November 3, 2026

Puget Sound Energy
Integrated System Planning

Re: Feedback of Renewable Northwest and Climate Solutions, Puget Sound Energy's October RPAG Meeting

I. INTRODUCTION

Renewable Northwest (RNW) and Climate Solutions appreciate the opportunity to provide feedback on Puget Sound Energy's (PSE) 2027 Integrated System Plan (ISP) process. These comments respond to PSE's request for recommendations on candidate portfolios, as well as the scenario and cost-test results presented during the October 27 RPAG meeting.

RNW and Climate Solutions propose a candidate portfolio that incorporates many of the recommendations we have advanced throughout the RPAG process, particularly concerning storage accreditation, transmission optimization, emerging technologies, and the risks associated with flex-fuel peakers. We encourage PSE to incorporate this portfolio into its candidate portfolio analysis and look forward to reviewing the results in December.

II. FEEDBACK – OCTOBER RPAG

A. Electrification scenarios

Scenarios 2 through 4 embed predetermined electrification trajectories without accounting for customer responses to escalating gas rates and equipment conversion costs. While WAC 480-96-050(4)(d) and (e) require scenarios demonstrating emissions reductions consistent with Washington's proportional share targets, WAC 480-96-030(2) also expressly requires an iterative planning framework with feedback loops and opportunities for optimization across the gas and electric systems. PSE's illustrative Scenario 2 rate of $212.92/therm in 2050 would translate to more than $21,000 annually for a customer consuming just 100 therms. It is difficult to envision customers remaining on the gas system at such rates, yet the analysis does not demonstrate how customer departures, residual infrastructure costs, or changes in electrification economics feed back into subsequent modeling. These outcomes should trigger further iteration.

B. Feasibility and execution risk

We are concerned with PSE's reliance on aggregate resource and infrastructure additions as a proxy for feasibility (slides 28-29). Higher nameplate capacity or transmission mileage does not

necessarily indicate greater execution risk, particularly when comparing commercially established storage and renewable technologies with combustion resources dependent on uncertain future fuel supplies. PSE should apply consistent, resource specific feasibility criteria, including permitting, construction costs, fuel availability, and stranded asset exposure.

Moreover, slides 29 and 30 are confusing. This point was raised during the RPAG meeting, but the response did not address the information asymmetry. The nameplate values do not correspond to the mileage of transmission buildout (e.g., the reference case and Scenario 1 have the same nameplate capacity but Scenario 1 requires 169 additional miles of transmission and 175 MW of additional transformer capacity), and the transition from 2035 to 2050 does not yield logical results (e.g., the reference case somehow does not change its transmission buildout from 2035 to 2050). We request corrected tables and more information about how this risk data informs the cost test, as it was not included in the summary tables (slides 34-35).

C. Environmental impacts and preferred-portfolio selection

Slide 25 shows substantially higher NOx and PM2.5 emissions under the high-electrification scenarios, apparently reflecting greater reliance on combustion resources. PSE should provide cumulative emissions estimates—including upstream emissions—and explain how these outcomes are evaluated alongside GHG reductions and portfolio costs.

III. CANDIDATE PORTFOLIO RECOMMENDATION

PSE should evaluate a candidate portfolio (attached as Exhibit A) that prioritizes the WAC definition of "commercially available" clean resources, transmission optimization, and staged procurement while deferring substantial new investment in flex-fuel peakers.

As emphasized in previous feedback, PSE has not adequately demonstrated that its modeling fairly captures the reliability value of different storage durations. The use of shared saturation tranches raises concerns that the model may undervalue longer-duration configurations as shorter-duration storage penetration increases. The proposed portfolio incorporates duration-specific storage accreditation, updated resource costs, additional transmission options, and more favorable assumptions for emerging clean technologies. It also tests whether PSE can meet near-term reliability requirements without committing to new flex-fuel generation before 2036, while allowing a limited role for peakers thereafter if justified by reliability and demonstrated fuel availability.

