

2019 Cluster Study: Summary Results

Table 1, below, lists the reinforcements identified in the 2019 TSEP Cluster Study (CS), the associated estimated direct cost, and an estimated energization date for each project. Table 1 summarizes system reinforcement projects on the BPA-TS Network that would be required to accommodate one or more of the 2019 TSEP CS TSRs. The estimated direct project costs do not include overhead loadings. The projected energization date provides an indication of the time that might be needed to complete the project assuming completion of preliminary engineering, environmental review, and construction; it assumes that these efforts would start upon execution of preliminary engineering agreements under the TSEP.

Table 1 does not list project requirements associated with fixes or other mitigations to third-party systems. Those requirements will, however, need to be addressed before commencement of service can begin for those affected TSRs. BPA-TS has identified potential impacted third-party transmission systems following Table 1.

Table 1: 2019 Cluster Study Plan(s) of Service and Estimated Costs

Plan of Service	Direct Cost (\$M)	Energization Date
Raver-Paul Reinforcements <ul style="list-style-type: none"> • Covington-Chehalis 230 kV Reconductor • Westside-RAS Modification • Schultz-Wautoma 500 kV Series Compensation 	\$12.5 N/A ¹ N/A ²	Fall 2024 Spring 2020 Fall 2023
La Pine-Area projects <ul style="list-style-type: none"> • La Pine 230/115 kV #1 Transformer Replacement • La Pine-Fort Rock 115 kV #2 new radial circuit 	\$7.5 \$70.0	Fall 2025 Fall 2027
South of Allston <ul style="list-style-type: none"> • Schultz-Wautoma 500 kV Series Compensation 	N/A ²	Fall 2023
Satsop-Area project <ul style="list-style-type: none"> • AberdeenTap-Satsop Park 115 kV re-sag/reconductor 	\$0.5	Fall 2024
Walla Walla Project (identified in prior Cluster Study)	\$15.5	Fall 2027
South Tacoma-St. Clair (identified in prior Cluster Study)	N/A ³	Fall 2019
Garrison-Bell-Ashe ⁴ (identified in prior Cluster Study) or Montana Non-Wire Solution	\$1,330.0 (Garrison-Bell-Ashe only)	Fall 2029
Total	\$1,436.0	

¹ BPA-TS is completing the modification to the West-side RAS, and will be accounted for outside of TSEP.

² BPA-TS is completing the Schultz-Wautoma Series Compensation project on its own behalf outside of TSEP.

³ BPA-TS is completing the South Tacoma-St. Clair project on its own behalf outside of TSEP.

⁴ BPA-TS continues to examine other non-wire alternatives in lieu of a Garrison-Bell-Ashe line.

Third-Party Impacts

The CS also identified potential impacts to third-party transmission systems that would require mitigation in order for BPA-TS to provide the requested transmission service for one or more of the 2019 TSEP CS TSRs. The following third-party systems may be impacted and require mitigation:

- For certain TSRs with identified impacts to the Cross Cascades South flowgate (PGE SW Portland/I-5 Corridor area and PacifiCorp's Troutdale area), Customers may need to mitigate impacts to Portland General Electric and PacifiCorp's transmission systems.
- For TSRs requesting a sink in Portland General Electric's Albany/Salem area, Customers may need to mitigate impacts to Portland General Electric's transmission system.
- For TSRs sourcing out of the Satsop area, Customers may need to mitigate impacts to Grays Harbor Public Utility District's transmission system.

Other Projects Required to Provide Service

BPA-TS also identified certain regional projects as required in order to accommodate certain 2019 CS TSRs.

Puget Sound Area Study Team Reinforcements

Congestion in the PSA has been an issue for decades, thus several Puget Sound Area/Northern Intertie (PSANI) reinforcements were developed jointly between Seattle City Light, Puget Sound Energy and BPA in 2011 as a result of the ColumbiaGrid Puget Sound Area Study Team (PSAST). These reinforcement projects are designed to reinforce the Puget Sound Area system and reduce the amount of potential curtailments and congestion. This Plan of Service is denoted in Tables 2 and 3 as "PSAST". These reinforcements include:

- BPA's 500/230 kV Transformer and associated 230 kV line at BPA's Raver substation;
- Puget Sound Energy's Lakeside-Talbot #1 230 kV transmission line upgrade;
- Joint BPA-Seattle City Light (SCL) Bothell-Snoking #1 and #2 230 kV transmission line upgrade;
- SCL's Broad Street 115 kV series reactors.

Montana Remedial Action Scheme

The CS also identified a requirement that TSRs crossing the West of Hatwai or West of Garrison path in the east to west direction must be associated with a physical generator supporting the request that could be tripped as part of a Remedial Action Scheme.

