



# Oregon

Tina Kotek, Governor



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**To:** Oregon Energy Facility Siting Council

**From:** Sarah Esterson, Senior Policy Advisor

**Date:** July 18, 2025

**Subject:** Montague Solar Facility (Pachwaywit Fields) – Annual Monitoring for Wildlife Monitoring and Mitigation Plan (Condition 91)

**Attachments:** Wildlife Monitoring and Mitigation Plan (April 21, 2021)  
2024 Annual Wildlife Monitoring Results Extracted from April 23, 2025 Annual Report

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## Purpose

The Oregon Department of Energy (Department) prepared this staff report for the Energy Facility Siting Council to summarize the results of ongoing wildlife monitoring and results at Montague Solar Facility. The Department is required to make available the actual results and allow for public comment. This staff report supports both Council and the public's understanding of the results and of their opportunity to review and comment.

## Wildlife Monitoring and Mitigation Plan Overview

Montague Solar Facility is a 162 megawatt alternating current (MWac) solar photovoltaic power generation facility. The facility occupies 1,189 acres and includes solar panels, trackers, 14-mile, 230-kV transmission line (shared with Montague Wind Facility), substation, operations and maintenance enclosure, facility roads and access. The solar generating facility components are located approximately 11 miles south of Arlington, and the substation and shared transmission line are approximately 2.5 miles from Arlington in Gilliam County.

The Council issued a site certificate for the facility in 2020; the facility has been operational since April 2023.

Condition 91 of the site certificate states that, "...The certificate holder shall conduct wildlife monitoring as described in the final WMMP, as amended from time to time. [Amendment #3; AMD5]."

The WMMP requires maintenance personnel to voluntarily search for avian and bat incidents (e.g., fatality, injury) during operational activities of the facility. No systematic wildlife monitoring is required by the WMMP. Incidental monitoring conducted by on-site personnel in 2023-2024 submitted in the 2024 Annual Report Cover Letter included an observation of common raven on April 18, 2024.

## Public Comments on Wildlife Monitoring Results

Section 2 of the WMMP, establishes an opportunity for the public to review and comment on monitoring results. Specifically, the WMMP states, "Within 30 days after receiving the final versions of reports that are required under this plan, the Department will make the reports available to the public on its website and will specify a time in which the public may submit comments to the Department."

The Department received the annual monitoring results for the facility on April 23, 2025. In accordance with the terms of the WMMP, the Department provides a copy of this letter posted to the Department's

project website at: <https://www.oregon.gov/energy/facilities-safety/facilities/Pages/MSF.aspx> and has established a 30-day timeframe to accept public comments.

Comments are due within 30-days of posting, or **August 18, 2025 at 5:00 p.m.** and may be submitted to Sarah Esterson at [sarah.esterson@energy.oregon.gov](mailto:sarah.esterson@energy.oregon.gov)

**Attachment 1:**

**Wildlife Monitoring and Mitigation Plan (April 21, 2021)**

**Montague Solar Facility:  
Wildlife Monitoring and Mitigation Plan**  
[MARCH 2021]

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This plan describes wildlife monitoring that the certificate holder shall conduct during operation of the Montague Solar Facility.<sup>1</sup> This plan was approved in September 2019 as part of the Energy Facility Siting Council's (EFSC) Final Order on Request for Amendment 4 of the Montague Wind Power Facility site certificate (Final Order on RFA4). Final Order on RFA4 approved modifications to the previously approved layout and specifications of wind facility components and the addition of approximately 1,189 acres of solar photovoltaic energy generation equipment. Within the 1,189 acres approved for solar facility components, the land was used for cultivation of dryland winter wheat and was designated habitat Category 6. In September, 2020, the Council approved Final Order on Request for Amendment 5 of the Montague Wind Power Facility site certificate (Final Order on RFA5), authorizing previously approved facility components (Phase 2) to be allocated under original site certificates for facilities named Montague Solar Facility and Oregon Trail Solar Facility. The site certificate issued for the Montague Solar Facility was based entirely on the previously approved Montague Wind Power Facility site certificate; mitigation plans were based entirely on those approved in the Final Order on RFA4; modifications were incorporated into the site certificates and mitigation plans based on the allocation of previously approved facility components, location and type of equipment.

