

**State of Colorado
Before the Public Utilities Commission**

**In the Matter of Advice Letter)
No. 1857-Electric of Public Service) Proceeding No. 21AL-0317E
Company of Colorado to Revise Its)
Colorado PUC No. 8-Electric Tariff to)
Revise Jurisdictional Base Rate)
Revenues, Implement New Base Rates)
for All Electric Rate Schedules, and)
Make Other Proposed Tariff)
Changes Effective August 2, 2021)**

**HEARING EXHIBIT NO. 1502
ANSWER TESTIMONY AND ATTACHMENTS OF
JOHN D. WILSON
ON BEHALF OF
ENERGY OUTREACH COLORADO**

RESOURCE INSIGHT, INC.

November 3, 2021

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1 **I. Identification & Qualifications**

2 **Q: Mr. Wilson, please state your name, occupation, and business address.**

3 A: I am John D. Wilson. I am the research director of Resource Insight, Inc., 10 Court St.,
4 Arlington, Massachusetts.

5 **Q: Please summarize your professional education and experience.**

6 A: I received a BA degree from Rice University in 1990, with majors in physics and history,
7 and an MPP degree from the Harvard Kennedy School of Government with an emphasis in
8 energy and environmental policy, and economic and analytic methods.

9 Prior to joining Resource Insight, I was deputy director of regulatory policy at the
10 Southern Alliance for Clean Energy for more than twelve years, where I was the senior staff
11 member responsible for SACE's utility regulatory research and advocacy, as well as energy
12 resource analysis. I engaged with southeastern utilities through regulatory proceedings,
13 formal workgroups, informal consultations, and research-driven advocacy.

14 While at Resource Insight, I have represented clients in Georgia, the Carolinas,
15 California, North Dakota, Ohio, Maryland, Massachusetts, Nova Scotia and, now, Colorado.
16 My work has considered, among other things, the cost-effectiveness of prospective new
17 electric generation plants and transmission lines, retrospective review of generation-planning
18 decisions, conservation program design, ratemaking and cost recovery for utility efficiency
19 programs, allocation of costs of service between rate classes and jurisdictions, design of retail
20 rates, and performance-based ratemaking for electric utilities.

21 My professional qualifications are further summarized in **Attachment JDW-1**.

22 **Q: Have you testified in Colorado?**

23 A: No, this is my first time.

1 **Q: Have you testified previously in utility proceedings?**

2 A: Yes. I have testified more than thirty times before utility regulators in California, the
3 Southeast U.S., and Nova Scotia, and appeared numerous additional times before various
4 regulatory and legislative bodies.

5 **II. Introduction**

6 **Q: On whose behalf are you testifying?**

7 A: I am testifying on behalf of Energy Outreach Colorado (EOC).

8 **Q: What is the purpose of your testimony?**

9 A: I reviewed the application of Public Service Company of Colorado (Public Service) for its
10 Phase I rate case to determine whether the Company has met its evidentiary burden for
11 including its proposed capital expenses in rate base.

12 My testimony demonstrates that Public Service has failed to provide substantial
13 evidence that the costs of the capital projects it proposes to add to its rate base are just and
14 reasonable. As the Commission has previously recognized, Public Service bears the burden
15 of proof to present facts that convince the Commission of the reasonableness of the costs of
16 its capital projects.¹

17 I also discuss Public Service's proposal to use a Future Test Year (FTY) that would
18 include the forecast costs of capital projects that have not even been budgeted with a
19 reasonable degree of certainty.

20 In support of an Historic Test Year (HTY), I evaluate the normalized sales and demand
21 data that are necessary to support application of the jurisdictional cost of service study in this
22 proceeding and the class cost of service study in a Phase II rate case.

¹ Colorado PUC, Decision No. C20-0096 (February 11, 2020), para. 50.

1 **Q: Please provide your recommendations for the Commission with respect to the cost of**
2 **capital projects.**

3 A: My recommendations address the treatment of costs proposed to be included in the FTY rate
4 base as well as the treatment of costs that would be included in the rate base regardless of
5 whether a HTY or FTY is utilized.

6 With respect to the prudence of projects being placed into rate base (whether HTY or
7 FTY), Public Service's application is notably thin on demonstrations that the costs of its
8 capital projects have been prudently incurred. Public Service could not produce a comparison
9 of budgeted to actual costs for its capital projects. For this and other reasons discussed in
10 Section III, the Commission should find that Public Service has failed to supply evidence
11 that the costs of the capital projects it proposes to include in rate base are efficient, just and
12 reasonable.

13 If the Commission does approve Public Service's proposal to use a FTY, it should
14 reduce the rate base by excluding projects whose budgets may be at a very low—Class 5—
15 level of project maturity. The Commission should exclude all projects that have not been
16 completed in 2021 from the rate base.

17 If the Commission does allow projects that are incomplete in 2021 to be included in
18 rate base, it should require that the cost estimates be developed at a Class 1 level of project
19 maturity. As discussed in Section IV, some of the costs included in Public Service's proposed
20 rate base are for projects whose planning has not reached readiness for competitive
21 procurement.

22 The Commission should maintain its policy of balancing the need for the utility to have
23 adequate revenues to cover its legitimate capital costs with its responsibility to protect
24 customers from paying for projects that do not provide useful services or include
25 unreasonable cost overruns. The Commission should address Public Service's lack of

1 evidence by requiring annual reporting on its capital projects as well as additional
2 information in future Phase I rate case applications

3 As discussed in Section V, below, the annual reporting will enable the Commission
4 and interested parties to better understand Public Service's capital project budgeting process.
5 Additional information in future Phase I rate case applications will provide a starting point
6 for the Company to better demonstrate the prudence of its capital project costs as well as
7 essential data for the Commission to consider disallowances for unreasonable cost overruns.

8 **Q: Please discuss your recommendations with respect to the selection of the test year.**

9 A: The Commission should maintain its long-standing principle of using an HTY with known
10 and measurable adjustments and should reject Public Service's request to use an FTY.

11 An FTY involves the use of projected costs for capital projects, including some with
12 highly speculative costs. Committing the revenues prior to placing projects in service puts
13 customers at risk that the benefits will not materialize. As discussed in Section IV of my
14 testimony, some of the capital projects included in Public Service's application are not
15 certain to be completed by 2022 and are thus inappropriate to be included in rate base.

16 Public Service warns that if its earnings opportunity is not sufficient, it may delay
17 otherwise necessary projects. If Public Service delays projects whose projected costs have
18 been put in rates, rate cases generally do not allow for reconsideration of those costs. The
19 Commission should approve an HTY revenue requirement that includes expenses that are
20 known and measurable and costs for capital projects that are in service, used, and useful.

21 Furthermore, if the Commission adopts an HTY, it should be aligned with normalized
22 sales and demand data, including normalization for COVID-19. Sales and demand data are
23 an essential part of jurisdictional and class cost of service allocations as well as rate design.
24 The Company's unexplained decision to include COVID-19 normalization for the FTY load
25 data but omit it for the HTY load data should be corrected by the Commission.