Table 2: 2019 TSEP Cluster Study Results by Customer

2019 TSEP -- Project Requirements by Customer

104 TSRs 3,965 MW

AREF	Service Type	Start Date	Stop Date	POR	POD	Demand	Project Description
Avista Corporation						1 TSRs	14 MW
86223081	PTP	1/1/2019	1/1/2024	GARRISON500CLS	HATWAI230	14 MW	Garrison-Bell-Ashe/MT RAS, or Montana Non-Wire Solution
BioGreen Sustainable Energy¹						1 TSRs	28 MW
84844876	PTP	1/1/2020	1/1/2035	LAPINE115	BETHEL230	28 MW	N/A – TSR WITHDRAWN by Customer
Bonneville Power Administration						1 TSRs	10 MW
87723819	NT	8/1/2018	8/1/2023	BOXCNYN115	PWRSRNTMOA	10 MW	Garrison-Bell-Ashe/MT RAS, or Montana Non-Wire Solution
Cypress Creek Renewables Transmission, LLC						11 TSRs	320 MW
87559181	PTP	12/1/2022	12/1/2027	NEWPOINT (KNIGHT 500) ²	Covington 230	60 MW	Authorize
87559198	PTP	12/1/2022	12/1/2027	NEWPOINT (KNIGHT 500) ²	Covington 230	20 MW	Authorize
87559219	PTP	12/1/2022	12/1/2027	NEWPOINT (KNIGHT 500) ²	Covington 230	20 MW	Authorize
87559222	PTP	12/1/2022	12/1/2027	NEWPOINT (KNIGHT 500) ²	Covington 230	20 MW	Authorize
87559227	PTP	12/1/2022	12/1/2027	NEWPOINT (KNIGHT 500) ²	Covington 230	20 MW	Authorize
87559235	PTP	12/1/2022	12/1/2027	NEWPOINT (KNIGHT 500) ²	Covington 230	20 MW	Authorize
87559973	PTP	12/1/2022	12/1/2027	NEWPOINT (MOXEE115) ³	Covington 230	40 MW	Authorize
87560014	PTP	12/1/2022	12/1/2027	NEWPOINT (MOXEE115) ³	Covington 230	20 MW	Authorize
87560043	PTP	12/1/2022	12/1/2027	NEWPOINT (MOXEE115) ³	Covington 230	10 MW	Authorize
87560055	PTP	12/1/2022	12/1/2027	NEWPOINT (MOXEE115) ³	Covington 230	10 MW	Authorize
87560064	PTP	12/1/2022	12/1/2027	NEWPOINT (GRAND COULEE115) ⁴	Covington 230	80 MW	Authorize
Fossil Lake Solar, LLC						1 TSRs	10 MW
85803176	PTP	11/1/2018	11/1/2023	LAPINE115	BETHEL230	10 MW	La Pine-Area; 3rd-Party Mitigation (PGE Salem Area)
Fremont Solar, LLC						2 TSRs	20 MW
85842065	PTP	11/1/2018	11/1/2023	LAPINE115	BETHEL230	10 MW	La Pine-Area; 3rd-Party Mitigation (PGE Salem Area)
87583265	PTP	10/1/2021	10/1/2026	LAPINE115	BETHEL230	10 MW	La Pine-Area; 3rd-Party Mitigation (PGE Salem Area) and Cross Cascades South (PGE&PAC)
Invenergy Energy Management, LLC						8 TSRs	878 MW
84487211	PTP	1/1/2020	1/1/2025	SATSOP230GEN	KITSAP230	100 MW	Satsop-area Project; 3rd-Party Mitigation (Grays Harbor PUD)
84487219	PTP	1/1/2020	1/1/2025	SATSOP230GEN	OLYMPIA115	100 MW	Satsop-area Project; 3rd-Party Mitigation (Grays Harbor PUD)
85053949	PTP	1/1/2020	1/1/2025	SATSOP230GEN	NWMRKTHUB(NWH)	100 MW	Satsop-area Project; 3rd-Party Mitigation (Grays Harbor PUD)
85053955	PTP	1/1/2020	1/1/2025	SATSOP230GEN	NWMRKTHUB(NWH)	100 MW	Satsop-area Project; Schultz-Wautoma; 3rd-Party Mitigation (Grays Harbor PUD)
85053957	PTP	1/1/2020	1/1/2025	SATSOP230GEN	NWMRKTHUB(NWH)	100 MW	Satsop-area Project; Schultz-Wautoma; 3rd-Party Mitigation (Grays Harbor PUD)
85847235	PTP	1/1/2021	1/1/2041	BOARDMAN115GEN	BETHEL230	75 MW	Schultz-Wautoma; 3rd-Party Mitigation (PGE Salem Area)
86518913	PTP	1/1/2021	1/1/2041	MCNARY230PACW (LONGHORN230) ⁵	BETHEL230	102 MW	Schultz-Wautoma; 3rd-Party Mitigation (PGE Salem Area)
87496314	PTP	1/1/2021	1/1/2026	MCNARY230PACW (STANFIELD500) ⁶	BETHEL230	201 MW	Raver-Paul; 3rd-Party Mitigation (PGE Salem Area)
NewSun Energy Transmission Company, LLC						42 TSRs	440 MW
85677022	PTP	6/1/2023	6/1/2028	NEWPOINT (PONDEROSA230) ⁷	BETHEL230	10 MW	3rd-Party Mitigation (PGE Salem Area)
85677028	PTP	6/1/2023	6/1/2028	NEWPOINT (PONDEROSA230) ⁷	BETHEL230	10 MW	3rd-Party Mitigation (PGE Salem Area)
85677033	PTP	6/1/2023	6/1/2028	NEWPOINT (PONDEROSA230) ⁷	BETHEL230	10 MW	3rd-Party Mitigation (PGE Salem Area)
85677036	PTP	6/1/2023	6/1/2028	NEWPOINT (PONDEROSA230) ⁷	BETHEL230	10 MW	3rd-Party Mitigation (PGE Salem Area)
85677052	PTP	6/1/2023	6/1/2028	NEWPOINT (PONDEROSA230) ⁷	BETHEL230	10 MW	3rd-Party Mitigation (PGE Salem Area)
85677056	PTP	6/1/2023	6/1/2028	NEWPOINT (PONDEROSA230) ⁷	BETHEL230	10 MW	3rd-Party Mitigation (PGE Salem Area)
85677062	PTP	6/1/2023	6/1/2028	NEWPOINT (PONDEROSA230) ⁷	BETHEL230	10 MW	3rd-Party Mitigation (PGE Salem Area)
85677064	PTP	6/1/2023	6/1/2028	NEWPOINT (PONDEROSA230) ⁷	BETHEL230	10 MW	3rd-Party Mitigation (PGE Salem Area)
85677068	PTP	6/1/2023	6/1/2028	NEWPOINT (PONDEROSA230) ⁷	BETHEL230	10 MW	3rd-Party Mitigation (PGE Salem Area)
85677071	PTP	6/1/2023	6/1/2028	NEWPOINT (PONDEROSA230) ⁷	BETHEL230	10 MW	3rd-Party Mitigation (PGE Salem Area)

