

**EXH. DJL-6 (Apx. C)  
DOCKETS UE-240004/UG-240005  
2024 PSE GENERAL RATE CASE  
WITNESS: DAVID J. LANDERS**

**BEFORE THE  
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

**WASHINGTON UTILITIES AND  
TRANSPORTATION COMMISSION,**

**Complainant,**

**v.**

**PUGET SOUND ENERGY,**

**Respondent.**

**Docket UE-240004  
Docket UG-240005**

**APPENDIX C (NONCONFIDENTIAL) TO THE FIFTH EXHIBIT TO THE  
PREFILED DIRECT TESTIMONY OF**

**DAVID J. LANDERS**

**ON BEHALF OF PUGET SOUND ENERGY**

**FEBRUARY 15, 2024**



**Pipeline Mod: Alternative Fuels Readiness**  
Corporate Spending Authorization (CSA)

<b>Date Created:</b>	Friday, February 10, 2023
<b>Discretionary/ Non-Discretionary:</b>	Discretionary
<b>Multi Year Rate Plan:</b>	Programmatic
<b>Equity Impact:</b>	Yes
<b>Strategic Alignment:</b>	Evolve the Business-Clean
<b>Estimated In-Service Date:</b>	Sunday, December 31, 2028
<b>Current State (Business Need):</b>	<p>Reducing carbon emissions from fossil fuels is a focus of PSE's goals, the Climate Commitment Act, CETA, as well as the Infrastructure Investment and Jobs Act. While PSE embarks on targeted electrification, the valued pipeline system can be cleaner with focus on alternative fuels including the addition of more renewable natural gas and hydrogen blending (and other alternatives on the innovation front). PSE's system must be ready to accept and encourage alternate fuels as full electrification will take time. PSE completed a preliminary study in 2021 to understand the potential of H2 and performed small demonstrations to gain practical experience.</p>



**Pipeline Mod: Alternative Fuels Readiness**

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**Desired State (Proposed Solution):**

PSE will pursue 1-3 pilots annually, increasing in complexity, to inform H2 blending strategy that future proofs equipment and engineering to be able to handle hydrogen blends and other alternate fuels on the natural gas system, determines workforce operational readiness, assesses customer impact including communication and any specific appliance impact, identifies longer range system improvements as needed to support increased percentages and distribution of blended fuels, and streamlines and removes obstacles for the alternate fuels interconnection process. PSE's pilot projects intend to reduce methane emissions by up to 10% that will hopefully bring scalable actions forward.



## Pipeline Mod: Alternative Fuels Readiness

Corporate Spending Authorization (CSA)

Outcome/Results  
(What are the  
anticipated benefits):

The primary benefit is reducing CO2 emissions through PSE's existing pipeline. Additional benefits are improved employee morale and retention through innovative inspiration.



**Pipeline Mod: Alternative Fuels Readiness**  
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**Dependencies:** No

**Dependencies comment:** None.

**Escalation Included:** No, escalation has not been included.

**Total Estimated Costs:** \$8,300,000

**Estimated Five Year Allocation:**

Funds Type	ID	Line Item Description	Previous Years Actuals	Fiscal 2024 Requested	Fiscal 2025 Requested	Fiscal 2026 Requested	Fiscal 2027 Requested	Fiscal 2028 Requested
Capital	W_R.10015.08.02.02	G Alternative Fuels	\$ -	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 2,000,000	\$ 150,000

**Incremental O&M:** No

**Qualitative Benefits:** Employee retention and inspiration in an environment that devalues the careers and jobs relating to the natural gas industry. These projects will ensure that PSE is ready to accept H2 blends in the system as that becomes available.

**Quantitative Benefits:**

Quantitative Benefits	Benefit Type	Previous Years	Fiscal 2024	Fiscal 2025	Fiscal 2026	Fiscal 2027	Fiscal 2028	Fiscal 2029	Remaining Costs	Life Total
Reduce GHG - Health and Safety / Environmental	Other	\$ -	\$ 2,841,843	\$ 2,841,843	\$ 2,841,843	\$ 2,841,843	\$ 2,841,843	\$ -	\$ -	\$ 14,209,215

**Risk Summary:** Project risk is challenged by company commitment and sponsorship to advance hydrogen beyond supply resources.  
Benefit risk occurs if hydrogen blending or increased RNG does not advance.  
System risk exists relative to CO2 until alternative fuels are embraced or pipelines are shut off.



