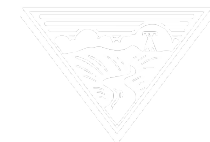


TC-25 Tariff Pre-proceeding Workshop

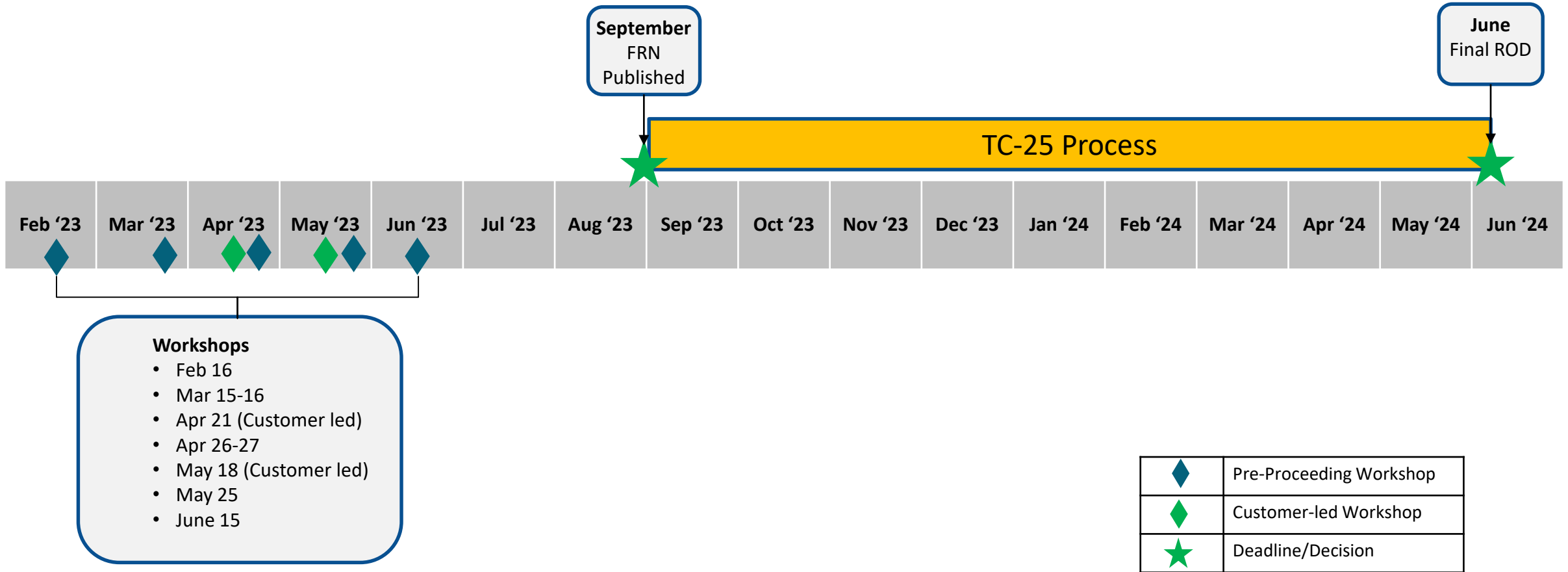
June 15, 2023



Agenda

May 25		
Time	Topic	Presenter
9:00 — 9:05	Agenda Review	Rebecca
9:05 — 9:30	Interest Rate	Rebecca
9:30 — 10:15	Scalable Plans	Christina
10:15 — 10:30	Clarification- Point of Interconnection	Christina
10:30 — 10:45	Break	
10:45 — 11:45	Network Cost Allocation	Rebecca/Pat
11:45 — 11:55	Summary of Leaning	Tammie
11:55 — 12:00	Wrap up	Rebecca

TC-25 Timeline



Procedural Schedule dates are draft only



General Comments

What we heard

- Agreement
 - A lot of agreement with most of the staff leanings
 - Interest rate for deposits with a different alternative (see discussion later in presentation)
- More discussion
 - A lot of concern on network cost allocation (see discussion later in presentation)
 - Concerns on timeline for the cluster study process
 - Concerns on transition plan
 - More explanation on scalable block plans



Interest on Deposits



Steps 5-6



Problem

- Currently we pay the interest on refunds of interconnection study deposits using the FERC rate. The costs of interest are borne by other customers who do not benefit from the interconnection process.
- If BPA changes our collection and increasing the amounts of deposits for interconnection studies, the interest earned on the study deposits refunded could be higher.
- These higher interest costs will continue to be shifted to other customers who do not benefit.

