

Kittitas County CESP Draft EIS

Volume I

Summary and Background

November 2026



Kimley»Horn

FUNDED BY WASHINGTON'S CLIMATE COMMITMENT ACT

Cover Letter

November 5, 2026

Subject: Draft Environmental Impact Statement (Draft EIS) for the Kittitas County Clean Energy Siting and Permitting (CESP) Project

Dear Reader,

Kittitas County (County) is pleased to share the Draft Environmental Impact Statement (Draft EIS) prepared in support of the Clean Energy Siting and Permitting (CESP) Project. The CESP Project reviews local permitting processes and may recommend code updates for established and emerging energy technologies in Kittitas County.

The Kittitas County CESP Project goals are to:

- Determine what clean energy types are most suitable for permitting,
- Retain local control of permitting in Kittitas County for identified energy projects,
- Develop and/or modify county code, where appropriate, so project applicants and the public understand:
    - Where various uses may be appropriate,
    - What studies and information are necessary to evaluate applications, and
    - The types of mitigation which may be appropriate for energy projects that are proposed in Kittitas County,

Where energy uses may be appropriate, create a streamlined permitting process.

The following Draft EIS is part of the environmental review process under the State Environmental Policy Act (SEPA) in Washington Administrative Code (WAC) 197-11. The purpose is to provide detailed comparisons of planning alternatives, assess cumulative effects, and develop broad mitigation strategies in a clear and concise Final EIS. The Draft EIS is split into two volumes.

The Draft EIS examines three alternatives to understand what energy types are most suitable for permitting in Kittitas County. Each alternative analyzes different pathways and energy facilities under consideration at a broad, planning-level, rather than site-specific projects. The alternatives include a No Action Alternative and two Action Alternatives with different energy facilities. The alternatives studied in the Draft EIS include:

- **Alternative 1: the No Action Alternative.** As required under SEPA, assumes that energy development for solar, wind, battery energy storage systems (BESS), geothermal, and small modular reactors (SMR) would occur within Kittitas County based on the current development regulations with no changes.
- **Alternative 2: Reassess Solar and Wind Overlays, Assess Potential Siting and Permitting.** Re-evaluates locations suitable and appropriate for large-scale solar and large-scale wind facilities along with amending current permitting procedures. Evaluates BESS for significant environmental impacts.
- **Alternative 3: Assess Potential Geothermal and Small Nuclear Reactor Siting and Permitting.** Evaluates significant environmental impacts for geothermal energy facilities and small modular reactor facilities.

The County anticipates selecting a preferred path forward based on the range of options presented in the Draft EIS. This can include selecting parts from multiple alternatives for a hybrid approach or selecting one of the

alternatives as is. The preferred path would update the Kittitas County local permitting process for energy facilities. This could include potential changes to development regulations, zoning and overlay districts, permit review procedures, application requirements, technical study requirements, approval criteria, permit conditions, and mitigation measures.

To learn more about the differences between the alternatives, see the **Summary of Alternatives** section.

Key environmental issues across the affected environment as part of the Draft EIS include:

- Where energy uses may be located
- What impacts energy uses may have on the environment
- What information is needed to understand project-level impacts
- How potential impacts may be mitigated

Following completion of the environmental review process and consideration of public input, the County intends to adopt development regulations that reflect the preferred approach for clean energy siting and permitting in Kittitas County.

For more information about the CESP Project outside of the Draft EIS, please visit the Project website at https://www.co.kittitas.wa.us/cds/cesp.aspx.

To review a summary of the impact findings within this document, please see the **Summary of Impacts** section of the Draft EIS.

Thank you for your interest in the CESP Project. If you have any questions, please contact:

Ellie Myers, Planner I, or Jamey Ayling, Planning Manager,

Community Development Services

cleanenergy@co.kittitas.wa.us or call (509) 962-7506.

Sincerely,

Chad Bala, Director
Kittitas County Community Development Services
411 N Ruby Street, Suite 2
Ellensburg WA 98926

The Clean Energy Siting and Permitting CESP-CLEANENERGY25 RFA is supported with funding from Washington's Climate Commitment Act. The CCA supports Washington's climate action efforts by putting cap-and-invest dollars to work reducing climate pollution, creating jobs, and improving public health. Information about the CCA is available at www.climate.wa.gov.

Fact Sheet

Project Title

Draft Environmental Impact Statement (DEIS or Draft EIS) for the Kittitas County Clean Energy Siting and Permitting (CESP) Project.

Proposed Action Description and Alternatives

The County is completing a programmatic EIS to evaluate appropriate areas for permitting a variety of different energy uses. The energy uses being studied include solar, wind, geothermal, small modular reactors (SMRs), and battery storage systems (BESS). This Project includes evaluating suitable zones or areas within different zones, identifying environmental impacts, and appropriate mitigation at a programmatic level for different energy uses.

The County administers utilities via Kittitas County Code (KCC) 17.61 Utilities, including large-scale solar energy facilities, or solar farms, in KCC 17.61C and large-scale wind energy facilities, or wind farms, in KCC 17.61A. This Project may result in updating the permitting requirements in KCC 17.61, the Kittitas County Comprehensive Plan, and/or locations and maps in which these facilities may be permitted as a result of the EIS.

The County is completing this Project to proactively address the siting of certain energy uses and strengthen opportunities for local evaluation and permitting of energy projects by establishing permitting pathways that are clear and predictable for certain energy uses, where these uses are appropriate, while also ensuring that permit processes properly evaluate and mitigate project impacts during construction, operation, and decommissioning. Where the County does not provide a permitting pathway or only allows uses in certain areas, applicants may still apply to permit uses through the Energy Facility Site Evaluation Council (EFSEC). More information about this is provided on the Project website. Please see following link: https://efsec.wa.gov/.

A comparative evaluation of alternative courses of action is included in the Draft EIS. The County studied three alternatives as part of the Draft EIS. Alternatives include a No Action Alternative and two action alternatives that consider approaches to siting criteria, clean energy uses, and mitigation and minimization measures. The following alternatives have been identified:

- **Alternative 1: the No Action Alternative.** As required under State Environmental Policy Act (SEPA), the no action alternative assumes that energy development for solar, wind, BESS, geothermal, and SMRs would occur within Kittitas County based on the current development regulations with no changes. The current KCC sections relating to energy development are KCC Chapter 17.61 Utilities, KCC Chapter 17.61A Wind Farm Resource Overlay Zone, KCC Chapter 17.61B Small Wind Energy Systems, and KCC Chapter 17.61C Solar Power Production Facilities. The processes and development code standards currently established in Kittitas County would be carried forward and any uses not permitted could be done through the permitting process established by the Washington State EFSEC.
- **Alternative 2: Reassess Solar and Wind Overlays, Assess Potential BESS Siting and Permitting.** Re-evaluates locations suitable and appropriate for large-scale solar and large-scale wind facilities along with amending current permitting procedures. Evaluates BESS for significant environmental impacts. Current overlay locations (KCC 17.61C.030 Solar Power Production Facilities Overlay Map and KCC 17.61A Wind Farm Overlay Zone) may be modified based on findings. Where deemed appropriate, County permitting processes for large-scale solar, wind, and BESS may be modified to

streamline the local permitting pathway and provide clear development standards with known mitigation measures.

- **Alternative 3: Assess Potential Geothermal and Small Nuclear Reactor Siting and Permitting.** Evaluates significant environmental impacts for geothermal energy facilities and SMR facilities. Where deemed appropriate, County permitting processes may be modified to streamline the local permitting pathway and provide clear development standards with known mitigation measures.

It is anticipated that after the DEIS is issued, a Preferred Alternative will be selected from the range provided in the alternatives for the Final EIS (FEIS). Based upon the Preferred Alternative, the Kittitas County Comprehensive Plan, land use and zoning maps, and KCC may be amended to reflect the Preferred Alternative. **The tentative date for action is June 2027.**

Location

The geographic scope of the CESP EIS is Kittitas County, including all unincorporated urban areas, rural lands, and natural resource lands.

Project Contacts

Lead Agency

Kittitas County

SEPA Responsible Official

Chad Bala, Director & Jamey Ayling, Planning Manager
Kittitas County Community Development Services
411 N Ruby Street, Suite 2
Ellensburg, WA, 98926

Contributors

Kimley Horn and Associates, Inc.
2828 Colby Avenue, Suite 200
Everett, WA 98201
Primary contributor for the Draft EIS.

For Questions, Contact:

Ellie Myers, Planner I, or Jamey Ayling, Planning Manager,
Kittitas County Community Development Services
cleanenergy@co.kittitas.wa.us or call (509) 962-7506

Required Permits, Licenses, and Approvals

There are numerous regulations, plans, and laws that guide, influence, and relate to the contents of this EIS. As a programmatic EIS, the following does not relate to project-level action, meaning a specific energy facility or development project. As such, the specifics of projects that would be proposed are not yet known. It is not possible for the County to present a complete list of federal, state, and local permits, licenses, and approvals that could be required for future facilities. The implementation of the energy facilities studied in the CESP EIS would require applicable regulations, rules, and plans at federal, state, and local levels at the time of the

Project. A list of regulations that could be applicable to the studied energy facilities can be found in **Appendix A in Volume III**.

Date of Draft EIS Issuance

November 5, 2026.

DEIS Comment Due Date

Kittitas County is requesting comments from the public, cities, agencies, Tribes, and all interested parties on the Draft EIS from November 5, 2026 to December 11, 2026. Comments are due by 5:00PM, Friday December 11, 2026.

Tentative Date of Final Action

Summer 2027

Phased Environmental Review

The Washington State Legislature previously directed the Washington State Department of Ecology (Ecology) to prepare programmatic EISs for utility-scale solar energy facilities, utility-scale onshore wind energy facilities, and green electrolytic and renewable hydrogen facilities, respectively, by June 2025.

Revised Code of Washington (RCW) 43.21C.538 requires SEPA lead agencies, such as Kittitas County, to consider the Ecology Utility-Scale Solar Programmatic Environmental Impact Statement (PEIS) and Utility-Scale Wind PEIS for applicable facilities. Agencies must use the information in the PEIS, along with other publicly available information and site-specific details, to support their evaluation of proposed actions, alternatives, environmental impacts, and mitigation for a proposed project. Potential impacts not addressed in the PEIS will need to be evaluated by the SEPA lead agency in the project-level environmental review. As such, the County has reviewed the PEISs for solar energy facilities, onshore wind energy facilities, and BESSs, as part of the environmental review for energy siting and permitting in Kittitas County. Information shared in the PEISs was used in the following EIS. Future project-level or non-project actions proposed in Kittitas County will still require additional environmental review under SEPA.

Related Documents

You may review the Project website for relevant information associated with the CESP Project at https://www.co.kittitas.wa.us/cds/cesp.aspx. Please see the contact persons above if you request any clarification or have additional questions.

To Receive a Copy of the EIS

This Draft EIS is available for review at the Kittitas County Community Development Services Department at 411 N Ruby Street, Suite 2, Ellensburg WA 98926.

The Draft EIS is also posted on the County's website at https://www.co.kittitas.wa.us/cds/cesp.aspx.

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See Volume III for the Appendix Items

Acronyms and Abbreviations

Acronym	Definition
AC	Alternating Current
ACHP	Advisory Council on Historic Preservation
Agriculture	Washington State Department of Agriculture
BESS	Battery Energy Storage System
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
BOCC	Board of County Commissioners
CAA	Clean Air Act
CESP	Clean Energy Siting and Permitting
CPP	Countywide Planning Policies
CWA	Clean Water Act
DAHP	Washington State Department of Archaeology and Historic Preservation
DC	Direct Current
DEIS	Draft Environmental Impact Statement
DNR	Washington State Department of Natural Resources
DOC	United States Department of Commerce
DOD	United States Department of Defense
DOE	Department of Energy
DOH	Department of Health
DOI	Department of Interior
Ecology	Washington State Department of Ecology
EFSEC	Washington State Energy Facility Site Evaluation Council
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
F	Fahrenheit
FAA	Federal Aviation Administration
FEIS	Final Environmental Impact Statement
FERC	Federal Energy Regulatory Commission
GHI	Global Horizontal Irradiance
HVAC	Heating, Ventilation, and Air Conditioning
KCC	Kittitas County Code
kV	Kilovolt
kW	Kilowatt
kWh	Kilowatt-hour

Acronym	Definition
kWh/m^2/day	Kilowatt-hours per Square Mile per Day
LiDAR	Light Detection and Ranging
MBTA	Migratory Bird Treaty Act
MDNS	Mitigated Determination of Non-Significance
mph	Miles per Hour
MVA	Megavolt-ampere
MW	Megawatt
MWe	Megawatt electrical
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NIETC	National Interest Electric Transmission Corridors
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NREL	National Renewable Energy Lab
NRL	National Laboratory of the Rockies
PEIS	Programmatic Environmental Impact Statement
PSE	Puget Sound Energy
PV	Photovoltaic
RAEL	Radioactive Air Emissions License
RCW	Revised Code of Washington
RML	Radioactive Materials License
SCA	Site Certification Agreement
SEPA	State Environmental Policy Act
SMP	Shoreline Master Program
SMR	Small Modular Reactor
SPPF	Solar Power Production Facilities
THPO	Tribal Historic Preservation Officer
UGA	Urban Growth Area
USACE	U.S. Army Corps of Engineers
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USNRC	United States Nuclear Regulatory Commission
WAC	Washington Administrative Code

Acronym	Definition
WDFW	Washington Department of Fish and Wildlife
WETA	Washington Electric Transmission Authority
WRIA	Water Resource Inventory Area

1 Summary

1.1 Introduction

To increase the speed and efficiency of clean energy permitting in Washington State, the Washington State Legislature funded the CESP grant program in 2025. The program supports faster, more efficient, and equitable siting and permitting processes for clean energy projects while ensuring environmental protection, community engagement, and alignment with state climate and energy goals.

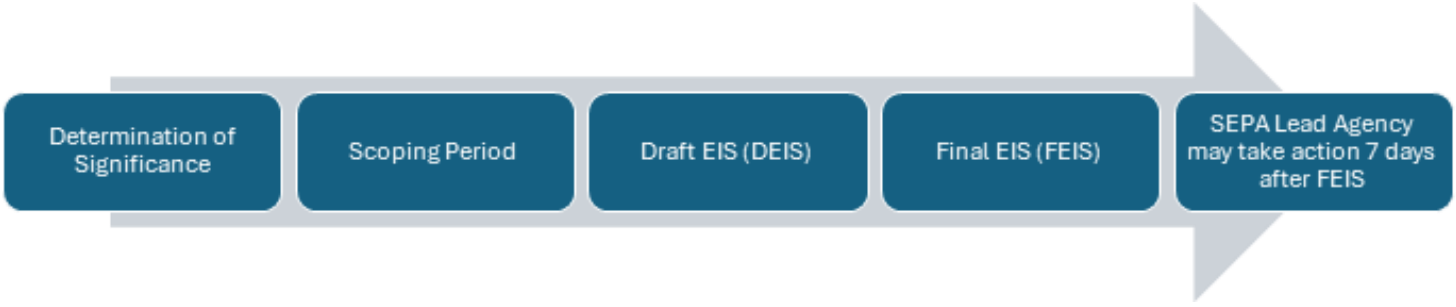
Kittitas County, a recipient of the CESP grant, regulates energy facilities under Chapter 17.61 Utilities, which includes provisions for geothermal facilities, major thermal power facilities, major alternative energy facilities, wind energy facilities (KCC 17.61A and 17.61B), and solar facilities (KCC 17.61C).

Through this grant-funded project, the County aims to streamline its local permitting process for clean energy technologies by conducting a PEIS to evaluate current energy uses and permitting processes for solar, wind, geothermal, SMRs, and BESSs.

1.2 Environmental Review Process

Under SEPA, lead agencies such as Kittitas County review proposed actions, like updates to county-wide energy siting and permitting processes, to determine whether they could significantly affect the natural, built, or social environment. An EIS is prepared by the lead agency when an action or series of actions may result in significant adverse environmental impacts, including decisions involving multiple projects, long-term implementation, or large geographic areas. The purpose of an EIS is to provide the public, agencies, Tribes, and decision makers with detailed information about potential environmental effects before decisions are made, supporting a more informed decision-making process.

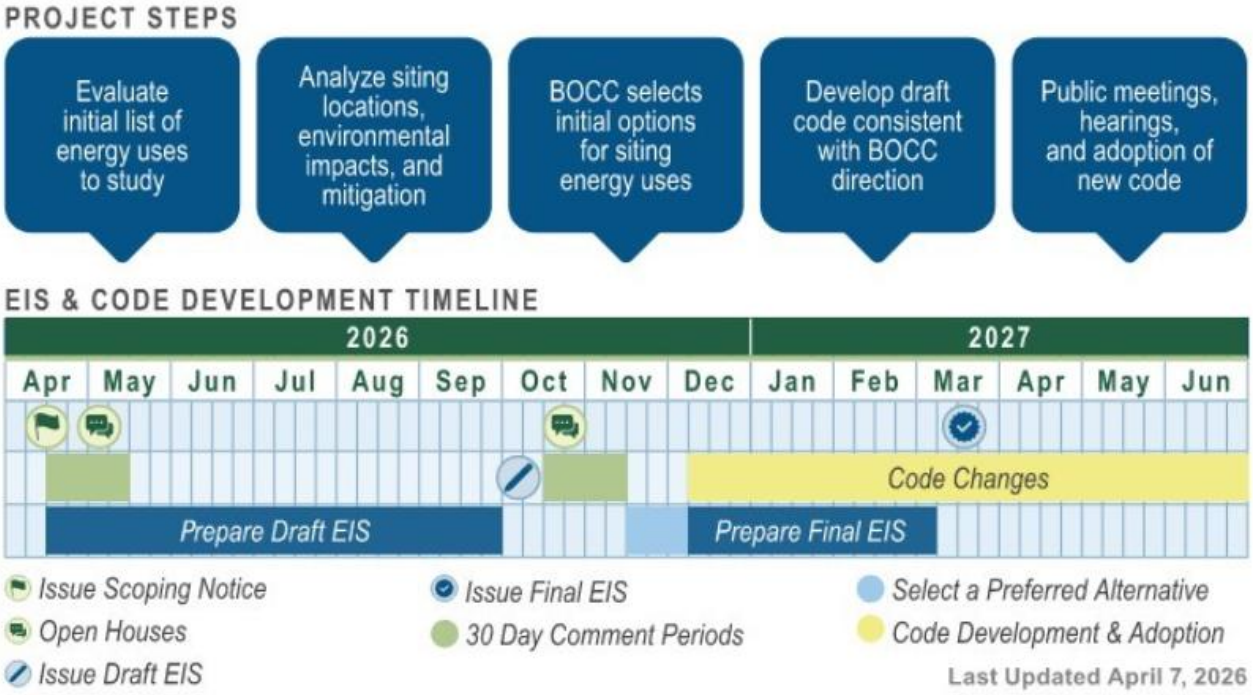
Figure 1: SEPA Process



The general EIS process is shown **Figure 1** above. It begins with the lead agency determining whether an action could result in significant environmental impacts. If significant impacts are anticipated, the lead agency (in this case, Kittitas County) issues a Determination of Significance (DS) and begins the scoping process to help inform the scope of the EIS. During scoping, the public, agencies, Tribes, and decision makers were invited by the County to provide input to help identify key issues and alternatives. The County then prepared a DEIS, which analyzes potential impacts, evaluates alternatives, and identifies possible mitigation measures. The DEIS is released for public review and comment. After reviewing comments, the lead agency (Kittitas County) will prepare a FEIS, which will respond to comments and include a refined analysis. The lead agency may then decide whether and how to proceed with the proposed action based on the information in the FEIS.

As part of the CESP Project, the County determined that the energy uses under consideration for siting and permitting have the potential for significant environmental impacts within Kittitas County and issued a DS and Scoping Notice on April 16, 2026, as shown in the schedule below.

Figure 2: Project Schedule



During the scoping period, the County gathered feedback on the scope of the EIS and energy uses identified for study. The scoping comment period and related scoping events were announced on the Project website, SEPA register, through the local newspaper, email distribution list to agency, Tribes, and members of the public signed up for email alerts, as well as posted on Facebook through the Kittitas County Board of County Commissioners (BOCC). The scoping comment period occurred from April 16 to May 18, 2026, and included two in-person scoping events with the public. One event was held at the Ellensburg Farmers Market, and the other was an Open House event in Cle Elum. Kittitas County considered the comments received during the scoping period when preparing the DEIS.

The DEIS was issued on November 5, 2026. Comments on the DEIS were accepted from November 5, 2026 to December 11, 2026. Open Houses for the DEIS issuance are scheduled for November 16, 2026 (lower county) and November 21, 2026 (upper county). For more information, visit the Project website at https://www.co.kittitas.wa.us/cds/cesp.aspx. Comments submitted during the DEIS comment period will be reviewed and revisions to the DEIS for the FEIS will be made based on the comments received.

1.2.1 PEIS Overview

For the CESP Project, the County has prepared a PEIS, a type of EIS that provides flexibility to evaluate a range of alternatives, including different plans, policy changes, and courses of action. Unlike a project-level EIS, it does not provide detailed, site-specific analysis of environmental impacts. Future project-level or non-project actions proposed in the County will still require additional environmental review under SEPA.

The County has prepared this PEIS, referred to throughout as the "CESP EIS", to evaluate energy siting and permitting activities in Kittitas County, Washington.

The intent of this CESP EIS is to analyze the general energy uses, not individual projects, and related siting considerations to identify probable significant adverse environmental impacts. Alongside identified significant impacts, the CESP EIS outlines measures to reduce, minimize, or mitigate those impacts and identifies impacts that may remain significant despite those efforts.

The CESP EIS is not an evaluation of a specific project within the county. It does not authorize nor exclude future facilities. Proposed energy facilities will need project-level environmental review under SEPA and meet applicable requirements determined by the lead agency for environmental review.

1.2.2 CESP EIS Considerations

The Washington State Legislature previously directed Ecology to prepare PEISs for utility-scale solar energy facilities, utility-scale onshore wind energy facilities, and green electrolytic and renewable hydrogen facilities, respectively, by June 2025.

RCW 43.21C.538 requires SEPA lead agencies, such as Kittitas County, to consider and incorporate, when appropriate, the Ecology's PEISs for utility-scale solar, utility-scale onshore wind, and green electrolytic and renewable hydrogen for applicable facilities. SEPA lead agencies must use the information in these PEISs, along with other publicly available information and local specific details to support their evaluation of proposed actions, alternatives, environmental impacts, and mitigation for proposed projects. As such, the County has reviewed the PEISs for solar energy facilities and onshore wind energy facilities as part of the environmental review for energy siting and permitting in Kittitas County and incorporated key aspects of these documents in this CESP EIS.

1.3 Purpose of Study

As part of the County CESP review process, including the CESP EIS, the following project goals were developed:

- Determine what clean energy types are most suitable for siting and permitting consideration in the county,
- Retain local control of permitting, when possible, in Kittitas County for identified energy projects,
- Develop and/or modify KCC, where appropriate, so project applicants and the public understand where various uses may be appropriate, what studies and information are necessary to evaluate applications, and the types of mitigation which may be appropriate for energy projects that are proposed in Kittitas County, and
- Where energy uses may be most appropriate, create a streamlined permitting process.

The purpose of the CESP EIS is to generally evaluate appropriate locations, permitting processes, common impacts, and appropriate mitigation measures for solar, wind, BESS, geothermal, and small modular nuclear reactor energy projects within Kittitas County.

1.4 Scope of Study

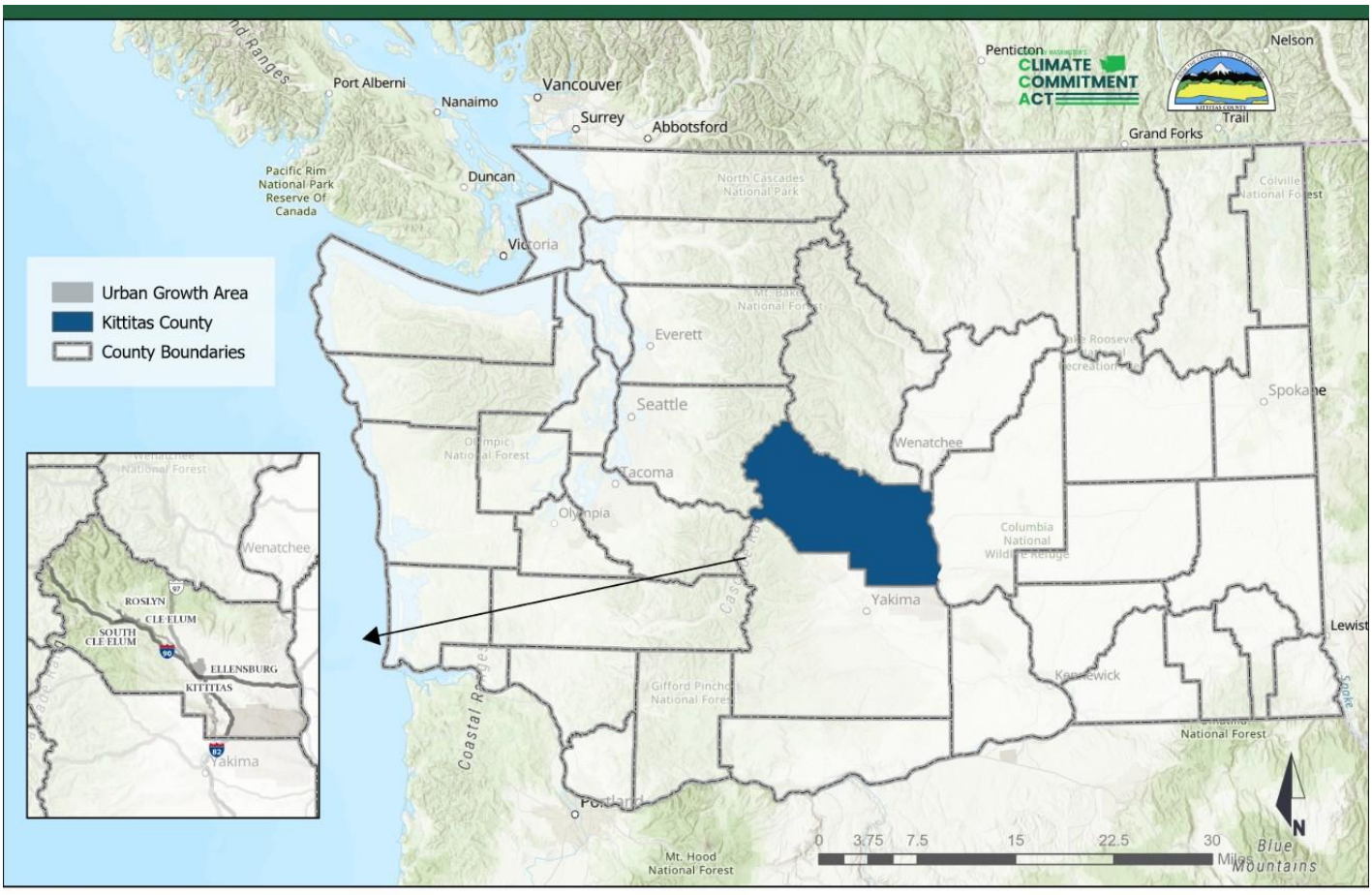
As part of the CESP EIS, the County is evaluating the three alternative approaches to siting and permitting energy in the county:

- Alternative 1, the No Action Alternative,
- Alternative 2, Reassess Solar and Wind Overlays, Assess Potential BESS Overlay,
- Alternative 3, Assess Potential Geothermal and Small Nuclear Overlays.

More information on the selected alternatives can be found in the **Summary of Alternatives** section, while further background on the current local, state, and federal permitting processes for energy uses can be found in **Energy Permitting Overview** section.

The geographic scope for the CESP EIS includes Kittitas County, including all unincorporated urban areas, rural lands, and natural resource lands.

Figure 3: Kittitas County Vicinity Map



Source: Kittitas County and Kimley-Horn, 2026

Additional information on the selected energy facilities and general infrastructure components can be found in the **Energy Facilities** section. Facilities that did not meet the definitions of the energy uses in this section were not analyzed as part of the CESP EIS.

The siting analysis found in **Section 3** reviews existing methodologies and criteria for locating clean energy facilities. Existing methodologies and criteria include state-wide studies relevant to the selected energy uses and were compiled for areas favorable, constrained, and highly-constrained areas. This section is meant to provide a preliminary overview to consider with the potential significant impacts identified in this study.

An analysis for the affected environment can be found in Volume II of the CESP EIS.

1.5 Summary of Alternatives, Impacts, and Mitigation Measures

This section summarizes the alternatives analyzed, the potential impacts identified, and mitigation measures developed through the analysis of the affected environment.

1.5.1 Summary of Alternatives

The CESP Project PEIS provides a comparative evaluation of alternative courses of action in siting and permitting clean energy alternatives in the county. The energy uses being studied include solar, wind, geothermal, SMRs, and BESSs. Three alternatives were selected for study to evaluate suitable areas within the county for energy siting, identifying environmental impacts of energy uses, and evaluating appropriate mitigation and minimization measures at a programmatic level.

- Alternative 1, the No Action Alternative,
- Alternative 2, Reassess Solar and Wind Overlays, Assess Potential BESS Overlay,
- Alternative 3, Assess Potential Geothermal and Small Nuclear Overlays.

It is intended that after studying the selected alternatives in the DEIS, a Preferred Alternative will be selected from the range provided for the FEIS. The Preferred Alternative may be one of the studied alternatives as written, or a combination of elements from one or more alternatives. Based on the Preferred Alternative, the Kittitas County Comprehensive Plan; land use and zoning maps; and KCC may be updated and/or amended to reflect the Preferred Alternative.

The following provides a detailed description of each of the selected alternatives.

1.5.1.1 Alternative 1: No Action Alternative

Alternative #1, No Action Alternative, as required under SEPA, assumes that energy development for solar, wind, BESS, geothermal, and SMRs would occur within Kittitas County based on the current development regulations with no changes. The current KCC sections relating to energy development are KCC Chapter 17.61 Utilities, KCC Chapter 17.61A Wind Farm Resource Overlay Zone, KCC Chapter 17.61B Small Wind Energy Systems, and KCC Chapter 17.61C Solar Power Production Facilities. The processes and development code standards currently established in Kittitas County would be carried forward and any uses not permitted by the County could be done through the permitting process established by the Washington State EFSEC. The **No Action Alternative** takes into consideration the energy uses permitted to date, impacts observed so far, and how these processes would be carried forward.

1.5.1.1.1 Current Kittitas County Permitting Procedures

1.5.1.1.1.1 Solar Permitting

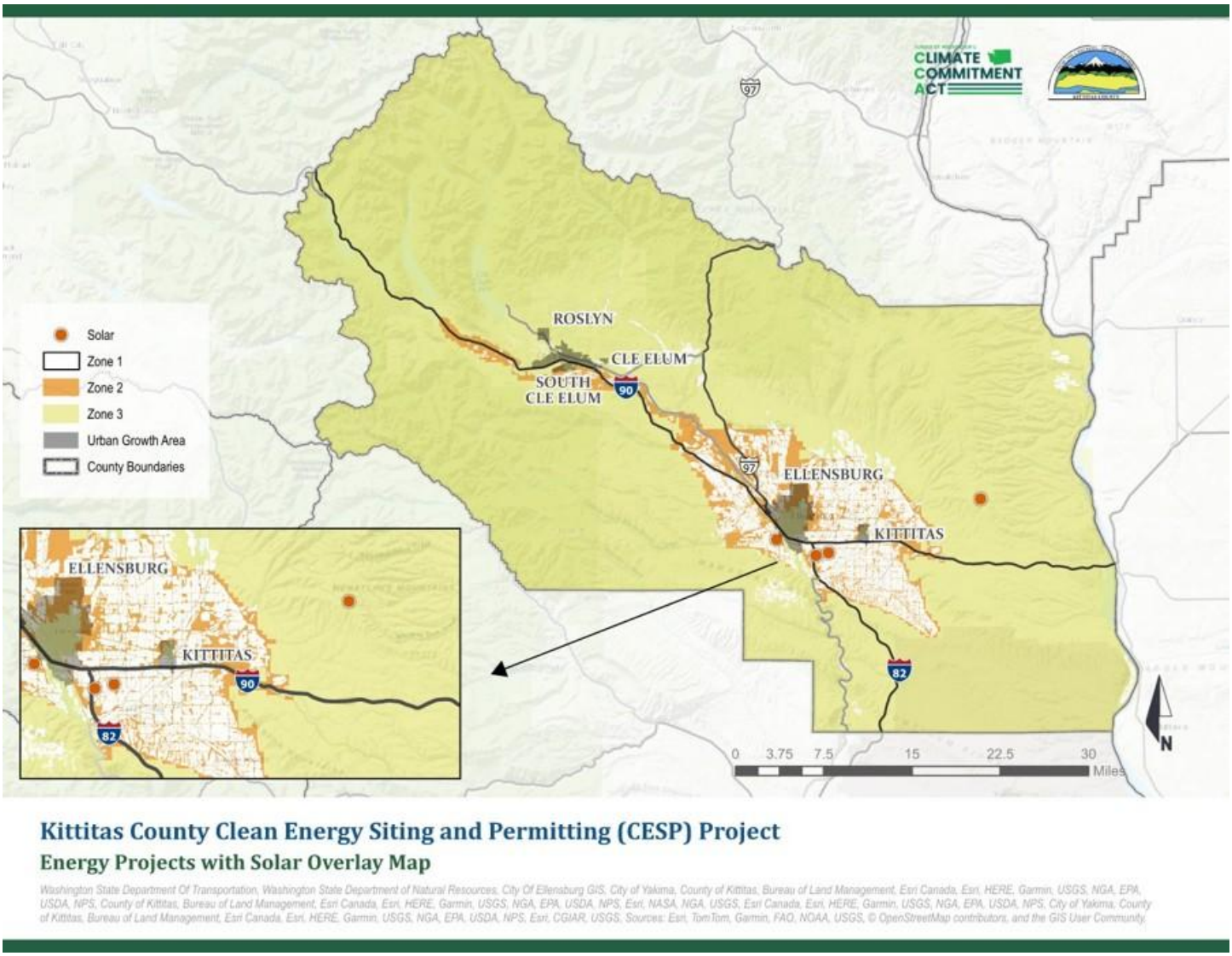
In KCC 17.61C.020, large-scale solar facilities fall under the County's definition of "Solar Power Production Facilities" or "SPPF".