B O N N E V I L L E P O W E R A D M I N I S T R A T I O N

86194711	PTP	8/1/2020	8/1/2025	NEWPOINT (PONDEROSA230) ⁷	PEARL230	10 MW	Schultz-Wautoma
86194727	PTP	8/1/2020	8/1/2025	NEWPOINT (PONDEROSA230) ⁷	PEARL230	10 MW	Schultz-Wautoma
86194740	PTP	8/1/2022	8/1/2027	NEWPOINT (PONDEROSA230) ⁷	PEARL230	10 MW	Schultz-Wautoma
86194746	PTP	8/1/2022	8/1/2027	NEWPOINT (PONDEROSA230) ⁷	PEARL230	10 MW	Schultz-Wautoma
86194749	PTP	8/1/2022	8/1/2027	NEWPOINT (PONDEROSA230) ⁷	PEARL230	10 MW	Schultz-Wautoma
86194752	PTP	8/1/2022	8/1/2027	NEWPOINT (PONDEROSA230) ⁷	PEARL230	10 MW	Schultz-Wautoma
86308288	PTP	8/1/2020	8/1/2025	NEWPOINT (PONDEROSA230) ⁷	PEARL230	10 MW	Schultz-Wautoma
86308326	PTP	8/1/2020	8/1/2025	NEWPOINT (PONDEROSA230) ⁷	PEARL230	5 MW	Schultz-Wautoma
86308345	PTP	8/1/2020	8/1/2025	NEWPOINT (PONDEROSA230) ⁷	PEARL230	5 MW	Schultz-Wautoma
86939989	PTP	2/1/2024	2/1/2029	NEWPOINT (PONDEROSA230) ⁷	PEARL230	10 MW	Schultz-Wautoma
86940021	PTP	2/1/2024	2/1/2029	NEWPOINT (PONDEROSA230) ⁷	PEARL230	10 MW	Schultz-Wautoma
86940024	PTP	2/1/2024	2/1/2029	NEWPOINT (PONDEROSA230) ⁷	PEARL230	10 MW	Schultz-Wautoma
86940031	PTP	2/1/2024	2/1/2029	NEWPOINT (PONDEROSA230) ⁷	PEARL230	10 MW	Schultz-Wautoma
86940049	PTP	2/1/2024	2/1/2029	NEWPOINT (PONDEROSA230) ⁷	PEARL230	10 MW	Schultz-Wautoma
86940094	PTP	2/1/2024	2/1/2029	NEWPOINT (PONDEROSA230) ⁷	PEARL230	10 MW	Schultz-Wautoma
86940109	PTP	2/1/2024	2/1/2029	NEWPOINT (PONDEROSA230) ⁷	PEARL230	10 MW	Schultz-Wautoma
86940128	PTP	2/1/2024	2/1/2029	NEWPOINT (PONDEROSA230) ⁷	PEARL230	10 MW	Schultz-Wautoma
86940147	PTP	2/1/2024	2/1/2029	NEWPOINT (PONDEROSA230) ⁷	PEARL230	10 MW	Schultz-Wautoma
86940153	PTP	2/1/2024	2/1/2029	NEWPOINT (PONDEROSA230) ⁷	PEARL230	10 MW	Schultz-Wautoma
86981596	PTP	2/1/2024	2/1/2029	NEWPOINT (PONDEROSA230) ⁷	PEARL230	40 MW	Schultz-Wautoma
87198333	PTP	12/1/2024	12/1/2029	NEWPOINT (PONDEROSA230) ⁷	PEARL230	10 MW	Schultz-Wautoma
87198343	PTP	12/1/2024	12/1/2029	NEWPOINT (PONDEROSA230) ⁷	PEARL230	10 MW	Schultz-Wautoma
87198352	PTP	12/1/2024	12/1/2029	NEWPOINT (PONDEROSA230) ⁷	PEARL230	10 MW	Schultz-Wautoma
87198362	PTP	12/1/2024	12/1/2029	NEWPOINT (PONDEROSA230) ⁷	PEARL230	10 MW	Schultz-Wautoma
87198492	PTP	6/1/2022	6/1/2027	NEWPOINT (PONDEROSA230) ⁷	PEARL230	10 MW	Schultz-Wautoma
87198501	PTP	6/1/2022	6/1/2027	NEWPOINT (PONDEROSA230) ⁷	PEARL230	10 MW	Schultz-Wautoma
87198505	PTP	6/1/2022	6/1/2027	NEWPOINT (PONDEROSA230) ⁷	PEARL230	10 MW	Schultz-Wautoma
87198516	PTP	6/1/2022	6/1/2027	NEWPOINT (PONDEROSA230) ⁷	PEARL230	10 MW	Schultz-Wautoma
87198520	PTP	10/1/2025	10/1/2030	NEWPOINT (PONDEROSA230) ⁷	PEARL230	10 MW	Schultz-Wautoma
87198524	PTP	10/1/2025	10/1/2030	NEWPOINT (PONDEROSA230) ⁷	PEARL230	10 MW	Schultz-Wautoma
87198528	PTP	10/1/2025	10/1/2030	NEWPOINT (PONDEROSA230) ⁷	PEARL230	10 MW	Schultz-Wautoma
87198530	PTP	10/1/2025	10/1/2030	NEWPOINT (PONDEROSA230) ⁷	PEARL230	10 MW	Schultz-Wautoma
NextEra Energy Power Marketing LLC						2 TSRs	300 MW
87537441	PTP	1/1/2021	1/1/2026	NEWPOINT (BOARDMAN115) ⁸	PSEI_STHCNTGS	200 MW	Raver-Paul
87537449	PTP	1/1/2021	1/1/2026	NEWPOINT (BOARDMAN115) ⁸	HATWAI230	100 MW	Authorize
OneEnergy Transmission, LLC						1 TSRs	35 MW
87483048	PTP	1/1/2022	1/1/2027	NEWPOINT (MOXEE115) ³	PSEI_CENTCNTGS	35 MW	PSAST
PPM Energy, Inc./Avangrid						19 TSRs	920 MW
86358110	PTP	12/1/2020	4/1/2021	NEWPOINT (BOARDMAN115) ⁸	PGE_CNTGS	25 MW	Authorize
86358128	PTP	12/1/2020	4/1/2021	NEWPOINT (BOARDMAN115) ⁸	PGE_CNTGS	25 MW	Authorize
86358137	PTP	12/1/2020	4/1/2021	NEWPOINT (BOARDMAN115) ⁸	PGE_CNTGS	5 MW	Authorize
86988658	PTP	1/1/2021	1/1/2031	KLONDIKESH230 ⁹	PSEI_CENTCNTGS	125 MW	PSAST
86988672	PTP	1/1/2021	1/1/2028	KLONDIKESH230 ⁹	JOHNDAYINTI500	125 MW	Authorize
86988788	PTP	1/1/2021	1/1/2031	NEWPOINT (MAUPIN230) ¹⁰	PGE_CNTGS	50 MW	Schultz-Wautoma
86988811	PTP	1/1/2021	1/1/2031	NEWPOINT (MAUPIN230) ¹⁰	PGE_CNTGS	50 MW	Schultz-Wautoma
86988838	PTP	1/1/2021	1/1/2031	NEWPOINT (MAUPIN230) ¹⁰	PGE_CNTGS	40 MW	Schultz-Wautoma
87032136	PTP	1/1/2021	1/1/2028	NEWPOINT (MAUPIN230) ¹⁰	Big Eddy 115	50 MW	Authorize
87032150	PTP	1/1/2021	1/1/2028	NEWPOINT (MAUPIN230) ¹⁰	Big Eddy 115	50 MW	Authorize

