

**Puget Sound Energy**  
**2023 Annual Renewable Portfolio Standard Report**  
**pursuant to RCW 19.285.070 and WAC 480-109-210**

June 1, 2023

## Required Contents: Checklist and Table of Contents

RCW 19.285.070	WAC 480-109-210(2)	Section/Page
The utility's annual load for the prior two years	The utility's annual load for the prior two years	<b>Section 1 Annual Load For Previous Two Years</b> Page 1
The amount of megawatt-hours needed to meet the annual renewable energy target	The total number of megawatt-hours from eligible renewable resources and/or renewable resource credits the utility needed to meet its annual renewable energy target by January 1 of the target year	<b>Section 2 Renewable Energy Target</b> Page 2
The amount of megawatt-hours of each type of eligible renewable resource acquired, the type and amount of renewable energy credits acquired	The amount (in megawatt-hours) of each type of eligible renewable resource used and the amount of renewable energy credits acquired	<b>Section 3 Renewable Energy Acquired To Have Met Renewable Energy Target</b> Page 2
The percent of its total annual retail revenue requirement invested in the incremental cost of eligible renewable resources and the cost of renewable energy credits	Total incremental cost as a dollar amount and in dollars per megawatt-hour of renewable energy generated by all eligible renewable resources and multiply the dollars per megawatt-hour cost by the number of megawatt-hours needed for target year compliance.	<b>Section 4 Incremental Cost Calculation and Revenue Requirement Ratio</b> Page 2
	State whether the utility is relying upon one of the alternative compliance mechanisms provided in WAC <a href="#">480-109-220</a> instead of fully meeting its renewable resource target.	<b>Section 5 Alternative Compliance</b> Page 4

<b>RCW 19.285.070</b>	<b>WAC 480-109-210(2)</b>	<b>Section/Page</b>
	Describe the resources that the utility intends to use to meet the renewable resource requirements for the target year.	<b>Section 6 2020 Compliance Plan Page 4</b>
	A list of each eligible renewable resource that serves Washington customers, for which a utility owns the certificates, with an installed capacity greater than twenty-five kilowatts.	<b>Section 7 Eligible Resources Page 5</b>
	The number of certificates sold, their WREGIS certificate numbers, their source, and the revenues obtained from the sales.	<b>Section 8 Sales Page 7</b>

**Attachment 1: Memo dated December 14, 2022 Regarding Sufficient Eligible Renewable Resources for 2023 Compliance**

**Attachment 2: Appendix G from PSE's 2021 Integrated Resource Plan**

**Attachment 3: Reporting Tool**

**Attachment 4: Renewable Energy Certificate Sales, Confidential Version  
Renewable Energy Certificate Sales, Redacted Version**

**Attachment 5: Incremental Cost Template, Confidential Version  
Incremental Cost Template, Redacted Version**

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**Documentation Supporting Attestation:**

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First Time Facilities - Contracts, Redacted Version**

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**Attachment 9: Renewable Energy Certificate Transfers - WREGIS Report for First Time Facilities, Confidential Version**

**Renewable Energy Certificate Transfers – WREGIS Report for First Time Facilities, Redacted Version**

## Section 1. Annual Load for the Prior Two Years

*This section provides the delivered load from the prior two calendar years that is the source for the 2023 target calculation in Section 2.*

	<u>2021</u>	<u>2022</u>
Delivered Load to Retail Customers (MWh)	21,036,614	21,613,415

The source of this data is the PSE's 2022 FERC Form 1, p. 301, line 10, columns d and e.

## Section 2. 2023 Renewable Energy Target

*This section provides the number of megawatt-hours from eligible renewable resources and/or renewable resource credits the utility needed to meet its annual renewable energy target by January 1st of the target year.*

Subject to Commission approval, PSE's Renewable Energy Target for 2023 will be 3,198,752 MWh.

### Calculation:

	<u>2021</u>	<u>2022</u>
Delivered Load to Retail Customers (MWh)	21,036,614	21,613,415
Average Load	21,325,015	
15 Percent of Average Load	3,198,752	

## Section 3. Renewable Energy Acquired To Meet 2023 Renewable Energy Target

*This section provides the amount (in megawatt-hours) of each type of eligible renewable energy credits planned to be acquired to meet the 2023 target.*

As was previously documented as shown in Attachment 1, PSE has sufficient eligible renewable resources to meet its 2023 target. PSE plans to meet its 2023 target with a combination of incremental hydro along with other RECs from qualifying resources. The following table, which is supported in the "Generation Rollup" tab of Attachment 3, shows RECs from all of PSE's eligible resources for 2023, a subset of which will be used for compliance purposes:

Incremental Hydro Resources	118,836
Eligible Wind Resources	5,019,089
Biomass	82,835

#### Section 4. Incremental Cost Calculation and Revenue Requirement Ratio

*This section calculates the total incremental cost as a dollar amount and in dollars per megawatt-hour of renewable energy generated by all eligible renewable resources and multiplies the dollars per megawatt-hour cost by the number of megawatt-hours needed for target year compliance and provides the annual revenue requirement ratio.*

*The following is a summary of PSE’s incremental cost calculation as developed in Staff’s template, attached as Attachment 5.*

Description	All Eligible Resources (RCW 19.285.070(1))	Resources Used for Target Year (WAC 480-109-210(2)(a)(ii)(B) and (C))
Incremental Cost <sup>1</sup>	\$45.6 million	\$34.7 million
Revenue Requirement	\$2,984.9 million	\$2,984.9 million
Percentage	1.528%	1.164%
Source of Information	Attachment 5 “(2)(a)(ii)Annual2022est (C)” tab	Attachment 5 “(2)(a)(ii)Annual2022est (C)” tab

PSE’s incremental cost is based on the average cost of eligible renewable resources. Consistent with the requirements outlined in WAC 480-109-210 (2)(a)(i) (A) through (G), the calculation of incremental costs for each eligible resource is performed at the time of acquisition. PSE has acquired one new eligible resource Clearwater Wind Project Power Purchase Agreement (“Clearwater PPA”), for purposes of RCW 19.285.070(1), has utilized the method from its 2019 Integrated Resource Plan (“IRP”) as documented in Attachment 2 for calculating the incremental cost for the the Clearwater PPA as the 2019 IRP was the most up to date information available to PSE at the time the decision was made to enter into theClearwater PPA. Although PSE filed an Electric IRP Progress Report on March 31, 2023 in Docket UE-200304, the IRP Progress Report does not address incremental costs. The next full Electric IRP is due April 1, 2025. The one-time incremental costs (in millions of dollars) at the time of acquisition along with the annual megawatt hour (MWh) assumed for each eligible resource are as follows:

<sup>1</sup> Amounts are net of anticipated proceeds from the sales of RECs during the target year.

(\$ Millions/Year)	Renewable Resource	Equivalent Non-Renewable			One Year Incremental Cost	Annual MWh	Market Price/Peaker Assumptions
		Peaker	Market	Total			
Hopkins Ridge	\$18.77	\$1.71	\$19.26	\$20.97	(\$2.20)	466,908	2004 RFP
Wild Horse	\$34.94	\$3.21	\$26.53	\$29.74	\$5.20	642,984	2006 RFP
Klondike III	\$10.27	\$0.93	\$8.98	\$9.91	\$0.36	157,680	2006 RFP
Hopkins Infill	\$1.28	\$0.17	\$1.19	\$1.36	(\$0.08)	21,024	2007 IRP
Wild Horse Expansion	\$10.03	\$0.81	\$5.09	\$5.90	\$4.14	91,980	2007 IRP
Lower Snake River I	\$70.61	\$1.69	\$48.51	\$50.20	\$20.42	897,900	2010 Trends
Snoqualmie Falls Upgrade	\$3.85	\$0.74	\$2.44	\$3.18	\$0.67	34,164	2009 Trends
Lower Baker 4	\$8.60	\$1.37	\$7.92	\$9.29	(\$0.69)	109,500	2011 IRP Base
SPI PPA	\$6.77	\$1.41	\$3.37	\$4.78	\$1.99	126,582	2019 IRP Process Mid
Golden Hills	\$32.57	\$10.52	\$17.36	\$27.88	\$4.67	682,692	2019 IRP Process Mid
Clearwater	\$58.95	\$13.79	\$36.47	\$50.27	\$8.68	1,419,558	2020 RFP
<b>Total</b>					<b>\$43.35</b>	<b>4,650,972</b>	

As reflected in the above table, the incremental cost of all eligible renewable resources portfolio is \$43.35 million<sup>2</sup> resulting in an average cost/MWh of \$9.28.<sup>3</sup> Based on anticipated REC utilization for the 2023 target year, the incremental cost for the portfolio of resources is \$32.96 million<sup>4</sup> (\$10.31/MWh x 3,198,752 MWh).<sup>5</sup>

The resulting ratios of the portfolio’s annualized cost of investment, net of anticipated REC sales, relative to the utility’s total annual retail revenue requirement is 1.528% for all eligible resources and 1.164% for resources used for the target year.<sup>6</sup>

RECs from PSE’s Lower Snake River Dodge Junction wind facility are Center for Resource Solutions (“CRS”) Listed and will be sold in the voluntary REC market in 2023. Pacific Northwest wind has a higher value in the REC markets as do CRS Listed RECs. PSE has been able to sell these CRS Listed wind RECs in the voluntary REC market<sup>7</sup> and replace them by purchasing lower cost RPS compliant RECs to satisfy its RPS compliance.<sup>8</sup> The net proceeds are provided to PSE’s customers through the Schedule 137 Tracker. This ongoing optimization strategy allows PSE to lower the cost of PSE’s RPS compliance. With the onset of compliance

<sup>2</sup> This amount is not net of the anticipated REC sales.