What we heard

- Interest earned on Interconnection Study deposits held in the BPA fund should benefit customers requesting interconnection service, not all other customers
- Should consider escrow accounts for study deposits that allows customers to earn interest on their funds

Staff Leaning (Updated):

- Alternative #6: Customer earns interest equivalent to what BPA would earn on interest income using the effective rate assumed in the BPA Rate Case for Transmission, for the following reasons:
 - The interest earned on the deposits are shifting costs to other customers who do not benefit
 - Providing upfront costs for a service should include a cost and be borne by the customer requesting the service
 - Provides incentive to submit only viable requests

Interest options for refunds of different Interconnection Study deposits

- Refunds of Phase One and Phase Two Cluster Study deposits and Surplus Interconnection deposits may include interest at the effective rate assumed in the BPA Rate Case for Transmission. BPA will not allow customers to use escrow accounts for these deposits.
 - Escrow accounts would be an administrative burden to draw down, therefore were not considered for study deposits but were recommended for commercial readiness deposits
- Refunds of Commercial Readiness Deposits will not include interest from BPA. Customers may set-up escrow accounts for Commercial Readiness Deposits to accrue interest, which would be refunded to the customer.



Scalable Plan Block - Examples

Cluster Studies around the country...

- Are resulting in plans of service larger than anyone is willing to fund:
 - CAISO issued [2023 Interconnection Process Enhancements](#) after conducting 13 Cluster Studies that in part seek to close off portions of their system to interconnections and limit the amount of MWs able to be requested.
- Are plagued by restudies as customers gain more information and drop out of the queue:
 - Ex. PAC is in Cluster 3 and they are still restudying Cluster 1 as requestors continue to drop out.