87032178	PTP	1/1/2021	1/1/2028	NEWPOINT (MAUPIN230) ¹⁰	Big Eddy 115	40 MW	Authorize
87350025	PTP	9/1/2019	4/1/2021	NEWPOINT (BOARDMAN115) ⁸	PGE_CNTGS	10 MW	Authorize
87350116	PTP	12/1/2021	10/1/2025	NEWPOINT (BOARDMAN115) ⁸	PGE_CNTGS	25 MW	Authorize
87583772	PTP	12/1/2022	12/1/2032	SPRNCRK230AVRN	PSEI_CENTCNTGS	50 MW	PSAST; 3rd-Party Mitigation - Cross Cascades South (PGE&PAC)
87583779	PTP	12/1/2022	12/1/2032	SPRNCRK230AVRN	PSEI_CENTCNTGS	50 MW	PSAST; 3rd-Party Mitigation - Cross Cascades South (PGE&PAC)
87583789	PTP	12/1/2022	12/1/2032	SPRNCRK230AVRN	Big Eddy 115	50 MW	Authorize
87583794	PTP	12/1/2022	12/1/2032	SPRNCRK230AVRN	Big Eddy 115	50 MW	Authorize
87583798	PTP	12/1/2022	12/1/2032	SPRNCRK230AVRN	JOHNDAYINTI500	50 MW	Authorize
87583806	PTP	12/1/2022	12/1/2032	SPRNCRK230AVRN	JOHNDAYINTI500	50 MW	Authorize
Puget Sound Energy Marketing						3 TSRs	102 MW
82996223	PTP	3/1/2024	3/1/2029	TUCNNRV115PSEI	STCLAIR230	75 MW	Walla Walla Project; South Tacoma-St. Clair
86877159	PTP	11/1/2021	3/1/2024	HARVLUM230GEC	PSEI_CENTCNTGS	21 MW	PSAST
87142801	PTP	11/1/2021	3/1/2024	HARVLUM230GEC	PSEI_CENTCNTGS	6 MW	PSAST
Powerex Corp						1 TSRs	60 MW
87582689	PTP	1/1/2019	1/1/2024	COLMBIA230CHPD	PSEI_CENTCNTGS	60 MW	PSAST
Scout Clean Energy						6 TSRs	500 MW
87101575	PTP	12/1/2020	12/1/2045	NEWPOINT (RED MOUNTAIN 115) ¹¹	PEARL230	100 MW	Raver-Paul
87101584	PTP	12/1/2020	12/1/2045	NEWPOINT (RED MOUNTAIN 115) ¹¹	PEARL230	100 MW	Raver-Paul
87101588	PTP	12/1/2020	12/1/2045	NEWPOINT (RED MOUNTAIN 115) ¹¹	PEARL230	50 MW	Raver-Paul
87582109	PTP	10/1/2020	10/1/2045	NEWPOINT (RED MOUNTAIN 115) ¹¹	NWMRKTHUB(NWH)	100 MW	Authorize
87582128	PTP	10/1/2020	10/1/2045	NEWPOINT (RED MOUNTAIN 115) ¹¹	NWMRKTHUB(NWH)	100 MW	Authorize
87583186	PTP	10/1/2020	10/1/2045	NEWPOINT (RED MOUNTAIN 115) ¹¹	NWMRKTHUB(NWH)	50 MW	Authorize
Snohomish County PUD						1 TSRs	6 MW
88306716	PTP	1/1/2019	10/1/2026	SILVRCK69PKWD	SNOHOMISHCNTGS	6 MW	Schultz-Wautoma; PSAST
Tacoma Power						1 TSRs	100 MW
86630924	PTP	1/1/2020	10/1/2031	TACOMA230	JOHNDAYINTI500	100 MW	Raver-Paul
WPD Wind Projects Inc.						4 TSRs	250 MW
87570680	PTP	12/1/2020	12/1/2025	NEWPOINT (FRANKLIN230) ¹²	NWMRKTHUB(NWH)	100 MW	Authorize
87570708	PTP	12/1/2020	12/1/2025	NEWPOINT (FRANKLIN230) ¹²	NWMRKTHUB(NWH)	100 MW	Authorize
87570766	PTP	12/1/2020	12/1/2025	NEWPOINT (FRANKLIN230) ¹²	NWMRKTHUB(NWH)	25 MW	Authorize
87570774	PTP	12/1/2020	12/1/2025	NEWPOINT (FRANKLIN230) ¹²	NWMRKTHUB(NWH)	25 MW	Authorize

