Summary

Final Programmatic Environmental Impact Statement for Utility-Scale Onshore Wind Energy Facilities in Washington

Shorelands and Environmental Assistance Program

Washington State Department of Ecology

Olympia, Washington

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DEPARTMENT OF ECOLOGY
State of Washington

Summary

Introduction

In 2023, the Washington State Legislature directed the state Department of Ecology (Ecology) to prepare a broad environmental review that assesses and discloses the probable significant adverse environmental impacts that utility-scale onshore wind energy facilities may pose in Washington. Under the directive, Ecology also evaluated related measures designed to avoid and reduce those likely impacts. State law, Revised Code of Washington 43.21C.535,[1] requires that a final report be submitted to state lawmakers by June 30, 2025.

Utility-scale onshore wind energy facilities help support the state's transition to clean energy. When electricity from an onshore wind energy facility replaces the electricity generated by an existing fossil fuel-based facility, it helps to reduce overall greenhouse gas emissions in Washington. However, utility-scale onshore wind energy facilities may have adverse environmental impacts. This Programmatic Environmental Impact Statement (PEIS) evaluates, at a broad level, different types of onshore wind energy facilities to identify potential environmental impacts and ways to avoid and reduce those impacts.

Ecology developed this PEIS to provide consistent and useful information that the public, local and state agencies, Tribes, and developers can use to help review and plan for a potential utility-scale onshore wind energy project. This statewide planning document is not specific to any single onshore wind energy project. Each utility-scale onshore wind energy project will still need an individual environmental review as determined by the lead agency.

The PEIS evaluates both natural and built resources. The PEIS identifies measures to avoid, reduce, and mitigate potential environmental impacts from a utility-scale onshore wind energy project. In many cases, mitigation measures can reduce potential significant adverse impacts to a less-than-significant level. In other cases, mitigation measures may reduce impacts, but not necessarily to a level below significance. Mitigation approaches will depend on the specific project and site.

Purpose

The PEIS is intended to:

- Support the state's transition to clean energy while protecting the environment, Tribal rights and resources, and local communities.
- Identify the range of probable significant adverse environmental impacts utility-scale onshore wind energy projects can pose.

[1] https://app.leg.wa.gov/RCW/default.aspx?cite=43.21C.535

- Provide information about facility siting and design that may be used to help avoid or minimize adverse environmental impacts for proposed projects.
- Identify general potential mitigation measures for impacts.
- Provide information for lead agencies to consider when conducting environmental reviews for utility-scale onshore wind energy projects.

Environmental review process

Ecology developed the study in compliance with the State Environmental Policy Act (SEPA).[2] A PEIS is a type of environmental review used for planning; it is not an evaluation of a specific project. This PEIS considers potentially significant adverse environmental impacts at a broad level. It analyzes general types of onshore wind energy facilities—but not individual projects—to identify likely environmental impacts and possible ways to avoid and reduce those impacts. The PEIS does not approve, authorize, limit, or exclude any projects.

To gather feedback on the scope of the PEIS and facilities to be evaluated, Ecology held an extended scoping period in September and October 2023, including conducting two online public meetings and a Tribal scoping meeting. Tribes were also provided additional time to comment. Ecology considered the feedback received during scoping when preparing the Draft PEIS. The scoping process is summarized in Appendix R, *Scoping Summary Report*.

The Draft PEIS was published on September 25, 2024. Comments were accepted during a 33-day comment period (September 25 through October 28, 2024). Tribes were provided with additional time to comment. The Draft PEIS was made available on the SEPA Register and Ecology's PEIS website, with information on how to provide comments. Three public hearings were held during the Draft PEIS comment period. Comments were accepted through various methods, including a comment form on the PEIS website, oral and written comments provided at the public hearings, and comments submitted by mail.

Comments were considered by Ecology in the preparation of the Final PEIS. Revisions include items identified in comments, updated information, and edits for clarity. All comments received on the Draft PEIS and responses are included in Appendix S, *Response to Comments*.

An overview of the SEPA review process is shown in Figure S-1.

