

BEFORE THE PUBLIC UTILITY COMMISSION  
OF OREGON  
LC 73

In the Matter of  
PORTLAND GENERAL ELECTRIC  
COMPANY,  
2019 Integrated Resource Plan.

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REPLY COMMENTS OF  
NW ENERGY COALITION

**1. Introduction**

The NW Energy Coalition (NVEC) respectfully submits the following reply comments on the 2019 Integrated Resource Plan (IRP) of Portland General Electric Company (PGE).

NVEC notes the detailed and informative interaction between PGE, Staff and stakeholders since the filing of initial comments. In a fast shifting policy, operational and economic landscape for utilities in the Northwest, PGE has rightly chosen to take innovative steps in IRP modeling and assessment. It is also right that these should be reviewed carefully and concerns and objections raised. We will not agree on all points with the company or others in this process, but the evolving approach to risk, metrics for scenarios and resource choices, and staged and flexible action, are moving PGE's IRP process forward significantly. Our comments here proceed in the order of PGE's Reply Comments.

**Customer Resource Actions (Sec. 2.1)**

PGE states that the Action plan does not treat forecasts for energy efficiency and distributed flexibility as minimum or maximum targets. The company also does not agree with NVEC's suggestion of a stretch goal for distributed flexibility, but promises a more thorough proposal within its Flexible Load Plan to be in 2020. PGE Reply Comments at 7. NVEC is very encouraged by the tangible progress being made on the DR Testbed and other energy efficiency and distributed flexibility actions, and we will engage to help the company identify further cost effective resources.

**Renewable Action (Sec. 2.2)**

NVEC highlights the company's finding that the near-term Renewable Action is least-cost, least-risk even if RPS obligations are fully removed. PGE Reply Comments at 10. This is an indication that the long view strategy of the RPS adopted via SB 838 in 2007 is now being fully realized just as we reach the 2020 milestone. The RPS remains centrally important in guiding resource strategy going forward, but the fall in costs, increases in performance and reshaping of the resource mix it has spurred are now more self-sustaining going forward, and this is a moment

for appreciation of the policy adopted by our state and the company's achievements on behalf of customers and all Oregonians.

### **Capacity Actions (Sec. 2.3)**

PGE notes that portfolios with thermal resources have lower expected costs but higher quantified risks than non-thermal portfolios; suggests that new energy policy and technical innovation will spur the inclusion of energy storage paired with renewable resources as a least cost resource over new thermal resources going forward; and agrees with CUB that reliance on emitting resources raises economic risk. PGE Reply Comments at 16-17.

NWEC agrees with PGE's conclusion that the way forward is not to acquire new thermal resources during the Action Plan period. We highlight that rather than a resource-for-resource replacement, this will be a clean portfolio replacement including renewables, storage, advanced energy efficiency and all forms of flexible demand. While this is complex to implement, it provides a great deal of reassurance in providing optionality, co-benefits and likely downward price trajectories across all categories. This will also decrease the need for expensive new transmission and focus that investment on where it is most valuable in capturing grid-connected renewables. Finally, a more dynamic and flexible clean resource portfolio will give PGE a big advantage as market expansion continues in our region.

### **Scoring Metrics (Sec. 3.1)**

PGE notes that model solutions optimizing for very different objective functions are consistently selecting a very large renewable addition, with generally over 1300 MW of new wind by 2023, providing both energy and capacity. PGE Reply Comments at 26.

NWEC notes that the convergence of different model results is another reflection of the falling cost of new renewables. However, we anticipate the best aggregate value will not be from picking a single winner, but rather a complementary set of renewables and storage alongside significant expansion of energy efficiency and flexible demand resources. In fact, the draft IRP provides a number of additional examples of how the emerging best-fit clean energy portfolio will be least-cost, least-risk and least-emissions.

### **Capacity Factors (Sec. 3.5)**

NWEC and our colleagues at Renewable Northwest have expressed considerable concern about some of the renewable capacity factors in the IRP. PGE conducted an interesting analysis showing that renewable additions in 2023 and 2024 are robust even with some variation in capacity factors. PGE Reply Comments at 33. We appreciate the company's willingness to delve into this issue and have had constructive bilateral and workshop discussions. The new analysis eases our concern to a degree, but we remain committed to helping PGE obtain more in-depth renewable performance data to be incorporate going forward, because the noted capacity factors for some areas in the Northwest still somewhat higher or lower than the range of other analyses.

### **Electric Vehicle Forecast (Sec. 4.2)**

PGE provides a summary of factors and current findings on electric vehicle current and future market saturation, partly in response to queries from NWEC's Opening Comments. We appreciate the direction the company is taking to refine the analysis and recognize that multiple factors are playing out. Because vehicle electrification is likely to be the first wave of new demand for the electric system as part of decarbonization, we look forward to continued focus on these developments and note our view that, in general, new sectoral demand such as electric vehicles must include a shapable component, whether driven by demand flexibility programs, rate design, or more likely both.

### **Energy Efficiency (Sec. 4.3)**

NWEC is very concerned about the reduction of anticipated energy efficiency potential from the revised Energy Trust of Oregon analysis as shown in Table 6. This amounts to a reduction of 10% in 2020 and 20% in 2021 and 2022 compared to amounts in the IRP. While we certainly agree about the effects of previous program success and especially market transformation for lighting, the reduction of nearly 15 MW of EE for the next three years is a finding we would like to review in full detail.