> ***"Solar Power Production Facilities" or "SPPF"*** *means a utility on an area of land designated for the purpose of producing photovoltaic electricity with a nameplate capacity of over 100 kW and includes, but is not limited to, an assembly of solar panels and solar equipment that converts sunlight into electricity and then stores and/or transfers that electricity. SPPFs may include mechanical buildings and other uses that are typical to an SPPF, however offices and other commercial uses are prohibited.*

The County permits SPPFs through its solar overlay zone in KCC 17.61C.040, dividing the county into three solar overlay zones. The intent of the current solar overlay zones is to preserve prime agricultural lands in the county for resource protection. As such, the current solar overlay zones are designated by their agricultural designation and local irrigation district boundaries.

- Solar Overlay Zone 1 consists of lands designated by the Washington State Department of Agriculture (Agriculture) as agricultural land uses on its agricultural land use geodatabase.
- Solar Overlay Zone 2 consists of lands that are not designated by Agricultural as agricultural land uses on its agricultural land use geodatabase.
- Solar Overlay Zone 3 consists of lands that are not designated by Agriculture as agricultural land uses on its agricultural land use geodatabase and are outside of irrigation district boundaries.

Figure 4: Solar Overlay Map



Source: Kittitas County and Kimley-Horn, 2026

The process of how SPPFs are permitted in the county depends on which zone it is located in.

In Solar Overlay Zone 1, SPPFs are prohibited except for the following areas with a conditional use permit:

- Lands that do not contain soils suited for agricultural uses as described by the United States Department of Agriculture and Natural Resource Conservation Service Soil Survey of Kittitas County Area, Washington
- Lands that have been converted to roads, parking lots, runways, or similar uses prior to October 2, 2018.
- Rooftops of buildings existing prior to October 2, 2018.
- Airport Safety Zones.
- Powerline Rights-of-Way.
- Highway Interchanges.

In Solar Overlay Zone 2, SPPFs require a conditional use permit.

In Solar Overlay Zone 3, the approval process for an SPPF depends on its generating capacity. The generation threshold for the placement or construction of an SPPF is 7 MW.

- If the placement or construction of an SPPF is greater than 7 MW, a conditional use permit approval is required.
- If the placement or construction of an SPPF generates up to 7 MW, an administrative conditional use permit approval is required.

As part of the development standards for SPPFs, the County currently requires:

- At least eight feet screening and/or fencing
- Glare shall not impact surrounding properties, wildlife, or livestock, and if located in an airport overlay zone, glare resistant panels are required.
- Shielded or downward-facing lighting
- Meet all minimum zoning setbacks for the underlying zoning, or 25 feet, whichever is greater.
- Height limit of SPPF equipment of 20 feet from grade at the base to its highest point during operation.
- Compliance with all applicable local, state, and federal regulations, including but not limited to safety, construction, electrical, communication, and fire requirements; this includes related solar equipment.
- Construction or maintenance activities shall not result in the introduction or spread of noxious weeds and other undesirable weed species.
- A County Fire Marshal-approved fire management plan.
- The manufacturers' or installers' identification and appropriate warning signage shall be posted at the site in a clear and visible manner at the entrance and along any fencing.
- A sign to identify the owner of the facility and provide a 24-hour emergency contact and phone number.
- Solar equipment compliance with the most current edition of the National Electrical Code.
- Any water rights associated with the property shall be retained through the life of the facility.

1.5.1.1.1.2 Wind Permitting

In KCC, "wind farm" is a type of "major alternative energy facility" under KCC 17.61.010 and is subject to KCC Chapter 17.61A.[1]

> ***"Wind farm"*** *means a single wind turbine exceeding 120 feet in height above grade or more than one wind turbine of any size proposed and/or constructed by the same person or group of persons on the same or adjoining tax parcels. The term does not include turbines mounted to existing structures principally used for other lawful purposes (such as buildings or electric utility poles) provided the nacelle does not extend more than 20 feet above the uppermost portion of the structure to which it is mounted or attached.*

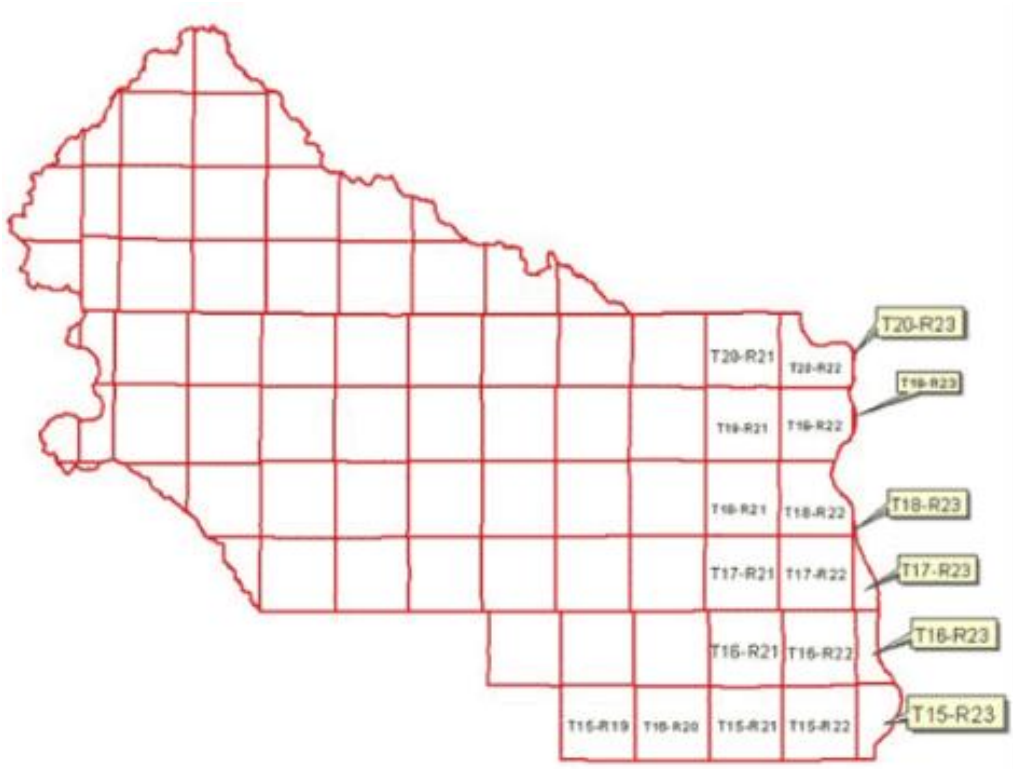
In Kittitas County, wind farms are a permitted use in a wind farm resource overlay zone through a wind farm resource development permit and a development agreement as provided under KCC 15A.11. As part of the development agreement, there must be the development standards applicable to the development of a specific wind farm, which may include, but are not limited to:

- Densities, number, size, setbacks, and location of turbines,
- Mitigation measures and such other development conditions as deemed appropriate by the BOCC to be necessary including measures to protect the best interests of the surrounding property or neighborhood or the county as a whole, and

- Other development standards including those identified in KCC 15A.11.020(E) and RCW 36.70B.170(3).

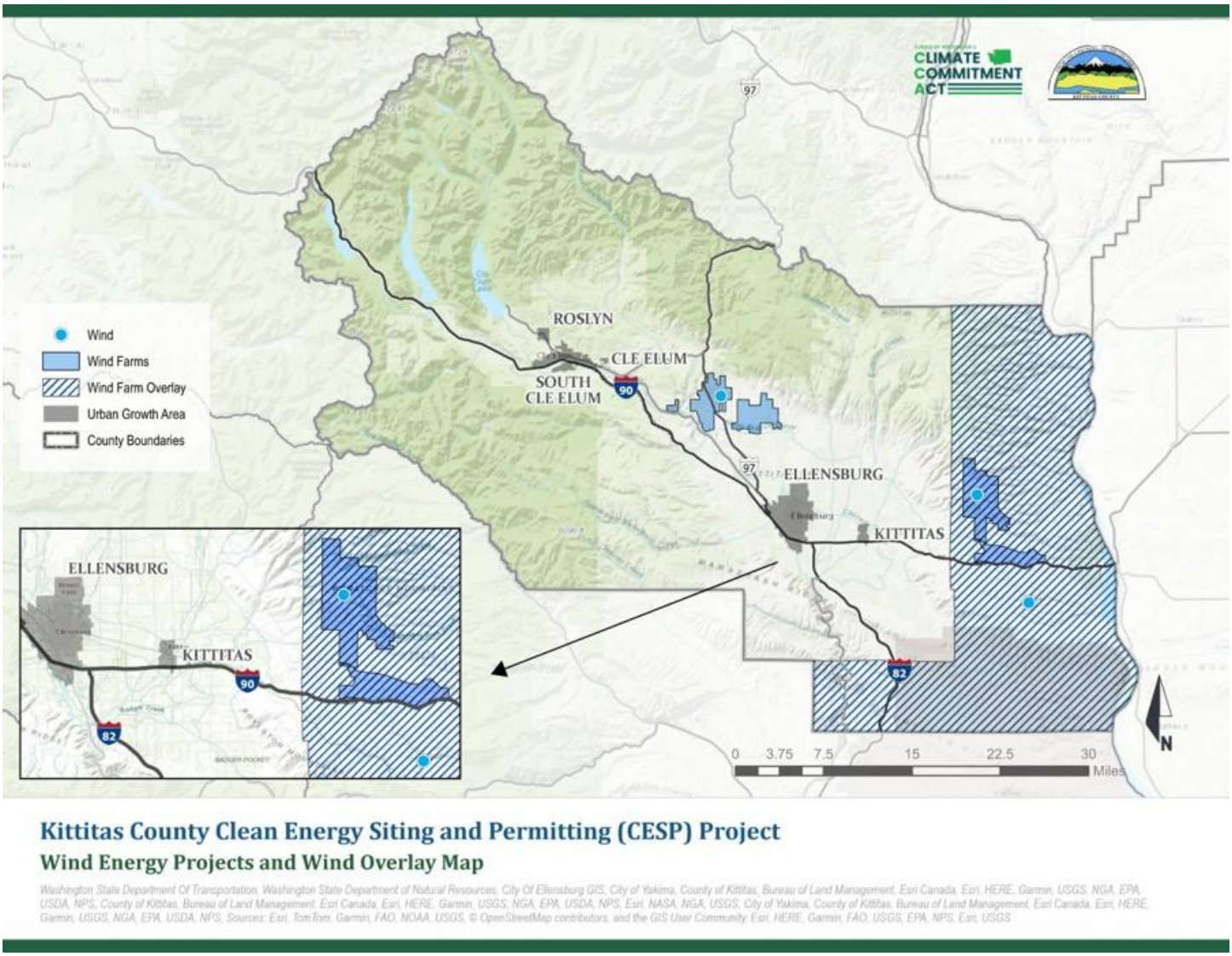
Under KCC 17.61A.035, the County provides pre-identified areas for siting where environmental review and public processes have previously occurred to expedite the siting of proposed wind farm facilities.

Figure 5: Pre-Identified Areas for Wind Farms



Source: KCC 17.61A.035

Figure 6: Wind Farm Overlay



Source: Kittitas County and Kimley-Horn, 2026

For wind farms sited in the pre-identified areas, the following siting standards apply:

- A minimum 1/2-mile setback from existing structures at time of application.

Additional analysis may include the following materials:

- Wildlife impact analysis,
- Noise impact analysis,
- Visual impact analysis, and
- Traffic impact analysis.

1.5.1.1.1.3 BESS Permitting

Currently, there are no explicit references to BESS technology in the KCC. Potential definitions that BESS may be interpreted as include the following definitions under KCC 17.61.010:

> ***"Associated facility"** or **"associated facilities"** means a land use whose principal purpose involves the distribution, processing, storage, handling, or other related and supporting activities necessary for a special utility, not including administrative activities or offices.*

BESS may be an "associated facility" as the technology is intended for the purpose of energy **storage** or a "utility" due to its relationship with electricity. BESS may also be a "special utility" or "special utilities" which provides a list of energy uses including "minor alternative energy facility."

> ***"Utility"** or **"utilities"** means the supply, treatment, and distribution, as appropriate, of gas, gas meter stations, municipal domestic and irrigation water, sewage, storm water, electricity, telephone, fiber-optic and cable television. Such utilities consist of both the service activity along with the physical facilities necessary for the utilities to be supplied, except for associated facilities and special utilities as defined herein. Electric vehicle infrastructure, as provided for in Chapter 17.66, is not a "utility" or "utilities".*
>
> ***"Special utility"** or **"special utilities"** shall mean the following:*
>
> *1. Natural gas, synthetic fuel gas, or liquefied petroleum gas pipelines operating at a pressure which results in a hoop stress of 20 percent or more of the specified minimum yield strength;*
>
> *2. Electrical transmission lines exceeding 115,000 volts;*
>
> *3. Electrical substations;*
>
> *4. Cellular, mobile, or fiber-optic telecommunication facilities;*
>
> *5. Geothermal power facilities;*
>
> *6. Minor thermal power plant facilities;*
>
> *7. Minor alternative energy facilities.*

Additionally, if battery storage use is related to solar energy facilities, BESS may fall under the County definition for "solar equipment" in KCC 17.61C.020:

The current County permitting process for BESS depends on whether it is a standalone energy storage facility or if it is equipment associated with another energy use such as solar or wind energy generation facilities. Currently, there are pathways within existing solar permitting processes for BESS to be treated as part of an "SPPF" if it falls under "solar equipment" or through the definition of "associated facilities."

> ***"Solar equipment"** means items including a solar photovoltaic cell, module, panel, or array, or solar hot air or water collector device panels, lines, pumps, batteries, mounting brackets, framing and possibly foundations or other structures used for or intended to be used for collection of solar energy.*

For standalone BESS facilities, the County has not established a clear permitting precedent. Applicable siting and permitting requirements would depend on the definition applied, the zones where that use is allowed, and the corresponding review process. **Table 1** below shows how current BESS siting and permitting may differ based on the applicable definition.

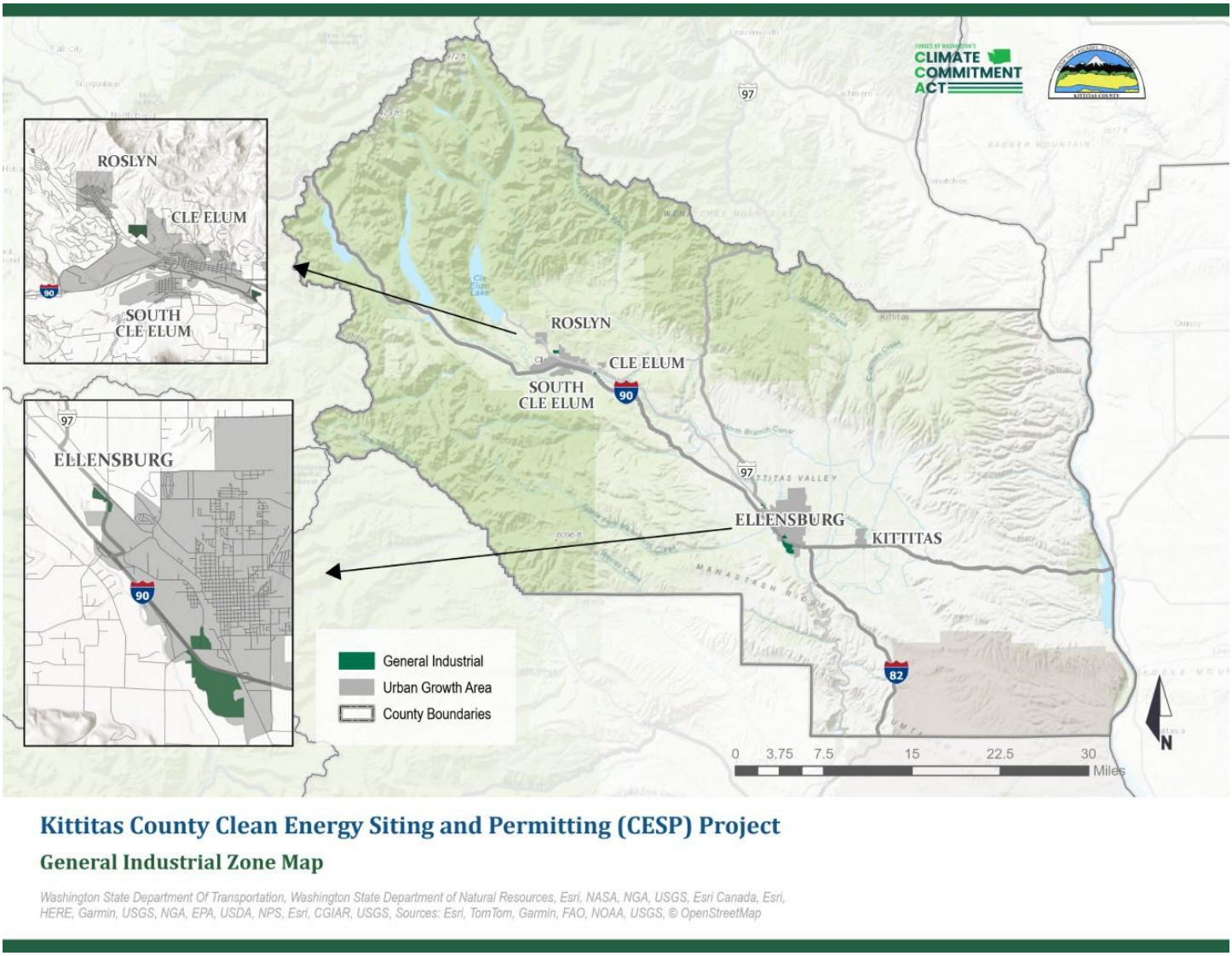
Table 1: BESS Definitions and Related Siting

Definition	Siting Locations	Permitting Process
Associated Facility	General industrial zone	Conditional use
Special Utilities	All zoning districts	Conditional use
Utilities	All zoning districts	Administrative review
Solar Equipment	Solar overlay zones	See Solar Permitting Process

Source: KCC 17.61.020 and 17.61C.040

If BESS is sited in the general industrial zone, **Figure 7** below shows the location of these zones in the county.

Figure 7: General Industrial Zones



Source: Kittitas County and Kimley-Horn, 2026

For their permitting review process, special utilities and associated facilities receive review through a hearing examiner, the process of which is laid out in KCC 17.61.030.

1.5.1.1.1.4 Geothermal Energy Facility Permitting

Currently, geothermal energy facilities are defined in KCC 17.61.010 as “Geothermal power facilities”.

> ***"Geothermal power facility"*** *or* ***"geothermal facility"*** *means a facility used to produce electricity by extracting and converting the natural thermal energy of the earth. The term does not include ground-source heat pumps or the direct use of geothermal energy for the heating of buildings located on or adjacent to the subject property.*

Procedurally, geothermal power facilities are permitted under the special utility process. This means that such facilities may be sited as a conditional use in all zoning districts as stated in KCC 17.61.020.

For their permitting review process, “special utilities” receive review through a hearing examiner, the process of which is laid out in KCC 17.61.030.

1.5.1.1.1.5 SMR Permitting

In Washington State, the type of nuclear reaction, nuclear fission or nuclear fusion, determines the permitting authority. For fission nuclear power facilities, they are required to receive certification through the Washington State EFSEC. For nuclear fusion, facilities may receive certification through EFSEC, but it is not required.

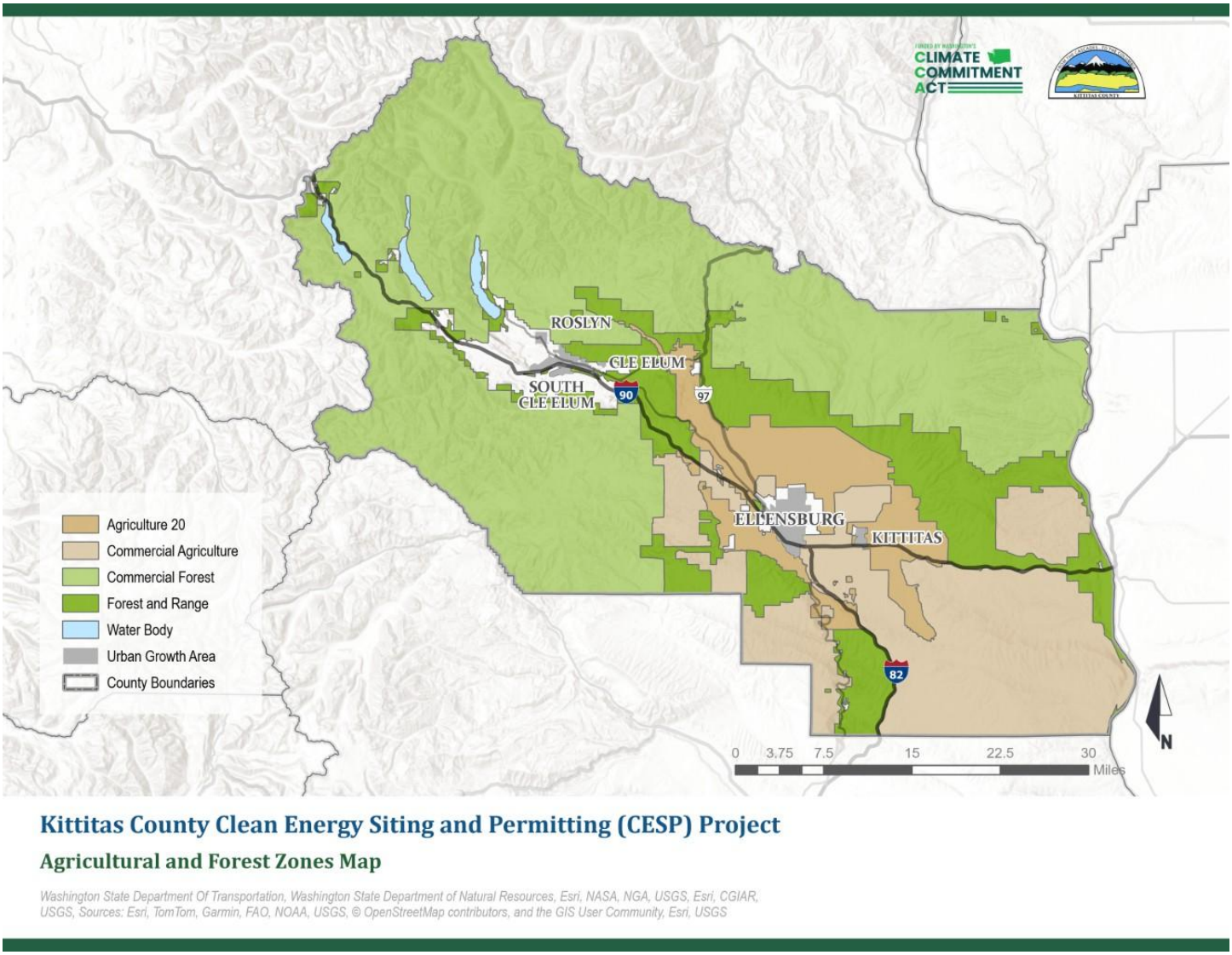
> ***"Major thermal power plant facility"*** *or* ***"major thermal power plant facilities"*** *means an electrical generating facility that utilizes nuclear or fossil fuels with output exceeding 10 megavolt-ampere (MVA).*

Currently, the County does not have an explicit reference to SMRs, small nuclear facilities, or fission or fusion nuclear power facilities in KCC. The most relevant definition in existing code is "major thermal power plant facility" or "major thermal power plant facilities" in KCC 17.61.010.

There is no current precedent in Kittitas County for small nuclear facilities or SMRs using the “major thermal power plant facility” definition; however, this definition may be referenced by EFSEC during the land use adjudication procedures if an SMR using nuclear fission is proposed, or by the County if an applicant proposes a nuclear fusion project at the County permitting level.

If an SMR is proposed in Kittitas County as falling under the definition of “major thermal power plant facility,” under current KCC they may be authorized as a conditional use in Agriculture-20, forest and range, commercial agriculture, and commercial forest zones, as stated in KCC 17.61.020 and shown in **Figure 8**.

Figure 8: Agricultural and Forest Zones



Source: Kittitas County and Kimley-Horn, 2026

1.5.1.2 Alternative 2: Reassess Solar and Wind Overlays and Assess Potential BESS Overlay

Alternative 2 re-evaluates locations suitable and appropriate for utility scale solar and wind along with current permitting procedures. Current overlay locations (KCC 17.61C.030 Solar Power Production Facilities Overlay Map and KCC 17.61A Wind Farm Overlay Zone) may be modified based on findings. In addition, the EIS will assess potentially significant environmental impacts associated with BESS to identify suitable locations in Kittitas County for a potential battery energy storage facility overlay and related development standards. Where deemed appropriate, County permitting processes for utility scale solar, wind, and BESS may be modified to streamline the local permitting pathway and provide clear development standards with known mitigation measures.

1.5.1.3 Alternative 3: Assess Potential Geothermal Energy and Small Nuclear Overlays

Alternative 3 evaluates potentially significant environmental impacts for geothermal energy facilities and SMR facilities.[1] The impacts associated with geothermal energy and SMRs are assessed to determine suitable and appropriate locations in Kittitas County. Where deemed appropriate, additional energy overlay zones and County permitting processes may be modified to streamline the local permitting pathway and provide clear development standards with known mitigation measures.

1.5.1.4 Preferred Alternative

After the DEIS is issued, a Preferred Alternative will be identified for the FEIS from the range of alternatives studied. The Preferred Alternative may be one of the studied alternatives as written or a combination of elements from the alternatives analyzed in the DEIS. Based on the Preferred Alternative, the County may amend the Comprehensive Plan, land use and zoning maps, and KCC.

1.5.2 Summary of Impacts

Affected Environment	Solar	Wind	BESS	Geothermal	SMRs
BIOLOGICAL RESOURCES					
Habitat loss and fragmentation	Large arrays, roads, and fencing could convert or divide shrub-steppe, grassland, wetlands, and riparian habitat.	Turbine pads, roads, and collection lines would create a dispersed disturbance footprint across potentially large areas.	Habitat effects would usually be localized, especially when facilities are placed on developed or previously disturbed land.	Exploration roads, well pads, pipelines, and generating facilities could fragment intact habitat before the final production footprint is known.	The reactor site, security perimeter, cooling facilities, and transmission improvements could permanently remove or divide habitat.
Wildlife movement and disturbance	Perimeter fencing and large blocks of panels could redirect wildlife or restrict movement between seasonal habitats.	Turbine activity, lighting, roads, and maintenance traffic could displace wildlife from otherwise suitable habitat.	Fencing, lighting, and equipment noise could affect movement near the site, although the disturbance area would generally be compact.	Roads, pipelines, lighting, and wellfield activity could disrupt movement across rural or undeveloped land.	Security fencing could create a long-term barrier where a site overlaps a wildlife corridor or route between seasonal ranges.

[1] As of June 2025, there is no Washington State definition for geothermal energy facilities or small modular reactors.

Affected Environment	Solar	Wind	BESS	Geothermal	SMRs
Species injury and mortality	Construction could disturb nests and special-status species, while electrical infrastructure could create collision or electrocution hazards.	Operating turbines present the clearest direct mortality risk, particularly for birds, bats, raptors, and eagles.	A battery fire or containment failure could expose nearby wildlife to smoke, chemicals, or contaminated runoff.	Fluid releases or changes to groundwater conditions could harm aquatic species and groundwater-dependent habitat.	Water intake and discharge systems could affect aquatic organisms through entrainment, flow changes, or altered water temperature.
WATER RESOURCES					
Water demand	Operational demand would generally be low, although construction, panel washing, revegetation, and fire protection would require a lawful and reliable supply.	Construction would require some water, while routine operational demand would remain low.	Routine demand would be low, but an emergency response could require substantial volumes of firefighting water.	Demand would vary widely based on the resource, cooling system, and use of open-loop, closed-loop, or reinjection technology.	Cooling demand could be substantial and may be difficult to meet during drought or Yakima Basin water shortages.
Surface water and drainage	Grading and concentrated panel runoff could increase erosion or alter natural drainage if the site is poorly designed.	Roads and stream crossings could increase sediment delivery, change drainage patterns, or impair aquatic connectivity.	Spills or contaminated fire water could reach streams, wetlands, irrigation facilities, or stormwater systems if containment fails.	Mineralized fluids, drilling materials, or thermal discharges could degrade surface water if they aren't contained and treated.	Cooling-system blowdown, wastewater, or heated discharges could affect receiving-water quality and temperature.
Groundwater	Compaction and grading could reduce infiltration, although major groundwater effects aren't expected from normal operation.	Foundations and road cuts could intercept shallow groundwater in some locations.	Damaged equipment or failed containment could release pollutants to shallow groundwater.	Withdrawal and injection could alter groundwater levels, pressure, temperature, or chemistry and affect nearby wells or springs.	Water withdrawals, dewatering, and facility operations could affect groundwater availability or quality depending on the selected design.

Affected Environment	Solar	Wind	BESS	Geothermal	SMRs
Wetlands and floodplains	Arrays, roads, and drainage improvements could fill wetlands or change wetland hydrology if sensitive areas aren't avoided.	Repeated road or utility crossings could reduce wetland function and flood-storage capacity.	Flooding could damage equipment and increase the chance that pollutants escape the site.	Changes in groundwater conditions could affect springs, wetlands, riparian vegetation, and other groundwater-dependent systems.	The plant and its water infrastructure could affect wetlands, floodplains, and aquatic habitat over a long operating period.
EARTH RESOURCES					
Soil disturbance and erosion	Broad grading could compact soil, remove topsoil, and increase wind or water erosion.	Foundation excavation, blasting, crane pads, and access roads could disturb soils across steep or erosion-prone terrain.	Grading and foundations would create a smaller disturbance area, but a spill or fire could contaminate soil.	Drilling pads, roads, and pipeline trenches could disturb soils during both exploration and production.	Deep excavation, grading, dewatering, and large foundations could substantially alter soil and bedrock conditions.
Geologic hazards	Settlement, liquefaction, or earthquake shaking could damage panel foundations and electrical equipment.	Landslides, fault movement, settlement, and earthquake shaking could damage turbines, roads, or collection systems.	Ground movement could damage battery units, containment systems, and emergency access routes.	Production and injection could contribute to induced seismicity, subsidence, uplift, or other ground movement.	Safety-related structures and emergency access would require careful siting and engineering for faults, liquefaction, landslides, and seismic shaking.
AIR QUALITY AND GREENHOUSE GASES					
Construction emissions	Clearing, grading, pile installation, and hauling would generate temporary dust and equipment exhaust.	Blasting, foundation work, road construction, and oversized deliveries could produce substantial short-term dust and exhaust.	Site preparation and container delivery would create temporary emissions across a relatively compact area.	Exploration, drilling, road construction, and material hauling could produce recurring emissions over several phases.	Multi-year excavation, concrete production, worker travel, and heavy deliveries could create prolonged construction emissions.