¹ – TSR was WITHDRAWN by Customer following the commencement of the 2019 Cluster Study. As such, the 2019 CS results omit this TSR.

² – NEWPOINT originally identified at Alfalfa 230 but studied at Knight 500 per alternate POI determination.

³ – NEWPOINT studied at Moxee 115; TSR will be conformed to POI established in the LGIA.

⁴ – NEWPOINT studied at Grand Coulee 115; TSR will be conformed to POI established in the LGIA.

⁵ – Requested McNary 230 POR studied at Longhorn 230 per alternate POI determination.

⁶ – Requested McNary 230 POR studied at Stanfield 500 per identified POI determination.

⁷ – NEWPOINT studied at Ponderosa 230 per identified POI determination.

⁸ – NEWPOINT studied at Boardman 115 per identified POI determination.

⁹ – Of these two TSRs, 200 MW is required to conform to Biglow Canyon/Golden Hills.

¹⁰ – NEWPOINT studied at Maupin 230 per identified POI determination.

¹¹ – NEWPOINT studied at Red Mountain 115 per identified POI determination.

¹² – NEWPOINT studied at Franklin 230 but TSR will be conformed to POI established in the LGIA.

Table 3: 2019 TSEP Cluster Study Results by Requirements

2019 TSEP -- Project Requirements by Project Grouping

104 TSRs 3,965 MW

Customer	AREF	Service Type	Start Date	Stop Date	POR	POD	Demand
Authorize							32 TSRs 1,475 MW
PPM Energy, Inc.	86358110	PTP	12/1/2020	4/1/2021	NEWPOINT (BOARDMAN115) ¹	PGE_CNTGS	25 MW
PPM Energy, Inc.	86358128	PTP	12/1/2020	4/1/2021	NEWPOINT (BOARDMAN115) ¹	PGE_CNTGS	25 MW
PPM Energy, Inc.	86358137	PTP	12/1/2020	4/1/2021	NEWPOINT (BOARDMAN115) ¹	PGE_CNTGS	5 MW
PPM Energy, Inc.	86988672	PTP	1/1/2021	1/1/2028	KLONDIKESH230 ²	John Day 500	125 MW
PPM Energy, Inc.	87032136	PTP	1/1/2021	1/1/2028	NEWPOINT (MAUPIN230) ³	Big Eddy 115	50 MW
PPM Energy, Inc.	87032150	PTP	1/1/2021	1/1/2028	NEWPOINT (MAUPIN230) ³	Big Eddy 115	50 MW
PPM Energy, Inc.	87032178	PTP	1/1/2021	1/1/2028	NEWPOINT (MAUPIN230) ³	Big Eddy 115	40 MW
PPM Energy, Inc.	87350025	PTP	9/1/2019	4/1/2021	NEWPOINT (BOARDMAN115) ¹	PGE_CNTGS	10 MW
PPM Energy, Inc.	87350116	PTP	12/1/2021	10/1/2025	NEWPOINT (BOARDMAN115) ¹	PGE_CNTGS	25 MW
NextEra Energy Power Marketing LLC	87537449	PTP	1/1/2021	1/1/2026	NEWPOINT (BOARDMAN115) ¹	Hatwai 230	100 MW
Cypress Creek Renewables Transmission, LLC	87559181	PTP	12/1/2022	12/1/2027	NEWPOINT (KNIGHT 500) ⁴	Covington 230	60 MW
Cypress Creek Renewables Transmission, LLC	87559198	PTP	12/1/2022	12/1/2027	NEWPOINT (KNIGHT 500) ⁴	Covington 230	20 MW
Cypress Creek Renewables Transmission, LLC	87559219	PTP	12/1/2022	12/1/2027	NEWPOINT (KNIGHT 500) ⁴	Covington 230	20 MW
Cypress Creek Renewables Transmission, LLC	87559222	PTP	12/1/2022	12/1/2027	NEWPOINT (KNIGHT 500) ⁴	Covington 230	20 MW
Cypress Creek Renewables Transmission, LLC	87559227	PTP	12/1/2022	12/1/2027	NEWPOINT (KNIGHT 500) ⁴	Covington 230	20 MW
Cypress Creek Renewables Transmission, LLC	87559235	PTP	12/1/2022	12/1/2027	NEWPOINT (KNIGHT 500) ⁴	Covington 230	20 MW
