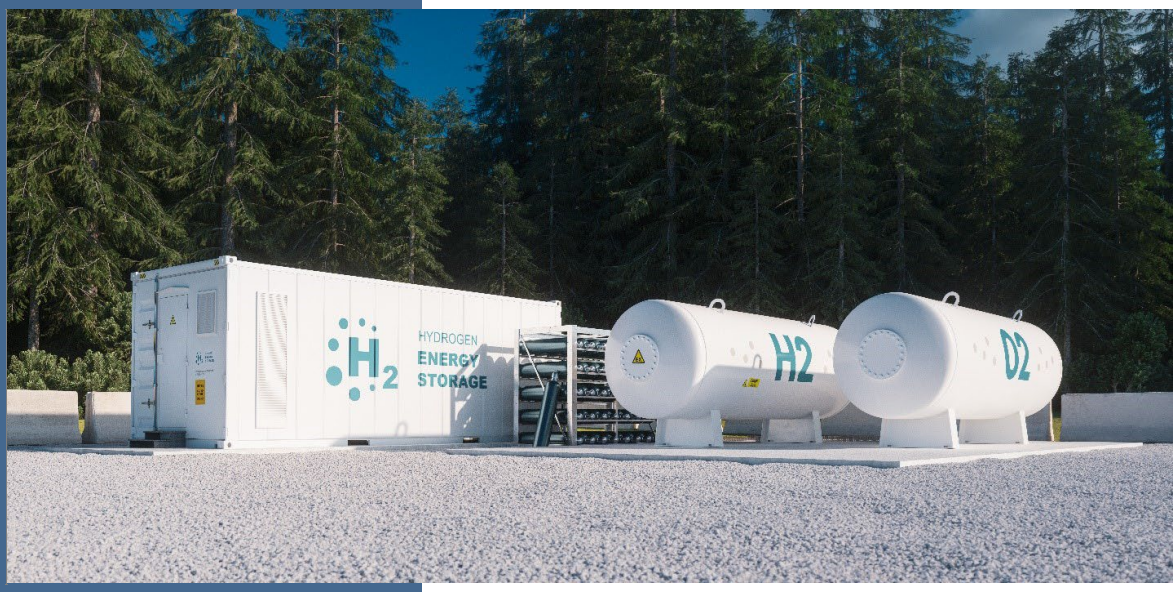

Scoping Summary Report

For Programmatic Environmental Impact Statement on Green Hydrogen Energy Facilities in Washington State

For the

Shorelands and Environmental Assistance Program

Washington State Department of Ecology

Olympia, Washington

August 2024

DEPARTMENT OF ECOLOGY
State of Washington

Contact Information

Shorelands and Environmental Assistance Program

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Olympia, WA 98504-7600
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Website[1]**:** Washington State Department of Ecology

