

TSR Study and Expansion Process

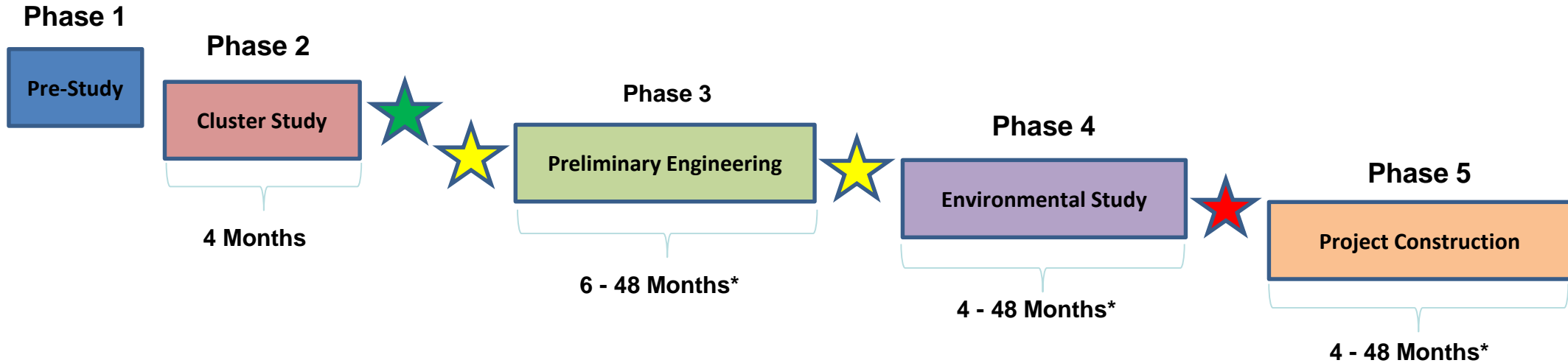
December 7, 2021



Overview

- The TSR Study and Expansion Process (TSEP)
- Overview of the 2021 Cluster Study Results
- Observations for 2022 Cluster Study Participation
- Cluster Study Participation Tips

TSEP Overview



At each of these points, BPA refreshes project-specific information, and the customers may decide whether to proceed.

***Estimated range; actual timelines vary based on project scope and/or environmental impacts**



Customer Closeout Package – Study participants are provided with a study report, a closeout letter detailing the requirements for each of their TSRs to obtain service, and an election form to determine the next steps for each of their TSRs. If applicable, the customer may be tendered an offer for LTF service.

Next Step Agreements - Prior to the commencement of a next phase, BPA will provide customers with updated information on the rate treatment, percentage shares of projects, other non-binding information, such as estimated project costs or timelines. An offer of CFS, if applicable, maybe be made at this time. BPA will provide the customer with Preliminary Engineering or Environmental Study agreements, or both as is applicable.

