Transmission Corridor Work Group

Meeting #1

September 22, 2021

Public Participation

- The public is invited to join this Zoom meeting at 340p today for public comment.
- If a member of the public is on the Zoom right now, we ask that you log off now and listen/watch the meeting via a livestream. www.rossstrategic.com/livestream
- If you wish to provide comment, please rejoin the Zoom meeting to provide public comment at 340p.

Welcome and Opening Remarks

Kathleen Drew, UTC

Anna Lising, WA Governor's Office

A few quick reminders....

Please keep yourself muted while others are speaking.

Raise your virtual hand to contribute to the conversation.

- **Alt+Y** to raise and lower your hand 

Allow everyone the chance to speak and listen actively to understand others' views.

If you need technical assistance, please send a Zoom chat to **Susan Hayman.**

Agenda Review

Today's agenda & plan for the day

Time	Topic
9:00 AM	Opening (remarks, agenda review, group member intros)
10:00 AM	Charter (review & confirm)
11:45 AM	**Lunch break (90 mins)**
1:15 PM	Level-setting (WA Energy Strategy, Transmission overview, Siting process, member perspectives)
3:00 PM	**Break (10 mins)**
3:10 PM	Initial Informational Assessment
3:50 PM	Public Comment Opportunity
4:15 PM	Looking Forward and Wrap Up
4:30 PM	Adjourn

Work Group Member Introductions (<2 mins each)

- Name
- What is your organization/agency's interest in transmission siting? (If two members present, only necessary to answer once.)
- Why is the work of the TCWG important to you?

Charter Review

Lunch Break

Please return at 1:15 PM

Level-Setting:

Presentations by

- Glenn Blackmon (WA Dept of Commerce)
- Anders Johnson (BPA)
- Joseph Wood (EFSEC)

Washington State Energy Strategy and Clean Electricity Standard

Transmission Corridors Work Group

Glenn Blackmon, PhD

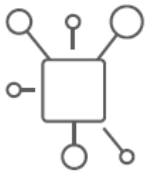
MANAGER, ENERGY POLICY OFFICE

SEPTEMBER 22, 2021

Washington State Department of Commerce

We strengthen communities

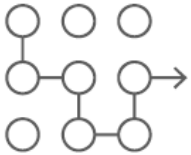
HOUSING HOMELESSNESS



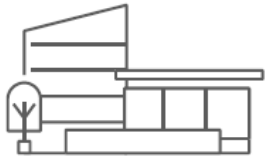
INFRASTRUCTURE

BUSINESS ASSISTANCE

ENERGY



PLANNING



COMMUNITY FACILITIES

CRIME VICTIMS & PUBLIC SAFETY

COMMUNITY SERVICES

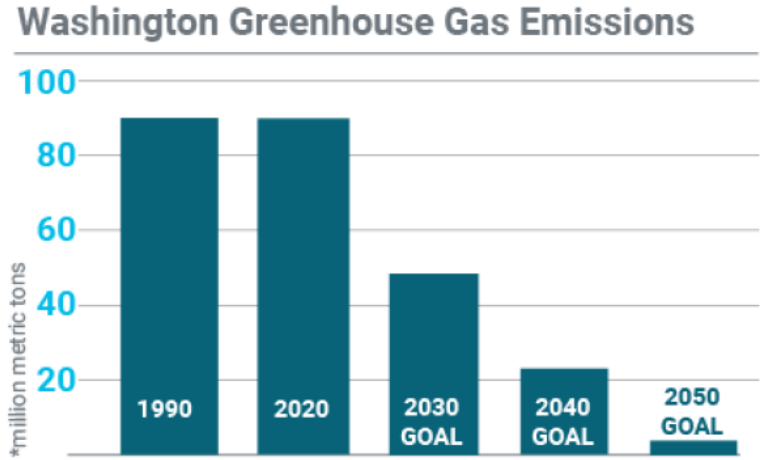
Clean Energy Transformation Action (CETA)

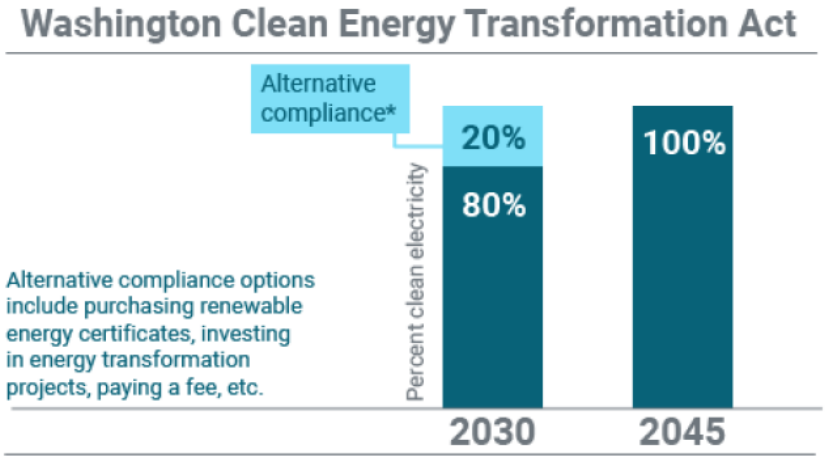
- Clean
- Affordable
- Reliable
- Equitable

Transition to 100% clean electricity

- 2025: Eliminate coal from retail portfolios
- 2030: Greenhouse gas neutral standard
  - At least 80 percent of electricity used for retail service must be renewable or non-emitting
  - Alternative compliance options for up to 20 percent
- 2045: 100 percent renewable or non-emitting retail electricity supply

Clean electricity is key to climate goals





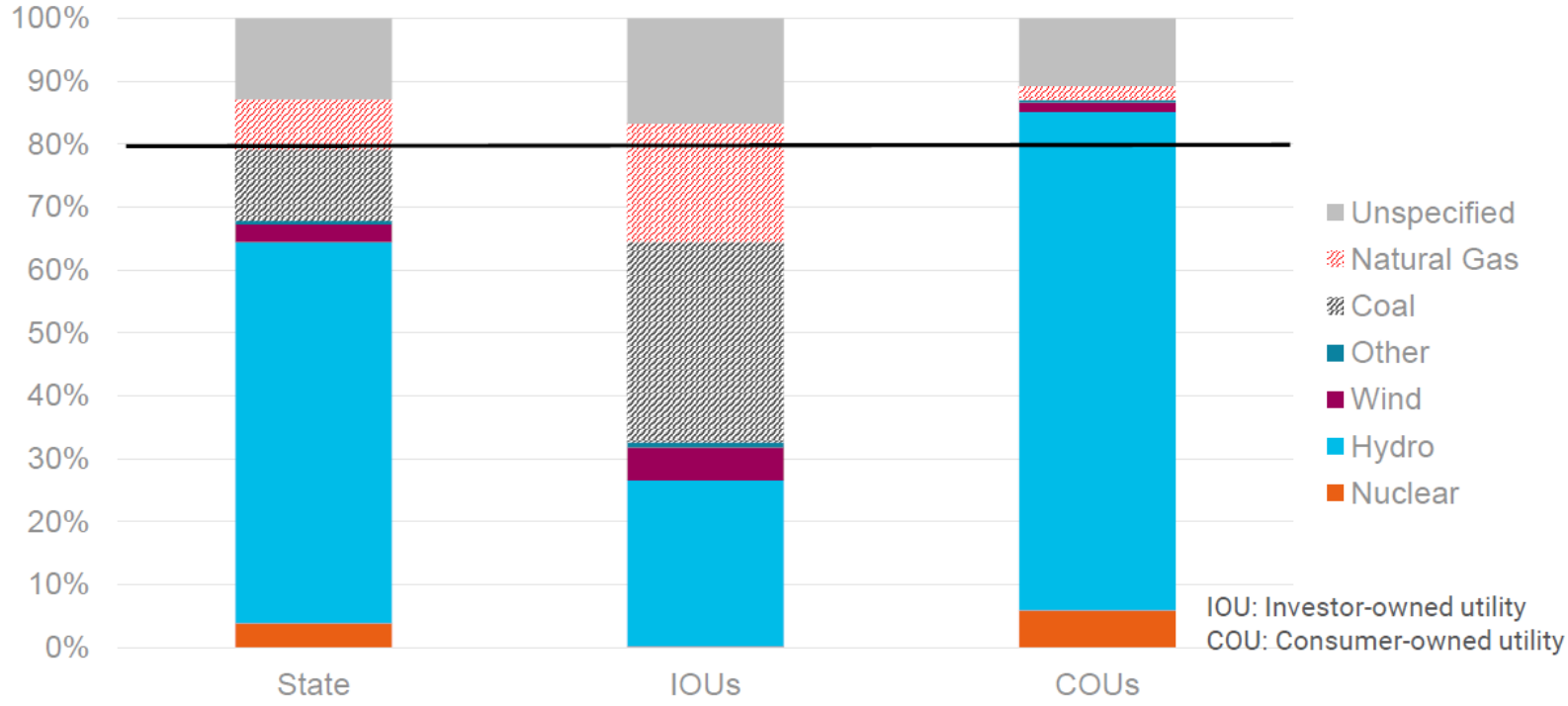
An equitable and affordable transformation