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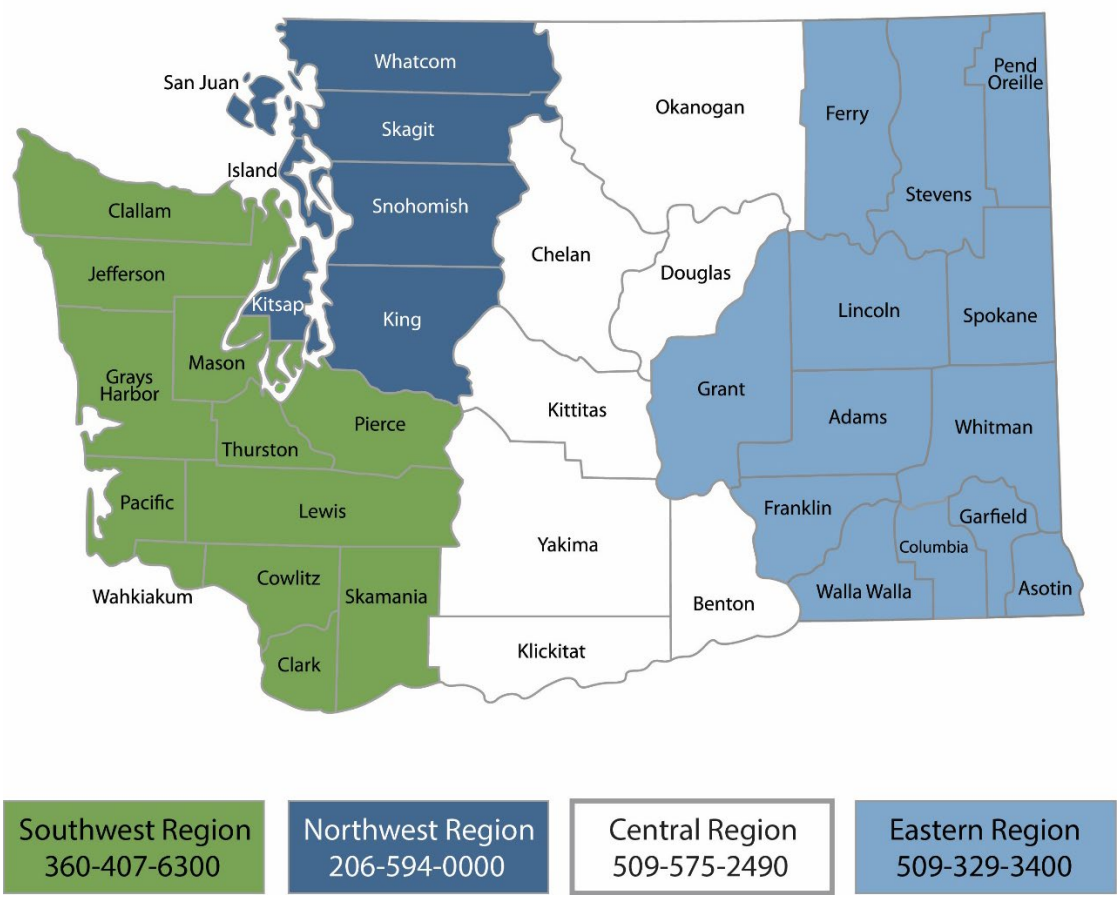
[1] https://ecology.wa.gov/about-us/contact-us

Department of Ecology's Regional Offices

Map of Counties Served



Southwest Region 360-407-6300	Northwest Region 206-594-0000	Central Region 509-575-2490	Eastern Region 509-329-3400

Region	Counties served	Mailing Address	Phone
Southwest	Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Mason, Lewis, Pacific, Pierce, Skamania, Thurston, Wahkiakum	PO Box 47775 Olympia, WA 98504	360-407-6300
Northwest	Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom	PO Box 330316 Shoreline, WA 98133	206-594-0000
Central	Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima	1250 W Alder St Union Gap, WA 98903	509-575-2490
Eastern	Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman	4601 N Monroe Spokane, WA 99205	509-329-3400
Headquarters	Across Washington	PO Box 46700 Olympia, WA 98504	360-407-6000

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ECOLOGY
State of Washington

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Acronyms and Abbreviations List

BESS	battery energy storage system
DS	Determination of Significance
Ecology	Washington State Department of Ecology
PEIS	programmatic environmental impact statement
PST	Pacific Standard Time
RCW	Revised Code of Washington
SEPA	State Environmental Policy Act
SMR	steam-methane reforming
WAC	Washington Administrative Code

1 Introduction

1.1 Scoping process and purpose

The Washington State Legislature directed the Washington State Department of Ecology (Ecology) to prepare a nonproject environmental review of green electrolytic and renewable hydrogen facilities by June 30, 2025.[2] These are referred to as "green hydrogen energy facilities" in this document. This review is being done under the State Environmental Policy Act (SEPA).

Ecology is developing a programmatic environmental impact statement (PEIS) to analyze potential impacts and potential mitigation at a broad level. The PEIS is being prepared under SEPA requirements described in Revised Code of Washington (RCW) 43.21C.030(2)(c) and chapter 197-11 Washington Administrative Code (WAC). Ecology issued a Determination of Significance (DS) and opened an extended comment period on the scope of the green hydrogen energy facilities PEIS on March 20, 2024. The DS and Scoping Notice initiated Ecology's environmental review process.