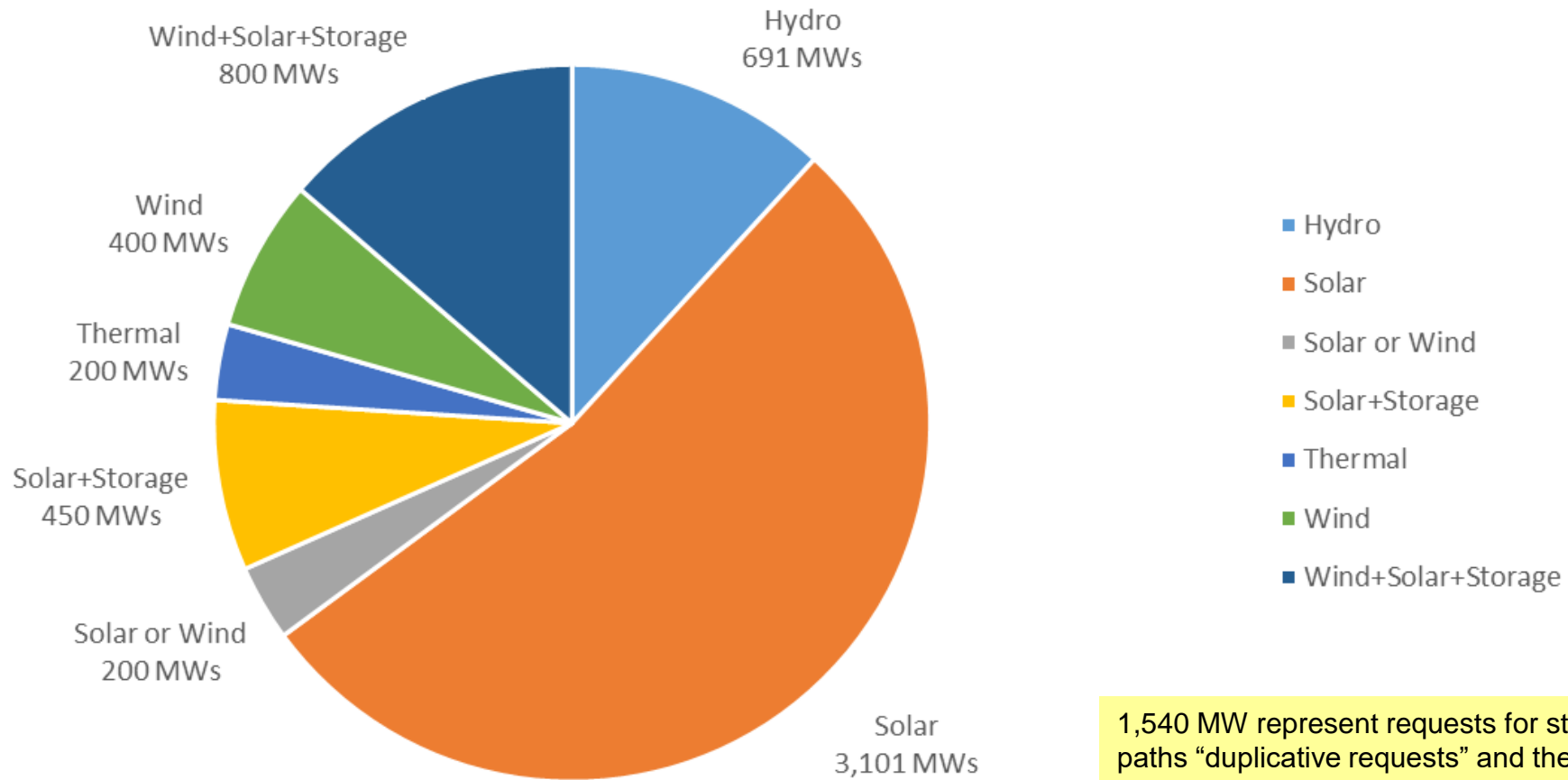
Service Agreement - Prior to the construction decision, BPA will determine whether to offer the requested service at an embedded or incremental rate. BPA will offer the Customer a service agreement for the requested service.

