# Report Addressing PSE's Electric Conjunctive Demand Service Option and the Design and Evaluation Elements in Staff's Pricing Pilot Proposal

From Paragraph 596 of the Final Order 08 in Dockets UE-190529 and UG-190530:

*Accordingly, we require the Company to use the design and evaluation elements in Staff's pricing pilot proposal as general guidelines, applying those elements it deems relevant and providing discussion for those that the Company deems have little or no application to this particular Pilot. In addition, the Commission would like to see more detail regarding the pros and cons of the Pilot and how the Company envisions expanding the Pilot over time. PSE should file a report addressing these issues within 90 days of the effective date of this Order.*

The elements of the Puget Sound Energy ("PSE") Conjunctive Demand Service Option ("CDSO") are aligned with the Commission Staff general evaluation elements and meet the spirit of the proposed reporting goals as follows.

## Design—Goals:

### Goals and Purpose of CDSO

The purpose is to better align the recovery of costs from general commercial and industrial electric customers with their cost-causation—with regard to the demand portion of the power and transmission costs.

For electric vehicle-related electric usage customers, the purpose is to reduce at least one potential barrier, the traditional demand charge and to encourage the State's goal of electrification of the transportation sector by rationalizing the traditional demand charge with a more accurate cost-to-serve across disparate charging locations.

### 'SMART' Goals Breakdown

#### Specific –

- Reduce the demand charge for eligible customers to levels more reflective of their energy and transmission cost-to-serve and thereby elicit a customer response to the price signals to reduce system-wide costs. (For both general commercial and industrial customers and electric vehicle-related customers.)
- Afford customers a better experience by treating them as unified entities across their relevant service locations. (For both general commercial and industrial customers and electric vehicle-related customers.)
- Better aligning demand charge burden for nascent electric vehicle ("EV") charging infrastructure reflective of their potentially expected lower energy and transmission cost-to-serve. (For electric vehicle-related customers.)
- Avail customers of more relevant and tailored rate designs and mechanisms by utilizing the AMI meters and data. (For both general commercial and industrial customers and electric vehicle-related customers.)

### Measurable –

- The primary measure of achievement of the goal will be the reduction in billed demand charges to the participating customers. (For both general commercial and industrial customers and electric vehicle-related customers.)
- The secondary measure will be observed shifts in peak load to minimize the summed hourly peak loads at the participating locations utilizing the AMI meters and data. (For both general commercial and industrial customers and electric vehicle-related customers.)
- Promote electrification and EV charging. (For electric vehicle-related customers.)

### Achievable –

- PSE believes demand charges will be reduced through the CDSO and participating customers should have some ability to respond to the monthly price signals offered which would allow them to further reduce their demand charges. (For both general commercial and industrial customers and electric vehicle-related customers.)
- PSE intentionally chose the "eligibility" criteria of customers in order to better facilitate a balance in achieving timeliness in deployment of the pilot, with that of controlling costs. The design will allow for relatively quick implementation and achievable administrative adjustments to underlying data and billing systems by leveraging existing AMI meter and data systems. (For both general commercial and industrial customers and electric vehicle-related customers.)

### Relevant

- PSE's commercial and industrial customers have been requesting electric rates to better reflect cost causation. (For both general commercial and industrial customers and electric vehicle-related customers.)

### Time-Bound

- The CDSO will last at least five years, with a filing in the final year to potentially extend or expand the service offering based on the initial results. The data that the AMI system will collect and make available for analysis will improve PSE's understanding of customer behavior in response to the service. (For both general commercial and industrial customers and electric vehicle-related customers.)

## Structure:

### Meaningful Signal

As Described in Exh. JAP-9. Slightly more than a third of demand related costs in Schedules 26 and 31 are associated with the recovery of production and transmission costs. Therefore, that portion of the participating customer's demand charge in this pilot would be charged using its conjunctive demand. The remainder would be charged in the same manner it is today, using the peak demands at that location in the billing period. PSE, as well as customers engaged in the design discussions, maintain the view that affording these customers the ability to save on such portion of their demand related costs would be meaningful. (For both general commercial and industrial customers and electric vehicle-related customers.)

