

Puget Sound Energy
2019 Annual Renewable Portfolio Standard Report
pursuant to RCW 19.285.070 and WAC 480-109-210

May 24, 2019
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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	Section 2 Renewable Energy Target Page 1
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	Section 3 Renewable Energy Acquired To Have Met Renewable Energy Target Page 1
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.	Section 4 Incremental Cost Calculation and Revenue Requirement Ratio Page 2
	State 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.	Section 5 Alternative Compliance Page 3

RCW 19.285.070	WAC 480-109-210(2)	Section/Page
	Describe the resources that the utility intends to use to meet the renewable resource requirements for the target year.	Section 6 2019 Compliance Plan Page 3
	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.	Section 7 Eligible Resources Page 4
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Attachment 1: Memo dated December 6, 2018 Regarding Eligible Renewable Resources

Attachment 2: Appendix N from PSE's Integrated Resource Plan filed with the Commission on November 14, 2017

Attachment 3: Reporting Tool

**Attachment 4: REC Sales, Confidential Version
REC Sales, Redacted Version**

Attachment 5: Incremental Cost Template

Attachment 6: Department of Commerce EIA Workbook

Attachment 7: Apprenticeship Credit Approval Letters

Section 1. Annual Load for the Prior Two Years

	<u>2017</u>	<u>2018</u>
Delivered Load to Retail Customers (MWh)	21,316,397	20,697,195

The source of this data is the Puget Sound Energy (“PSE”) 2018 FERC Form 1, p. 301, line 10, columns d and e.

Section 2. 2019 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.

After Commission approval, PSE’s Renewable Energy Target for 2019 will be 1,890,612 MWh.

Calculation:

	<u>2017</u>	<u>2018</u>
Delivered Load to Retail Customers (MWh)	21,316,397	20,697,195
Average Load	21,006,796	
9% of Average Load	1,890,612	

Section 3. Renewable Energy Acquired To Meet 2019 Renewable Energy Target

This section provides the amount (in megawatt-hours) of each type of eligible renewable resource used, and the amount of renewable energy credits acquired to meet the 2019 target.

As demonstrated in Attachment 1, PSE has sufficient eligible renewable resources to meet its 2019 target. PSE plans to meet its 2019 target with a combination of incremental hydro along with other renewable energy certificates from qualifying resources. The following table shows all of PSE’s eligible resources for 2019, of which a subset will be used for compliance purposes:

Incremental Hydro Resources	115,922
Eligible Wind Resources	2,417,820

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.

Incremental Cost	\$27.8M
Revenue Requirement	\$1,996M
Percentage	1.459%
Source of Information	Please see table below.

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 not acquired any new resources since 2013 and therefore continues to utilize incremental cost calculations as documented in Attachment 2. The incremental costs along with the annual megawatt hour (MWh) as sourced from PSE's 2017 IRP, for each eligible resource are as follows:

Resource	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
Total					\$27.81	2,422,140	

(\$ Millions/Year)

This information appears in PSE's 2017 IRP, Appendix N, Page N-177, Figure N-145, and is provided in Attachment 2.

As reflected in the above table, the incremental cost of the eligible renewable resources portfolio is \$27.81M resulting in an average cost/MWh of \$11.48. The incremental cost for the 2019

target year, based on the average cost for the portfolio of resources is \$21.7M (\$11.48 * 1,890,612 MWh).

The resulting ratio of the portfolio's investment relative to the utility's total annual retail revenue requirement is 1.459%.

Utilizing Staff's template, attached as Attachment 5, that calculates the incremental cost for the target based on the actual planned resources, the incremental cost for 2019 target year compliance is \$25.9M.

The total annual retail revenue requirement for 2019 is \$1,996.287 million.¹ The 2019 revenue requirement is based on the revenue requirement determined in PSE's last general rate case (UE-170033) after adjusting for Tax Cuts and Jobs Act ("Tax Reform") (Docket UE-180282).

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 2019 Renewable Energy Target.

Section 6. 2019 Compliance Plan

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

¹ Figure reflects Revenue Requirement from PSE's 2017 General Rate Case, after adjusting for Tax Reform updates approved by the Commission in Docket UE-180282. Electric Revenue Requirement as originally approved in UE-170033 was \$2,069,159,344. Utilizing the pre-tax reform, revenue requirement results in a 1.408% revenue requirement ratio.

PSE is positioned to meet its 2019 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 2019 compliance. Further details about this information can be found in Attachment 3.

2019 Compliance Plan	
	MWh or Equiv
Lower Baker Project Incremental Hydro	99,050
Snoqualmie Falls Project Incremental Hydro	16,872
Lower Snake River - Phalen Gulch (Vintage 2018)	370,818
Extra Apprenticeship Credits	74,164
Wild Horse Phase II (Vintage 2018)	103,462
Extra Apprenticeship Credits	20,692
Lower Snake River-Dodge Junction (Vintage 2018)	508,243
Extra Apprenticeship Credits	101,649
Hopkins Ridge (Vintage 2018)	220,858
Hopkins Ridge Phase II (Vintage 2018)	8,722
Wild Horse (Vintage 2018)	304,253
Klondike III (Vintage 2018)	61,829
Available to Meet Target	1,890,612

Data for 2019 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 nine percent of its estimated load for the year 2019, in advance of January 1, 2019. Eligible renewable resources that PSE may elect to use in whole or in part to meet its 2019 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 Iberdrola);

- Snoqualmie Falls Hydroelectric Efficiency Upgrades;
- Lower Baker River Hydroelectric Efficiency Upgrades;
- Allocation of Hydroelectric Efficiency Upgrades that may be (now or in the future) a part of PSE’s Mid-C Contracts;
- Customer-Generator owned facilities taking service from PSE under PSE electric rate Schedule 91; and
- Any other eligible renewable resources that may become available in 2019 or 2020.

Please also see Attachment 1.

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 by source and vintage year for 2012 through 2018 vintages. Through March 31, 2019, the Company has not transferred title to any Vintage 2019 RECs.

RECs Sold by Year by Resource

Source	WREGIS No.	Vintage							Total RECs Sold
		2012	2013	2014	2015	2016	2017	2018	
Wild Horse	W183	238,143	246,192	541,930	43,254	138,677	44,385	68,932	1,321,513
Wild Horse Phase II	W1364	54,206	47,386	98,496	10,000	-	-	-	210,088
Hopkins Ridge	W184	171,359	166,117	423,662	109,781	190,560	74,400	171,162	1,307,041
Hopkins Ridge Phase II	W1382	-	7,309	18,641	1,735	9,184	-	10,171	47,040
Klondike III	W237	58,264	68,465	133,571	60,697	62,849	57,197	57,609	498,652
Lower Snake River-Dodge Junction	W2669	-	201,751	230,247	-	-	-	-	431,998
Lower Snake River-Phalen Gulch	W2670	-	142,210	169,808	12,732	-	-	-	324,750
		521,972	879,430	1,616,355	238,199	401,270	175,982	307,874	4,141,082

Reflects REC transfers through 3/31/19.

Confidential Attachment 4 provides transaction details including the revenue proceeds associated with those sales.