

BPA Attachment K Planning Process

Planning Meeting I

April 11, 2023

1:30 PM – 3:00 PM



Agenda

- Introductions
- BPA's Attachment K Planning Cycle – 2023
- BPA's Attachment K Website – 2023
- Economic Study Requests
- 2023 Planning Assumptions, Methodology, and Criteria
- 2022 BPA Transmission Plan
- Next Steps



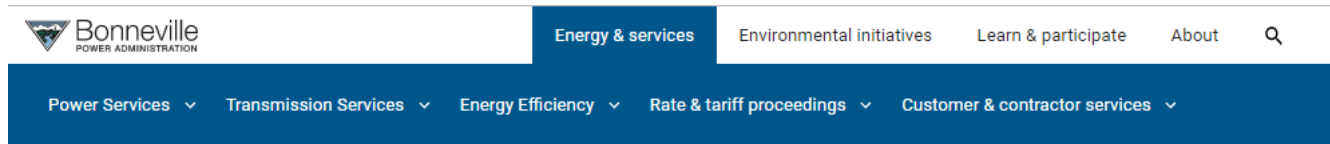
Attachment K Planning Cycle 2023

- **Customer Meeting I** **April 11, 2023**
 - **2023 Planning Assumptions, Methodology, Criteria**
 - **Economic Study Requests**
 - **2022 BPA Transmission Plan**
- **Posting I** **Summer 2023**
 - Summary of 2023 System Assessment Results and Conceptual Solutions
- **Customer Meeting II** **Fall 2023**
 - Draft Plans of Service and Cost
 - Preliminary Economic Study Results
- **Posting II** **End of Year 2023**
 - 2023 BPA Transmission Plan



BPA's Attachment K Planning Process Website

<https://www.bpa.gov/energy-and-services/transmission/attachment-k>



Doing Business

Becoming a Transmission Customer

Acquiring Transmission ▼

Business Practices ▼

Notices

Open Access Transmission Tariff

Attachment K Planning

Transmission Business Model

Coordinated Transmission Agreement

Customer Training

Standards of Conduct

Commercial Business Process Improvement

Attachment K Planning

Transmission Services conducts system planning meetings in accordance with its Open Access Transmission Tariff Attachment K. These meetings provide customers and interested parties the opportunity to discuss and provide input to the studies and development of the plans of service. This page provides information about the Transmission Services Attachment K process including notifications of meetings, results of planning studies, plans of service and other reference information.

Email Information

To request participation in the Planning Process, send questions, comments, or request copies of reports, complete the [Planning Process Participation Request](#).

To request an Economic Study, fill out the [Economic Study Request Form](#).

Planning Cycles

2023 Planning Cycle	+
2022 Planning Cycle	+
2021 Planning Cycles	+



BPA's 2023 Attachment K Planning Process Website

2023 Planning Cycle

Transmission Services conducts system planning meetings in accordance with its Open Access Transmission Tariff Attachment K. These meetings provide customers and interested parties the opportunity to discuss and provide input to the studies and development of the plans of service.

This page provides information about the Transmission Services Attachment K process including notifications of meetings, results of planning studies, plans of service and other reference information. To request participation in the Planning Process, complete and email the Participation Request form.

Meeting

April 11, 2023

[Agenda](#)

Reference Information

[2023 System Assessment Assumptions & Methodology](#)

[Economic Study Request \(10/31/2022\)](#)



Economic Study Requests

- What is an Economic Study?
 - Studies may be requested to address congestion issues or the integration of new resources and loads.
- How are Requests for Economic Studies submitted?
PlanningEconomicStudyRequest@bpa.gov
- Requests may be submitted any time...
Requests submitted after October 31 will be considered in the next prioritization process.
- BPA will complete up to two Economic Studies per year at its expense.
- There was one Economic Study Request received during the annual cycle ending on 10/31/2022.



Planning Assumptions & Methodology

- System Reliability Assessments may be based on current or qualified past studies as allowed by the NERC TPL Reliability Standard
 - The 2023 System Assessment for **load areas** was based on new studies.
 - The 2023 System Assessment for **paths and inerties** relied partly on new studies and partly on qualified past studies.
 - In order to determine if the previous study results are still valid, a number of factors are considered as part of the validation process.
 - Past studies are still valid if there have been no significant changes in topology, load forecast, new or retired generation or loads interconnected, known (planned) outages, or spare equipment strategy since the previous studies were performed.