- Legislative finding that “public interest” includes equitable distribution…
- Utilities will:
  - Provide energy assistance to low-income customers
  - Assess energy burden and adequacy of energy assistance programs
  - Consider non-energy impacts in resource decisions
  - Assess impacts on vulnerable populations and highly impacted communities
- 2030 and 2045 standards incorporate equitable distribution goals
- CETA includes a cost impact safeguard

Enhanced emphasis on resource adequacy

- Each utility must adopt an explicit resource adequacy standard and apply it in resource planning
- Allows temporary suspension to protect reliability
- Regular assessment by Commerce of reliability and resource adequacy
  - Begins in 2023
  - Includes consultation with experts and stakeholders

WA utilities' existing resource mix



Questions about CETA?

2021 Washington State Energy Strategy

Transportation

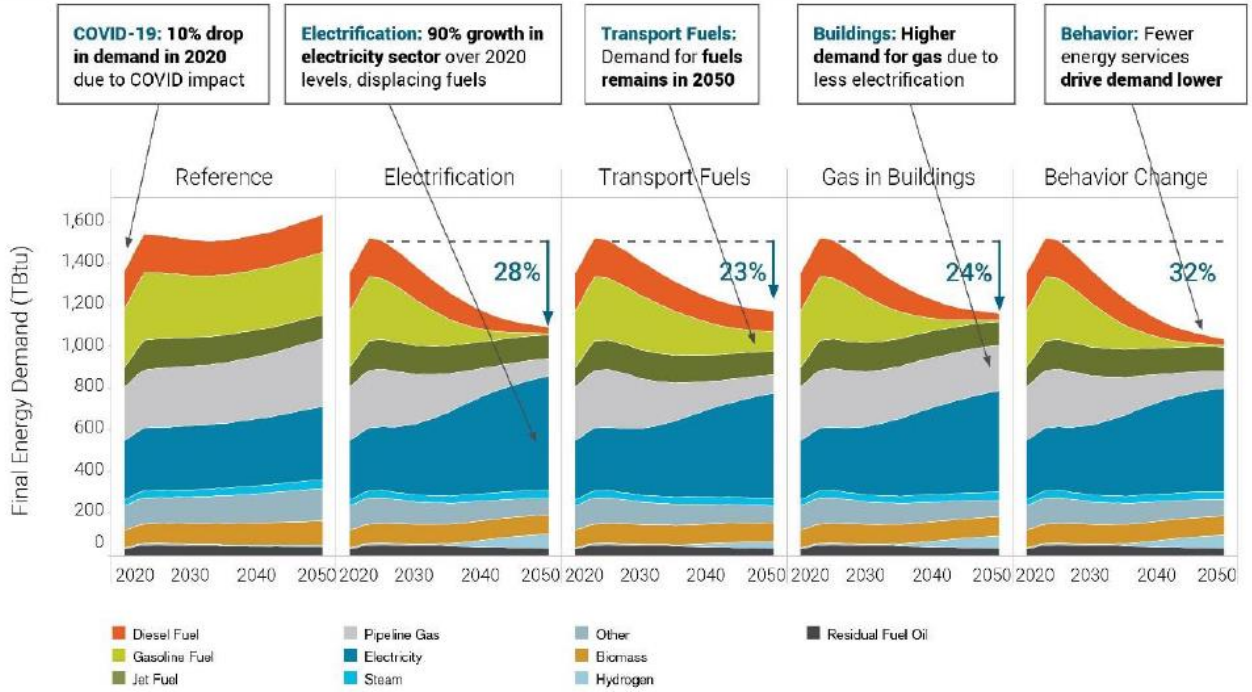
Buildings

Industry and Workforce

Electricity

https://www.commerce.wa.gov/energystrategy

Scenario-based energy modeling



Source: Appendix A – Deep Decarbonization Pathways Modeling Report, December 11, 2020 (p. 28).

Generation and Load in Washington

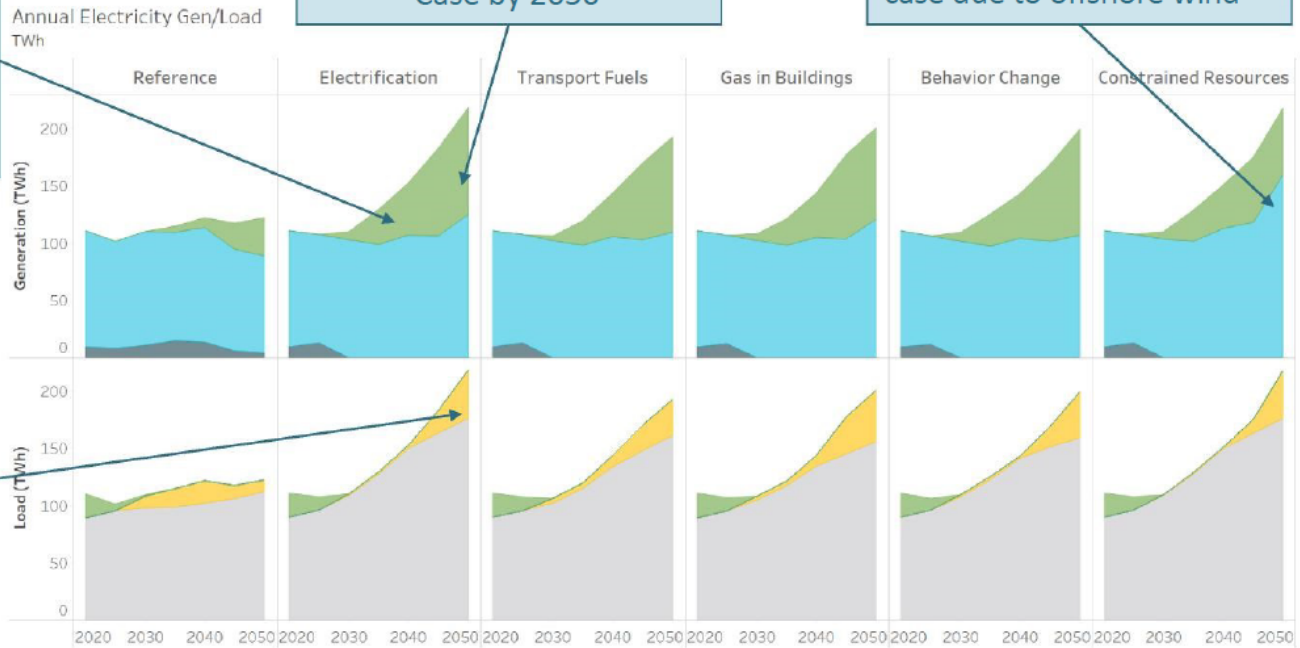
Increases in imports provide clean energy for expanding electricity sector

Growing reliance on clean imports to meet load growth, CETA, and emissions goals

Imports provide 43% of electricity in Electrification Case by 2050

Growth in clean electricity in Constrained Resources case due to offshore wind

Doubling of 2020 load by 2050, including new flexible loads (electrolysis, boilers)