Affected Environment	Solar	Wind	BESS	Geothermal	SMRs
Operational emissions	Routine emissions would mainly come from maintenance vehicles, vegetation management, and dust from unpaved roads.	Routine maintenance would generate limited emissions, although remote access roads could remain a source of dust.	A thermal-runaway event could release smoke and toxic combustion products.	Operations may release hydrogen sulfide, carbon dioxide, steam, or other constituents depending on the resource and technology.	Emergency generators and cooling equipment would generate emissions, while an abnormal event could involve hazardous or radiological releases.
LAND USE					
Agriculture and resource lands	A large facility could remove productive land from agricultural use and divide grazing areas.	Farming or grazing may continue between turbines, but roads and other infrastructure could fragment operations.	A standalone facility would convert a compact area to an industrial use and may displace the existing use.	Exploration, wells, and pipelines could interfere with farming, forestry, grazing, or mineral access across a wider area than the plant itself.	The plant and security area could permanently displace existing uses and limit development on nearby land.
Compatibility and rural character	Large blocks of panels and fencing could conflict with nearby homes, recreation areas, and the county's rural landscape.	Turbine height, movement, and lighting could affect rural character and conflict with residential, airport, or military operations.	Equipment enclosures, security fencing, lighting, and required separation distances could conflict with nearby residential uses.	Drilling and industrial operations could create noise, traffic, and land-use conflicts in rural or recreation-oriented areas.	Security requirements, supporting infrastructure, and long-term operating constraints could affect surrounding land-use patterns.
Recreation and public access	Fencing and land conversion could restrict access or change the setting around recreation routes and public lands.	Turbines and access roads could alter recreation settings or interfere with public use of surrounding lands.	Access restrictions would generally remain close to the facility itself.	Roads, pipelines, and wellfields could interrupt recreation routes or change the character of public lands.	A secure site could impose long-term access restrictions and affect nearby recreation or tourism uses.

Affected Environment	Solar	Wind	BESS	Geothermal	SMRs
PUBLIC SERVICES AND UTILITIES					
Fire and emergency response	Electrical equipment and vegetation could create fire or wildfire response needs, particularly in higher-risk areas.	Remote turbine locations could make firefighting, rescue, and equipment access difficult.	Battery fires require specialized training, monitoring, suppression strategies, and coordination among response agencies.	Drilling incidents, fluid releases, and industrial fires would require site-specific emergency procedures.	Nuclear security and emergency planning would require sustained coordination among local, state, federal, and Tribal agencies.
Utility capacity	Interconnection may require a new substation, transmission line, or upgrade to existing facilities.	Large projects may require transmission improvements and expanded communications coverage in remote areas.	Grid interconnection and cooling, monitoring, and fire-detection systems would require reliable electrical service.	Water, wastewater, electricity, and communications infrastructure may need to reach an otherwise rural location.	The plant may require major water, wastewater, transmission, communications, and backup-power infrastructure.
Waste and decommissioning	Panels, racking, cable, and electrical equipment would require reuse, recycling, or disposal.	Blades, tower components, foundations, and electrical equipment would create large and specialized waste streams.	Batteries would require controlled transport, recycling, replacement, or disposal through qualified facilities.	Drilling fluids, mineralized materials, well equipment, and contaminated soils may require specialized handling.	Radioactive waste management and federal decommissioning requirements would continue long after electricity generation ends.
TRANSPORTATION					
Construction traffic	Concentrated deliveries and worker trips could increase rural-road wear and delay agricultural, school, recreation, or emergency travel.	Heavy construction traffic could damage pavement and require temporary traffic controls over a broad delivery route.	Container and transformer deliveries would produce a shorter period of concentrated truck traffic.	Exploration and well development could generate repeated rounds of heavy traffic on remote roads.	A multi-year construction period could create sustained worker, freight, and equipment traffic.

Affected Environment	Solar	Wind	BESS	Geothermal	SMRs
Specialized transport	Large transformers may require route review and special hauling arrangements.	Blades, tower sections, nacelles, transformers, and cranes may exceed existing road, bridge, or clearance limits.	Battery containers and hazardous materials would require suitable routes and handling procedures.	Drilling rigs, casing, pipes, cranes, and transformers would require dependable heavy-haul access.	Reactor modules, nuclear fuel, and regulated waste would require secure transport and interagency coordination.
Emergency access	Sites would need dependable access for fire and emergency vehicles during construction and operation.	Dispersed and remote facilities could be difficult to reach during wildfire, winter weather, or equipment emergencies.	An incident could require temporary road closures, controlled entry, and emergency staging space.	Remote terrain or seasonal road conditions could delay emergency response.	The site would require secure primary and secondary access, evacuation support, and space for emergency exercises.
ENERGY AND NATURAL RESOURCES					
Construction materials	Construction would consume fuel and aggregate, but demand would generally be temporary.	Roads, foundations, and crane pads could require comparatively large quantities of aggregate, concrete, and fuel.	Foundations, drainage facilities, and fire access would require aggregate and construction fuel.	Exploration and drilling would consume fuel, electricity, water, concrete, aggregate, and specialized materials.	Construction could require major quantities of concrete, steel, aggregate, fuel, and electricity.
Operational role and demand	The facility would generate electricity while using small amounts of power and fuel for maintenance and site operations.	Turbines would generate electricity while consuming some power for controls, heating, lighting, and communications.	The facility would withdraw and return electricity to the grid while using power for cooling, controls, and safety systems.	The plant could provide steady generation while using electricity for pumps, cooling, controls, and fluid management.	The plant could provide steady generation but would depend on regulated nuclear fuel supplies and reliable auxiliary power.

Affected Environment	Solar	Wind	BESS	Geothermal	SMRs
SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE					
Employment and public revenue	Construction would support temporary jobs, local spending, lease payments, and tax revenue, with few permanent positions.	Construction and maintenance would support specialized jobs and local revenue, although permanent staffing would remain limited.	Most employment would occur during construction, with a smaller need for technical and emergency-response personnel during operation.	Exploration, drilling, plant operation, and well maintenance could support a longer sequence of specialized jobs.	Construction and operation could create substantial employment, business activity, and public revenue over several decades.
Housing and services	A temporary workforce could add pressure to housing and community services near the project.	Specialized construction crews could increase short-term housing demand in smaller communities.	Workforce-related effects would likely be limited unless several projects are built at the same time.	Phased exploration and construction could create recurring demand for temporary housing and services.	A large and prolonged workforce could raise housing costs and strain schools, health care, roads, and other services.
Existing businesses and livelihoods	Conversion of agricultural land could affect farm operations and related businesses.	Effects on agriculture, recreation, tourism, and rural character could alter existing economic activity.	A serious incident could temporarily close roads or disrupt nearby businesses, schools, and workplaces.	Drilling and industrial activity could affect recreation, tourism, agriculture, and other resource-based businesses.	Construction, safety concerns, and public perceptions of nuclear development could affect tourism, investment, and property decisions.
Distribution of impacts	Dust, traffic, land conversion, or access changes could compound existing burdens in nearby communities.	Noise, traffic, and landscape changes could be concentrated near rural residents or communities with fewer resources.	Emergency risks would raise greater concern near vulnerable populations or areas with existing health burdens.	Housing pressure, traffic, and environmental risks could fall unevenly across rural communities.	Housing costs, emergency-planning demands, and potential health risks could place added pressure on overburdened communities.

Affected Environment	Solar	Wind	BESS	Geothermal	SMRs
ENVIRONMENTAL HEALTH AND SAFETY					
Fire, hazardous materials, and public safety	Electrical equipment, vegetation, and transmission infrastructure could contribute to fire or wildfire risk.	Turbines, substations, and remote electrical infrastructure could create fire and emergency-access concerns.	Thermal runaway could result in fire, explosion, toxic smoke, contaminated runoff, and temporary evacuation or shelter-in-place orders.	Drilling failures, fluid releases, hydrogen sulfide, and induced seismicity could present site-specific health and safety risks.	Security events, radiological releases, radioactive materials, and long-term waste management would require federal oversight and specialized planning.
Noise and vibration	Pile driving, construction equipment, inverters, transformers, and substations could affect nearby receptors.	Construction equipment and operating turbines could change noise conditions in otherwise quiet rural areas.	Cooling systems, transformers, inverters, and emergency equipment could create steady operational noise.	Drilling would create recurring noise and vibration, while pumps and generating equipment could affect nearby receptors during operation.	Construction, cooling equipment, generators, security systems, and plant operations could create long-term noise sources.
VISUAL QUALITY					
Landscape character	Large arrays could replace open agricultural or shrub-steppe views with a broad, low-profile industrial landscape.	Turbines would remain visible across long distances and could alter prominent ridgelines and open viewsheds.	Containers, transformers, fencing, and other equipment would create a compact industrial site.	Wellfields, pipelines, steam, and generating equipment could introduce industrial features into rural or natural settings.	Reactor buildings, cooling equipment, transmission facilities, and security infrastructure could create a permanent visual change.
Lighting, glare, and visibility	Panels could create glare, while security lighting could affect dark rural skies.	Aviation lighting and turbine movement could remain visible from distant viewpoints, including at night.	Security lighting could affect nearby properties unless it is shielded and directed downward.	Drilling and operations may require lighting during nighttime work or continuous operation.	Security and operational lighting could affect a larger area because of the facility's scale and continuous use.

Affected Environment	Solar	Wind	BESS	Geothermal	SMRs
HISTORIC AND CULTURAL RESOURCES					
Archaeological resources and burials	Grading, pile installation, roads, and utility trenches could disturb buried archaeological resources.	Turbine foundations and dispersed roads could affect archaeological sites across a large project area.	Excavation and interconnection work could affect nearby archaeological resources, although the footprint would generally be compact.	Exploration and drilling could affect archaeological sites, cemeteries, or previously unidentified human remains.	Deep excavation and supporting infrastructure could disturb archaeological resources and historic sites.
Historic properties and cultural landscapes	Large arrays could change the setting of historic properties or culturally important landscapes.	Turbine height and visibility could alter traditional cultural properties and significant viewsheds.	Effects would depend largely on the site's proximity to historic properties and cultural resources.	Wellfields and industrial infrastructure could change the character of traditional cultural properties or historic landscapes.	The plant and its supporting infrastructure could affect historic properties, cultural landscapes, and their long-term use.
TRIBAL RIGHTS, INTERESTS, AND RESOURCES					
Access and traditional uses	Fencing and habitat conversion could limit access to areas used for gathering, hunting, fishing, ceremony, or other traditional practices.	Roads, turbines, and habitat changes could affect access to traditional use areas and culturally important species.	Ground disturbance and restricted access could affect Tribal resources depending on the site.	Drilling and groundwater use could affect aquifers, springs, plants, fisheries, and other resources important to Tribes.	Security restrictions and long-term site control could limit access to culturally important lands and resources.
Concerns raised during Tribal engagement	Placing facilities within sacred landscapes, cultural-resource areas, and traditional use areas.	Turbines on culturally significant landscapes and viewsheds.	No BESS-specific concern was recorded, but future projects would still require early engagement based on their location and design.	Possible effects on archaeological resources, aquifers, and groundwater systems.	Historical harms from uranium mining and concerns extending across the nuclear fuel and waste lifecycle.

1.5.3 Summary of Mitigation Measures

Mitigation measures identified throughout the CESP EIS are intended to avoid, minimize, reduce, or otherwise address potential environmental impacts associated with the studied energy uses. Given the programmatic nature of the CESP EIS, the specific required and recommended measures for future individual projects would depend on the facility type, location, design, and affected resources. Required measures are currently in place as of the drafting of the CESP EIS, while recommended measures are additional factors that the County may consider as part of future actions or are part of best management practices.

The Draft CESP EIS organizes mitigation measures into the following categories:

- Required Mitigation
- Recommendations for Siting and Design
- Recommendations for Construction, Operation, and Decommissioning
- Other Mitigation for Potentially Significant Impacts

1.5.3.1 Required Mitigation

Future energy facilities would be subject to applicable federal, state, and local laws, regulations, permits, approvals as determined based on the energy facility, jurisdictional authority, and project-specific factors as identified in the **Energy Permitting Overview**.

At the federal level, requirements may include agency licensing and approvals, species protections, and requirements applicable to particular technologies, such as United States Nuclear Regulatory Commission (USNRC) licensing for SMRs.

At the state level, requirements may include coordination and permitting with Ecology, the Washington State Department of Transportation (WSDOT), and/or the Washington State Department of Health (DOH) as it relates to resource-specific regulations, permits, approvals, and coordination where applicable.

At the local level, energy facilities may be subject to County requirements in addition to the utility-specific provisions of KCC 17.61, including applicable land use and zoning standards, critical areas regulations, transportation and access requirements, building and fire codes, noise control not exempt, and other development and infrastructure standards within County authority that serve as required mitigation measures for projects within the county.

Appendix A, List of Regulations, provides a list of potentially applicable federal, state, and local regulatory requirements applicable to energy facilities evaluated in the Draft EIS.

1.5.3.2 Recommendations for Siting and Design

Measures recommended for siting and design focus on ways to avoid or reduce impacts before development occurs through project location, site layout, and design of future facilities and associated infrastructure. Major themes include:

- Locating development in previously disturbed or otherwise suitable areas where feasible;
- Avoiding or minimizing conflicts with sensitive environmental resources and incompatible uses;
- Minimizing facility, road, utility, and infrastructure footprints;
- Maintaining access and connectivity; and
- Incorporating appropriate setbacks, buffers, drainage, safety, and other design features.

The **Siting Analysis** found in **Section 3** provides additional background information on siting favorability and unfavorable conditions for the selected energy uses as it has been identified through outside studies and resources. For resource specific siting and design recommendations, refer to the individual affected-environment sections in **Volume 2**.

1.5.3.3 Recommendations for Construction, Operation, and Decommissioning

Measures recommended for construction, operation, and decommissioning address the lifecycle of the selected energy facilities. Major themes include:

- Erosion and stormwater control;
- Traffic and access management;
- Noise and lighting reduction;
- Monitoring and adaptive management;
- Spill and hazardous material management;
- Emergency coordination;
- Waste management;
- Removal of temporary infrastructure; and
- Stabilization, restoration, and revegetation following disturbance.

For resource specific recommendations during construction, operation, and decommissioning, refer to the individual affected-environment sections in **Volume 2**.

1.5.3.4 Other Mitigation for Potentially Significant Impacts

Where required and recommended measures to avoid, reduce, or minimize impacts may not be sufficient to reduce the significance of an impact, the CESP EIS identifies additional measures that could be considered to address the remaining impacts. These measures can include compensatory restoration or replacement, off-site conservation, infrastructure or facility modifications, changes to access or configuration, operating limitations, enhanced monitoring, adaptive management tied to performance standards, financial assurance, or avoidance of locations where impacts cannot be adequately reduced.

For additional mitigation measures identified for potentially significant impacts, refer to the individual affected-environment sections in **Volume 2**.

1.6 Engagement Summary

The CESP Project includes a comprehensive engagement process to hear from members of the community, agencies, stakeholders, Tribes, and interested parties to better inform the County's CESP effort and the following EIS. At the start of the Project, the County met with the BOCC to identify and select five priority clean energy uses for analysis. It was from this meeting that large-scale solar, large-scale wind, BESSs, geothermal, and SMRs were confirmed to be evaluated as a part of this Project. Since then, the Project team has met with the BOCC throughout to share information on the selected energy uses, provide Project updates, and answer any questions.

Following Project initiation, a formal EIS scoping period, including a 30-day comment period, was launched. The scoping period provided a check-in moment with the public, agencies, stakeholders, and interested parties on the CESP Project. The Project team provided information to inform interested parties about the Project, including selected alternatives, and hear input on the Project's path forward. The scoping period included three public scoping events throughout the county.

After the scoping period closed and comments were summarized, additional outreach included stakeholder and Tribal staff meetings. with interested agencies, organizations, and community representatives. The team also facilitated engagement discussions with staff from all three Tribes within the county, with continued follow-up planned with the Confederated Tribes of the Colville Reservation.

Building on feedback received throughout the engagement process, the Project is now issuing the Draft EIS for public comment. The comment period runs from November 5, 2026 to December 11, 2026 for a 44-day comment period. As part of the Draft EIS comment period there will be two open houses across the county to present findings, answer questions, and gather feedback on the draft analysis.

1.7 Major Conclusions

The CESP EIS provides planning and environmental considerations for how the County may approach the siting and permitting of large-scale solar, large-scale wind, BESSs, geothermal energy facilities, and SMRs. The analysis in **Volume 2 Affected Environment** discusses the environmental impacts of the different energy types and the extent to which the County may choose to locate and apply standards to energy uses. The major conclusions are summarized below.

- **Differences between energy facility types may warrant tailored approaches.** The five energy facility types assessed in the CESP EIS vary in their land and infrastructure needs, physical characteristics, operational requirements, hazards, resource inputs, and waste streams, all of which result in different environmental considerations, potential impacts, and may call for different project-specific study materials to have ahead of time for future proposed developments. Generally, large-scale solar facilities have larger contiguous land requirements, while wind facilities have dispersed footprints with impacts that may extend across broader viewsheds and wildlife habitats. BESS facilities may have more compact footprints, depending on the design and containment, but have distinct fire and hazardous materials considerations. Geothermal facilities have considerations associated with subsurface conditions, groundwater, and geologic resources, while SMRs have distinct infrastructure, water, security, emergency planning, and waste management considerations.
- **Location is a key consideration across alternatives.** The environmental impacts of a facility depend on the conditions and resources present at a site. Directing development toward areas with compatible land uses and existing supportive infrastructure, and away from sensitive environmental, cultural, agricultural, recreational, and community resources, can avoid or reduce impacts. However, the presence of sensitive resources does not necessarily exclude development; it may increase mitigation needs, require project-level design or operational adjustments, affect permitting requirements, or influence development feasibility. The scale of a facility also impacts the magnitude of impacts, but its significance depends on the facility type and location context.

The differences identified among facility types, scales, and locations provide a framework and resource for future reviews in the county. During future project-level permitting and environmental review, the CESP EIS may help identify relevant environmental considerations and information needs, while evaluating the specific facility design, supporting infrastructure, site conditions, and affected resources to determine potential impacts, applicable requirements, and mitigation measures.

1.7.1 Significant Areas of Controversy or Uncertainty

The CESP EIS identifies several areas where uncertainty would remain following programmatic environmental review. Potential impacts and the effectiveness of mitigation measures would depend on the characteristics of a future facility, and the environmental conditions present at future sites. The following key themes were identified as remaining areas of uncertainty.

1.7.1.1 Technological Advancements and Emerging Technologies

Uncertainty is greater for emerging or less established technologies and how to treat the local permitting pathway for such uses. Current KCC does not explicitly address BESS, geothermal, or SMR facilities, which may require additional consideration of how these uses are classified and permitted based on their potential impacts. The geothermal analysis also does not address enhanced or advanced geothermal systems, which could involve different subsurface activities and potential than the conventional geothermal facilities evaluated in the CESP EIS and could require further future analysis. Similarly, uncertainty remains for SMR technologies, particularly nuclear fusion. As these technologies and related federal and state regulations continue to develop, continued information would be needed to inform future permitting and environmental review.

1.7.1.2 Unknown or Unidentified Resources

Uncertainty remains regarding the presence and location of environmental and cultural resources that may not be known at the programmatic level or at the time of a future project application. This may include wetlands and other site-specific environmental features, as well as historic and cultural resources that may be undocumented or not publicly available because of preservation concerns. Certain information may also be confidential or retained by Tribes consistent with data sovereignty and established protocols.

1.7.1.3 Potential Impacts on Tribal Rights, Interests, and Resources

As part of the CESP EIS, the significance of potential impacts to Tribal rights, interests, resources, and culturally sensitive areas was identified as an area that cannot be fully understood from a non-Tribal perspective. It calls for the perspectives and knowledge of potentially affected Tribes, consistent with respect for sovereignty and principle of self-determination. Assessing adverse impacts and significance would require input from each Tribe, of which data may be limited or unknown at time of project application and call for time to understand potential impacts.

1.7.2 Issues to be Resolved and Choices to be Made

Following publication of the Draft EIS and consideration of comments, the primary issue to be resolved is the selection of a preferred alternative to ultimately inform County planning and code decisions. The Preferred Alternative may be one alternative as analyzed or combine components of multiple alternatives.

The decision to be made is how the County should use the information developed through the CESP EIS to select a Preferred Alternative and inform future land use and development code decisions, including where facilities may be more appropriate and what siting, review, and mitigation expectations should apply. This direction can also provide a clearer local land use framework for facilities that may ultimately be reviewed through EFSEC, recognizing that permitting and siting authority varies by facility type and the permitting pathway selected by an applicant. The questions presented by this decision include:

- Where should the County encourage or facilitate energy development based on environmental conditions?
- How should areas with greater environmental constraints or potential conflicts be addressed through overlays, siting criteria, or development standards?

- What informational, design, operational, mitigation, monitoring, and decommissioning requirements should be required at time of application?

These choices may account for both the environmental impacts of individual facilities and the potential for multiple future developments to contribute incrementally to changes in land use, water availability, habitat, transportation and utility systems, community services, cultural resources, and other environmental conditions.

1.7.3 Effectiveness of Mitigation Measures

While the CESP EIS does not assume that the identified mitigation measures will eliminate every adverse impact, many of the environmental impacts identified within the Draft CESP EIS can be avoided, minimized, or reduced through existing regulatory requirements and through careful siting, project design, construction practices, operational controls, monitoring, and decommissioning efforts. With the programmatic nature of the CESP EIS, the mitigation measures provided are meant to be the table of known requirements and recommended options available at the time of the Draft CESP EIS.

The mitigation framework throughout the CESP EIS distinguishes between existing required measures, recommendations for siting and design, recommendations applying throughout construction, operation, and decommissioning, and additional mitigation that could be considered where potentially significant impacts remain. Regulatory requirements captured in **Appendix A** at the federal, state, or local level may be subject to changes in the future that strengthen or reduce their effectiveness as part of the siting and permitting processes.

Avoidance through siting is particularly important where resources are irreplaceable, difficult to restore, or where impacts may extend beyond the immediate facility footprint. In those circumstances, mitigation after an impact occurs may not provide the same level of protection as avoiding the resource during siting and design. Historic and cultural resources illustrate this limitation: project-level surveys, consultation, and mitigation can reduce risk, but previously unidentified resources can remain, and impacts cannot always be fully prevented.

2 Background

2.1 Energy Facilities

2.1.1 Overview

The following section provides a general overview of the energy facility types evaluated for siting in Kittitas County, including large-scale solar, large-scale wind, BESS, geothermal energy facilities, and SMRs. The discussion is intended to support the CESP Project EIS by describing common features and siting considerations associated with each facility type, including:

- General facility descriptions,
- Typical infrastructure components,
- Access needs and haul route considerations, and
- Siting considerations unique to certain facilities.

The descriptions are presented at a general level rather than project-specific design requirements. The descriptions are intended to remain flexible and broadly applicable given the continued evolution of energy technologies, facility configurations, and project-specific designs.

Although each technology has distinct operating characteristics, energy facilities generally require a combination of generation and/or storage equipment, electrical collection systems, interconnection facilities, access roads, operations and maintenance areas, emergency access, and temporary construction laydown or staging areas. The type and scale of infrastructure and access needs vary by facility type and site-specific conditions, including terrain, proximity to existing transmission infrastructure, construction logistics, public road conditions, and environmental constraints.

The information presented in this section provides a foundation for understanding the characteristics and facility siting considerations associated with the selected energy facilities. It begins with overviews of large-scale solar, large-scale wind, BESSs, geothermal energy facilities, and SMRs, and concludes with additional information on common electrical system features, transmission and interconnection jurisdiction authority, and access and haul route considerations.

2.1.2 Large-Scale Solar

2.1.2.1 Description

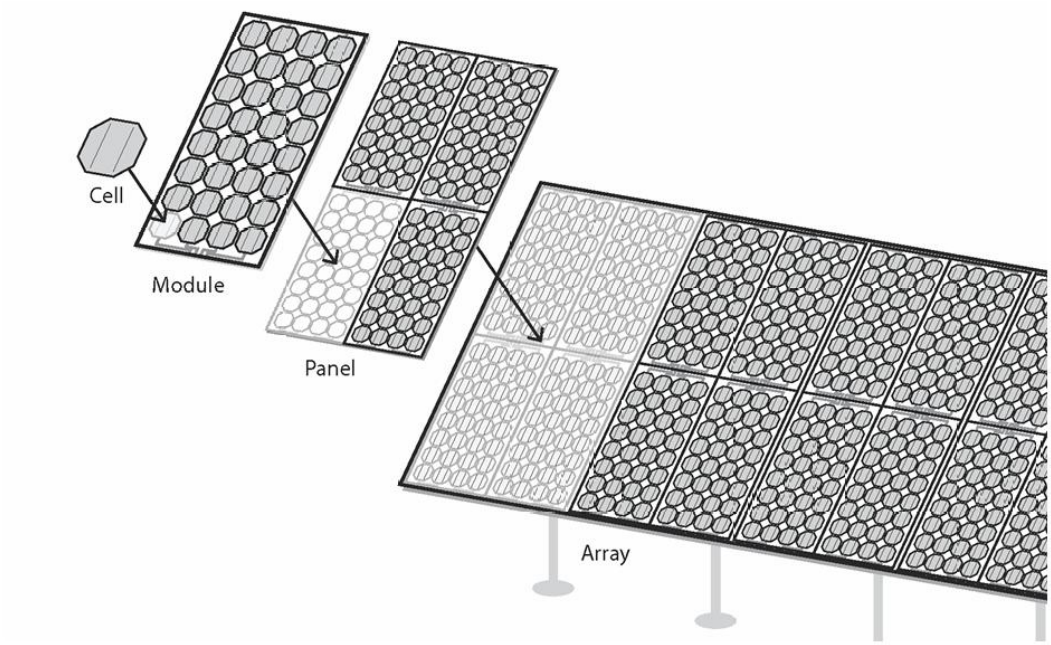
Large-scale solar facilities absorb energy from the sun and convert it to electricity. Photovoltaic (PV) solar systems use solar panels to absorb solar energy. Large-scale PV solar facilities differ from rooftop solar panels or solar microgrid facilities because of the scale of electricity generated and because the electricity is generally delivered to the broader electric grid rather than being used primarily onsite.

2.1.2.2 Typical Components

Large-scale solar facilities are typically comprised of solar arrays, associated power and electrical equipment, racking or mounting systems, solar piles, access roads, fencing, security systems, stormwater management controls, and operations and maintenance areas.

The primary component of solar facilities are solar arrays. A solar array can include multiple solar panels, which contain modules made up of PV cells. PV cells use semiconductors to convert sunlight into electricity. The amount of electricity generated per panel varies depending on the size, technology, and number of PV cells used. **Figure 9** depicts the breakdown of a solar array into its related parts.

Figure 9: Solar Array Diagram

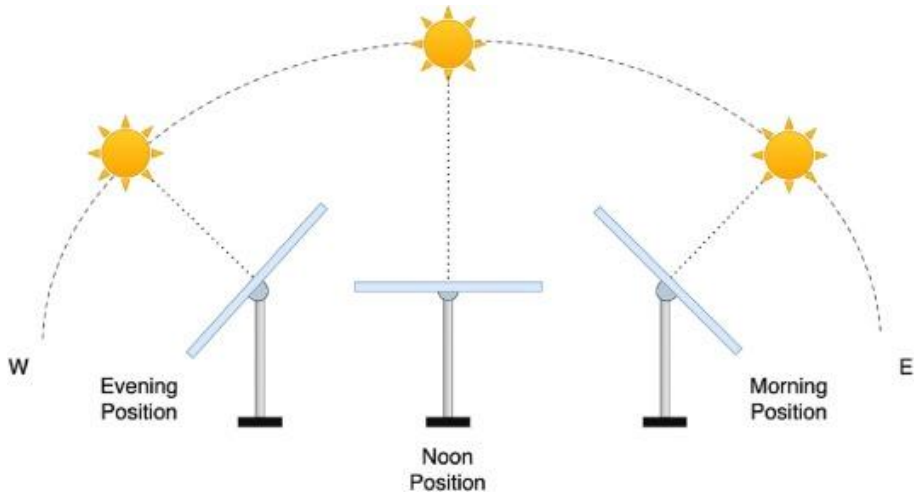


Source: Washington State Department of Ecology, Programmatic EIS for Utility Scale Solar, 2025

Since solar arrays are made of multiple PV cells, the design and configuration of solar facilities can range and be sized up or down as needed on a project level to accommodate equipment types and site conditions. Solar arrays can be arranged in different row configurations and designs with various mounting equipment that alter the specific facility layout.

Solar panel technology can also vary depending on applicant preferences, market conditions, costs, and regulatory requirements for projects. Most solar panels only have PV cells on one side but technology allowing for PV cells on both sides is becoming more common. While older iterations of solar panels had challenges with reflective surfaces contributing to glare concerns, many solar panels as of 2026 include measures to prevent reflections off panels.

Figure 10: Solar Panel Tracker Diagram



Source: Phiri et al., 2023, DOI: 10.1016/j.solener.2023.111803.

Solar arrays may be mounted at a fixed tilt angle or designed with tracker systems that adjust panel orientation based on the time of day or season. Tracker systems optimize electricity generation by rotating panels to follow the path of the sun throughout a given day and/or throughout the year as seasons change and more/less sunlight is available. Trackers can rotate east-west or both east-west and north-south depending on the design used.

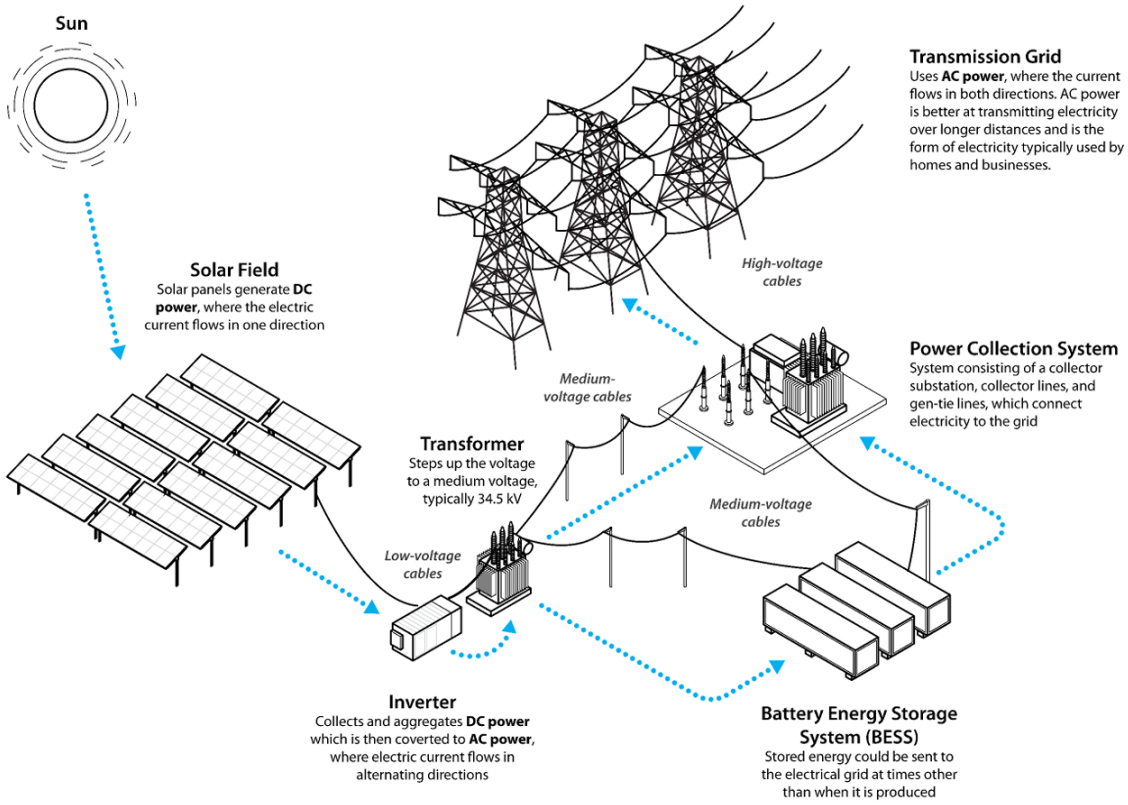
For ground mounted fixed-tilt systems, the ideal tilt angle in Washington State is between 45 to 48 degrees given the state's latitude and accounting for potential snow. Currently, typical heights for ground mounted fixed solar arrays are around 10 feet. Height measurements for solar arrays typically include panel tilt. For tracker systems, the maximum tilt may be incorporated into the height measurement. Given the varied tilt, solar facilities with tracker systems may have a height around 15 feet.[2]

Solar facilities also use piles to anchor solar arrays to the ground and provide stability under wind, snow, and seismic conditions. The depth of a pile varies based on soil conditions, but are typically four to ten feet deep, and they may extend up to 12 feet above grade. Piles located at the end of a row are typically installed deeper to provide additional structural support against wind.[3]

Common electrical components of large-scale solar facilities include inverters, transformers, collection lines, and substation or other interconnection facilities, as shown in **Figure 11** below. These components are discussed in further detail in **Common Electrical System Features**.

[2] Washington State Department of Ecology, "Programmatic Environmental Impact Statement for Utility-Scale Solar Energy Facilities in Washington State", (2025), https://apps.ecology.wa.gov/publications/documents/2506002.pdf
[3] Ibid.

Figure 11: Typical Components of Large-Scale Solar



Source: Washington State Department of Ecology, Programmatic EIS for Utility Scale Solar, 2025
Final SEPA PEIS for Utility-Scale Solar Energy Facilities in Washington State

2.1.2.3 Access Needs

Access needs for solar projects commonly include one or more improved driveway entrances, internal gravel access roads, and emergency access routes. Because solar components are generally modular, meaning components may be factory assembled and transported for installation, haul route impacts are often associated with construction traffic volume rather than oversized loads, although transformers and substation equipment may require specialized transport.

