.fisheries.noaa.gov/publications/gis_maps/maps/salmon_steelhead/critical_habitat/

ORBIC (Oregon Biodiversity Information Center). 2017. GIS data for rare, threatened and endangered plants and animals within the vicinity of the Golden Hills Wind Project. December, 2017.

ODFW (Oregon Department of Fish and Wildlife). 2017. Threatened, Endangered, and Candidate Fish and Wildlife Species in Oregon. Available online at: http://www.dfw.state.or.us/wildlife/diversity/species/docs/Threatened_and_Endangered_Species.pdf

Oregon Department of Agriculture. 2017. Oregon Listed Plants by County for Sherman County. Available online at: http://www.oregon.gov/ODA/programs/PlantConservation/Pages/ListedPlants.aspx

U.S. Fish and Wildlife Service. 2017. Information for Planning and Consultation. IPaC list of species known or expected be on or near the Exhibit Q analysis area. Available online at: https://ecos.fws.gov/ipac/

Overall, the Facility is appropriately sited in agricultural fields with low potential for wildlife habitat, and in a manner consistent with the Oregon Columbia Plateau Ecoregion Wind Energy Siting and Permitting Guidelines. Because this amendment request does not change the micrositing corridors, there is no change the Council's previous conclusion that the Facility complies with the Threatened and Endangered Species Standard.

4.10 Scenic Resources

The Council previously relied on Conditions PRE-SR-01through OPR -SR-01to address the Facility's compliance with the Scenic Resources Standards.[47] These conditions address the color

[47] Final Order on Request for Contested Case and Amendment #3 of the Site Certificate, p. 85-86 (February 24, 2017).

of facilities, signs, and lighting but are not related to the size of turbines. The Council previously considered a layout of 125 turbines with a maximum height of 518 feet, and concluded that turbines would be visible from six locations with land management plans.[48] The proposed change will increase the maximum turbine height allowed to 650 feet. Golden Hills completed a revised "zone of visual influence" (ZVI) analysis to evaluate whether the taller turbines could be visible at different scenic resources, or if the change would result in significant visual impacts at the six locations previously considered. For the ZVI analysis, Golden Hills conservatively assumed that all 125 turbine locations are 650 feet tall. This assumption greatly overestimates the number of turbines that would be used if the larger turbines are selected, but it also depicts the worst-case scenario from all points within the 10-mile analysis area overlooking the micrositing corridors.

The ZVI analysis indicates that the turbines will be visible from the same scenic resources as previously considered (Table 8). In some areas, more turbines maybe visible and in some areas the area of visibility is slightly extended. Considering the slight increase in area from which the facility will be visible compared to the previous area, as shown on Figure 4, the Council can conclude there is no significant impact to scenic resources.

Table 8. Visibility of Turbines at Scenic Resources

Scenic Resources	Distance to Closest Turbines	Turbine Visible at Scenic Resource	
		Approved (518 feet)	Proposed (650 feet)
Lands within the Columbia River Gorge National Scenic Area	5 miles	Yes	Yes
State Route 14 within the Columbia River Gorge National Scenic Area	7.5 miles	Yes	Yes
Lower Deschutes River and corridor	5.5 miles	Yes	Yes
John Day River and corridor	9 miles	Yes	Yes
Journey Through Time Scenic Byway	0.3 miles	Yes	Yes
Rock outcroppings, trees, the John Day River Canyon, the Deschutes River Canyon, and the rural nature of the Sherman County landscape	5.0 miles	Yes	Yes

[48] Final Order on Request for Contested Case and Amendment #3 of the Site Certificate, p. 85-86 (February 24, 2017).

RFA 5 provides an opportunity to use fewer turbines, which could reduce Facility impacts on visual resources. Consequently, the proposed amendment makes no changes that alter the basis for the Council's earlier findings, so the Council may find that this amendment request satisfies OAR 345-022-0080.

4.11 Historic, Cultural and Archaeological Resources

The Council previously relied on conditions imposed in the existing Facility Site Certificate to address compliance with the Council's Historic, Cultural, and Archaeological Resources Standard.[49] Conditions PRE-HC-01through PRE-HC-03V and CON-HC-01-CON-HC-02 discuss buffer zones, areas to be avoided, and unanticipated discoveries. Condition CON-HC-03addresses construction avoidance to any intact physical evidence of the Oregon Trail. Construction avoidance may include redesign, reengineering, or restrictions on the area of construction activity. The proposed changes turbine dimensions do not affect Golden Hills' ability to comply with cultural conditions of the Site Certificate because this amendment request does not seek to change the Site Boundary or increase the number of turbines. All turbines will be placed within the previously evaluated micrositing corridor. RFA 5 makes no changes that alter the basis for the Council's earlier findings, and OAR 345-022-0090 is met.

4.12 Recreation

The Council previously found that the Facility complies with the Recreation Standard. The analysis was based on the importance and uniqueness of the recreational opportunities in the area, and on usage or demand, along with potential impacts from Facility construction and operation on the recreational activity. Golden Hills has evaluated the potential for new recreation areas and found that there are no new, important recreational opportunities within the analysis area that were not previously analyzed.

