

TSR Study and Expansion Process (TSEP)

TLS Customer Workshop
March 31, 2016



Outline

- Continue discussion on TSEP Financial Analysis
 - Seeking customer feedback on inputs/outputs
- Other items/updates

TSEP Financial Discussion

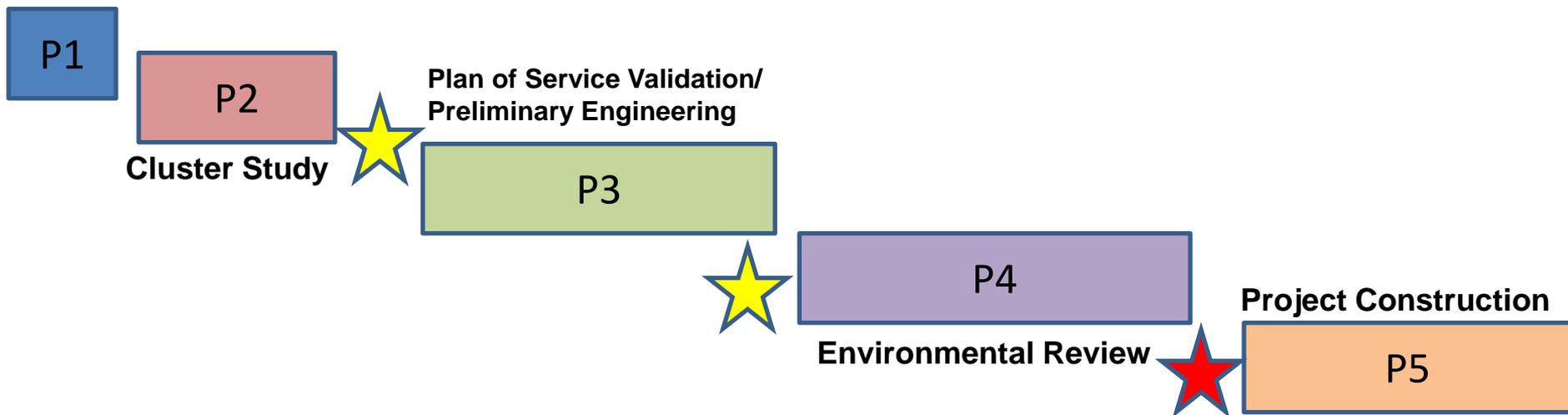


Agenda

- Refresh on TSEP and Role of Financial Analysis
- Overview on proposed modeling and analysis methodology
 - Inputs
 - Outputs

Reminder – Overview of Financial Evaluation and Updates to Participants

Pre-Cluster Study



At each of these points customers must decide whether to continue participating in the process or withdraw TSR.

-  Informational Financial Guidance - Prior to the commencement of a successive phase, BPA will provide customers with updated informational analysis on rate impacts and non-binding information on whether service might be provided at rolled-in rates
-  Determination of whether service could be provided at rolled-in rate - Prior to the construction decision, BPA will perform formal rate analysis and determination of whether service can be provided at rolled-in rate based on best available information

Rolled-In Rates Analysis

- Determines whether the project will be offered at rolled-in rates or incremental rates
- Analysis will be performed between TSEP phases
 - Preliminary estimates are performed after Phase 2 and Phase 3, to inform customers' decision whether to proceed with next phase
 - Official, 'binding' rolled-in rates test and decision will be made after Phase 4 (Environmental Review)
- Analysis focuses on BPA's costs and benefits only
 - Focuses on the differences in costs and benefits with and without the proposed project
- Focuses on Network transmission rate impacts only

Proposal for Rolled-In Rates Analysis

- Model a range of possible revenue requirements, MW subscription/sales, and resulting impacts on revenue requirement and rates
- Use high, low, and most likely estimates of inputs based on 80% confidence range
 - Will be informed by best available information provided by subject matter experts or historical data
 - Likely to have a large range of uncertainty early in the process which will narrow as we move toward the decision whether to build
- Output will be a risk distribution which will inform BPA decision makers and the region on the likelihood and magnitude of a project's rate impact.

