

**Puget Sound Energy**  
**2017 Annual Renewable Portfolio Standard Report**  
**pursuant to RCW 19.285.070 and WAC 480-109-210**

June 1, 2017

## 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 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	<b>Section 3 Renewable Energy Acquired To Have Met Renewable Energy Target</b> 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.	<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 3

<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 2017 Compliance Plan Page 3</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 4</b>
	The number of certificates sold, their WREGIS certificate numbers, their source, and the revenues obtained from the sales.	<b>Section 8 Sales Page 4</b>

**Attachment 1: Memo dated December 8, 2016 Regarding Eligible Renewable Resources**

**Attachment 2: Appendix N from PSE’s Integrated Resource Plan filed with the Commission on November 25, 2015**

**Attachment 3: Reporting Tool**

**Attachment 4: REC Sales**

**Attachment 5: Incremental Cost Template**

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

	<u>2015</u>	<u>2016</u>
Delivered Load to Retail Customers (MWh)	20,509,764	20,448,423

The source of this data is the Puget Sound Energy (“PSE”) 2016 FERC Form 1, p. 301, line 10, columns d and e.

**Section 2. 2017 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 2017 will be 1,843,118 MWh.

Calculation:

	<u>2015</u>	<u>2016</u>
Delivered Load to Retail Customers (MWh)	20,509,764	20,448,423
Average Load	20,479,094	
9% of Average Load	1,843,118	

**Section 3. Renewable Energy Acquired To Meet 2017 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 2017 target.*

As demonstrated in Attachment 1, PSE has sufficient eligible renewable resources to meet its 2017 target. PSE plans to meet its 2017 target with a combination of incremental hydro along with other renewable energy certificates from qualifying resources as demonstrated in the following table:

Incremental Hydro Resources	114,286
Eligible Wind Resources	2,375,452

## 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.*

*As requested by Commission Staff, following is a summary of PSE's incremental cost.*

Incremental Cost	\$21.2M
Revenue Requirement	\$2,003.605M
Percentage	1%
Source of Information	Please see table below.

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) 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
<b>Total</b>					<b>\$27.81</b>	<b>2,422,140</b>	

(\$ Millions/Year)

\*This information appears in PSE's 2015 IRP, Appendix N, Page N-127, Figure N-46 and is provided in Attachment 2.

As demonstrated in the table above, the incremental cost of eligible renewable resources is \$27.81M resulting in an average cost/MWh of \$11.48. For the 2017 target year compliance, the incremental cost is \$21.2M ( $\$11.48 * 1,843,118$  MWh).

The total annual retail revenue requirement for 2017 is \$ 2,003.605 million. The 2017 revenue requirement is based on the revenue requirement determined in PSE's last general rate case

(UE-111048) and adjusted for the 2013 and 2014 PCORC and 2014 PCORC Update (Dockets UE-130617, UE-141141, and UE-161135 respectively) and UE-130137 (Expedited Rate Filing).

The resulting ratio of this investment relative to the utility’s total annual retail revenue requirement is 1% (27.81M / 2003.605M = 1%).

## 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 2017 Renewable Energy Target.

## Section 6. 2017 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 2017 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 2017 compliance. Further details about this information can be found in Attachment 3.

2017 Compliance Plan	
	MWh or Equiv
Lower Baker Project Incremental Hydro	93,789
Snoqualmie Falls Project Incremental Hydro	20,497
Lower Snake River - Phalen Gulch (Vintage 2016)	367,953
Extra Apprenticeship Credits	73,591
Wild Horse Phase II (Vintage 2016)	108,686
Extra Apprenticeship Credits	21,737
Lower Snake River-Dodge Junction (Vintage 2016)	500,734
Extra Apprenticeship Credits	100,147
Hopkins Ridge (Vintage 2016)	398,058
Hopkins Ridge Phase II (Vintage 2016)	19,184
Wild Horse Phase II (Vintage 2016)	150,000
Available to Meet Target	1,854,376
2017 RPS Target	1,843,118
<b>(Deficit) / Surplus</b>	<b>11,258</b>

Data for 2017 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 2017, in advance of January 1, 2017. Eligible renewable resources that PSE may elect to use in whole or in part to meet its 2017 target include (but 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 2017 or 2018.

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 2015 vintages. To date, the Company has not transferred title to any Vintage 2016 RECs.

<b>RECs Sold by Year by Resource</b>						
<b>Source</b>	<b>WREGIS #</b>	<b>Vintage</b>				<b>Total RECs Sold</b>
		<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	
Wild Horse	W183	1,880,149	204,993	553,758	193,389	2,832,289
Wild Horse Phase II	W1364	535,526	43,804	88,385	15,900	683,615
Hopkins Ridge	W184	180,359	140,338	359,785	252,947	933,428
Hopkins Ridge Phase II	W1382		5,482	15,953	1,475	22,909
Klondike III	W237	68,264	82,558	135,706	154,562	441,090
Lower Snake River-Dodge Junction	W2669	-	151,313	227,710	-	379,023
Lower Snake River-Phalen Gulch	W2670	-	106,658	168,048	10,822	285,528
		<b>2,664,298</b>	<b>735,145</b>	<b>1,549,345</b>	<b>629,095</b>	<b>5,577,883</b>

Reflects REC transfers through 3/31/17.

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