

**BEFORE THE WASHINGTON  
UTILITIES AND TRANSPORTATION COMMISSION**

INVESTIGATION INTO RELIABILITY  
BENCHMARKING.

DOCKET NO. UE-151958

**INITIAL COMMENTS OF PUBLIC COUNSEL**

**August 21, 2017**

**I. INTRODUCTION**

1. Pursuant to the Commission's August 21, 2017, Notice of Opportunity to File Written Comments, the Public Counsel Unit of the Washington State Attorney General's Office ("Public Counsel") respectfully submits these comments in advance of the Commission's September 19, 2017, workshop. These comments address the final report produced by Power System Engineering, Inc. ("Power System"), as well as the use of econometric benchmarking for creating targets applicable to reliability standards for electric investor-owned utilities in Washington State. Public Counsel appreciates the opportunity to comment on these issues.
2. WAC 480-100-393 requires electric utilities to file an electric service reliability plan for approval by the Commission by selecting and defining "statistics that track full-system reliability, and information, which may include statistics, that tracks localized reliability and identifies areas of greatest reliability concern."<sup>1</sup> WAC 480-100-398 states, "baseline reliability statistics must be established and reported", in addition to explaining, "why the changes occurred and explain how the change is expected to affect comparisons of the new and older

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<sup>1</sup> WAC 480-100-393(3)(a).

information.”<sup>2</sup> However, the rules are generally silent on: (1) which statistics are reported, and (2) how they are calculated. Through this proceeding, Public Counsel is hopeful that accurate reliability standards can be discussed and applied to each Washington electric investor-owned utilities.

## II. SAIDI AND SAIFI BENCHMARKING

3. Public Counsel believes system average interruption duration index (“SAIDI”) and system average interruption frequency index (“SAIFI”) are essential metrics for reporting customer reliability. In order to employ these metrics proficiently across Washington electric investor-owned utilities, Public Counsel believes that standardization of all inputs may be required to calculate these metrics, such as the calculation of major event days (“MEDs”).<sup>3</sup> With a uniform methodology for MEDs and other reporting criteria associated with calculating benchmarks for SAIDI and SAIFI, utilities in Washington can reduce any confusion or difficulty associated with the identification of major storm events for more accurate SAIDI and SAIFI indexes across utilities.<sup>4</sup>

4. Even though all three Washington investor-owned electric utilities have adapted some service quality program and measures, Public Counsel is concerned customer reliability is suffering, as the reliability measures may be ineffective gauges of reliability performance. As stated in Power System’s report, regarding the inefficient use of historical values of unadjusted SAIDI and SAIFI scores, “This is because a given utility may historically be providing its

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<sup>2</sup> WAC 480-100-398(1); WAC 480-100-398(2).

<sup>3</sup> While the report does state, that the three Washington investor-owned electric utilities have indicated the use of the IEEE definition for MEDs<sup>3</sup>, the use of this definition appears to be voluntary.

<sup>4</sup> In order to be considered a MED, the daily SAIDI must exceed the threshold value (“TMED”), which is calculated and defined in IEEE Std. 1366.

customers with an improper level of electric reliability.” Public Counsel believes that this concern is epitomized in the current process, in which the SAIDI and SAIFI targets are set by the utility itself (but approved by the Commission) with no real comparison to a sample group. For instance, Puget Sound Energy (“PSE”) according to its 2016 Service Quality and Electric Service Reliability Report has met its SAIFI and SAIDI targets since 2012.<sup>5</sup> However, the Power System report shows a relatively large deviation in PSE’s actual SAIDI performance and the expected target.<sup>6</sup>

5. Public Counsel believes that a remedy to this issue may be achieved by employing an econometric analysis conducted by an outside consultant, as has been completed by Power Systems. Additionally, Public Counsel has concerns that reliability in Washington State may be following the nation’s trend of decreased reliability; thus, increasing SAIDI and SAIFI targets.<sup>7</sup> We believe econometric benchmarking may assist in revealing whether Washington electric investor-owned utilities also follow this trend.

### III. COMMENTS TO NOTICE QUESTIONS

6. The following are Public Counsel’s responses to the questions posed by Commission Staff:

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<sup>5</sup> *WUTC v. Puget Sound Energy*, UE-072300 & UG-072301, PSE 2016 Service Quality and Electric Service Reliability Report, Attachment A. (Mar. 31, 2017).

<sup>6</sup> Steve Fenrick, Power System Engineering, Inc. Reliability Targets for Washington’s Three Investor-Owned Utilities 24 (Mar. 6, 2017). “UTC Reliability Report”.

<sup>7</sup> Joseph Eto, Kristina LaCommare, Peter Larsen, Annika Todd, & Emily Fisher, Lawrence Berkley National Labs, An Examination of Temporal Trends in Electricity Reliability Based on Reports from U.S. Electric Utilities. Lawrence Berkley National Labs. (Jan. 2012.)