Rolled-In Rates Analysis

Inputs with no risk modeled

- Discount rate will be based on weighted average cost of debt
- Overhead cost assumptions will be updated annually based on agency assumptions (currently 24% of capital costs)

Rolled-In Rates Analysis

Method for Assessing Risk Around Inputs

- Will use a 10th, 50th, 90th percentile methodology
 - In general terms, subject matter experts will provide low, most likely, and high forecasts
 - 80% confidence that actuals will occur within the forecasted range
- Inputs with risk modeled:
 - Lifecycle costs of the project (upfront capital, O&M, refurbishment and replacements)
 - Estimated energization date
 - Interest rates
 - Other transmission considerations (more on slide 10)
 - Sales (more on slides 11, 12, and 13)
 - Submitted LT PTP requests
 - Service to forecasted NT resources identified to require transmission upgrades
 - Possible future sales

Other Transmission Considerations

- Provide Network transmission benefits (Included in Rolled-In Rates Analysis):
 - Avoided future costs/builds to meet reliability needs
- Provide regional benefits (Not included in Rolled-In Rates):
 - Change in losses over transformers and/or lines
 - Avoided planned and unplanned outages
 - Avoided congestion

Proposed Sales Assumptions for Submitted PTP Requests

Assumption	Proposed Basis (uses 10 th , 50 th , 90 th percentile assumption)
Deferrals	Based on forecast GI completion date, SME information, or historical data
Rollovers	Based on the remaining forecast life of that resource based type, SME information, or historical data
Default	Based on S&P credit rating and forecasted default risk
Upgrade Energization Date	Customers will not be able to take service until the project is complete. Will be based on the same date used to model upgrade spending for the project.
LGIA transmission credits	Total balance of credits based on SME estimates of interconnection upgrades. Rate of repayment tied to sales forecast for service related to the GI.
Replacement of existing reserved capacity	Use SME input to determine if requests are for new service or would be replacing existing service on the system

Proposed Assumptions for NT Service

- TSEP mainly deals with commercial upgrades, and doesn't necessarily deal with upgrades specifically intended to meet reliability needs
- Anticipate majority of NT needs studied under TSEP will be for service from forecasted non-federal generation.
- Sales to NT customers are likely to occur with or without build since load must be served
 - As the most likely forecast assume no incremental NT revenues
 - In some cases high estimate (90th percentile) may reflect additional revenues, especially if connected to new large load sources which are resource specific
- The basis for this assumption is that most NT load will be served regardless of what resource is used to meet that need
 - Is this a valid assumption? Is load service ever contingent on a specific resource?
 - Other suggestions on how to think of the revenue associated with NT service and the incremental effects of NT service enabled by proposed upgrade?

