NT Load Growth 101

The Evolving Grid

BPA Transmission & BPA Power

June 20, 2023

Agenda

Transmission Perspective

- What is Load Growth?
- BPAT Responsibility
- NT Customer Responsibility
- NT Annual Load and Resource Forecasting Process
- Data Exhibits
- TSEP Plans of Service

Power Perspective

- Power Obligations
- Regional Dialogue Contracts
- Rate Structures
- Net Requirements
- Above-RHWM Loads
- New Large Single Loads
- Transfer Service
- Provider of Choice

Transmission (BPAT)

What is Load Growth to BPAT?

- **Any** increase to an NT Customer's designated Network Load
- Unlike BPA Power, BPA Transmission does not differentiate rates based on amount of load growth
- BPA Transmission may accept, reject, or offer to be placed in study customers' updated forecasts for firm transmission showing load growth based on the combination of:
  - Transmission availability on the current system from customer forecast generation to Network Load
  - Timeline provided for when new load is energized (i.e.- lead time)
  - Size of additional transmission capacity required

Transmission Responsibilities

BPA has the obligation to endeavor to plan for reasonably forecasted load growth.

This applies to both:

- Network Customer resources
- FCRPS encumbered resources

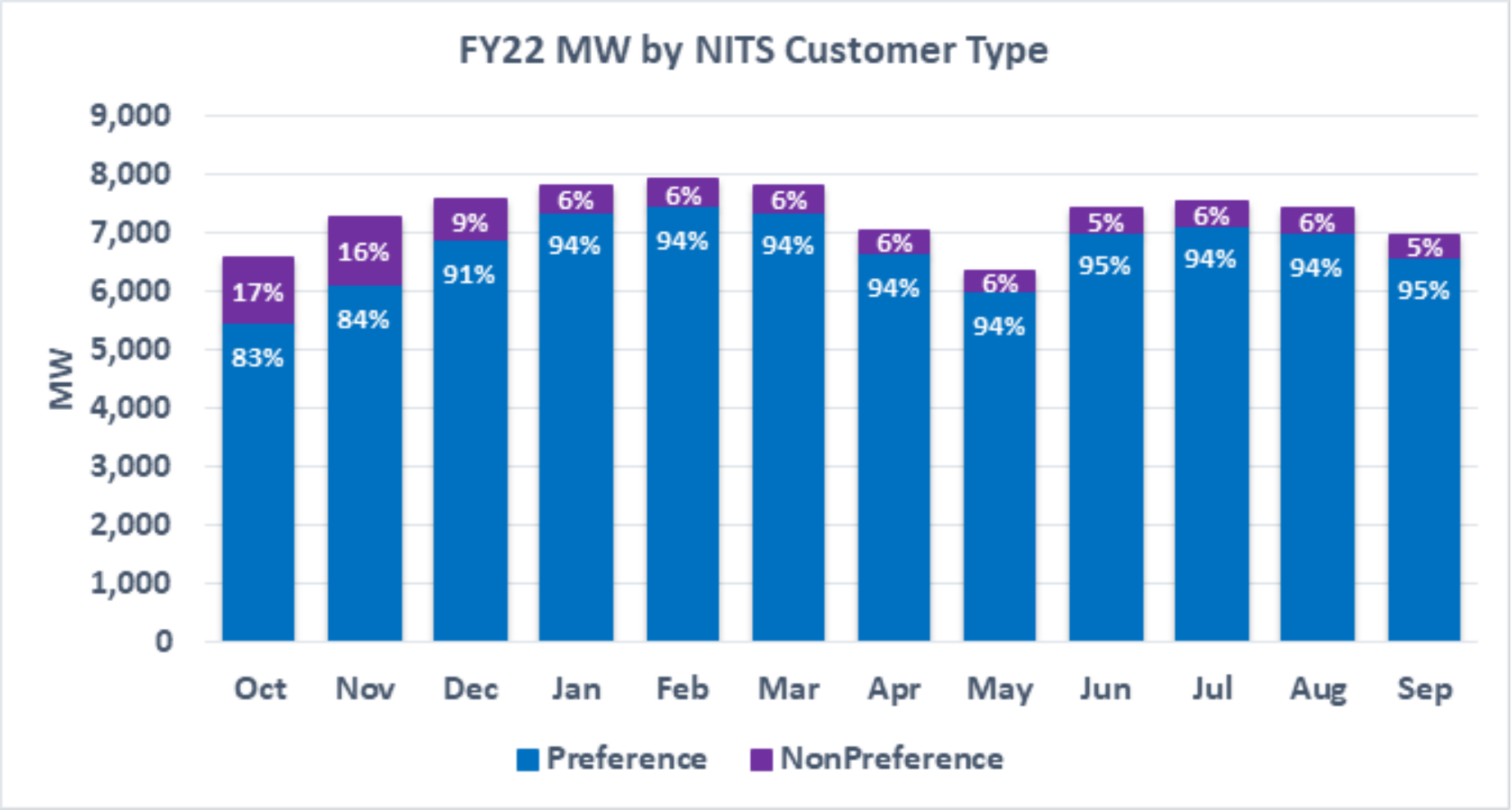
Transmission Customer Responsibilities

- NT Customers must designate Network Loads intended to be served by Network Integration Transmission Service