[2] https://ecology.wa.gov/regulations-permits/sepa/environmental-review

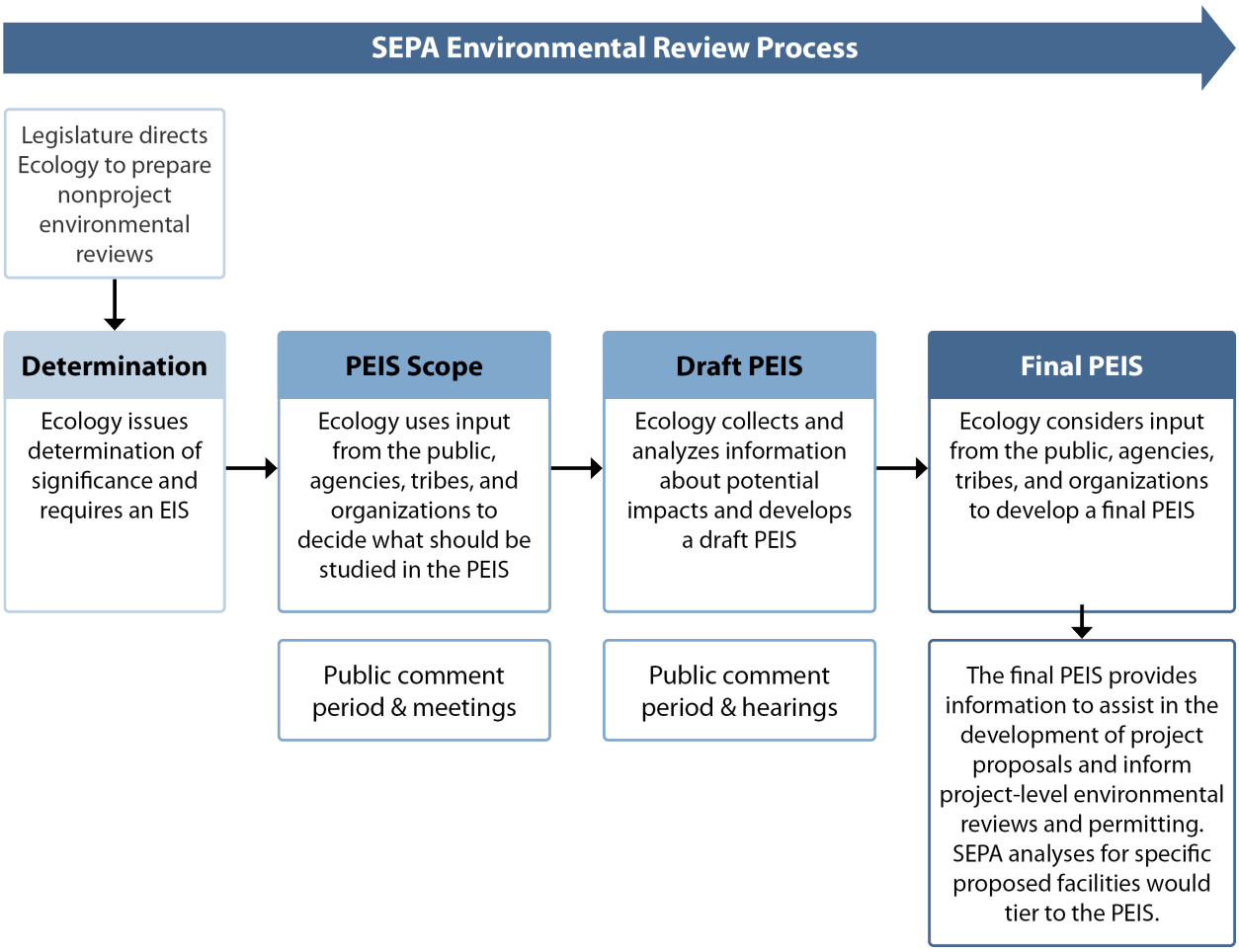

Figure S-1. SEPA environmental review process

Relationship of the PEIS to projects

SEPA analyses for specific onshore wind energy facility proposals would tier to the PEIS. Tiering means a broad nonproject evaluation is later used during the evaluation of a specific facility. Tiering can result in a more effective environmental analysis process for subsequent onshore wind energy development proposals (Figure S-2).