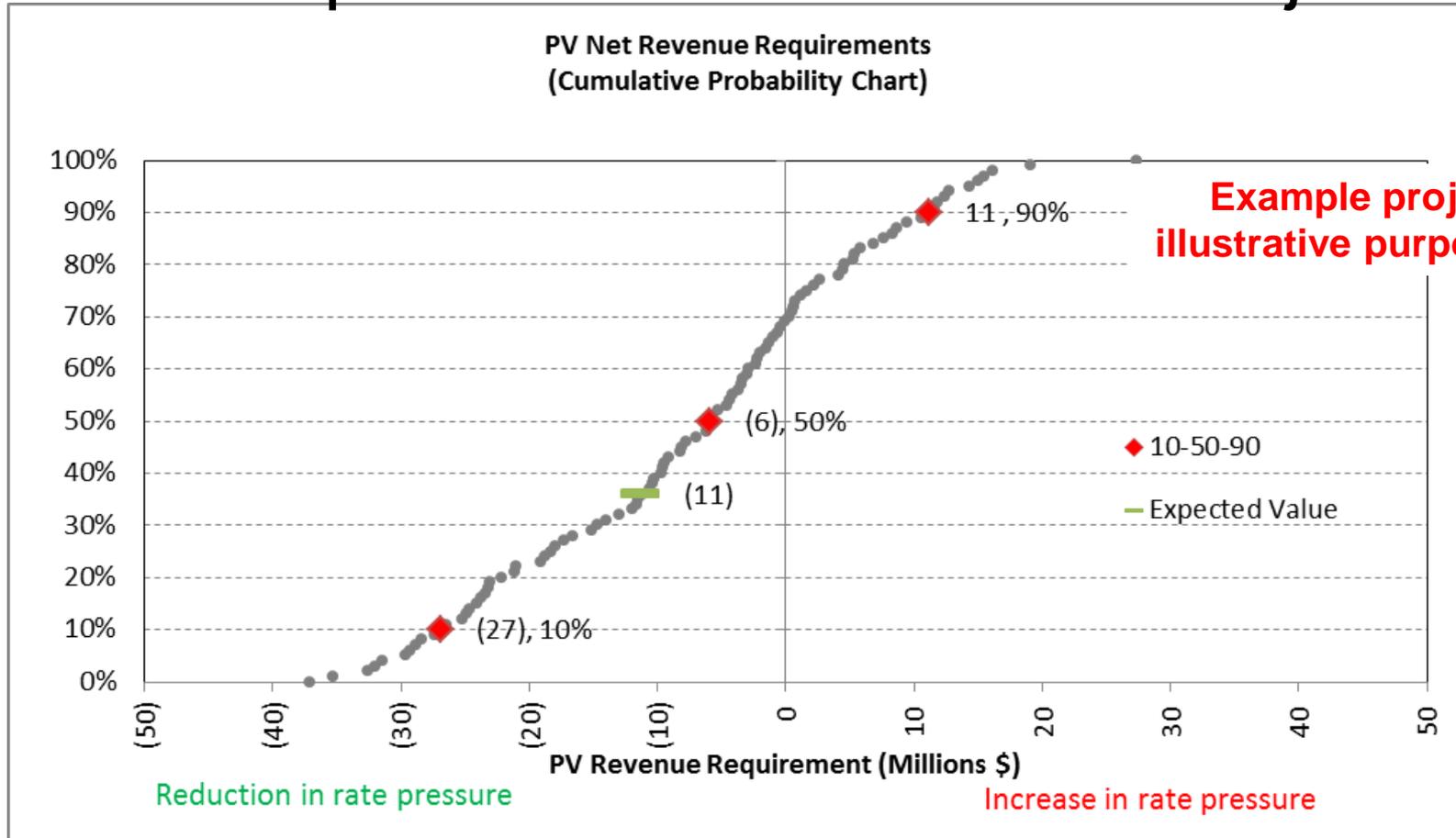
Proposal for Considering Future Sales

- Sales enabled by a new project may not be limited to requests submitted to-date in the specific TSEP cycle
- Possible sources for estimating what new sales may occur once a line is constructed
 - Subject matter expert input
 - Review regional IRPs
 - Renewable requirements
 - Planning power flow studies
- Inputs for analysis will be based on 10th, 50th, 90th percentile assumptions

Risk-Adjusted Output

- At previous workshops, we discussed with customers using a risk-adjusted output to inform rolled-in rate determination
- Will show the likelihood a project will recover its costs
 - Both annually and over the project life
- Will show the likelihood and magnitude of rate pressure to the region
 - Both annually and over the project life