Planning Assumptions

Base Cases

- The base cases for the 2023 System Assessment originated from WECC approved base cases for the Near Term and Long Term Planning horizons and represent both peak and off-peak load conditions. Load forecasts and topology were modified to represent the following years and seasons:

Year	Case	Season	Load Level	Notes
2024	24LSP	Spring	Off-Peak	Near term (1-year expected spring loads)
2024	24HW	Winter	Peak	Near term (1-year expected winter peak)
2024	24HS	Summer	Peak	Near term (1-year expected summer peak)
2028	28HW	Winter	Peak	Near term (5 year expected winter peak)
2028	28HS	Summer	Peak	Near term (5 year expected summer peak)
2032	32HW	Winter	Peak	Long-term (6-10 year expected winter peak)
2032	32HS	Summer	Peak	Long term (6-10 year expected summer peak)



Planning Assumptions (Continued)

Base Cases

- Loads in the Northwest Area
 - Peak load forecasts for both winter and summer seasons.
 - Forecasts are provided by Customers for the IOUs and larger utilities (represents approximately 75-80% of loads)
 - Forecasts are developed by BPA's Agency Load Forecasting group if not supplied by customers (represents approximately 20-25% of loads)
- Resources
 - Model existing generating resources and selected future resources proposed to be online, if needed to meet the forecast loads within the 10 year horizon.
- Update Northwest Area database
 - Update with the latest seasonal peak and off-peak load forecasts
 - Update with the latest network topology
 - Model future resources as needed, network expansion projects, and firm transmission obligations



Planning Assumptions (continued)

- Sensitivity Cases

Other patterns and conditions may be developed as sensitivities based on:

- Load level, load forecast, or dynamic load model assumptions
- Expected transfers
- Expected in-service dates of new or modified Transmission Facilities
- Reactive resource capability
- Generation additions, retirements, or other dispatch scenarios
- Or other system conditions unique to certain geographical areas

The 2023 System Assessment considered higher levels of output from renewable resources as a sensitivity for the 2024 light spring, 2028 summer peak and 2028 winter peak cases.

Additional sensitivities were developed as appropriate to stress specific load areas or paths.



Planning Methodology

- Check network topology and load forecast / load growth assumptions for each area of interest.
- Modify base cases to stress the study area and benchmark with historical data.
- Develop sensitivity cases as needed for worst case generation or transfer patterns.
- Perform steady state power flow simulation of all single contingencies and credible multiple contingencies.
- Study a large selection of single and multiple contingencies to evaluate voltage stability and transient stability performance.
- Model RAS as required.



Planning Methodology (continued)

- Identify Potential Problems

- Compare system performance with NERC and WECC Reliability Standards to determine if there are potential system performance deficiencies.
- Identify deficient areas for follow up and possible corrective action plans.
- Problems may include:
 - Steady State - Thermal overloads or Under/Over Voltages
 - Stability
 - Insufficient reactive margin (voltage stability)
 - Large voltage or frequency deviations (transient stability)

- Develop Conceptual Solutions

- Solutions to mitigate potential system performance deficiencies may include transmission expansion projects, facility upgrades, and/or non-wires solutions (e.g. energy efficiency, distributed generation, redispatch, or demand side management).



Planning Methodology (continued)

- Cost Estimates for the Conceptual Solutions
 - Preliminary cost estimates are developed for the conceptual solutions
 - Preliminary estimates are used for comparing cost effectiveness of the conceptual solutions

- Develop a Plan of Service for the Preferred Alternative
 - Establish the project team
 - Draft Project Requirements Diagram (PRD) and circulate for comments
 - Initiate Concept Design Document and Project Scoping
 - Finalize the plan of service and PRD
 - Update and refine cost estimates
 - Develop the Business Case and request capital funding for project



Planning Criteria

Standards and Criteria used for Planning:

- NERC and WECC Reliability Planning Standards
 - NERC (North American Electric Reliability Corporation) TPL-001-5
 - WECC (Western Electricity Coordinating Council) TPL-001-WECC-CRT-3.2 Regional Reliability Criteria

Transmission Needs for Public Policy Mandates:

Are there any transmission needs driven by Public Policy Mandates for consideration in the Planning Process?



2022 BPA Transmission Plan

- Can be found on the [2022 Planning Cycle page](#) under Reference Information
- BPA's Plans for Capital Expansion Projects
- Spans the 10 year horizon from 2022-2032
- Projects categorized by
 - Load Service Areas
 - Paths and Interties
 - Generator Interconnections
 - Line and Load Interconnections
- The following information is provided for each Project:
 - Project Description
 - Purpose
 - High-level Cost Estimate
 - Proposed Energization Date



Next Steps

- Posting I – Summer 2023
 - Summary of 2023 System Assessment Results and Conceptual Solutions
- Attachment K Customer Meeting II – Fall 2023
 - Review Results of 2023 System Assessment including draft plans of service
 - Review Preliminary Economic Study Results

Sign up to participate in future meetings or receive additional information by:

- Filling out the Participation Request form on BPA's Planning Process website and sending it via e-mail to: PlanningParticipationRequest@bpa.gov