This Wildlife Monitoring and Mitigation Plan is based on the draft amended plan provided as Attachment F of the Final Order on RFA4, revised accordingly to describe and apply to the Montague Solar Facility. The Montague Solar Facility is a 162 megawatt (MW) solar photovoltaic energy facility located within a 1,496 solar micro-siting area and 1,763 acre site boundary, in northeastern Gilliam County.

The monitoring objectives are to determine whether the facility causes significant fatalities of birds and bats and to determine whether the facility results in a loss of habitat quality.

The certificate holder shall use properly trained personnel (the "investigators") to conduct the monitoring required under this plan.

The *Wildlife Monitoring and Mitigation Plan* for the Montague Solar Facility has the following components:

1) Operational Wildlife Monitoring

2) Data reporting

Solar Array

Although publicly available fatality studies conducted at PV solar projects are rare in the literature, those that are available have documented fatalities of passerines but raptor and bat fatalities were generally absent. In the most recent study available, Walston et al. (2016) found

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<sup>1</sup> This plan is incorporated by reference in the site certificate for the Montague Solar Facility and must be understood in that context. It is not a "stand-alone" document. This plan does not contain all mitigation required of the certificate holder.

## Montague Solar Facility: Wildlife Monitoring and Mitigation Plan

[MARCH 2021]

the rate of bird mortality from known causes (i.e., collision with project infrastructure) at a large PV facility in central California was low (0.50 birds/MW/year). In comparison, Johnson and Erickson (2011) summarized fatality rates from 25 year-long fatality monitoring studies conducted at 23 wind-energy facilities in the Columbia Plateau Ecoregion and found the mean number of all bird (excluding raptors) mortality was 2.28 fatalities/MW/year.

Some risk of avian mortality occurs with most human development (ranging from single-family homes to large-scale industrial projects), but it is unlikely that the proposed PV solar array will result in significant impacts to birds. Known risk factors for avian collision fatalities include the height of structures, size of the facility, attributes of structures (e.g., guy wires, type of lighting), as well as the type of development, siting in high-risk areas, and species at potential risk. The role of these risk factors has been outlined in the USFWS guidelines for wind turbines (USFWS, 2012) and communication towers (USFWS, 2013), as well as by various publications in the peer reviewed literature (Gehring et al., 2009, 2011; Kerlinger et al., 2010).

After consideration of potential risk factors, the collision risk to birds from the facility solar array infrastructure will likely be low. Most importantly, the PV array, as proposed, will be located in disturbed habitat, will have only down-shielded lighting, will not have guy wires, and will not have any structures exceeding 15 feet (4.6 meters) in height (the greatest height of PV panels at full rotation).

### 1. Operational Wildlife Monitoring

The Operational Wildlife Monitoring is a voluntary monitoring program for maintenance personnel to search for avian and bat incidents (e.g., fatality, injury) during operation of the facility. Maintenance personnel will be trained in the methods needed to carry out this program. This monitoring program includes the documenting and reporting bird and bat carcasses discovered during maintenance operations. All carcasses discovered by maintenance personnel will be documented and left in place. This is a voluntary program and may be discounted by the certificate holder at any time.

### 2. Data Reporting

The certificate holder may include the reporting of wildlife monitoring data and analysis in the annual report required under OAR 345-026-0080 or submit this information as a separate document at the same time the annual report is submitted. In addition, the certificate holder shall provide to the Department any data or record generated in carrying out this monitoring plan upon request by the Department.

The certificate holder shall notify USFWS and ODFW if any federal or state endangered or threatened species are killed or injured on the facility site within 24 hours of species identification.

Within 30 days after receiving the final versions of reports that are required under this plan, the Department will make the reports available to the public on its website and will specify a time in which the public may submit comments to the Department.<sup>2</sup>

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<sup>2</sup> The certificate holder may establish a Technical Advisor Committee (TAC) but is not required to do so. If the certificate holder establishes a TAC, the TAC may offer comments to the Council about the results of the monitoring required under this plan.

# Montague Solar Facility: Wildlife Monitoring and Mitigation Plan

[MARCH 2021]

## 3. Amendment of the Plan

This *Wildlife Monitoring and Mitigation Plan* may be amended from time to time by agreement of the certificate holder and the Council. Such amendments may be made without amendment of the site certificate. The Council authorizes the Department to agree to amendments to this plan and to mitigation actions that may be required under this plan. The Department shall notify the Council of all amendments and mitigation actions, and the Council retains the authority to approve, reject or modify any amendment of this plan or mitigation action agreed to by the Department.