A PEIS is a type of nonproject environmental review used for planning under SEPA. A PEIS considers potential significant adverse environmental impacts at a broad level. It will analyze general types of facilities—but not individual facilities—to identify probable significant adverse environmental impacts and possible mitigation measures.

Scoping helps determine the focus of the analysis by seeking input from Tribes, agencies, members of the public, and interested groups on the content of the PEIS. For scoping, parties are notified that a PEIS is being prepared, and their comments and feedback are requested.

Ecology conducted an extended 30-day PEIS scoping period in accordance with SEPA requirements per WAC 197-11-408. The comment period opened on March 20, 2024, and ended April 18, 2024. It also included two online public meetings held on April 9 and April 11, 2024. A separate Tribal scoping meeting was held on April 30, 2024, and Tribes were provided an additional 30 days to comment.

Ecology invited Tribes, agencies, members of the public, and interested parties to provide input on the scope of the PEIS related to the following:

- Types of green hydrogen energy facilities to be evaluated
- Assumptions used to identify the geographic scope of study for the PEIS analysis
- Potential impacts to environmental resources
- Potential mitigation measures

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

This Scoping Summary Report provides a summary of the scoping process (Section 3) and the scoping comments received (Section 4). The report also identifies the study area, alternatives, and resources to be analyzed in the Draft PEIS (Section 2).

1.2 SEPA process

The SEPA process is intended to provide information to state and local agencies, facility developers, Tribes, interested parties, and the public to encourage the development of proposals that avoid, minimize, and mitigate potential impacts.

The SEPA environmental review process provides a way to identify and assess the possible environmental effects of different types of facilities. It identifies and evaluates alternatives, probable environmental impacts, and mitigation. The process helps decision-makers and the public understand how a proposed action could affect the natural and built environments. This environmental information, along with other documents, is used by decision-makers to decide whether to approve a proposal, approve the proposal with conditions, or deny the proposal.

Ecology is the lead agency for the PEIS process, as directed by the Legislature in RCW 43.21C.535, Clean energy projects—Nonproject environmental impact statements.[3]

1.3 PEIS process

The PEIS will consider potential impacts from general types of green hydrogen energy facilities; it is not site-specific or for a specific project. It evaluates potential significant environmental impacts over a broad geographic and time horizon. The depth and detail of the impact analysis is fairly general, focusing on significant impacts in a qualitative manner. Mitigation is also identified at a high level, focusing on actions that could be implemented or might be required.

A PEIS does not approve or deny a proposed project. A PEIS:

- Provides information for facility developers, SEPA lead agencies, permitting agencies, Tribes, interested parties, and the public.
- Helps project developers understand potential impacts and make siting and design choices that could avoid or minimize impacts from the start.
- Identifies how impacts could be mitigated.

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 (see Figure 1).

RCW 43.21C.535[4] requires SEPA lead agencies to consider the green hydrogen PEIS for any related projects. Each agency would be responsible for determining which elements of the PEIS analysis are applicable to their evaluation of a proposed project and revising or supplementing

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

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

the analysis to address project-specific elements and circumstances that were not evaluated in the PEIS.

The PEIS can help:

- Project developers avoid and minimize potential impacts and put together mitigation plans;
- Local, state, and federal agencies conduct their environmental reviews and make permit decisions; and
- The public and Tribes assess future proposed projects.

1.4 How the PEIS is to be used

Local, state, and federal agencies may use PEISs that have previously been prepared in order to help evaluate proposed actions, alternatives, environmental impacts, or mitigation for a proposed facility. Each agency will ensure that the PEIS analysis is valid when applied to the current proposal, knowledge, and technology. If it is not valid, the analysis must be reanalyzed in the facility-level environmental review or permit.