**A. 1. Does an Economic Approach, in General, Provide a Sound Basis for Establishing Targets for SAIDI and SAIFI?**

7. As previously mentioned, Public Counsel does not believe that the current methodology for calculating SAIDI and SAIFI targets is accurate or suitable for understanding a utility's reliability performance. Public Counsel believes that an econometric approach, which is defined as "a combination of economic theory and statistics that helps to analyze and test economic relationships"<sup>8</sup>, is a reasonable alternative method for establishing targets for SAIDI and SAIFI. However, an econometric model can be time consuming and involve exhaustive data mining in order to attain each utility's reliability benchmark.<sup>9</sup> Public Counsel believes by understanding this relationship between a utility's actual reliability and the unique characteristics of its service territory, the Commission and other parties can better assess whether a company may need to invest more in reliability or make other adjustments; thus, justifying the time intensive process.

8. Additionally, an econometric model, as presented by Power Systems, provides an individualized target for SAIDI and SAIFI for an individual utility unlike other peer group comparisons with "raw data" oriented targets.<sup>10</sup> Even within the state of Washington, there is general variability in the variable values presented in the Power System report. For example, PSE has the highest deviation from the sample mean of the 'elevation' variable, whereas Avista has the closest annual average in 'thunderstorm hours' to the sample mean.<sup>11</sup> Hence, by using an econometric approach instead of comparing raw data, the Commission and other stakeholders

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<sup>8</sup> Evgenia Shumilkina, National Regulatory Research Institute, Utility Performance: How can State Commissions Evaluate it Using Indexing, Econometrics, and Data Envelopment Analysis. 10-05. (Mar. 2010).

<sup>9</sup> *Id.*

<sup>10</sup> UTC Reliability Report, at 5.

<sup>11</sup> *Id.*, Table 7, at 22-23.

will be given a more complete view of each utility's reliability performance given its service territory characteristics.

**B. 2. In the Absence of an Econometric Benchmarking Study, How Should the Commission Evaluate Whether a Utility is Providing an Economically Efficient Level of Reliability?**

9. Public Counsel submits no response to this question.

**C. 3. Does an Econometric Approach, in General, Provide a Sound Basis for Evaluating the Need for Reliability Investments?**

10. Public Counsel believes that an econometric approach is a reasonable method for evaluating utility performance in reliability, in addition to establishing reliability targets. This approach may not directly indicate whether there is a need for reliability investment, but may require further explanation. It may be possible for a company's deviation from its expected target to be the result of poor management, or the availability of more precise data caused by the implementation of smart grid or OMS technologies. As stated in the report, "we use it to make comparisons between observed data values for each utility (e.g. actual SAIDI/SAIFI scores) to the predicted values obtained from the model."<sup>12</sup> Thus, a utility not reaching a designated benchmark may require further investigation than merely viewing the achieved target and the utility benchmark.

11. For example, according to Power System's report PSE has not met any of its SAIDI targets when econometric benchmarking is utilized.<sup>13</sup> Nevertheless, no explanation was given for PSE not meeting the econometric benchmarking goal. A possible solution to this may be to

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<sup>12</sup> *Id.*, at 6.

<sup>13</sup> *Id.*, at 2.

include a variable for investments into the model, such as annual expenses for transmission and distribution.

**D. 4. In the Absence of an Econometric Benchmarking Study, How Should the Commission Evaluate Whether a Utility's Reliability Performance is Appropriate Given its Unique Service Territory Characteristics?**

12. Public Counsel submits no response to this question.

**E. 5. What Other Statistically Measurable and Valid Approaches Should the Commission Consider in Evaluating SAIDI and SAIFI Targets?**

13. Public Counsel submits no response to this question.

**F. 6. Should the Econometric Benchmarking Study Performed by Power System Engineering be Used to Establish Utility-Specific Targets For SAIDI and/or SAIFI? Why or Why Not?**

14. Public Counsel believes that the Power System study is a helpful foundation for establishing econometric benchmarks. Public Counsel does share some of the cautions in interpreting the results of model, as stated in the Power System report.<sup>14</sup> The primary concern is the use or lack of certain variables in the model.

15. Public Counsel is uncertain of the use of the variable 'thunderstorm' as the independent variable for weather. The use of this 'thunderstorm' variable may have been utilized for ease of data collection and/or continuity across utility data applied in its sample. However, Public Counsel believes that this may not be a representative variable for weather in the Pacific Northwest. For example, some studies have used wind speeds or abnormally hot or cold degree-days as a weather variable.<sup>15</sup> Another option may be to include more than one weather variable.