- NT Customers have the obligation to provide an annual 10 year Load and Resource forecast, including but not limited to:
  - Provide advance notice of new Network Load requirements
  - Provide amount and location of projected load growth and selected resources including commercial Load Growth
  - Submit timely written notification of material changes
    - Refer to OATT 28.2, Good Utility Practice, and Attachment K (BPAT shall include Customer load in planning, construct, and place in service on a basis comparable to Native Load Customer)

Network Integration Transmission Service

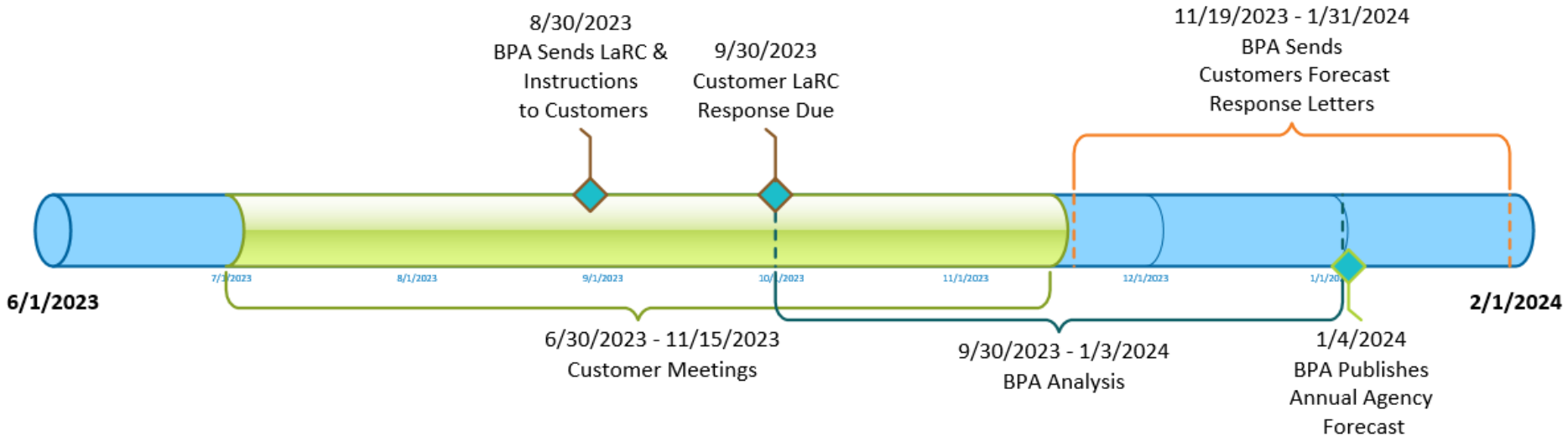
Preference vs Non-Preference Customers



Annual NT Load and Resource Forecasting Process (LRFP)

- BPA holds an NT Annual Load and Resource Forecasting Process
  - This process is made up of 3 major parts
    - BPA Forecasting meetings with NT customers
    - Load and Resource Consolidated (LaRC) document review and return by customers
    - BPATs Review and Response to updated LaRC

- Timeline Overview
  - 6/1 – KSL Kick-off Customer meetings begin
  - 9/30 – Customer LaRC due to BPAT
  - 11/30 – TSEP Annual Cluster Study submission deadline
    - This date is subject to change. BPA will send customers 60 day advanced notice of submission deadline once finalized.
  - +1/30 – Closeout Letter delivered to Customers



Transmission LRFP Takeaways

Why engage early and often?