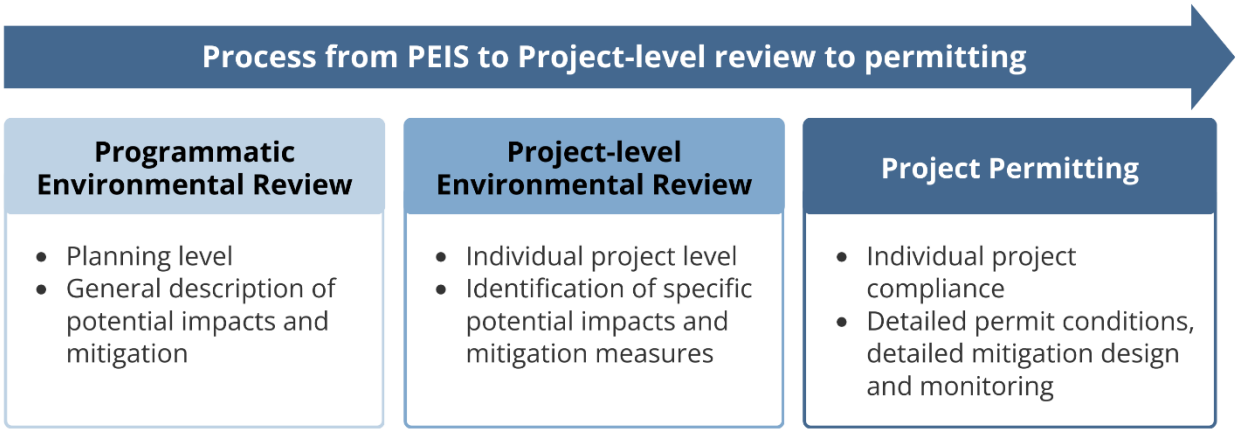

Figure 1. Planning, review, and permitting processes

1.4.1 PEIS informs project-level SEPA reviews

When a developer submits a green hydrogen facility proposal, a project-level SEPA environmental review will be done by the appropriate lead agency as required by the SEPA Rules (chapter 197-11 WAC). For green hydrogen facility proposals, RCW 43.21C.538 requires a SEPA lead agency to consider the PEIS prepared under RCW 43.21C.535 to identify and mitigate facility-level probable significant adverse environmental impacts.

The law states that green hydrogen facility proposals that follow the recommendations to avoid and reduce impacts in the PEIS must be considered to have mitigated the probable significant adverse facility-specific environmental impacts for which recommendations were specifically developed. A project-level review must address any probable significant adverse environmental impacts associated with the proposal that were not analyzed in the PEIS. The review must identify any mitigation measures specific to the facility for probable significant adverse environmental impacts.

1.4.2 PEIS informs permitting decisions

No final permit decisions on a project can be made until a project-level SEPA environmental review is finished. The PEIS, project-level environmental review, and other documents and studies are used by decision-makers to decide whether to approve a proposal, approve the proposal with conditions, or deny the proposal.

Permits ensure that facilities comply with all applicable state environmental standards to protect land, air, water, wildlife, and people. The required permits for a facility depend on its location and the construction and operations involved. A facility may need local, state, and federal permits, and each permit has its own regulatory authority and regulatory agency. Information about specific permits can be found in the Washington State Regulatory Handbook.[5]

[5] https://apps.oria.wa.gov/permithandbook/

2 PEIS Scoping Decisions

2.1 PEIS resource analysis

Ecology has determined that the PEIS will analyze probable significant adverse impacts to the resource areas listed below. The analysis will consider direct, indirect, and cumulative impacts to these resources:

- Earth resources
- Air quality and greenhouse gases
- Water resources
- Biological resources (species and habitats)
- Energy and natural resources
- Environmental health and safety
- Environmental justice and overburdened communities
- Tribal rights, interests, and resources
- Noise and vibration
- Land use, including agricultural and ranching uses and military installations and operations
- Visual quality
- Recreation
- Historic and cultural resources
- Transportation
- Public services and utilities

The programmatic analysis will consider potential environmental effects over a broad geographic and time horizon. The PEIS will focus on probable significant adverse impacts, with some information provided on non-significant adverse impacts. Impacts will be evaluated from site characterization, construction, operations and maintenance, and decommissioning of different types of facilities.

2.2 Geographic scope of study

RCW 43.21C.535 states that "The scope of a nonproject environmental review shall be limited to the probable, significant adverse environmental impacts in geographic areas that are suitable for the applicable clean energy type." Based on this direction, the Scoping Document[6] proposed assumptions for determining the geographic scope of study for the PEIS. Comments received during scoping, discussions with industry, and research into siting factors were used to refine the geographic scope of study.