Recognizing that deferring peaker additions may introduce resource adequacy challenges, if this portfolio cannot satisfy PSE's planning reserve margin, PSE should identify the year, magnitude, and duration of the shortfall, determine which constraints are binding, and quantify the minimum incremental firm capacity needed to restore reliability.

The portfolio is intended to test the value of preserving investment flexibility. Commercialization of long-duration storage and other clean-firm technologies continues to advance, while uncertainty surrounding combustion resource costs, future qualifying fuels, and emissions requirements remains substantial. PSE should distinguish near-term investments necessary to maintain reliability from long-term resource commitments that could prove uneconomic as technologies and market conditions evolve.

IV. ELECTRIFICATION RECOMMENDATION

PSE should evaluate the proposed candidate portfolio using an electrification trajectory grounded in existing policy and customer adoption potential rather than relying on new mandated early appliance retirement requirements. HB 1589 contemplates iterative optimization of PSE's gas and electric system, including cost-effective alternatives to planned gas infrastructure investments. PSE should prioritize geographically coordinated electrification where customer conversions can avoid planned gas-main replacement costs, enable retirement of existing infrastructure, or otherwise reduce long-term gas-system costs.

This approach should incorporate end-of-life appliance replacement, targeted incentives (maintaining at minimum the same incentives as Scenario 1), electric distribution readiness, avoided gas infrastructure investment, and the costs of maintaining or retiring underutilized gas assets.

V. CONCLUSION

RNW and Climate Solutions encourage PSE to use this candidate portfolio to address outstanding modeling concerns and test a commercially grounded, lower-risk alternative to the existing reference case. We look forward to reviewing the results in December and continuing to engage as PSE develops its preferred portfolio.

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EXHIBIT A

Candidate Resource Portfolio for PSE Modeling

Resource	First year available / build constraint	Recommended modeling treatment
Lithium-ion BESS (2, 4, 6, 8, 10 hours)	2028; all durations eligible	Apply duration-specific costs (2025 ATB) and compute marginal ELCC by duration and penetration. Add longer-duration units sequentially after shorter-duration builds, capturing interactions rather than forcing all durations onto one saturation schedule.
Co-located wind/solar + BESS	2028	Allow 4-, 6-, 8-, and 10-hour BESS behind shared interconnections, including grid charging.
Wind and solar	2028	Update capital costs to current benchmarks with transparent regional adjustments. Model transmission and deliverability consistently across all resources.
100-hour iron-air BESS	2033: up to 100 MW/year; 2035+: up to 500 MW/year	Advance first availability ahead of PSE's 2035 assumption. Keep PSE's $2,273/kW (2020$) starting cost with updated trajectories. Recalculate ELCC using PSE-specific charging availability and multiday reliability events, and compare with PSE's existing 85%/85%/13% tranches.
Advanced compressed-air storage	2035	Model separately as a medium-duration option at PSE's $2,321/kW (2020$) starting cost with duration-specific accreditation. Do not merge its ELCC with lithium-ion simply because both are medium-duration.
Enhanced geothermal	2035	Use lower-cost geothermal at $6,500/kW (2020$), as in the Aug. 25, 2026, RPAG slide 23. Keep PSE's 96% winter ELCC unless recalculated.
Transmission expansion and GETs	Project PULSE: 2027–2031; others per feasible in-service dates	Reflect gains in transfer capability and local deliverability from Project PULSE, reconductoring, dynamic line ratings, Cross-Cascades, BPA projects, and other feasible options. Identify binding constraints, and let transmission upgrades influence resource selection.
Energy efficiency and demand flexibility	2030 statutory milestones	Follow existing ISP assumptions.
New flex-fuel peakers	No builds through 2035; first available 2036; max 2,500 MW cumulative through 2050	Require the model to meet 2031–2035 reliability needs first with available clean resources, existing generation, and transmission. After 2035, apply current market capital costs, fuel availability and deliverability limits, qualifying-fuel costs, and asset-life risk. Do not grant firm-capacity credit without accounting for fuel security through 2044, and biodiesel cost and supply risk from 2045.
Other emerging clean-firm resources	Existing PSE availability assumptions	Follow existing ISP assumptions.