- Meet annual obligation of OATT sections 29.2 and 31.6
- Facilitates BPAT long term transmission planning for customer needs
- Queue placement for available transmission capacity
  - FTSRs created as a part of the NT LRFP hold a queue time based on the updated LaRC submission date
- Efficient and expedited plan of service generation via the TSR Study and Expansion (TSEP) cycles

How NT customers may connect with BPA Transmission

- General questions and policy concerns:
  - Customer Transmission Account Executive (AE)
- Fulfilling annual forecasting requirements:
  - BPA Forecaster - Annual BPA forecast meetings
  - LaRC document - NT annual load and resource forecasting processes
  - Customer Service Engineering – Determine if LLIR submissions are required
  - BPAT Planning – Feedback on impacts of potential resource choices
    - To initiate dialogue with BPA Planning please coordinate with your Transmission Account Executive
- DNR and TSR submittal questions:
  - BPAT Reservation Desk

Transmission Data Exhibit

- Why have these requirements changed?
  - Updates to enhance BPA Transmission's ability to plan for NT Load
    - *Notification of requirement, response timelines, Cure Period*
  - Audited previous requirements for alignment with OATT
  - Implemented more user-friendly formatting on Data Exhibits
  - Updated Data Exhibit form instructions for clarity
  - Data Exhibit provides more in depth load and resource information than the TSR requires

- Multiple Business Practices were Updated
  - TSR Study and Expansion Process (TSEP)
  - Requesting Transmission Service – Designations of resources without a standing FTSR require NT Data exhibit submission
    - *Effective 3/24/23 Customers are required to submit data exhibits for all Original and Redirect Requests*
  - Network Integration (NT) Transmission Service – BPA may request an NT Data Exhibit from the NT Customer for forecasted resources or loads if necessary to evaluate the forecast

Forecast Update vs LLIR Updates

- When is a Load and Resource forecast update required?
  - While the LaRC process is annual (fulfilling customer OATT requirement), it is recommended that updates to forecasts be made when any changes in load or resource forecasts are identified that could materially impact load service
    - The LaRC process does not dictate the frequency with which customers should communicate material changes in the load and resource forecasts
    - Reporting should include all known possibilities, even if the probability of occurrence is low, and won't be included in the customer's official forecast (developed by BPA Forecasting) used for Rates and other purposes
    - Load growth or resource additions may not be able to connect to BPAT grid without sufficient notice

- When is a Line and Load Interconnection Request (LLIR) required?
  - Current LLI Business Practice (BP): All NT Customers must submit a LLIR on BPA Form F6420.25 when requesting a **new** or **modified transmission system interconnection** (Line and Load Interconnection Request (LLIR) procedures on BPA.gov)
    - Customers considering additional load burden behind existing interconnections may also discuss, with their transmission AE and CSE, potential benefits of LLIR submission(s) to manage LLIR queue priority and reliability project identification timeline risks
  - BPA is reviewing the processes and the LLIR BP to make it clear when LLIRs are required
    - BPA will go through a full stakeholder process before changing the BP

- If the Load and Resource forecast is updated, is the customer still required to submit an LLIR?
  - **Until BPA updates the BP, BPA Staff highly recommends that for any load increase, customers should submit an LLIR as well as an updated LaRC.**
    - The LLIR triggers a Kick-off meeting with the customer where BPA shares with the customers if steps/studies are required
    - Without an LLIR, Planning will not be aware of the increased load for 1.5 to 2 years
    - Customers should not make the assumption that there is capacity on the system no matter how small the increased load is