This amendment request does not seek to change the Site Boundary or increase the number of turbines. Consequently, and in consideration of the below, the proposed amendment makes no changes that would alter the basis for the Council's earlier findings:

- The noise analysis conducted for the Final Order on the Application indicated that the approved Facility will be inaudible from all recreational opportunities in the analysis area except the Oregon National Historic Trail, the Journey Through Time Scenic Byway, and DeMoss Springs Memorial Park. The modifications proposed in this amendment request will still comply with noise conditions described in the site

[49] Final Order on Request for Contested Case and Amendment #3 of the Site Certificate, p. 90 (February 24, 2017).

certificate and, for the same reasons previously cited by EFSC, audible noise will not adversely affect recreation.

- There will be no changes to construction traffic or operations traffic than previously reviewed by Council in RFA 3 and 4.
- Visibility of the proposed turbines and the changes resulting from the modifications described in this amendment request are detailed in the previous sections for Protected Areas and Scenic Resources. As noted in those sections, the proposed turbines slightly, but not substantially, extended the ZVI in some areas.

Therefore, the Council may find that this amendment request complies with OAR 345-022-0040.

4.13 Public Services

The Council has adopted Site Certificate Conditions PRE-PS-01, PRE-PS-02, OPR -PS-01, OPR -PS-02, CON-PS-01-CON-PS-04, PRO -PS-01, GEN -PS-01, and GEN -PS-02, to address the Public Services Standard. The proposed amendment will not alter the Facility's impacts on the ability of public and private service providers to supply sewer and sewage treatment, water, stormwater drainage, solid waste management, housing, traffic safety, police and fire protection, health care, and schools. The traffic analysis presented in the ASC included an analysis of the vehicles needed to deliver and construct turbines and there is no change to anticipated truck size or construction equipment that will result from the proposed amendment. As noted in the Final Order on Amendment 3, because the turbines will be larger, there will be fewer of them. Therefore, construction truck traffic is expected to be equal or less than presented in the ASC. The modifications proposed under RFA 5 do not change this conclusion.

As provided in RFA 4, Golden Hills now assumes that during the peak construction period there will be 300 workers onsite, and there will be an average of 170 workers onsite throughout construction. Included as Attachment F to RFA 4, the certificate holder conducted a Public Services Evaluation in which the anticipated increase in workers' construction-related impacts to public services (e.g., housing, health care, transportation and roadway impacts, etc.) were taken into consideration. The certificate holder also confirmed in RFA 4 that the estimated number of permanent employees needed to operate the Facility, between 10 and 15 permanent employees, would remain consistent with what was previously assumed in Exhibit U of the ASC. The increase in passenger (construction worker) traffic is not anticipated to increase Facility-related traffic impacts due to very low use of these local roadways. The modifications proposed under RFA 5 do not alter the estimates presented in RFA 4. As noted above, the Public Services conditions provides safety, fire protection and emergency response measures for the Facility, including the requirement to develop a fire safety and response plan with affected agencies prior to construction of the Facility.

RFA 5 does not seek to change the Site Boundary or increase the number of turbines, and there are no other circumstances that would alter the basis for the Council's earlier determination. Accordingly, RFA 5 meets OAR 345-022-110.

4.14 Waste Minimization

The Waste Minimization Standard analysis provides an assessment of procedures and practices needed to minimize generation of solid waste and wastewater. RFA 5 will not increase the amount of solid waste and wastewater generated by the Facility, and will not modify the procedures and practices to be used to handle these materials. The Council adopted Conditions PRE-WM-01, PRO -WM-01, CON-WM-01 and OPR -WM-01 to address the Waste Minimization Standard for the Facility's compliance. RFA 5 does not alter Golden Hills' ability to comply with the Facility Site Certificate conditions. Therefore, the Council may rely on its earlier finding that OAR 345-022-0120 is met.

4.15 Public Health and Safety

The majority of the Site Boundary is actively farmed for dry land wheat and barley. Occasionally, low flying crop duster aircraft are used to apply herbicides. The Council previously relied on comments from local crop duster operators to conclude that placement of 125 turbines would not impede this accepted farm practice.[50] The proposed change could reduce the number of turbines by nearly half, which would have a corresponding reduction in the number of obstacles to low flying aircraft. For RFA 5, Golden Hills contacted Aviation to get its input on taller turbines at the Facility. In response, Aviation referred to its May 31, 2016 letter to ODOE (Attachment 3) that summarized the need for an airspace study, coordination with the FAA, and outlined air safety concerns about the area in the immediate vicinity of Wasco State Airport. As required by the FAA and Condition PRE-PH-03, Golden Hills will submit a Notice of Proposed Construction and Alteration (FAA form 7460-1) to the FAA and Aviation that identifies turbine locations and heights based on final design.

Golden Hills also consulted with the Navy (Attachment 4) as a military training route (MTR; IR-343) crosses a portion of the site boundary. The Navy confirmed that military aircraft using this MTR operate a minimum elevation of 5,000 feet. Therefore, the proposed change to increase turbine height will not affect the safe operation of military aircraft within an MTR.