Cypress Creek Renewables Transmission, LLC	87559973	PTP	12/1/2022	12/1/2027	NEWPOINT (MOXEE115) ³	Covington 230	40 MW
Cypress Creek Renewables Transmission, LLC	87560014	PTP	12/1/2022	12/1/2027	NEWPOINT (MOXEE115) ³	Covington 230	20 MW
Cypress Creek Renewables Transmission, LLC	87560043	PTP	12/1/2022	12/1/2027	NEWPOINT (MOXEE115) ³	Covington 230	10 MW
Cypress Creek Renewables Transmission, LLC	87560055	PTP	12/1/2022	12/1/2027	NEWPOINT (MOXEE115) ³	Covington 230	10 MW
Cypress Creek Renewables Transmission, LLC	87560064	PTP	12/1/2022	12/1/2027	NEWPOINT (GRAND COULEE115) ⁶	Covington 230	80 MW
WPD Wind Projects Inc.	87570680	PTP	12/1/2020	12/1/2025	NEWPOINT (FRANKLIN230) ⁷	NWMRKTHUB(NWH)	100 MW
WPD Wind Projects Inc.	87570708	PTP	12/1/2020	12/1/2025	NEWPOINT (FRANKLIN230) ⁷	NWMRKTHUB(NWH)	100 MW
WPD Wind Projects Inc.	87570766	PTP	12/1/2020	12/1/2025	NEWPOINT (FRANKLIN230) ⁷	NWMRKTHUB(NWH)	25 MW
WPD Wind Projects Inc.	87570774	PTP	12/1/2020	12/1/2025	NEWPOINT (FRANKLIN230) ⁷	NWMRKTHUB(NWH)	25 MW
Scout Clean Energy LLC	87582109	PTP	10/1/2020	10/1/2045	NEWPOINT (RED MOUNTAIN115) ⁸	NWMRKTHUB(NWH)	100 MW
Scout Clean Energy LLC	87582128	PTP	10/1/2020	10/1/2045	NEWPOINT (RED MOUNTAIN115) ⁸	NWMRKTHUB(NWH)	100 MW
Scout Clean Energy LLC	87583186	PTP	10/1/2020	10/1/2045	NEWPOINT (RED MOUNTAIN115) ⁸	NWMRKTHUB(NWH)	50 MW
PPM Energy, Inc.	87583789	PTP	12/1/2022	12/1/2032	SPRINGCREEK230	Big Eddy 115	50 MW
PPM Energy, Inc.	87583794	PTP	12/1/2022	12/1/2032	SPRINGCREEK230	Big Eddy 115	50 MW
PPM Energy, Inc.	87583798	PTP	12/1/2022	12/1/2032	SPRINGCREEK230	John Day 500	50 MW
PPM Energy, Inc.	87583806	PTP	12/1/2022	12/1/2032	SPRINGCREEK230	John Day 500	50 MW
3rd-Party Mitigation (PGE Salem Area)							10 TSRs 100 MW
NewSun Energy Transmission Company LLC	85677022	PTP	6/1/2023	6/1/2028	NEWPOINT (PONDEROSA230) ⁹	BETHEL230	10 MW
NewSun Energy Transmission Company LLC	85677028	PTP	6/1/2023	6/1/2028	NEWPOINT (PONDEROSA230) ⁹	BETHEL230	10 MW
NewSun Energy Transmission Company LLC	85677033	PTP	6/1/2023	6/1/2028	NEWPOINT (PONDEROSA230) ⁹	BETHEL230	10 MW
NewSun Energy Transmission Company LLC	85677036	PTP	6/1/2023	6/1/2028	NEWPOINT (PONDEROSA230) ⁹	BETHEL230	10 MW
NewSun Energy Transmission Company LLC	85677052	PTP	6/1/2023	6/1/2028	NEWPOINT (PONDEROSA230) ⁹	BETHEL230	10 MW
NewSun Energy Transmission Company LLC	85677056	PTP	6/1/2023	6/1/2028	NEWPOINT (PONDEROSA230) ⁹	BETHEL230	10 MW
NewSun Energy Transmission Company LLC	85677062	PTP	6/1/2023	6/1/2028	NEWPOINT (PONDEROSA230) ⁹	BETHEL230	10 MW
NewSun Energy Transmission Company LLC	85677064	PTP	6/1/2023	6/1/2028	NEWPOINT (PONDEROSA230) ⁹	BETHEL230	10 MW
NewSun Energy Transmission Company LLC	85677068	PTP	6/1/2023	6/1/2028	NEWPOINT (PONDEROSA230) ⁹	BETHEL230	10 MW
NewSun Energy Transmission Company LLC	85677071	PTP	6/1/2023	6/1/2028	NEWPOINT (PONDEROSA230) ⁹	BETHEL230	10 MW