2021 Cluster Study Overview

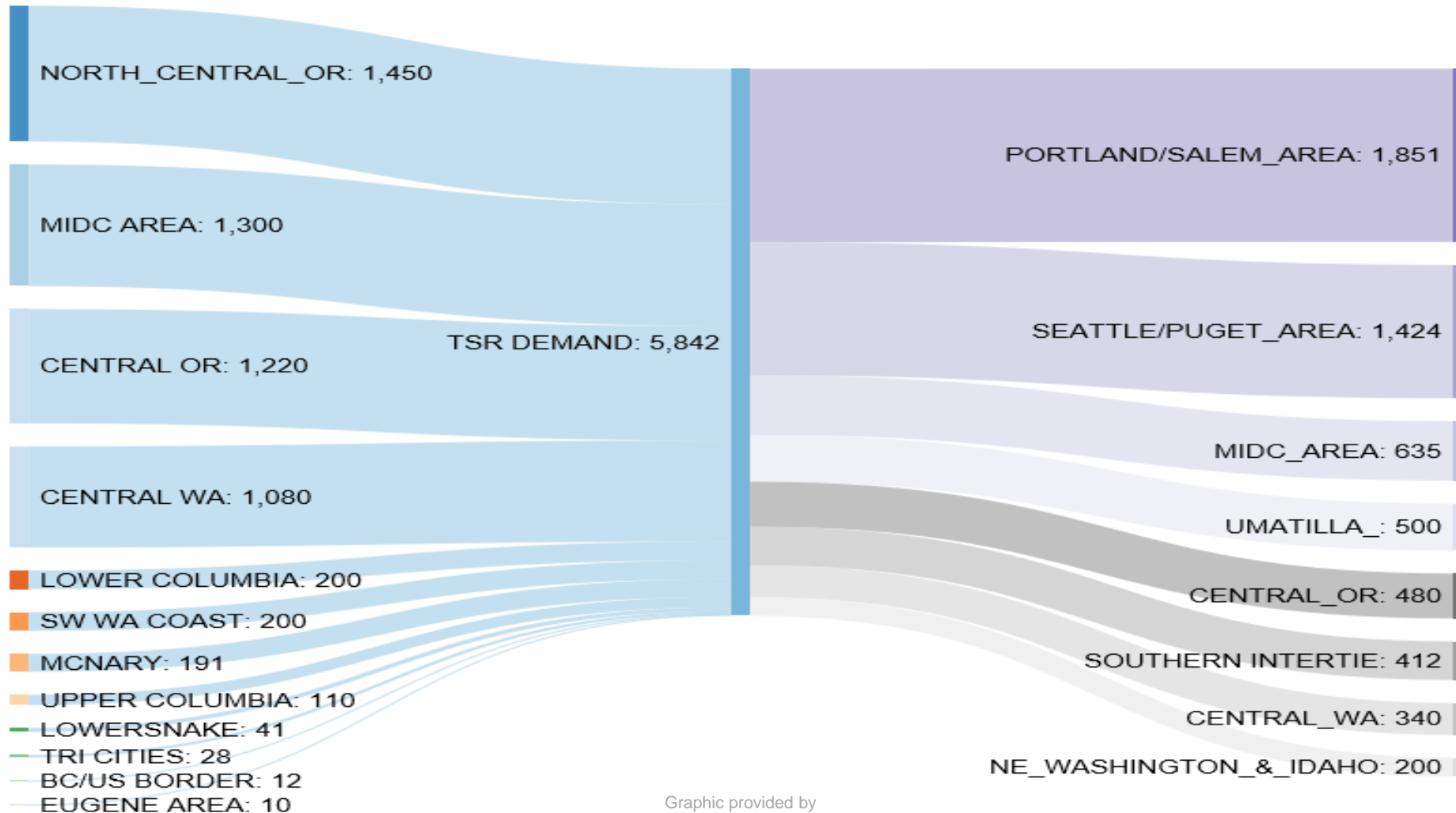
2021 Cluster Study Findings

- BPA evaluated 116 new transmission service requests (TSRs), representing 5,842 MW of transmission demand
 - Eleven (11) TSRs, totaling 305 MW were awardable without transmission upgrades.
 - Twenty-eight (28) TSRs, totaling 2,008 MW, require an upgrade on the BPA system to enable firm service.
 - Seventy-seven (77) TSRs, totaling 3,529 MW, require an upgrade AND resolution of impacts to third-party Transmission Providers.
 - Seventy-four (74) TSRs were determined to be eligible for Conditional Firm Service (CFS) for a total of 3,677 MW.

