Overall Comment on Use of the Social Cost of Carbon

During Webinar 6 on August 11, 2020, Puget Sound Energy (PSE) did not adequately respond to or resolve the concerns expressed by Invenergy and other stakeholders about its preferred approach to including the Social Cost of Carbon (SCC) in its 2021 Integrated Resource Plan (IRP).

Invenergy strongly encourages PSE to reconsider including the SCC as a fixed annual cost in the resource portfolio modeling for its 2021 IRP. Instead, PSE should treat the SCC as an incremental cost of hourly dispatch for Greenhouse Gas (GHG)-emitting resources. This approach will be more consistent with:

a) the purpose and intent of the Clean Energy Transformation Act (CETA);
b) accepted practices for internalizing the environmental externality costs of GHG emissions into decision-making; and
c) how the SCC was developed as an estimate of the economic value of environmental damages caused by GHG emissions and the intended use of the SCC.

Before proceeding with the resource portfolio modeling sensitivity analyses, Invenergy strongly encourages PSE to address the issues surrounding properly including the SCC in its resource portfolio modeling analyses for the 2021 IRP.

Specific Comments

1. CETA imposes two distinct requirements for PSE to limit its GHG emissions. The first requirement is to limit its annual GHG emissions (i.e., 80 percent GHG-free by 2030 and 100 GHG-free by 2045). The second requirement is for PSE to incorporate the SCC into its resource planning and acquisition decisions.

2. Satisfying just one of these requirements does not relieve PSE of its obligation to satisfy the other requirement. Therefore, PSE needs to properly incorporate the SCC in its 2021 IRP.

3. GHG emissions are an environmental externality. They are a real cost to society that is caused by but not borne by PSE or its retail electric customers. As a result, GHG emissions and the environmental damages they cause represent a clear market failure. Until and unless a mechanism to solve this market failure (e.g., carbon tax or GHG cap and trade program) is implemented in Washington State, the best available means for dealing with this market failure is to treat GHG emissions as an environmental externality.

4. Instead of imposing a carbon tax or creating a GHG cap and trade program, it is quite clear that the intent of CETA is to treat GHG emissions as an environmental externality. While CETA does not explicitly use the terms “environmental externality” or “market failure”, it recognizes and requires utilities to deal with GHG emissions as such. For example, Subsection 14(3)(a) of CETA states the following:

   > *An electric utility shall consider the social cost of greenhouse gas emissions, as determined by the commission for investor-owned utilities pursuant to section 15 of this act and the department for consumer-owned utilities, when developing integrated resource plans and clean energy action plans. An electric utility must incorporate the social cost of greenhouse gas emissions as a cost adder when:*

(i) Evaluating and selecting conservation policies, programs, and targets;
(ii) Developing integrated resource plans and clean energy action plans; and
(iii) Evaluating and selecting intermediate term and long-term resource options.

5. Further, Section 15 of CETA identifies the SCC as the required metric for treating GHG emissions as an environmental externality:

> *For the purposes of this act, the cost of greenhouse gas emissions resulting from the generation of electricity, including the effect of emissions, is equal to the cost per metric ton of carbon dioxide equivalent emissions, using the two and one-half percent 21 discount rate, listed in table 2, technical support document: Technical update of the social cost of carbon for regulatory impact analysis under Executive Order No. 12866, published by the interagency working group on social cost of greenhouse gases of the United States government, August 2016. The commission must adjust the costs established in this section to reflect the effect of inflation.*

6. The SCC was developed by the federal Interagency Working Group (IWG) as an economic estimate of the *real, incremental* environmental damage costs caused by the emission of one metric ton of CO2-equivalent GHG emissions. The IWG specifically designed and developed the SCC to quantify the externality effects of GHG emissions and incorporate them into economic decisions.

7. Applying the SCC as an incremental cost is also consistent with well-established economic principles for incorporating environmental externalities into decision-making, including for integrated resource planning.

8. Environmental damages caused by GHG emissions are *incremental* costs; they are not *fixed* costs. Correspondingly, the SCC is an estimate of the *incremental* economic costs – not the fixed economic costs – of the environmental damages caused by GHG emissions.

9. While CETA requires PSE to use the SCC to represent the environmental damage costs caused by GHG emissions, it does not authorize PSE to include the damage costs in its revenue requirements or in its retail electric rates.

10. Therefore, PSE's analysis for its 2021 IRP needs to recognize the distinction between the two types of costs and account for them properly. Specifically, resource decisions should be made on the basis of the sum of revenue requirements costs plus environmental damage costs (as represented by the SCC). However, rate impacts of resource decisions should only include revenue requirements costs.

11. There is nothing in CETA that requires or justifies treating the SCC as a fixed annual cost.

12. Treating the SCC as a fixed annual cost biases resource decisions in favor of more GHG-intensive resources. A key reason for this is that excluding the SCC from simulation of hourly dispatching decisions in the portfolio modeling leads to increased generation by more GHG-intensive resources. In turn, this allows the fixed costs of the more GHG-intensive resources to be spread over a larger quantity of

generation, thereby causing the total (revenue requirements and externality) costs of those resources to artificially appear lower than if the SCC were included in hourly dispatching decisions.

13. PSE has said its past analyses showed that including the SCC as a variable cost of dispatch did not materially change the mix of resources in its modeling results. Invenergy remains skeptical about the validity of this conclusion, including due to flaws in PSE's prior assumptions and methodology for incorporating the SCC. Further, if including the SCC as a variable cost of dispatch truly does not change PSE's resource decisions, then PSE should have no objection to using that method.

14. If PSE does not agree that the SCC should be properly modeled as an incremental cost of hourly dispatch, PSE should perform a fair and rigorous side-by-side analysis of PSE's preferred approach of treating the SCC as a fixed annual cost with the more sound approach of including the SCC as a variable hourly dispatch cost for existing and new GHG-emitting resources it would use to serve its retail customers' needs. PSE should complete the side-by-side analysis and obtain feedback on the results from stakeholders *before* proceeding with the numerous portfolio sensitivity analyses it is planning to perform.