LLIR Study Flow

LLIR Process Timeline

- Submission of Line and Load Interconnection Request (LLIR)
- Kickoff meeting (BPAT & Customer)
  - Establish what steps/studies are required.
- Feasibility Study (FES)
  - Est. 60 – 90 days
- System Impact Study (ISIS)
  - Est. 90 – 120 days
- Facilities Study (IFS) & Pre-Scoping
  - Est. 8 – 12 months
- Preliminary Engineering Scoping Effort
  - Est. 9 – 12 months
- NEPA Study
  - Starting during the Scoping Effort and generally continues until around the 90% completion point of the Design process
- Design, Material Procurement, and Construction (Construction Agreement)
  - BPA tenders the Construction agreement within 60 Calendar days following project approval

- At the conclusion of each study step BPA will schedule a meeting with the customer to review results and discuss next steps.

- Additional time on each step above may be needed for complex and Plans of Service

NOTE: LLIR and LaRC are required for different purposes

- *LLIR to allow for Interconnection with BPA's system & allow BPA to plan for changes to the customers interconnection to BPA's Transmission system*
- *LLIR submissions impact LLIR queue priority*
- *LaRC to acquire NT transmission service & allow BPA to plan for changes to the transmission system*
- *LaRC submissions impact Long-term Transmission Service Pending Queue*

Cluster Study / Plans of Service

Why would an NT Customer be offered a Study Agreement?

- NT Customers may be offered a Study Agreement as a result of customer selection of resources not currently designated in the customer's NT agreement to serve new or existing load that requires an transmission system upgrade when existing resources are available that do not require transmission system upgrades

How can a Customer identify limitations that may require plans of service?

- Engagement with BPA Forecaster annually
- Partnership with BPAT Planning and your Transmission AE during resource selection to identify resources that may serve your needs
    - To initiate dialogue with BPA Planning please coordinate with your Transmission Account Executive

Cluster Study / Plans of Service (Cont.)

Study Costs:

- Approximately $150 per MW as of 2023

Plan of Service:

Preliminary Engineering Agreement (PEA)

- Customer decision point (Continue with the PEA?)
- Per MW share of the scoping costs

Environmental Study Agreement (ESA)

- Customer decision point (If the customer elects to with the ESA?)
- Per MW share of the environmental study costs

Securitization

- Customer must provide security for their proportional share of the direct costs of constructing the project for the original requested service duration
- This security may take the form of cash or a letter of credit
- Customer security obligations will be reduced per year until the completion of the original requested service duration
- BPA is evaluating NT customer securitization standards

Cluster Study / Plans of Service (Main Takeaway)

Customers should consider the following when selecting resources to support Load Growth:

- Resource cost
- Transmission rates
- Required upgrades for load service (Costs and Timing)

Power (BPAP)

BPA (Power) Obligations

- BPA has an obligation to offer contracts to meet the firm power loads of publics and IOUs whenever requested
- Power sales contract duration limited to 20 years, including any renewals or extensions
- When making power sales, BPA must provide preference to public bodies and cooperatives "at all times" in the event of competing applications
- Section 5(b) of the Northwest Power Act established BPA's Firm Load Obligation, referred to as "Net Requirements"
- Net Requirements is a customer's Total Retail Load minus any non-Federal resources applied to load

BPA's Regional Dialogue Contracts

- BPA's current power sales contracts, known as Regional Dialogue contracts, were signed in 2008 and are effective through September 30, 2028

- Actual Requirements product –
  - **Load Following:** BPA meets the customer's actual energy and capacity requirements (metered load less non-Federal resources applied to load) on an hourly basis

- Planned Requirements products: Block & Slice/Block –
  - **Block:** BPA provides a planned amount of firm requirements power to serve a customer's planned Annual Net Requirement
  - **Slice/Block:** BPA provides a combined sale of firm requirements power under the Block product and firm power and other services as the Slice Output under the Slice Product based on a customer's planned Annual Net Requirement

Tiered Rate Structure under Regional Dialogue

- The Tiered Rate Methodology (TRM) is the methodology used to establish a two-tiered Priority Firm (PF) rate design applicable to firm requirements service under Regional Dialogue contracts