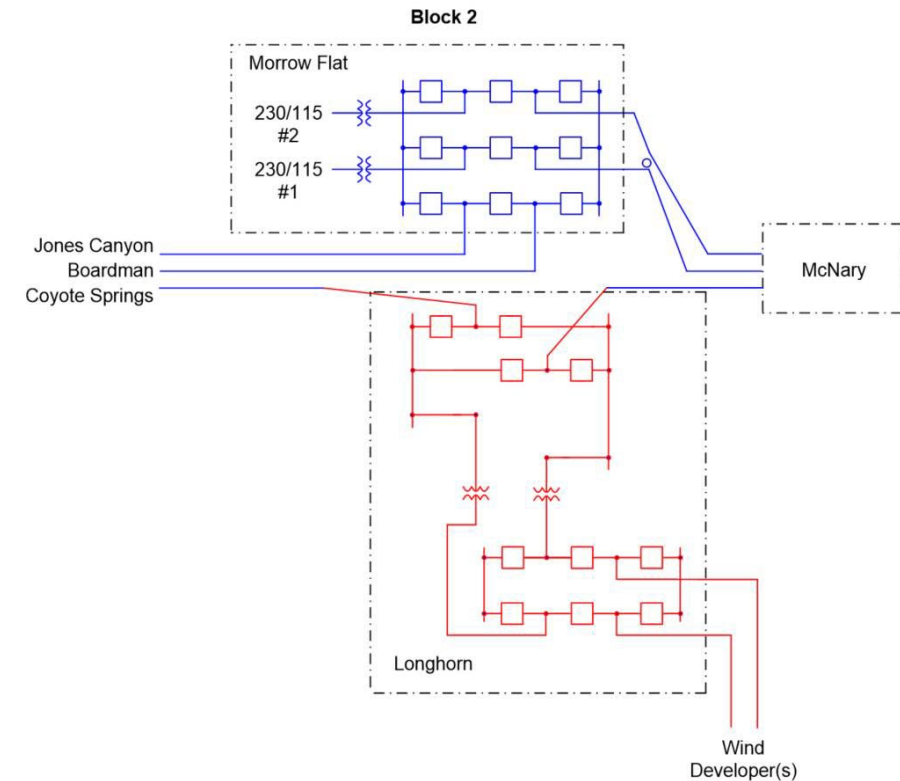
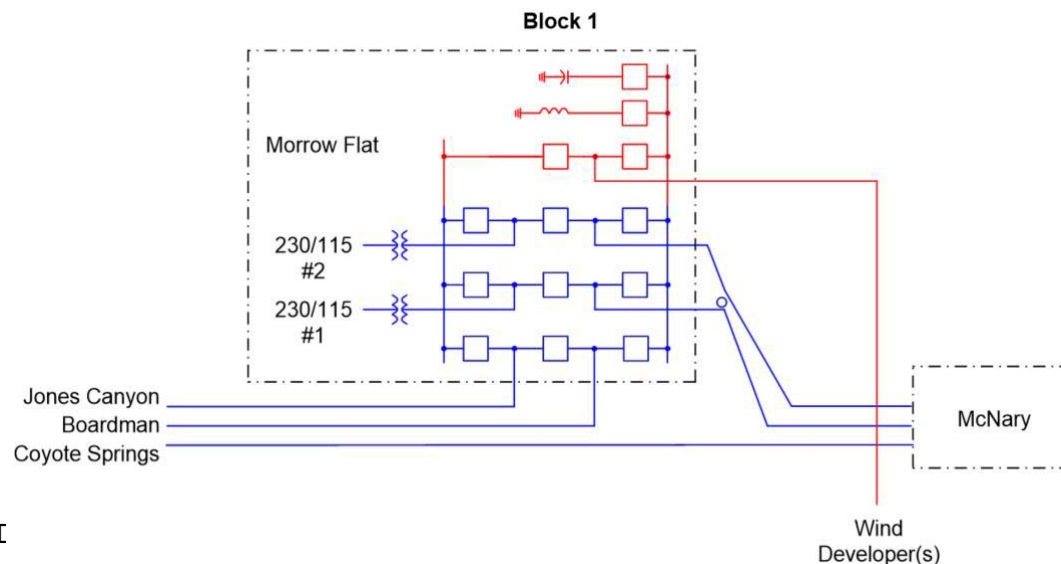
Scalable Plan Blocks head off these issues

- Cluster Study will address all requests:
 - Consistent with the nature of Cluster studies
 - Phase 1 study work combined with system knowledge, can result in Scalable Plan Blocks that enable a tranche of interconnection requests
- Restudy:
 - Likelihood of needing a restudy is greatly reduced
 - If requestors drop out, a ‘restack’ of those remaining can occur, reallocating interconnection capability based on the Scalable Plan Blocks.

Scalable Plan Blocks – Example 1

- Previous interconnection studies found that the Morrow Flat Plan of Service could enable a total of 684 MW
- Subsequent requestors needed to fund Longhorn 500/230kV Substation, which enabled the remainder
- Carrying the example to the proposed process, Scalable Plan Block 1 = MORF, Scalable Plan Block 2 = LONG

MW Enabled	Project	MW Requested	Total MW	Reinforcement Requirements	Cost
0-684 MW	G0362	200	0	New Terminal at Morrow Flat Substation Reactive Compensation at Morrow Flat Substation	\$20M
	G0363	200	400		
685-1000 MW	G0365	300	700	Longhorn 500-230 kV Substation	\$140 M
	G0366	300	1000		