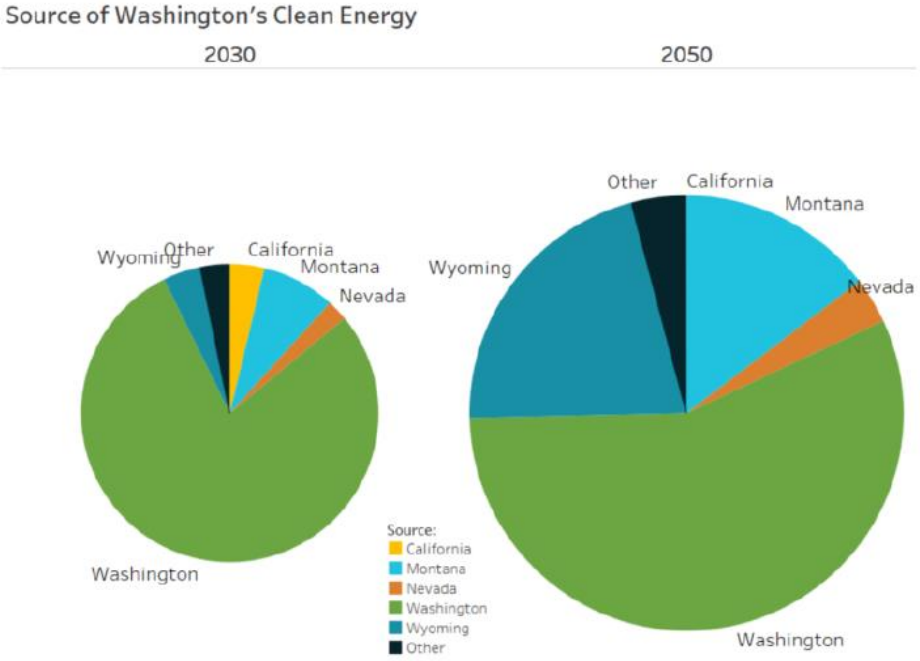


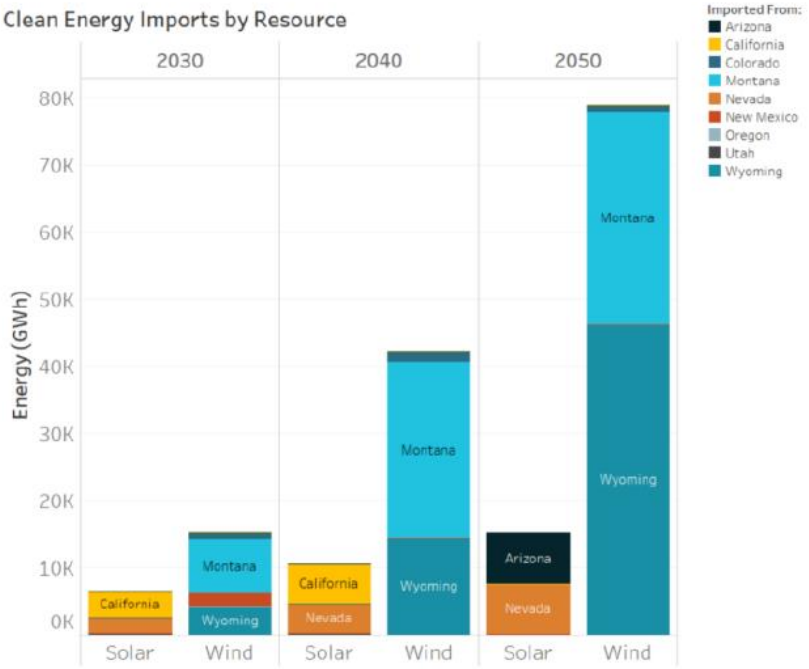
Gas exports not prohibited under CETA but model assumes emissions count towards state inventory in decarbonization cases

Where do Imports Come from?

Clean electricity imports from Electrification Case

High quality wind resources from Wyoming and Montana account for 36% of WA clean electricity in 2050

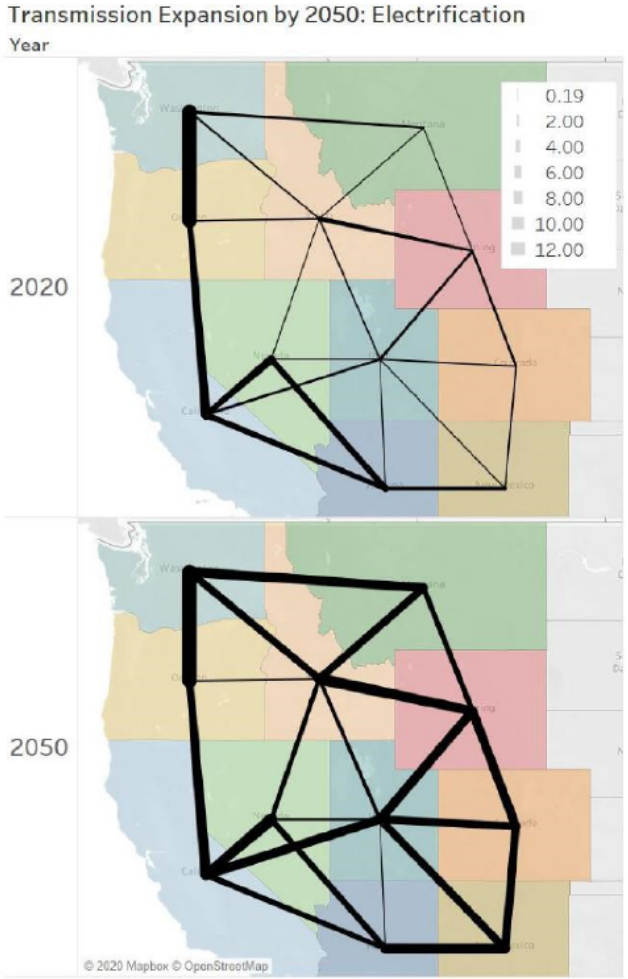




Expanding Transmission Facilitates Imports

Increased TX capacity required to import so much energy

- Expansion of up to 6 additional GWs of TX between states permitted in the model
  - MT->WA: Maximum 6 GW added by 2050
  - ID->WA: 5 GW added by 2050
- Western states become far more interconnected, taking advantage of least cost clean energy resources
- Additional solar and offshore wind built if unable to expand interties



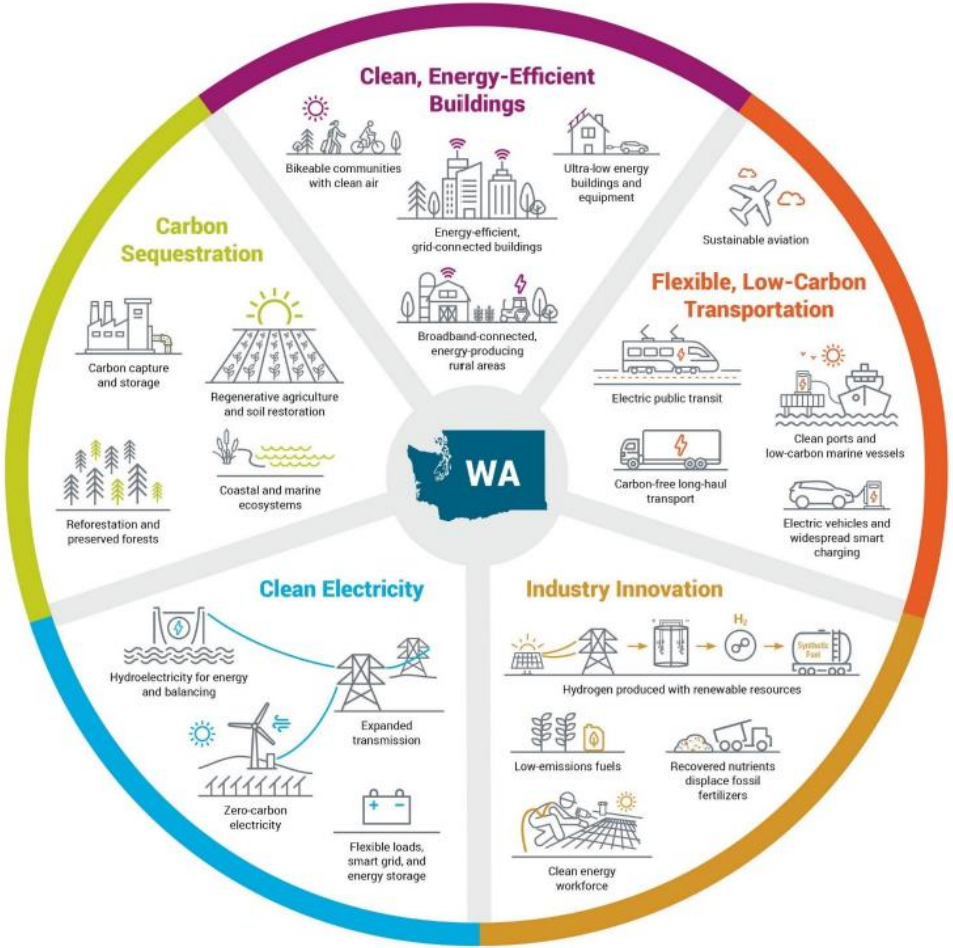
100% Clean Electricity, Smart Grid Power Transition