**Pipeline Mod: Alternative Fuels Readiness**  
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Change Summary:

Planning Cycle	Change Summary	Last Update Date
2022 Baseline Cycle	This CSA has been migrated into the EPPM tool at go-live as part of the Phase 1 EPPM implementation effort. The projects in this CSA were previously approved for the 2023-2027 capital plan. Please refer to the original CSA document for additional information (if available.)	2/10/2023
2023 Cycle 1	Updated based on last business plan	4/1/2023



**Pipeline Mod: Alternative Fuels Readiness**  
Corporate Spending Authorization (CSA)

Approval History:

Approved By	Date Approved
Approved by Cost Center Owner: Weatherby , Niece	4/7/2023
Approved by Director Sponsor: Landers , David	4/7/2023
Approved by Executive Sponsor: Jacobs , Josh	4/8/2023
CSA Status changed to Approved	4/8/2023
Approved by Cost Center Owner: Shrum , Bailey	12/4/2023
Approved by Director Sponsor: Shrum , Bailey	12/4/2023
Approved by Executive Sponsor: Shrum , Bailey	12/4/2023
CSA Status changed to Approved	12/4/2023
Approved by Cost Center Owner: Weatherby , Niece	1/29/2024
Approved by Director Sponsor: Landers , David	1/29/2024
Approved by Executive Sponsor: Jacobs , Josh	2/2/2024
CSA Status changed to Approved	2/2/2024

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## ALTERNATE FUELS

### ENERGY TYPE: GAS

#### 1. SHORT DESCRIPTION

The alternate fuels plan is a pipeline modernization initiative to prepare PSE's system for low carbon fuels including Renewable Natural Gas (RNG) and Hydrogen. This plan describes PSE's future planned demonstrations, pilots and improvement activities needed to safely and efficiently operate the system of the future.

#### 2. BACKGROUND

PSE's pipeline delivery system has supported and integrated RNG sources to the system since the 1990s. The number of RNG facilities feeding the PSE system varies based on market changes and supply availability. The current facilities receive RNG from wastewater treatment plants and a landfill. PSE currently receives approximately one feasibility request per year for RNG connections and with anticipation of continuing legislative actions to require lower-carbon energy resources, PSE is anticipating an increase in feasibility requests and will be pursuing process enhancements to standardize and streamline the process.

PSE has been reviewing its design, construction, and maintenance plans to support a variety of fuel blends that may be possible in the future. Preliminary studies identified several categories of prudent analysis that will need to be performed prior to the blending of alternate fuels on the distribution system. In 2021, PSE began its net zero carbon journey with a series of hydrogen blend demonstrations and pilots in test environments to gain practical experience working with hydrogen, validate information from research, and begin determining the impact of those blends on the distribution system.

PSE has been partnering with other utilities, conducting research on existing industry practices, and seeking alternate funding to advance our knowledge base and technology/research capabilities. Through the American Gas Association, Western Energy Institute, and HyReady Consortium working groups, PSE was able to leverage research and lessons learned from other utilities. In 2021, PSE applied for and was awarded a Clean Energy grant from Washington State Department of Commerce to conduct a feasibility study using a reduced carbon fuel source (RNG or hydrogen) in a backup generator at Tenino High School in Washington State. The research and engineering information obtained from this study will advance PSE's knowledge of reduced carbon fuels and will specifically inform customers of the benefits of utilizing hydrogen as an alternative fuel source to reduce emissions.

#### 3. STATEMENT OF NEED

PSE's delivery system and workforce will need to change in order to safely operate and maintain the low carbon delivery system of the future. The objective of this business plan is



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to perform demonstrations and pilots, both in test environments and on the pipeline system, to determine and ensure:

- Safety for the customers, workers and system
- Operational compatibility of components of the system
- Workforce preparedness to operate the system
- Appropriate tools to maintain the system
- Customer preparedness
- Impacts of blended fuels on longer range system plans
- Alternate fuels obstacle reduction
- Understanding and impacts of emerging technologies

### 3.1. NEED DRIVERS

#### a) Climate Action

National, state, and municipal policies and customers will require natural gas delivery systems to emit far lower carbon in the future. For example, the Washington Climate Commitment Act, which was signed into law by Governor Jay Inslee in May 2021. Additionally, the State Energy Strategy, legislative proposals and municipal actions demonstrate growing interest in increasing the urgency toward decarbonization. To meet these drivers and maintain safety and prudence, PSE must conduct the necessary analysis that will enable the pipeline system to support decarbonization while ensuring that our most vulnerable customers are not left behind.