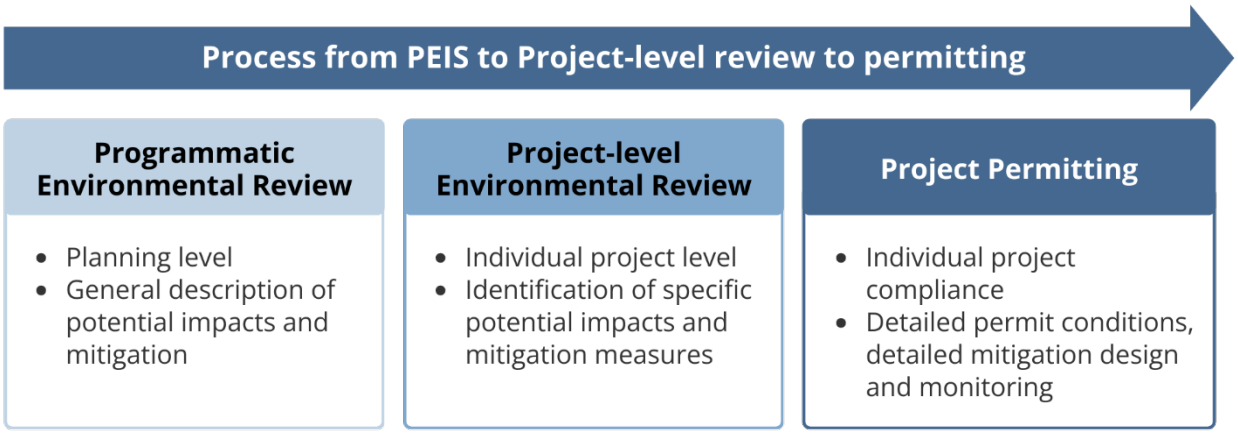

Figure S-2. Planning, review, and permitting processes

A PEIS does not approve or deny a proposed project. Federal, state, and local agencies may—and in some cases must, as explained below—use the information in the PEIS, along with other publicly available information and site-specific details, to inform project-level environmental reviews and permitting.

RCW 43.21C.538[3] requires SEPA lead agencies to consider the PEIS for a proposed utility-scale onshore wind project. Each agency would be responsible for determining which elements of the PEIS analysis are applicable in its evaluation of a proposed facility. Developers must conduct analysis to address project-specific elements and impacts not evaluated in the PEIS.

At the project level, this PEIS can be useful in a variety of ways:

- For project developers, this PEIS can help with:
  - Making siting and design decisions that avoid and reduce impacts
  - Identifying impacts that could be potentially significant and the type of information reviewing agencies will need for their evaluations
  - Identifying mitigation measures for potentially significant impacts that could be incorporated into a mitigation plan
- For local, state, and federal agencies, this PEIS can help with conducting environmental reviews and making permit decisions.
- For the public and Tribes, this PEIS provides information about project types, potential impacts, and measures to avoid, reduce, and mitigate impacts.

Section 4.1 of the PEIS provides additional information regarding use of the PEIS at the project level.

[3] https://app.leg.wa.gov/RCW/default.aspx?cite=43.21C.538

Types of facilities evaluated

The PEIS evaluates three types of utility-scale onshore wind energy facilities as well as a No Action Alternative:

- **Utility-scale onshore wind facilities:** wind energy facilities capable of generating between 10 and 1,500 megawatts of energy on sites between 340 to 127,500 acres in size.
- **Utility-scale onshore wind facilities with battery energy storage systems:** facilities that also include one or two battery energy storage systems, each capable of storing up to 500 megawatts of energy.
- **Utility-scale onshore wind facilities that include agricultural uses:** dual-use facilities combined with agricultural land use.
- **No Action Alternative:** agencies would continue to conduct environmental review and permitting for utility-scale onshore wind facilities under existing state and local laws on a project-by-project basis without using this PEIS as a reference.

It is important to note that this PEIS does not limit the types of facilities that could be proposed or built in Washington. The facilities evaluated in this PEIS are intended to capture the types of facilities most likely to be proposed based on current and best available information.

Scope of Study

The geographic scope of study for the PEIS (Figure S-3) was defined based on the criteria described below to identify suitable areas for utility-scale onshore wind energy facilities. The geographic scope of study does not show where a facility may or may not be sited; it is for impact analysis only. Projects could be built on private, city, county, state, or federal lands with agreement from the landowner or manager. For facilities on state or federal lands, the responsible agency would make land use decisions. For facilities on Tribal reservation lands, each Tribe would determine the use of their lands.