- Enhance reliability and resource adequacy of the electricity grid
- Accelerate new renewables and transmission expansion
- Deploy flexible solutions and smart grid technology to manage load
- Develop market mechanisms for clean power
- Ensure effective implementation of the Clean Energy Transformation Act

WASHINGTON STATE 2050

Net-Zero Vision

A blueprint for how we can meet our state's climate goals to nearly eliminate the use of climate-threatening fossil fuels by 2050, while growing a prosperous economy and maintaining affordable and reliable energy supplies.



Washington State Department of Commerce

www.commerce.wa.gov

Thank you!

Glenn Blackmon, PhD
MANAGER, ENERGY POLICY OFFICE

ceta@commerce.wa.gov

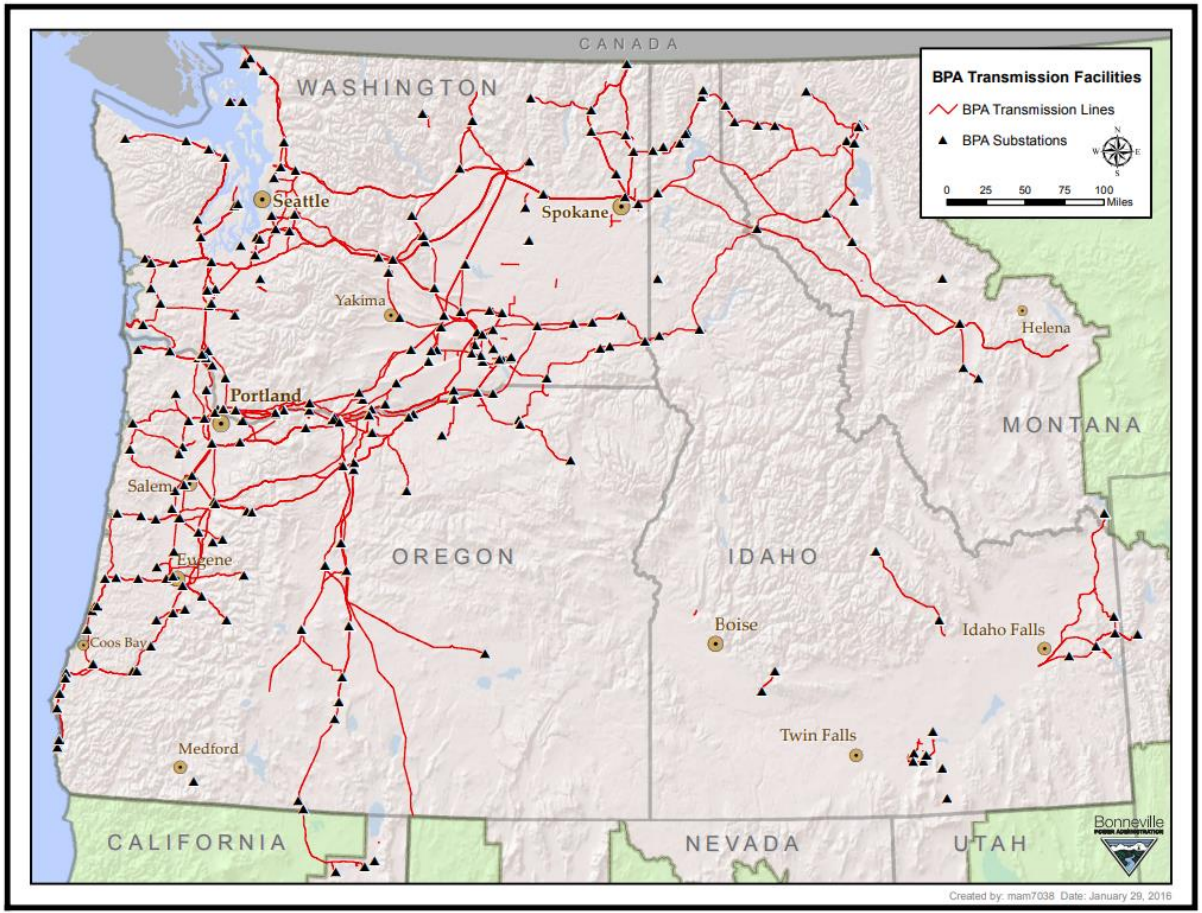
360 339-5619

Electric Transmission in Washington State

Anders Johnson
Electrical Engineer, Long Term Planning
aljohnson@bpa.gov
September 2021

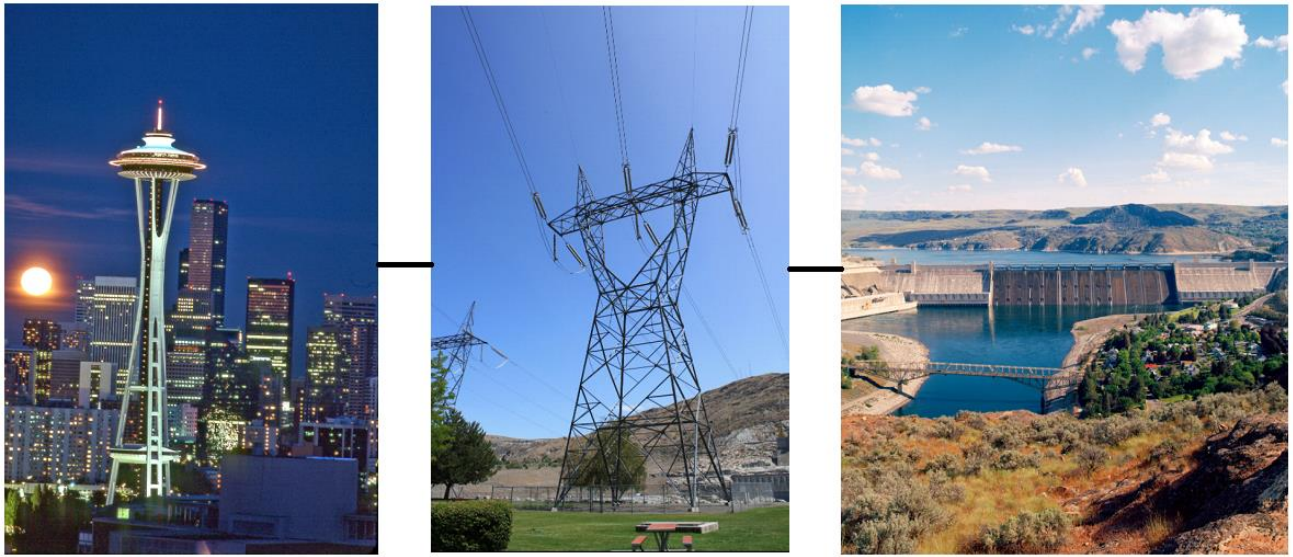
Introduction to Bonneville

- BPA markets power from 31 Federal hydro plants, the Columbia Generating Station Nuclear Plant, and several small non-Federal power plants.
- BPA owns no power generators.
- About 80% of the power BPA sells is hydroelectric.
- BPA accounts for about 28% of the electric power consumed within the PNW and over 50% of power consumed in WA.
- BPA recovers all costs from selling power and transmission services.
- BPA, with USCOE & USBR, invests $250 - $300 million per year in Fish & Wildlife programs across the Columbia River basin