2.1.2.4 Siting Considerations

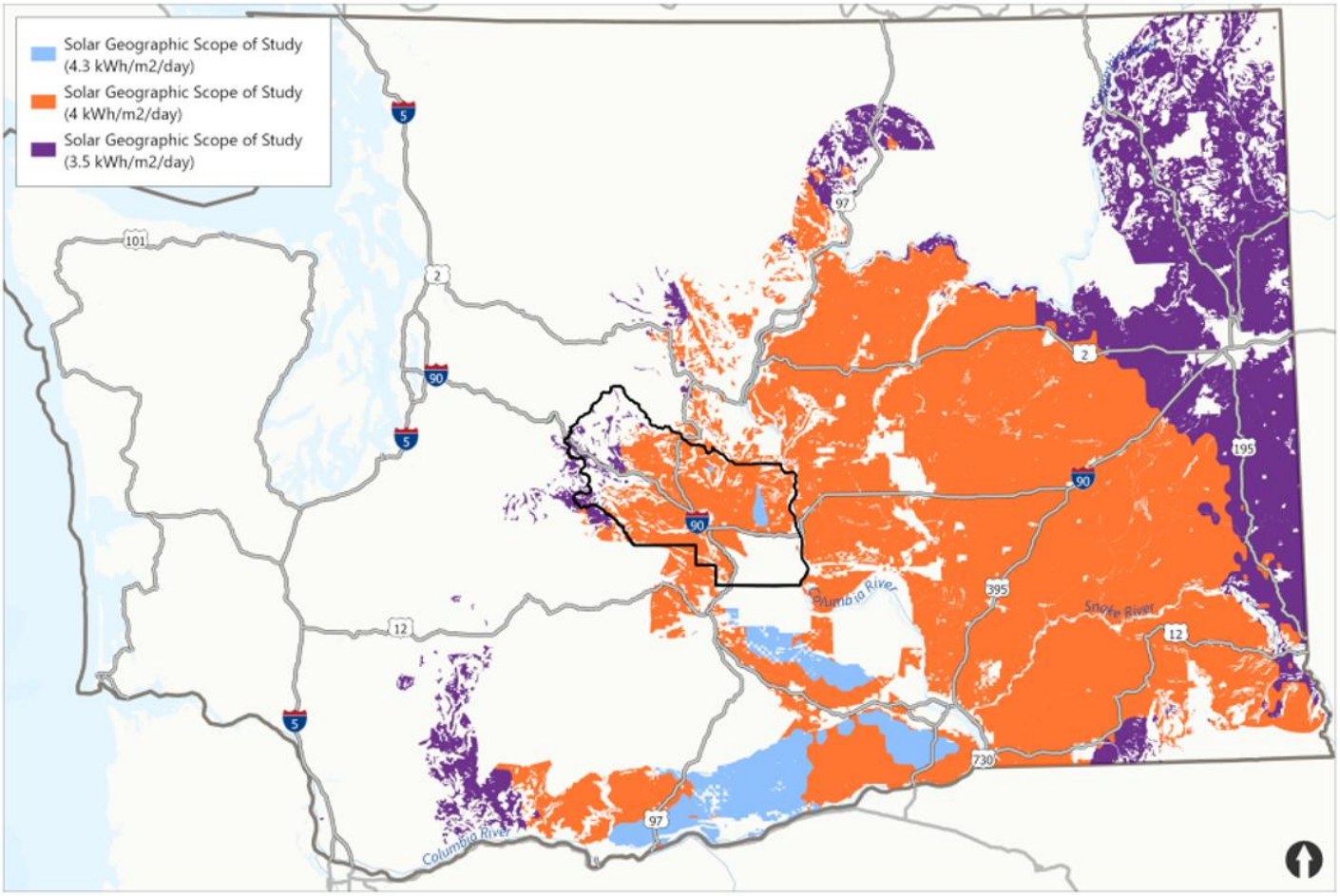
The amount of sunlight an area receives is a large consideration for siting solar facilities. This factor is influenced by the direction a solar panel is facing, the slope of a given terrain, and the global horizontal irradiance (GHI), a measurement of the amount of sunlight hitting a flat surface on the ground.

South-facing solar panels are most often the most effective. With the sun rising in the east and setting in the west, the south facing area of a site typically receives the most consistent sunlight throughout a given day. If south-facing solar panels are not feasible on a given site, panels may face east and/or west and compensate by increasing the number of panels used or by using tracker systems to tilt the panels throughout the day.

Flat terrain is generally most suitable for solar facilities. However, the Ecology's PEIS for utility-scale solar evaluated areas with slopes of 15 percent or less based on research and coordination with industry stakeholders.[4] Slopes steeper than 15 percent may be feasible for solar facilities, but they could require additional grading and geologic studies to evaluate potential impacts.

Another siting consideration for solar is GHI. GHI helps predict energy output and calculate a site's solar potential. As part of Ecology's PEIS for utility-scale solar, GHI was reviewed for the PEIS geographic scope. The study area included locations with a GHI of 3.5 kilowatt-hours per square mile per day (kWh/m^2/day) or greater given their solar energy potential.[5] **Figure 12** below shows the area studied by Ecology.

Figure 12: Geographic Scope of Study for Utility-Scale Solar Energy Facilities PEIS



Source: Washington State Department of Ecology

Note: The County outline has been added to this map.

[4] Washington State Department of Ecology, "Programmatic Environmental Impact Statement for Utility-Scale Solar Energy Facilities in Washington State", (2025), https://apps.ecology.wa.gov/publications/documents/2506002.pdf
[5] Ibid.

The lower portion of Kittitas County is captured in **Figure 12** as having 4kWh/m^2/day. Solar conditions are expected to be lower in the Snoqualmie Pass region of northern Kittitas County because of its mountainous terrain and greater tree canopy coverage.

Agrivoltaics, meaning the co-location or dual use of agricultural uses and solar facilities on the same land, is another siting consideration. In Washington, an "agrivoltaics facility" is defined as "a ground-mounted photovoltaic solar energy system that is designed to be operated coincident with continued productive agricultural use of the land".[6] Eligible agricultural uses include crop production, grazing, animal husbandry, and apiaries, or dedicated beekeeping areas, with pollinator habitat. Agrivoltaics facilities must not degrade the agricultural or ecological productivity of the land.

In Washington, energy siting on agricultural land is generally interpreted as a "non-agricultural accessory use," meaning it should be compatible with the size, scale, and intensity of existing agricultural operations and should not convert more than one acre of farmland.[7] Ecology's utility-scale solar PEIS also evaluated a utility-scale solar alternative that would allow agricultural uses to continue during facility operations, including through raised or modified solar panels that accommodate agricultural land use.

2.1.3 Large-Scale Wind

2.1.3.1 Description

Large-scale wind facilities generate electricity from wind using turbine generators. Wind energy discussions typically refer to horizontal-axis wind turbines, which use rotor blades shaped to create lift and drag that turn the blades and drive electricity generation. Wind turbines can be used to generate electricity on a small, localized scale and a larger utility scale connecting to the greater power grid.



[6] RCW 43.21F.100

[7] Washington State Department of Commerce, "Practical Pathways for Siting Clean Energy across Washington State", Virtual Webinar, April 2026, https://planningassociationofwa.org/wp-content/uploads/2026/04/SMITH-Valerie-DRAFT_PAW-2026-presentation.pdf

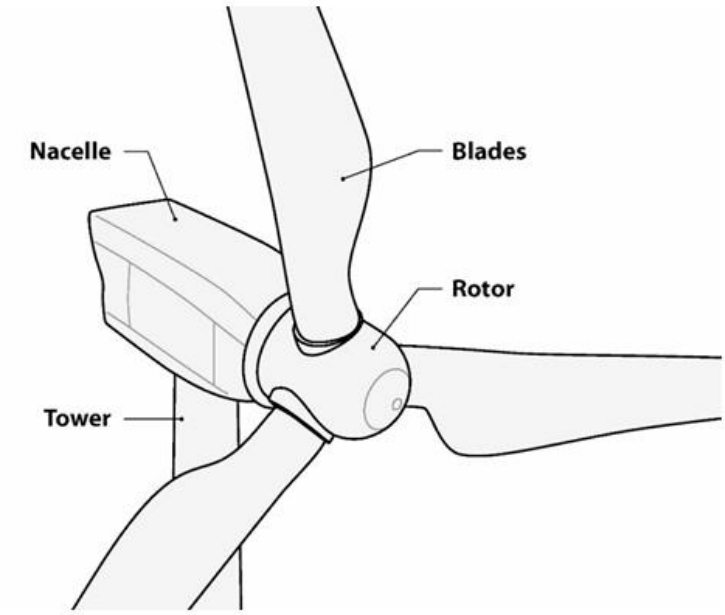
2.1.3.2 Typical Components

Wind facilities consist of wind turbines, meteorological towers, power collection systems, and infrastructure needs such as access roads. Facilities may include multiple wind turbines arranged on one property or across a series of adjacent properties. Previous large wind facilities permitted in Kittitas County have included maximum numbers for turbines ranging from 52 to 158 depending on the project size and location.[8]

Wind turbines are commonly made up of four main components as shown in **Figure 13** and described below:

- **Tower:** The main support structure. Towers are typically hollow freestanding structures made up of steel or steel composite. They are mounted onto concrete pads with foundations going into the ground for stability. Foundation designs for towers are anticipated to advance as technologies evolve.
- **Nacelle:** Contains the gears, control system, a generator, speed shafts, drivetrain, and brake.
- **Blades:** Most wind turbine blades are made of fiberglass and can vary in size depending on the facility. Most wind turbines are made up of three blades.
- **Rotor:** Includes the blades and hub assembly that connects to the nacelle.

Figure 13: Typical Components of Wind Turbine



Source: Washington State Department of Ecology, Programmatic EIS for Utility Scale Wind, 2025

[8] Kittitas County, "Notice of SEPA Application: Vantage Wind Power Project", (2008), https://www.co.kittitas.wa.us/cds/land-use/project-details.aspx?archive=Archived&title=Wind%20Farm&project=WSA-07-01+Vantage+Wind+Power+Project; Energy Facility Site Evaluation Council, "Site Certification Agreement between the State of Washington and Sagebrush Power Partners, LLC for the Kittitas Valley Wind Power Project", (2009), https://efsec.wa.gov/sites/default/files/2025-06/20090902_SCA_Amd1.pdf; Energy Facility Site Evaluation Council, "Site Certification Agreement between the State of Washington and Puget Sound Energy for the Wild Horse Wind Power Project", Amendment No. 5, (2009), https://efsec.wa.gov/sites/default/files/2025-06/20090122_SCA_Amd5.pdf

Both the size of the wind facility and size of the individual wind turbine can vary greatly from project to project. This can be due to differences in site conditions, applicant preferences, and advancements in technology. As of June 2026, common wind turbine dimensions are approximately 300 to 350 feet in height with blades extending approximately 170 feet radii.[9] Previous wind facilities permitted in Kittitas County include 3-bladed tubular steel towers with maximum height limits of 410 feet, from ground to blade tip height.[10]



Figure 14 below shows a comparison of various wind turbine heights. Given their various heights, turbines must be lighted and painted in accordance with Federal Aviation Administration (FAA) rules and advisory circulars.[11]

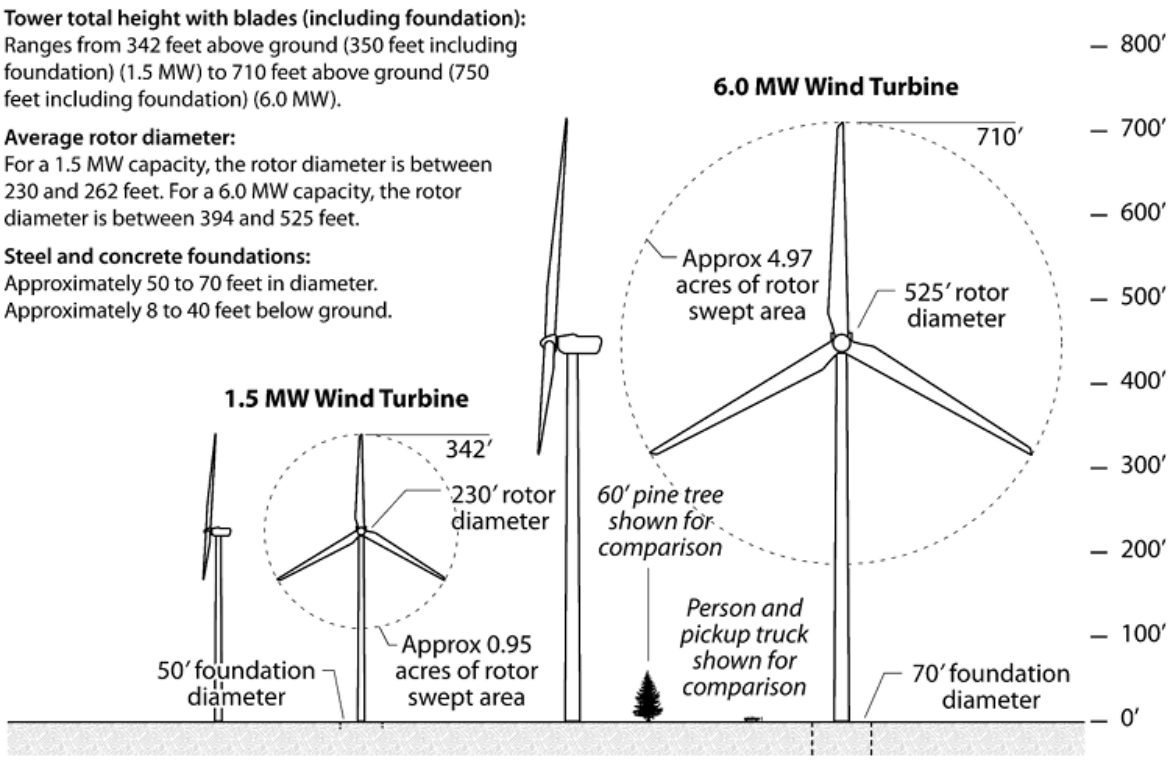
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[9] US Department of Energy, "Wind Turbines: the Bigger, the Better", (2024), https://www.energy.gov/cmei/wind/articles/wind-turbines-bigger-better; US Department of Energy, "How a Wind Turbine Works", (n.d.), https://www.energy.gov/cmei/systems/how-wind-turbine-works-text-version

[10] Kittitas County, "Notice of SEPA Application: Vantage Wind Power Project", (2008), https://www.co.kittitas.wa.us/cds/land-use/project-details.aspx?archive=Archived&title=Wind%20Farm&project=WSA-07-01+Vantage+Wind+Power+Project; Energy Facility Site Evaluation Council, "Site Certification Agreement between the State of Washington and Sagebrush Power Partners, LLC for the Kittitas Valley Wind Power Project", (2009), https://efsec.wa.gov/sites/default/files/2025-06/20090902_SCA_Amd1.pdf; Energy Facility Site Evaluation Council, "Site Certification Agreement between the State of Washington and Puget Sound Energy for the Wild Horse Wind Power Project", Amendment No. 5, (2009), https://efsec.wa.gov/sites/default/files/2025-06/20090122_SCA_Amd5.pdf

[11] Washington State Department of Ecology, "Programmatic Environmental Impact Statement for Utility-Scale Solar Energy Facilities in Washington State", (2025), https://apps.ecology.wa.gov/publications/documents/2506002.pdf

Figure 14: Wind Turbine Heights



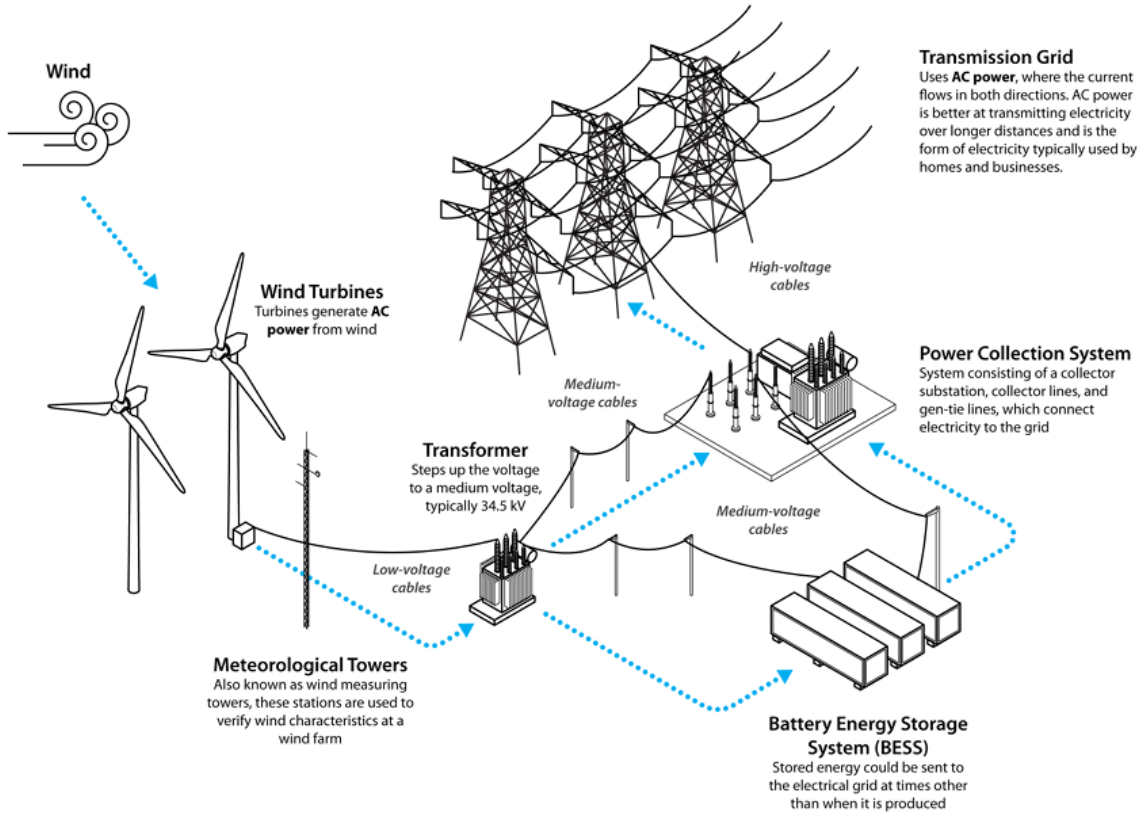
Source: Washington State Department of Ecology, Programmatic EIS for Utility Scale Wind, 2025

Meteorological towers are metal lattice structures with data collection equipment used for collecting localized weather data. These towers, which can be as high as 200 feet, may be temporary infrastructure to assess local conditions such as wind speed, wind shear, temperature, and humidity for the first few years during initial site characterization, or an applicant may choose to include permanent meteorological towers as part of the wind facility design. The extent of the tower design and any undergrounding of electrical cables or below ground foundation needs typically depends on whether the tower is a temporary or permanent feature of the facility. Additionally, while signal lights on meteorological towers are typically not required, the specific height of a tower would impact whether it is subject to FAA lighting requirements.[12]

Transformers for turbines, electrical collector lines, collector substations, and gen-tie lines connecting the wind facility to the power grid make up the **power collection system.** [13] Additional infrastructure may include temporary crane pads, construction laydown areas, or operations and maintenance buildings. **Figure 15** below shows the different components it takes for wind energy to transmit from the point of generation to the power grid.

[12] Washington State Department of Ecology, "Programmatic Environmental Impact Statement for Utility-Scale Wind Energy Facilities in Washington State", (2025), https://apps.ecology.wa.gov/publications/SummaryPages/2506003.html
[13] Ibid.

Figure 15: Typical Components for Utility Scale Wind Facilities



Source: Washington State Department of Ecology, Programmatic EIS for Utility Scale Wind, 2025

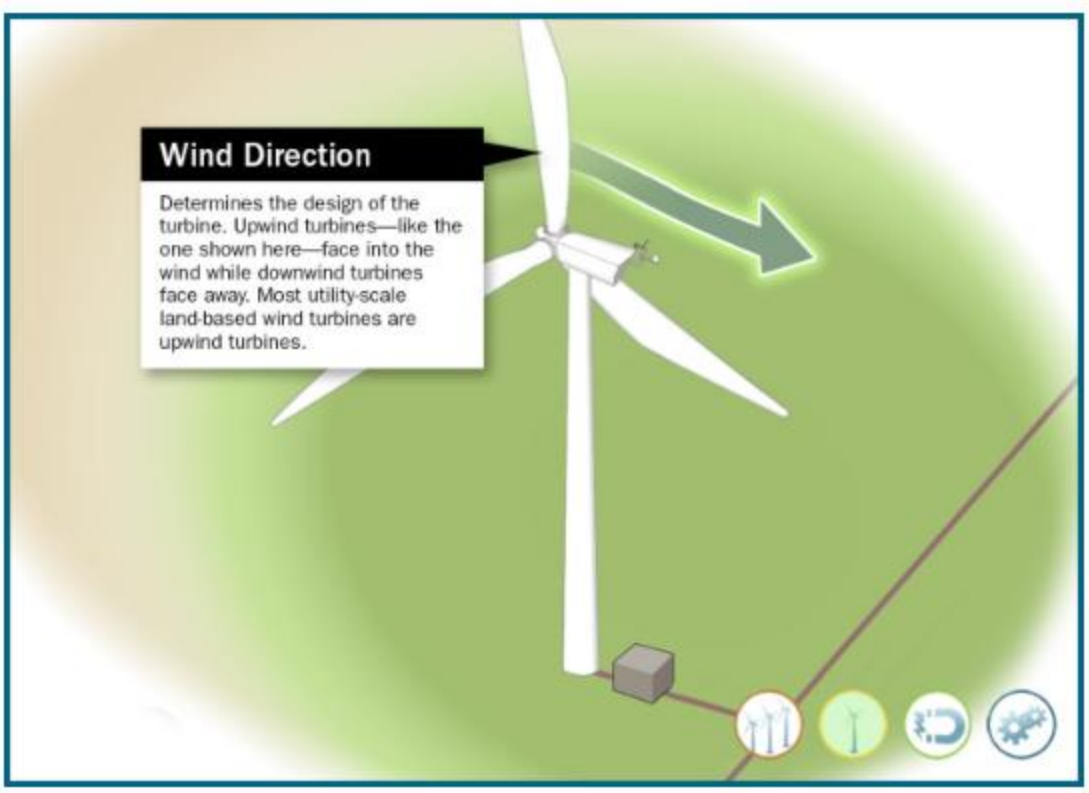
2.1.3.3 Access Needs

Wind facilities typically have substantial haul route and access requirements due to the length and weight of turbine blades, tower sections, nacelles, and cranes. Permitting may require identification of construction haul routes, turning radii, bridge and road load ratings, temporary road improvements, oversize/overweight transport permits, and measures to restore affected public roads after construction. Improved intersections with widened turning areas, and acceleration or deceleration lanes may be needed where project traffic enters or exits public roads.

2.1.3.4 Siting Considerations

Wind direction is a key determinant of the design and location of wind facilities. Most large-scale wind facilities are upwind turbines, meaning they face into the wind.

Figure 16: Wind Direction Diagram



Source: United States Department of Energy, Explore Wind Turbines, https://www.energy.gov/cmei/systems/explore-wind-turbine-text-version

Areas with the strongest wind energy potential are generally associated with exposed ridgelines, open uplands, and terrain that consistently captures regional wind flow. Wind turbines are typically started when conditions are between 7 to 11 mph and shut off wind turbines when speeds exceed 55 to 65 mph to prevent potential damage.[14] For large wind facilities, ideal site conditions have an average annual wind speed of roughly 13 mph.[15]

Ecology's PEIS for utility scale onshore wind was used to identify areas of strong wind energy potential in Kittitas County. **Figure 17** below shows the areas characterized by the Department of Ecology as having annual average wind speeds of 11 mph (5 mps) or greater at approximately 260 feet (80 meters) above the ground.[16]

[14] Washington State Department of Ecology, "Programmatic Environmental Impact Statement for Utility-Scale Wind Energy Facilities in Washington State", (2025), https://apps.ecology.wa.gov/publications/documents/2506002.pdf
[15] US Energy Information Administration, "Where Wind Power is Harnessed", (2024), https://www.eia.gov/energyexplained/wind/where-wind-power-is-harnessed.php
[16] Washington State Department of Ecology, "Programmatic Environmental Impact Statement for Utility-Scale Wind Energy Facilities in Washington State", (2025), https://apps.ecology.wa.gov/publications/documents/2506002.pdf

Figure 17: Washington State Wind Speeds Above 11mph

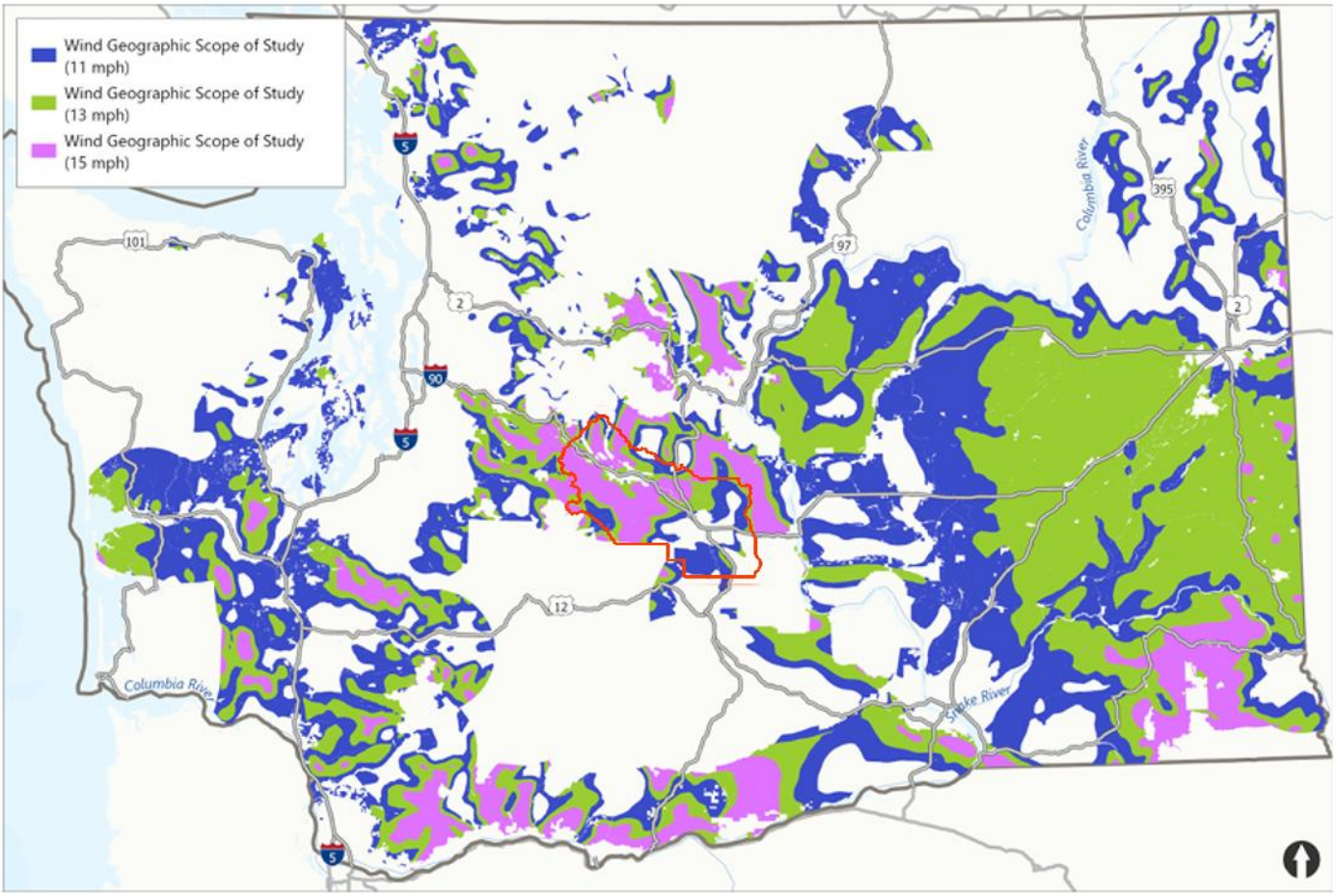


Figure 3-1. Geographic scope of study for utility-scale wind PEIS

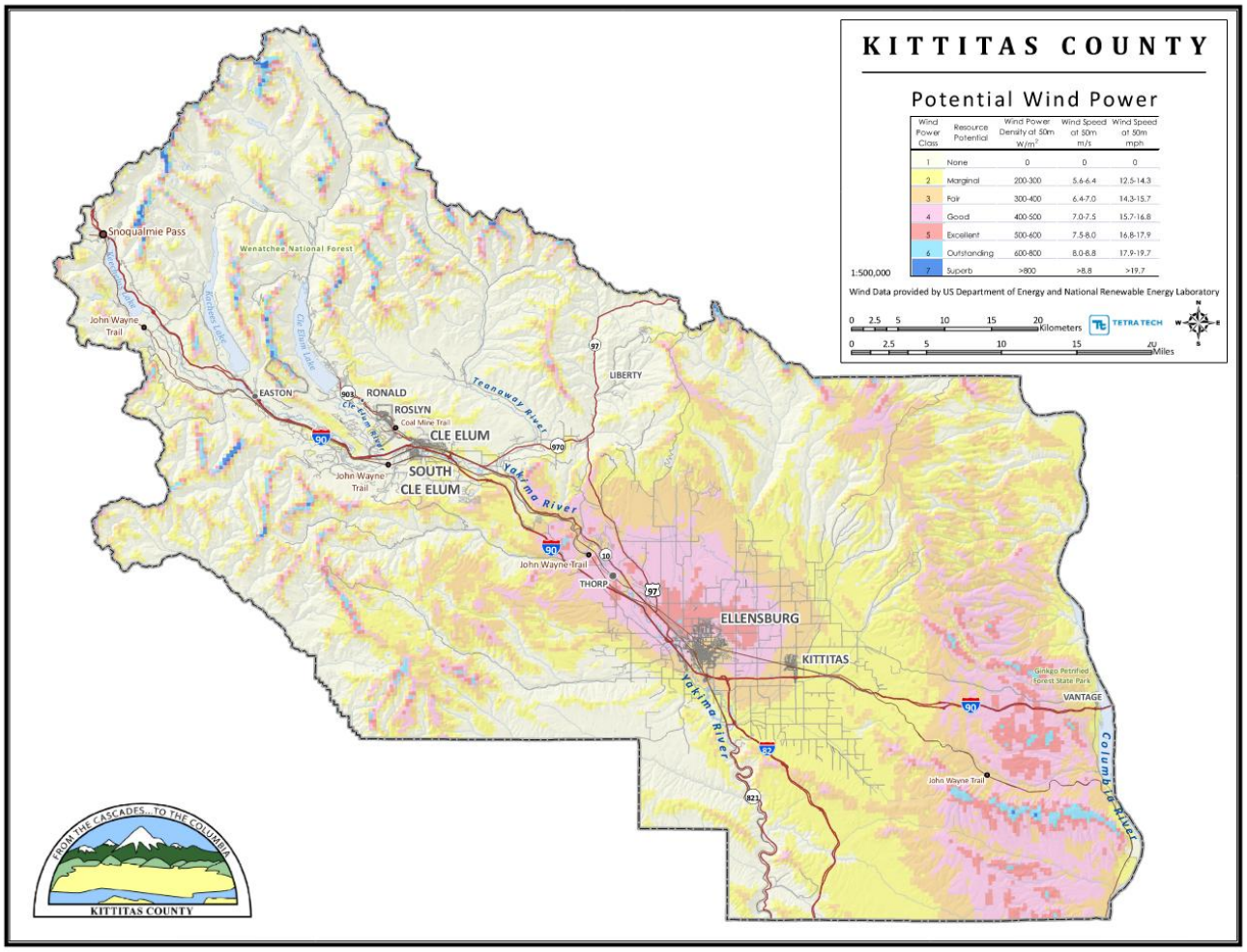
Note: The geographic scope of study includes all areas with wind speeds depicted. Areas with annual average wind speed of 13 mph or greater and 15 mph or greater at 80 meters above the surface are also shown to provide additional context for consideration of wind energy availability.

Source: Washington State Department of Ecology, Programmatic EIS for Utility Scale Wind, 2025

Note: The County outline has been added to this map.

As shown in **Figure 17**, much of Kittitas County has strong wind energy potential. For further considerations, in 2019 as part of the Hazard Mitigation Plan update, the County developed a detailed Potential Wind Power map shown below in **Figure 18**. This map shows wind speed and wind power density within Kittitas County at a height of roughly 160 feet (50 meters) across the county.