1 **III. Lack of Evidence for Prudent Capital Project Costs**

2 **A. Public Service's Capital Project Proposal**

3 **Q: Please summarize the Company's proposal for adding capital project costs to its rate**
4 **base.**

5 A: In its application, Public Service is proposing to include \$1,807 million in costs of capital
6 projects placed in service between August 31, 2019 and December 31, 2020, as well as
7 \$2,360 million in costs of capital projects placed in service between January 1, 2021 and
8 December 31, 2022.² Some of these costs relate to "projects, programs or initiatives that the
9 Commission has previously approved."³ The total requested capital cost addition of \$4,167
10 million is contingent on approval of Public Service's request to use a 2022 Future Test Year
11 (FTY). If a 2020 Historical Test Year (HTY) is used instead, then the application would
12 support an addition of only \$1,807 million.

13 It is also worth noting that Public Service's capital investment costs have grown
14 "exponentially" over the past decade.⁴ These costs increases are discussed generally by EOC
15 witness Mr. Bennet, but my understanding is that the Company is embarking on numerous
16 projects and programs to help Colorado achieve its greenhouse gas emission goals. EOC
17 supports much of this work, but an exponential and continuing rise in costs needs to have
18 accountability as ratepayers, especially income-qualified ratepayers, bear those costs.

19 **Q: What evidence does the Company's application present to demonstrate prudence?**

20 A: Included in Public Service's request are some costs of capital projects that are currently
21 recovered in a rate rider. Certain projects, such as the Cheyenne Ridge, have been specifically

² Direct Testimony of Brooke A. Trammell, Hearing Exhibit 101, p. 71, lines 17-20, 26-28.

³ Hearing Exhibit 101, p. 18, lines 15-19.

⁴ Hearing Exhibit 101, p. 53, line 19 through p. 54, line 1.

1 authorized by the Commission and do not appear to require further review to determine if
2 their costs were incurred in an efficient, just and reasonable manner.⁵

3 Other costs are recorded in deferred assets or presented in Public Service's current
4 Phase I application for the first time. The Company's witnesses provide general assertions
5 of prudence for those investments. For example, Company Witness Ms. Trammell states,
6 "We are required to maintain a safe and reliable distribution system and therefore have little
7 discretion regarding the amounts and timing of [distribution-related] investments."⁶ Other
8 Public Service witnesses provide overviews of capital projects in several business areas and
9 provide similar general assertions of system benefits from the categories of projects within
10 their respective business areas.

11 **Q. Do you agree with Public Service's assessment of its lack of discretion?**

12 A. I am skeptical that there is "little discretion" as Public Service testifies. Regardless of the
13 discretion of the Company, none of the Public Service witness testimonies present an
14 overview of how well the Company has done in minimizing costs or whether cost overruns
15 were reasonable. In a discovery response sponsored by Witness Mr. Dietenberger, Public
16 Service acknowledges that, "There are many circumstances that may require the Company
17 to exceed the budget for a project or Business Area."⁷ While Public Service identified two
18 projects where the actual spend exceeded the budget for reasonable cause, it asserted that
19 "None" of its projects exceeded the budget for any reason that was not considered to be
20 reasonable cause.⁸

⁵ Hearing Exhibit 101, p. 17 line 12 through p. 18 line 8. Further program costs that PSCo believes do not require further review are discussed on page 26, line 5 through p. 27 line 3.

⁶ Hearing Exhibit 101, p. 31, lines 4-5.

⁷ **Attachment JDW-2**, PSCo Response to Discovery Request EOC 3-1, at (c).

⁸ **Attachment JDW-3**, PSCo Response to Discovery Request EOC 3-11, at (c) and (d).

1 **Q: Why is that evidence insufficient?**

2 A: It is hard to see how the Company can demonstrate that its capital project costs are efficient,
3 just and reasonable⁹ without submitting evidence regarding major capital projects that it has
4 completed, making information on the benefit of each major project available, and
5 demonstrating that any cost overruns can be attributed to reasonable causes.

6 **Q: Has Public Service provided sufficient evidence to demonstrate prudence of some of its**
7 **projects?**

8 A: Generally, no. In order to further examine these instances of costs exceeding budget, EOC
9 requested basic data from Public Service. However, the Company was unable to make those
10 data available. Public Service stated that it would be “unduly burdensome” to provide any of
11 the following data for the “approximately 150 individual [capital] projects that are over \$1
12 million” in each of the years 2017-2021.¹⁰

- 13 a. The original project scope, budget (excluding contingency), contingency, in-
14 service date, and class of budget maturity, based on the Company’s internal
15 approval process;
- 16 b. For each major amendment to the scope, budget, or in-service date, the same
17 information as requested in (a) along with the reason for each amendment;
- 18 c. Actual cost and in-service date; and
- 19 d. For any major items included in the original scope that were later removed
20 from the final completed project, indicate (1) whether those items are no
21 longer being considered for investment or (2) identify the project to which
22 those items were transferred and the approximate budget for those items.

23 In objecting to the scope of the discovery request, Public Service stated,

⁹ See Decision C20-0096, Proceeding No. 19AL-0268E, ¶¶ 41-52 (discussing standards for prudence review in rate case, including ensuring services provided are “adequate, efficient, just and reasonable.”).

¹⁰ Attachment JDW-4, PSCo Supplemental Response to Discovery Request EOC 3-24.

1 ... to pull the requested information for each of these 750 capital projects, Public
2 Service would have to go to each business area to identify the specific project
3 managers for each of these approximately 750 projects. Because project budgets
4 are appropriately refined over time as scope, planning, engineering, and
5 construction occur, and because various projects are in different stages of
6 completion at any given time, Public Service would have to determine what is an
7 “original” budget for each individual project, extract each category of requested
8 information for each project, determine what is a “major” amendment, and then
9 pull each of those items into a special study for the response.¹¹

10 **Q: Do you agree that this information would be unduly burdensome to provide?**

11 A: This request should not have been unduly burdensome. Identifying projects with actual cost
12 overruns should not require a “special study.”

13 The objection suggests that it would be difficult for Public Service to “determine what is
14 an ‘original’ budget for each individual project.” However, this assertion is contradicted
15 by a different response in which Public Service states, “To facilitate project cost tracking
16 and reporting, the Company will designate a budget version as the final version and use
17 that for all comparisons of actual spend versus the selected budget version for the
18 subsequent year.”¹² If a process to designate budgets “final” exists but cannot be readily
19 accessed, then this objection is further evidence of a need for improved practices.

20 As the Commission is aware, capital spending by Public Service is already dramatically
21 increasing and is projected to stay on that course throughout the decade. In light of this
22 increase in expenditures, in my opinion it is not reasonable for the Company to state that it
23 would be “unduly burdensome” to provide a list of capital projects and basic data about
24 budget, spending, and in-service dates for those projects. This proceeding, where the capital
25 costs of those projects are placed into rate base, is the correct context to review that data.

¹¹ *Id.* (PSCo Supplemental Response to Discovery Request EOC 3-24.)