### Cost Causation

Again, referring to the Prefiled Direct Testimony of Jon Piliaris, from the perspective of power and transmission cost causation; customers served by PSE through multiple locations have no materially different cost of service than a single customer with similar load characteristics. Customers served at multiple locations pay more for these services through their demand charge when the sum of the demands at their individual locations exceed what they would be if measured through a single meter in the same billing period. To this end, PSE maintains that the pilot's pricing structure better aligns to these customers' cost causation for the demand portion of their power and transmission costs. (For both general commercial and industrial customers and electric vehicle-related customers.)

### Possible to implement

PSE's selection of the CDSO eligibility criteria coupled with the deployment of AMI meters and data systems, as well as pre-engagement with some applicable customers avail PSE of the ability to implement this new service. (For both general commercial and industrial customers and electric vehicle-related customers.)

## Administration:

### Internal Validity

WUTC Staff's requirement that pricing pilots have "internal validity" is not well suited to this particular pilot, as every participating customer is likely to have a unique set of circumstances that makes it less likely that one could conduct a "statistical extrapolation" of results to some larger population of customers.

### Consistent & Regular Reporting

At the end of the initial pilot term, PSE intends to report on the following:

- Magnitude of customer savings.
- Evidence of customer load shifting due to CDSO.
- Evaluation of the administrative process and potential for scalability.
- Potential for other similar (or additional) rate design approaches that may be more suitable with AMI.

### 18 Month Report

In addition to the previously mentioned items that will be reported at the end of the initial 5 year period. PSE will, in compliance with the Order, provide documentation showing if the revenues for Sch. 26 and Sch. 31 customers has increased or declined over this time and if all these customers' rates are recovering their costs imposed on the system.

In addition, PSE will provide the number of charging facilities served by Sch. 26 or 31, and the approximate electric load used by the respective billed customers (not end-users).

### Prioritize customer engagement and communication

Customer engagement will continue to be primarily handled through PSE's Business Services Group. As these are generally more sophisticated commercial and industrial customers with specific needs, the business services group is adept to communicating with their respective customers on a case-

by-case basis to afford them the ability to maximize their ability to participate in this service. (For both general commercial and industrial customers and electric vehicle-related customers.)

# Evaluation Elements

## SMART Goals Assessment

PSE would revisit the SMART goals listed above and assess accordingly.

## Communications with pilot participants and suggestions for improvement.

In line with PSE's Business Services Group's best practices, customer outreach would be performed on a case-by-case basis in line with that customer's particular needs and profile. The nature of this customer class predicates the existence of these dedicated business services contacts that keep a dialogue between PSE and the Customer. (For both general commercial and industrial customers and electric vehicle-related customers.)

## Extrapolate how this applied to broader ratepayer population (where cost effective).

N/A – The pilot was deliberately limited in size and scope to business customers that would likely immediately benefit from conjunctive demand billing. Applications to a broader population would have to be limited to other same and similar Schedules with similar demand characteristics based on lessons learned from this pilot.

## Impacts on vulnerable population and mitigation strategies.

N/A – Given the nature of the targeted commercial and industrial customers, generally accepted understanding of the undefined term 'vulnerable' customers would be more applicable to the residential classes.

# Development and Administration:

## State Assumptions in Design

Please see "Design-Goals" section above.

## Outline data collection needs and methods

Leverage technology such as the AMI system to afford customer choice and leverage existing software such as SAP and MDMS.

## Detail customer outreach

In line with PSE's Business Services Group's best practices, customer outreach would be performed on a case-by-case basis in line with that customer's particular needs and profile. The nature of this customer class predicates the existence of these dedicated business services contacts that keep a dialogue between PSE and the Customer. (For both general commercial and industrial customers and electric vehicle-related customers.)

## On-the-fly Refinements

PSE intends to utilize adaptive management, and as noted elsewhere ongoing improvements.

## Costs and Benefits:

1) Compare to another similar group of customers. (For both general commercial and industrial customers and electric vehicle-related customers.)

2) Compare to previous years' loads of participating customers. This may include customer bill impacts and customer electric load impacts – specifically the measurement of hourly peak demand.

Review of customer effect – Customer education, customer enrollment, customer understanding of rate structures, customer understanding of the new bill, customer understanding of benefits or costs, customer acceptance, and customer satisfaction. (For both general commercial and industrial customers and electric vehicle-related customers.)

### A) Statistical review of cost and benefits from control group

*Distribution of bill impacts for various customer segments.*

PSE intends to analyze within the population of participating customers where the demand characteristics are consistent with the initially targeted schedules.