Schultz-Wautoma							35 TSRs	480	MW
NewSun Energy Transmission Company LLC	86194711	PTP	8/1/2020	8/1/2025	NEWPOINT (PONDEROSA230) ⁹	PEARL230	10	MW	
NewSun Energy Transmission Company LLC	86194727	PTP	8/1/2020	8/1/2025	NEWPOINT (PONDEROSA230) ⁹	PEARL230	10	MW	
NewSun Energy Transmission Company LLC	86194740	PTP	8/1/2022	8/1/2027	NEWPOINT (PONDEROSA230) ⁹	PEARL230	10	MW	
NewSun Energy Transmission Company LLC	86194746	PTP	8/1/2022	8/1/2027	NEWPOINT (PONDEROSA230) ⁹	PEARL230	10	MW	
NewSun Energy Transmission Company LLC	86194749	PTP	8/1/2022	8/1/2027	NEWPOINT (PONDEROSA230) ⁹	PEARL230	10	MW	
NewSun Energy Transmission Company LLC	86194752	PTP	8/1/2022	8/1/2027	NEWPOINT (PONDEROSA230) ⁹	PEARL230	10	MW	
NewSun Energy Transmission Company LLC	86308288	PTP	8/1/2020	8/1/2025	NEWPOINT (PONDEROSA230) ⁹	PEARL230	10	MW	
NewSun Energy Transmission Company LLC	86308326	PTP	8/1/2020	8/1/2025	NEWPOINT (PONDEROSA230) ⁹	PEARL230	5	MW	
NewSun Energy Transmission Company LLC	86308345	PTP	8/1/2020	8/1/2025	NEWPOINT (PONDEROSA230) ⁹	PEARL230	5	MW	
NewSun Energy Transmission Company LLC	86939989	PTP	2/1/2024	2/1/2029	NEWPOINT (PONDEROSA230) ⁹	PEARL230	10	MW	
NewSun Energy Transmission Company LLC	86940021	PTP	2/1/2024	2/1/2029	NEWPOINT (PONDEROSA230) ⁹	PEARL230	10	MW	
NewSun Energy Transmission Company LLC	86940024	PTP	2/1/2024	2/1/2029	NEWPOINT (PONDEROSA230) ⁹	PEARL230	10	MW	
NewSun Energy Transmission Company LLC	86940031	PTP	2/1/2024	2/1/2029	NEWPOINT (PONDEROSA230) ⁹	PEARL230	10	MW	
NewSun Energy Transmission Company LLC	86940049	PTP	2/1/2024	2/1/2029	NEWPOINT (PONDEROSA230) ⁹	PEARL230	10	MW	
NewSun Energy Transmission Company LLC	86940094	PTP	2/1/2024	2/1/2029	NEWPOINT (PONDEROSA230) ⁹	PEARL230	10	MW	
NewSun Energy Transmission Company LLC	86940109	PTP	2/1/2024	2/1/2029	NEWPOINT (PONDEROSA230) ⁹	PEARL230	10	MW	
NewSun Energy Transmission Company LLC	86940128	PTP	2/1/2024	2/1/2029	NEWPOINT (PONDEROSA230) ⁹	PEARL230	10	MW	
NewSun Energy Transmission Company LLC	86940147	PTP	2/1/2024	2/1/2029	NEWPOINT (PONDEROSA230) ⁹	PEARL230	10	MW	
NewSun Energy Transmission Company LLC	86940153	PTP	2/1/2024	2/1/2029	NEWPOINT (PONDEROSA230) ⁹	PEARL230	10	MW	
NewSun Energy Transmission Company LLC	86981596	PTP	2/1/2024	2/1/2029	NEWPOINT (PONDEROSA230) ⁹	PEARL230	40	MW	
PPM Energy, Inc.	86988788	PTP	1/1/2021	1/1/2031	NEWPOINT (MAUPIN230) ³	PGE_CNTGS	50	MW	
PPM Energy, Inc.	86988811	PTP	1/1/2021	1/1/2031	NEWPOINT (MAUPIN230) ³	PGE_CNTGS	50	MW	
PPM Energy, Inc.	86988838	PTP	1/1/2021	1/1/2031	NEWPOINT (MAUPIN230) ³	PGE_CNTGS	40	MW	
NewSun Energy Transmission Company LLC	87198333	PTP	12/1/2024	12/1/2029	NEWPOINT (PONDEROSA230) ⁹	PEARL230	10	MW	
NewSun Energy Transmission Company LLC	87198343	PTP	12/1/2024	12/1/2029	NEWPOINT (PONDEROSA230) ⁹	PEARL230	10	MW	
NewSun Energy Transmission Company LLC	87198352	PTP	12/1/2024	12/1/2029	NEWPOINT (PONDEROSA230) ⁹	PEARL230	10	MW	
NewSun Energy Transmission Company LLC	87198362	PTP	12/1/2024	12/1/2029	NEWPOINT (PONDEROSA230) ⁹	PEARL230	10	MW	
NewSun Energy Transmission Company LLC	87198492	PTP	6/1/2022	6/1/2027	NEWPOINT (PONDEROSA230) ⁹	PEARL230	10	MW	
NewSun Energy Transmission Company LLC	87198501	PTP	6/1/2022	6/1/2027	NEWPOINT (PONDEROSA230) ⁹	PEARL230	10	MW	
NewSun Energy Transmission Company LLC	87198505	PTP	6/1/2022	6/1/2027	NEWPOINT (PONDEROSA230) ⁹	PEARL230	10	MW	
NewSun Energy Transmission Company LLC	87198516	PTP	6/1/2022	6/1/2027	NEWPOINT (PONDEROSA230) ⁹	PEARL230	10	MW	
NewSun Energy Transmission Company LLC	87198520	PTP	10/1/2025	10/1/2030	NEWPOINT (PONDEROSA230) ⁹	PEARL230	10	MW	
NewSun Energy Transmission Company LLC	87198524	PTP	10/1/2025	10/1/2030	NEWPOINT (PONDEROSA230) ⁹	PEARL230	10	MW	
NewSun Energy Transmission Company LLC	87198528	PTP	10/1/2025	10/1/2030	NEWPOINT (PONDEROSA230) ⁹	PEARL230	10	MW	
NewSun Energy Transmission Company LLC	87198530	PTP	10/1/2025	10/1/2030	NEWPOINT (PONDEROSA230) ⁹	PEARL230	10	MW	
Schultz-Wautoma; 3rd-Party Mitigation (PGE Salem Area)							2 TSRs	177	MW
Invenergy Energy Management LLC	85847235	PTP	1/1/2021	1/1/2041	BOARDMAN115GEN	BETHEL230	75	MW	
Invenergy Energy Management LLC	86518913	PTP	1/1/2021	1/1/2041	MCNARY230PACW (LONGHORN230) ¹⁰	BETHEL230	102	MW	
Schultz-Wautoma; PSAST							1 TSR	6	MW
Snohomish County PUD No. 1	88306716	PTP	1/1/2019	10/1/2026	SILVRCRK69PKWD	SNOHOMISHCNTGS	6	MW	
Garrison-Bell-Ashe/MT RAS, or Montana Non-Wire Solution							2 TSR	24	MW
Avista Corporation	86223081	PTP	1/1/2019	1/1/2024	GARRISON500CLS	HATWAI230	14	MW	
Bonneville Power Administration	87723819	NT	8/1/2018	8/1/2023	BOXCNYN115	PWRSRNTMOA	10	MW	
La Pine Area; 3rd-Party Mitigation (PGE Salem Area)							2 TSRs	20	MW
Fossil Lake Solar, LLC	85803176	PTP	11/1/2018	11/1/2023	LAPINE115	BETHEL230	10	MW	
Fremont Solar, LLC	85842065	PTP	11/1/2018	11/1/2023	LAPINE115	BETHEL230	10	MW	
La Pine Area; 3rd-Party Mitigation (PGE Salem Area); 3rd-Party Mitigation Related to Cross Cascades South (PGE+PAC)							1 TSR	10	MW