¹² Attachment JDW-3, PSCo Response to Discovery Request EOC 3-11, at (a).

1 **Q: Are you familiar with other utilities that provide this type of information in a rate case?**

2 A: Yes, other utilities are able to produce responses to similar data requests. For example, Nova
3 Scotia Power is required to file similar data in its Annual Capital Expenditure Plan.¹³ In
4 recent testimony on behalf of the Consumer Advocate, I was able to analyze 154 capital
5 projects. Out of that list, I identified five projects that raised significant issues related to
6 planning, project management, or cost control.¹⁴ Another example is Southern California
7 Edison, which provided extensive detail on specific project spending in its ongoing Phase I
8 General Rate Case. In testimony on behalf of the Small Business Utility Advocates, I
9 analyzed several capital investments in software related to wildfire mitigation.¹⁵ In my
10 experience, some utilities do not find it burdensome to produce comparisons of budgets and
11 schedules created during a planning process with final actual spend and project completion
12 dates, either on a project specific basis or across the utility's operations as a whole.

13 Public Service's responses to these and other discovery requests suggests that no
14 amount of discovery is likely to yield information that would demonstrate that its projects
15 have costs that are efficient, just and reasonable, because the Company does not appear to be
16 collecting and organizing the necessary information.

¹³ Nova Scotia Power, *2021 Annual Capital Expenditure Plan*, Appendix E, NSUARB Matter No. M09920 (November 27, 2020). Available at: <https://uarb.novascotia.ca/fmi/webd/UARB15>.

¹⁴ *Evidence of John D. Wilson on Behalf of the Consumer Advocate*, NSUARB Matter No. M09920 (February 18, 2021). Available at: <https://resourceinsight.com/wp-content/uploads/2021/03/M09920-Direct-Evidence-of-Wilson.pdf>.

¹⁵ *Direct Testimony of John D. Wilson on Behalf of Small Business Utility Advocates*, California PUC Docket A.19-08-013, Track 2 (Errata Version September 4, 2020) and Track 3 (August 20, 2021). Available at: <https://resourceinsight.com/wp-content/uploads/2021/01/A.-19-08-03-Track-2-Testimony-of-John-Wilson-ERRATA.pdf> and <https://resourceinsight.com/wp-content/uploads/2021/09/A1908013-SBUA-Track-3-Direct-Testimony.pdf>.

1 **B. Evidence Regarding Benefits of Capital Projects**

2 **Q: Does Public Service calculate the benefits of capital projects in a manner that supports**
3 **cost-effectiveness analysis?**

4 A: Public Service’s methods for calculating project benefits vary significantly by business area;
5 based on the available information, many projects are justified using qualitative rankings
6 against a predetermined budget rather than using cost-effectiveness analysis.

- 7 • Shared Corporate Services (Hearing Exhibit 107): Fleet asset replacements are
8 justified using a total cost of ownership model, which compares costs of alternative
9 methods of providing fleet services; enterprise security and property services projects
10 are prioritized based on safety and other business needs that are not quantified as
11 benefits.¹⁶
- 12 • Generation Investments (Hearing Exhibit 108): Although a discovery response did
13 not include the word “benefits,” it explained that “financial scoring points [are]
14 granted based on the amount the project reduces overall cost to the customer
15 compared to the alternative of not performing the project.”¹⁷
- 16 • Transmission Investments (Hearing Exhibit 109): Benefits are “unnecessary to
17 quantify” for transmission projects.¹⁸
- 18 • Distribution Investments (Hearing Exhibit 110): With the exception of capacity
19 projects, the benefits of distribution investment projects are considered “unnecessary

¹⁶ Hearing Exhibit 107, p. 26, lines 9-13, 20-22 and p. 27, lines 13-18.

¹⁷ **Attachment JDW-5**, PSCo Response to Discovery Request EOC 3-2. An example of this cost-effectiveness method was provided in PSCo’s Response to Discovery Request EOC 3-4, at (a), attached as **Attachment JDW-6**.

¹⁸ For regional expansion projects, the response did state that benefits “are determined qualitatively,” but it went on to say that, “Since almost all such projects are to provide transmission access for remote renewable resources, and integrate them while preserving system reliability,” the benefits are usually unnecessary to quantify. **Attachment JDW-7**, PSCo Response to Discovery Request EOC 3-6.

1 to quantity.”¹⁹ Public Service is “currently developing a cost benefit methodology for
2 NWA with stakeholder input that will be applied to all traditional wire solution
3 projects that have estimated costs exceeding \$2 million and which meet certain
4 screening criteria.”²⁰

- 5 • Distributed Intelligence Investments (Hearing Exhibit 112): A discovery response
6 stated that “benefits ... were not explicitly calculated, but rather scored according to
7 the degree to which the use case would enable each of the underlying value
8 categories.”²¹
- 9 • Technology Investments (Hearing Exhibit 114): A discovery response cites seven
10 metrics used to measure the benefits: affordability, clean energy, customer
11 experience, employee experience, risk and compliance, technology rationalization,
12 and IT resiliency.²²

13 Of those business areas that quantify benefits, only fleet asset replacements and generation
14 investments clearly use a process that may routinely allow for determining whether projects
15 are cost-effective. (A comparable process may be developed for distribution capacity
16 projects.) Although Public Service states that, “Cost is one of the criteria that is used by the
17 Company as part of this alternatives evaluation process,” the Company does not explain how
18 it determines whether a project is too costly if it is not able to measure benefits.²³

¹⁹ For capacity projects, “A benefit to cost ratio is calculated that considers: type of risk, amount of load at risk, duration of risk, whether the risk is existing or forecasted, when the mitigation is needed, and whether the mitigation satisfies long term system needs.” **Attachment JDW-8**, PSCo Response to Discovery Request 3-8, at (a – b).

²⁰ **Attachment JDW-9**, PSCo Supplemental Response to Discovery Request EOC 3-10, at (b).

²¹ **Attachment JDW-10**, PSCo Response to Discovery Request EOC 3-12, at (a).

²² **Attachment JDW-11**, PSCo Response to Discovery Request EOC 3-17, at Attachment A1, p. 2. EOC requested quantification of benefits in “dollars saved or some similar metric” for twelve areas of technology investment, but PSCo provided quantified cost savings for only one-third of the investment areas. The response stated, “The Company’s responses to this discovery request do not necessarily entail 1:1 savings where indicated, but reflect reduced increases in costs, mitigation of cost risks, such as by avoiding security breaches and system failures, and otherwise create efficiencies that do not necessarily equate to specific cost reductions.” **Attachment JDW-12**, PSCo Supplemental Response to Discovery Request EOC 3-20.

²³ **Attachment JDW-13**, PSCo Response to Discovery Request EOC 3-21.

1 **Q: Why is it important for a utility to compare costs to benefits in a systematic manner?**

2 A: In order to avoid excessive spending, a prudent utility should seek to minimize costs and
3 ensure that those investments are of significant net benefit to its customers. While Public
4 Service may not have done this kind of analysis in the past, the Commission is correctly
5 seeking ways to manage the great number of initiatives the Company is now undertaking or
6 planning to undertake for the clean energy transition. There are several practices that a utility
7 may use to minimize costs and better specify benefits.