## 4. References

Gehring, J., P. Kerlinger, and A. M. Manville, II. 2009. "Communication Towers, Lights, and Birds: Successful Methods of Reducing the Frequency of Avian Collisions." *Ecological Applications* 19(2): 505-514.

Gehring, J., P. Kerlinger, and A. M. Manville, II. 2011. "The Role of Tower Height and Guy Wires on Avian Collisions with Communication Towers." *The Journal of Wildlife Management* 75(4): 848–855.

Johnson, G. and W. P. Erickson. 2011. *Avian, Bat and Habitat Cumulative Impacts Associated with Wind Energy Development in the Columbia Plateau Ecoregion of Eastern Washington and Oregon*. Prepared by Western EcoSystems Technology, Inc., for Klickitat County Planning Department. May 18.  
[https://www.fws.gov/southwest/es/documents/R2ES/LitCited/LPC\\_2012/Johnson\\_and\\_Erickson\\_2011.pdf](https://www.fws.gov/southwest/es/documents/R2ES/LitCited/LPC_2012/Johnson_and_Erickson_2011.pdf).

Kerlinger, P., J. L. Gehring, W. P. Erickson, R. Curry, A. Jain, and J. Guarnaccia. 2010. "Night Migrant Fatalities and Obstruction Lighting at Wind Turbines in North America." *Wilson Journal of Ornithology* 122(4): 744-754.

Manly, B. F. J. 1997. *Randomization, Bootstrap, and Monte Carlo Methods in Biology*. 2nd edition. New York: Chapman and Hall.

U.S. Fish and Wildlife Service (USFWS). 2012. *U.S. Fish and Wildlife Service Land-Based Wind Energy Guidelines*. UOMB Control No. 1018-0148.

U.S. Fish and Wildlife Service (USFWS). 2013. *Revised Guidelines for Communication Tower Design, Siting, Construction, Operation, Retrofitting, and Decommissioning -- Suggestions Based on Previous USFWS Recommendations to FCC Regarding WT Docket No. 03-187, FCC 06-164, Notice of Proposed Rulemaking, "Effects of Communication Towers on Migratory Birds," Docket No. 08-61, FCC's Antenna Structure Registration Program, and Service 2012 Wind Energy Guidelines*.

Walston, L. J., Jr., K. E. Rollins, K. E. LaGory, K. P. Smith, and S. A. Meyers. 2016. "A preliminary assessment of avian mortality at utility-scale solar energy facilities in the United States." *Renewable Energy* 92: 405–414.

**Attachment 2:                    2024 Annual Wildlife Monitoring Results Extracted  
from April 23, 2025 Annual Report**

Amrit Kaur  
Oregon Department of Energy  
550 Capitol St. NE, 1<sup>st</sup> Floor  
Salem, OR 97301

**Re: Montague Solar Facility (Pachwaywit Fields Solar Facility) - 2024 EFSC Annual Report /  
Cover letter and response to OAR 345-026-0080, Condition 21**

Dear Amrit:

Montague Solar, LLC (Montague Solar), a wholly owned subsidiary of Avangrid Power LLC, an Oregon limited liability company f/k/a Avangrid Renewables LLC, provides the following information to comply with its general reporting requirements under OAR 345-026-0080 (Condition 21) for the Montague Solar Facility (MSF) and Conditions 43, 91, 92 and 93, which are referenced herein in response to Condition 21(b)(iv). Montague Solar began commercial operations on 19 April 2023. This is Montague's second EFSC Annual Report for year 2024.

**Condition 21(a)(iii) - General Reporting:**

See Condition 21 (b)(i) for unusual events.

See Condition 21 (b)(ii) for efficiency and power production.

See Condition 21 (b)(iii) for cite certificate bond.

See Condition 21 (b)(iv) for list of monitoring reports under different conditions.

**Condition 21(b)(i) - Facility Status:**

MSF encountered unusual events with MC4 connectors, remediation was carried and completed in 2024 as reported to the Oregon Department of Energy. See document *Condition 21 (b)(i) - Montague Solar - Facility Status Unusual Events 2024*

**Condition 21(b)(ii) - Reliability and Efficiency of Power Production:**

The reliability and efficiency of power production is provided as part of the 2024 report (see document *Condition 21 (b)(ii) Reliability and Efficiency of Power Production 2024*).