*How load impacts vary by rate period and customer segments.*

The criterion was selected for administrative scale and mitigation and limitation of revenue erosion. Additional schedules may be evaluated for inclusion for such service in the future.

*How load impacts vary by different areas, climate, rural*

N/A—these evaluation features lend themselves to a larger, more diverse Schedule population such as Residential.

*Review of vulnerable customers in relation to other customer groups and the distribution of bill impacts*

N/A—these evaluation features lend themselves to a larger, more diverse Schedule population such as Residential.

### B) Summary of costs and benefits to the utility in comparison to a baseline like the IRP

*Costs and benefits of the service to the utility*

PSE will report on any revenue erosion at the 18 month mark. At pilot completion, an assessment would be made of the resource benefits to the system and possible implications of demand response to price signals.

*Pricing pilot software and physical integration requirements and costs.*

The software to implement the pilot would be the SAP, MDMS, and AMI systems; all of which are not unique to the pilot and are accounted for elsewhere; but there will be incremental costs related to these items in implementing the pilot, especially billing system costs but likely including all systems noted above.

*Existing capabilities, limitations, and barriers to expansion*

Limitations will be further understood in any future revenue erosion analysis. Examining barriers for expansion could also include evaluation of future customer feedback.

*Long-term planning impacts*

The potential responsiveness of customers to the monthly demand price signals are an area of study and would be evaluated for their potential as a "resource" or cost reduction to system costs as appropriate.

C) Effects on peak and energy consumption

How is it measured and verified, energy savings and reduction in peak usage.

A comparative analysis would need to be prepared with a baseline demand usage evaluated against the new usage patterns identified in possible response to the pilot.

D) Summary of Regional benefits, including greenhouse gasses, air benefits.

The commission has identified that the Company shall keep records-insofar as possible on the count and respective load of EV charging stations taking this service. In line with prevailing standards for calculation at the completion of the pilot, an aggregate analysis of avoided greenhouse gases could conceivably derived.

E) Customer acceptance, complaints and satisfaction

In line with PSE's Business Services Group's best practices, customer outreach would be performed on a case-by-case basis in line with that customer's particular pain points and customer experience throughout the pilot. Issues that would impact the efficacy of the CDSO would likely be rectified during the pilot, but best practices can be documented as part of the evaluation.

## Product Risks

### Sensitivity of outcomes to periods of wholesale price stability or instability.

N/A – in the short-run, wholesale price effects would be captured outside of rates under the other portions of Schedules 26 & 31, thus not directly impacting the rates under this service.

### Summary of relationships with vendors directly or indirectly related to the service and any risks from their software on the operations of the general service.

N/A – The pilot itself would not elicit the use of unique vendors.

### Customer outreach and engagement associated with a broader default participation rate, such as availability of call centers.

N/A – Customer communication would fall to the existing Business Services Groups.

### Privacy implications from customer participation

N/A – Customer information would be continue to be treated in a confidential manner in line with PSE normal billing and record keeping practices.

### In a similar fashion PSE lists the 'pros' of the CDSO, and one 'con'

- Pro: The CDSO has a specific goal is to reduce the demand charge for the eligible customers to levels more reflective of cost causation. Secondary to that goal another specific goal to have a positive customer response to the price signals that reduce costs to PSE.

- Pro: The CDSO has a primary measure of achievement to have a reduction in demand charges to the participating customers. The secondary measure will be observed shifts in peak load to minimize the summed hourly peak loads at the participating locations.
- Pro: PSE believes that it is achievable for customers to have reduced demand charges through the CDSO and customers should have some ability to respond to the price signals offered, allowing them to achieve further reductions their demand charges.
- Pro: The CDSO service is very relevant to PSE's commercial and industrial customers since they have been requesting that electric rates to better reflect cost causation.
- Pro: The CDSO will last at least five years, with a filing in the final year to potentially extend or expand the service offering based on the initial results.

At this time, PSE does not foresee any significant "cons" of the CDSO. However, with regulatory lag, PSE may experience revenue under-recovery in the short term and other customer groups in the long term will eventually bear the burden of the revenue under-recovery.

## Expansion of CDSO

In regard to how PSE envisions expanding the CDSO over time, PSE prefers to wait until a few years of customers taking service under the CDSO has already occurred, before offering more details in that regard. PSE could envision an expanding offering of the CDSO to more vehicle electrification related customer sites.