These criteria were used to identify areas suitable for utility-scale onshore wind energy facilities:

- **Wind speed:** Areas with average annual wind speeds of 11 miles per hour (5 meters per second) at 262 feet (80 meters) high. Adequate wind speed at the appropriate height above the ground surface for a facility's turbines is required for turbines to generate electricity.
- **Transmission line access:** Areas within 25 miles of existing transmission lines that can handle the energy generation of utility-scale facilities (230 kilovolt or greater lines).

The study area excluded the following areas:

- Tribal reservation and trust lands
- Military installations

- U.S. Department of Energy Hanford Site in Eastern Washington (except for a small area available for clean energy development)
- National parks, monuments, wilderness areas, and wildlife refuges
- Washington state parks
- National scenic areas and trails and historic trails
- Unincorporated areas zoned as urban, residential, or rural-residential 5-acre; areas inside city limits; and unincorporated urban growth areas

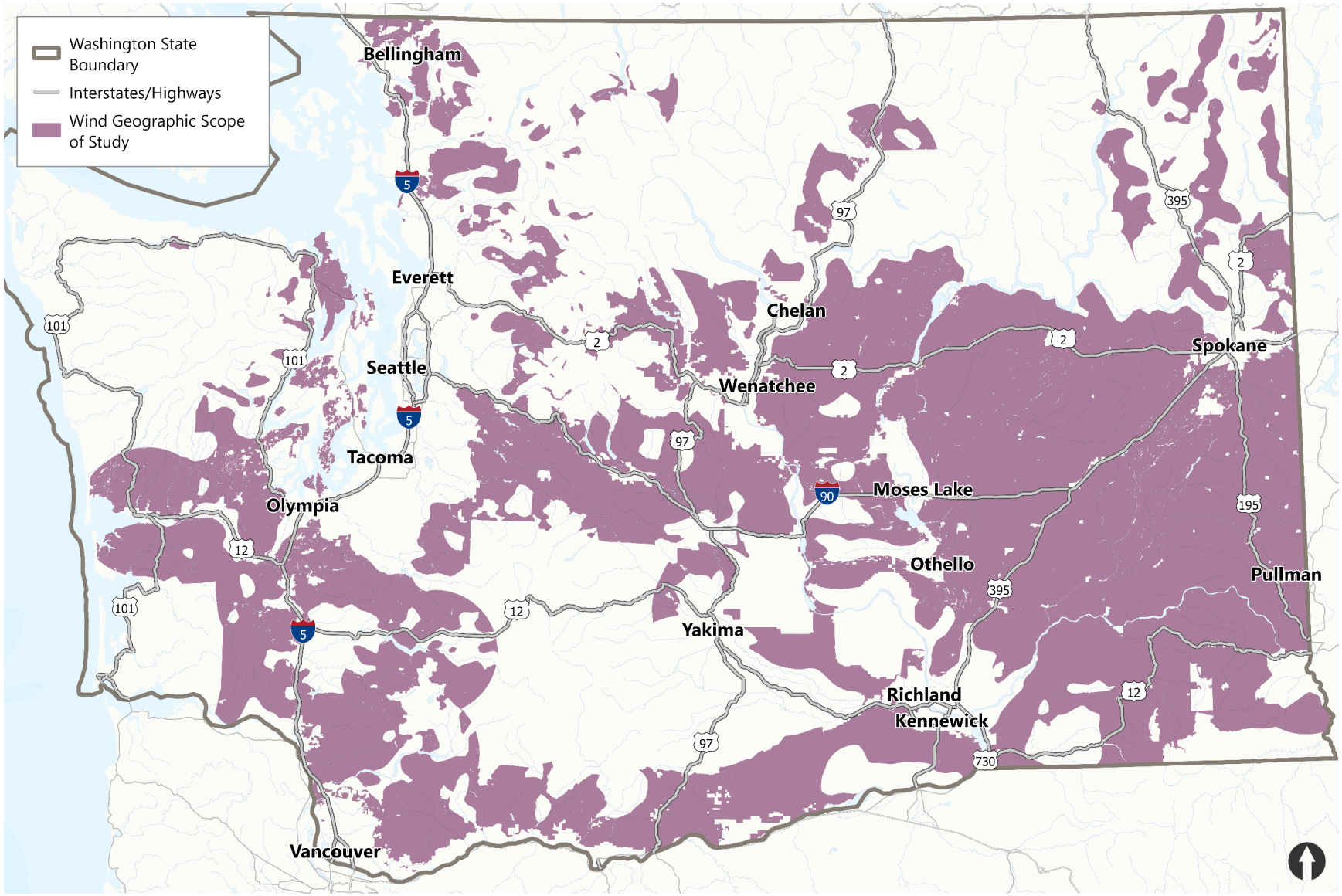

Figure S-3. Onshore Wind Energy Facilities PEIS – geographic area of study

Analysis and impact findings

The PEIS analyzes the potential impacts on environmental resources associated with constructing, operating, and decommissioning utility-scale onshore wind energy facilities. These include resources where significant impacts are not likely as well as resources that could be significantly impacted. The PEIS also considers cumulative impacts. For more detailed information and analysis, see the technical resource reports in the appendices.

Developers should seek to avoid impacts when making siting decisions and determining the design of their project. The PEIS includes "recommendations for siting and design" identifying agencies and Tribes to contact early in the process, data to gather, and actions to take. To avoid and reduce potentially significant impacts, we recommend developers closely review these recommendations and the PEIS analysis.

The PEIS identifies measures to avoid, reduce, and mitigate the potential environmental impacts that a utility-scale onshore wind energy project might pose. Developers can select mitigation approaches that will help offset the potential impacts specific to their project, including design and site location. In some cases, mitigation measures can reduce probable adverse impacts to a less than significant level. In other cases, while there may be mitigation measures that can reduce or eliminate significant impacts, these approaches will depend on the specific project and site.