8 First, utilities should use cost estimation practices that reduce systemic risks and result
9 in budget estimates that can be statistically evaluated against outcomes. Application of such
10 cost estimation practices advances realistic consideration of alternatives, including deferring
11 or cancelling the project. Later in my testimony, I discuss my concerns with Public Service's
12 practice of relying on immature cost estimates for purposes of revenue recovery. I was unable
13 to evaluate the Company's other capital project budgeting practices because its response to
14 a discovery request for a "detailed description of the practices" was evasive.²⁴

15 Second, utilities should utilize competitive procurement of goods and services. This
16 practice appears to be utilized by Public Service.²⁵

17 Third, utilities should use internal benchmarking, which may include the use of project-
18 specific cost minimization reports, internal reporting of cost minimization results across
19 projects and business areas, and evaluation of cost overruns. Public Service acknowledges
20 that it does not apply such practices, as follows.

21 The Company does not have any internal reporting of "cost minimization results
22 across multiple projects or business areas." The Company also does not prepare
23 any "project-specific cost minimization reports" for its capital projects.²⁶

²⁴ Attachment JDW-14, PSCo Response to Discovery Request EOC 3-23, at (e).

²⁵ Attachment JDW-13, PSCo Response to Discovery Request EOC 3-21.

²⁶ *Id.* (PSCo Response to Discovery Request EOC 3-21.)

1 Not only does Public Service lack such reporting practices, the Company does not appear to
2 systematically evaluate the actual spend vs budget at a project level, which is the first step in
3 evaluating cost overruns.

4 Fourth, in addition to concerns about cost overruns, utilities must also consider the risks
5 associated with underinvestment. For example, the deferral of vegetation management and
6 replacement of end-of-life equipment can result in an increased risk of wildfires. If the
7 benefits of projects are not well-specified, then there is a potential that funding limitations
8 can result in unreasonable risks.

9 **Q: Please elaborate on your concerns about risks associated with underinvestment.**

10 A: I am primarily concerned that Public Service may not be applying lessons learned or
11 implementing cost minimization practices, potentially resulting in unnecessary cost
12 overruns. The other side of that coin is the failure to appreciate the risks associated with
13 underinvestment.

14 In a response to a discovery request sponsored by Public Service Witness Ms. Mirzayi,
15 the Company acknowledges that, “Funding limitations may result in a project ... being
16 delayed. ... The impact on reliability for these delayed projects is that the risk continues to
17 exist on the system until the mitigation is constructed and is unique to each project.”²⁷

18 I am particularly concerned that projects could be delayed, with consequences for
19 reliability, in response to “capital portfolio reallocations, or corporate financial needs.”²⁸
20 Public Service did not provide criteria, methods, or practices to explain under what
21 circumstances the Company might delay projects because of corporate finances. Even more
22 troubling is the warning issued by Public Service witness Mr. Berman:

²⁷ Attachment JDW-8, PSCo Response to Discovery Request EOC 3-8, at (e).

²⁸ Attachment JDW-2, PSCo Supplemental Response to Discovery Request EOC 3-1, Attachment EOC 3-1.A1, p. 9.

1 If [the pattern of low earnings] continues, at some point Xcel Energy will likely
2 begin to channel more of its available capital to those jurisdictions in which the
3 Xcel Energy Operating Companies have a better opportunity to earn their
4 authorized return. Although Xcel Energy remains committed to Colorado,
5 management ultimately has a duty to deploy capital in a way that balances the
6 interests of the investors who own Xcel Energy with those of customers.²⁹

7 If decisions to delay projects are mainly discretionary and do not follow well-understood
8 practices, then customer benefits may be decreased while project delays drive up costs.

9 ***C. Evidence for Reasonableness of Cost Overruns***

10 **Q: Does Public Service have any standard policies or documents that define the criteria,**
11 **methods or practices for evaluating the actual spend versus budget?**

12 A: As noted above, Public Service suggested that a company-wide review of cost overruns
13 would require a “special study.” But more directly, according to a discovery request response
14 sponsored by Public Service Witness Mr. Dietenberger, the answer is no.

15 The response does suggest that the Company does track cost overruns at some level.
16 The response later states that, “the business areas and their finance partners will review the
17 variances monthly and identify drivers for the majority of the variance, covering 80% or
18 more of the total.”³⁰ Similarly, Witness Dietenberger testifies that “the Financial Operations
19 organization continually reviews actual spend versus the budget to determine if costs are
20 exceeding targets and why.”³¹

21 However, I am skeptical that Public Service staff routinely “identify drivers” during
22 the process to close-out projects after they are placed in-service. The only document or
23 response provided by Public Service to a data request that included a quantified actual versus
24 pre-construction estimate cost comparison is a checklist report for a transmission work order.

²⁹ Direct Testimony of Steven P. Berman, Hearing Exhibit 102, p. 21, lines 2-8.

³⁰ Attachment JDW-3, PSCo Response to Discovery Request EOC 3-11, at (b).

³¹ Direct Testimony of Adam R. Dietenberger, Hearing Exhibit 107, p. 29, lines 10-12.

1 The checklist report noted that the actual was over the estimate by 3.79%. Of note, in
2 response to the form's request for an "explanation for variances, per engineer" the analyst
3 completing the checklist stated that the explanation was "No longer required with new TF-
4 11 form."³² In other words, even in the one documented instance of a comparison of budget
5 to actual spend, the evidence shows that the Company no longer directs staff to provide an
6 explanation of cost overruns.

7 **Q: Why should utilities have standard policies or documents that define the criteria,**
8 **methods or practices for evaluating the actual spend versus budget?**

9 A: The lack of standard policies or practices for evaluating the actual spend versus budget is an
10 essential component of prudent cost controls. For example, when developing a budget
11 contingency, a cost estimating expert should "be well versed in (or know where to find)
12 historical experience and lessons learned with cost risks and their impacts for comparable
13 projects."³³ Public Service's lack of a policy to guide the criteria, methods or practices for
14 evaluating the actual spend versus budget suggests that cost risks for future projects are high.

15 If the historical experience and lessons learned are not applied to identify cost risks of
16 planned projects, it is likely that any cost overrun will be attributed to a reasonable cause. As
17 noted earlier, it is Public Service's position that every one of its cost overruns can be
18 attributed to a reasonable cause. Recurring causes may be reasonable at first, but
19 unreasonable when they re-occur.

20 Identifying recurring causes will be difficult for Public Service if it can't even produce
21 a list of projects with budgets over \$1 million that have (or have not) had cost overruns. Thus,
22 Public Service has failed to provide the Commission with the evidence required to
23 demonstrate that its capital projects' spending has been efficient, just and reasonable.

³² Attachment JDW-15, PSCo Response to Discovery Request EOC 3-22, at Attachment A3.

³³ AACE International, *Risk Analysis and Contingency Determination Using Expected Value*, Recommended Practice 44R-08 (December 12, 2012), p. 4. Available at: <https://web.aacei.org/resources/publications/recommended-practices>.