<sup>3</sup> Attachment 5, tab “(2)(a)(iii)(A) and (B)” cell D24.

<sup>4</sup> Attachment 5, tab “(2)(a)(iii)(A) and (B)” cell F24.

<sup>5</sup> Attachment 5, tab “(2)(a)(iii)(A) and (B)” cells E24 and F25.

<sup>6</sup> Attachment 5, tab “(2)(a)(ii)Annual2022est (C)”, cells D49 and G49.

<sup>7</sup> The sales are reflected in Section 8, in Attachment 3 and in Attachment 4.

<sup>8</sup> Purchases are reflected in Attachment 3.

obligations under the Clean Energy Transformation Act (“CETA”), PSE anticipates it will no longer be entering into REC optimization transactions as it will use all of its RECs for CETA compliance. Therefore, PSE is not anticipating that there will be REC sales to disclose in future RPS reports.

The total annual retail revenue requirement for 2023 is \$2,984.9 million. The 2023 revenue requirement is based on the revenue requirement underlying the rates approved in PSE’s 2022 general rate case under Docket No. UE-220066.

## **Section 5. Alternative Compliance**

*This section states whether the utility is relying upon one of the alternative compliance mechanisms provided in WAC 480-109-220 instead of fully meeting its renewable resource target. A utility using an alternative compliance mechanism must use the incremental cost methodology described in this section and include sufficient data, documentation and other information in its report to demonstrate that it qualifies to use that alternative mechanism.*

PSE is not utilizing an alternative compliance mechanism provided for in RCW 19.285.040(2)(d) or RCW 19.285.050(1) and WAC 480.109.220 instead of meeting its 2023 Renewable Energy Target.

## **Section 6. 2023 Compliance Plan**

*This section describes the resources that PSE intends to use to meet the renewable resource requirements for the target year.*

PSE is positioned to meet its 2023 Renewable Energy Target with a combination of qualified hydroelectric upgrades and other renewable energy certificates from qualifying resources. The following table provides a summary of PSE’s expected 2023 compliance. Further details about this information can be found in Attachment 3.



Blue = Hydro, Gray = Apprenticeship Credits Facility	Source	PSE 2023 Compliance Plan		
		2022 Vintage	2023 Vintage	2023 Plan
Baker River Project	Water		96,283	96,283
Clearwater	Wind	212,195		212,195
Golden Hills Wind Farm LLC	Wind	-	44,394	44,394
Hopkins Ridge	Wind		393,780	393,780
Hopkins Ridge Phase II	Wind		18,977	18,977
Klondike III	Wind	24,229	127,877	152,106
Lower Snake River - Dodge Junction	Wind	-	476,310	476,310
Lower Snake River - Dodge Junction - Apprenticeship Credits	Wind-A		95,262	95,262
Lower Snake River - Phalen Gulch	Wind	-	358,126	358,126
Lower Snake River - Phalen Gulch - Apprenticeship Credits	Wind-A		71,625	71,625
Snoqualmie Falls Project	Water	-	22,553	22,553
Sierra Pacific Burlington - Sierra Pacific Burlington	Biomass	-	82,835	82,835
Wild Horse	Wind	474,885	590,609	1,065,494
Wild Horse Phase II	Wind	-	90,677	90,677
Wild Horse Phase II - Apprenticeship Credits	Wind-A	-	18,135	18,135
Totals		711,309	2,487,443	3,198,752

Data for 2023 provided above is an estimate and is subject to change.