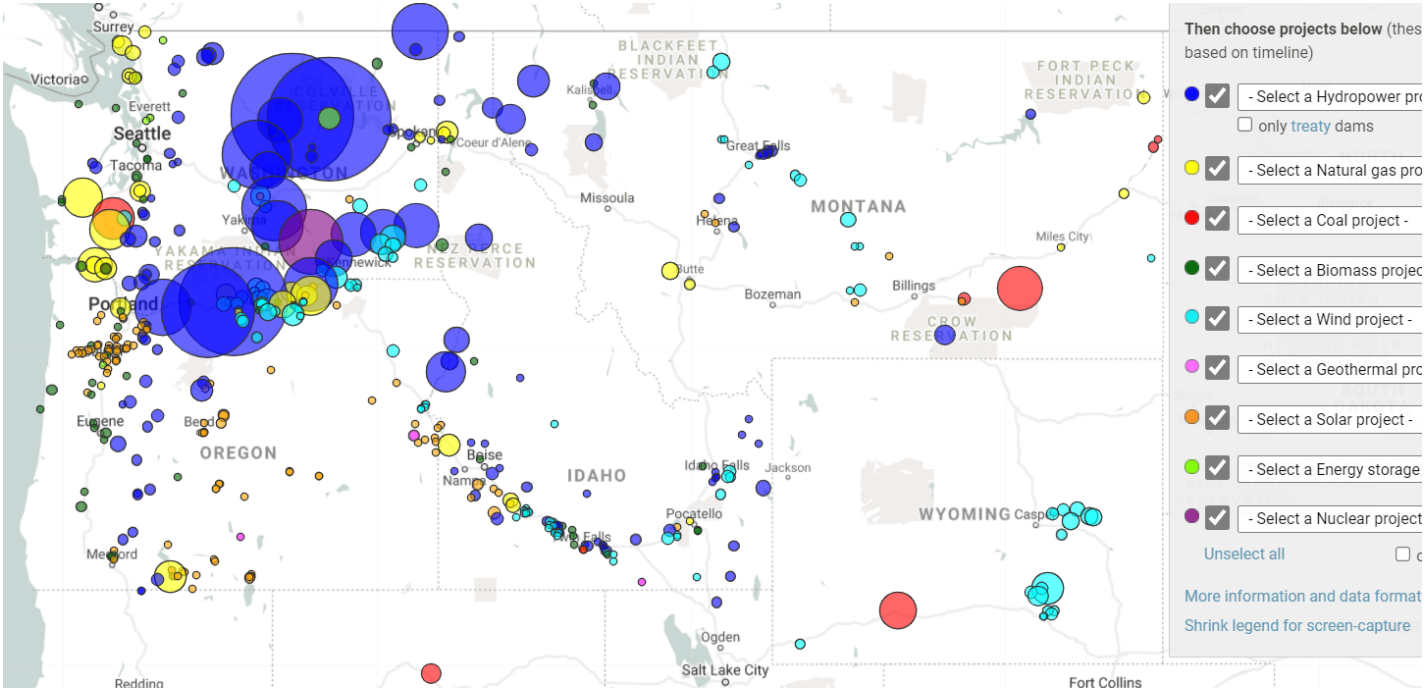
- BPA owns and operates 15,000+ miles of transmission lines, about 75% of transmission in its service territory

Importance of Transmission



- Transmission enables end-users to access cost-effective, clean, and diverse supply sources
- Transmission is important for keeping the lights on and getting to a low carbon energy future

Power Plant Locations



https://www.nwcouncil.org/energy/energy-topics/power-supply/map-of-power-generation-in-the-northwest

Transmission Benefit Examples

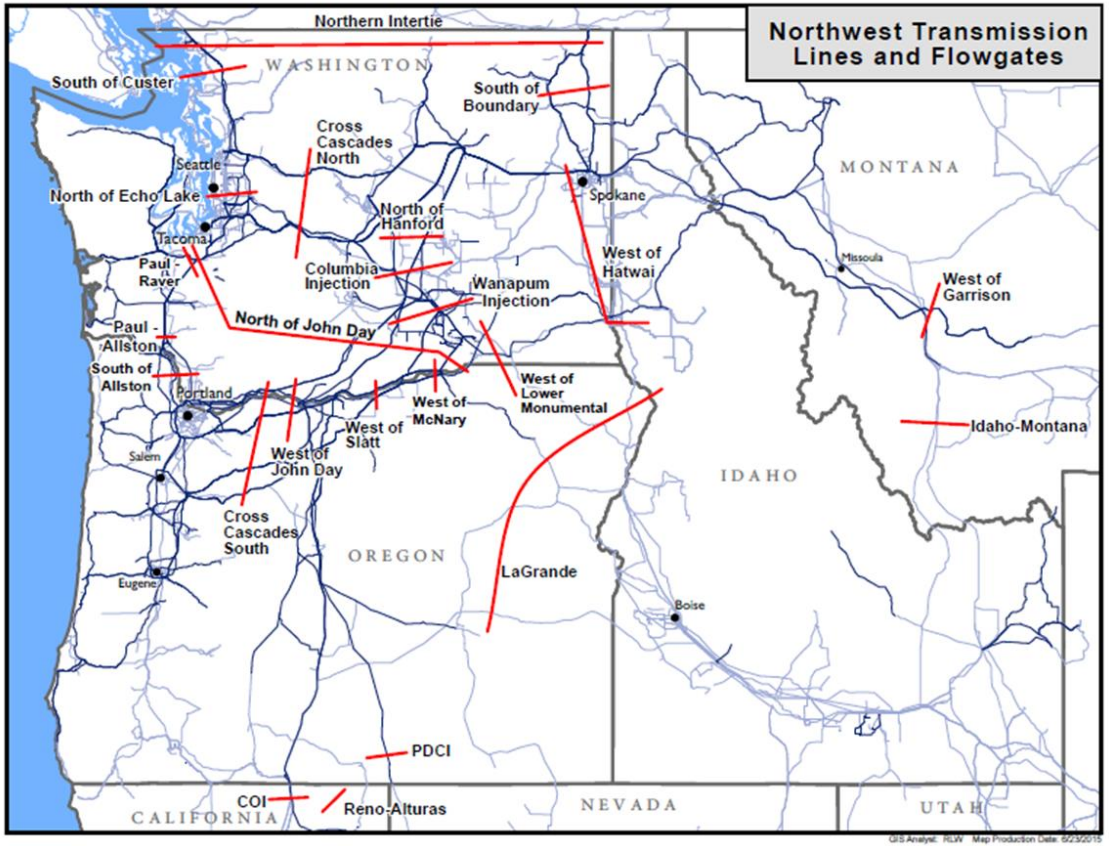
- PNW has surplus during the spring runoff when loads are low
  - Export to the south and east to displace fossil fuels and keep rates low
- PNW is short during a winter cold snap and drought
  - Import from summer-peaking neighbors rather than build power plants that would be idle the rest of the year
- California has more solar at noon than they can use, but not enough generation at sunset
  - PNW saves water for higher net demand hours
- Wind drops in one area but picks up in another

Reliability and Safety

- NERC and WECC Standards define performance requirements for the HV transmission system
  - Withstand normal equipment outages without interrupting service to end-users
  - Avoid equipment overloads, instability, and cascading outages
- Multiple layers of defenses keep the public and workers safe
  - Detect and isolate short circuits quickly
  - Manage flows within limits