1 **IV. Inclusion of Immature Projects in FTY Rate Base**

2 **Q: Please explain why you believe that the FTY Rate Base includes projects whose cost**
3 **estimates are insufficiently mature.**

4 A: In general, the cost of capital projects that Public Service projects to be placed in-service in
5 a 2022 FTY are based on budgets that may or may not be actually realized.

6 For example, the testimony of Witness Mr. Romine describes the budget for capital
7 investments in the Distributed Intelligence (DI) roadmap. However, the Company has not
8 yet either issued or completed evaluation of relevant competitive procurements for DI
9 applications.

10 Instead of relying on actual costs or even a budget based on contracts resulting from a
11 competitive procurement, Public Service forecasts the cost of capital investment in DI for
12 2022 “based on the Company’s and our consultant’s expertise in developing software
13 applications.”³⁴

14 According to AACE International’s Cost Estimate Classification System, a cost
15 estimate based on judgement is typically developed for screening or feasibility purposes, and
16 such Class 5 cost estimates represent the lowest maturity level of project definition. Higher
17 levels of cost estimates include stochastic methods (relying on “factors, metrics, models,
18 etc.”) or deterministic methods (which may “include quotes, bids, etc.”). AACE International
19 recommends the use of at least a Class 3 cost estimate for budget authorization, a practice
20 that I have seen used by several utilities. A Class 5 cost estimate is not suitable for budget
21 authorization or contract tender as its expected accuracy range is 2 to 3.3 times greater than
22 that of a Class 3 cost estimate.³⁵

³⁴ Attachment JDW-16, PSCo Response to Discovery Request EOC 3-13, at (d).

³⁵ AACE International, *Cost Estimate Classification System*, Recommended Practice 17R-97 (August 7, 2020), Table 1 (p. 3) and Section 5.3 (p. 4). Available at: <https://web.aacei.org/resources/publications/recommended-practices>.

1 In addition to the inclusion of projects that rely on inaccurate cost estimate methods,
2 the likelihood that Public Service’s proposed rate base includes projects with Class 5 cost
3 estimates is shown by the maturity level of project definitions. For example, with respect to
4 one of the line items included in Table ERR-D-3, Public Service has “not yet determined the
5 extent to which external resources would be required.”³⁶ This strongly suggests that the
6 budget estimates lack sufficient project scope definition, requirements documents and other
7 information necessary to define the project.

8 By requesting that the Commission deem these DI projects prudent and that they should
9 be placed into rate base, Public Service is presenting costs developed using methods whose
10 inaccuracy may be 2 to 3.3 times greater than the methods that should be used for budget
11 authorization, not to mention actual realized costs.

12 **Q: Do prior Commission decisions support the use of projected budgets for capital**
13 **projects?**

14 A: No. In Public Service’s 2019 Phase I rate case, the Commission approved the use of a Current
15 Test Year (CTY). In explaining its reasons for allowing the use of a CTY over the
16 “Commission’s long-standing principle of using an HTY with known and measurable
17 adjustments,” the Commission concluded that “the cost of service information available
18 through August 2019 supports the adoption of a current test year,” as supported by an
19 evidentiary record that included “actual capital additions through September 2019.”³⁷ While
20 a portion of the rate base items were projected, the Commission’s decision sustained the
21 principle of requiring verifiable, actual capital costs when approving the rate base valuation.

22 The Commission may also wish to review a similar decision by the Minnesota Public
23 Utilities Commission regarding Northern States Power’s capital project spending in a rate

³⁶ Attachment JDW-16, PSCo Response to EOC 3-13, at (b).

³⁷ Colorado PUC, Decision No. C20-0096 (February 11, 2020), Proceeding No. 19AL-0268E, at para. 67- 69.

1 case. In its 2015 rate case, the Xcel subsidiary initially proposed costs associated with 849
2 capital projects in the 2014 test year plus a 2015 “Step” year. During an update, Northern
3 States Power acknowledged that 51 of the projects would be delayed. The Commission
4 allowed the substitution of replacement projects which met the following criteria:

5 (1) the Company has shown that the replacement projects are necessary, the costs
6 are prudent, and the projects will be in-service during the test year; and (2) the
7 other parties have had sufficient time to review the proposed replacement
8 projects.³⁸

9 The substitution allowed by the Commission resulted in a net reduction in the 2014 revenue
10 requirement of \$1.8 million, but perhaps more importantly, reaffirmed the principle that the
11 revenue requirement should only include actual costs.

12 **Q: If the Commission allows incomplete projects to be included in an FTY rate base, what**
13 **level of project maturity should be required?**

14 A: While I do not recommend that the Commission include in Public Service’s rate base any
15 capital costs that are not actual realized costs, if the Commission approves an FTY, it should
16 limit the capital costs to projects whose actual costs are in the evidentiary record. If the
17 Commission decides to allow projects that are not yet complete, the Commission should
18 require Class 1 cost estimates.

19 Class 1 cost estimates should utilize deterministic methods, such as fixed-price contract
20 costs and “straightforward counts or measures of units of items multiplied by known unit
21 costs or factors.”³⁹ The risk of further change orders should be very low. Such a standard
22 would exclude most incomplete projects (although it may include some nearly complete

³⁸ Minnesota Public Utilities Commission, *Findings of Fact, Conclusions and Order*, MPUC Docket No. E-002/GR-13-868 (May 8, 2015). Provided by PSCo as Attachment CPUC3-22.A1, and attached hereto as **Attachment JDW-17**.

³⁹ AACE International, *Cost Estimate Classification System*, Recommended Practice 17R-97 (August 7, 2020), Table 1 (p. 3) and Section 6.3 (p. 6). Available at: <https://web.aacei.org/resources/publications/recommended-practices>.

1 projects that have not yet been closed out), and thus would not be very different from the
2 Current Test Year standard adopted for the 2019 Phase I rate case.

3 **V. Recommended Reporting Requirements**

4 **Q: Do you have any recommendations regarding requiring annual reporting to enable the**
5 **Commission and interested parties to better understand Public Service's capital project**
6 **budgeting process?**

7 A: I have two recommended steps for the Commission to reinforce its policy of balancing the
8 need for the utility to have adequate revenues to cover its legitimate capital costs with its
9 responsibility to protect customers from paying for projects that do not provide useful
10 services or include unreasonable cost overruns.

11 First, the Commission should address Public Service's lack of evidence by requiring
12 annual reporting on its capital projects. This recommendation is based on my experience
13 with Nova Scotia Power's Annual Capital Expenditure Plan process. In that process, NS
14 Power is required to submit information on its completed and forthcoming capital projects.
15 One reason the Nova Scotia Utility and Review Board (NSUARB) has found this process
16 useful is that it provides a venue for identifying areas in which NS Power has difficulty with
17 budgeting and cost control. In response, the NSUARB has directed further reporting and
18 implementation of improved practices. Over the past several years, it appears that the Board's
19 direction has resulted in significant improvements in internal oversight.