Scalable Plan Blocks – Example 2

MW Enabled	Project	MW Requested	Total MW	Reinforcement requirements beyond project POI to reach La Pine 115 kV	Estimated Cost
0-87 MW	G0377	5	5	Reactive Voltage Control with +/- .95 power factor capability	N/A
	G0385	15	20		
	G0387	10	30		
	G0409	5	35		
	G0410	5	40		
87-140 MW	G0416	20	60	Reactive Voltage Control Add second 115 kV 19.6 MVAR capacitor at La Pine	\$1M
	G0431	20	80		
	G0521	20	100		
	G0526	20	120		
140-200 MW	G0527	105	225	Reactive Voltage Control Add third 115 kV 19.6 MVAR capacitor at La Pine	\$1.1M
>200 MW	G0570	20	245	Second La Pine-Fort Rock 115kV transmission line (Developer)	\$3M
	G0571	20	265		
	G0572	20	285		

- Reduced Restudy Requirement, example:
 - If greyed out requests dropped out...
 - No restudy would be needed. Instead, lower queued requests could be 'restacked' to allocate the enabled capacity.

Scalable Plan Blocks – Example 2 continued

MW Enabled	Project	MW Requested	Total MW	Reinforcement requirements beyond project POI to reach La Pine 115 kV	Estimated Cost
0-87 MW	G0416	20	20	Reactive Voltage Control with +/- .95 power factor capability	N/A
	G0431	20	40		
	G0521	20	60		
	G0526	20	80		
87-140 MW	G0527	105	185	Reactive Voltage Control Add second 115 kV 19.6 MVAR capacitor at La Pine	\$1M
140-200 MW	G0570	20	205	Reactive Voltage Control Add third 115 kV 19.6 MVAR capacitor at La Pine	\$1.1M
>200 MW	G0571	20	225	Second La Pine-Fort Rock 115kV transmission line (Developer)	\$3M
	G0572	20	245		

- Restack would result in new scalable plan block allocation

Scalable Plan Block Reinforcements

- Consistent with the past examples shared, Interconnection Requirements will be based local area impacts within or in close proximity to the applicable Cluster Area
 - Interconnection studies will look at getting local area requests to the 500kV system
 - Interconnection Requests are not expected to get assigned interconnection costs for projects ‘a hundred miles away.’

Scalable Plan Blocks

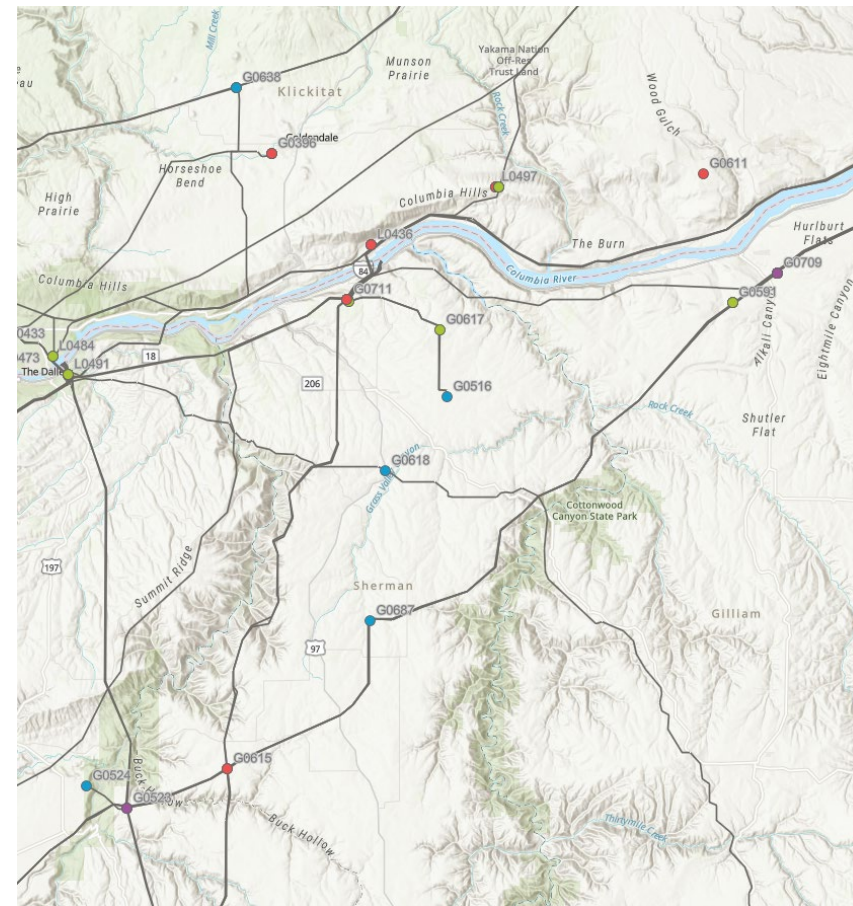
- Get projects energized faster
 - Reduced Restudy requirements if requestors drop out
- Having Scalable Plan Blocks creates the need for ‘priority’
 - To allocate capacity and give plan of service certainty, some mechanism for allocating capacity must exist
- To maintain consistency with First Ready, First Service, need requirements that show progress towards energization to stay in the queue/hold position