Design Considerations

- Power flows based on the laws of physics on AC system
- Higher voltage lines can move larger amounts of power for longer distances
- Resource location impacts transfer capability and reliability
  - Reactive power doesn't "travel" as well as real power
- "Too big to fail" issue



Flowgates and Paths: One or more transmission facilities that are operated in a coordinated manner and are monitored for congestion management

Western & Pacific NW Landscape

- Load levels and fuel availability cause power flows to vary throughout the day and year
- Traditional patterns
  - E->W flows across the Cascades in all months, with higher flows during winter cold snaps
  - High N->S flows in spring and summer through WA and OR to CA, but S->N import from CA has been infrequent
  - Higher thermal generation use during winter and summer peaks
- Emerging patterns
  - Higher N->S exports to CA around sunset
  - S->N transfers of surplus solar at midday (duck curve)
  - More bidirectional transfers between coastal and mountain states to take advantage of load / resource diversity

Generation Fleet Transition

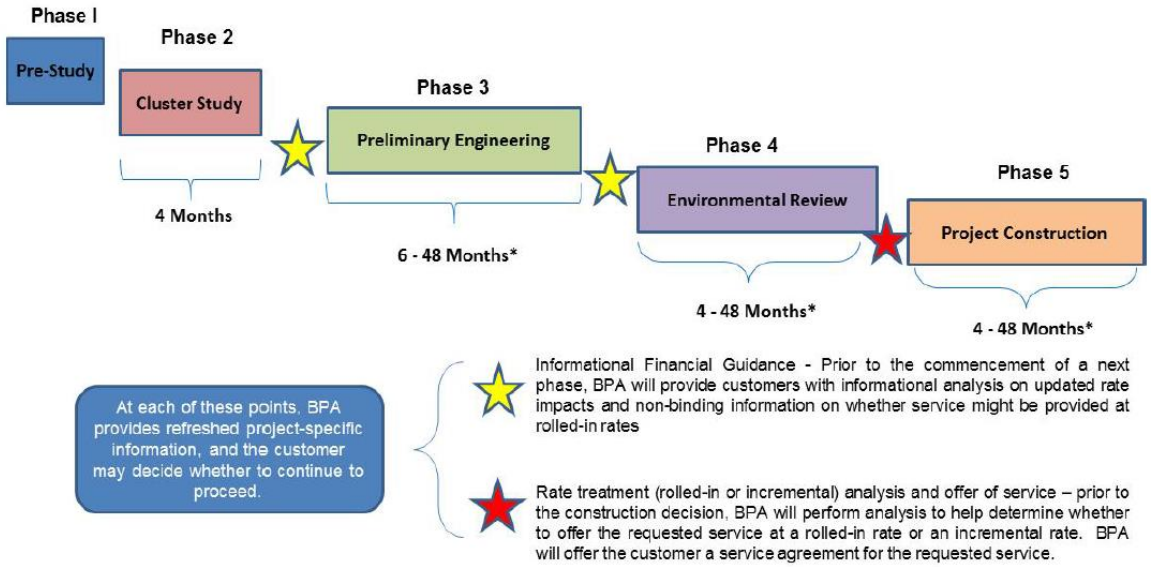
- Strict GHG reduction standards for 2030+
- Multiple challenges and opportunities associated with replacing capacity, energy, and essential reliability services attributes while reducing emissions
  - Changing location of resources impacts transmission system
  - Availability and cost of transmission impacts resource choices
  - Load growth from electrification
  - Optimize transmission capacity utilization
  - Will longer duration energy storage emerge?

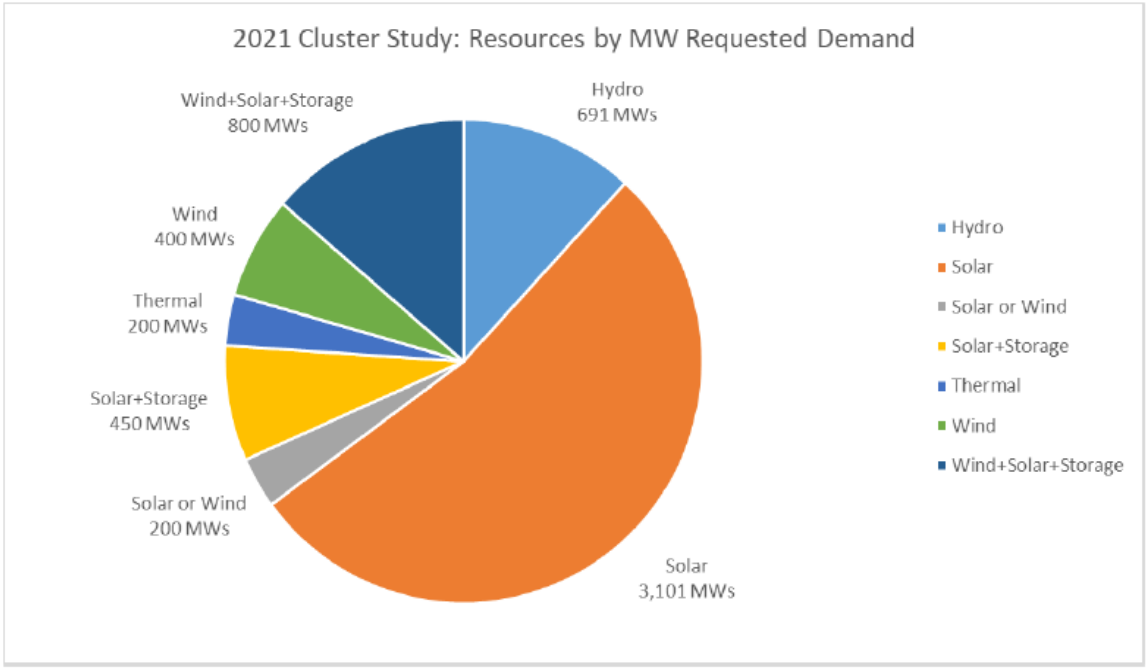
How are Transmission Reinforcement Needs Identified?

- Reliability assessments
  - Transmission providers annually demonstrate that their system can reliably serve projected loads and resources through the next ten years
- Requests from customers
  - Transmission service
  - Interconnection
- Evaluation is not limited to existing paths and flowgates

BPA Transmission Service Request Study and Expansion Process (TSEP)

- Annual cluster studies evaluate eligible requests for Long Term Firm service on the BPA Network





1,540 MW of the above total represents delivery to different load areas from a single generator, and therefore do not represent additive generation.

- Large volume of requests from clean resources east of the Cascades to load centers west of the Cascades

Large Generation Interconnection

Requirements: >20 MW: Large Generation Interconnection Procedure (LGIP)

Start process: Request Submitted ($10,000 or $20,000); Scoping meeting

Three stages of technical studies:

Feasibility Study (FES)
Deposit: $10,000.
Approximately: 3 months (incl. procedural, e.g. tendering/executing agreements, review meetings, etc.)

System Impact Study (SIS)
Deposit: $50,000.
Approximately: 3 to 6 months

Facilities Study (FAS)
Deposit: $100,000.
Approximately: 6 to 12 months

Total deposits required: < $200,000

*Restudies as needed and Optional Studies as requested can increase the total deposits collected

Small Generation Interconnection

Requirements: ≤20 MWs or less generating capacity, Small Generation Interconnection Procedure (SGIP)

> 200 kW threshold

- Aligns with Power Services Regional Dialog contracts
- Aligns with BPA Technical Requirements for Interconnection

BPA does NOT have a Fast Track process – only applies to Distribution Systems

Same steps as the LGI but with smaller deposits

Start process: Request Submitted ($2,500); Scoping meeting

Study Deposits: ~$5,000 - $60,000 for each study

FES, SIS, FAS studies: any or all may be skipped

Total deposits required: < $65,000

Potential Transmission Reinforcements

- Connect new resources to the main grid
- Move additional clean energy across the Cascades
- Address bottlenecks within the I-5 Corridor
- Strengthen ties with neighboring regions to provide mutually beneficial access to load and resource diversity

Questions?