The Council addressed the Public Health and Safety Standard for Wind Facilities in Section IV.I of the Final Order on the Application and found that the Golden Hills could design, construct, and operate the facility to exclude members of the public from close proximity to the turbine

[50] Final Order on the Golden Hills Wind Project, p.56 (May 15, 2009).

blades and electrical equipment. The Council further found that the certificate holder could design, construct, and operate the facility to preclude structural failure of the tower or blades that could endanger public safety, and to have adequate safety devices and testing procedures designed to warn of impending failure and to minimize the consequences of such failure. The Council previously imposed Condition CON-PH-01 requiring that the certificate holder follow the manufacturer's recommended handling instructions and procedures to prevent damage to turbine or turbine tower components that could lead to failure. In addition, the Council imposed setback conditions in consideration of public safety as part of RFA 1 that are based on blade tip height. Accordingly, the Council can find that the facility, with conditions, can comply with the Public Health and Safety Standard, OAR 345-22-0110.

4.16 Cumulative Effects

The Council previously found in the Final Order on Amendment 3 that the Facility complies with the Cumulative Effects Standards for Wind Energy Facilities (OAR 345-024-0015). The proposed changes will not change the Facility's reliance on existing roads where possible. As described in Section 4.10 above, although the proposed turbines will be taller, the changes to visual impact on protected areas or public viewing areas will not be significant. Proposed changes will not significantly affect wetlands or other waters of the state because the Facility construction will avoid impacts to wetlands through boring or rerouting facilities around these features as necessary. The facility has been sited to reduce impacts to productive fish and wildlife habitat by siting as much of the facility as possible in Class 6 habitat. In addition, the facility as modified would comply with the existing site certificate conditions, including Conditions IV.I.1 to CON-PH-02 and condition PRE-PH-01 related to compliance with the Threatened and Endangered Species standard, and Conditions PRE-FW-01 to PRE-FW-05, and CON-FW-01, related to compliance with the Fish and Wildlife Habitat standard. RFA 5 makes no changes that would alter the basis for EFSC's earlier findings that OAR 345-024-0015 is met.

Section 5. Other Applicable Regulatory Requirements

Golden Hills demonstrates in Table 9 that the Facility, as amended, will comply with other applicable Requirements.

Table 9. Summary of Other Applicable Regulatory Requirements

Agency	Regulation	Applicability to Proposed Change
FAA	Notice of Proposed Construction or Alteration	**Applicable**: Existing site certificate Condition PRE-PH-03 requires that before beginning construction, the certificate holder shall submit to the Federal Aviation Administration (FAA) and the Oregon Department of Aviation a Notice of Proposed Construction or Alteration identifying the proposed final locations of the turbines and related or supporting facilities and shall provide a copy of this notice to the Department.
ODEQ	Noise Control Regulations	**Applicable**: Condition PRE-CJ-01requires a new noise analysis be submitted to the department prior to construction that demonstrates the Facility, as proposed, will comply with all relevant noise related requirements. The Certificate Holder has multiple means to demonstrate compliance, including (1) eliminating or moving turbine locations within the approved corridors, (2) altering the turbine selection, (3) documenting that the hourly L50 noise levels caused by the Facility at any noise-sensitive property will not cause the hourly L50 to increase by more than 10 dBA, and 4) obtaining a legally-effective easement or real covenant. Nothing in this amendment request alters the Facility's ability to comply with OAR 340-035-0035 or the four noise related conditions of approval (Conditions CON-CJ-01, PRO-CJ-01, and OPR-CJ-01).
ODSL	Removal-Fill Law	**Not Applicable**: The Facility can be constructed and operated without triggering the need for a Removal/Fill Permit from DSL or a Section 404 permit from the USACE because impacts to wetlands, waters of the state, and waters of the State will be avoided.
Oregon Water Resources Department	Ground Water Act	**Applicable**: The amendment request does not increase the quantity of water used during construction or operation. The request does not significantly change the quantity of water used and wastewater generated during operations from what was originally authorized in the Site Certificate. The modifications proposed in this amendment request do not affect the Certificate Holder's ability to comply with the Site Certificate, and OAR Chapter 690.

Section 6. Conclusion

Table 10 provides the location where the required information for a written request for amendment (OAR 345-027-0060 (1)) is located in this document. In the analysis provided in this amendment request, Golden Hills demonstrates that the Facility, as amended, will comply with the applicable requirements outlined in OAR 345-027-0060. Golden Hills has provided sufficient evidence for the Council to reasonably conclude that the requested site certificate amendment is warranted and allowed.