Fremont Solar, LLC	87583265	PTP	10/1/2021	10/1/2026	LAPINE115	BETHEL230	10	MW	
Puget Sound Area Study Team (PSAST) Upgrades							5 TSRs	247	MW
PSEM	86877159	PTP	11/1/2021	3/1/2024	Harvalum 230	PSEI_CENTCNTGS	21	MW	
PSEM	87142801	PTP	11/1/2021	3/1/2024	Harvalum 230	PSEI_CENTCNTGS	6	MW	
PPM Energy, Inc.	86988658	PTP	1/1/2021	1/1/2031	KLONDIKESH230 ²	PSEI_CENTCNTGS	125	MW	
OneEnergy Transmission, LLC	87483048	PTP	1/1/2022	1/1/2027	NEWPOINT (MOXEE115) ⁵	PSEI_CENTCNTGS	35	MW	
PWX	87582689	PTP	1/1/2019	1/1/2024	Columbia 230	PSEI_CENTCNTGS	60	MW	
PSAST; 3rd-Party Mitigation - Cross Cascades South (PGE&PAC)							2 TSRs	100	MW
PPM Energy, Inc.	87583772	PTP	12/1/2022	12/1/2032	Spring Creek 230	PSEI_CENTCNTGS	50	MW	
PPM Energy, Inc.	87583779	PTP	12/1/2022	12/1/2032	Spring Creek 230	PSEI_CENTCNTGS	50	MW	
Raver-Paul							5 TSRs	550	MW
Tacoma Power	86630924	PTP	1/1/2020	10/1/2031	TACOMA230	JOHNDAYINTI500	100	MW	
Scout Clean Energy LLC	87101575	PTP	12/1/2020	12/1/2045	NEWPOINT (RED MOUNTAIN115) ⁸	PEARL230	100	MW	
Scout Clean Energy LLC	87101584	PTP	12/1/2020	12/1/2045	NEWPOINT (RED MOUNTAIN115) ⁸	PEARL230	100	MW	
Scout Clean Energy LLC	87101588	PTP	12/1/2020	12/1/2045	NEWPOINT (RED MOUNTAIN115) ⁸	PEARL230	50	MW	
NextEra Energy Power Marketing LLC	87537441	PTP	1/1/2021	1/1/2026	NEWPOINT (BOARDMAN115) ¹	PSEI_STHCNTGS	200	MW	
Raver-Paul; 3rd-Party Mitigation (PGE Salem Area)							1 TSRs	201	MW
Invenergy Energy Management LLC	87496314	PTP	1/1/2021	1/1/2026	MCNARY230PACW (STANFIELD500) ¹¹	BETHEL230	201	MW	
Satsop-area Project; 3rd-Party Mitigation (Grays Harbor PUD)							3 TSRs	300	MW
Invenergy Energy Management LLC	84487211	PTP	1/1/2020	1/1/2025	SATSOP230GEN	KITSAP230	100	MW	
Invenergy Energy Management LLC	84487219	PTP	1/1/2020	1/1/2025	SATSOP230GEN	OLYMPIA115	100	MW	
Invenergy Energy Management LLC	85053949	PTP	1/1/2020	1/1/2025	SATSOP230GEN	NWMRKTHUB(NWH)	100	MW	
Satsop-area Project; 3rd-Party Mitigation (Grays Harbor PUD); Schultz-Wautoma							2 TSRs	200	MW
Invenergy Energy Management LLC	85053955	PTP	1/1/2020	1/1/2025	SATSOP230GEN	NWMRKTHUB(NWH)	100	MW	
Invenergy Energy Management LLC	85053957	PTP	1/1/2020	1/1/2025	SATSOP230GEN	NWMRKTHUB(NWH)	100	MW	
Walla Walla Project; South Tacoma-St. Clair							1 TSR	75	MW
PSEM	82996223	PTP	3/1/2024	3/1/2029	TUCNNRV115PSEI	STCLAIR230	75	MW	

¹ – NEWPOINT studied at Boardman 115 per identified POI determination.

² – Of these two TSRs, 200 MW is required to conform to Biglow Canyon/Golden Hills.

³ – NEWPOINT studied at Maupin 230 per identified POI determination.

⁴ – NEWPOINT originally identified at Alfalfa 230 but studied at Knight 500 per alternate POI determination.

⁵ – NEWPOINT originally identified at Moxee 115; TSR will be conformed to POI established in the LGIA.

⁶ – NEWPOINT studied at Grand Coulee 115; TSR will be conformed to POI established in the LGIA.

⁷ – NEWPOINT studied at Franklin 230; TSR will be conformed to POI established in the LGIA.

⁸ – NEWPOINT studied at Red Mountain 115 per identified POI determination.

⁹ – NEWPOINT studied at Ponderosa 230 per identified POI determination.

¹⁰ – Requested McNary 230 POR studied at Longhorn 230 per alternate POI determination.

¹¹ – Requested McNary 230 POR studied at Stanfield 500 per identified POI determination.