Figure 18: Kittitas County Potential Wind Power



Source: Kittitas County, Hazard Mitigation Plan, 2019

The map in **Figure 18** above utilizes data from the National Laboratory of the Rockies (NRL)[17] to categorize wind power class from 1-7 and the related resource potential from None to Superb. The areas in Kittitas County with higher resource potential include:

- Small areas of northern Kittitas County, near Snoqualmie Pass, include mountainous ridgelines and are rated outstanding (6) to superb (7) for potential wind power.
- The City of Ellensburg, located in the central portion of the county, is generally rated as having good (4) or excellent (5) potential wind power.

[17] The National Renewable Energy Laboratory (NREL) was renamed to the National Laboratory of the Rockies (NLR) in 2025.

- Portions of eastern Kittitas County along Highway 90 and the Columbia River also have high potential wind power.

In addition to geologic conditions and wind speed, land availability is another siting consideration for large-scale wind facilities. Large wind projects require roughly 85 acres per MW though the infrastructure and equipment only occupy around one percent.[18] This figure can differ between turbine technology. Ecology's PEIS for utility-scale onshore wind evaluated facility areas ranging from 340 to 127,500 acres. Although this range represents total site acreage, similarly the developed wind facility footprint is cited as occupying 5 percent or less of the overall site; the remaining acreage is generally undeveloped and used to provide spacing between turbines.[19]

Lastly, large wind facility siting and permitting often require or benefit from siting coordination with multiple federal and state agencies in regard to airspace, aviation safety, lighting, and other operational considerations. Early coordination helps support safe construction and operation, confirm regulatory consistency, and avoid conflicts with aviation, communication, utility, and land use activities.

2.1.4 Battery Energy Storage Systems (BESS)

2.1.4.1 Description

BESSs are facilities that store electricity for later use, including energy generated by renewable resources or electricity drawn from the grid. Energy storage technologies typically come in mechanical, chemical, and thermal storage mechanisms. BESS facilities are sometimes developed as stand-alone facilities or co-located with intermittent generation facilities such as solar or wind facilities.

In Washington State, BESSs are defined as "commercially available technology that is capable of retaining electricity, storing the energy for a period of time, and delivering the electricity after storage by chemical, thermal, mechanical, or other means that has at least 10 megawatts of storage."[20]

For the purposes of CESP EIS, the BESS facilities evaluated for their potential impacts as standalone utility-scale facilities to understand isolated environmental impacts. Ecology's utility-scale wind and solar PEISs evaluated alternatives that included co-located BESS facilities. The findings from those alternatives were reviewed for the CESP EIS.

[18] Center for Sustainable Systems, University of Michigan. 2025. "Wind Energy Factsheet." Pub. No. CSS07-09.
[19] Washington State Department of Ecology, "Programmatic Environmental Impact Statement for Utility-Scale Solar Energy Facilities in Washington State", (2025), https://apps.ecology.wa.gov/publications/documents/2506002.pdf
[20] New definition added to Chapter 82.96 RCW in 2026 through E3SHB 1960

Figure 19: BESS Exterior and Interior



Source: Washington State Department of Ecology, Programmatic EIS for Utility Scale Wind, 2025
Final SEPA PEIS for Utility-Scale Solar Energy Facilities in Washington State

2.1.4.2 Typical Components

BESSs typically house batteries in enclosures or containers. The batteries used may be comprised of different battery technologies. Lithium-ion batteries are the most common utility-scale storage technology, but damage or battery management system failures can cause overheating and create a thermal runaway risk. Flow and

zinc-hybrid batteries are less common at utility scale but generally have lower fire risk and longer lifespans, typically lasting 10 to 20 years compared with approximately 5 to 15 years for lithium-ion batteries.[21]

The self-contained enclosers may be located on a concrete pad or concrete pile over gravel, or the facility may be within a warehouse-type enclosure. Containers for BESSs may be around 40 feet by 8 feet by 8.5 feet; however exact dimensions can vary by manufacturer and project specifics.[22]

Additional components of BESS infrastructure commonly observed include power conversion equipment, transformers, inverters, switchgear, thermal management systems (such as HVAC systems), fire detection and suppression systems, control systems, fencing, access roads, stormwater controls, and supporting electrical interconnection facilities. For more information regarding these components, see the **Common Electrical System Features**.

BESSs may include prefabricated units. These units are assembled in a controlled manufacturing setting with their batteries, electrical systems, and safety equipment, such as fire suppression, integrated before delivery to the project site. Prefabricated systems can improve quality control and shorten installation periods. They can also reduce construction costs and allow for scalable storage capacity. Specific facility design, equipment selection, and construction methods would be determined at the project level.

2.1.4.3 Access Needs

Access needs for BESSs generally require reliable all-weather access for construction, operations and maintenance, and emergency response. Site design should provide adequate internal navigation, fire apparatus access, emergency response clearances, and appropriate separation from sensitive receptors. Construction phase haul routes may be needed for delivery of battery containers, transformers, and other heavy electrical equipment. Depending on equipment dimensions, weight, and delivery routes, the project may require oversized/overweight load permits, access permits, and road use agreements.

2.1.4.4 Siting Considerations

The modular, scalable, and ability of prefabrication for BESSs allows relatively flexible siting considerations. Favorable locations are generally near end users, substations, transmission lines, and distribution infrastructure, depending on the project scale and intended function. Interconnection capacity, system reliability benefits, and the ability to charge and discharge energy to either an end-user of the energy or the grid are central siting considerations. Safety considerations in siting include areas within the county adequately served by fire response in case of a potential emergency.

2.1.5 Geothermal Energy Facilities

2.1.5.1 Description

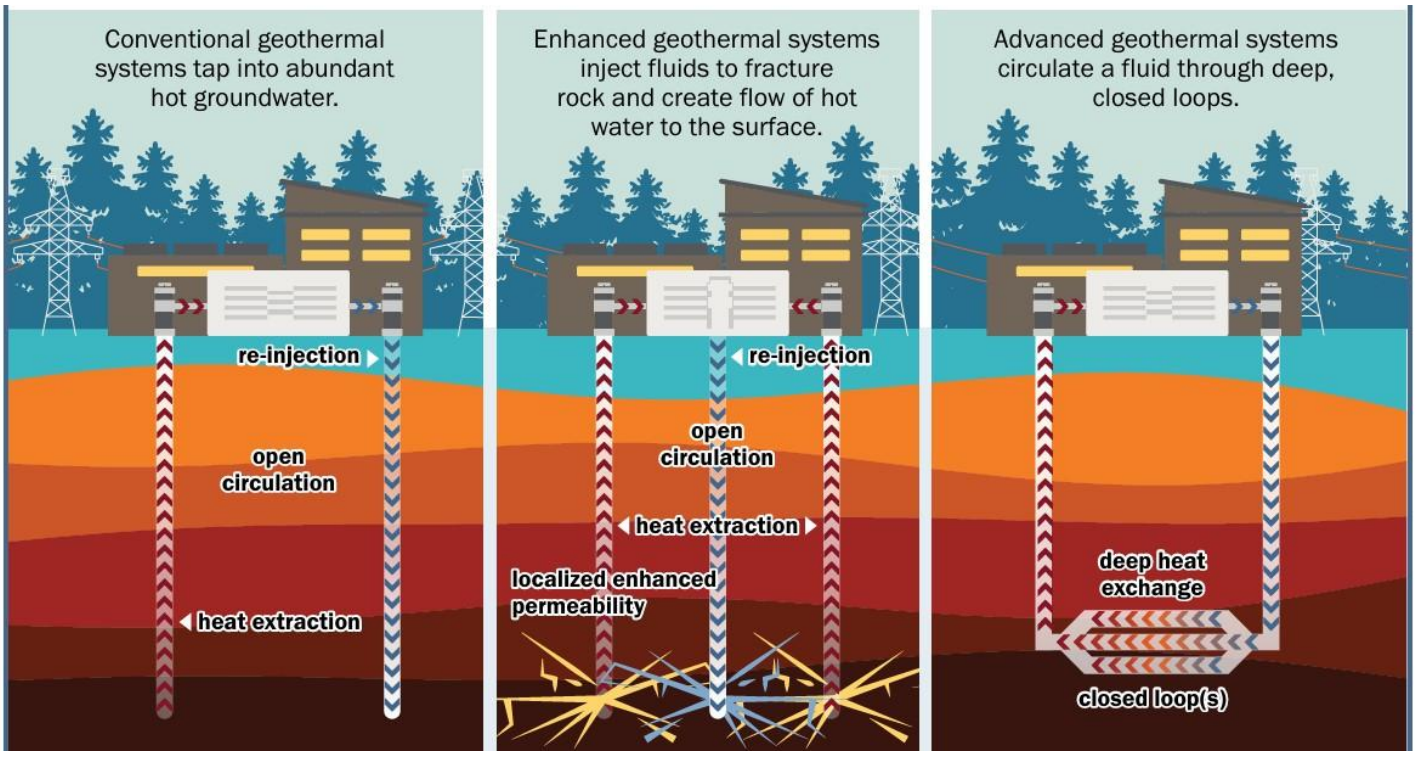
Geothermal energy facilities use heat from beneath the earth's surface to generate electricity. These systems require heat, fluid, and permeable subsurface pathways that allow fluid to move through hot rock. Conventional and emerging geothermal technologies use geothermal heat to produce steam or hot liquid that can drive turbines and generate electricity.

As of 2026, geothermal energy facilities in Washington State are grouped into three general categories: conventional, enhanced, and advanced. Enhanced and advanced geothermal systems are emerging

[21] Washington State Department of Ecology, "Programmatic Environmental Impact Statement for Utility-Scale Solar Energy Facilities in Washington State", (2025), https://apps.ecology.wa.gov/publications/documents/2506002.pdf
[22] Ibid.

unconventional technologies. These geothermal facility categories are described further and shown below in **Figure 20**.

Figure 20: Geothermal Systems



Source: Washington State Department of Ecology, Geothermal Collaborative Process, 2026
Geothermal Energy in Washington: A Collaborative Process

Conventional geothermal systems are typically associated with flash steam, dry steam, or binary power systems. These systems use very hot (>180 °C) to moderately hot groundwater (55 to 180 °C) to drive turbines.[23] Flash steam plants are the most common type of geothermal systems.[24]

Enhanced geothermal systems involve the injection of water to fracture rocks, a practice commonly referred to as fracking. This practice is commonly associated with drilling techniques for oil and natural gas resources. These systems provide geothermal potential where there are not enough natural permeability or fluids present.[25]

Advanced geothermal systems do not involve fracking but still require drilling to access subsurface heat. They are closed looped systems that circulate water and fluids for power generation.[26]

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[23] Washington State Department of Natural Resources, "The Washington Geothermal Experience", (2026), https://storymaps.arcgis.com/stories/6038a47202a04a5da71c2251ec11c2c1
[24] U.S. Department of Energy, "Geothermal Electricity Generation.", (2023), http://energy.gov/eere/geothermal/electricity-generation
[25] U.S. Department of Energy, "Enhanced Geothermal Systems", (n.d), https://www.energy.gov/hgeo/geothermal/enhanced-geothermal-systems
[26] Washington State Department of Natural Resources, "The Washington Geothermal Experience", (2026), https://storymaps.arcgis.com/stories/6038a47202a04a5da71c2251ec11c2c1; U.S. Department of Energy, "Enhanced Geothermal Systems", (n.d), https://www.energy.gov/hgeo/geothermal/enhanced-geothermal-systems

Ecology is working with communities in three geographic areas of the state that are identified as having high potential for geothermal energy resources (Mount Baker, Mount St. Helens, and Wind River valley). Kittitas County is not one of those areas, though projects like the Central Washington University 'Geo Eco Plant' create interest in understanding siting, permitting, and potential impacts for such facilities.

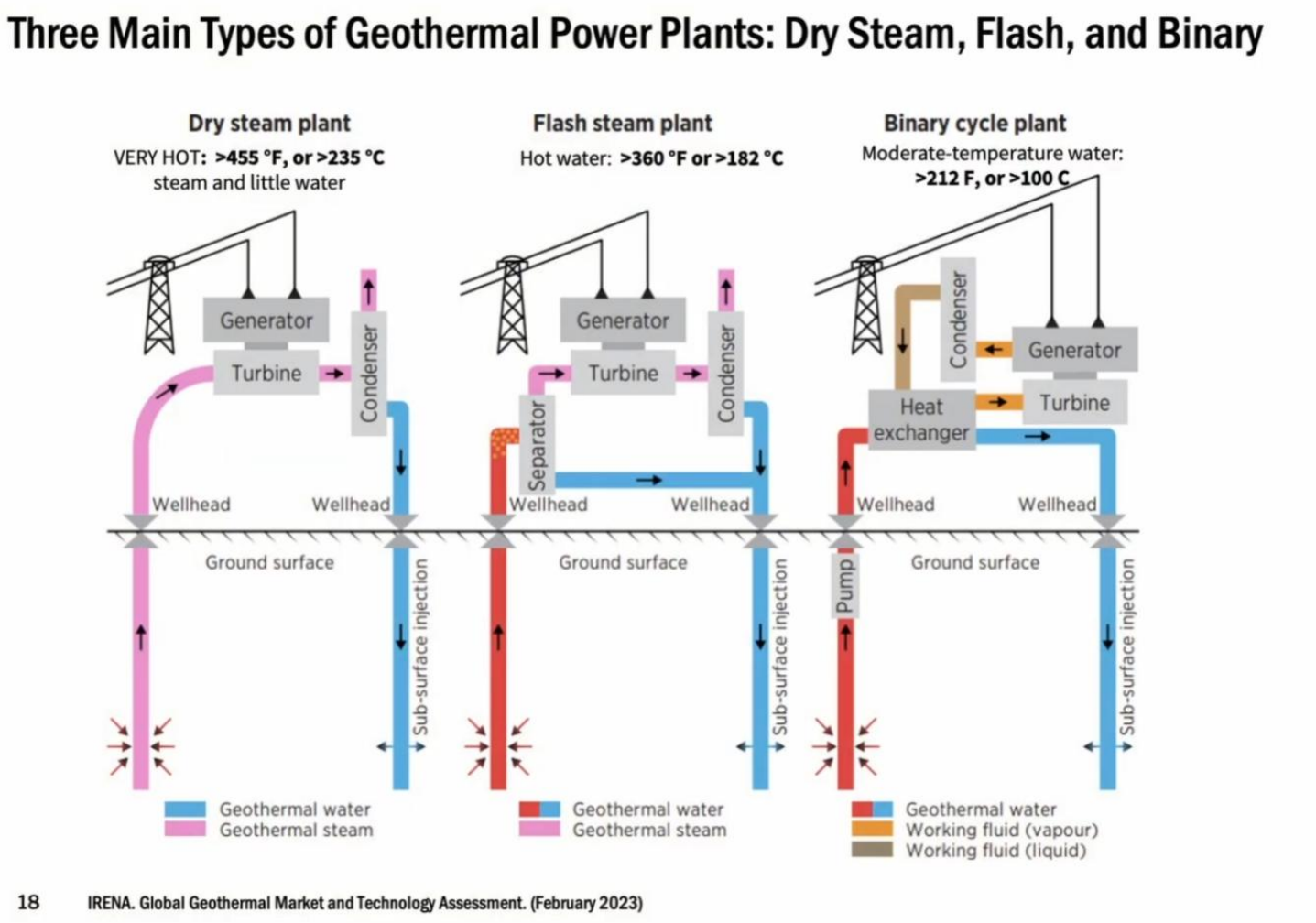
For the purposes of CESP EIS, the geothermal energy facilities evaluated for their potential impacts are focused on conventional geothermal energy facilities. Enhanced and advanced geothermal systems are not included in this assessment.

2.1.5.2 Typical Components

Typical geothermal facility infrastructure may include production and injection wells, well pads, pipelines, power generation equipment, cooling systems, substations, access roads, monitoring systems, and ancillary operations areas. Depending on project type and location, geothermal projects can also use filtering technology to extract minerals from subsurface fluids.[27] Conventional geothermal facilities that generate electricity typically fall into three main types: dry steam, flash steam, and binary. The type of facility selected is largely influenced by the geothermal resource potential at the individual site. Dry steam is rare given the very high temperatures required. Flash steam is currently the most common, but binary is growing in interest given their low temperatures and potentially reduced costs.

[27] Washington State Department of Ecology, "Geothermal Energy Collaborative Process – Legislative Update", (2026), https://apps.ecology.wa.gov/publications/documents/2606013.pdf

Figure 21: Basic Geothermal Energy Facility Components



Source: Stanford University, Geothermal Lecture by Dawn Owens, 2024, https://www.youtube.com/watch?v=selKK3YjrSY&list=PLj03YfdUVX_AS5txqzxaK-ur6BNYoj4Ok&t=1933s

2.1.5.3 Access Needs

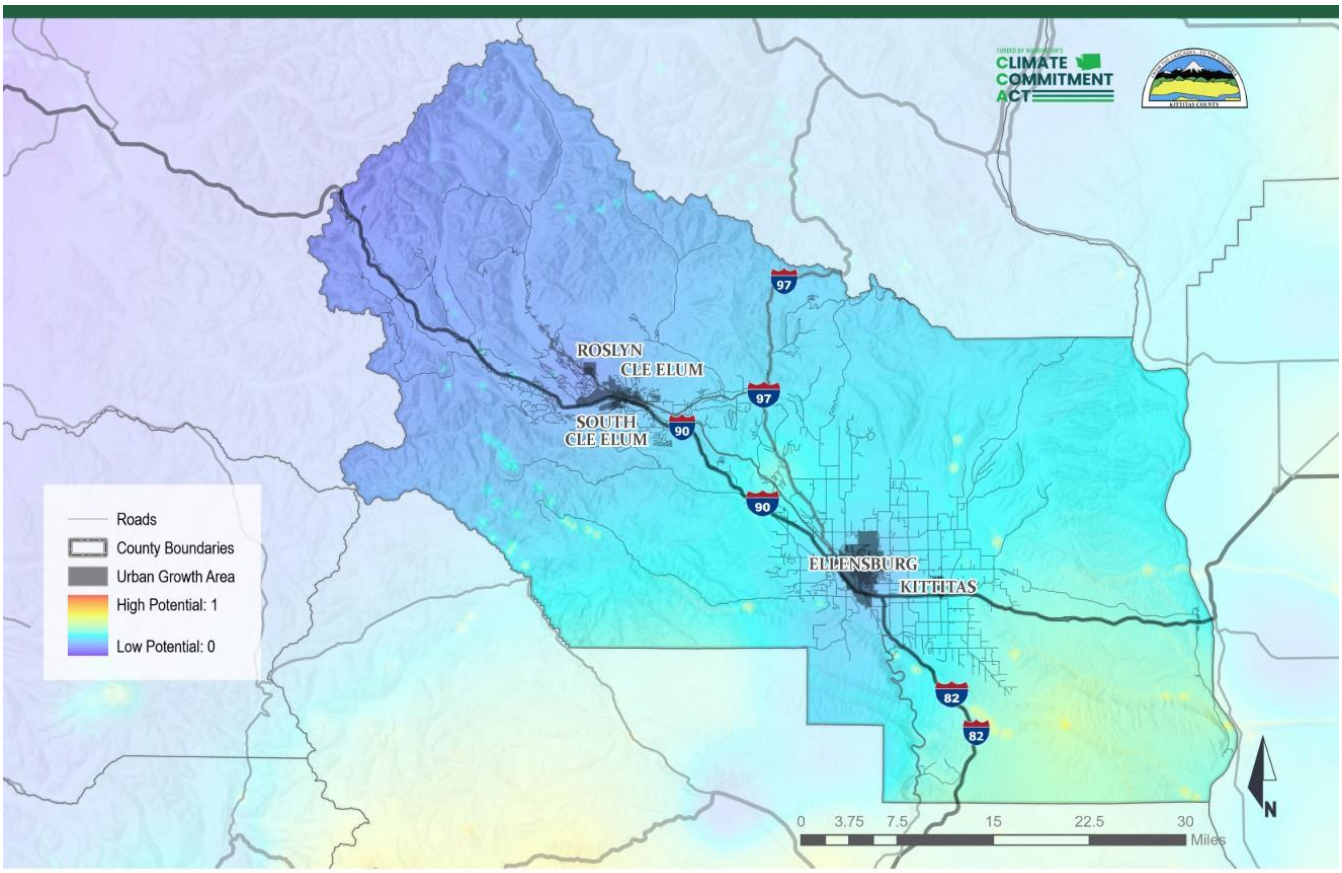
Access needs include roads capable of supporting drilling rigs, heavy equipment, water trucks, ongoing operations, and maintenance vehicles. Construction and exploration phases may require haul route planning for drilling equipment, casing, piping, and temporary water or material transport. Depending on project scale, access roads may need to accommodate sustained heavy vehicle use and emergency response access.

2.1.5.4 Siting Considerations

Geothermal facility siting considerations largely include geologic conditions, underground and surface water resources, and proximity to transmission and distribution infrastructure. Subsurface heat, permeability, resource depth, and the presence of fluid-bearing rock are the main geologic siting conditions. Emerging geothermal technologies may reduce reliance on some natural resource conditions, but adequate heat and the depth needed to access geothermal resources remain central siting factors. To generate electricity, subsurface

temperatures generally must exceed 302°F.[28] Seismic fault locations may also affect siting, particularly for enhanced geothermal systems, which have the potential to induce seismicity. Evaluation of a site for geothermal energy development may occur in phases, progressing from geologic, geophysical, and geochemical investigations to test well drilling and testing to further characterize subsurface conditions and determine geothermal potential. The Washington State Department of Natural Resources (DNR) has an initial analysis geothermal potential as it relates to soil permeability and heat across the entire Washington. For Kittitas County, moderate potential is shown in the central and lower portions of the county as seen below in **Figure 22**.

Figure 22: Geothermal Potential in Kittitas County



Source: Kimley-Horn, 2026 using Washington State Department of Natural Resources, Geothermal Potential Data, 2014

Geothermal facilities also require interconnection to transmission or distribution infrastructure appropriate to their generating capacity. Because geothermal resource siting may be fixed by geologic conditions and may

[28] Washington State Department of Ecology, "Geothermal Energy Collaborative Process – Legislative Update", (2026), https://apps.ecology.wa.gov/publications/documents/2606013.pdf

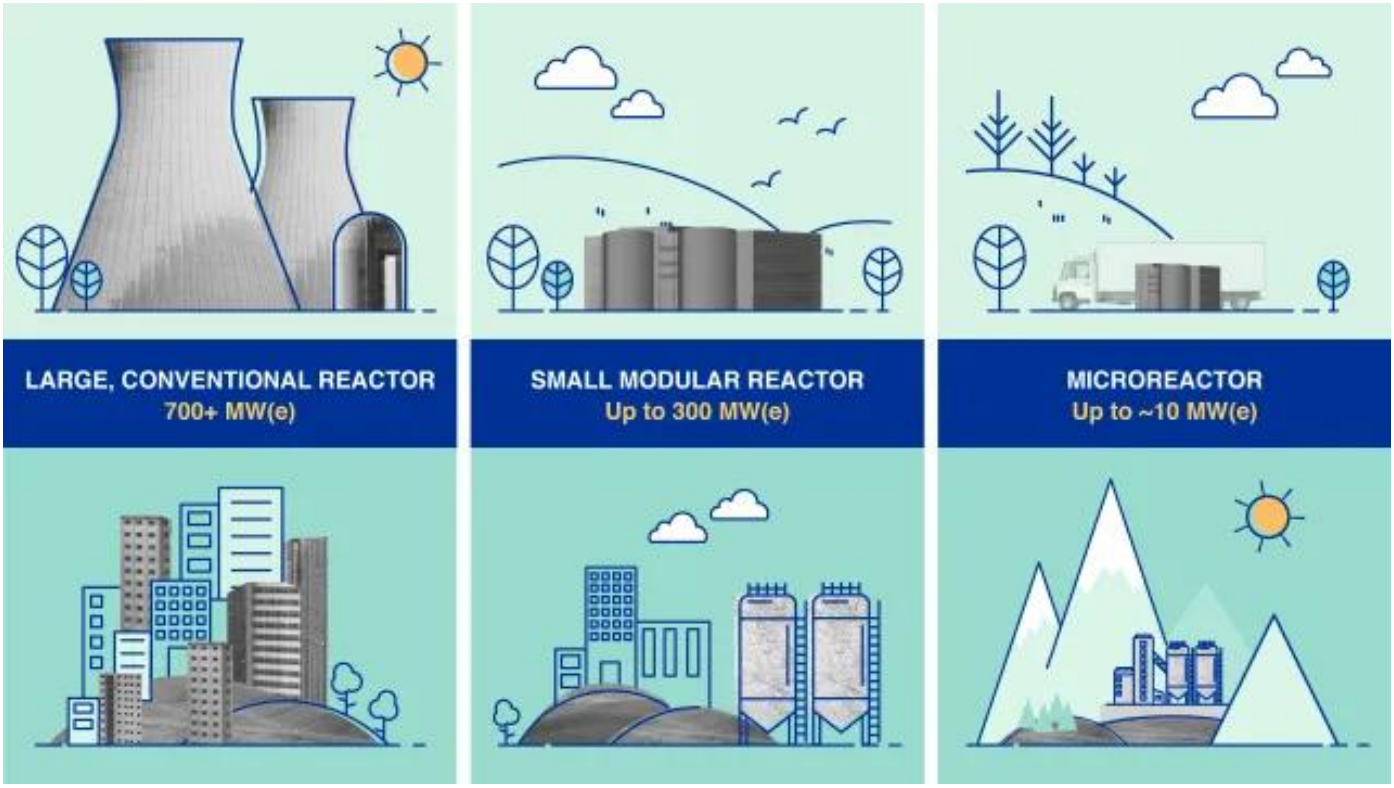
include more remote locations, new gen-tie lines or substation upgrades may be needed where suitable electrical infrastructure does not currently exist.

2.1.6 Small Modular Reactors (SMRs)

2.1.6.1 Description

For purposes of this EIS, SMRs refer to advanced nuclear reactors that are smaller than conventional nuclear power facilities[29], modular in design, meaning components may be factory assembled and transported for installation, and utilize nuclear reactions for fuel generation.

Figure 23: Nuclear Reactor Size Diagram



Source: International Atomic Energy Agency, What are Small Modular Reactors?
https://www.iaea.org/newscenter/news/what-are-small-modular-reactors-smrs

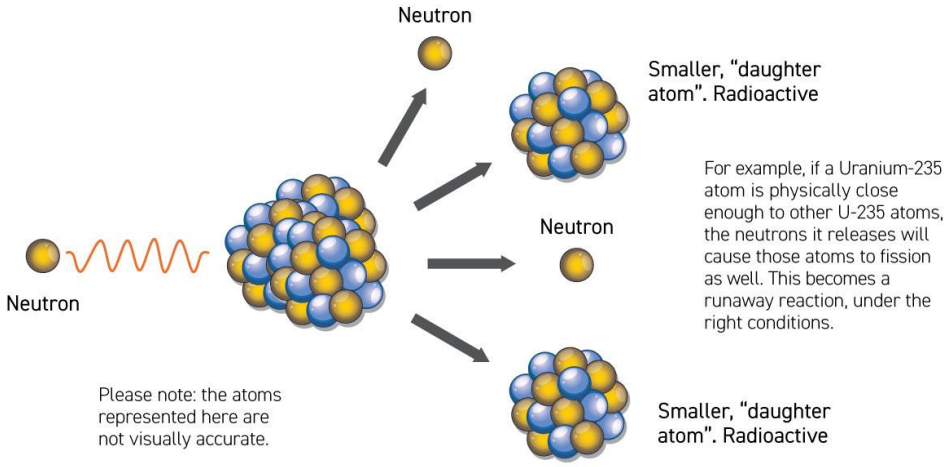
In Washington State, nuclear reactor facilities are categorized as either nuclear fission or nuclear fusion. SMRs are most commonly associated with advanced nuclear fission; however, nuclear fusion is an emerging technology being developed in Washington and is relevant to the discussion of SMR technologies.

Nuclear fission generates energy by splitting heavy elements, such as uranium, to produce heat for steam and electricity. **Figure 24** below shows a graphic of this reaction. Nuclear fission releases large amounts of

[29] As of 2023, International Atomic Energy Agency states SMRs have a power capacity of up to 300 MW(e) per unit. About one-third the capacity of conventional nuclear power facilities (International Atomic Energy Agency, 2023).

energy and significant amounts of high-level radioactive waste for disposal.[30] This is the more well-known type of nuclear reaction associated with power generation.

Figure 24: Nuclear Fission Diagram

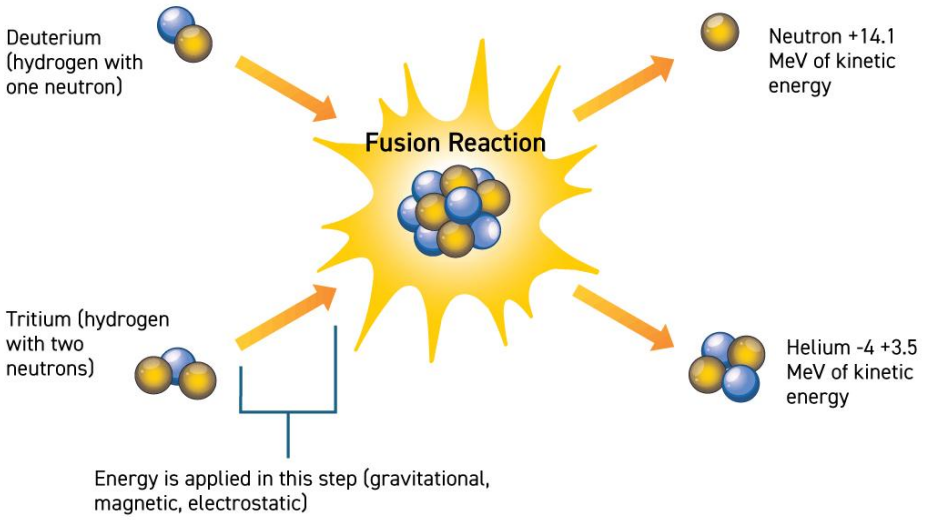


Source: Washington State Department of Health, Fusion in Washington, 2025, https://doh.wa.gov/community-and-environment/radiation/radiation-topics/fusion

Nuclear fusion is distinct from nuclear fission because it combines two lighter elements, such as hydrogen, to form a new nucleus as shown below in **Figure 25**. The most common example of nuclear fusion is the process that powers the sun and other stars. The waste produced through nuclear fusion is also different than nuclear fission. Nuclear fusion can produce tritium, a radioactive byproduct that has a faster rate of decay[31] compared to nuclear fission. Tritium has roughly a 12.5-year half-life while nuclear fission waste can take hundreds of years.[32]

[30] Washington State Energy Facility Site Evaluation Council, Washington State Fusion Energy Workgroup, "Fusion Technology Legislative Report", (2024), https://efsec.wa.gov/sites/default/files/2025-04/20241114_LegislativeReport_FusionTechnology.pdf
[31] Meaning it remains radioactive for a shorter period of time.
[32] Washington State Energy Facility Site Evaluation Council, Washington State Fusion Energy Workgroup, "Fusion Technology Legislative Report", (2024), https://efsec.wa.gov/sites/default/files/2025-04/20241114_LegislativeReport_FusionTechnology.pdf

Figure 25: Nuclear Fusion Diagram



Source: Washington State Department of Health, Fusion in Washington, 2025, https://doh.wa.gov/community-and-environment/radiation/radiation-topics/fusion

Both nuclear fission and fusion facilities involve radioactive fuel, materials, or byproducts; however, the type, quantity, and management requirements differ by technology and facility design. Fuel sources for nuclear facilities are primarily based on their reaction types, of which uranium is more common for fission facilities, but plutonium, thorium, isotopes of hydrogen, and new fuel blends may also be used. Due to their radioactive materials, nuclear fission and fusion technology used commercially, must be licensed by the USNRC, as described in the **Energy Permitting Overview**.

2.1.6.2 Why Fission and Fusion?

For the purposes of the CESP EIS, the County is evaluating both nuclear fission and nuclear fusion under the "small modular reactor" terminology. This approach allows the CESP EIS to consider the potential siting, permitting, and community impact implications of both nuclear technologies, while recognizing that they differ in maturity, regulatory treatment, and potential impact profile.

As discussed further in the **Energy Permitting Overview**, nuclear fission facilities must proceed through the EFSEC siting and permitting process, while nuclear fusion facilities may choose either the EFSEC process or the local government permitting pathway.[33] Nuclear fission generally presents more intensive regulatory, waste management, and safety considerations. Nuclear fusion may have a less intensive impact portfolio, but because fusion technology is still rapidly emerging, its siting, permitting, and environmental implications remain less established. For this reason, evaluating fusion alongside fission allows the County to take a precautionary approach to future small modular nuclear facilities that may be proposed in Kittitas County, including facilities reviewed through the EFSEC process or local government pathways depending on the nuclear reaction type.