Table 10. Submittal Requirements Matrix

Requirement	Location
OAR 345-027-0060 (1) To request an amendment to the site certificate required by OAR 345-027-0050(3) and (4), the certificate holder shall submit a written preliminary request for amendment to the Department of Energy that includes the following:	N/A
OAR 345-027-0060(1)(a) The name of the facility, the name and mailing address of the certificate holder, and the name, mailing address, email address and phone number of the individual responsible for submitting the request.	Section 3.1
OAR 345-027-0060(1)(b) A detailed description of the proposed change, including:	Section 3.2
(A) a description of how the proposed change affects the facility,	Section 3.2
(B) a description of how the proposed change affects those resources or interests protected by applicable laws and Council standards, and	Section 2.0, Section 4.0 & Section 5.0
(C) the specific location of the proposed change, and any updated maps and/or geospatial data layers relevant to the proposed change.	Section 3.1
OAR 345-027-0060(1)(c) References to any specific Division 21 information that may be required for the Department to make its findings.	Section 4.1 & 4.2
OAR 345-027-0060(1)(d) The specific language of the site certificate, including conditions, that the certificate holder proposes to change, add or delete through the amendment.	Section 3.0
OAR 345-027-0060(1)(e) A list of the Council standards and all other laws - including statutes, rules and ordinances - applicable to the proposed change, and an analysis of whether the facility, with the proposed change, would comply with those applicable laws and Council standards. For the purpose of this rule, a law or Council standard is "applicable" if the Council would apply or consider the law or Council standard under OAR 345-027-0075(2).	Section 4.0 & Section 5.0
OAR 345-027-0060(1)(f) An updated list of the owners of property located within or adjacent to the site of the facility, as described in OAR 345-021-0010(1)(f).	To be provided when requested by ODOE.

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Figures

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120°50'W 120°48'W 120°46'W 120°44'W 120°42'W 120°40'W 120°38'W 120°36'W 120°34'W

45°38'N 45°36'N 45°34'N 45°32'N 45°30'N

China Valley Creek

Wasco

Klondike Substation

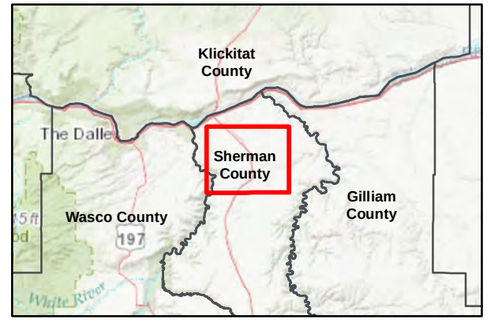
Sherman County

Proposed Substation

Wasco County

Moro

Vicinity Map



Legend

- Wind Turbine
- Existing Substation
- Proposed Substation
- Operations and Maintenance Facility
- Existing Hay Canyon 230-kV Transmission Line
- Proposed 230-kV Transmission Line
- 230 kV GenTie Northern Termination
- Low-voltage Collector System
- Approved Micrositing Corridor
- Crane Path
- Access Road
- Public Road (Paved)
- Public Road (Gravel)
- Temporary Laydown Area
- Land Parcel Boundary
- Facility Site Boundary
- City Boundary
- County Boundary