Point of Interconnection - Clarification

Point of Interconnection (POI) Clarification

- To encourage efficiency in Points of Interconnection and develop feasible plans that enable interconnection, BPA Staff Proposal is to develop POIs as part of the study process.
- BPA will use site control information, consider similarly situated Interconnection Requests (based on geographical location and electrical relevance), knowledge of the area being studied, MWs requested in an area, and study results to determine efficient Points of Interconnection that align with development of reliable plans of service.



Point of Interconnection (POI) Clarification

- Customers would be able to request a POI for consideration but it would not be required.
- The Scoping Meeting held for all customers would not include POI discussions for individual customers.
 - The purpose of the Scoping Meeting would be to discuss general information regarding the applicable Cluster Study size (e.g., MW and number of Interconnection Requests in the Cluster), a general overview of the Cluster Study process, and to exchange information, including transmission data and earlier study and Cluster Study evaluations, that would be reasonably expected to affect the applicable Cluster Study.
- A definitive Point of Interconnection would not be included in the Phase One Cluster Study Agreement.
- The POI determination would be made during the Phase One Cluster Study and shared as part of the Phase One Cluster Study report.

Network Cost Allocation

Network Cost Allocation-Overview

- In the April workshop, staff shared their leaning for the Network cost allocation.
- Staff basis for network cost allocation was mainly due to the proportional capacity allocation being consistent how the cluster study will be performed.
- Proportionate capacity allocation will be transparent.
- This methodology will allow us to avoid risking delays in timelines due to extra work for our planners
- Allows flexibility for Interconnection Customers to move between the scalable block plans without doing additional studies
- Allows Interconnection Customers to decrease MW without significant changes to the Network cost allocation

Network Cost Allocation-Why is Proportional Capacity consistent with studies?

- High level overview of studies:
 - Plans of services for interconnection is largely determined by power flow studies
 - The power flow studies are mainly based on injection of MW across the system
 - BPA currently does not have a DFAX and would have to create a tool to provide this information
 - If BPA was to create a tool to calculate DFAX (Power Transfer Distribution Factor, “PTDF”) it would be created from the power flow
 - PTDFs may give misleading results because they require a lot of engineering assumptions.
 - Using the level of service the interconnection customer requested to interconnect is a part of the power flow studies does not require engineering assumption and would take that judgement out of the equation