Nuclear fusion is included in the CESP Project despite being an emerging technology because of its potential and rapid regulatory developments. Other county jurisdictions throughout Washington are already experiencing fusion technology in the permitting process. In June 2026, Helion Energy's Orion facility in Chelan County,

[33] RCW 80.50.060(1)(b)(vi)

adjacent to Kittitas County, received Radioactive Materials and Radioactive Air Emissions licenses from the DOH.[34] The facility also received a mitigated determination of significance (MDNS) from Chelan County, marking major regulatory milestones for nuclear fusion development.[35]

2.1.6.3 Typical Components

An SMR facility primarily focuses on the reactor, including the reactor modules or power blocks, potential containment features, and related cooling systems. SMRs are meant to be manufactured elsewhere in a controlled environment then transported to a given facility site via truck or rail transportation. SMR facilities must have safe and secure access points including, but not limited to, controlled site entrances, emergency access, and security checkpoints. Sites also need safe access highway and rail networks to plan for transportation of construction and equipment materials, which may be oversized and/or heavy hauls, and both nuclear fuel and potential nuclear waste transportation. Highway access also ensures adequate response in case of emergency situations and support for operation and maintenance needs.

Additional components of a facility may include perimeter security, operation rooms or buildings, interim radioactive waste holding, water supply management systems, fire protection, switchyard for electrical connections, and long-term monitoring and maintenance areas. Safety, security, and emergency planning can include multiple back-up safety systems, including automatic safe shutdown mechanisms.[36] For nuclear fission SMR technology, it is common for reactor modules to be located underground for safety measures.[37]

Nuclear fusion facility designs are likely to vary due to their early stage of development and continued to evolution. Based on the processes known at this time, typical components of these facilities may include the following:

- A device or chamber that creates and confines dynamic high-temperature fusion plasma;
- Equipment used to heat, compress, accelerate, and control the plasma;
- Shielding and structural materials that are designed to withstand extreme heat, pressure, and high-energy particle exposure; and
- Infrastructure to connect electricity generated to grid or end user.

Supporting systems for fusion may include equipment for fuel storage, tritium handling where tritium is used or produced, compression and temperature control systems, radiation monitoring, automatic shutdown mechanisms, and power conversion equipment. Sitewide components may include control and operations buildings, electrical switchyards and interconnection equipment, water supply and discharge systems, fire protection, perimeter security, and maintenance and monitoring areas. Because fusion technologies remain under development, the specific components, facility arrangement, and infrastructure needs would depend on the selected confinement method, heat-transfer system, power-conversion design, project scale, and other project-specific design components.

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[34] Helion, "Helion clears key regulatory milestone on the path to building and operating the world's first fusion power plant", (2026), https://www.helionenergy.com/newsroom/helion-clears-key-regulatory-milestone-on-the-path-to-building-and-operating-the-worlds-first-fusion-power-plant

[35] Chelan County, "Notice of Application and Environmental Review: Helion conditional use permit", (2025), https://www.co.chelan.wa.us/news/article/notice-of-application--environmental-review-helion-conditional-use-permit

[36] Ibid.

[37] Golder Associates, "Small Modular Reactors: An Analysis of Factors Related to Siting and Licensing in Washington State", (2016), Prepared for Washington State Energy Facility Site Evaluation Council, 20160108SMRFinalReport.pdf

2.1.6.4 Access Needs

With their modular nature, SMRs are meant to be manufactured elsewhere in a controlled environment then transported to a given facility site via truck or rail transportation. SMR facilities must have safe and secure access points including, but not limited to, controlled site entrances, emergency access, and security checkpoints. Sites also need safe access highway and rail networks to plan for transportation of construction and equipment materials, which may be oversized and/or heavy hauls, and both nuclear fuel and nuclear waste transportation.[38] Highway access is also important to ensure adequate response in case of emergency situations and support of operation and maintenance needs.

2.1.6.5 Nuclear Waste and Disposal

Nuclear waste management is a large consideration for nuclear facilities because of the historic and potential future ecological, public health, safety, and overburdened community impacts. With SMR facilities, the nuclear waste generated differs between fission and fusion reactions.

In nuclear fission facilities, radioactive waste is primarily generated when fuel rods are no longer efficient for electricity production. The fuel rods are considered high-level radioactive waste as they emit hazardous levels of radiation during short-term exposure. Exposure to such levels whether direct or indirect, such as through contamination, has the potential for significant health impacts. Disposal of spent fuel occurs in 'spent fuel pools' and 'dry casks'. The USNRC is the party responsible for licensing and regulating the receipt and possession of high-level nuclear waste at both private and certain Department of Energy (DOE) facilities.[39] In Washington State, the Ecology Nuclear Waste Program largely oversees nuclear waste treatment, storage, and disposal.

With nuclear fusion, little radioactive waste is generated and is associated with a lower risk of public health, safety, and environmental hazards.[40] Tritium, the radioactive hydrogen often produced through nuclear fusion, is a weaker source of radiation. Tritium is usually in a gaseous state and is colorless, odorless, tasteless, and radioactive.[41] The exposure risk with tritium is low but it can enter the body through inhalation, ingestion, or absorption.[42] As of the 2024 Fusion Legislative Report by EFSEC, additional research is underway for fusion recapture systems. Fusion-related radioactive material is expected to be regulated under the USNRC byproduct material framework, with implementation potentially involving state authority where applicable. Regulatory requirements for fusion are evolving and may depend on facility design, radioactive material use, and applicable state or federal licensing requirements.

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[38] Golder Associates, "Small Modular Reactors: An Analysis of Factors Related to Siting and Licensing in Washington State", (2016), Prepared for Washington State Energy Facility Site Evaluation Council, 20160108SMRFinalReport.pdf

[39] Nuclear Regulatory Commission, "Background on Radioactive Waste", (2024), https://www.nrc.gov/reading-rm/doc-collections/fact-sheets/radwaste

[40] Washington State Energy Facility Site Evaluation Council, Washington State Fusion Energy Workgroup, "Fusion Technology Legislative Report", (2024), https://efsec.wa.gov/sites/default/files/2025-04/20241114_LegislativeReport_FusionTechnology.pdf

[41] U.S. Department of Energy, "Tritium Handling and Safe Storage", (2015), https://www.nrc.gov/docs/ML2114/ML21140A435.pdf

[42] Canadian Nuclear Safety Commission, "Facts about tritium", (2021), https://www.cnsc-ccsn.gc.ca/eng/resources/fact-sheets/tritium/

2.1.6.6 Siting Considerations

General site requirements for SMRs include land for the reactor and related facility infrastructure, site access, safety buffers, and adequate utility connections, including water supply, wastewater treatment, interconnection for electricity, and disposal infrastructure.[43]

Siting considerations may include seismic conditions, water availability, emergency planning zones and emergency response plans, security setbacks, environmental constraints, and compatibility with surrounding land uses. Additionally, considerations for the transportation, storage and waste management of radioactive materials can influence siting. SMRs can be grid-connected or co-located with an end-user, meaning that transmission availability may be a higher consideration for SMRs seeking a grid connection.

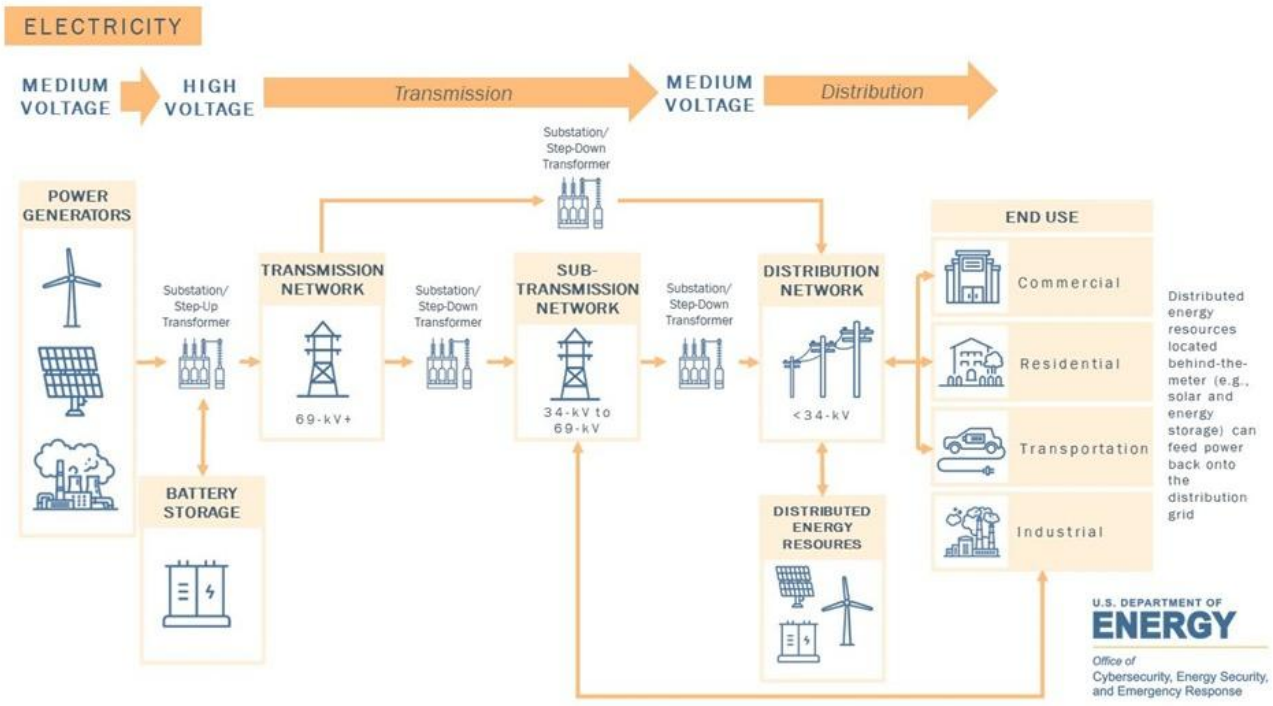
For more information regarding suitable site criteria, see the **Siting Analysis** section.

2.1.7 Common Electrical System Features

Energy generating sources require additional infrastructure to move and distribute power to the grid. The electric grid can be broken down into three main systems: generation, transmission, and distribution.

Figure 26 below provides an overview of the process from energy generation to end use.

Figure 26: Electric System Overview



Source: US Department of Energy, How It Works: Electric Transmission & Distribution and Protective Measures, https://www.energy.gov/sites/default/files/2023-11/FINAL_CESER%20Electricity%20Grid%20Backgrounder_508.pdf

[43]Golder Associates, "Small Modular Reactors: An Analysis of Factors Related to Siting and Licensing in Washington State", (2016), Prepared for Washington State Energy Facility Site Evaluation Council, 20160108SMRFinalReport.pdf

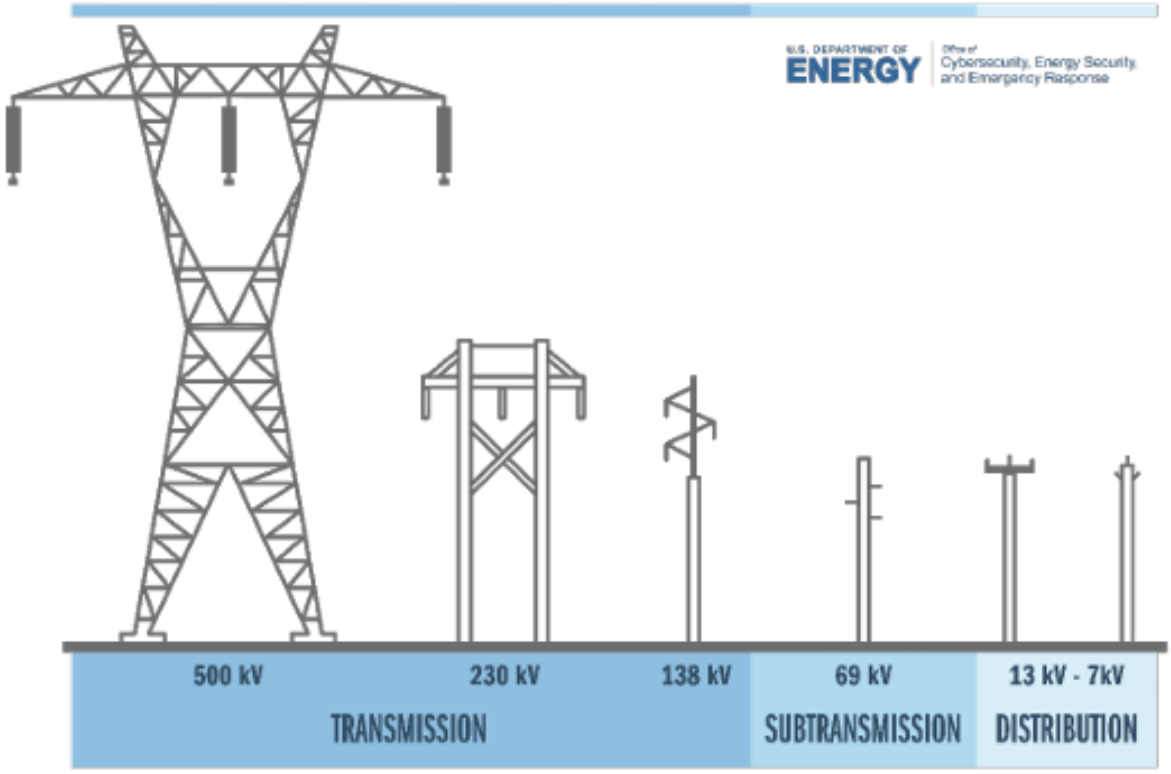
The CESP EIS focuses on the energy facilities involved in power generation and power storage. However, transmission and distribution systems are part of the broader energy supply system. The distance between power generation and the end user can vary depending on a specific project. All energy facilities can be located near an end-user or can interconnect with the distribution or transmission grid.

Transmission is the process which moves power from generation sources over long distances through high-voltage power lines, referred to as transmission lines.

Distribution is the process which moves power over shorter distances to end users using lower-voltage lines, referred to as distribution lines. Distribution lines deliver electricity to homes, businesses, and other end users.

Figure 27 below shows the difference between transmission and distribution lines.

Figure 27: Transmission and Distribution Lines



Source: US Department of Energy, How It Works: Electric Transmission & Distribution and Protective Measures, https://www.energy.gov/sites/default/files/2023-11/FINAL_CESER%20Electricity%20Grid%20Backgrounder_508.pdf

Moving electricity from generation to transmission, distribution, and end use requires interconnection components such as inverters, substations, transformers, switchyards, and gen-tie lines.

- **Inverters**: converts direct current (DC) into alternating current (AC).
- **Substations**: contain transformers, breakers, switches, and protection and control equipment used to transform voltage levels and safely connect, control, and protect portions of the electric power system.
- **Transformers**: can convert between high and low voltages as needed for connection across systems.
- **Switchyards**: function as a routing center to direct flow of power for operation flexibility and system reliability.

- **Gen-tie lines**: provide generation interconnection. They enable a generation facility to interconnect to the power grid.

The proximity to existing grid infrastructure can inform early site planning, project design, and environmental review. More information surrounding existing power grid infrastructure can be found in the **Siting Analysis** and in **Volume II**.

2.1.7.1 Transmission and Interconnection Jurisdiction

The jurisdiction for transmission and interconnection depends on several factors, including the type of energy facility, whether the transmission component is part of an EFSEC jurisdiction facility, the line voltage or capacity, the ownership and purpose of the infrastructure, and whether federal, state, or local approvals are triggered.

As described in **Energy Permitting Overview**, EFSEC provides centralized siting and environmental review for certain major energy facilities and associated facilities, including high voltage transmission facilities. In 2023, the State of Washington directed EFSEC to evaluate probable significant adverse environmental impacts from electrical transmission facilities with a voltage of 230 kV or greater at a programmatic level. The draft Transmission EIS was released by EFSEC October 2025.[44]

These efforts are part of a broader statewide focus on transmission planning, siting, and permitting coordination. In 2026, the Washington State Legislature created the Washington Electric Transmission Authority (WETA). This new authority will serve as a centralized body for providing development transmission services, coordinating siting and permitting, and engaging with utilities, transmission developers, local jurisdictions, state agencies, regional entities, the federal government, federally recognized Indian Tribes, and affected communities.[45]

As of June 2026, the specific role WETA holds in the transmission and interconnection siting and permitting coordination process in comparison to EFSEC and local jurisdiction authority is undefined. Lower voltage distribution lines, local interconnection upgrades, access roads, and other ancillary improvements may remain subject to state, utility, county, or local review unless incorporated into an EFSEC site certification or otherwise preempted by applicable law.

For the CESP EIS purposes, transmission-related analysis will remain general and focus on whether an energy facility would require new gen-tie lines, substation construction or expansion, distribution upgrades, right-of-way acquisition, utility coordination, or improvements that could potentially create additional disturbance or jurisdictional review. The appropriate permitting pathway should be confirmed and additional environmental review conducted on a project-specific basis once the specific voltage, length, capacity, location, ownership, and point of interconnection are known.

[44] Washington State Energy Facility Site Evaluation Council, "Final Transmission Programmatic Environmental Impact Statement", (2025), https://efsec.wa.gov/transmission-programmatic-environmental-impact-statement-eis
[45] Engrossed Substitute Senate Bill 6355 as passed during the 2026 Washington State Legislative Session, 6355-S.SL.pdf

2.1.7.2 Access and Haul Route Considerations

Access and haul routes should be evaluated in the siting and permitting process for potential construction, operation, and maintenance impacts on transportation systems, public safety, emergency response, adjacent land uses, and environmental resources. Key considerations include access points, construction traffic volume, vehicle types, delivery schedules, emergency access, and the condition and capacity of affected public roads.

Potential impacts may include temporary traffic increases, roadway wear, dust, noise, conflicts with local or agricultural traffic, and short-term access limitations during major equipment deliveries. Wind, geothermal, SMR, and larger BESS or substation components may require more detailed haul route analysis due to oversized or heavy equipment, while solar facilities may primarily require review of construction traffic volumes and delivery of substation equipment.

Mitigation may include a construction traffic management plan, designated haul routes, coordination with the applicable road authority, pre- and post-construction road condition documentation, dust control, temporary traffic control, delivery scheduling, signage, flagging, and road repair or restoration. Where warranted, review may also address turning radii, bridge and culvert load ratings, intersection or driveway improvements, improved intersections with acceleration or deceleration lanes, oversize or overweight transport permits, and emergency access requirements.

Access planning should also account for interconnection infrastructure, including substations, gen-tie lines, switchyards, and related electrical equipment, which may create separate construction access needs and temporary disturbance areas. Proximity to existing transmission, distribution, and substation infrastructure may reduce new disturbance, but available grid capacity, utility coordination, and system upgrades remain key sitting and permitting considerations.

2.2 Energy Permitting Overview

The following section provides an overview of the permitting steps for energy facilities to be developed within a local jurisdiction. The section starts with an explanation of the Washington State permitting pathways providing a comparison between the local and state permitting options then discusses Federal permits and when certain agency permits and reviews are triggered. Lastly, the section ends with a history of projects permitted within Kittitas County and which permit pathways were needed for the existing facilities seen across the county.

2.2.1 Washington State Energy Permitting

2.2.1.1 Overview

In Washington State, there are two different levels of agency reviews for most energy projects:

- Local government, such as Kittitas County, or,
- Washington State EFSEC.

For most energy uses, applicants have the option to choose the specific permitting process for their energy project. Whether an applicant chooses the local government or EFSEC pathway comes with a set of considerations. The following information provides descriptions of the current local, state, and federal permitting processes related to the energy facilities studied within the CESP EIS. A comparison of the Washington State permitting pathways can be found on **Page 76**.

2.2.1.2 Kittitas County Procedures

If an applicant for an energy project pursues the local government permitting route in Kittitas County, the permit review process depends on the energy facility proposed as described in **Alternative 1: No Action Alternative**.

2.2.1.2.1 Siting Locations

The siting of certain energy facilities depends on the applicable zoning, as shown in **Table 2** below. Most utility definitions identify specific zones where facilities may be allowed; however, solar and wind facilities are governed through overlay zones. Overlay zones apply location-specific standards in addition to the underlying zoning, which remains in effect within the overlay area.

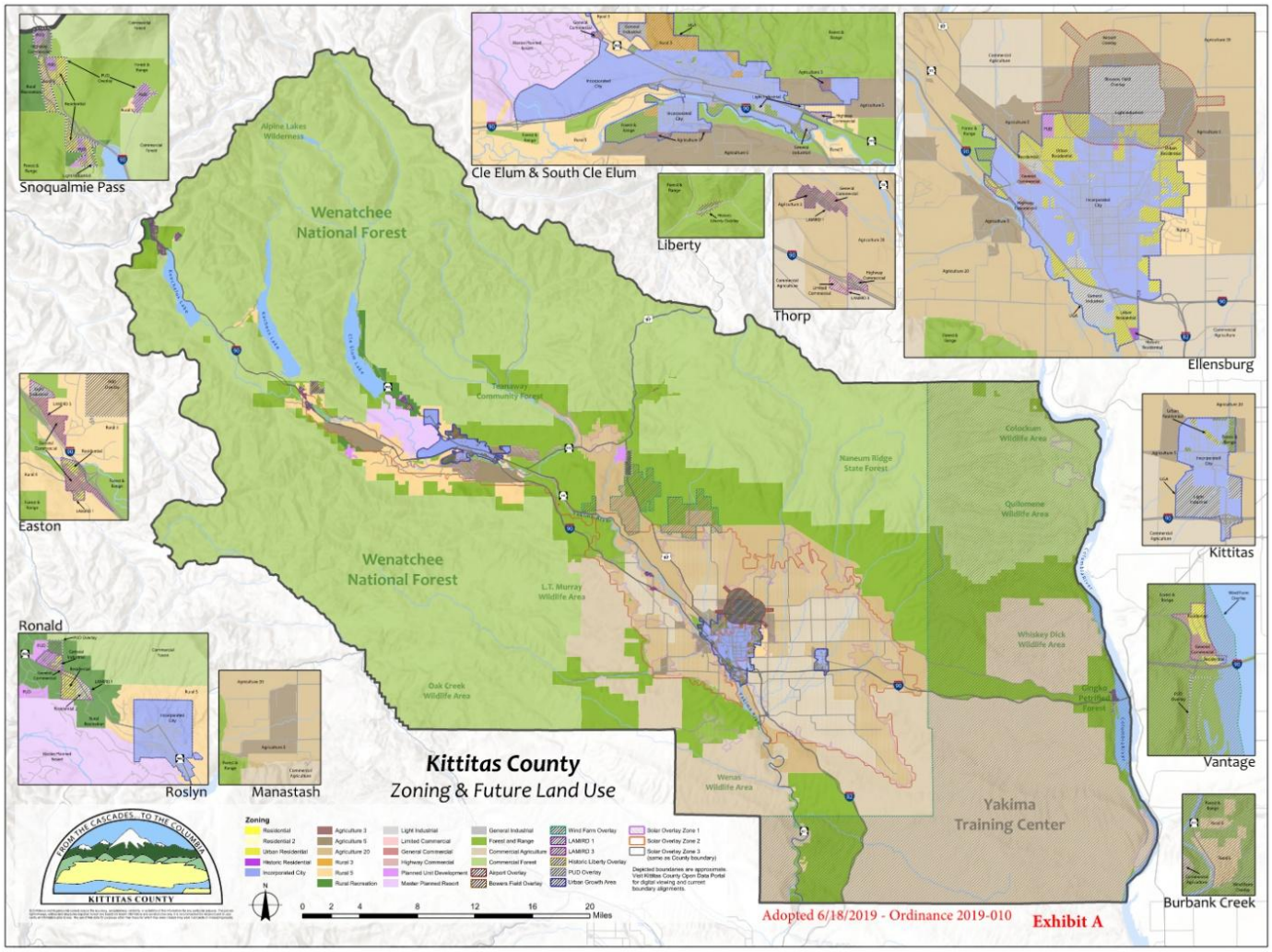
Table 2: Kittitas County Energy Definitions and Siting Locations

Kittitas County Definition	Siting Locations
Associated Facility	General industrial zone
Major Thermal Power Plant	Agriculture-20, forest and range, commercial agriculture, and commercial forest zones
Solar Power Production Facility (SPPF)	Solar overlay zones
Special Utility	All zoning districts
Utility	All zoning districts
Wind Farm	Wind farm overlay zones

Source: Kittitas County Code Chapter 17.61, 2026

The current zoning for Kittitas County, including the overlay zones for wind and solar, are found below in **Figure 28**.

Figure 28: Zoning Map



Source: Kittitas County, 2019

2.2.1.2.2 Permitting Process

To permit SPPFs, geothermal energy facilities, and "major thermal power plant" in Kittitas County, a conditional use permit is required for approval.

KCC 17.60A provides the standards of the conditional use process in Kittitas County. Most conditional uses in Kittitas County are given a SEPA determination, require a public hearing, and are reviewed by the Hearing Examiner. Administrative conditional uses, including solar facilities under 7 MW in Solar Overlay Zone 3, are to be reviewed administratively by the Director.[46]

The conditional use application requires a site plan showing the dimensions and arrangement of the development; however, the administrator or Hearing Examiner may require other materials to understand the proposed use and its relationship to the surrounding properties. For SPPFs, applications must also include the following materials:

[46] KCC 17.60A.015

- Noxious weed management plan
- Stormwater management plan
- Decommissioning plan
- Water rights retention plan, if applicable

The Director or Hearing Examiner may approve conditional uses when the following criteria are met:

- The proposed use…
    - Is essential or desirable to the public
    - Is not harmful to public health, peace, safety or to the character of the surrounding neighborhood.
    - Will be serviced by existing facilities, the applicant shall provide needed facilities, or the proposed use will provide an economic benefit that offsets public costs.
    - Complies with relevant development standards and approval criteria
    - Mitigates development impacts, environmental or otherwise
    - Ensures compatibility with existing neighboring land uses
    - Is consistent with the intent and character of the zoning district
- The proposed location will not unreasonably harm the economic welfare of the county and will not create excessive public costs to serve.
- If outside of urban growth areas (UGAs), the proposed use…
    - Is consistent with intent, goals, policies, and objectives of the Kittitas County Comprehensive Plan.
    - Preserves "rural character" as defined in the Growth Management Act (RCW 36.70A.030(20));
    - Requires only rural government services;
    - Does not compromise the long-term viability of designated resource lands.

The Director or Hearing Examiner may impose conditions to protect the best interests of the surrounding areas and the county as a whole. These conditions may address:

- Lot sizes, setbacks, yards;
- Height limits;
- Access;
- Open space;
- Screening;
- Requiring additional rights-of-way for future public street, improvements;
- Public use easements;
- Off-street parking and/or loading spaces;
- Site reclamation upon discontinuance of use;
- Limits on hours and size of operation;
- Control of use and structure siting on the property,
- Mitigation measures to reduce potential land use conflicts with agricultural and resource lands; and
- Demonstration of adequate water supply.

For energy facilities classified as “special utilities” and “associated facilities”, including **BESS and geothermal facilities**, review is completed by the Hearing Examiner to determine that:

- Adequate measures have been taken to reduce accident risk caused by hazardous materials,
- The proposed facilities are essential or desirable to the public and/or not harmful to the public health, safety, or the character of the surrounding neighborhood, and
- The proposed facilities will not be unreasonably detrimental to the economic welfare of the county and/or that it will not create excessive public cost for public services.

The Hearing Examiner will also consider industry standards, available technology, and proposed design technology for BESS and geothermal energy facilities for conditions of approval.

For permitting wind facilities in Kittitas County, a wind farm resource development permit and development agreement approved by the BOCC are required. For wind facilities not utilizing the "pre-identified areas for siting", there are additional requirements. These include:

- A site-specific amendment of the Kittitas County Comprehensive Plan Land Use Designation Map to wind farm resource overlay district
- A site-specific rezone of the County Zoning Map to wind farm resource overlay zoning district pursuant to KCC Chapter 17.98, Amendments.

Development agreement procedures are largely found in KCC Chapter 15A.11, where the general requirements are found in KCC 15A.11.020. Consistent with KCC 15A.11.020(B) and RCW 36.70B.170, the development agreement must include the development standards applicable to the development of specific wind facilities. This may include, but is not limited to:

- Densities, number, size, setbacks, and location of turbines;
- Mitigation measures and such other development conditions as deemed appropriate by the BOCC; and
- Other development standards including those identified in KCC 15A.11.020(E) and RCW 36.70B.170(3).

A development agreement is approved by ordinance or resolution after a public hearing. The approval is only made by the BOCC if it is determined that:

- The proposal is essential or desirable to the public convenience;
- The proposal is not detrimental or injurious to the public health, peace, or safety or to the character of the surrounding neighborhood; and
- The proposed use at the proposed location(s) will not be unreasonably detrimental to the economic welfare of the county and it will not create excessive public cost for facilities and service.

2.2.1.3 EFSEC Permitting

For the permitting and development of some energy facilities, EFSEC certification is required; however, for others, certification is an optional path. Whether a facility must obtain EFSEC certification affects the speed, efficiency, and equity considerations of clean energy projects in Washington State. **Table 3** below identifies which facility types and criteria require EFSEC certification and which facilities may elect the EFSEC process.

Table 3: EFSEC Energy Categories

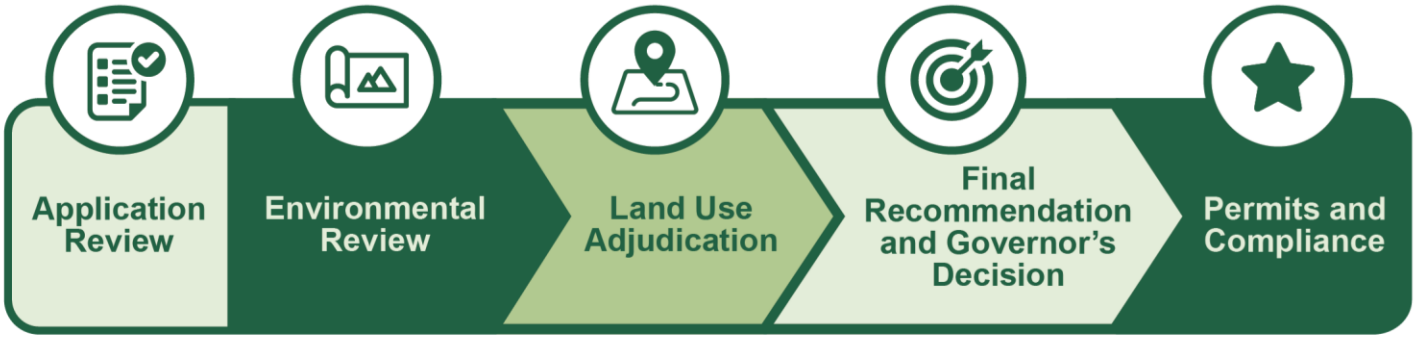
Energy Category	Specifics	EFSEC Certification
Alternative electrical generation	Includes: wind, solar, geothermal, renewable natural gas, wave or tidal action, biomass, renewable or green electrolytic hydrogen, and fusion	Optional
Electrical Transmission	• Facilities located in "national interest electric transmission corridors" (NIETC), areas the USDOE has identified as having limited transmission for customers.	Required
	• Facilities with a voltage of at least 115 kV • Facilities located in multiple areas with separate land use plans and zoning ordinances	Optional
Nuclear power facilities[47]	• Facilities using nuclear fission	Required
	• Facilities using nuclear fusion	Optional
Storage Facilities, including BESS	• New facilities that can refine more than 25,000 barrels of petroleum or biofuel per day, except when processing biofuel at existing facilities • Facilities that increase petroleum refining by more than 25,000 barrels per day • Crude, refined, or liquefied petroleum facilities that can receive more than an average of 50,000 barrels per day from over the ocean	Optional
Thermal electrical generation	• Stationary thermal power plants that can generate 350,000 kW or more • Floating thermal power plants that can generate 100,000 kW or more	Required
Additional Facilities	• Petroleum storage • Petroleum refineries, and • Pipelines	Required
	• Facilities producing refined biofuel of no more than 25,000 barrels a day • Clean energy product manufacturing facilities	Optional

Source: EFSEC, Who we regulate \| EFSEC, June 2026

If an energy facility is required or voluntarily pursues certification with EFSEC, the process for which energy facilities are approved can be broken down into five major phases.

[47] Small modular reactors (SMRs) are emerging energy technologies that may utilize nuclear fission or nuclear fusion reactions to generate power. As of June 2026, nuclear fission is the more established reaction technology, whereas nuclear fusion is currently under active research and development.

Figure 29: EFSEC Process



During **application review,** applicants may request an optional pre-application review by EFSEC to share information ahead of application submittal. Application submittal officially starts the process with a determination of completeness and an application fee of $50,000. The information provided as part of the application informs the environmental review in the next phase.[48]

SEPA is incorporated into the EFSEC Process through the **environmental review** phase. EFSEC makes a determination about whether, under SEPA, an environmental impact statement is needed or whether it's possible to mitigate the identified significant negative impacts using methods EFSEC recommends.[49] If an EIS is needed, scoping notice and issuance of a DEIS and FEIS for the project will be required.

After the environmental review, EFSEC holds **land use hearings** to determine whether a proposed facility complies with local land use plans and zoning ordinances. This starts with pre-hearing conferences which may be held by an administrative law judge to decide:

- On requests from people or groups who want to intervene as parties to the proceeding,
- Which topics are allowed to be presented and the order in which they will be considered, and
- The hearing schedule.