[6] Washington State Department of Ecology, 2024. Scoping Document for Programmatic Environmental Statement on Green Hydrogen Energy Facilities. Prepared for the Shorelands and Environmental Assistance Program, Olympia, Washington.

Figure 2 shows the geographic scope of study for this PEIS, where existing conditions and potential environmental impacts will be analyzed. Areas included in the geographic scope of study for green hydrogen energy facilities were based on the assumptions listed below:

- For a green hydrogen production or storage facility:
  - 50 miles or less from freight highway routes
  - In an area zoned for industrial use
- Additionally, for a green hydrogen production facility:
  - 25 miles or less from transmission lines of 55 kilovolts and above

However, because a statewide zoning dataset is not currently available, identifying areas zoned for industrial use requires obtaining zoning data from individual cities and counties. Given the large number of cities and counties in Washington, obtaining zoning data from individual cities and counties was not practicable for this PEIS. Therefore, the geographic scope of study in Figure 2 only shows areas zoned for industrial use for the following:

- Counties
- Large cities (populations greater than 50,000)
- Cities near proposed Pacific Northwest Hydrogen Hub projects
- Other cities with established industrial areas where green hydrogen could be used by existing industries, including, but not limited to, refineries, commercial ports, and commercial airports

Ecology used publicly available county and city zoning data to identify areas with industrial land uses to include in the geographic scope of study. The industrial areas depicted on Figure 2 are a snapshot in time as of summer 2024. County and city updates to zoning data in the future may change the areas mapped as suitable to industrial uses.

The following areas were excluded from the geographic scope of study:

- Tribal reservations and trust lands
- Military installations
- Federal lands, with the following exception:
  - The U.S. Department of Energy has identified a small area of land at the Hanford Site as available for lease to develop utility-scale carbon pollution-free electricity projects. This area is included in the geographic scope of study, but the rest of the Hanford Site is excluded.
- National parks, wilderness areas, wildlife refuges, and state parks

This PEIS does not approve, authorize, limit, or exclude projects on a site-specific basis. Projects could be built on private, city, county, state, or federal lands with agreement from the landowner or manager. This PEIS does not limit the geographic extent of the state where green hydrogen energy projects could be proposed. The purpose of the study area is to identify the geographical areas where probable, significant adverse environmental impacts from green hydrogen energy facilities are likely to occur.

For projects on Tribal reservation lands, each federally recognized Tribe would determine use of their lands. Tribal reservation lands are not included in the proposed geographic scope of study. Ecology will offer consultation with each Tribe that has reservation lands, and if a Tribe chooses to include their lands, they will be added to the geographic scope of study for the Draft PEIS.