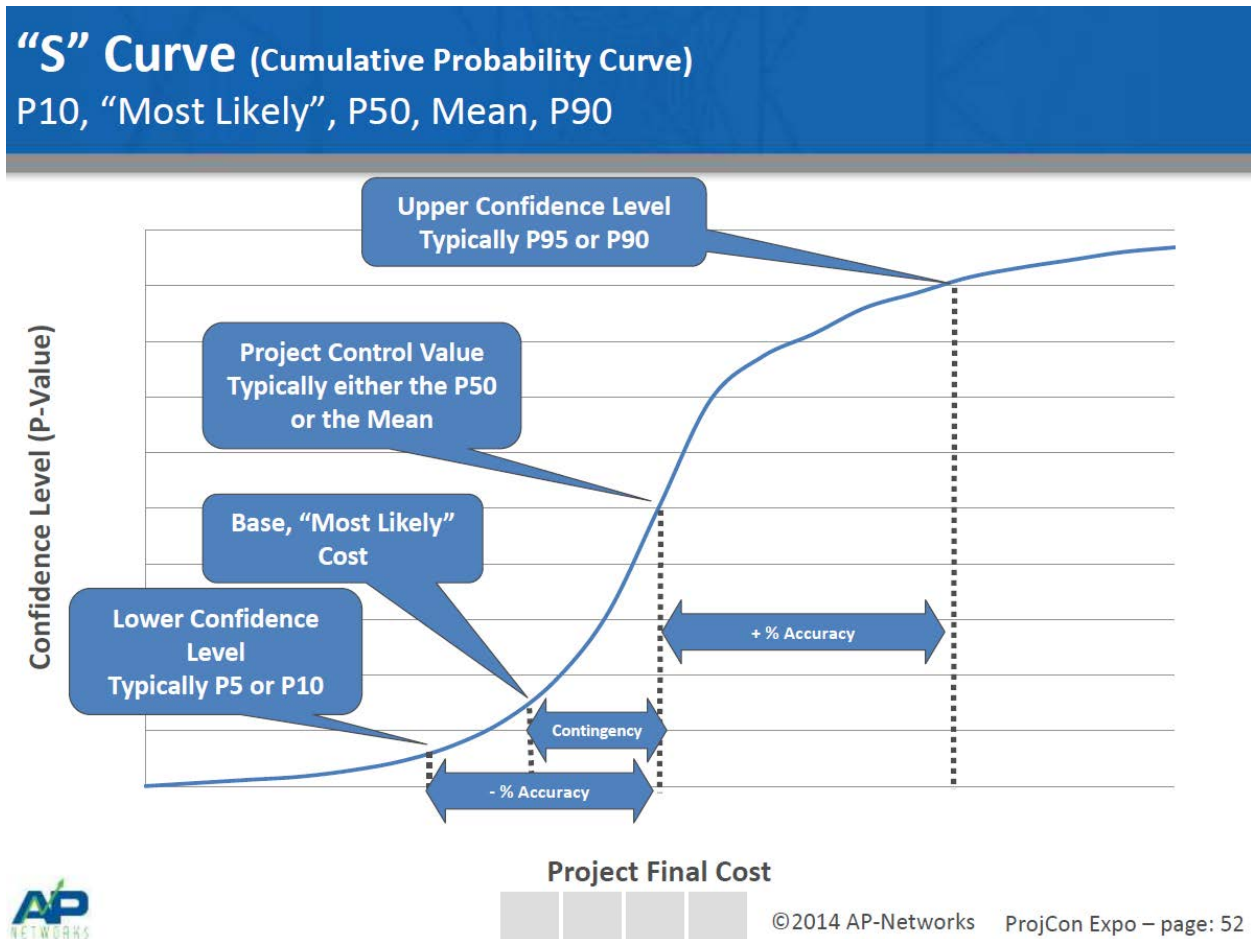
20 Second, the Commission should address Public Service's lack of evidence by requiring
21 additional information in future Phase I rate case applications. It appears that Public Service
22 does not maintain an internal database that tracks capital project budgets and actual spending.
23 Requiring that information for future Phase I rate case applications will result in Public
24 Service creating that database. Public Service can then use that database for internal

1 oversight and support its claims regarding the reasonableness of cost overruns with
2 comparative data.

3 Public Service could use a database to compare project budget and contingency with
4 final cost on a cumulative probability curve, as shown in Figure JDW-1. This cumulative
5 probability curve can be compared with AACE International's expected accuracy ranges or
6 other similar resources to determine whether Public Service's outcomes are consistent with
7 reasonable expectations regarding the frequency of cost overruns as well as below-budget
8 outcomes.⁴⁰ Implementing these reporting requirements will provide Public Service and the
9 Commission with new tools to identify and correct problems that may be resulting in
10 unnecessary capital costs being added to rate base.

⁴⁰ See AACE International, *Cost Estimate Classification System*, Recommended Practice 17R-97 (August 7, 2020), p. 3. Available at: <https://web.aacei.org/resources/publications/recommended-practices>. AACE's RP 17R-97 provides a generic accuracy range; other recommended practices provide more specific accuracy ranges that are appropriate for different types of capital projects.

1 **Figure JDW-1: Cumulative Probability Curve for Project Cost Analysis**



2
3 Source: Steve Jewell, *Cost Estimate Risk Analysis: For Capital Projects and Maintenance*
4 *Turnarounds*, Project Controls Expo (November 18, 2014).

5 **VI. Other Concerns with a Future Test Year**

6 **Q: Please summarize the reasons that Public Service believes a Future Test Year should**
7 **be preferred over a Historic Test Year.**

8 A: Public Service witness Mr. Berman states that:

- 9
- 10 • An HTY does not provide Public Service with a reasonable earnings opportunity;
 - 11 • Public Service is investing for the transition to carbon-free generating resources;
 - An FTY should reduce the frequency of rate cases; and

- 1 • An FTY is sound policy.⁴¹

2 Mr. Berman also contests claims that an HTY provides incentives to control costs and operate
3 more efficiently.⁴²

4 Mr. Berman's most forceful argument is that the Commission is encouraging Public
5 Service to take a "leadership role in reducing carbon emissions and promoting economic
6 development."⁴³ This linkage is reinforced by the warning Mr. Berman issued regarding the
7 Company's willingness to delay projects in response to its corporate financial interests (see
8 p. 17 above). I interpret these statements to suggest that the Company expects to have its
9 financial interests addressed prior to taking action on behalf of customer interests.

10 **Q: Do you agree that a FTY is preferable?**

11 A: No, I do not. While it is reasonable for Public Service to assert a linkage between leadership
12 and earnings opportunity, it is also reasonable for the Commission to expect accountability.
13 The Commission's long-standing principle of using an HTY with known and measurable
14 adjustments is not simply intended to be a hindrance to a utility's earnings opportunity.
15 Instead, it provides a clear foundation for just and reasonable rates.