At the hearings and deliberations, interested and impacted parties present evidence and testimony for and against a proposed facility and potential conditions to be imposed for its construction and operation. The information at these hearings becomes official record to be used in the later recommendations to the governor.[50]

The land use consistency hearing itself is meant to determine whether a proposed facility complies with local land use plans and zoning ordinances. It comprises an informational public meeting, held within 60 days of a completed application, and a compliance hearing. Despite the inclusion of this land use consistency hearing, EFSEC has the power to preempt local land use plans, zoning ordinances, or other development regulations for certification of a project as described in Chapter 463-28 WAC.

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[48] Washington State Energy Facility Site Evaluation Council, Application Submittal and Review, n.d., accessed July 2026, https://efsec.wa.gov/siting-process/application-review/application-submittal-and-review
[49] Washington State Energy Facility Site Evaluation Council, Threshold Determination, n.d., accessed July 2026, https://efsec.wa.gov/siting-process/environmental-review/threshold-determination
[50] Washington State Energy Facility Site Evaluation Council, Adjudicative Hearings, n.d., accessed July 2026, https://efsec.wa.gov/siting-process/land-use-and-adjudication/adjudicative-hearings-and-deliberations

> *"The state hereby preempts the regulation and certification of the location, construction, and operational conditions of certification of the energy facilities included under RCW 80.50.060 as now or hereafter amended."*
>
> *- RCW 80.50.110*

If EFSEC pursues preemption, they must include conditions in the draft Site Certification Agreement (SCA) to protect affected state, local government, community, and overburdened community interests. These conditions must also recognize the purpose of any laws, ordinances, rules, or regulations preempted under RCW 80.50.110.[51]

A draft SCA describes the conditions a facility must meet during construction, operation, and decommissioning. This agreement is presented to the EFSEC for approval and if approved, is sent to the governor as part of a **recommendation for approval**. If the governor signs and approves the draft SCA, it becomes the final SCA, the official approval for building and operating an energy facility. The final SCA takes effect once the governor has signed it. The final version may include changes to the conditions in the draft SCA.

If the governor approves the energy facility, there are additional permitting and compliance steps after the final SCA. This includes related environmental permits for certain facilities, potentially including permits related to:

- Air Quality
- Water Discharge
- Water Rights
- Road Revisions
- Noise
- Hazardous Waste

Ongoing compliance, decommissioning, and site restoration are described in a final SCA and EFSEC oversight lasts until the certificate holder decommissions the facility and completes such site restoration.

2.2.1.4 Comparison of Permitting Procedures

The following table compares the Kittitas County and EFSEC permitting pathways, including key differences in review timing, responsibilities, and decision-making.

Table 4: Local Government and EFSEC Permitting Comparison

Actions and Roles	Kittitas County SEPA and Permitting Process	EFSEC Process
SEPA Lead Agency	Kittitas County	EFSEC Director is the responsible official
Permitting Timelines	Timing varies by permit and reviewing agency. Multiple local and state approvals may proceed separately or concurrently, depending on application completeness, SEPA review, public hearings, and appeals.	Review occurs through a centralized certification process. Timing depends on application completeness, environmental review, hearings, EFSEC recommendation, and governor approval.

[51] WAC 463-28-070

Actions and Roles	Kittitas County SEPA and Permitting Process	EFSEC Process
Decision-Maker/s	For each permit, the agency responsible makes the decision. All permits needed for a project must be approved.	The EFSEC makes a recommendation to the governor, who makes the decision on a project.
Responsibility for Tribal engagement and consultation	State agencies would offer Tribal consultation for environmental reviews as the SEPA lead agency and/or for their related permits. Kittitas County can offer to engage with local Tribes.	EFSEC is responsible, in coordination with Department of Archaeological and Historic Preservation (DAHP)
Fees	Yes, depends on project specifics.	Yes, $50,000 application fee
Complete application required	Yes, it is used to begin SEPA review.	Yes. If pre-application is done, the SEPA review can begin before the final application is submitted.
Local Ordinances	Kittitas County ordinances apply	EFSEC can preempt county and local ordinances
Appeals	Each permit has their own requirements for appeals.	Appeals are limited to the final decision and are not done for individual permits.

Source: Kimley-Horn and Washington State Department of Ecology
https://apps.ecology.wa.gov/publications/documents/2406001.pdf

2.2.2 Additional Washington State Resources

As of 2023, Ecology provides a route to help in the coordination of clean energy projects. This pathway does not issue permits directly from Ecology but instead assists in navigating the local, state, and federal permits as well as Tribal coordination and community engagement on behalf of clean energy developers. Cost reimbursement is required as part of Ecology's coordinated process, and a complete application is required to develop the workplan and begin SEPA review.

Projects considered by Ecology as "clean energy projects" and could use this clean energy coordination assistance include:

- Battery energy storage
- Biofuel and biomass energy generation
- Clean energy product manufacturing
- Electrical transmission
- Energy-Intensive Trade-Exposed projects that reduce greenhouse gases
- Geothermal energy
- Green electrolytic or renewable hydrogen
- Nuclear fusion and nuclear fission
- Pumped hydro storage
- Solar energy
- Sustainable aviation fuel or alternative jet fuel
- Tidal energy
- Wind energy

As of June 2026, no projects have utilized the Clean Energy Coordinated Permit Process (CPP) provided by Ecology.

2.2.3 Federal Energy Permitting

If an energy project has a federal nexus (i.e. federal funding or loan, is located on federal lands, is interconnecting with a federal power authority, or triggers a major federal permit), the project would be subject to review under the National Environmental Policy Act (NEPA). The NEPA process and federal permitting may occur concurrently with local government review, review through EFSEC, or with Ecology's Clean Energy CPP.

Federal departments and agencies which may permit energy projects include:

- **United States Department of Energy (USDOE)**: The USDOE may serve as a lead or cooperating agency where federal funding, transmission related actions, or USDOE decision-making provide the federal nexus for review.
- **Federal Energy Regulatory Commission (FERC)**: FERC is generally not a primary permitting agency for utility-scale solar, wind, or standalone BESS, but may be applicable for certain geothermal transmission interconnections or other actions within its jurisdiction.
- **Environmental Protection Agency (EPA)**: The EPA may have a reviewing or commenting role under NEPA and may be relevant for Clean Air Act (CAA), Clean Water Act (CWA), or other environmental permitting and compliance responsibilities.
- **United States Department of Agriculture (USDA)**: USDA agencies such as the US Forest Service (USFS) may be applicable where facilities cross National Forest System lands or require federal land use authorization.
- **United States Nuclear Regulatory Commission (USNRC)**: USNRC is a principal federal agency for licensing and environmental review of SMRs and other commercial nuclear facilities.
- **United States Department of Defense (DOD)**
    - United States Army Corps of Engineers (USACE)
- **United States Department of Transportation (USDOT)**: FAA review may apply where solar glare, wind turbine height, transmission structures, geothermal facilities, SMR structures, or other project features could affect navigable airspace or aviation safety.
- **United States Department of Interior (DOI)**: DOI agencies such as the ones listed below may serve as lead, cooperating, reviewing, or resource agencies, or may have land management, trust, or resource consultation responsibilities.
    - Bureau of Land Management (BLM)
    - National Park Service (NPS)
    - United States Fish and Wildlife Service (USFWS)
    - Bureau of Indian Affairs (BIA)
- **National Oceanic and Atmospheric Administration (NOAA)**

Other consulting or reviewing agencies: Depending on the resources affected, additional agencies may include the Advisory Council on Historic Preservation (ACHP) for Section 106 consultation, the DOD for military compatibility and airspace coordination, and other federal entities with jurisdiction by law or special expertise.

The specific permitting triggers for various federal agencies are included below in **Table 5**.

Table 5: Federal Agencies, Action, and Authority

Agency (Department)	Action	Legal Authority
DOE	DOE funding, loan guarantees, transmission-related decisions, interconnections to federal power marketing administrations.	DOE Organization Act; Energy Policy Act of 2005; Transmission Infrastructure Program
FERC (Independent)	Project specific jurisdiction for interstate natural gas facilities; Hydropower licensing; Certain transmission/interconnection matters.	Federal Power Act; Natural Gas Act; Energy Policy Act of 2005; NEPA
EPA (Independent)	NEPA review; National Pollutant Discharge Elimination System (NPDES); CWA permitting; CAA standards; Waste and hazardous substance management	NEPA; CWA; CAA; Resource Conservation and Recovery Act; Comprehensive Environmental Response, Compensation, and Liability Act; Toxic Substances Control Act
Forest Service (USDA)	Special use authorizations, rights-of-way, and land management review for facilities crossing or occupying National Forest System lands.	National Forest Management Act; Federal Land Policy and Management Act, as applicable; NEPA
Rural Development (USDA)	Loans, loan guarantees, grants	Rural Electrification Act
USNRC (Independent)	Licensing, safety review, and environmental review for SMRs and other commercial nuclear facilities, including site, construction, and operating approvals as applicable.	Atomic Energy Act; Energy Reorganization Act; NEPA; USNRC licensing regulations
USACE (DOD)	Section 404 authorization for discharges of dredged or fill material into waters of the United States; Section 10 authorization for work in navigable waters; Associated NEPA review and consultations.	CWA Section 404; Rivers and Harbors Act Section 10; NEPA
DOD and Military Departments	Military compatibility review and coordination for projects that may affect military training routes, special use airspace, radar, communications, installations, or mission readiness.	NEPA; DOD siting and military compatibility
FAA (USDOT)	Notice of proposed construction or alteration; Obstruction evaluation; Airspace review; Coordination for wind turbines, transmission structures, tall facilities, and potential solar glare near airports.	Federal Aviation Act; 14 CFR Part 77; NEPA, as applicable
BLM (DOI)	Rights-of-way, land use authorizations, and NEPA review for energy facilities, gen-tie lines, access roads, or other facilities on BLM-administered lands.	Federal Land Policy and Management Act; NEPA

Agency (Department)	Action	Legal Authority
USFWS (DOI)	Endangered Species Act (ESA) consultation; Bald and Golden Eagle Protection Act; Migratory Bird Treaty Act (MBTA).	ESA; Bald and Golden Eagle Protection Act; MBTA; Fish and Wildlife Coordination Act
ACHP, Tribal Historic Preservation Officer [THPO], NPS (DOI)	Section 106 consultation and review of effects to historic properties, archaeological resources, cultural resources, Tribal cultural resources, and National Register-listed or eligible resources.	National Historic Preservation Act (NHPA) Section 106; Native American Graves Protection and Repatriation Act; Archaeological Resources Protection Act
BIA (DOI)	Trust land review, rights-of-way, land access approvals, and coordination where projects affect Indian trust or restricted lands, Tribal interests, or BIA-administered resources.	Indian Right-of-Way Act; NEPA; NHPA
NOAA/National Marine Fisheries Service [NMFS] (Department of Commerce [DOC])	Consultation and review where projects may affect listed marine or anadromous species, essential fish habitat, marine mammals, coastal resources, or NOAA trust resources.	ESA; Magnuson-Stevens Fishery Conservation and Management Act; Marine Mammal Protection Act; Coastal Zone Management Act

The federal permitting process is closely related to the role of Ecology when a proposed action requires both federal approvals and state environmental or water quality authorizations. Although federal agencies retain responsibility for NEPA review and issuance of federal permits, licenses, or approvals, Ecology may participate through SEPA review, coordinated state permitting, and water quality authorities under state and federal law.

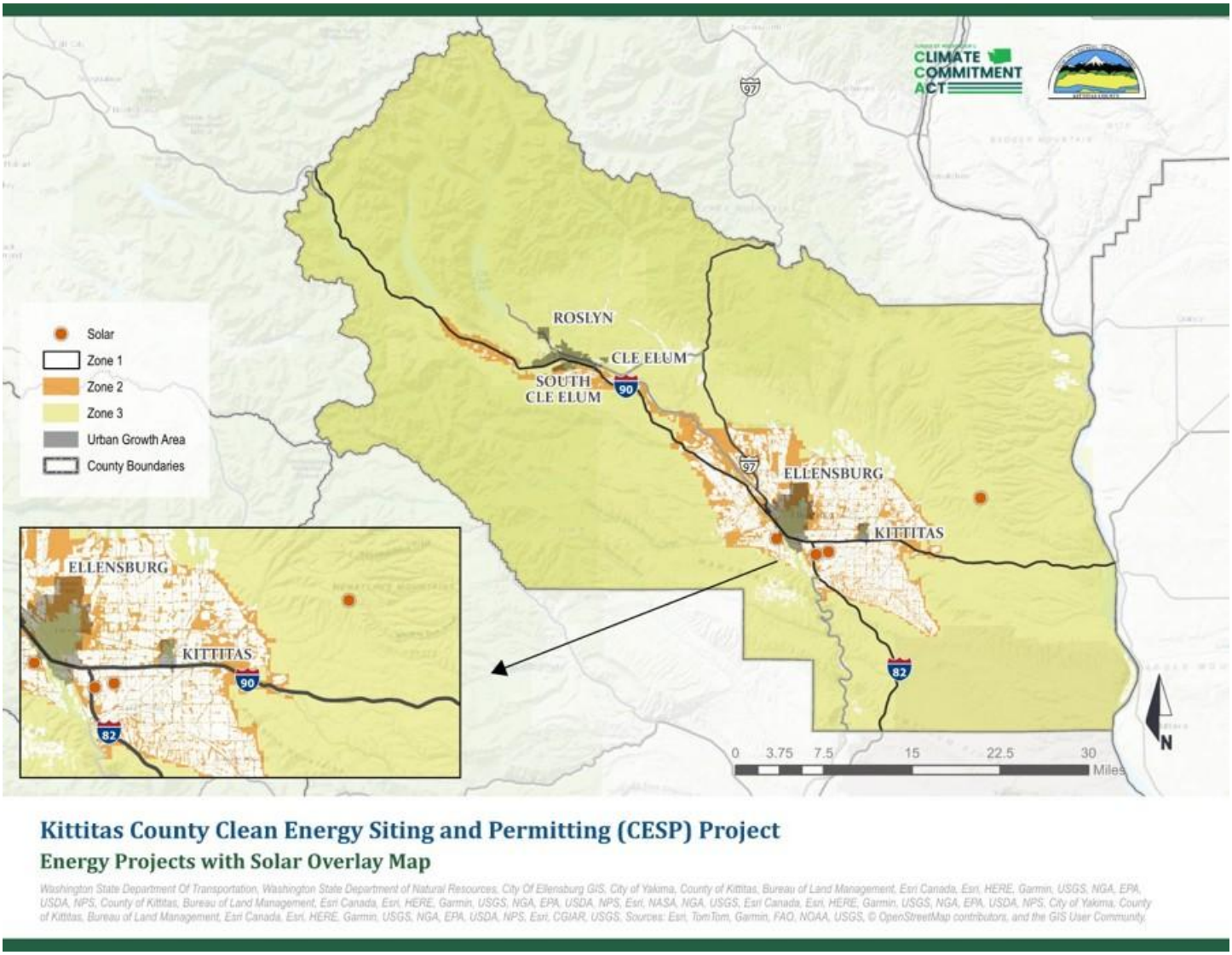
In particular, Ecology serves as the certifying authority for CWA Section 401, water quality certifications in Washington for many federally permitted activities, and federal agencies generally may not issue the underlying permit or license until Ecology has approved, conditioned, denied, or waived certification. Ecology also administers state water quality and stormwater permitting programs and may coordinate early planning, environmental review, and permitting for eligible clean energy projects in a manner intended to align state, local, Tribal, and, where applicable, federal review processes.

2.2.4 Clean Energy History in Kittitas County

2.2.4.1 Large-Scale Solar

Current solar facilities in Kittitas County are primarily located in central and eastern portions of the county, near the City of Ellensburg and Vantage. These projects are positioned within or near areas identified as more suitable for solar development. One solar facility is located further east on the same site as the Wild Horse Wind Facility.

Figure 30: Solar Facilities in Kittitas County



Source: Kittitas County and Kimley-Horn, 2026

Note: Solar energy facility locations are approximate

Two large solar projects within Kittitas County have utilized the EFSEC pathway for their permitting. This includes Columbia Solar, consisting of three separate solar projects capable of 15 MW of energy, and Wild Horse Wind Power, which has a 0.5 MW solar facility on the same site as their wind facility project.[52] To date, three solar facilities were processed and approved by the County, but none have been built to date. These facilities include:

- Schnebly Coulee Solar Farm (CU-24-00003)
- Osprey Solar Farm (CU-14-00003)
- The Teanaway Solar Reserve (CU-09-00005)

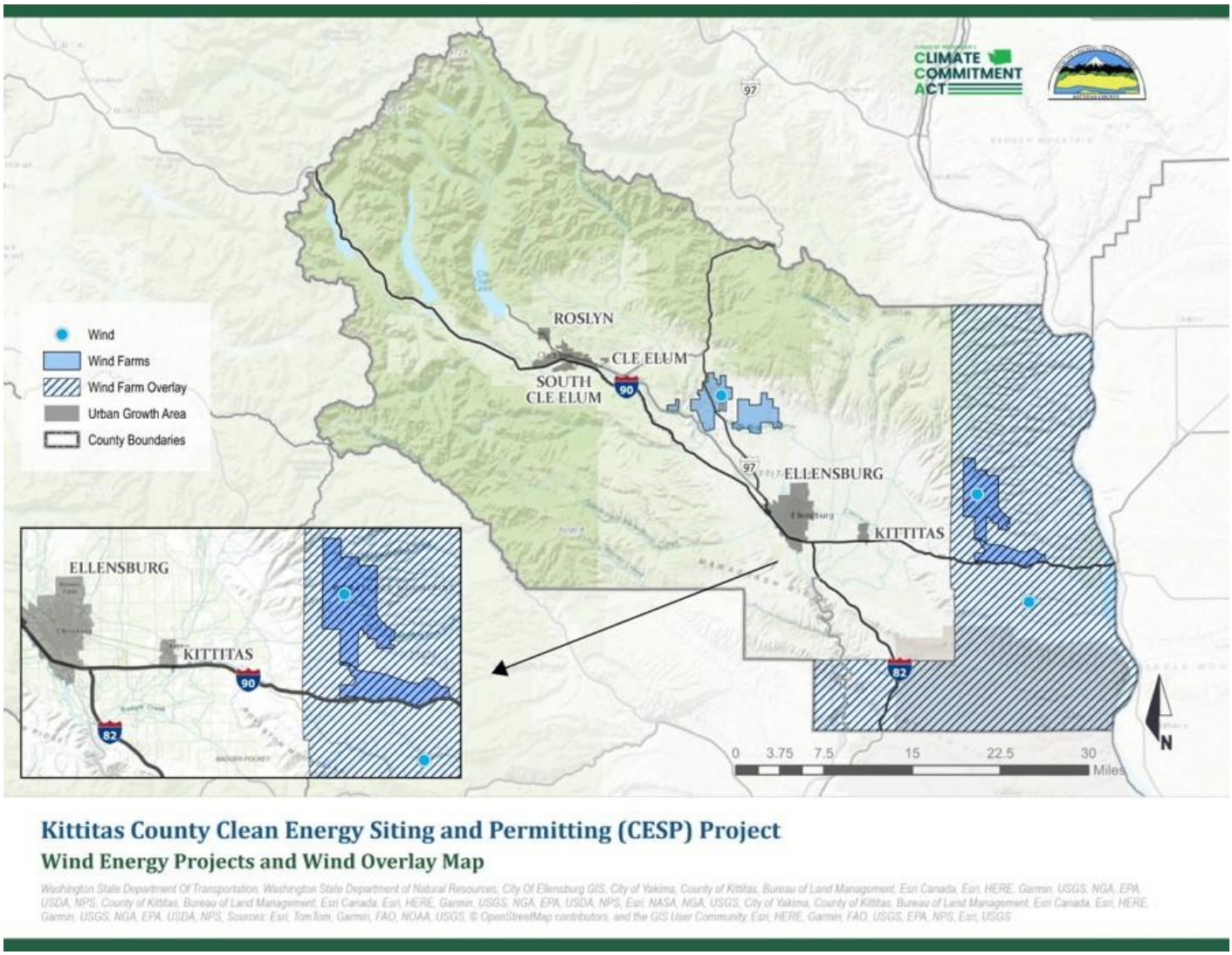
[52] EFSEC: Facilities | EFSEC

Two solar facilities were denied through the County's permitting process. One by the hearing examiner and the other by the BOCC.

2.2.4.2 Large-Scale Wind

As of 2026, three wind facilities have been permitted in Kittitas County. Current wind facilities are located northwest of City of Ellensburg along Highway 97 and in the Wind Farm Overlay to the east.

Figure 31: Wind Facilities in Kittitas County



Source: Kittitas County and Kimley-Horn, 2026

Note: Wind energy facility locations are approximate

Two of the wind facilities currently in operation were permitted through EFSEC, while one was permitted through the County. The two wind facilities permitted through EFSEC in Kittitas County include Wild Horse Wind Power, a 273 MW wind facility operational as of 2006, and Kittitas Valley Wind, 101 MW wind facility operational in 2010.[53] Vantage Wind Project, a 90 MW wind facility operational in 2010, was permitted through the County under WSA-07-01 Vantage Wind Power Project.

2.2.4.3 Battery Energy Storage Systems (BESS)

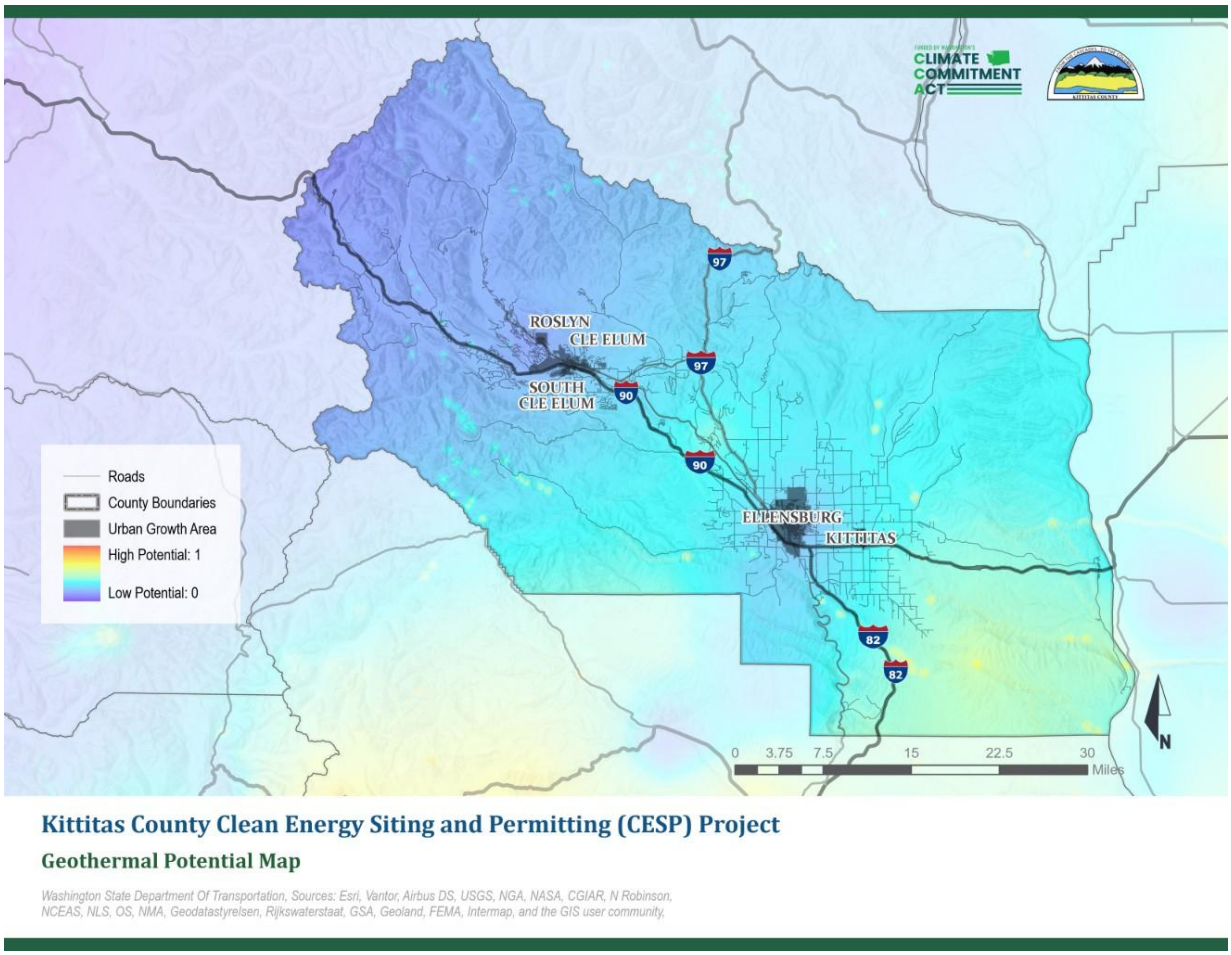
One BESS project has been proposed through the County permitting process as a standalone facility; however, the application was withdrawn on April 20, 2026.[54]

2.2.4.4 Geothermal Energy Facilities

There are currently no geothermal energy facility projects proposed for development in unincorporated Kittitas County.[55] Ecology has identified three geographic areas with geothermal resource potential, including Mount Baker area in northwest Washington, Mount St. Helens area in southwest Washington, and Wind River valley area, south of Mount St. Helens. The Mount Baker area extends into Kittitas County. The Mount St. Helens and Wind River valley areas are located entirely within Skamania County. The figure below shows DNR geothermal potential data for Kittitas County. Of the areas across the county, the southeast portion has the highest geothermal resource potential.

[53] EFSEC: Facilities | EFSEC
[54] CU-25-00003 Wind Ridge BESS
[55] Washington State Department of Ecology 2025

Figure 32: Geothermal Potential in Kittitas County



Source: Kimley-Horn, 2026 using Washington State Department of Natural Resources, Geothermal Potential Data, 2014

2.2.4.5 Small Modular Reactors

Areas across Washington State are considering small nuclear facility options to address growing energy demand and carbon-free fuel targets. Though as of June 2026, there are no permitted SMR facilities in Kittitas County. Nuclear technology is rapidly developing. The first nuclear fission SMR in Washington is proposed in nearby Benton County on the DOE's Hanford Site.[56] The first nuclear fusion facility is in progress in Chelan County after receiving Hearing Examiner approval in 2025.[57] In summer of 2026, this fusion facility received its Radioactive Materials License (RML) and a Radioactive Air Emissions License (RAEL) from the Washington DOH.[58]

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[56] US Nuclear Regulatory Commission, Cascade Advanced Energy Facility, 2026, https://www.nrc.gov/facilities-safety/new-reactors/advanced-reactors/who-were-working-with/pre-application-activities/energy-northwest-new-nuclear-llc

[57] Rodriguez, Oscar. "Chelan County Hearing Examiner approves Helion fusion power plant permit." The Wenatchee World, October 15, 2025, https://web.archive.org/web/20251018090701/https:/www.wenatcheeworld.com/news/local/chelan-county-hearing-examiner-approves-helion-fusion-power-plant-permit/article_0841b295-b9a2-438a-9756-6bbf86173d18.html/?utm_medium=referral&utm_source=shareArticleButton&utm_campaign=shareArticleButton

[58] Smith, Brooklyn. "World's first nuclear fusion power plant receives go-ahead in Washington state." MSN.com, June 24, 2026. https://www.msn.com/en-us/money/markets/world-s-first-nuclear-fusion-power-plant-receives-go-ahead-in-washington-state/ar-AA26u52t?ocid=hpmsn&cvid=6a3d0fb15df04084a028d70db2fc37b8&ei=16

3 Siting Analysis

3.1 Overview

The following section describes factors that may influence facility siting and identify where site conditions could present constraints for energy development. Siting refers to the site selection process of identifying and evaluating locations for a future facility based on physical, environmental, infrastructure, land use, and operational conditions.

Prior to project applications, applicants review local conditions and conduct early project feasibilities to narrow down potential locations. Early siting and feasibility reviews potential site constraints such as access to transmission or other necessary infrastructure, land area and physical conditions, surrounding land uses and environmental resources, and local code and mitigation measures. Local jurisdictions proactively address siting through local development code and critical areas regulations, including zoning, setbacks, and critical areas buffers and mitigation measures. Once a specific project is proposed, siting considerations may be further addressed through project-level review and conditions of approval.

The purpose of this section is to review and summarize statewide studies relevant to siting the clean energy facilities evaluated in this EIS and identify considerations that may influence the location of future energy development to Kittitas County.

3.2 Methodology for Analysis

Statewide studies provide context for the siting analysis by identifying methodologies, criteria, and factors previously used to evaluate energy developments and regional suitability in Washington. Collectively, they provide a reference for understanding the types of site characteristics that may result in greater or fewer project-level constraints.

These studies were prepared by state agencies and partner organizations, including the Washington State Department of Fish & Wildlife (WDFW), the Washington State Department of Ecology (ECY) and the Washington State Energy Facility Site Evaluation Council (EFSEC), and are listed below:

- SMR Report (2016), EFSEC
- Solar PEIS (2025), ECY
- Wind PEIS (2025), ECY
- Geothermal potential and favorability layers (2014) and methodology, Washington State Department of Natural Resources (DNR)
- Solar and Wind WDFW Guidance (2025), WDFW
- Least Conflict Solar Siting Gateway (2023), Conservation Biology Institute

To consistently discuss the findings and takeaways from these resources, each of the energy subsections below summarize factors relevant to siting from less constrained to more constrained.

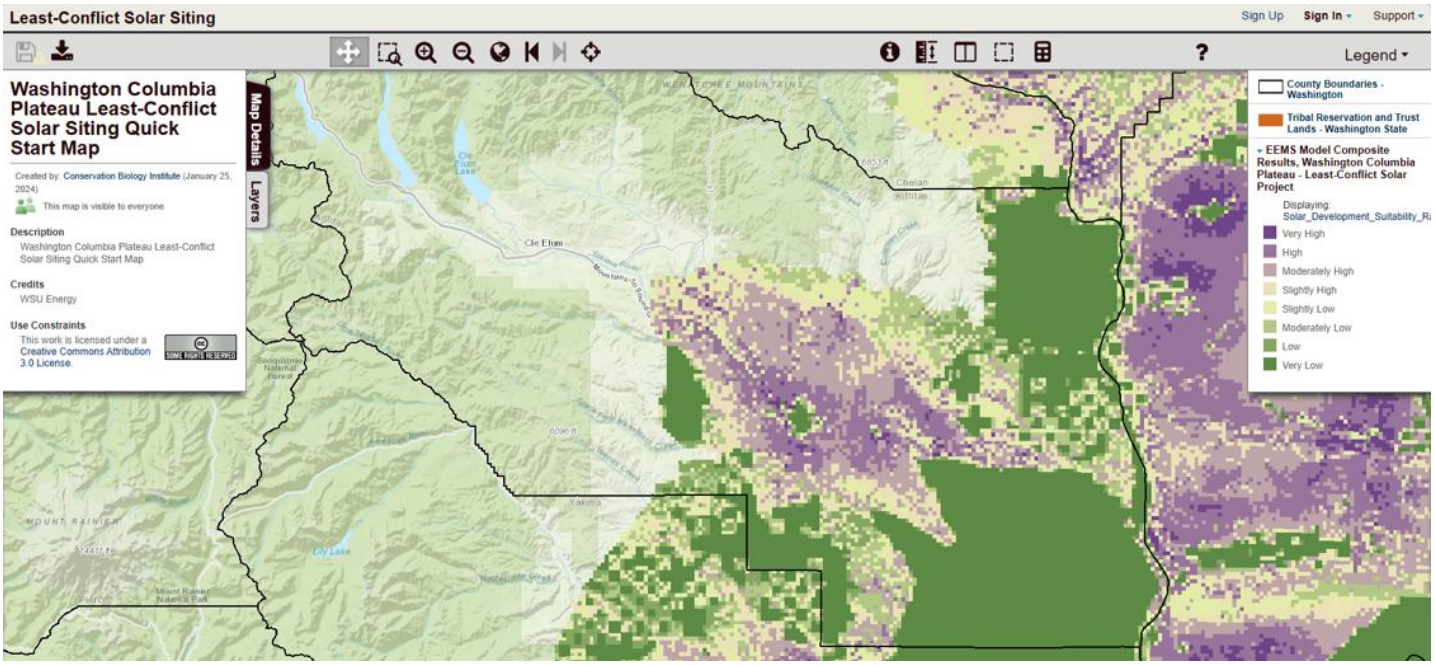
Certain site constraints are common across multiple clean energy facility types. Areas containing critical areas, sensitive ecosystems, hazards, or other environmental factors may present greater challenges or call for additional mitigation measures. Conversely, proximity to existing transmission or power-delivery infrastructure, suitable access, stable soils, and other characteristics may reduce some development constraints. These factors do not independently determine whether a specific project or project site is more or less suitable for the clean energy uses reviewed in the CESP EIS. Project-level review would still be required.