### **Direct Access (Sec. 4.7)**

In response to NWEC's point about the urgency of addressing direct access in our Opening Comments, PGE makes an interesting observation that the issues involved extend beyond the utility business model to reliability and resource adequacy, because those depend on accounting for all loads. PGE Reply Comments at 57. We further agree with PGE's point that "resource adequacy is a system capability to provide capacity from a portfolio of resources when needed." The theme of system capability cuts across a number of Commission dockets including the generic investigation of capacity in Docket No. UM 2011.

### **Technology Costs (Sec. 5.1)**

NWEC is troubled by the use of the Energy Information Administration's (EIA) 2018 Annual Energy Outlook (AEO 2018) to establish learning rates for the experience curve analysis of future projected costs for wind, solar, geothermal and battery storage. PGE Reply Comments at 67-68.

In our view the AEO relies on an outmoded approach to learning rates and tends not to have very current cost data. Notably, PGE decided not to use the AEO for one category, the low projection for solar PV. The AEO uses a 10% learning factor (i.e., the cost reduction from a doubling of aggregate resource size) instead of the 20% factor which was first established for solar PV four decades ago. For that reason, we are also uncomfortable with the use of the Bloomberg New Energy Finance learning factor of 28%, at least for analysis extending beyond 5 years.

A much better approach is available in the Annual Technology Baseline (ATB) produced by the National Renewable Energy Laboratory.<sup>1</sup> The ATB is a very sophisticated, internally consistent and thoroughly documented study with the most current cost data available, all in easily usable tables. We have discussed this with PGE in recent IRP workshops and hope the ATB will be more fully incorporated in the IRP analysis going forward.

### **Integration Costs (Sec. 5.5)**

NWEC appreciates PGE's willingness to discuss solar integration costs in more detail. Along with Renewable Northwest, we continue to have concerns about getting a better read on these costs which still appear too high. This is an increasingly important factor in solar resource development as system costs continue to come down.

### **Interim Transmission Solution (Sec. 6.1)**

First, NWEC appreciates the extended discussion of transmission related issues in the PGE Reply Comments. We are still considering the many aspects discussed and particularly how they relate to the evolving approach by the Bonneville Power Administration to its transmission products, cluster study process, tariff revisions and other aspects.

PGE states that intermittent renewable resources must have sufficient transmission to deliver their output to PGE's customer load rather than being forced to reduce output or shut off completely. PGE Reply Comments at 74.

While NWEC agrees, it may help improve overall system performance not to require that all renewable output is available 100% of the time. A small amount of variance may be helpful to accommodate infrequent limitations in transmission capacity or underestimates of renewable variable output. And as further development of western power markets and improvement in grid operations moves forward, new optimizations may be possible that do not require curtailment.

As a result, we think PGE's statement that "Firm transmission products are the only way to achieve these necessary elements" might benefit from further refinement, and look forward to more discussion with the company about the multiple aspects of the firm transmission question.

PGE also provides a thoughtful discussion of complementary value from combinations of resources. PGE Reply Comments at 76. This underscores a point going back to the NREL Western Wind and Solar Integration Study<sup>2</sup> that the best system value from renewable resources comes from diverse geographic location and diverse types of generation. While NREL's study was at the western regional level and was conceptual in design, it is gratifying to see those insights now being recognized in the detailed planning by PGE.

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<sup>1</sup> Advanced Technology Baseline: Electricity, National Renewable Energy Laboratory, <https://atb.nrel.gov>

<sup>2</sup> The Western Wind and Solar Integration Study actually comprises three phases and multiple reports. All are available at <https://www.nrel.gov/grid/wwsis.html>

### **Renewables RFP Timing (Sec. 7.2)**

PGE notes its effort to align its planning approach with the timing and stages of the BPA TSEP<sup>3</sup> process, and that it expects most bidders needing to use the BPA system will be able to show the availability of BPAs conditional firm reassessment service. PGE Reply Comments at 82. This is an important step forward, and while NWEC recognizes the considerable refinement of details still needed, we are supportive and optimistic about BPA and PGE's efforts to find better transmission product solutions supporting much faster acquisition of grid connected renewable and storage resources.

### **RFP Scoring Methodology (Sec. 7.3)**

PGE provides a very informative overlay chart showing BPA transmission loading and PGE peak hours across the year. PGE Reply Comments, Fig. 15. However, the BPA loadings are based on their Total Transmission System Load (TTSL) readings, which include all interchange and wheel-throughs as well as sources and sinks to native load within the BPA balancing authority area. In other words, TTSL represents an aggregate transmission utilization rate that includes many flowgates and intertie points that are at most lightly touched by flows from sources to PGE's system across the BPA network. As a result, NWEC wonders whether additional analysis of the portions of the BPA system more relevant to flows for PGE resources would be useful.

Thank you for your consideration of NW Energy Coalition's Reply Comments.

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<sup>3</sup> Transmission Service Request (TSR) Expansion Process. See ongoing developmental materials at <https://www.bpa.gov/transmission/CustomerInvolvement/TSRStudyExpansionProcess/Pages/default.aspx>