- The TRM established the Contract High Water Mark (CHWM) construct

Net Requirements Under Regional Dialogue

Net Requirement = Total Retail Load – Dedicated Resources

- CHWMs are largely based on customer loads in FY 2010 (with certain adjustments, as provided in the TRM)
- CHWMs are administered through Rate Period High Water Marks (RHWM) which determine the average megawatt amount of energy customers can purchase at Tier 1 PF rates for a given rate period
- RHWMs are calculated in the RHWM Process every two years and account for changes in the amount of Tier 1 system capability forecast for a rate period
- Firm requirements power serving up to a customer's RHWM is subject to the PF Tier 1 rate
- Firm requirements power used to serve Above-RHWM Load is subject to the PF Tier 2 rate
- Above-RHWM Load means the *forecast* Total Retail Load, less Existing Resources, New Large Single Loads (NLSL), and the customer's RHWM, as determined in the RHWM Process

Customer Options for Service to Above-RHWM Load

- Customers may experience Above-RHWM Load due to either reductions in the Tier 1 system capability or load growth

- Customers have three options for serving Above-RHWM Load:
  1. Non-federal Resource (Specified or Unspecified)
  2. BPA purchase at a Tier 2 rate
  3. Combination of the two above

Above-RHWM Load Election Dates:

Notice Deadline		Purchase Period
November 1, 2009	for	FY 2012 – FY 2014
September 30, 2011	for	FY 2015 – FY 2019
September 30, 2016	for	FY 2020 – FY 2024
September 30, 2021	for	FY 2025 – FY 2028

New Large Single Loads

- An NLSL is any load:
  - Associated with a new facility, an existing facility, or an expansion of an existing facility, which was not contracted for, or committed to, as determined by the Administrator, by a public body, cooperative, investor-owned utility, or federal agency customer prior to Sept. 1, 1979, and
  - Which will result in an increase in power requirements of such customer of **ten average megawatts or more** in any consecutive twelve-month period

- If BPA supplies Firm Power to serve an NLSL, that power is sold at the New Resources (NR) rate and is not eligible for service at either the Tier 1 or Tier 2 PF rate
  - Under Regional Dialogue contracts, Block and Slice/Block customers agree to serve NLSLs with non-Federal resources

- To date, all customers with NLSLs have chosen to serve those loads with dedicated resources

Transfer Service

- To serve its geographically diverse customer base, BPA has sometimes chosen to serve customers over transmission systems owned and operated by entities other than BPA rather than build to directly connect those customers to the BPA transmission system
- BPA refers to this kind of delivery as “transfer service”
- BPA Power Services administers the third party transmission service agreements
- Under Regional Dialogue contracts, BPA has contractually committed to acquire and pay for transfer service for customers’ existing transfer points of delivery
- Any requests for new transfer points of delivery are evaluated on a case-by-case basis to determine if it is the best plan of service
- Planning to meet the load growth for transfer customers requires coordination between the customer, BPA Power and Transmission and one or more third party transmission providers

Power Post 2028- "Provider of Choice"

- "Provider of Choice" is BPA's regional effort to establish long-term power sales policies and agreements that will go into effect on October 1, 2028