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<sup>14</sup> *Id.*, at 9.

<sup>15</sup> Joseph Eto, Kristina LaCommare, Peter Larsen, Annika Todd, & Emily Fisher, Lawrence Berkley National Lab. Assessing Changes in the Reliability of the U.S. Electric Power System. (Aug. 2015).

16. Also, it may be useful to also include the annual amount of transmission and distribution (“T&D”) expenditures devoted to reliability as an independent variable in the study. With this inclusion it may be possible to see if there is a statistically significant effect of the annual T&D expenditures on reliability.

**G. 7. Should the Econometric Benchmarking Study Performed by Power System Engineering be Used to Evaluate the Need for Investments in Reliability? Why or Why Not?**

17. As mentioned previously, it may be possible to evaluate the “need for investments in reliability,” but it may not be possible without further investigation and added explanatory variables in the model to determine whether the study by Power System should result in more investments or other regulatory resolutions.

**H. 8. Do you Believe that Additional Policy Guidance From the Commission on the Issue of Reliability Performance Benchmarking is Necessary?**

18. Yes. As mentioned above, Public Counsel believes that standardization of SAIDI and SAIFI measurements (i.e. MEDs and its threshold) may be needed for a complete and transparent view of all electric utilities in relation to its SAIDI and SAIFI actual target and expected target.

19. Public Counsel also believes that penalties for not meeting targets provides an incentive to the utility for meeting (or exceeding) its reliability benchmarks. Providing reliable electricity service to customers is an essential requirement under RCW 80.28.005(2). Thus, Public Counsel believes that penalties should be assessed when utilities do not deliver on this obligation.

20. Finally, as previously mentioned, Public Counsel thinks that the Commission should consider the use of an outside consultant for completing the econometric analysis on reliability benchmarking for each electric investor-owned utility.

**I. 10. Please Provide Any Additional Commentary You Believe the Commission Should Consider When Determining Whether or How, to Use the Study From Power System Engineering to Establish Reliability Benchmarks or to Evaluate Investments in Reliability.**

21. Public Counsel has a few additional concerns regarding reliability benchmarks. First, Public Counsel agrees with Power Systems recommendation for SAIDI and SAIFI reliability benchmarks to be updated every five years. Nonetheless, we also believe updates should occur whenever a utility installs upgrades or new equipment, such as outage management equipment or other smart grid technology, to incorporate the use of the new technology into the correct benchmark calculation.
22. Second, Public Counsel believes electric utilities may have more incentive to meet accurately set SAIDI and SAIFI benchmarks, as well as appropriately invest for increased reliability if they are required to implement a service quality program with penalties. PSE's program, which was created as a condition of the settlement stipulation of the merger of Washington Natural Gas Company and Puget Sound Power and Light Company, has continued with relative modifications, to "assure customers will not experience deterioration in quality of service."<sup>16</sup> However, it remains to be seen by the use of econometric benchmarking whether PSE was successful in this endeavor.
23. Finally, Public Counsel believes that a 'stretch goal' for increasing reliability (and effectively decreasing SAIDI and SAIFI metrics) should be implemented once stability in

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<sup>16</sup> *In the Matter of the Proposal by Puget Sound Power & Light Company To Transfer Revenues from PRAM Rates to General Rates*, Docket UE-951270, and *In the Matter of the Application of Puget Sound Power & Light Company and Washington Natural Gas Company for an Order Authorizing the Merger of Washington Energy Company and Washington Natural Gas Company with and into Puget Sound Power & Light Company, and Authorizing the Issuance of Securities, Assumption of Obligations, Adoption of Tariffs, and Authorizations in Connections Therewith*, Docket UE-960195, Fourteenth Supplemental Order Accepting Stipulation; Approving Merger (Feb. 5, 1997).




establishing econometric benchmarks has been accomplished. For example, a Massachusetts State Attorney General's Office study recommends an annual adjustment of the SAIDI and SAIFI benchmarks for "steady, annual improvement" by using a decreasing annual stepladder approach with periods of review for assessing the need to continue the decreasing expected target.<sup>17</sup> This approach may be more appropriate for utilities who have performed with larger deviances from their expected target, but may also be useful for utilities who may have previously outperformed their expected target and benefitted from these offsets.

#### IV. CONCLUSION

24. Public Counsel appreciates the opportunity to comment on the Power System report, as well as econometric benchmarking. We look forward to further collaboration with parties, as well as the workshop on September 19, 2017.

25. Dated this 21st day of August, 2017.

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<sup>17</sup> O'Neill Management Consulting, Recommendations for Strengthening the Massachusetts Department of Public Utilities Service Quality Standards (Dec. 13, 2012). <http://www.mass.gov/ago/docs/energy-utilities/ago-sq-review.pdf>.