2021 Cluster Study: Type of Resources



TSR Demand by Geographic Region



Graphic provided by
sankeymatic.com

TSEP Customer Actions

- Based on Customer Elections:
 - 9 TSRs for 220 MW accepted LTF Offers
 - 2 TSRs for 85 MW rejected LTF offers
 - 24 TSRs for 2,011 MW withdrawn by customers
 - 51 TSRs requested BPA send Conditional Firm Service (CFS) offers, representing 1,341 MW of service
 - 75 TSRs for 2,824 MW requested BPA send next stage agreements to support upgrades (these activities are customer funded)

2021 Cluster Study Projects

Plan of Service	Direct Cost Estimate (\$M)
PEA/ESA Participation Projects	
Cross Cascades North Reinforcement •Schultz-Raver #3 and #4 500 kV Series Compensation	\$42.60
Portland Area Reinforcement •Pearl-Sherwood-McCloughlin Reinforcement	\$8.20
Satsop Area Project •Aberdeen Tap to Satsop Park-Cosmopolis #1 115 kV line upgrade	\$0.50
Withdrawn Projects	
Raver-Paul Reinforcements •New 500 kV substation, Coulee-Olympia line upgrade and Olympia substation expansion	\$745.30
Fort Rock Reinforcement •Grizzly-Captain Jack 500 kV line upgrade	\$29.60
Grandview sub-grid area •Grandview-Red Mountain 115 kV line rebuild	\$8.30

TSEP Projects

Projects	MWs*	TSRs	Customers
MT RAS	500	5	2
M2W	320	4	2
Schultz-Wautoma	2,499	73	13
Maupin Upgrade	140	3	1
Monroe-Novelty	600	6	1
Satsop	300	3	1
LaPine Subgrid	113	9	1
Schultz-Raver	2,264	72	11
Pearl-Sherwood-Mcloughlin	934	48	8

* The same MWs can be included in multiple individual projects.

2022 TSEP Kicking Off

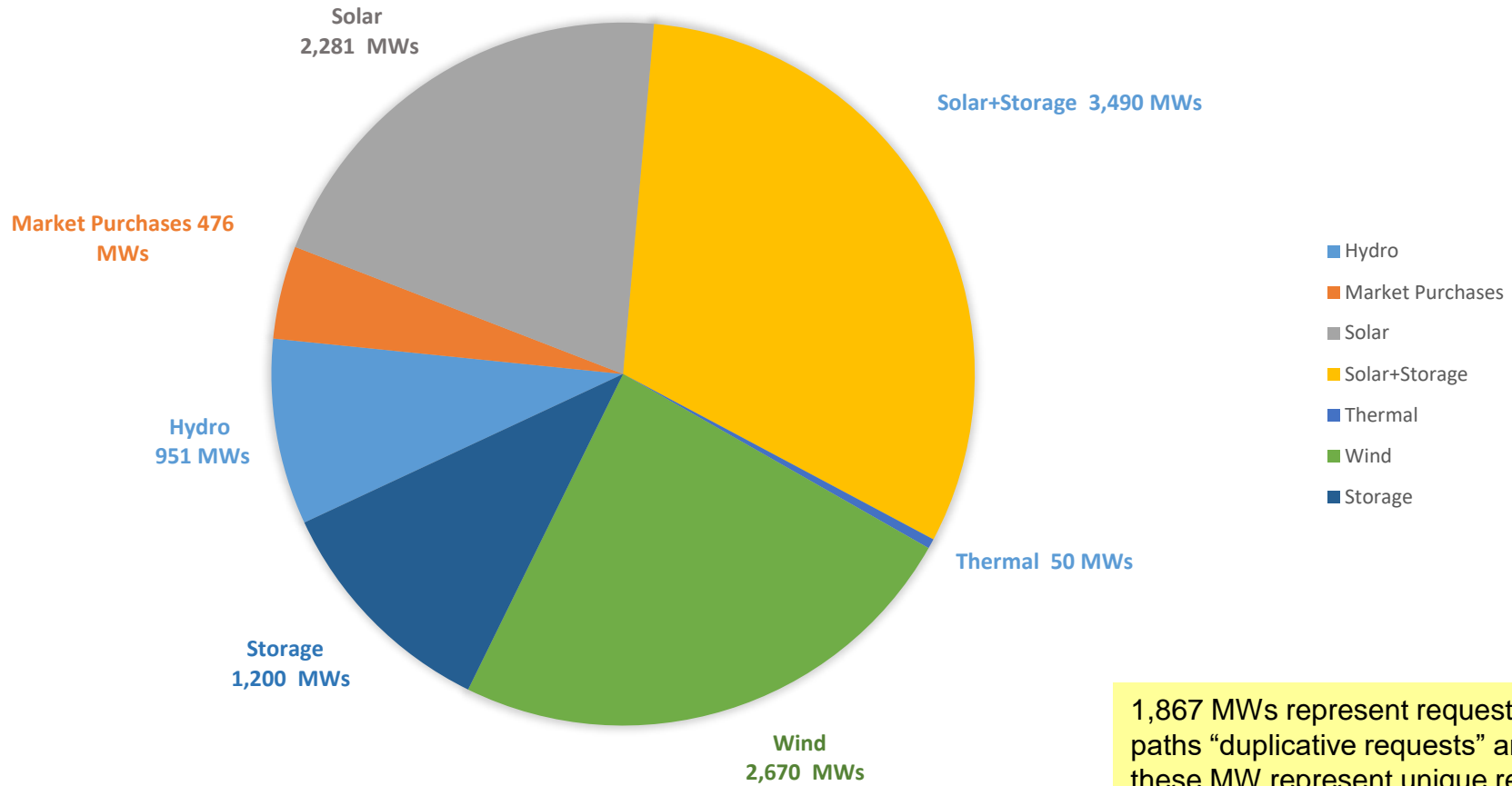
2022 Cluster Study Preliminary Observations