#### b) Beyond Net Zero Carbon pledge

On January 21, 2021, PSE announced its Beyond Net Zero Carbon pledge, setting an aspirational goal to reach net zero carbon emissions for natural gas sales by 2045, with an interim target of a 30% carbon emissions reduction by 2030. The objective of this goal is to reduce PSE's residential, commercial, and industrial natural gas carbon emissions. The planned method for this reduction will be through a combination of energy efficiency, low carbon fuel sources and blending of RNG, synthetic natural gas, and hydrogen, and to reduce emissions from PSE's gas and electric operations and energy supply.

## 4. EQUITY

PSE evaluates equity in the planning process with consideration of the four core tenets of energy justice: Recognition Justice, Procedural Justice, Distributional Justice, and Restorative Justice in various steps of the process.

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As specific studies are performed and projects proposed to further a business plan, planners review system, customers, and now equity data to recognize the specific customer burdens, whether there are highly impacted or vulnerable customers that are or will be affected by addressing the specific business need. Planners must prioritize where to focus study each year, thus the full understanding of the historic and ongoing inequities for the entire business plan is extrapolated at this time, maturing over time which greater tools and data.

PSE is building process and tools to enable procedural inclusion in defining the need and solutions through engagement with specific communities and community-based organizations, increasing understanding of local needs and consequences to inform specific study development as well as options to address need. Maturity in where and how this occurs will increase over the next several years. Business plans will be updated as informed this collective engagement to reflect broader equity benefits and burdens as this engagement increases over time.

As specific projects are proposed, PSE investment decision optimization tool captures equity benefits. An optimized portfolio of projects across many business plans ensures the distribution of benefits and burdens are spread across all segments of the community and aim to ensure that marginalized and vulnerable communities do not receive an inordinate share of burdens or are denied access to benefits. As an initial step, PSE leverages Customer Benefit Indicators (“CBI”) and information established as part of the 2021 Clean Energy Implementation Plan (“CEIP”) to identify an equity framework to evaluate system projects. The CBI approach was developed through an iterative process that was coordinated with the Equity Advisory Group. These CBI span the core tenets of energy justice and provide a framework to evaluate the comparative equity benefit of each solution alternative considered. Refer to Table 1 for a brief description of the CBIs that address equity and the applicable benefits for the Alternative Fuels Readiness program. PSE will continue to adjust and refine equity consideration in projects when necessary as the process continues to mature.

Projects will be evaluated on each CBI category and a total equity benefit score will be provided.

Table 1: Equity Applicable Benefits

<b>Customer Benefit Indicator</b>	<b>Description</b>	<b>Program Applicable Benefit</b>
<b>Customer Energy Savings</b>	Solutions that lead customers to use less energy, which leads to less energy that must be purchased and potentially a reduction in planned system upgrades.	No
<b>Greenhouse Gas Emissions</b>	Solutions that lead to a reduction of greenhouse gas emissions, either directly or indirectly	Yes
<b>Enables Cleaner Energy</b>	Solutions that either directly integrate DER on the system or enable the grid to more readily accommodate future DER.	Yes
<b>Air Quality</b>	Solutions that either directly eliminate the source of a common pollutant or reduce the risk that could cause a	Yes

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	common pollutant to increase, such as enabling Electric Vehicle or DER adoption	
<b>Resilience</b>	Solutions that address major event outages or harden critical facilities to prevent catastrophic events from creating long duration outages.	No
<b>Cost Reduction</b>	Solutions that identify least cost alternatives and therefore reduce costs for all customers	No
<b>Clean Energy Jobs</b>	Solutions that increase clean energy jobs by furthering clean energy technology application, as described in the CEIP	Yes
<b>Home Comfort</b>	Solutions that deploy residential energy efficiency in either a targeted solution area or by leveraging load reduction from system wide energy efficiency installations	No

The program attempts to annually address the Alternative Fuels Readiness and is programmatically optimized based on total benefit value to cost. Specific program projects are identified based total benefit to cost with named communities receiving additional scored benefit based on vulnerable population designation and highly impact community characteristics, essentially ensure investments are distributed appropriately to named communities.

Business plans in isolation do not address restorative justice, but continued planning process improvements which include considerations of data, tools, and documentation as well as operational practices will help to restore equity over time.