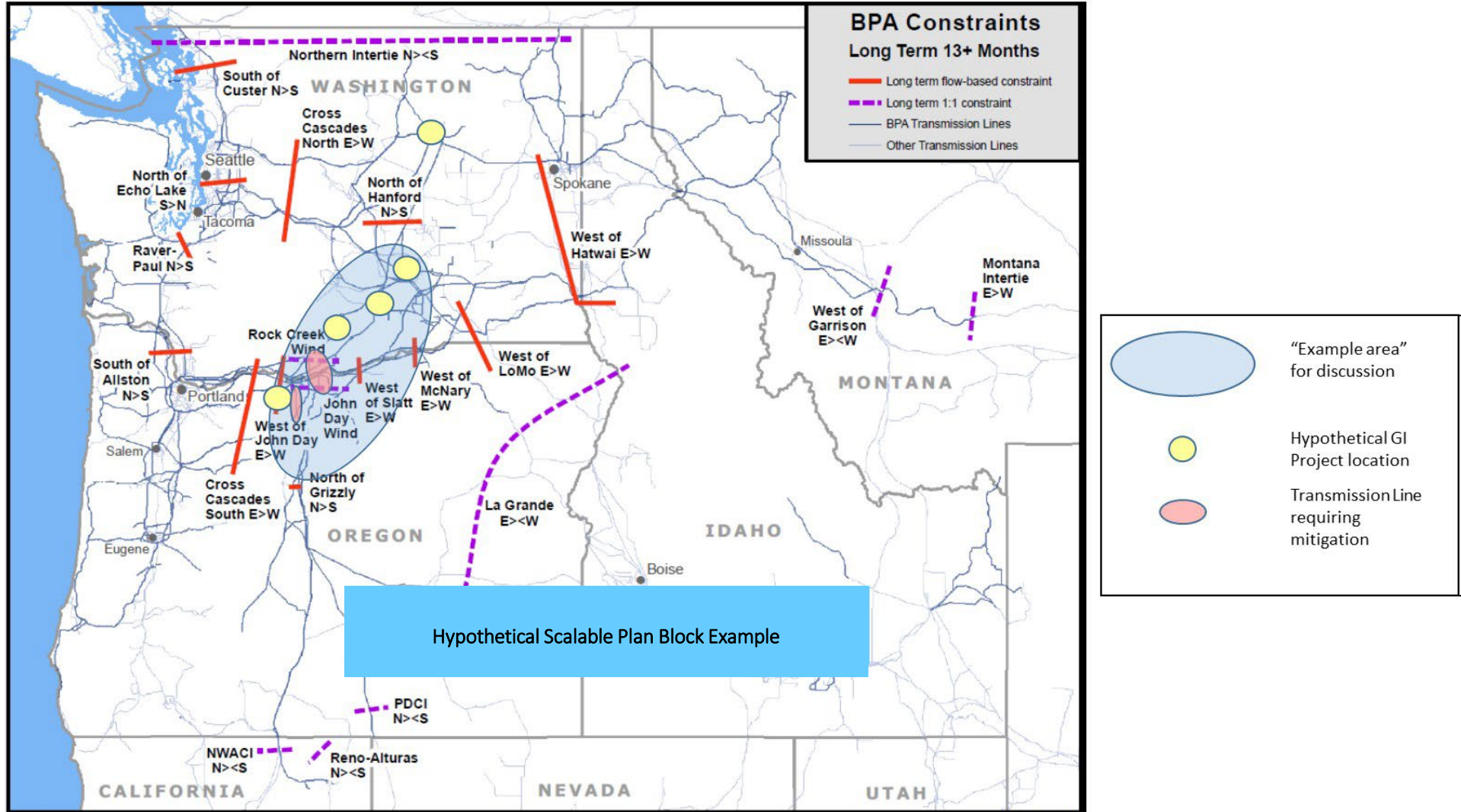
Network Cost Allocation

Hypothetical Example – “Thinking Out Loud” Session

- The following discussion is intended to be an open discussion to highlight how BPA is looking at an allocation method that would include PTDFs.
- The discussion is not intended to be a final indication of a BPA leaning, but rather, an opportunity to see how different allocation methods might be applied and some of the concerns with each method considered.
- The discussion will include a few examples of how various nameplate and PTDF allocations *might* play out.