- Initial TSR submission for the 2022 Cluster Study included 153 TSRs for 11,831 MWs.
- 275 MWs offered service
- 21 customers signed CSAs

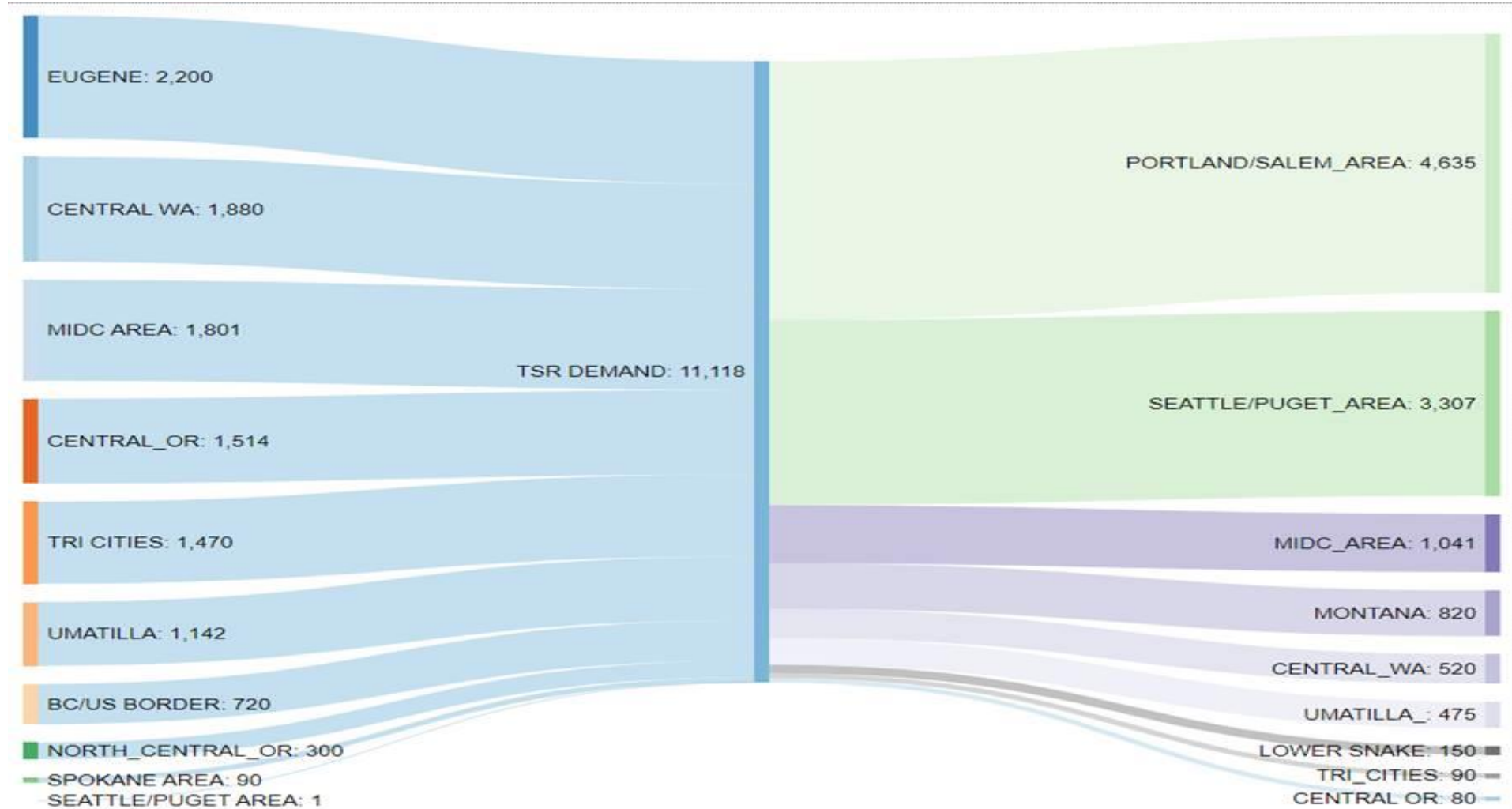
Comparison to Past Studies

Comparison of Participation to Past Studies				
Year	TSRs Submitted	MWs Submitted	TSRs In Study	MW In Study
2008	316	11,464	153	6,410
2009	83	4,867	34	1,553
2010	121	7,304	76	3,759
2013	--	--	50	3,673
2016	--	--	51	2,042
2019	127	5,183	105	3,993
2020	72	4,518	62	3,871
2021	178	11,539	116	5,842
2022	153	11,831	144	11,118

2022 Cluster Study: Type of Resources



TSR Demand by Geographic Region



2022 Cluster Study Next Steps

- Pre-Study Phase
 - Establish power flow models
- The official 2022 Cluster Study kicks off the first week of January 2022.
- Anticipated completion date is early May 2022.
- Anticipated release date of the study report and customer packages is mid to late June.

TSEP Participation Tips

Participation Tips

- Queue time matters
 - Reviewed for service within 30 days of receiving a Completed Application.
 - Before study, if queue changes could get service.
 - After study, higher queued TSRs may not need to participate in a plan of service.
- Become a customer as soon as possible
 - Could take several months to complete requirements for becoming a customer – plan ahead!
 - Work with your Transmission Account Executive

Participation Tips

■ Know your resource

- The more a customer can tell BPA about the type, size, and Point of Interconnection the better.
- If a specific POR has not yet been established for the resource then use NEWPOINT.
- Comments for a NEWPOINT POR should be specific to a voltage and either a substation or a line, or a GI plan of service (the GI number alone is not sufficient).

■ Know the ultimate load to be served

- Use PODs consistent with both the ultimate load being served and the receiving party
- Use the most generic POD available, such as a contiguous POD (CNTGS)

Questions?