## Section 7. Eligible Resources

*This section provides a list of each eligible renewable resource that serves Washington customers, for which PSE owns the certificates, with an installed capacity greater than twenty-five kilowatts and each resource's WREGIS registration status and use of certificates, whether it be for annual target compliance, a voluntary renewable energy program as provided for in RCW 19.29A.090, or owned by the customer; and eligible resources being included in the report for the first time and documentation of their eligibility.*

PSE has acquired sufficient eligible renewable resources in its portfolio to supply at least fifteen percent of its estimated load for the year 2023, in advance of January 1, 2023. Eligible renewable resources that PSE may elect to use in whole or in part to meet its 2023 target include (but are not limited to):

- Hopkins Ridge Wind Project;
- Wild Horse Wind Project;
- Wild Horse Expansion Wind Project (including extra apprenticeship credits);
- Lower Snake River Wind Project (including extra apprenticeship credits);
- Klondike III Wind Project (e.g. the output PSE purchases from Avangrid Renewables);
- Snoqualmie Falls Hydroelectric Efficiency Upgrades;
- Lower Baker River Hydroelectric Efficiency Upgrades;
- Golden Hills Wind Facility Power Purchase Agreement;

- Clearwater Wind Project Power Purchase Agreement;
- Allocation of Hydroelectric Efficiency Upgrades that may be (now or in the future) a part of PSE's Mid-C Contracts;
- Biomass;
- Customer-Generator owned facilities taking service from PSE under PSE electric rate Schedule 91;
- Washington RPS compliant REC purchases; and
- Any other eligible renewable resources that may become available in 2023 or 2024.

Please also see Attachment 1.

**Attestation**

PSE has purchased RECs for RPS compliance from the following 2 facilities for the first time. PSE respectfully requests the Commission consider and approve these 2 facilities as eligible renewable resources for annual RPS compliance. In support of this request, PSE provides documentation supporting the eligibility of these first time facilities in Attachments 7 through 9. PSE has provided the REC purchase contracts under which the RECs were purchased from the 2 facilities (see Confidential Attachment 7.) Additionally, PSE has provided a WREGIS report indicating that both facilities have a Commenced Operation Date prior to January 1, 2023, the year in which these RECs are intended to be used (see highlighted column of Attachment 8, WREGIS Proof of Operability). Confidential Attachment 9 shows Clearwater and Golden Hills RECs transferred to PSE.

No.	Facility	WREGIS ID	Facility Type per Att. 9	Compliant Pursuant to WAC 480-109-200
1	Clearwater Wind I, LLC	W14351	Wind	(12)(a)(ii) & (32)(b)
2	Golden Hills Wind Farm LLC	W13230	Wind	(12)(a)(i) & (32)(b)

PSE requests the Commission consider and approve these facilities as eligible renewable resources for RPS compliance. Clearwater qualifies as an eligible wind facility under WAC 480-109-060(12)(a)(ii) and WAC 480-109-060(32)(b) and has been assigned WREGIS ID W14351 and commenced operation on November 1, 2022. The proof of operability for the Clearwater PPA is evidenced by the Commercial Operation Certificate provided in Attachment 8. These RECs are intended to be used for 2023 or future RPS compliance.

Additionally, PSE has entered into a Power Purchase Agreement with Golden Hills Wind Farm, LLC. PSE requests the Commission consider and approve this facility as an eligible renewable resource for annual RPS compliance. Golden Hills qualifies as an eligible wind facility under WAC 480-109-060(12)(a)(i) and WAC 480-109-060(32)(b) and has been assigned WREGIS ID W13230 and commenced operation on April 29, 2022. The proof of operability for Golden Hills is evidenced by the Commercial Operation Certificate provided in Attachment 8. These RECs

are intended to be used for 2022 or future RPS compliance.

## Section 8. Sales

*This section reports on the number of certificates sold, their WREGIS certificate numbers, their source, and the revenues obtained from the sales.*

The following table summarizes PSE’s REC sales volumes by source and vintage year for 2019 through 2023 vintages as reported in Attachment 3.

Sum of Qty		Vintage Year	2019	2020	2021	2022	2023	Grand Total
Facility	WREGIS #	Vintage	Vintage	Vintage	Vintage	Vintage	Vintage	
⊗ Hopkins Ridge	W184	25,000						25,000
⊗ Hopkins Ridge Phase II	W1382				7,200			7,200
⊗ Klondike III	W237	87,499	43,165					130,664
⊗ Lower Snake River-Dodge Junction	W2669		4,000	15,500	15,500	15,500		50,500
⊗ Wild Horse	W183	413,729	129,203					542,932
<b>Grand Total</b>		<b>526,228</b>	<b>176,368</b>	<b>22,700</b>	<b>15,500</b>	<b>15,500</b>	<b>15,500</b>	<b>756,296</b>

Confidential Attachment 4 provides transaction details including the revenue proceeds associated with the above sales. Additionally, Attachment 4 provides information related to sales of RECs of older vintages that occurred since the last report<sup>9</sup> but that were not included in Attachment 3 which only covered reporting for vintages back to 2018.

<sup>9</sup> Sales proceeds for all vintages included in Attachment 4 were included in the incremental cost calculation discussed in Section 4 and included in Attachment 5.