N

0 0.5 1 2
Miles

Golden Hills Facilities Map

Sherman County, Oregon

AVANGRID RENEWABLES

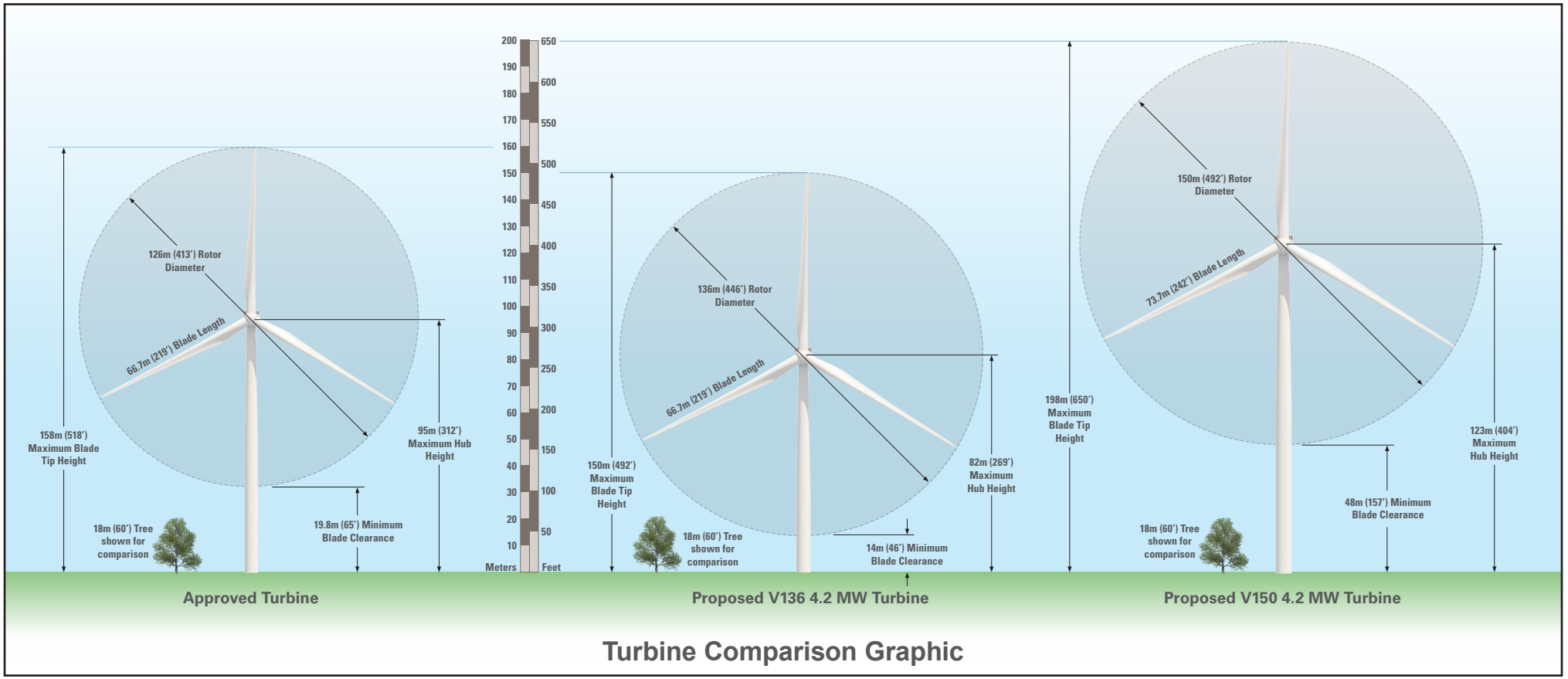


Figure 2. Turbine Options

Golden Hills Wind Project

Sherman County, Oregon

AVANGRID RENEWABLES

Golden Hills Wind Project

Figure 3
Protected Areas

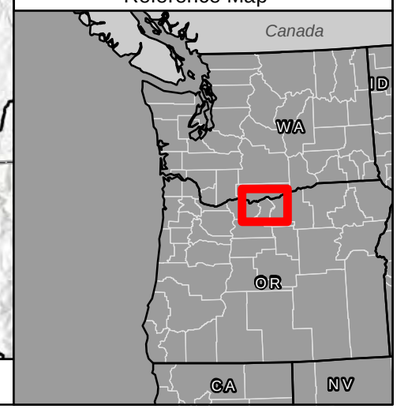
SHERMAN COUNTY, OR

- Wind Turbine Location
- Area of Turbine Visibility
- Additional Visible Areas from Original ZVI
- County Boundary
- Facility Site Boundary
- Analysis Area (20 Miles)
- Protected Area
- Major River or Stream
- Wild / Scenic River Corridor
- Wilderness Study Area
- Columbia River Gorge National Scenic Area
- Columbia Hills Natural Area Preserve
- John Day Wildlife Refuge
- Lower Deschutes Wildlife Area
- Interstate Highway
- Secondary Highway
- Secondary Road

Turbine Hub Height: 123 meters
Turbine Rotor Diameter: 75 meters
Worst-case Total Turbine Height: 198 meters
Total Number Assessed: 125 turbines
Analysis Area: 20 miles from Site Boundary
Assumed Viewer Height: 6-foot tall person

TETRA TECH

Reference Map



1:325,000 WGS 1984 UTM Zone 10N

0 5 10 20 30 40 Miles

P:\GIS_PROJECTS\Avangrid\GoldenHills\MXDs\RAI\Avangrid_GoldenHills_RAI5_ZVI_ProtectedAreas_11117i_20180418.mxd

Golden Hills Wind Project

Figure 4
Scenic and Aesthetic Values

SHERMAN COUNTY, OR

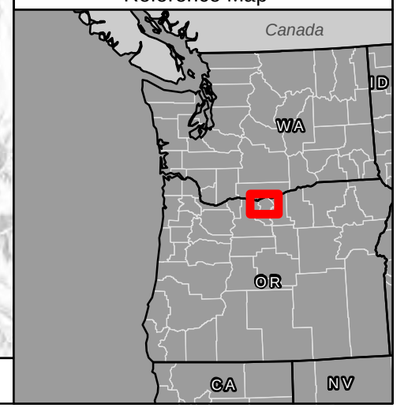
- Wind Turbine Location
- Area of Turbine Visibility
- Additional Visible Areas from Original ZVI
- Analysis Area (10 Miles)
- Facility Site Boundary
- County Boundary
- Scenic Resource
- Major River or Stream
- Wild / Scenic River Corridor
- Wilderness Study Area
- Columbia River Gorge National Scenic Area
- Interstate Highway
- Secondary Highway
- Secondary Road

Turbine Hub Height: 123 meters
Turbine Rotor Diameter: 75 meters
Worst-case Total Turbine Height: 198 meters
Total Number Assessed: 125 turbines

Analysis Area: 10 miles from Site Boundary
Assumed Viewer Height: 6-foot tall person

TETRA TECH

Reference Map



1:200,000 WGS 1984 UTM Zone 10N

0 2.5 5 10 15 20 Miles

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Attachment 2:

Department's Type B Review ADR Evaluation and Determination (June 1, 2018)

ESTERSON Sarah * ODOE

From: ESTERSON Sarah * ODOE
Sent: Friday, June 1, 2018 11:37 AM
To: 'Hutchinson, Matthew'; 'Walsh, Brian'
Cc: WOODS Maxwell * ODOE; CORNETT Todd * ODOE; 'Albrich, Elaine'; 'Konkol, Carrie'; RATCLIFFE Jesse D
Subject: Avangrid/Golden Hills - Request for Amendment No. 5 - "Type B Review ADR" Determination Letter
Attachments: GHAMD5 RFA5 ADR Evaluation and Response 2018-6-01.pdf

Matt and Brian,

Please find the attached evaluation and response for the "Type B Review" Amendment Determination Request (ADR) for the Golden Hills Wind Project, Request for Amendment 5 of the Site Certificate, received on May 4, 2018. As indicated, the Department considers Type A review appropriate and does not consider the reasons provided in the ADR to warrant a Type B review.