Resources with potential significant adverse environmental impacts

Table S-1 provides a summary of the environmental resources with potential significant adverse impacts.

Table S-1. Summary of potential significant impacts in the PEIS

Section	Topic	Description of potential significant impact from facility types	Can it be mitigated below significance?
Tribal rights, interests, and resources	Tribal rights, interests, and resources	Constructing, operating, and decommissioning facilities could impact Tribal rights, interests, and resources. The significance of these impacts would be determined through consultation with potentially affected Tribes.	Impacts and mitigation would be determined in consultation with Tribes. Determining if mitigation options would reduce or eliminate impacts below significance would be dependent on the specific project and site.
Environmental justice and overburdened communities	Disproportionate impacts	Disproportionate impacts on historic and cultural resources, Tribes and Tribal communities, land use, aesthetics/visual quality, biological resources, public services and utilities, environmental health and safety, noise and vibration, air quality, and recreation.	Impacts and mitigation would be determined in consultation with Tribes. Determining if mitigation options would reduce or eliminate impacts below significance would be dependent on the specific project and site.
Biological resources	Terrestrial habitat and species (including birds)	Permanent degradation, loss, or conversion of suitable habitat that is critical to species viability. Disruption of habitat continuity along migration routes. Impacts affecting species viability, the mortality of any individual species, or disturbance that disrupts successful breeding and rearing behaviors.	Determining if mitigation options would reduce or eliminate impacts below significance would be dependent on the specific project and site. Mitigation to reduce impacts below significance for special-status habitats or species may not be feasible.
Environmental health and safety	Battery overheating	Potential hazardous air emissions from damage or failure of battery management system that present health and safety risks to fire responders.	Yes
	Wildfire risk	New ignition sources in remote locations with limited response capabilities.	Determining if mitigation options would reduce or eliminate impacts below significance would be dependent on the specific project and site.
Noise and vibration	Noise	Constructing, operating, or decommissioning within 2,500 feet of people in quiet rural areas. Operating stationary equipment including turbines, substations, or battery energy storage system may affect residents within 1.5 miles.	Yes

