

BPA Attachment K Planning Process

Planning Meeting I

April 30, 2021

01:00 PM – 03:00 PM



Agenda

- Introductions
- BPA's Attachment K Planning Cycle – 2021
- BPA's Attachment K Website – 2021
- Economic Study Requests
- 2021 Planning Assumptions, Methodology, and Criteria
- 2020 BPA Transmission Plan
- Next Steps



Attachment K Planning Cycle 2021

- **Customer Meeting I** **April 30, 2021**
 - **2020 BPA Transmission Plan**
 - **2021 Planning Assumptions, Methodology, Criteria**
 - **Economic Study Requests**
- **Posting I** **Summer 2021**
 - Summary of 2021 System Assessment Results and Conceptual Solutions
- **Customer Meeting II** **Fall 2021**
 - Draft Plans of Service and Cost
- **Posting II** **End of Year 2021**
 - 2021 BPA Transmission Plan



BPA's Attachment K Planning Process Website

<http://www.bpa.gov/transmission/AttachmentK/Pages/default.aspx>



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Doing Business

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Operations & Reliability

Projects

Attachment K

2021 Planning Cycle

2020 Planning Cycle

2019 Planning Cycle

Commercial Business Process Improvement (CBPI)

Coordinated Transmission Agreement

Generator Interconnection Reform Implementation

Network Integration Transmission Service (NT Service)

Network Open Season (NOS)

South of Allston Bilateral Redispatch Pilot

Southeast Idaho Load Service

TC-20 Implementation

Transmission Business Model

Transmission Plan

TSR Study and Expansion Process

Attachment K Planning Process

Transmission Services conducts system planning meetings in accordance with its Open Access Transmission Tariff Attachment K. Below are links to past and present information on the Attachment K Planning Process:

[2021 Planning Cycle](#)

[2020 Planning Cycle](#)

[2019 Planning Cycle](#)

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](#).

Related Links

[Open Access Transmission Tariff](#)


[Interconnection](#)

[Business Practices](#)



BPA's 2021 Attachment K Planning Process Website

<https://www.bpa.gov/transmission/AttachmentK/Pages/2021-Planning-Cycle.aspx>


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TC-20 Implementation
Transmission Business Model
Transmission Plan
TSR Study and Expansion Process

2021 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](#).

Meetings

- [April 30, 2021](#)
- [Agenda](#)

Economic Studies

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

Reference Information

- [2021 System Assessment Assumptions and Methodology](#)

Related Links

- [FERC Order 1000](#)
- [FERC Order 890](#)
- [NERC Reliability Standards](#)
- [Open Access Transmission Tariff \(includes Attachment K\)](#)
- [Planning Studies](#)
- [WECC Reliability Criteria](#)



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 were no Economic Study Requests received during the annual cycle ending on 10/31/2020



Planning Assumptions & Methodology

- System Reliability Assessments may be based on current or qualified past studies as allowed by the NERC TPL Reliability Standard
 - The 2021 System Assessment is based on qualified past studies from 2020
 - BPA's 2020 System Assessment relied largely on the results of current studies.



Planning Assumptions

Base Cases

- The base cases used for the 2021 System Assessment originated from WECC approved base cases for the Near Term and Long Term Planning horizons and both peak and off-peak loads. Load forecasts and topology were modified to represent the following:

Year	Case	Season	Load Level	Notes
2022	22LSP	Spring	Off-Peak	Near term (2-year expected spring loads)
2022	22HW	Winter	Peak	Near term (2-year expected winter peak)
2022	22HS	Summer	Peak	Near term (2-year expected summer peak)
2026	26HW	Winter	Peak	Near term (5 year expected winter peak)
2026	26HS	Summer	Peak	Near term (5 year expected summer peak)
2030	30HW	Winter	Peak	Long-term (6-10 year expected winter peak)
2030	30HS	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 provided by Customers for the IOUs and larger utilities (approximately 75-80% of loads)
 - Forecasts developed by BPA's Agency Load Forecasting group if not supplied by customers (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.



Planning Assumptions (continued)

- 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

- 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



Planning Methodology

- System Assessment.
 - The 2021 System Assessment rely on current and qualified past studies from the 2020 System Assessment as allowed by NERC TPL-001-4.
 - 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 element 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-001-4
 - WECC (Western Electricity Coordinating Council) TPL-001-WECC-CRT-3.2 Regional Reliability Criteria



2020 BPA Transmission Plan

- Can be found on the [2020 Planning Cycle page](#) under Reference Information
- BPA's Plans for Capital Expansion Projects
- Spans the 10 year horizon from 2020-2030
- 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 2021
 - Summary of 2021 System Assessment Results and Conceptual Solutions
- Attachment K Customer Meeting II
 - Review Results of 2021 System Assessment including draft plans of service

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