16 As I discussed earlier in Section IV, the use of capital project costs projected on the
17 basis of Class 5 budgets (the least reliable) introduces substantial inaccuracy into Public
18 Service's authorized cost of service. Similarly, if a project has significant cost overruns due
19 to poor planning, and as a result several prospective projects are delayed or scaled back, the
20 utility is balancing its budget at a potential cost to reliability, safety, or some other objective.
21 Once projected costs have been put in rates, rate cases generally do not allow for
22 reconsideration of those costs to determine whether the actual expenses are just and

⁴¹ Hearing Exhibit 102, p. 13, lines 14-26.

⁴² *Id.*, p. 16, line 6 to p. 18, line 10.

⁴³ *Id.*, p. 19, lines 15-19.

1 reasonable, and whether capital projects are in service, used, and useful. These
2 considerations weigh against adoption of a FTY at this time.

3 **Q: Are you suggesting that the historic cost principle should be strictly applied?**

4 A: No. I have no objection to the use of known and measurable adjustments, well-supported *pro*
5 *forma* adjustments and normalization, and near-term projections of highly predictable costs.
6 It is my understanding that these practices have been applied by the Commission, even in
7 approving a Current Test Year in the Company's most recent rate case.⁴⁴

8 VII. Test Year Sales and Demand

9 **Q: Please explain the purpose of this section of your testimony.**

10 A: In the previous section, I explained why I believe a Future Test Year (FTY) is not preferable
11 to using the Historical Test Year (HTY) in this case. In this section, I explain why the
12 Company should use the COVID-19 related normalization adjustments to sales and demand
13 data it proposes for the FTY to the HTY.

14 **Q: Please explain how Public Service uses sales and demand data for the FTY and the**
15 **HTY.**

16 A: In the Phase I rate case, the primary direct application of these data is to the jurisdictional
17 cost of service study. Sales and demand data are used to determine the allocation of costs
18 between wholesale and retail customers. In a future Phase II rate case filing, Public Service
19 uses the load data approved in Phase I to inform class allocation of costs and set rates.

20 **Q: Does Public Service make any adjustments to its sales and demand data in the FTY and**
21 **HTY?**

⁴⁴ Colorado PUC, Decision No. C20-0096 (February 11, 2020), para. 67-69.

1 A. Yes. Public Service normalizes its sales and demand data for a variety of purposes. Public
2 Service presents two sets of sales data, proposing to use a 2022 FTY and filing a 2020 HTY
3 for informational purposes. In a rate case analysis, normalization removes the year-to-year
4 effects of weather, unusual economic events, and potentially other factors that introduce
5 variability into the sales and demand data that is not reflected in costs. In this case, Public
6 Service also employs normalization to deal with the economic effects of the COVID-19
7 pandemic on electricity use.

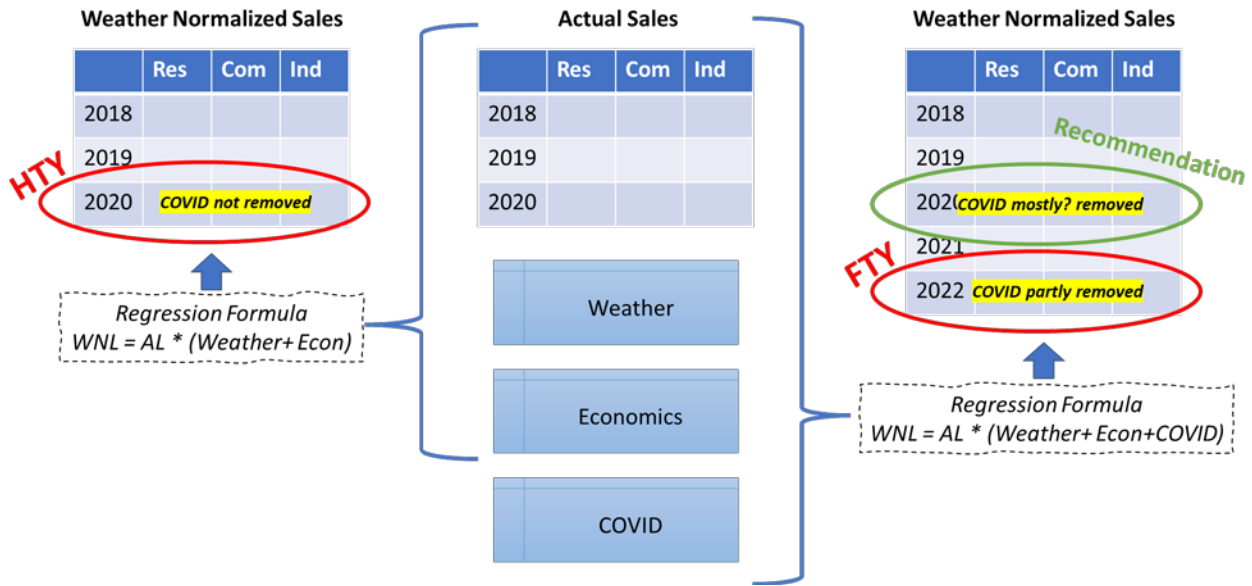
8 **Q: What is the relationship between normalization and COVID-19?**

9 A: For a 2020 HTY, one could not think of a more unique set of circumstances of electricity
10 demand and use than occurred in that year. Normalization should be used to “correct” for the
11 effects of changes in use that resulted from the economic restrictions resulting from the
12 pandemic, similar to corrections for the onset of a recession or extreme weather conditions.

13 **Q: Does Public Service use the same normalization approach for its FTY as its HTY sales
14 and demand forecasts?**

15 A: Surprisingly, no. Public Service applies the COVID weather normalization approach to the
16 FTY, but not the HTY. Public Service Witness Ms. Marks explains that the normalized FTY
17 and HTY sales data are developed with the same data sets, for the most part, but using
18 significantly different methods. As illustrated in Figure JDW-2, both the FTY and HTY
19 utilize the same historical record of sales (and demand), weather, economics, and model
20 specifications.

1 **Figure JDW-2: Simplified Illustration of Public Service Load Forecast Methods**



2
 3 Note: Components and regression formulas are for illustrative purposes only and are not intended to depict all the
 4 details presented in Hearing Exhibit 119.

5 The key difference between the two weather normalizing methods is highlighted in
 6 Figure JDW-2. The regression formula for the HTY weather normalization does not consider
 7 the impact of COVID on 2020 sales, as indicated by the red oval labeled “HTY.” In contrast,
 8 the regression formula for the FTY weather normalization uses a COVID-19 binary variable
 9 to partially adjust the FTY weather normalized data for the economic effects of COVID-19,
 10 as indicated by the red oval labeled “FTY.”

11 With respect to demand data, Public Service presents only FTY weather normalized
 12 demand data, and its discussion of the HTY data does not explain the omission of demand
 13 data. Demand data are necessary to apply the jurisdictional and class cost of service studies
 14 to allocate costs and design rates.

