

**EXH. PKW-45C
DOCKETS UE-190529/UG-190530
UE-190274/UG-190275
2019 PSE GENERAL RATE CASE
WITNESS: PAUL K. WETHERBEE**

**BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

**WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,**

Complainant,

v.

PUGET SOUND ENERGY,

Respondent.

**Docket UE-190529
Docket UG-190530 (*Consolidated*)**

In the Matter of the Petition of

PUGET SOUND ENERGY

**For an Order Authorizing Deferral
Accounting and Ratemaking Treatment
for Short-life IT/Technology Investment**

**Docket UE-190274
Docket UG-190275 (*Consolidated*)**

**ELVENTH EXHIBIT (CONFIDENTIAL) TO THE
PREFILED REBUTTAL TESTIMONY OF**

PAUL K. WETHERBEE

ON BEHALF OF PUGET SOUND ENERGY

**REDACTED
VERSION**

JANUARY 15, 2020

Puget Sound Energy
Day-ahead Wind Integration Costs
 2019 GRC Rebuttal Power Cost Update

Total day-ahead wind integration cost	REDACTED VERSION												2019 GRC Rebuttal Update	2019 GRC Proposed	Increase / (Decrease)		
	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21					
\$ Skookumchuck wind PPA	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
\$ Hopkins Ridge wind	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
\$ Wild Horse wind	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
\$ Wild Horse Expansion wind	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
\$ Lower Snake River wind	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
\$ Klondike III wind PPA	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
\$ Total DA wind integration cost	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX

Rate year generation	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	2019 GRC Rebuttal Update	2019 GRC Proposed	Increase / (Decrease)
MWh Skookumchuck wind PPA	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
MWh Hopkins Ridge wind	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
MWh Wild Horse wind	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
MWh Wild Horse Expansion wind	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
MWh Lower Snake River wind	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
MWh Klondike III wind PPA	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
MWh Total wind generation	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX

Day-ahead wind integration cost per: MWh	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	2019 GRC Rebuttal Update	2019 GRC Proposed	Increase / (Decrease)
\$/MWh Skookumchuck wind PPA	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
\$/MWh Hopkins Ridge wind	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
\$/MWh Wild Horse wind	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
\$/MWh Wild Horse Expansion wind	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
\$/MWh Lower Snake River wind	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
\$/MWh Klondike III wind PPA	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
\$/MWh Weighted average	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX

Notes:
 2019 GRC day ahead study provides a weighted average rate/MWh per project from 2007 to 2018. 2017 GRC day ahead study utilized the average annual total cost per project, not a rate per MWh.
 For Skookumchuck, a new project, PSE used the weighted average rate/MWh for all of the existing projects
 2017 GRC Settlement data for Wild Horse wind includes Wild Horse Expansion wind

2019 GRC day-ahead wind integration study summary results
 Totals from 2007 (or start date) to 2018

Project	Total generation (MWh)	Total cost / (benefit) (\$)	\$/MWh
Hopkins	XXXXXX	XXXXXX	XXXXXX
Klondike	XXXXXX	XXXXXX	XXXXXX
LSR	XXXXXX	XXXXXX	XXXXXX
Wild Horse	XXXXXX	XXXXXX	XXXXXX
Grand Total	XXXXXX	XXXXXX	XXXXXX