**Condition 21(b)(iii) - Status of Surety:**

The Surety Site Certificate Bond number 019076509 was issued by Liberty Mutual Insurance Company. The term of this Bond began on 15 February 2025 and is continuous in nature until cancelled. This Bond previously provided assurance in the sum of \$7,044,000.00 and was increased to \$7,272,000.00; (see document *Condition 8 - Montague Solar - 019076509 Rider 2025*).

**Condition 21(b)(iv) - Monitoring Report:**

Monitoring for MSF includes Weed Control Plan (Condition 43), Wildlife Monitoring (Condition 91), Revegetation Plan (Condition 92), and Habitat Mitigation Plan (Condition 93).

**Condition 21(b)(v) - Compliance Report:**

MSF had no instances of noncompliance in 2024.

**Condition 21(b)(vi) - Facility Modification Report:**

In 2024, ODOE gave approval for an albedo study to be conducted at the facility, which involved placing albedo material under panels in a portion of the project, see *Condition 21(b)(vi) - Montague Solar - ODOE Albedo Study Approval*; and *Condition 21(b)(vi) - Montague Solar - ODOE Albedo Study July 2024*. The study is ongoing, and no albedo material has been added or removed since ODOE approval of the study.



Conditions referenced in Condition 21(b)(iv) above:

**Condition 43 - Weed Control Plan**

The Certificate Holder continues to comply with the Weed Control Plan. The Weed Control Plan was revised in 2024 to incorporate sheep grazing (see *Condition 43 - Montague Solar - Weed Control Plan\_Revised Mar2024*). Year-2 of weed monitoring was conducted by MB&G on July 1, 2024. At the time of monitoring, the footprint of the facility contained a dominance of non-native/naturalized vegetation and sporadic occurrences of ODA-listed target weed species. Compared to year-1 monitoring, there has been a decrease in the cover of target weed species. Herbicide weed control is recommended throughout the project to reduce the cover of undesired species (see *Condition 92 - Montague Solar - year-2\_2024\_reveg\_weeds\_report\_090324*). Weed control invoices are attached (see *Condition 43 - Montague Solar - 2024 Vegetation Mgmt invoices*).

**Condition 91 - Wildlife Monitoring**

Any observed fatalities during operations were recorded and reported as required by the WMMP previously provided.

There were no incidental wildlife observations (injuries/fatalities) in 2024.

During operation in 2024, operations staff recorded incidental observations of wildlife (injuries/fatalities) listed below.

Date	Location of Discovery	Species
04/18/2024	Solar Array	Common Raven

**Condition 92 - Revegetation Plan**

Revegetation monitoring was completed on July 1, 2024, by MB&G. The report was submitted to ODOE on September 3, 2024. Year-2 monitoring found that footprint of the facility contains a dominance of non-native/naturalized vegetation and sporadic occurrences of ODA-listed target weed species for the project. Compared to year-1 monitoring, there has been a decrease in the cover of target weed species. Herbicide weed control is recommended throughout the project to reduce the cover of undesired species per the Weed Control Plan (see *Condition 92 - Montague Solar - year-2\_2024\_reveg\_weeds\_report\_090324*). In addition, The Certificate Holder, after approval from ODOE, has implemented sheep grazing for noxious weed management and vegetation control. The Weed Control Plan was revised to incorporate sheep grazing in 2024 (see *Condition 43 - Montague Solar - Weed Control Plan\_Revised Mar2024*).

The site certificate for the facility requires restoration of disturbed areas. MB&G performed revegetation monitoring on July 1, 2024. At the time of the 2024 monitoring, vegetation composition was dominated by non-native/naturalized species and sporadic occurrences of ODA-listed weed species. Compared to year-1 monitoring, there was a decrease in cover of target weed species. MB&G recommended performing herbicide weed control throughout the project per the Weed Control Plan.

See documents *Condition 92 - Montague Solar\_year-2\_2024\_reveg\_weeds\_report\_090324*; *Condition 92 - PFS\_GenTie\_Poles*; *Condition 92 - PFS\_GenTie\_Poles\_Coordinates*; *Condition 92 - Montague Solar - Gentie Poles Pictures*

**Condition 93 - Habitat Mitigation Plan**

The facility is entirely located in category 6 habitat and therefore the Certificate Holder has no obligation to create a habitat mitigation area. No systematic monitoring is required under the approved WMMP. See condition 21 for incidental wildlife observations (injuries/fatalities) reported in 2024.

Regards,

Name:

Title: Authorized Representative