Output Example: PV of Net Revenue Requirement Over Life of a Project



Example project for illustrative purposes only

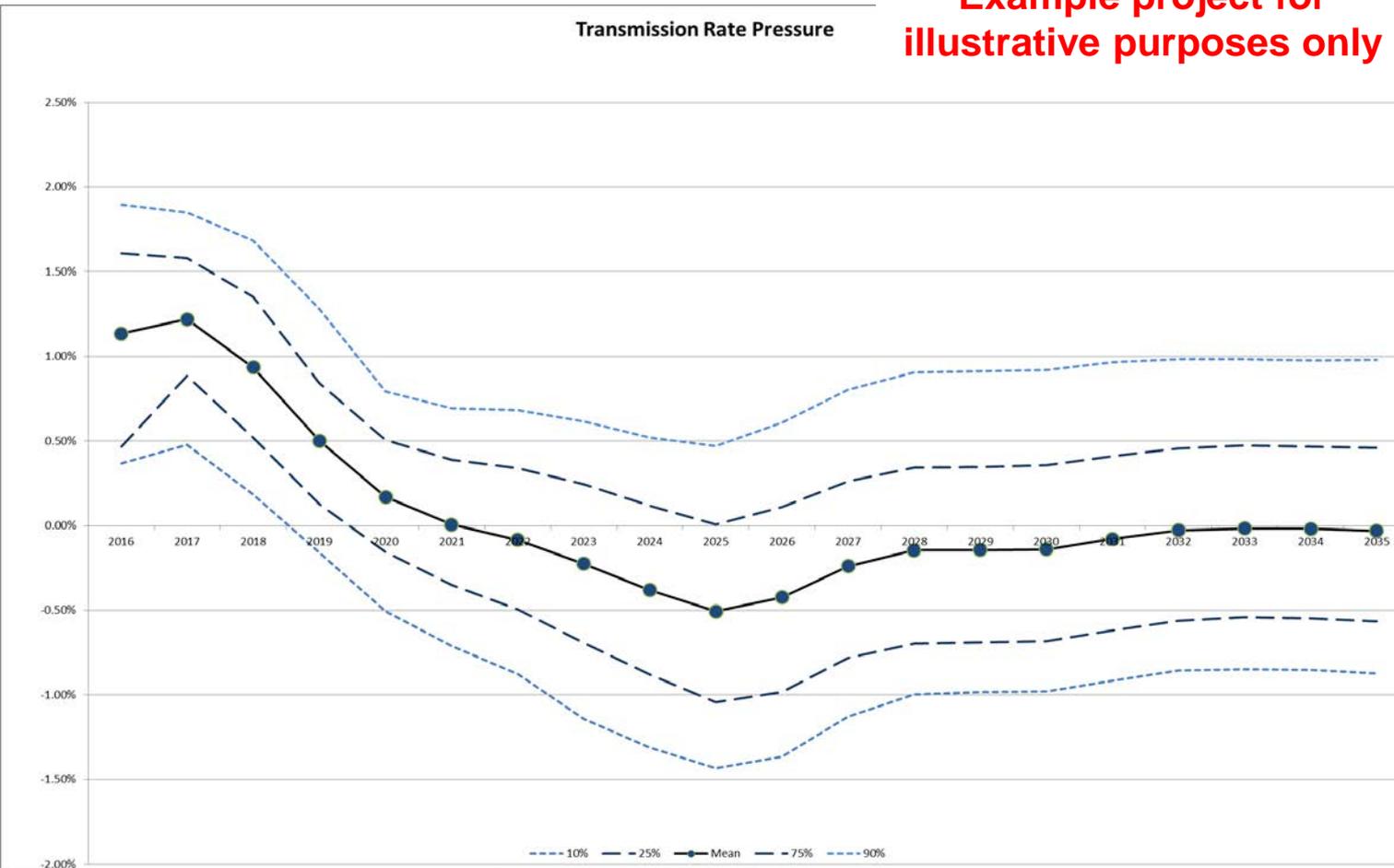
◆ 10-50-90

— Expected Value

- This chart shows the distribution of the present value of the incremental net revenue requirement resulting from the analysis. Negative incremental revenue requirement indicates rate relief.
- Shows approximately 70% likelihood that this project would recover its costs at rolled-in rates

Output Example: Annual Rate Pressure for Life of the Project

Example project for illustrative purposes only



- Shows that rate impact likely to be the highest in the first years of the project
- There is a nearly 25% chance that the project would create rate pressure in excess of 1.5% in 2016-2017
- There is roughly a 80% chance that the project would have between 1% and -1% rate impact from 2028 on

Next Steps

- Requesting customer feedback on:
 - Proposed inputs
 - Proposed output
 - Other information needed to inform build decision?
- Please submit feedback by April 14th to BPA Tech Forum (techforum@bpa.gov)
- Next workshop:
 - Review any customer comments/proposals on modeling
 - Discussion on how build decision will be made
 - Official policy on analysis threshold vs. project-specific assessment for project to move forward
 - Role of region in build decision discussions
 - Other topics?

TSEP – Updates on Outstanding Items



Updates

- As discussed at previous workshops, the team continues to evaluate alternative ways to treat the TSRs of TSEP participants
 - Whether to leave the requests in the pending queue as-submitted, or allow/require customers to modify the requested term of service to align with the in-service date of the required upgrade(s)
 - The team anticipates obtaining agency decision in April
 - Intent is to report out at upcoming workshop on this decision
- Additionally, the team is developing principles to govern the post-cluster study phases
 - Will develop specific agreement templates (Preliminary Engineering or Environmental Review agreements, e.g.) as these phases approach
 - Principles will outline BPA and customer obligations, as well as potential concepts to address the dynamic nature of the TSEP design
 - I.e., impacts to TSEP participants of changes in cost or subscription levels
 - Southwest Power Pool example
- In addition, the team anticipates completing a draft TSEP Business Practice in the coming months, which will be reviewed with customers

2016 Cluster Study

- BPA has not yet made a decision whether to conduct a 2016 cluster study
- We anticipate this decision will occur around the end of April
 - Customers will be notified of this decision as soon as practicable following BPA's decision
- Were BPA to conduct a cluster study in 2016, we anticipate the TSR deadline would be on June 30