Transmission Line Permitting in Washington State:

An Overview for

Transmission Corridors Work Group

September 22, 2021

GENERAL PERMITTING PROCESSES

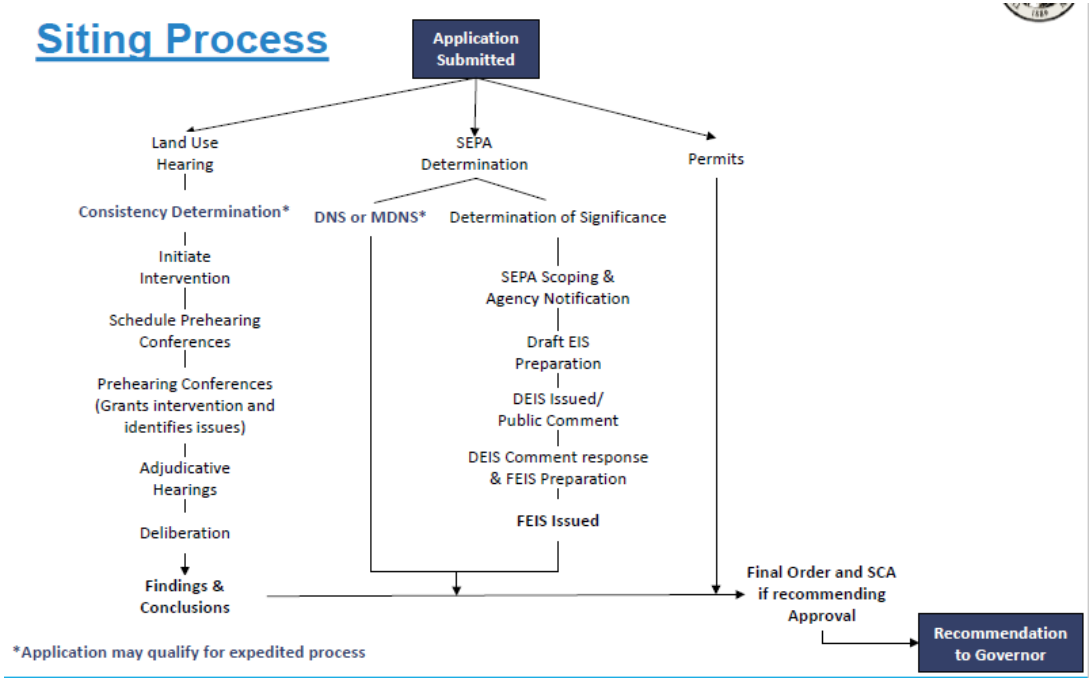
- **FEDERAL**
  - National Environmental Policy Act (NEPA) process
- **STATE**
  - Energy Facility Site Evaluation Council (EFSEC) Certification: Optional for lines >115kV
  - State Environmental Policy Act (SEPA) and/or NEPA process(es)
- **LOCAL**
  - Jurisdiction by jurisdiction approvals
  - Project must comply with local code requirements and corresponding siting process

GENERAL PERMITTING PROCESSES

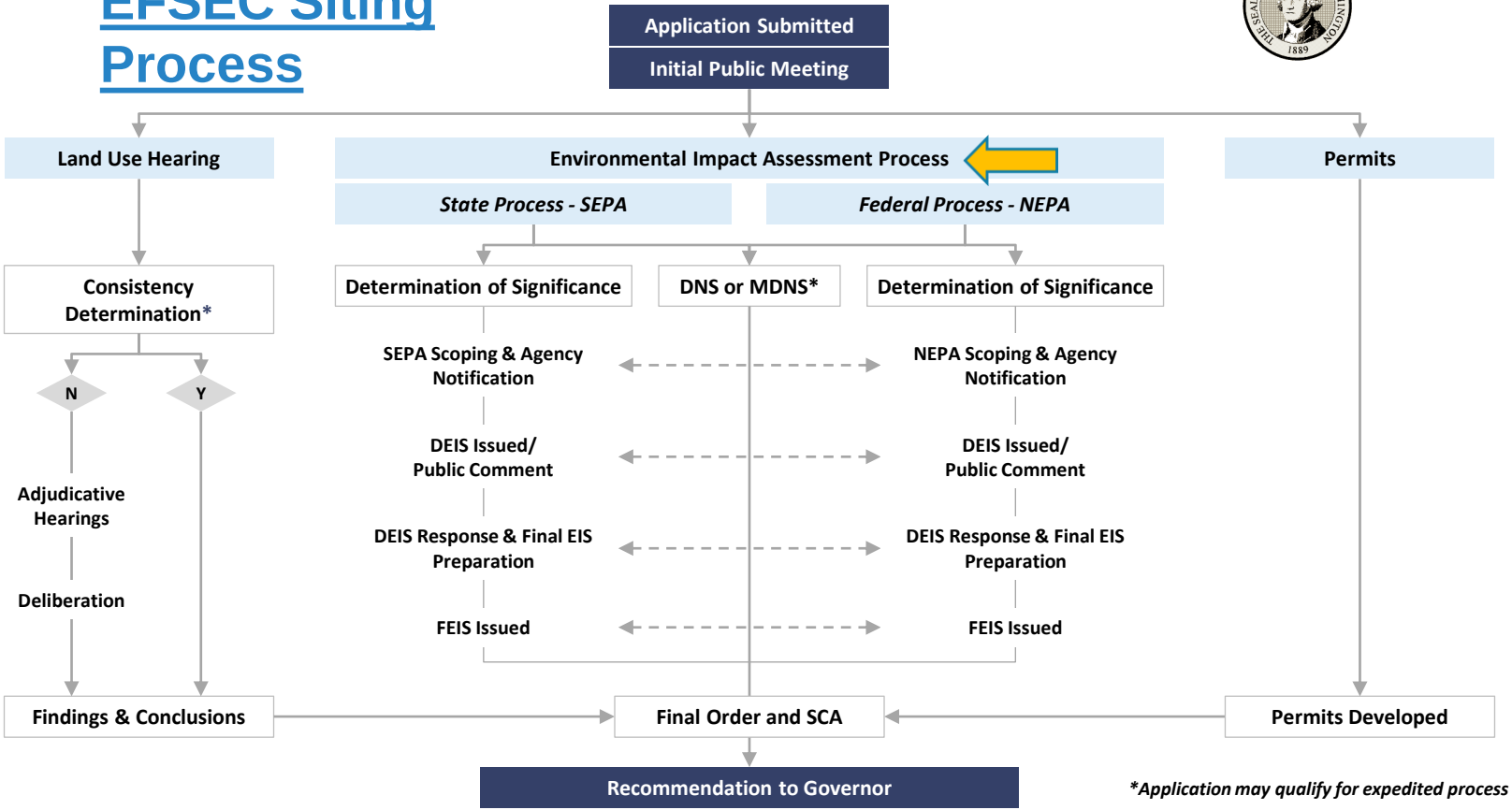
- **FEDERAL** – NEPA Process (Federal Property, Federal Nexus, BPA projects)
  - Federal Agency is generally lead agency through NEPA process
  - Generally used for large-scale transmission lines traversing large areas

GENERAL PERMITTING PROCESSES

- **STATE** – EFSEC Process
  - Optional for transmission lines >115KV
  - “One-Stop Shop” for permitting
  - Involves Land Use hearing and adjudication process to mitigate issues
  - Seldom used pathway for transmission development