Network Cost Allocation

Hypothetical Example – “Thinking Out Loud” Session



Example of the PTDF: Staff concerns

Outage Based TLRs: Knight-Ostrander & Big Eddy-Knight				Northwest (Area 40) Load		
Limiting Branch	GI Bus	GI Nameplate	Nameplate Allocation	PTDF	Impact	PTDF Allocation
JOHN DAY_500.0 to ROCK CK_500.0 ckt 1	KNIGHT_500.0	500 MW	17.9%	16.37%	81.9 MW	25.94%
Reverse	WAUTOMA_500.0	700 MW	25.0%	16.37%	114.6 MW	36.31%
TRUE	VANTAGE_N_230.0	300 MW	10.7%	8.90%	26.7 MW	8.46%
Multiplier	VANTAGE_500.0	700 MW	25.0%	10.53%	73.7 MW	23.36%
-1	SPRING_CK_230.0	100 MW	3.6%	-5.50%	0.0 MW	0.00%
Shift Factors Assumed Reference: Malin 500 kV	GND_COULE_S2_230.0	200 MW	7.1%	9.35%	18.7 MW	5.93%
Base Case:	MAUPIN_230.0	100 MW	3.6%	-14.61%	0.0 MW	0.00%
	BIG_EDDY1_230.0	200 MW	7.1%	-14.91%	0.0 MW	0.00%
			100.0%			100.0%

Network Cost Allocation-Summary

- Staff is still leaning towards proportional capacity for Network Cost allocation for the following reasons:
 - Consistent with cost causation
 - Eliminates the need to have engineering judgement as a driver of cost allocation
 - Transparent as customers know how much will be allocated by their requested amount to interconnect and they will see the total assumed in the study report
 - Saving time for planners to better meet the study timelines outlined
 - Simple and repeatable



Overview of Staff Recommendations

Executive Summary: May Workshop Reform Leanings and Staff Recommendations

Reform	May Workshop Reform Leaning	Staff Recommendation
FR/FS	FR/FS Two-phase Cluster Study	No change
Application Fee	\$10k/request, non-refundable	No change
Site Control	Evidence of exclusive site control for the entire generating facility	No change
Study Deposits	Phase 1: \$25k base + \$500/MW, \$100k capped	No change
	Phase 2: \$50k base + \$1K/MW, \$250k capped	No change
	Facilities Study: Based on good faith estimate of request’s allocated share of cost for BPA to perform the preliminary engineering necessary to complete the FAS report on a non-clustered basis for that Sub-cluster’s network plan of service identified in the Phase 2 Cluster Study or Restudy.	No change
Information Access	Provide a publicly available interconnection capacity heat map. For Phase 1 Cluster Study provide a preliminary evaluation of system impact, non-binding <i>typical</i> estimate of cost, non-binding <i>typical</i> time to construct.	No change

Executive Summary: May Workshop Reform Leanings and Staff Recommendations

Reform	May Workshop Reform Leaning	Staff Recommendation
<p>Commercial Readiness Requirements</p>	<p>Commercial Readiness Demonstrations or an amount in lieu of</p> <ul style="list-style-type: none"> • Executed term sheet; • Executed contract binding upon the parties for sale of (i) the constructed Generating Facility to a load-serving entity or to a commercial, industrial, or other large end-use customer, (ii) the Generating Facility’s energy where the term of sale is not less than five (5) years, or (iii) the Generating Facility’s ancillary services if the Generating Facility is an electric storage resource where the term of sale is not less than five (5) years; • Reasonable evidence that the Generating Facility has been selected in a Resource Plan or Resource Solicitation Process; or • Site specific purchase order for generating equipment specific to the Queue Position <p>OR</p> <ul style="list-style-type: none"> • A cash deposit or irrevocable letter of credit in lieu of, in the amount of: <p>At Phase 2: Two times the requests study deposits At Facilities Study: 20% of the allocated Network Upgrade Cost</p>	<p>No change</p>

Executive Summary: May Workshop Reform Leanings and Staff Recommendations

Reform	May Workshop Reform Leaning	Staff Recommendation
Network Upgrade Cost Allocation	Station equipment Network Upgrades allocated based on number of Generating Facilities interconnecting at an individual station on a per capita basis Transmission and distribution Network Upgrade costs are allocated based on the level of service selected by the Interconnection Customer and the Interconnection Customer’s share of the proportional capacity of each individual Generating facility in the Cluster	No change
Study Financials	50% based on the MWs of the request (pro rata) + 50% based on number of participants	No change
Interest on Deposits	No interest paid on deposits	Customer earns interest equivalent to what BPA would earn on interest income using the effective rate assumed in the rate case for transmission interest income. All commercial readiness deposits should either be in an LOC or Escrow account.
Study Flexibility	Allow increases in nameplate (incremental increases of same fuel type and/or co-location of new fuel types) with no change in Interconnection Service level (gen and charging) to go through the Material Modification process. Revise Tariff to align with current process of allowing co-location of resources in a single request.	No change