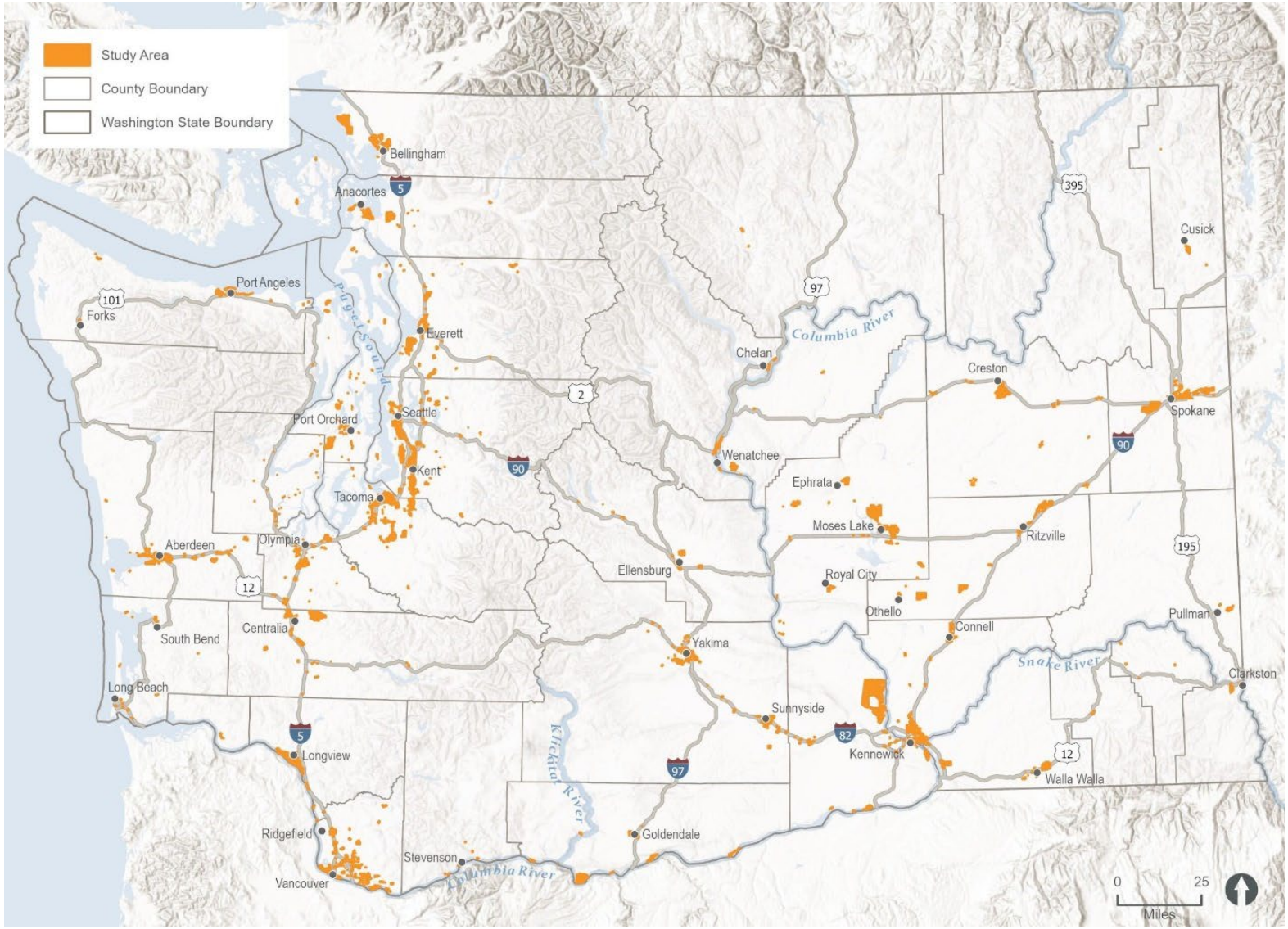

Figure 2. Map of geographic scope of study for Green Hydrogen Energy Facilities PEIS

2.3 Types of facilities (alternatives)

Ecology identified three types of green hydrogen facilities to be evaluated in the PEIS plus a No Action Alternative. RCW 43.21C.535 requires the PEIS consider facilities with a co-located battery energy storage system (BESS). The SEPA Rule requires a No Action Alternative.

2.3.1 Green hydrogen production facility (Alternative 1)

A green hydrogen production facility producing green hydrogen using one of the following processes:

- Electrolysis
- Steam-methane reforming (SMR) using renewable natural gas
- Pyrolysis
- Bio-gasification

The Scoping Document[7] provides additional detail on these production technologies. The footprint of a facility would vary based on the technology used and production capacity.

2.3.2 Green hydrogen production facility with co-located battery energy storage system (BESS) (Alternative 2)

This type of facility would be the same as the green hydrogen production facility described above but would include a co-located BESS. A BESS stores and deploys energy. A BESS could be used to power a green hydrogen production facility. A BESS would balance loads from renewable energy sources and demand from a hydrogen production system and provide resilience to a facility in the case of power outages or power quality deviations.

2.3.3 Green hydrogen storage facility (gas or liquid form) (Alternative 3)

A green hydrogen storage facility storing hydrogen in gas or liquid form. This type of facility could be:

- Co-located at green hydrogen production facilities
- A standalone facility
- At transport terminals
- At an end-use location such as an industrial facility or fueling facility

2.3.4 No Action Alternative

The PEIS is a planning document, so under the No Action Alternative, city, county, and state agencies would continue to conduct environmental review and permitting for utility-scale solar energy development under existing state and local laws on a project-by-project basis.

