

**EXHIBIT NO. RCS-6
DOCKET NOS. UE-170033/UG-170034
WITNESS: RALPH C. SMITH**

**BEFORE THE
WASHINGTON STATE UTILITIES AND TRANSPORTATION COMMISSION**

**WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,**

Complainant,

v.

PUGET SOUND ENERGY, INC.,

Respondent.

**Docket No. UE-170033
Docket No. UG-170034**

FOURTH EXHIBIT (NONCONFIDENTIAL) TO TESTIMONY OF

RALPH C. SMITH

ON BEHALF OF PUBLIC COUNSEL

*Data Request Responses Regarding Temperature Normalization
(without voluminous attachments)*

JUNE 30, 2017

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

**Dockets UE-170033 and UG-170034
Puget Sound Energy
2017 General Rate Case**

WUTC STAFF DATA REQUEST NO. 006

WUTC STAFF DATA REQUEST NO. 006:

RE: Weather Normalization – Model Output

Please provide the output for all temperature sensitivity models, including electric system-level model, all electric rate class-level models, gas system-level model and all gas rate class-level models, separately. Please also include the model output for the rate classes whose usages are not weather sensitive. Please include all relevant statistics generated by the statistical software.

Response:

Attached as Attachment A to Puget Sound Energy's ("PSE") Response to WUTC Staff Data Request No. 006, please find an MS Excel file containing the Eviews outputs for all temperature sensitivity models. The file presents model specifications and coefficient estimates, and all statistics generated by Eviews. As stated in PSE's Response to WUTC Staff Data Request No. 005, PSE did not develop temperature sensitivity models for non-weather-sensitive electric and gas rate schedules.

Some errors were discovered in the gas rate-schedule modeling database after PSE filed its Prefiled Direct Testimony on January 13, 2017. The gas rate-schedule modeling results presented in Attachment A to PSE's Response to WUTC Staff Data Request No. 006 reflects the corrections made after the initial filing. Since the revision of model coefficients is limited to the schedule-level equations, the total temperature adjustment at the system level did not change while rate-schedule allocations have changed slightly. The overall impact on revenue adjustment is about \$50,000. Attached as Attachment B to PSE's Response to WUTC Staff Data Request No. 006, please find an electronic copy of the revised gas adjustment workpaper.

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

**Dockets UE-170033 and UG-170034
Puget Sound Energy
2017 General Rate Case**

WUTC STAFF DATA REQUEST NO. 046

WUTC STAFF DATA REQUEST NO. 046:

Please provide updates to temperature normalization adjustments for both Electric and Gas models as they become available. With each update:

- a. Please describe the nature of the revision.
- b. Please clearly state the impact of the revision on revenue adjustments, including all revenue adjustments affected by weather-normalized sales volumes.
- c. Please provide revised workpapers and associated supporting documents.

Response:

- a. As explained in Puget Sound Energy's ("PSE") Response to WUTC Staff Data Request No. 006, PSE discovered an error in the gas rate-schedule modeling process. PSE uses an econometric modeling software called "EViews" to estimate the weather sensitivity model coefficients. There was a problem with the way "Eviews" was reading the historical data. Instead of starting with the row of January 2011, it started with the row of February 2010. As a result, the original model equations were estimated with the historical data of February 2010 through January 2015, instead of the most recent five-year period of January 2011 through December 2015. Therefore, the model coefficients had to be re-estimated with the input data for the correct historical period. The temperature adjustment of sales by rate schedule was then re-calculated with the revised model coefficients.
- b. Although the input data was shifted by eleven months, the monthly interactive dummy and intercept terms were assigned correctly. Therefore, the extent of changes in estimated coefficients were small. Furthermore, the total amount of temperature adjustment at the system level did not change because the revision of model coefficients affected only the schedule-level model equations. This correction has resulted in a slight change in rate-schedule allocations within the service classes (i.e. Firm, Interruptible and Transportation service classes). This revision has lowered the weather-related revenue adjustment by \$50,044, from \$58,088,570 to \$58,038,526.

- c. The revised gas rate-schedule model coefficients with statistical analysis results and the revised workpaper have been provided in Attachments A and B to PSE's Response to WUTC Staff Data Request No. 006.