15 **Q: How does the regression formula for the FTY consider the impact of COVID-19 on**
 16 **2020 sales?**

17 **A:** As Public Service Witness Ms. Marks indicates, a COVID-19 binary variable is an
 18 appropriate method “to account for changes in sales due to the COVID-19 pandemic that

1 were not captured by the underlying economic information.”⁴⁵ Ms. Marks’ testimony does
2 not explain why the Company failed to consider COVID-19 impacts in the HTY normalized
3 sales data.

4 **Q: What is the impact of this different treatment for COVID-19 on 2020 sales?**

5 A: Overall, excluding COVID-19 impacts serves to increase residential sales in the HTY
6 relative to a normalized value that includes COVID-19 impacts.

7 In Table JDW-1, I summarize the 2020 data obtained from Public Service’s HTY and
8 FTY workpapers. The HTY data result in normalized sales that are 40,167 MWh higher than
9 the FTY data. Most of the excess normalized sales are allocated to the residential class during
10 the months June through September, although some are also allocated to the Commercial
11 and Industrial classes in August and September.

⁴⁵ Hearing Exhibit 119, p. 28, lines 21-23.

1 **Table JDW-1: 2020 Normalized Sales Using Public Service HTY and FTY Models**

Months	Residential			Commercial and Industrial		
	FTY	HTY	Difference	FTY	HTY	Difference
January	951,742	949,401	-0.2%	1,719,943	1,720,622	0.0%
February	714,385	714,524	0.0%	1,474,470	1,474,514	0.0%
March	813,424	812,883	-0.1%	1,682,757	1,682,485	0.0%
April	699,048	699,434	0.1%	1,423,091	1,423,131	0.0%
May	627,323	627,323	0.0%	1,316,182	1,316,182	0.0%
June	811,959	817,336	0.7%	1,392,976	1,394,575	0.1%
July	1,036,013	1,043,062	0.7%	1,671,460	1,673,590	0.1%
August	984,484	990,781	0.6%	1,585,998	1,590,164	0.3%
September	912,419	918,987	0.7%	1,638,571	1,644,733	0.4%
October	734,110	735,104	0.1%	1,523,162	1,524,871	0.1%
November	638,880	640,065	0.2%	1,402,385	1,402,534	0.0%
December	888,895	887,840	-0.1%	1,600,077	1,599,783	0.0%
Total	9,812,681	9,836,738	0.2%	18,431,072	18,447,183	0.1%

2 FTY Source: Hearing Exhibit 119, Workpaper “Marks_WP_Direct Testimony WP PUBLIC,” tab “PUBLIC Public
3 Service-E Dec 2020 Act.”

4 HTY Source: Hearing Exhibit 119, Workpaper “Marks_WP_ 2020 Electric WN WP PUBLIC,” tab “2020 Revenue
5 Month (10).”

6 Difference is calculated as HTY/FTY – 1.

7 **Q: Why did Public Service not apply the COVID-19 binary variable for HTY sales data?**

8 A: Public Service’s testimony does not explain why COVID-19 impacts should not be utilized
9 when producing such data.

10 **Q: If the Commission directs use of an HTY, what sales data do you recommend be used
11 for Public Service’s rate cases?**

12 A: If the Commission directs use of an HTY, then the Commission should direct Public Service
13 to use the 2020 normalized sales data derived from the regression performed for the FTY
14 sales and load forecast, as I indicated by the green oval in Figure JDW-2, and as presented
15 under the headings FTY in Table JDW-1.

1 **Q: What is the impact of this different treatment for COVID-19 on 2020 demand?**

2 A: The impact of excluding COVID-19 impacts from 2020 HTY demand data is likely to shift
3 demand from non-residential to residential classes. However, because the Company did not
4 produce HTY and FTY demand data, I cannot determine the exact impact.

5 Using actual system peak data, is possible to estimate the magnitude of the COVID-19
6 impact. In 2020, the actual system peak occurred in August. Using a benchmark of average
7 system peak demand for 2015-2019, Table JDW-2 shows that the economic effects of
8 COVID-19 substantially shifted relative demand from non-residential to residential.

9 **Table JDW-2: Residential and Non-Residential Contribution to System Peak**
10 **Demand, Compared with Average of Five Prior Years (2015-2019)**

	Residential	Non-Residential
Average (2015-2019)	2,692 MW	3,294 MW
2020 (August)	3,166 MW	2,845 MW
Difference	+ 18 %	- 14 %

11 Source: **Attachment JDW-18**, PSCo Response to EOC 6-11.

12 This 34 percent differential in class contribution to system peak demand stands out in
13 comparison to the prior five years. When compared against the same average baseline, the
14 largest similar difference occurred in 2018, when residential demand was 9 percent above
15 average and non-residential demand was 4 percent below average. This total 13 percent
16 differential is less than half as large as the differential in 2020. If we didn't already know it,
17 this would confirm that COVID-19 was a major event.

18 Furthermore, the COVID-19-driven differential in class demand is consistent with the
19 normalized class sales for August reported in Table JDW-1. Based on my analysis of the
20 actual peak contribution data as well as the corroborating sales data, I conclude that
21 normalized HTY demand data should include a very large correction to shift demand from
22 residential to non-residential classes.

1 **Q: If the Commission directs use of an HTY, what demand data do you recommend be**
2 **used for Public Service’s rate cases?**

3 A: If the Commission directs use of an HTY, then the Commission should direct Public Service
4 to develop 2020 normalized demand data using Public Service’s FTY method. This is the
5 same recommendation as for the sales data, but the model used for demand data is different.

6 **Q: What if the Commission approves the use of an FTY?**

7 A: If the Commission approves Public Service’s proposal to use an FTY, then I have no
8 objection to the proposed sales and demand data.

9 **Q: How should the recommended HTY normalized data be utilized?**

10 A: The selection of appropriately normalized sales and demand data is important in both Phase
11 I and Phase II rate cases.

12 For the Phase I rate case, I recommend that the Commission direct Public Service to
13 file updated jurisdictional cost of service data utilizing the HTY normalized data I
14 recommended above.

15 For a future Phase II rate case filing, I recommend that the Commission utilize the HTY
16 normalized data I recommended above.

17 **Q: Why is it important that the Commission require Public Service to use the COVID-19**
18 **adjusted HTY data in a Phase II general rate case?**

19 A: Public Service included a COVID-19 binary variable in its FTY weather normalization to
20 “explain the sales increase due to people working remotely and spending more time at
21 home.”⁴⁶ Similarly, actual 2020 sales losses for the Commercial and Industrial class were
22 driven by COVID-19 restrictions.⁴⁷ Normalization of class sales and demand data, both for

⁴⁶ Hearing Exhibit 119, p. 28, line 23 to p. 29, line 2.

⁴⁷ Hearing Exhibit 119, p. 17, lines 9-10.

1 weather as well as for extraordinary events such as COVID-19, enables the reasonable and
2 fair allocation of costs among customer classes.

3 If the Commission were to use the informational HTY filing presented by Public
4 Service, then the failure to consider the impact of COVID-19 would result in residential
5 customers being assigned a significantly higher proportion of cost responsibility than would
6 be the case if, for example, 2019 were used as the HTY.

7 **Q: Does this conclude your testimony?**

8 A: Yes.