[7] Washington State Department of Ecology, 2024. Scoping Document for Programmatic Environmental Statement on Green Hydrogen Energy Facilities. Prepared for the Shorelands and Environmental Assistance Program, Olympia, Washington.

3 Scoping Process

3.1 Overview

Ecology conducted a PEIS scoping period from March 20, 2024, to April 18, 2024. During the scoping period, Ecology held online public scoping meetings on April 9 and April 11, 2024, for the public to provide verbal comments. A separate Tribal scoping meeting was held on April 30, 2024, and Tribes were provided an additional 30 days to submit comments. Scoping materials were available for public review throughout the entire length of the scoping period on Ecology's PEIS website.[8] The website provided information for the scoping period and how to comment, including a link to an online comment form.

Tribes, agencies, members of the public, and interested parties were invited to participate in the scoping process and provide comments, as described in the following sections.

3.2 Ways to provide comments

During the scoping period, Ecology provided multiple ways to submit scoping comments, including the following:

- Using the online comment form that was available, for which a link was provided on the Ecology project website
- Sending a comment by U.S. mail to:

  Clean Energy Coordination
  Department of Ecology
  PO Box 47600
  Olympia, WA 98504-7600
- Making a verbal comment during the online public scoping meetings

3.3 Scoping notifications

Ecology conducted the following public notice and outreach activities in English and Spanish to notify Tribes, agencies, members of the public, and interested parties of the scoping period and announce upcoming public scoping meeting dates. A variety of outreach and notification methods were used to communicate information about scoping, including the following:

- Published legal notices:
  - The DS and request for comments on the scope of green hydrogen energy facility PEIS, including a description of the action, how to submit comments, and scoping meeting announcements, were issued on March 20, 2024.
  - Ecology's SEPA Register published the DS and Scoping Notice on March 20, 2024.
  - Legal notices were published in the following newspapers:
    - *The Columbia Basin Herald*
    - *The Kitsap Sun*

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

    - *The Seattle Times*
    - *Spokane Spokesman-Review*
    - *The Tri-City Herald*
    - *The Yakima Herald*
    - *Tú Decides (in Spanish)*
- Public and media notifications:
    - Information was sent to Ecology's clean energy email distribution list and SEPA email distribution list.
    - Social media notifications were shared on Ecology's blog on March 20, 2024.
    - Information was published on Ecology's Public Input and Events Listing website.
- Website:
    - Ecology developed and published an update to their PEIS website.[9]
- Tribal notifications:
    - Notifications were sent to Tribal Chairs, Natural and Cultural Resources Directors, and Executive Directors of Tribal Organizations to notify them of scoping.
    - A Tribal Forum was held on April 30, 2024.
- Agency notifications:
    - State agencies were notified by email, listserv, and SEPA Register notices.

3.4 Public meetings

Ecology hosted two virtual public meetings to share information from the scoping document and receive verbal comments. Each meeting included a presentation and an opportunity to provide verbal comment. Ecology provided Spanish interpreters for the meetings. Scoping meeting materials, including the scoping documents and a scoping handout, were available to the public on the Ecology PEIS website throughout the scoping period:

- Tuesday, April 9, 2024, from 4pm to 6pm Pacific Standard Time (PST)
- Thursday, April 11, 2024, from 12pm to 2pm PST

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

4 Summary of Scoping Comments

4.1 Summary

A total of 17 comment submissions were received. Comments were received via online forms and through verbal comments during the public scoping period. A variety of groups and individuals provided comments, as follows:

- Agencies (comments were received from three agencies):
  - Lewis County Transit
  - Public Utility District No. 1 of Whatcom County
  - Washington Department of Health
- Tribes (comments were received from two Tribes):
  - Lummi Indian Business Council
  - Confederated Tribes of the Umatilla Indian Reservation
- Citizens (comments were received from four individuals)
- Businesses (comments were received from four businesses):
  - Fortescue
  - GKN Hydrogen
  - Puget Sound Energy
  - STARS Technology Corporation
- Organizations (comments were received from three organizations):
  - Joint Environmental Advocates
  - Pacific Northwest Hydrogen Association
  - Washington Green Hydrogen Alliance

The following sections summarize key themes of substantive comments received during the scoping period and are not meant to provide a comprehensive or detailed listing of all comments.