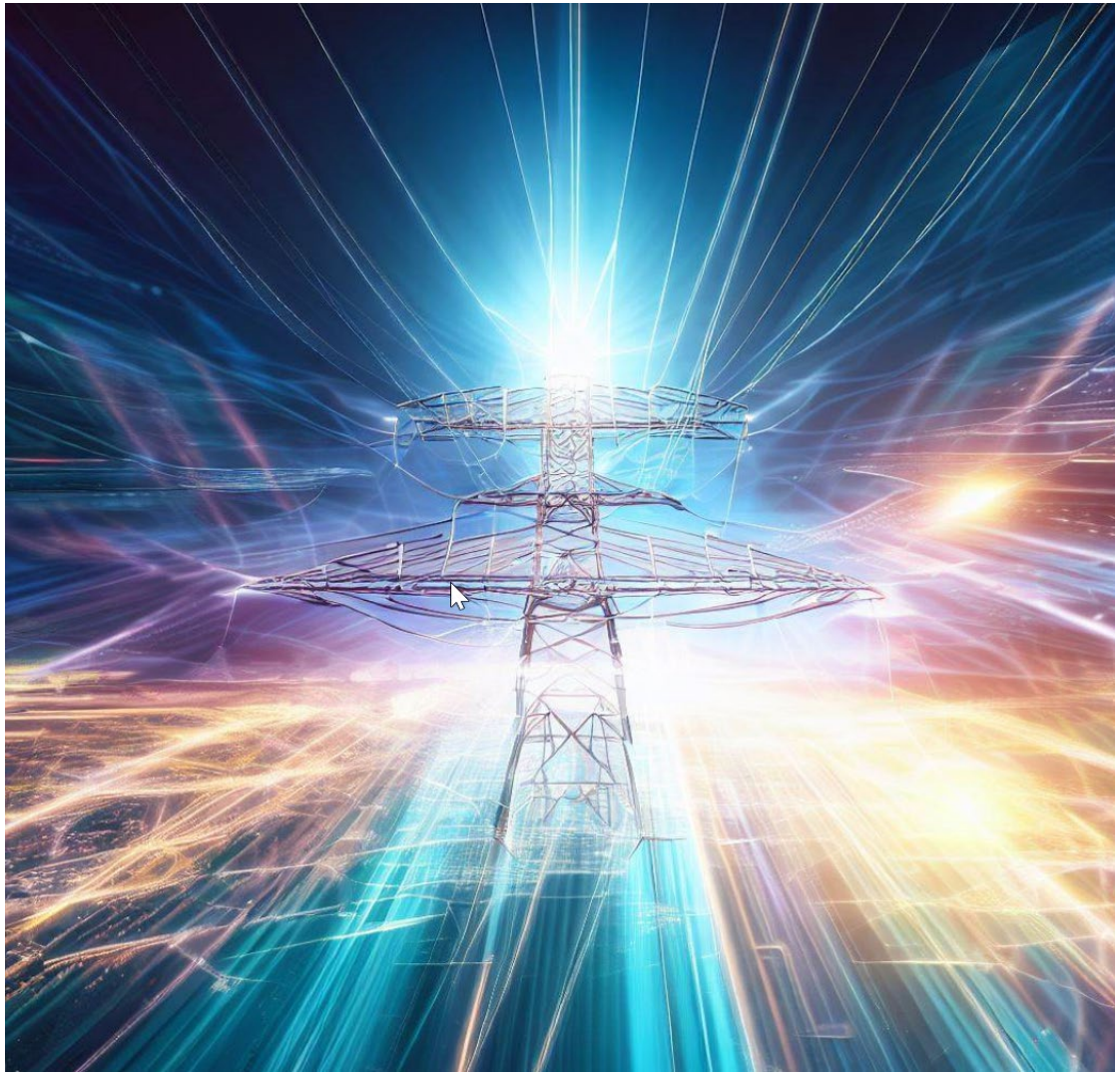
Provider of Choice

- BPA continues to hear general support for the continuation of tiered rates

- BPA expects to release its draft POC Policy in July 2023
  - For more information refer to the Provider of Choice page linked in the Helpful BPA Links slide at the end of this presentation


Questions

The Evolving Grid



Helpful BPA Links

BPA Transmission Plan: https://www.bpa.gov/-/media/Aep/transmission/attachment-k/2022-bpa-transmission-plan.pdf

Transmission Availability : https://www.bpa.gov/energy-and-services/transmission/transmission-availability

Becoming a BPA Customer: https://www.bpa.gov/energy-and-services/transmission/becoming-a-transmission-services-customer

- *For assistance in the BPA application process, call BPA Transmission Sales (360) 619-6016 and request the assignment of a BPA Transmission Services Account Executive.*

Interconnection: https://www.bpa.gov/energy-and-services/transmission/interconnection

Transmission Service Request Study: https://www.bpa.gov/energy-and-services/transmission/acquiring-transmission/tsep

Provider of Choice: https://www.bpa.gov/energy-and-services/power/provider-of-choice