3.3 Large Scale Solar Suitability

Large-scale solar facilities are PV solar systems that use solar panels to absorb solar energy on a large scale. Electricity generated from large-scale solar facilities is generally delivered to the broader electric grid rather than being used primarily onsite. Large-scale solar facilities are typically comprised of solar arrays, racking or mounting systems, solar piles, access roads, fencing, stormwater management controls, and operations and maintenance areas.

The Least-Conflict Solar Siting resource was cited multiple times in the CESP scoping comments as a resource for clean energy siting within Kittitas County. The resource was created as part of a voluntary, non-regulatory stakeholder process for identifying least-conflict lands in eastern Washington's Columbia Plateau for utility scale solar development. The goal was to map general locations where stakeholders identified as being areas where solar development could occur while ensuring habitat, farmlands, ranchlands, and Tribal rights and cultural resources remain protected.[59] Below is the map for solar development suitability in Kittitas County based on the least conflict solar siting process. Suitability in the map is based on factors including terrain and soil conditions, proximity to existing road and transmission infrastructure, and potential natural hazards. Higher suitability ratings (purple) indicate areas that generally possess characteristics deemed favorable for solar energy development, while lower suitability ratings (green) indicate areas that are unfavorable for solar development.[60]

Figure 33: Least-Conflict Solar Siting Suitability Map



Source: Conservation Biology Institute, Least Conflict Solar Siting Solar Suitability Map, 2023, https://waenergy.databasin.org/maps/82b0ff23eba64287bf2e443fb6bc3b77/active/

[59] Conservation Biology Institute, Least Conflict Solar Siting Conservation Value Map, 2023, https://waenergy.databasin.org/

[60] Conservation Biology Institute, Least Conflict Solar Siting Conservation Value Map, 2023, https://waenergy.databasin.org/

In addition to the Least-Conflict Solar Siting resource, two major sources for Large-Scale Solar siting suitability analysis were reviewed:

- Washington Department of Fish and Wildlife. 2025. Guidelines for Utility-Scale Solar and Onshore Wind Energy Development in Washington State.
- Washington State Department of Ecology. 2025. Programmatic Environmental Impact Statement on Utility-Scale Solar Energy Facilities in Washington State.

These resources helped create the following site suitability criteria in **Table 6** below.

Table 6: Large Scale Solar Siting Constraints

Large-Scale Solar	Less Constrained	Constrained	More Constrained	Resources
Terrain	• Flat, below 15% existing grade • Stable soil types, low susceptibility to erosion and liquefaction	• Sites which require mass grading (variable slopes across the entire site) • Slopes over 20% (slope instability risks) on or near site	• Landslide hazard area on or near site • Soils with high liquefaction potential on site • Majority of site is steep slope areas (jurisdiction specific, but typically over 30% grades)	• Least Conflict Solar Siting Conservation Value Map • DNR Geologic Provinces • EIM Groundwater Search Map • Web Soil Survey (for specific soil susceptibilities) • WA LiDAR Portal (for site specific contours and slopes)
Habitat	• No indicators of priority habitat species or habitat connectivity concerns	• Nearby priority habitat species or habitat connectivity area (off site, but buffers/protection areas extend onsite)	• Federally or state listed endangered, threatened, or candidate for endangered/threatened listed species	• Least Conflict Solar Siting Conservation Value Map • Priority Habitat Species • Shrub-steppe Restoration • Habitat Connectivity • Critical Habitat for Threatened & Endangered Species
Water	• No surface water present or near site • Existing water utility infrastructure adjacent to or near site • Outside floodplain	• Surface water nearby site (buffers may extend onto the site) • Water utility infrastructure nearby or drilling a well is feasible on site • Near floodplain or partially in a floodplain • Within critical aquifer recharge areas	• Surface waters and their buffers • Floodplains • Groundwater contaminated area • No water rights or available water connection source	• Local/site-specific sources when available • Water Availability Focus Sheets by WRIA • Water Availability • DOE 2016 Modeled Wetland Inventory • USFWS National Wetlands Inventory • DOE GIS Data • Principal Aquifers of the United States • National Hydrography Dataset

Large-Scale Solar	Less Constrained	Constrained	More Constrained	Resources
Infrastructure	• Existing right-of-way access to the site • Existing utility easements adjacent to site • Multiple access points • Near emergency services (within a fire station service area) • Areas within 25 miles of existing transmission lines that can handle the energy generation of large-scale facilities	• Single access point/limited property access to right-of-way • Utility easements directly over site • Existing underground utilities under the site	None	• County or state easements, right-of-way, and roads GIS data • Fire Services Resource • Mobilization Plan • WA Fire Services
Land Use	• Comprehensive plan future land use designations, zoning, and SMP designations (if applicable) allow for this use • Allowed use under the applicable state/federal agency management plan and guiding regulations if proposed on state or federal lands	• Conditional, special, or partially restricted use under authorizing code • Partially within or near DOD facilities or training areas • In or near FAA restricted areas	• Areas in a zone where use is not allowed under authorizing codes • Military installation property • Areas inside unincorporated UGAs • State and National parks	• Local authorizing codes in effect at the time of siting application • County UGA maps • DNR State Trust Lands • DNR Clean Energy Parcel Screening Tool • Least Conflict Solar Siting Conservation Value Map • Compatible Energy Siting Assessment • WSDOT Airports

Note: Light Detection and Ranging (LiDAR); Shoreline Master Program (SMP); Water Resource Inventory Area (WRIA)

3.4 Large Scale Wind Suitability

Large-scale wind facilities generate electricity from wind using turbine generators. Wind turbines can be used to generate electricity on a small, localized scale and a larger utility scale connecting to the greater power grid. Wind facilities consist of wind turbines, meteorological towers, power collection systems, and infrastructure needs such as access roads. Facilities may include multiple wind turbines arranged on one property or across a series of adjacent properties.

Two major sources for Large-Scale Wind facility siting suitability analysis were reviewed:

- Washington Department of Fish and Wildlife. 2025. Guidelines for Utility-Scale Solar and Onshore Wind Energy Development in Washington State.
- Washington State Department of Ecology. 2025. Programmatic Environmental Impact Statement on Utility-Scale Onshore Wind Energy Facilities in Washington State.

Table 7: Large Scale Wind Siting Constraints

Large-Scale Wind	Less Constrained	Constrained	More Constrained	Resources
Terrain	• Stable soil types, low susceptibility to erosion and liquefaction • Areas with average annual wind speeds of 11 mph at 262 feet high	• Sites which require mass grading (variable slopes across the entire site) • Geologic hazards partially on site	• Landslide hazard area on or near site • Soils with high liquefaction potential on site • Other geologic hazard areas present on majority of the site (seismic hazards, landslide hazard areas, surface fault rupture hazard areas, and volcanic flow hazard)	• DNR Geologic Provinces • EIM Groundwater Search Map • Web Soil Survey (for specific soil susceptibilities) • Earthquakes and Faults • Geologic Information Portal
Habitat	• No indicators of priority habitat species or habitat connectivity concerns	• Nearby priority habitat species or habitat connectivity area (off site, but buffers/protection areas extend onsite)	• Federally or state listed endangered, threatened, or candidate for endangered/threatened listed species	• Priority Habitat Species • Shrub-steppe Restoration • Habitat Connectivity • North American Waterfowl Management Plan • Critical Habitat for Threatened & Endangered Species • Pacific Flyway Council Migratory Bird Management

Large-Scale Wind	Less Constrained	Constrained	More Constrained	Resources
Water	• No surface water present or near site • Existing water utility infrastructure adjacent to or near site • Outside floodplain	• Surface water nearby site (buffers may extend onto the site) • Water utility infrastructure nearby or drilling a well is feasible on site • Near floodplain or partially in a floodplain • Within critical aquifer recharge areas	• Surface waters and their buffers • Floodplains • Groundwater contaminated area • No water rights or available water connection source	• Local/site-specific sources when available • Water Availability Focus Sheets by WRIA • Water Availability • DOE 2016 Modeled Wetland Inventory • USFWS National Wetlands Inventory • DOE GIS Data • Principal Aquifers of the United States • National Hydrography Dataset
Infrastructure	• Existing right-of-way access to the site • Existing utility easements adjacent to site • Multiple access points • Near emergency services (within a fire station service area)	• Single access point/limited property access to right-of-way • Utility easements directly over site • Existing underground utilities under the site	None	• County or state easements, right-of-way, and roads GIS data • Fire Services Resource • Mobilization Plan • WA Fire Services

Large-Scale Wind	Less Constrained	Constrained	More Constrained	Resources
Land Use	• Comprehensive plan future land use designations, zoning, and SMP designations (if applicable) allow for this use • Allowed use under the applicable state/federal agency management plan and guiding regulations if proposed on state or federal lands	• Conditional, special, or partially restricted use under authorizing code • Partially within or near DOD facilities or training areas • In or near FAA restricted areas	• Areas in a zone where use is not allowed under authorizing codes • Military installation property • Areas inside unincorporated UGAs • State and National parks	• Local authorizing codes in effect at the time of siting application • County UGA maps • DNR State Trust Lands • DNR Clean Energy Parcel Screening Tool • Least Conflict Solar Siting Conservation Value Map • Compatible Energy Siting Assessment • WSDOT Airports

3.5 Battery Energy Storage System Suitability

BESSs are facilities that store electricity for later use, including energy generated by renewable resources or electricity drawn from the grid. BESS facilities are sometimes developed as stand-alone facilities or co-located with intermittent generation facilities such as solar or wind facilities. BESSs typically house batteries in enclosures or containers. The batteries used may be comprised of a variety of battery technologies. Lithium-ion batteries are the most common large scale storage technology. The self-contained enclosers may be located on a concrete pad or concrete pile over gravel, or the facility may be within a warehouse-type enclosure. Containers for BESSs may be around 40 feet by 8 feet by 8.5 feet; however exact dimensions can vary by manufacturer and project specifics. Additional components of BESS infrastructure commonly include power conversion equipment, transformers, inverters, switchgear, thermal management systems (such as HVAC systems), fire detection and suppression systems, control systems, fencing, access roads, stormwater controls, and supporting electrical interconnection facilities.

The Ecology PEIS for utility-scale solar and wind considered the addition of one or two BESS facilities, each with a capacity of up to 500 MW and consisting of multiple battery containers arranged in rows. The study stated that proposed 200 MW BESS facilities in Washington typically range from 10 to 20 acres. Using this range, a 500 MW BESS was assumed to occupy approximately 25 to 50 acres.[61] These estimates provide a

[61] Washington State Department of Ecology, Final Programmatic Environmental Impact Statement for Utility-Scale Solar, 2025, https://apps.ecology.wa.gov/publications/SummaryPages/2506003.html

general basis for considering the potential scale and land area of larger BESS facilities in the siting analysis; actual facility size would vary based on project-specific design and site conditions.

Puget Sound Energy (PSE) released a BESS location study in 2021 with preliminary findings and case studies for siting of BESS facilities, specifically relating to PSE's existing substation locations. "Energy Storage System Location Study, 2021". This resource has been reviewed for additional insight on site suitability for BESS.

Siting criteria for BESS facilities are similar to other clean energy facility types in regard to land use and avoidance of critical areas. Favorable site conditions for BESS facilities include areas near existing transmission lines or substations. The following table provides an analysis of favorable, constrained, and highly constrained areas for BESS.

Table 8: BESS Siting Constraints

Battery Energy Storage Systems	Less Constrained	Constrained	More Constrained	Resources
Terrain	• Flat, below 15% existing grade • Stable soil types, low susceptibility to erosion and liquefaction • Open space surrounding facilities	• Sites which require mass grading (variable slopes across the entire site) • Slopes over 15% (slope instability risks) on or near site	• Landslide hazard area on or near site • Soils with high liquefaction potential on site • Majority of site is steep slope areas (jurisdiction specific, but typically over 30% grades)	• Least Conflict Solar Siting Conservation Value Map • DNR Geologic Provinces • EIM Groundwater Search Map • Web Soil Survey (for specific soil susceptibilities) • WA LiDAR Portal (for site specific contours and slopes)
Habitat	• No indicators of priority habitat species or habitat connectivity concerns	• Nearby priority habitat species or habitat connectivity area (off site, but buffers/protection areas extend onsite)	• Federally or state listed endangered, threatened, or candidate for endangered/threatened listed species	• Least Conflict Solar Siting Conservation Value Map • Priority Habitat Species • Shrub-steppe Restoration • Habitat Connectivity • Critical Habitat for Threatened & Endangered Species

Battery Energy Storage Systems	Less Constrained	Constrained	More Constrained	Resources
Water	• No surface water present or near site • Outside floodplain	• Surface water nearby site (buffers may extend onto the site) • Near floodplain or partially in a floodplain	• Surface waters and their buffers • Floodplains • Groundwater contaminated area • No water rights or available water connection source	• Local/site-specific sources when available • Water Availability Focus Sheets by WRIA • Water Availability • DOE 2016 Modeled Wetland Inventory • USFWS National Wetlands Inventory • DOE GIS Data
Infrastructure	• Existing right-of-way access to the site • Existing utility easements adjacent to site • Multiple access points • Near emergency services (within a fire station service area) • Near existing suitable substation (115 kV) or other interconnection point	• Single access point/limited property access to right-of-way • Utility easements directly over site • Existing underground utilities under the site	None	• County or state easements, right-of-way, and roads GIS data • Fire Services Resource • Mobilization Plan • WA Fire Services

Battery Energy Storage Systems	Less Constrained	Constrained	More Constrained	Resources
Land Use	• Comprehensive plan future land use designations, zoning, and SMP designations (if applicable) allow for this use • Allowed use under the applicable state/federal agency management plan and guiding regulations if proposed on state or federal lands	• Conditional, special, or partially restricted use under authorizing code • Partially within or near DOD facilities or training areas • Near highly residential areas, schools, and hospitals • Requires negotiation with multiple property owners	• Areas in a zone where use is not allowed under authorizing codes • Military installation property • State and National parks • Would require eminent domain to make siting feasible • Would interrupt existing neighborhood/ development pattern	• Local authorizing codes in effect at the time of siting application • County UGA maps • DNR State Trust Lands • DNR Clean Energy Parcel Screening Tool • Least Conflict Solar Siting Conservation Value Map • Compatible Energy Siting Assessment • WSDOT Airports

3.6 Geothermal Suitability

Geothermal energy facilities use heat from beneath the earth's surface to generate electricity. These systems require heat, fluid, and permeable subsurface pathways that allow fluid to move through hot rock. Conventional and emerging geothermal technologies use geothermal heat to produce steam or hot liquid that can drive turbines and generate electricity. Typical geothermal facility infrastructure includes production and injection wells, well pads, underground pipelines, power generation equipment, cooling systems, substations, access roads, monitoring systems, and ancillary operations areas.

Geothermal facility siting considerations largely include geologic conditions, underground and surface water resources, and proximity to transmission and distribution infrastructure.

The DNR published the Geothermal Potential Model in 2014. The Geothermal Potential Model and the Geothermal Favorability report provides a ranking of potential for the presence of a moderate-to-high temperature geothermal resource using a combination of the heat potential and permeability potential models.

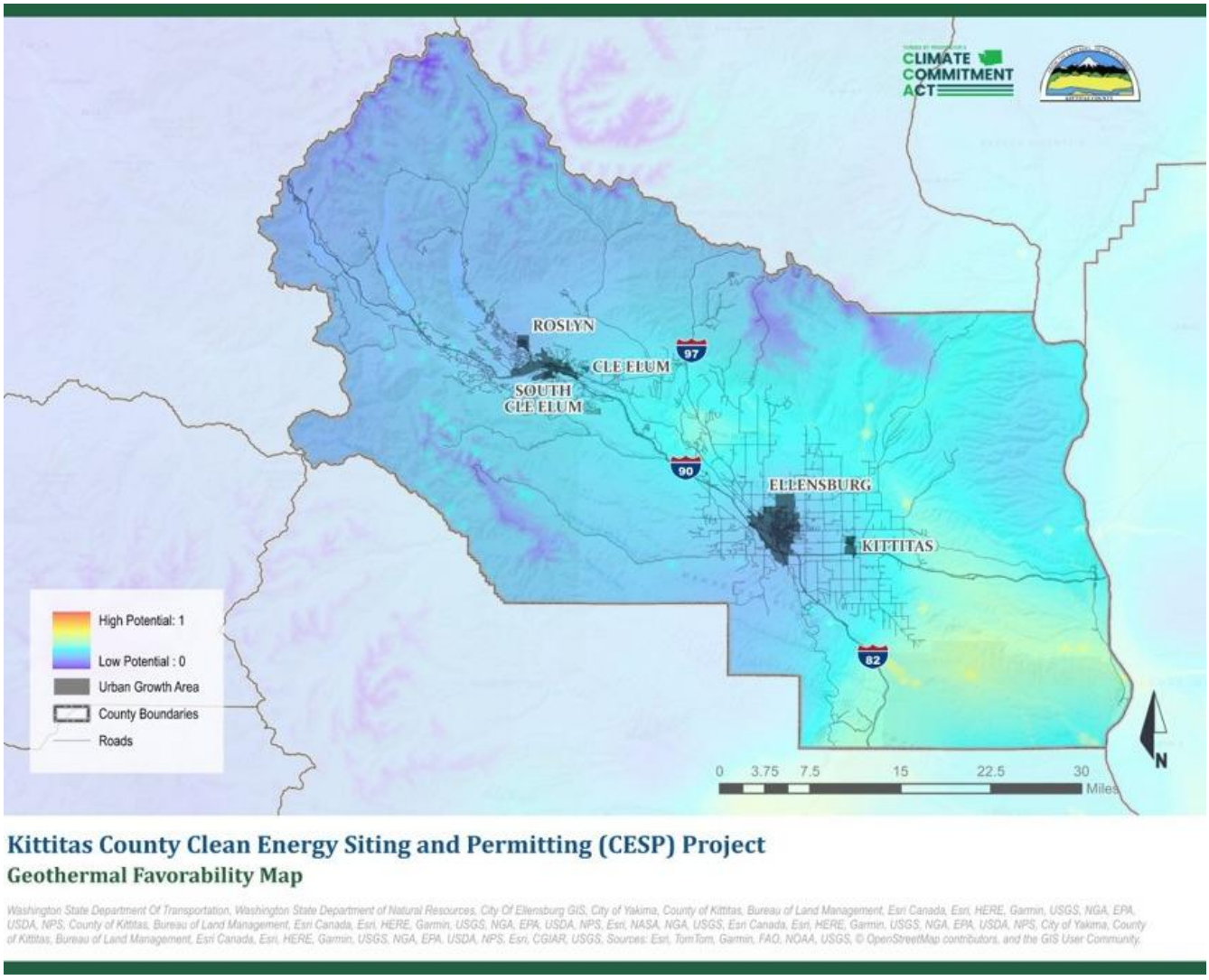
The primary criteria used in the development of the model were:

- Minor vent proximity
- Stratovolcano proximity
- Caldera proximity

- Earthquake hypocenters
- Mapped and remote sensed faults
- Temperature gradient
- Intrusive rock proximity
- Volcanic vent proximity
- Thermal/mineral spring proximity

The criteria used in the model helped develop a statewide geothermal potential map. The map provided in the **Geothermal Siting Considerations** section provides a closer look for geothermal potential specifically for Kittitas County. In addition to the geothermal potential map, DNR also produced a geothermal favorability analysis for geothermal exploration and development of moderate-to-high temperature geothermal resources. The favorability is based on weighted overlay layers including geothermal potential, proximity to transmission lines, and elevation restrictions. Based on the DNR's findings, the lower portion of Kittitas County has the most favorable locations as shown in **Figure 34** below.

Figure 34: Geothermal Favorability Map



Source: Kimley-Horn, 2026 using Geothermal Favorability GIS layer from Washington State Department of Natural Resources Geologic Information Portal, https://geologyportal.dnr.wa.gov/#wigm?-14906006,-12567644,5530577,6550553?

The research and modeling published by DNR and the additional resources shown below, helped create the following suitability table for geothermal energy facilities.

Table 9: Geothermal Energy Facility Siting Constraints

Geothermal	Less Constrained	Constrained	More Constrained	Resources
Terrain	• Stable soil types, low susceptibility to erosion and liquefaction • Presence of volcanic vents • Thermal/ mineral spring proximity • Intrusive rock proximity	• Geologic hazards partially on site	• Landslide hazard area on or near site • Soils with high liquefaction potential on site • Seismic hazards	• DNR Geologic Provinces • EIM Groundwater Search Map • Web Soil Survey (for specific soil susceptibilities) • Earthquakes and Faults • Geologic Information Portal • DNR Mine Locations
Habitat	• No indicators of priority habitat species or habitat connectivity concerns • Areas that contain land that has been previously disturbed and have low habitat value	• Nearby priority habitat species or habitat connectivity area (off site, but buffers/protection areas extend onsite)	• Federally or state listed endangered, threatened, or candidate for endangered/threatened listed species	• Priority Habitat Species • Shrub-steppe Restoration • Habitat Connectivity • Critical Habitat for Threatened & Endangered Species

Geothermal	Less Constrained	Constrained	More Constrained	Resources
Water	• No surface water present or near site • Existing water utility infrastructure adjacent to or near site • Outside floodplain	• Surface water nearby site (buffers may extend onto the site) • Near floodplain or partially in a floodplain • Existing water rights or new water rights available for purchase at location	• Surface waters and their buffers • 100-year floodplains	• Local/site-specific sources when available • Water Availability Focus Sheets by WRIA • Water Availability • DOE 2016 Modeled Wetland Inventory • USFWS National Wetlands Inventory • DOE GIS Data • Principal Aquifers of the United States • National Hydrography Dataset
Infrastructure	• Existing right-of-way access to the site • Proximity to existing transmission lines	• No criteria given.	None	• County or state easements, right-of-way, and roads GIS data • Fire Services Resource • Mobilization Plan • WA Fire Services
Land Use	• Comprehensive plan future land use designations, zoning, and SMP designations (if applicable) allow for this use • Allowed use under the applicable state/federal agency management plan and guiding regulations if proposed on state or federal lands	• Conditional, special, or partially restricted use under authorizing code • Partially within or near DOD facilities or training areas • In or near FAA restricted areas	• Areas in a zone where use is not allowed under authorizing codes • Military installation property (unless SMR is associated with a military entity) • Areas inside unincorporated UGAs • State and National parks	• Local authorizing codes in effect at the time of siting application • County UGA maps • DNR State Trust Lands • DNR Clean Energy Parcel Screening Tool • Least Conflict Solar Siting Conservation Value Map • Compatible Energy Siting Assessment • WSDOT Airports

3.7 Small Modular Reactor Suitability

For purposes of this EIS, SMRs refer to advanced nuclear reactors that are smaller than conventional nuclear power facilities, modular in design, meaning components may be factory assembled and transported for installation, and utilize nuclear reactions for fuel generation. Much like the other clean energy facilities discussed in this PEIS, site requirements are largely based on facility operation requirements and resource needs; however, the added radioactive material and waste component provides additional considerations.

As discussed in **Why Fission and Fusion?**, both nuclear fission and nuclear fusion SMR facilities are captured within this analysis; however, it is understood that the County only has permitting jurisdiction for nuclear fusion SMR facilities. Nuclear fusion may have a less intensive impact portfolio, as stated in the EFSEC Fusion Report to the Washington State Legislature[62], but because technology and related permitting is rapidly evolving, its siting, permitting, and environmental implications remain less established. As such, evaluating fusion alongside fission allows the County to take a precautionary approach to future SMRs that may be proposed in Kittitas County, including facilities reviewed through the EFSEC process or local government pathways depending on the nuclear reaction type.

In 2016, EFSEC commissioned a statewide report by Golder Associates evaluating the potential for developing nuclear power in Washington State, focusing on SMR technology. The report examined technical, regulatory, and land use considerations associated with SMR development and included a statewide suitability analysis to identify areas with the greatest potential for future deployment. For purposes of the EFSEC SMR analysis, it was assumed the following SMR facility requirements:

> *Facility site requirements include land for the reactor core and all balance of plant infrastructure, setbacks, buffer/site safety areas, and access. Per mPower, the land requirement for a 180 MWe facility is approximately 40 acres. As a conservative estimate for siting considerations, the mPower estimate is scaled up linearly for a 600 MWe facility resulting in a model SMR land requirement equal to approximately 130 acres. This is a conservative estimate as much of the facilities support structures and facilities would not change with added reactor modules.*[63]

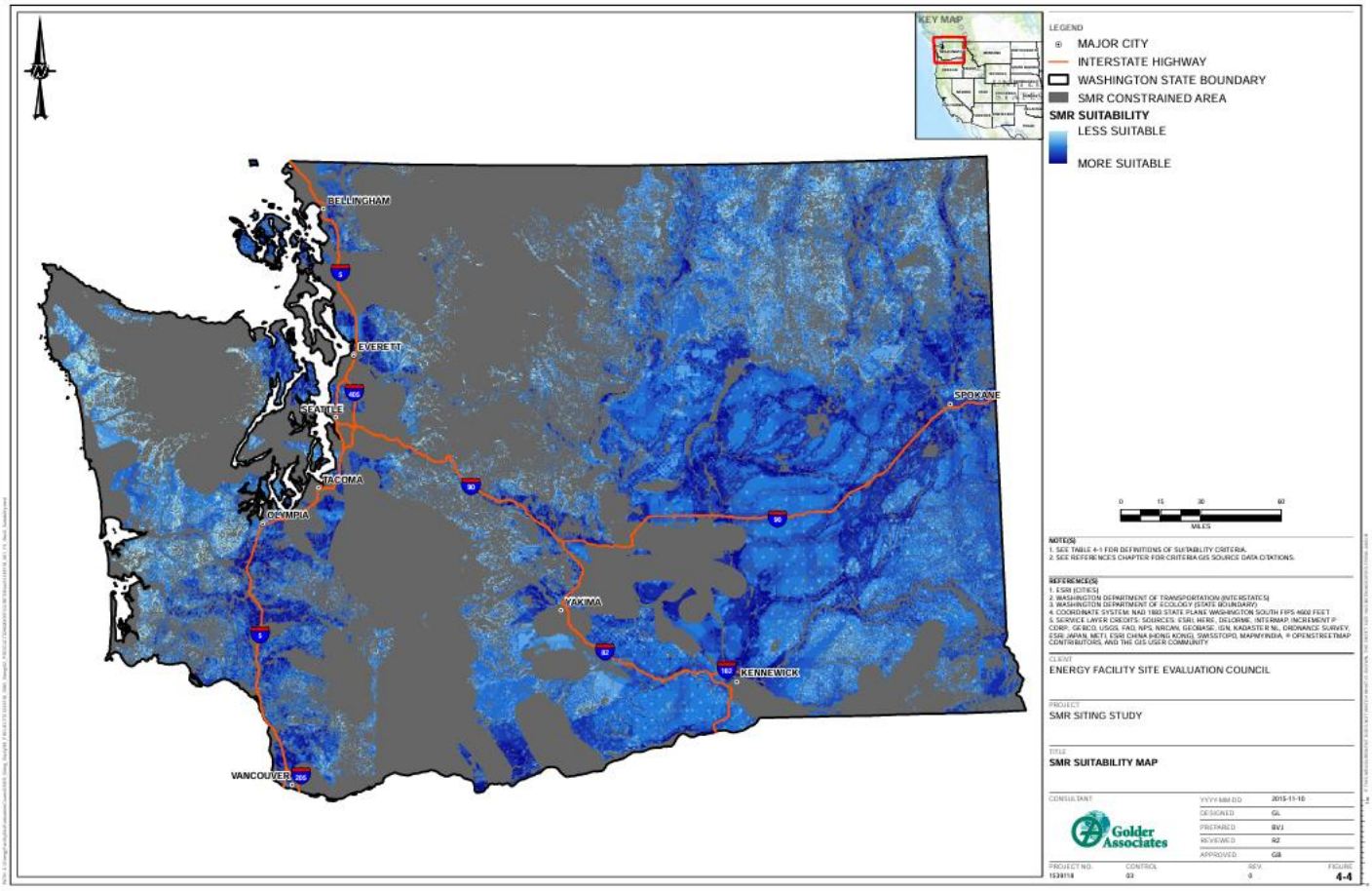
As part of the EFSEC SMR Report, a statewide suitability analysis was conducted to identify areas with the greatest potential for SMR development. Section 4.1 of the report describes the methodology, criteria, and results of the analysis. Suitability was evaluated using GIS-based criteria that identified constrained, avoidance, and attraction areas, which were then used to assign relative suitability scores across Washington State (**The results** of the analysis indicate that the areas of highest relative suitability within Kittitas County are generally concentrated near the I-90 corridor. While the EFSEC SMR Report provides a starting point for evaluating potential SMR siting considerations within the county, the analysis was completed in 2016 and did not consider the advancement of nuclear fusion. As a result, some underlying datasets, assumptions, regulatory conditions, and local circumstances may have changed since the analysis was prepared and should be considered when interpreting the results.

[62] 20241114_LegislativeReport_FusionTechnology.pdf
[63] EFSEC SMR Report

Figure 35).

The results of the analysis indicate that the areas of highest relative suitability within Kittitas County are generally concentrated near the I-90 corridor. While the EFSEC SMR Report provides a starting point for evaluating potential SMR siting considerations within the county, the analysis was completed in 2016 and did not consider the advancement of nuclear fusion. As a result, some underlying datasets, assumptions, regulatory conditions, and local circumstances may have changed since the analysis was prepared and should be considered when interpreting the results.

Figure 35: Washington State Small Modular Reactor Suitability



Source: EFSEC, "Small Modular Reactors: An Analysis of Factors Related to Siting and Licensing in Washington State" SMR Suitability Map, 2016

The research published by EFSEC and the additional resources shown below helped create the following suitability table for small modular reactor facilities. The table below is intended to capture both fission and fusion facilities.

Table 10: SMR Siting Constraints

Small Modular Reactors	Less Constrained	Constrained	More Constrained	Resources
Terrain	• Stable soil types, low susceptibility to erosion and liquefaction • Areas that are flat or have shallow slopes (less than 15%) • Areas with little to no ground shaking potential (under 60% ground acceleration)	• Variable slopes across the entire site (15-30%) • Geologic hazards partially on site • Inactive or abandoned mines (on site or within 500 feet of site) • Areas with ground shaking potential (over 60% ground acceleration)	• Landslide hazard area on or near site • Steep slopes present on site (greater than 30%) • Soils with high liquefaction potential on site • Seismic hazards • Surface fault and folds (within 5 miles) • Volcanic flow hazard	• DNR Geologic Provinces • EIM Groundwater Search Map • Web Soil Survey (for specific soil susceptibilities) • Earthquakes and Faults • Geologic Information Portal • DNR Mine Locations • DNR Percent Ground Acceleration tool
Habitat	• No indicators of priority habitat species or habitat connectivity concerns • Areas that contain land that has been previously disturbed, have low habitat value, • Lack the presence or potential of listed species of flora and fauna	• Nearby priority habitat species or habitat connectivity area (off site, but buffers/protection areas extend onsite)	• Federally or state listed endangered, threatened, or candidate for endangered/ threatened listed species	• Priority Habitat Species • Shrub-steppe Restoration • Habitat Connectivity • North American Waterfowl Management Plan • Critical Habitat for Threatened & Endangered Species • Pacific Flyway Council Migratory Bird Management

Small Modular Reactors	Less Constrained	Constrained	More Constrained	Resources
Water	• No surface water present or near site • Existing water utility infrastructure adjacent to or near site • Outside floodplain	• Surface water nearby site (buffers may extend onto the site) • Near floodplain or partially in a floodplain • Existing water rights or new water rights available for purchase at location	• Surface waters and their buffers • 100-year floodplains	• Local/site-specific sources when available • Water Availability Focus Sheets by WRIA • Water Availability • DOE 2016 Modeled Wetland Inventory • USFWS National Wetlands Inventory • DOE GIS Data • Principal Aquifers of the United States • National Hydrography Dataset
Infrastructure	• Existing right-of-way access to the site • Proximity (within 2 miles) to existing transmission lines greater than 69 kV • Near nuclear waste disposal services • Within 2 miles of a thermal power plant, arterial highway, or active railway	• Further than 2 miles from existing transmission lines greater than 69 kV	None	• County or state easements, right-of-way, and roads GIS data • Fire Services Resource • Mobilization Plan • WA Fire Services

Small Modular Reactors	Less Constrained	Constrained	More Constrained	Resources
Land Use	• Comprehensive plan future land use designations, zoning, and SMP designations (if applicable) allow for this use • Allowed use under the applicable state/federal agency management plan and guiding regulations if proposed on state or federal lands	• Conditional, special, or partially restricted use under authorizing code • Partially within or near DOD facilities or training areas • In or near FAA restricted areas	• Areas in a zone where use is not allowed under authorizing codes • Military installation property (unless SMR is associated with a military entity) • Areas inside unincorporated UGAs • State and National parks • Near schools and landfills	• Local authorizing codes in effect at the time of siting application • County UGA maps • DNR State Trust Lands • DNR Clean Energy Parcel Screening Tool • Least Conflict Solar Siting Conservation Value Map • Compatible Energy Siting Assessment • WSDOT Airports

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