4.2 Facility types and assumptions

Commenters suggested additional types of facilities be considered in the PEIS. These included central, distributed, metal hydride storage, and carbon capture systems. Commenters questioned the need to evaluate a BESS in the PEIS. Some commenters recommended Ecology evaluate both green hydrogen and renewable hydrogen. Commenters also suggested that the PEIS only evaluate green hydrogen.

Commenter said not all hydrogen production must occur proximate to high-capacity electrical transmission lines. Another disagreed with Ecology's assumption regarding energy needs for pyrolysis. Commenter disagreed with Ecology's assumption regarding land use/acreage per ton of hydrogen produced.

4.3 Information sources

Commenters advised Ecology to engage early and often with industry representatives and subject matter experts. Another suggested working groups including multiple representatives from different parts of the hydrogen technology development, production, and use industries.

4.4 Geographic study area

Commenter asked for "an area with water availability" to be defined. Another commenter said to consider disproportionately impacted disadvantaged, overburdened, and Tribal populations when determining the study area.

4.5 Mitigation

Commenter stated the PEIS should retain flexibility in any mitigation measures to ensure they can be adjusted and adapted to future specific projects. Another said mitigation measures should be consistent and equitable across projects and geographies.

4.6 Scope of analysis

Commenters recommended the evaluation of end uses, transportation, co-production of hydrogen, and hydrocarbon fuels. Commenters encouraged the analysis of full lifecycle impacts, including the evaluation of impacts from the processes used to convert hydrogen into electricity and upstream feedstocks.

4.7 Elements of the environment

4.7.1 Environmental justice and overburdened communities

Commenter recommended strong safeguards for environmental justice and protections for overburdened communities. Another suggested evaluating Community Benefits Program as part of Department of Energy cooperative agreement.

4.7.2 Tribal interests, treaty rights, and resources

Commenter stated need for Tribal consultation and the acknowledgement of Tribal sovereignty and support for the protection of treaty-reserved rights and resources.

4.7.3 Water resources

Commenters suggested providing details on the electrolysis process, water use for hydrogen production, and potential water reuses. Another said to consider how the effects of water requirements for hydrogen production may impact already water-stressed communities.

4.7.4 Biological resources (species and habitats)

Commenter said to analyze water as it relates to fish and fish habitat.

4.7.5 Energy and natural resources

Commenter stated need to consider impacts to energy and natural resources to meet the electricity demands of green electrolytic hydrogen production.

4.7.6 Air quality and greenhouse gases

Commenter advised considering federal and state carbon reduction and net zero initiatives.

4.7.7 Environmental health and safety

Commenter recommended evaluating potential effects of hydrogen spills and leaks.

4.7.8 Land use

Commenter recommended considering land use in the context of biomass, other sources of green hydrogen feedstock, and water use.

4.7.9 Public services and utilities

Commenter requested considering impacts to public services and utilities to meet the electricity demands of green electrolytic hydrogen production.

5 Next Steps

Ecology has started to develop the green hydrogen energy facilities Draft PEIS. There will be a public comment period for the Draft PEIS, which is planned for release in late 2024. Once the Draft PEIS is published, Tribes, agencies, members of the public, and interested parties will be invited to review and comment on the document and participate in public hearings. Ecology plans broad outreach when the Draft PEIS is available for public review. The Ecology PEIS website[10] will be maintained and updated throughout the environmental review process. Interested parties can receive updates via email by signing up for notices on the Ecology Clean Energy webpage.[11]

After public comments are received on the Draft PEIS, they will be considered to determine if additional analysis is needed. The Final PEIS is scheduled to be issued by the legislatively mandated date of June 30, 2025.

It is important to note that future proposed green hydrogen projects will need individual environmental review under SEPA using project- and site-specific information.

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

[11] https://public.govdelivery.com/accounts/WAECY/subscriber/new?topic_id=WAECY_296