Transition Process: Reform Recommendations

Area	Current	May Workshop Reform Leaning	Staff Recommendation
Late-stage Requests	n/a	A Late-stage Request is an Interconnection Customer that has executed a Facilities Study Agreement	No Change
		Study Deposit: If the FAS is not completed, a deposit in the amount of a good faith estimate of that requests allocated share of the cost for BPA to perform the preliminary engineering necessary to complete the FAS report on a non-clustered basis for that Study Group’s network plan of service identified in the System Impact Study	No Change
		Re-demonstration of evidence of exclusive site control for the entire generating facility	No Change
		Commercial Readiness: Evidence of one of the following Readiness Milestone Options: <ul style="list-style-type: none"> • Executed term sheet (or comparable evidence); • Executed contract binding upon the parties for sale of (i) the constructed Generating Facility to a load-serving entity or to a commercial, industrial, or other large end-use customer, (ii) the Generating Facility’s energy where the term of sale is not less than five (5) years, or (iii) the Generating Facility’s ancillary services if the Generating Facility is an electric storage resource where the term of sale is not less than five (5) years; • Reasonable evidence that the Generating Facility has been selected in a Resource Plan or Resource Solicitation Process by or for a load- serving entity, is being developed by a load-serving entity, or is being developed for purposes of a sale to a commercial, industrial, or other large end-use customer. For a Generating Facility being developed by a load-serving entity: a site-specific purchase order for generating equipment or statement signed by the Interconnection Customer attesting that the facility will be supplied with generating equipment (e.g. turbines) with a manufacturer’s blank purchase agreement; • Site specific purchase order for generating equipment specific to the Queue Position. 	No Change

Transition Process: Reform Recommendations

Area	Current	May Workshop Reform Leaning	Staff Recommendation
Transition Process – Non-late Stage Requests	n/a	First Ready/First Serve cluster study approach with deviations already approved by FERC and using a BPA “Scalable Plan Block” approach	No Change
		Study Deposit: <ul style="list-style-type: none"> Phase 1: \$25K + \$500/MW (max \$100K) Phase 2: \$50k + \$1K/MW (max \$250K) 	No Change
		Evidence of exclusive site control for the entire generating facility	No Change
		Commercial Readiness: Evidence of one of the following Readiness Milestone Options: <ul style="list-style-type: none"> Executed term sheet (or comparable evidence); Executed contract binding upon the parties for sale of (i) the constructed Generating Facility to a load-serving entity or to a commercial, industrial, or other large end-use customer, (ii) the Generating Facility’s energy where the term of sale is not less than five (5) years, or (iii) the Generating Facility’s ancillary services if the Generating Facility is an electric storage resource where the term of sale is not less than five (5) years; Reasonable evidence that the Generating Facility has been selected in a Resource Plan or Resource Solicitation Process by or for a load- serving entity, is being developed by a load-serving entity, or is being developed for purposes of a sale to a commercial, industrial, or other large end-use customer. For a Generating Facility being developed by a load-serving entity: a site-specific purchase order for generating equipment or statement signed by the Interconnection Customer attesting that the facility will be supplied with generating equipment (e.g. turbines) with a manufacturer’s blank purchase agreement; Site specific purchase order for generating equipment specific to the Queue Position. 	No Change

Next Steps - Settlement Discussions

- Parties interested in participating in settlement discussions moving forward should contact their Transmission Account Executive.
- Settlement discussions should conclude by mid-July in order to afford time to develop tariff language, should a settlement be reached.
- If a settlement is not reached, then BPA will proceed with formal tariff proceedings in Fall 2023.