Pursuant to OAR 345-027-0057(7), you may refer the Department's determination to the Council for their concurrence, modification, or rejection. If Avangrid requests to refer the Department's Type A review determination to Council, and would like to be included on the June Council meeting agenda, please let us know by **5 p.m. on Thursday, June 7, 2018** to allow for adequate planning.

Let us know if there are questions or comments.

Thanks,
Sarah

Sarah T. Esterson
Energy Facility Siting Analyst
Oregon Department of Energy
550 Capitol St NE, 1st Floor
Salem, OR 97301
P:(503) 373-7945
C: (503) 385-6128

Oregon.gov/energy

Oregon
Kate Brown, Governor

OREGON DEPARTMENT OF ENERGY

550 Capitol St. N.E., 1st Floor
Salem, OR 97301-3737
Phone: (503) 378-4040
Toll Free: 1-800-221-8035
FAX: (503) 373-7806
www.Oregon.gov/ENERGY

June 1, 2018

Brian Walsh, Senior Developer
Avangrid Renewables, LLC
1125 NW Couch Street, Suite 700
Portland, Oregon 97209

Sent via email: brian.walsh@avangrid.com; matthew.hutchinson@avangrid.com; ElaineAlbrich@dwt.com; carrie.konkol@tetratech.com

Dear Mr. Walsh,

On May 4, 2018, the Oregon Department of Energy (Department) received the preliminary Request for Amendment 5 (pRFA5) and a Type B review amendment determination request (ADR), submitted pursuant to OAR 345-027-0057, for Golden Hills Wind Facility, LLC's existing Golden Hills Wind Project Site Certificate. The ADR describes that pRFA5 requests to amend Condition PRE-DC-01 and to construct and operate a differing turbine model option (increase turbine hub height from 311 to 404 feet, increase blade tip height from 521 to 650 feet, and reduce minimum blade tip clearance from 65 to 46 feet); increase temporary access road width (40 to 100 feet); and increase height of meteorological towers (311 to 404 feet) ("proposed modifications").

The Type A review is the standard or "default" site certificate amendment process. A certificate holder can request Department determination of the Type B review process, but the certificate holder has the burden of justifying the appropriateness of the Type B review process. The Department may consider, but is not limited to, the factors identified in OAR 345-027-0057(8) when determining whether to process an amendment request under Type B review. The Department's evaluation of the OAR 345-027-0057(8) factors is presented below.

Amendment Review Process

Energy Facility Siting Council (EFSC or Council) rules describe the process for Type A and Type B review of a request for amendment at OAR 345-027-0051. The table below summarizes key differences in the review phases/steps and timelines between the two processes. Council rules describe both processes in greater detail.

Review Phase/Step	Timeline	
	Type A	Type B
ODOE Issues Determination of Completeness on Preliminary Request for Amendment	Within 60 days	Within 21 days
ODOE Issues Draft Proposed Order	Within 120 days of notice of Determination of Completeness	Within 60 days of notice of Determination of Completeness
Public Hearing	At least 20 days after issuance of Draft proposed order	Not applicable
ODOE Issues Proposed Order	Within 30 days following the Public Hearing	Within 21 days of close of comment period on Draft Proposed Order
Deadline for Contested Case Requests	At least 30 days after issuance of Proposed Order	Not applicable
ODOE Review and Council Decision on Contested Case (CC) Requests	Next regularly scheduled Council meeting following deadline for CC requests	Not applicable
Contested Case Proceeding	At Council's discretion (no specific timeline)	Not applicable
Issuance of Final Order and Amended Site Certificate	Next regularly scheduled Council meeting following deadline for CC requests	Next regularly scheduled Council meeting following issuance of PO

As presented in the above table, the key procedural difference between the Type A and Type B review is that the Type A review includes a public hearing on the draft proposed order and an opportunity for a contested case proceeding. The key timing differences between Type A and Type B review are in the Department's determination of completeness of the preliminary amendment request, and the issuance of the draft proposed order and proposed order; it is important to note that Council rules authorize the Department to adjust the timelines for these specific procedural requirements, if necessary.

Description of Proposed Modifications

The certificate holder proposes to construct and operate a differing turbine model option that would increase turbine hub height from 311 to 404 feet, increase blade tip height from 521 to 650 feet, and reduce minimum blade tip clearance from 65 to 46 feet. The certificate holder also requests approval for modifications to previously approved related and supporting facility dimensions and specifications, respectively, including an increase in temporary access road width from 40 to 100 ft, and an increase in meteorological tower height from 311 to 404 ft. The certificate holder requests flexibility in final turbine model selected, including the previously approved and the proposed turbine model options. While a differing turbine model option is proposed, the certificate holder requests flexibility to construct and operate the previously approved maximum 125 turbines.