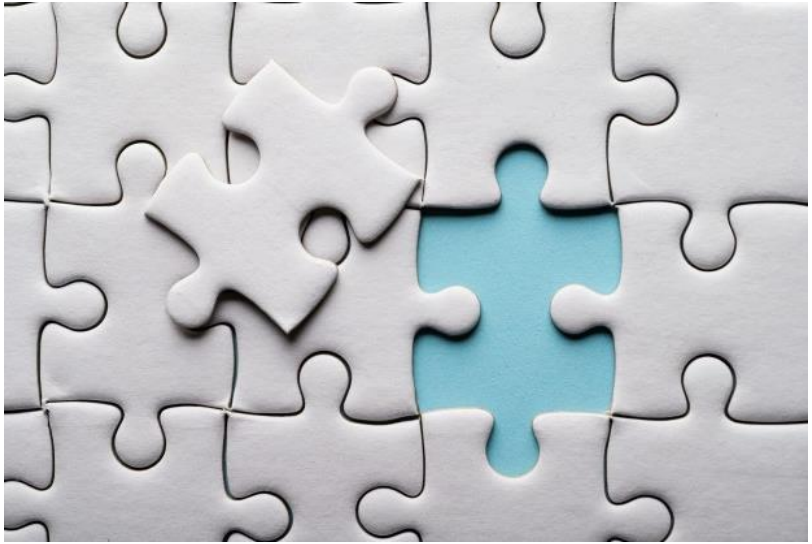
EFSEC Siting Process



*Application may qualify for expedited process

GENERAL PERMITTING PROCESSES

- **LOCAL** – Jurisdictional-Dependent Code and Processes
  - Project must comply with multiple land use/building codes, siting procedures, and permits over multiple jurisdictions
  - Federal and State permits may still be needed
  - Most common pathway for utility-owned (non-BPA) transmission permitting



GENERAL PERMITTING PROCESSES

QUESTIONS? COMMENTS?

Break

Please return at 3:20 PM

Initial Information Assessment

Initial Information Assessment

1. Identify need for upgraded and new transmission and distribution facilities

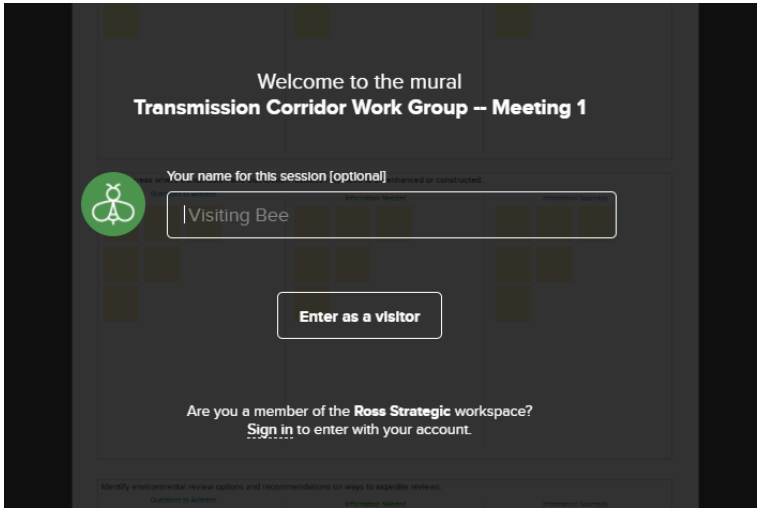
2. Identify areas where transmission and distribution facilities may need to be enhanced or constructed

3. Identify environmental review options and recommendations on ways to expedite reviews.

- **What questions do we need to address?**
- **What information do we think we need?**
- **Where can we find it?**

Intro to Mural

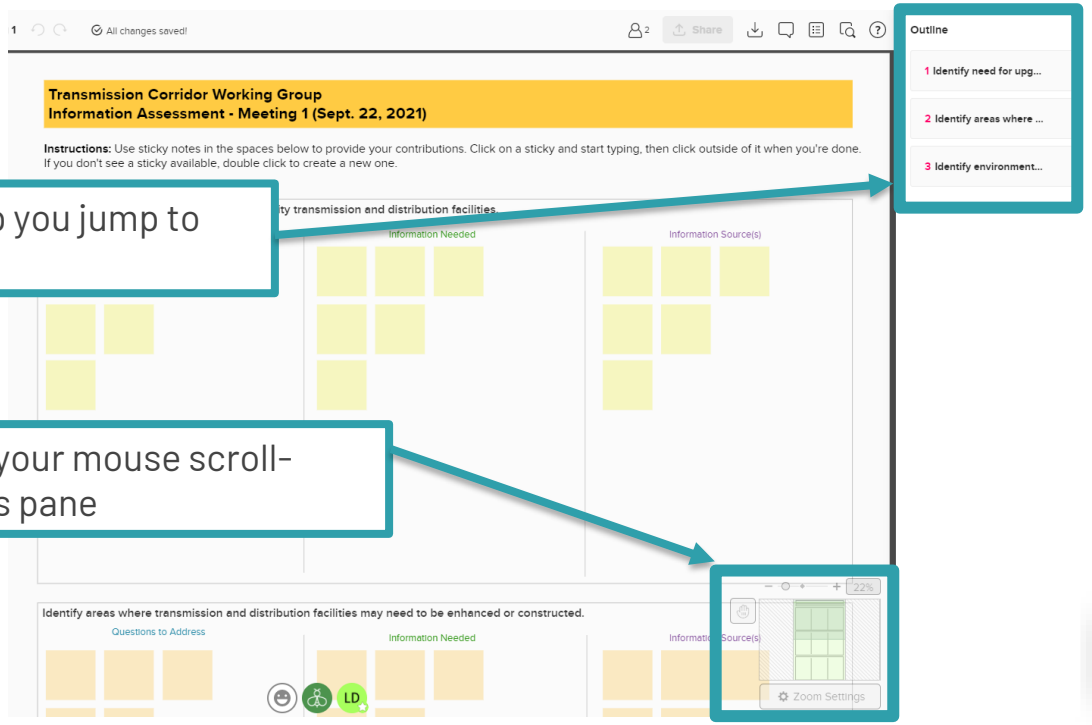
- Copy-paste link from Zoom chat box into an internet browser
- Keep Zoom and Mural open simultaneously
- Add your name & click “Enter as a visitor”



Intro to Mural

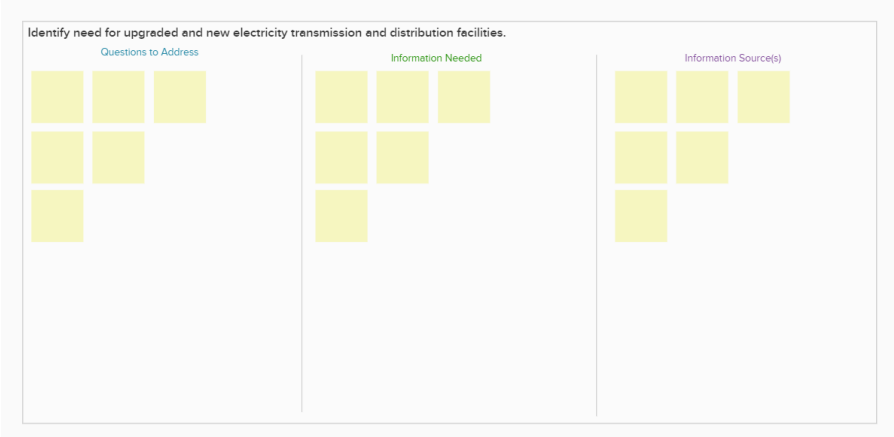
The page outline can help you jump to where you need to go

Zoom in/out with your mouse scroll-wheel or using this pane



Intro to Mural

- To add thoughts in a sticky note, **click once** and begin typing
- **Click outside** of the sticky when you're done typing. You can then move it, resize it, go back to edit it, or delete it.
- To add a new sticky note, **double click** in the area



Initial Informational Assessment

Work currently occurring in the Mural....

Public Comment Opportunity

Public Comment Opportunity

- Each commentor has up to 2 minutes to provide comment.
- Please raise your virtual hand to indicate you would like to comment. (Alt-Y)
- The facilitation team will call on commenters when it is their turn to speak. You will be muted until your turn.
- Commenters may also email comments to **transmissioncorridors@rossstrategic.com** by Oct 6

Looking Forward and Wrap Up

Looking Forward and Wrap Up

- Action items/next steps
- Meeting #2 topics
  - Presentations regarding visions for Energy
  - Outcome #2

Closing remarks

Thank you!

Please direct group member questions and public comments to:
transmissioncorridors@rossstrategic.com