## 5. PLAN DETAIL

### 5.1. PLAN SIZE/POPULATION

The plan includes RNG interconnection process improvements and a series of demonstrations and pilots with alternate fuels targeting 1-3 per year. The demonstrations and pilots will vary in complexity and initially be conducted in a test environment with the goal of moving them onto sections of the distribution system. As requirements are solidified, additional business plans will be created for larger implementation. The extent of this plan is to scope, develop, and determine the requirements (training, skills, tools, safety protocols) to operate the system of the future relating to reduced carbon fuels.

**Table 2 – Alternative Fuels Plan**

Plan	2024	2025	2026	2027	2028
# of Demonstration Projects	1-2	1-2	1-2	1-2	1-2

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**5.2. PROPOSED COMPLETION DATE**

The current target is to complete RNG interconnection improvements, the demonstrations and pilots, and be operationally ready for alternate fuels by 2028. It is expected that there will be advances in low carbon fuels that may alter or extend the pilot phase which will be outlined in revised plans as needed.

**5.3. SUMMARY OF PLAN BENEFITS**

- **Environmental Impact** – Environmental benefits are achieved through customer end use of lower carbon fuels. PSE’s primary benefit of these demonstrations and pilots is learning and developing efficient transformation of the pipeline system.

**Table 3 – Pilot CO2 Potential Emission Reduction**

Type of Benefit	2024	2025	2026	2027	2028
Carbon Reduction from customer end use potential tested by pilots (CO2% reduction)	Up to 5%	Up to 5%	Up to 5%	Up to 10%	Up to 15%

- **Reliability** – The Alternate Fuel plan ensures that PSE is able to transport lower carbon fuels through its pipeline distribution system while meeting the obligation of providing service to firm customers.
- **Interested Parties Relationships** – The program provides opportunities to gather feedback and demonstrate readiness from interested parties such as WUTC, cities, and customers on on efforts to reduce the pipeline system’s environmental impact while ensuring equitable outcomes.
- **Operational Safety** – Program mitigates risk of employee and public injury from operational failure through enhanced understanding of alternate fuel characteristics and pipeline requirements.

**5.4. PRIMARY IDOT CATEGORIES**

PSE’s employs an Investment Decision Optimization Tool (iDOT) to evaluate benefits of projects and optimize the annual portfolios for construction. The top primary iDOT Categories that this plan addresses are:

- Environment
- Interested parties

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Table 4 – iDOT Benefit

2025-2026	Total Projects	Total Budget	iDot B/C Score
Total	1-3	\$3.0 million	4.3

### 5.5. ESTIMATED COSTS

Costs estimates for this plan are based on the quantity of demonstrations and pilots, estimated labor, materials and potential partnerships. Each pilot/demonstration will have a detailed scope and updated budget. PSE’s intent will be to manage pilots scope and subsequent actions within the total budget of \$8.1 million through 2028 The cost estimate is based on alternate fuel project proposals adjusted for traditional escalators

## 6. ALTERNATIVES

### 6.1. SOLUTION ALTERNATIVES

**Proactive Remediation:** Puget Sound Energy is actively evaluating the investment in other decarbonization methods such as demand response and potentially targeted electrification. However, due to the number of customers and time to convert end usage a single approach may not be enough to meet PSE’s decarbonization goals. Investments that enable near-term reduction of carbon impacts from the delivery system and customer end use will enable a more rapid decarbonization.

**Reactive Remediation:** The alternative not selected is to not invest in decarbonization. The risk associated with this is possible fines, loss of trust with the public/WUTC/interested parties, and prolonging climate change issues.

### 6.2. FUNDING ALTERNATIVES

**No Action:** The proposed level of funding allows PSE to determine the impact of blended fuels on the delivery system.

**Increased Funding:** With increased funding, PSE would be able to implement planned strategies sooner.

**Decreased Funding:** Decreased funding may prolong the timeline of the plan and PSE may miss goal targets.

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**7. PLAN DOCUMENT HISTORY**

The current version of the project summary supersedes all previous versions.

<b>Date of Project Summary Revision</b>	<b>Reason(s) for Update</b>	<b>Summary of Significant Change(s)</b>	<b>Modified By</b>
9/20/2021	Documented existing program strategy.	Initial	Phil Puzon
12/17/2021	Annual Review	Minor word and format changes. Updated benefits	Phil Puzon
9/30/23	Annual Review	Added Equity and removed ISP section. Minor word changes and data updates	Jason Dinwiddie

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**8. SUPPORTING DOCUMENTATION**

<b>Document Name</b>