Section	Topic	Description of potential significant impact from facility types	Can it be mitigated below significance?
Noise and Vibration	Vibration	Construction or decommissioning could affect people or historic structures within 350 feet of the facility. Blasting within 2,000 feet of historic structures may also have adverse effects.	Yes
Land use	Changes to land use	Conflict with rural character based on comprehensive plans and development regulations. Conversion of natural resource lands of long-term commercial significance.	Determining if mitigation options would reduce or eliminate impacts below significance would be dependent on the specific project and site, and local regulations and plans.
Aesthetics/ visual quality	Visual landscape	Changes in landscape appearance and addition of new facility structures into the viewshed.	Determining if mitigation options would reduce or eliminate impacts below significance would be dependent on the specific project and site.
Recreation	Recreation	Loss of recreational opportunity, overuse or overcrowding of recreation areas, and/or segmented recreational facilities.	Yes
Historic and cultural resources	Historic and cultural resources	Construction, operations, and decommissioning of all types of facilities could impact historic and cultural resources. The significance of these impacts would be determined through consultation with potentially affected Tribes and the Washington State Department of Archaeology and Historic Preservation (DAHP).	Impacts and mitigation would be determined in consultation with Tribes and DAHP.
Public services and utilities	Fire response	If activities required a large fire response in remote locations with limited response capabilities or if there are other unique aspects of a facility site or operations that affect fire response.	Determining if mitigation options would reduce or eliminate impacts below significance would be dependent on the specific project and site.
	Solid waste	Depends on turbine recycling facilities and recycling methods available at the time of decommissioning and volume of waste.	Yes

Resources with findings of less than significant impacts

These resources had findings of less than significant when plans, permits, and measures to avoid and reduce impacts were considered. For any project, a site-specific environmental review would still be done to evaluate these resources.

- Earth, including soil resources and geological hazards
- Air quality and greenhouse gases
- Biological resources, including aquatic habitats and species and wetlands
- Water, including surface water, water quality, groundwater, water availability, floodplains, and wetlands
- Energy and natural resources
- Environmental health and safety, including hazardous materials and worker safety
- Land use, including military areas
- Aesthetics and visual quality, including light and glare
- Transportation
- Public services and utilities, including law enforcement; public schools; gas, electric, and communications utilities; and water and wastewater utilities

Cumulative impacts

The broad geographic study area includes many reasonably foreseeable actions in the past, present, and future that taken together could result in impacts. These were evaluated as trends. They include:

- Energy projects, including clean energy development and changes to energy systems
- Urban, commercial, and industrial development and activities
- Rural and agricultural development and activities
- Federal, state, Tribal, and local wildlife and related habitat projects
- Transportation infrastructure development and modification
- Timber and forestry management
- Contaminated site cleanup and remediation
- Mining operations
- Recreation activities on public lands
- Military use
- Water supply development

Due to the large geographic study area the PEIS addresses, as well as the broad trends of reasonably foreseeable actions the study identifies and considers, cumulative impacts on natural and built resources would **range from less than significant** to **potentially significant**. The cumulative impacts analysis is designed to ensure decision-makers consider the full range of potential consequences under anticipated future conditions. An analysis of individual onshore wind energy projects would also consider cumulative impact assessments as part of a project-specific environmental review.

Areas of controversy and uncertainty

- **Land use:** Agricultural groups have expressed concern that onshore wind energy projects reduce critical agricultural lands. This is evaluated in Section 4.12.
- **Visual quality:** People have shared concerns that rural landscapes are adversely impacted when onshore wind energy projects are constructed. This is evaluated in Section 4.13.
- **Wildfire risks and emergency response:** There is concern about increased fire risks and adequacy of available response resources for wildfires related to onshore wind energy projects and battery energy storage systems. This is evaluated in Section 4.10 and Section 4.17.
- **Cumulative impacts:** Communities, Tribes, and interested parties have raised concerns about cumulative impacts related to developing multiple energy projects in the same area. Chapter 5 describes trends and potential cumulative impacts.

Next steps

This Final PEIS provides information for use by the public, local and state agencies, Tribes, and developers to help review and plan for potential utility-scale onshore wind energy projects. Any future utility-scale onshore wind energy project would tier from the PEIS for a separate project-level review. Ecology is developing guidance and tools for using the PEIS. These will be available on the PEIS website.[4]

[4] https://ecology.wa.gov/regulations-permits/sepa/clean-energy/programmatic-eis