The certificate holder requests to amend an existing site certificate condition based on proposed

changes in turbine hub height, blade tip height, and blade tip clearance specifications; and, requests to remove a sub-condition requirement restricting maximum combined turbine metal weight.

Considerations for Determining Whether to Process an Amendment Request as Type B Review

OAR 345-027-0057(8) provides a non-exhaustive list of factors the Department may consider in determining whether to process an amendment request under Type B review. In its review of the factors, the Department considers the anticipated regulatory review, potential environmental impacts, and level of public and agency interest. The procedural history and administrative record for the facility also support the evaluation of anticipated level of public and reviewing agency interest related to potential new or differing findings; new or amended conditions; and historic level of interest in facility siting proceedings.

It is within the Department and Council's discretion to consider the factors individually or in combination in the evaluation of whether Type B review is warranted.

The listed factors are evaluated as follows:

(a) The complexity of the proposed change;

Golden Hills Wind Facility, LLC's ADR requests that the Department consider the proposed modifications to be minor. The ADR explains that there are no new resources to consider because the amendment request does not include a change in site boundary or micrositing corridor. The ADR explains that the proposed differing turbine model option would not result in greater visual impacts to scenic resources or noise impacts to noise sensitive receptors than previously evaluated on the record for the facility. The ADR describes that the requested site certificate condition amendment is minor because it modifies references to turbine specifications and removes non-relevant turbine metal weight restrictions.

The Department considers the proposed modifications to be complex for the following reasons. The proposed differing turbine model option represents the largest wind turbine, at a total turbine height of 650-feet, ever considered by the Department and Council. Based on review of pRFA5 submitted with the Type B review ADR, the Department is uncertain of the significance of the visual impact from the change in total turbine height (from 521 to 650-ft) compared to the Council's previous analysis for the Recreation, Scenic Resources, Protected Areas, and Historic, Cultural and Archeological Resources standards. Similarly, the Department is uncertain of the significance of the impact from the change in total turbine height (from 521 to 650-ft) to accepted farm practices and cost of farm practices under the Land Use standard, and to aircraft operators under the Public Health and Safety Standard for Wind Facilities; and, from the lowering of minimum blade tip clearance to members of the public under the Public Health and Safety Standard for Wind Facilities.

Because the proposed differing turbine model option represents wind turbine specifications not previously evaluated by Council for this facility or historically for any EFSC facility, and based on the uncertainty of potential adverse environmental impacts, the Department considers the proposed modifications to be complex.

(b) The anticipated level of public interest in the proposed change;

Golden Hills Wind Facility, LLC's ADR requests that the Department consider the anticipated level of public interest to be low. The ADR includes a summary of comments received during the ASC phase and subsequent proceedings, and suggests that the nature of and minimal level of comments received on RFA3 and RFA4 related to wildlife impacts, turbine setbacks, and health and safety standards be used as a proxy for the anticipated level of public interest in the proposed modifications. The ADR presents an evaluation of the substantive nature of comments received and seems to argue that because Council was able to make affirmative findings after evaluation of comments received, that anticipated level of public interest in the proposed modifications be viewed as minimal.

The Department agrees that the level of public interest in historic proceedings for the Golden Hills Wind Project is an available metric for the evaluation of this factor. However, the Department does not consider the substantive nature of the comments, or Council findings or responses to comments, to establish a basis for anticipating a minimal level of public interest, or in minimizing the importance of a level of public interest.

Because the proposed differing turbine model option represents wind turbine specifications not previously evaluated by Council for this facility or historically for any EFSC facility, and based on the uncertainty of potential adverse environmental impacts, the Department anticipates a moderate level of general public interest in this amendment request.

(c) The anticipated level of interest by reviewing agencies;

Golden Hills Wind Facility, LLC's ADR requests that the Department consider the anticipated level of interest by reviewing agencies to be low because reviewing agencies previously evaluated the facility during the application phase and subsequent EFSC proceedings. The ADR explains that the certificate holder expects the level or reviewing agency interest to be similar to RFA3, where two non-substantive reviewing agency comments were received, and one substantive comment was received from ODFW on wildlife issues. The ADR also describes that the certificate holder initiated consultation with the Oregon Department of Aviation, Department of Geology and Mineral Resources, and the U.S. Department of Navy.

Because pRFA5 was submitted in conjunction with the Type B review ADR, the Department initiated review with specifically identified reviewing agencies (Oregon State Historic Preservation Office, Oregon Department of Aviation, Oregon Department of Fish and Wildlife) and the Special Advisory Group (Sherman County Board of Commissioners). During its review of pRFA5, the Department identified specific issues, questions and impacts for each of these entities to consider and for which to provide responses.

Because the proposed differing turbine model option represents wind turbine specifications not previously evaluated by Council for this facility or historically for any EFSC facility, and based on the uncertainty of potential adverse environmental impacts and specific reviewing agencies identified by the Department where their technical expertise and review was requested, the Department anticipates a moderate level of interest from several reviewing agencies.

(d) The likelihood of significant adverse impact;

Golden Hills Wind Facility, LLC's ADR requests that the Department consider the likelihood of a significant adverse impact to be low because the differing turbine model option may result in fewer overall impacts due to fewer turbines operating onsite. However, the certificate holder specifically requests flexibility to maintain the previously approved maximum number (125) of turbines; therefore, the Department does not agree that the pRFA5 would reduce impacts to land from fewer turbines because the certificate holder is not requesting a reduction in the number of turbines that could be deployed at the facility.

The Department disagrees that the reasons included in the Type B review ADR and analysis included in pRFA5 support a conclusion that the likelihood of significant adverse impacts from the proposed modifications be considered low. As described under the OAR 345-027-0057(8)(a) factor, the proposed differing turbine model option represents the largest wind turbine, at a total turbine height of 650-feet, ever considered by the Department and Council. Based on review of pRFA5 with the Type B review ADR, the Department is uncertain of the significance of the visual impact from the change in total turbine height (from 521 to 650-ft) compared to the Council's previous analysis for the Recreation, Scenic Resources, Protected Areas, and Historic, Cultural and Archeological Resources standards. Similarly, the Department is uncertain of the significance of the impact from the change in total turbine height (from 521 to 650-ft) to accepted farm practices and cost of farm practices under the Land Use standard, to aircraft operators under the Public Health and Safety Standard for Wind Facilities; and, from the lowering of minimum blade tip clearance to members of the public under the Public Health and Safety Standard for Wind Facilities.

(e) The type and amount of mitigation, if any.

Golden Hills Wind Facility, LLC's ADR states that the proposed modifications would not increase the type and amount of mitigation established in its Habitat Mitigation Plan and Wildlife Monitoring and Mitigation Plan. The ADR refers to Sections 3 and 4 of pRFA5 to support its conclusions.

The Department agrees that for the reasons described above, the proposed modifications are not likely to result in new mitigation for temporary and permanent habitat impacts.

Amendment Type Determination

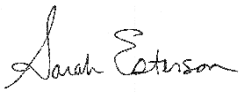
After reviewing the Type B review ADR and consideration of the OAR 345-027-0057(8) factors, the Department determines that pRFA5 be processed under Type A review. The Department bases its determination of Type A review on the following:

- The proposed modifications are considered complex;
- There is an anticipated moderate level of interest from members of the public and reviewing agencies in the proposed modifications;
- The likelihood of potential significant adverse impacts from the proposed modifications is uncertain.

If Golden Hills Wind Facility, LLC disagrees, pursuant to OAR 345-027-0057(7) you may refer the Department's determination to the Council for their concurrence, modification, or rejection.

If there are any questions or comments, please feel free to contact me per the information below.

Sincerely,



Sarah Esterson, Senior Siting Analyst
E: sarah.esterson@oregon.gov
P: 503-373-7945

cc via e-mail distribution:
Todd Cornett, Oregon Department of Energy
Maxwell Woods, Oregon Department of Energy
Jesse Ratcliffe, Oregon Department of Justice

Attachment 3:

Golden Hills Wind Farm, LLC's Referral of Department's June 1, 2018 Type A Review Determination to Council (June 7, 2018)

ESTERSON Sarah * ODOE

From: Hutchinson, Matthew <matthew.hutchinson@avangrid.com>
Sent: Thursday, June 7, 2018 1:01 PM
To: ESTERSON Sarah * ODOE
Cc: CORNETT Todd * ODOE; WOODS Maxwell * ODOE; Walsh, Brian; elainealbrich@dwt.com; Konkol, Carrie
Subject: Avangrid/Golden Hills - Request for Council Review of Amendment Determination
Attachments: Golden Hills Request for Council Review.pdf

Sarah,
See attached letter requesting Council review of ODOE's denial of the Type B review for the Golden Hills amendment request. Avangrid requests this item be included in the June 2018 meeting agenda.

Thanks,
Matt

AVANGRID RENEWABLES

Matt Hutchinson
Permitting Manager Ld/Sr

1125 NW Couch St., Suite 700, Portland, OR, 97209
Telephone 503.478.6317
Cell 503.701.0665
matthew.hutchinson@avangrid.com

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==========

AVANGRID
RENEWABLES

Matt Hutchinson
Senior Permit Manager

June 7, 2018

Sarah Esterson
Oregon Department of Energy
550 Capitol St. N.E. 1st Floor
Salem, OR, 97301

RE: Request for Council Review of Golden Hills Amendment Determination

Dear Sarah,

Golden Hills Wind Facility, LLC (Golden Hills) disagrees with the Oregon Department of Energy's (ODOE) determination provided in its June 1, 2018 letter that a Type A review is needed for Golden Hills' request to amend its Site Certificate to allow the use of turbines with larger dimensions, similar to what was recently approved for the Montague Wind Power Facility under the old expedited amendment process. Therefore, Golden Hills requests that ODOE's denial of Golden Hill's Type B request be referred to the Energy Facilities Siting Council under OAR 345-027-0057(7).

Sincerely,

Matt Hutchinson
Senior Permit Manager

cc:
Todd Cornett, Oregon Department of Energy
Maxwell Woods, Oregon Department of Energy
Brian Walsh, Avangrid Renewables
Elaine Albrich, DWT

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